SILVER FERN FARMS

100% MADE OF NEW ZEALAND

Good by nature

Climate-related Disclosures

01

Introduction

Silver Fern Farms' purpose is creating goodness from the farms the world needs.

Inherent in this purpose is the need to navigate the immediate and longer-term threats of climate change by recognising and addressing the role our farming and food production systems play in this global challenge.

Our commitment on sustainability issues is a key way we're making sure we do the right thing by our customers who increasingly want to know that their red meat is sustainably produced. It also reflects our desire to support our livestock suppliers and the communities in which we operate, by promoting the long-term viability of Aotearoa, New Zealand farming.

This means not merely doing less harm, but doing greater good by ultimately enhancing the ecosystems we operate in. We are optimistic and have a high degree of commitment to the positive role our company, our farmers and our customers can play during the transition to a low carbon, nature positive global economy.

We are reducing our own emissions[1] as fast as we reasonably can, adopting science-based targets and extending our approach right across our value chain, including on-farm. Climate innovation is also a key pillar of our Sustainability Action Plan - under this plan we are making strong progress and have committed to a range of initiatives to reduce emissions[2] and position Silver Fern Farms as a leader in nature positive food production.

We are continuing to build our understanding of climate risks and opportunities across our full value chain. Integrating this understanding across our decision-making at all levels ensures we are actively working to address these challenges.

This climate statement demonstrates the transparency and openness with which we are approaching our transformative sustainability programme.

While Silver Fern Farms is not captured under the mandatory reporting regime, we believe it is important to emphasise the scale of the challenge ahead of us and the impact climate change is likely to have across all aspects of our business over the coming years. However, we also recognise the significant opportunity for Aotearoa, New Zealand to build a world-leading low emissions, nature positive and climate resilient food system. That's an opportunity that Silver Fern Farms intends to grab with both hands.

2 Throughout this document "emissions" means "greenhouse gas (GHG) emissions". Unless otherwise stated, emissions are reported as tonnes of carbon dioxide equivalent (tCO_2e).

This climate statement is issued by Silver Fern Farms Limited (Silver Fern Farms). It is a voluntary disclosure. While Silver Fern Farms has considered the Aotearoa New Zealand Climate Standards (NZCS) issued by the External Reporting Board in the preparation of this statement, we are not a climate reporting entity under the Financial Markets Conduct Act 2013 and accordingly we do not need to complete climate statements under that Act. This statement aligns with the NZCS where we have considered it appropriate and feasible to do so, but this statement is not fully compliant with those standards, including in relation to anticipated financial impacts.

This statement has been prepared as at September 2025 and we have used reasonable efforts to ensure the accuracy of this statement as at that date, based on the information available. This statement contains forward-looking statements, including climate-related metrics, climate scenarios and projections, targets, assumptions, judgments, forecasts and statements of future intentions. None of these forward-looking statements can be relied upon.

Climate-related risk management is an emerging area and Silver Fern Farms acknowledges that the understanding of climate risk, and inputs to assist this understanding, are constantly evolving. The risks and opportunities in this statement, and the strategies to achieve Silver Fern Farms' targets, may not eventuate or may be more or less significant than anticipated. We reserve our right to revise statements made, and / or our strategies and business activities described, in this statement without notice.

Nothing in this statement should be interpreted as capital growth, earnings or any other legal, financial, tax or other advice or guidance. We recommend you seek independent advice before relying on any information in this statement. To the greatest extent permitted by law, Silver Fern Farms (including its directors, officers and employees) do not accept and expressly disclaim any liability for any direct, indirect and / or consequential loss arising from any use or inability to use the information in this statement, arising from any cause whatsoever."

Who we are

We are Silver Fern Farms.
100% Made of New Zealand.

We care deeply about doing the right thing and doing it well, striving every day to create goodness from the farms the world needs.

New Zealand's largest producer and marketer of lamb, beef, and venison

Started in

1948

Became Silver Fern Farms in 2008

16K+

Sheep, Beef and Deer Partners

14

Processing sites throughout New Zealand

7

Global hubs (UK, Shanghai, USA, Korea, Japan, NZ, UAE)

$2.7B+

Annual sales

6K+

Staff in the peak of the season

02

Governance

Our governance approach

BOARD

Board of Directors

- Protects the interests of stakeholders and promotes the creation of long-term sustainable value by defining the strategic direction, setting the risk appetite, and overseeing implementation of an effective risk management strategy and framework at Silver Fern Farms.

Board Risk and Sustainability Committee (RSC)

- Assists the Board in fulfilling its responsibilities by establishing a strategic and robust approach to risk and sustainability management.
- Provides strategic guidance, feedback and oversight on climate-related matters, risks and opportunities.

EXECUTIVE

Chief Executive Officer (CEO) and Executive team

- Promotes a strong, proactive risk management culture and drives leadership in sustainability management.
- Overall accountability for identifying, addressing and monitoring climate-related risks and opportunities, and integrating climate change considerations into strategic planning, budget allocation, management reporting and other key business activities.

Chief Sustainability and Risk Officer (CSRO)

- Leads and shapes the Enterprise Risk Management (ERM) programme, consistent with the Board's risk appetite.
- Provides strategic advice and governance on the management of risks and opportunities, including those related to climate change.
- Designs and drives delivery of the Sustainability Action Plan and supports culture.

OPERATIONS

Sustainability and Risk Team

- Drives a culture of transparent, integrated risk and opportunity management, aligned to our ERM framework.
- Shapes and embeds our social and environmental sustainability strategy and agenda, articulated through our transformative Sustainability Action Plan.

Our People

- Apply the ERM framework within their individual roles.
- Actively identify, assess and manage risks, including climate-related risks, in their business area.
- Report any significant risks (real or perceived) in the broader business to the appropriate people / teams.

Board oversight

The Board is ultimately responsible for providing governance and oversight over Silver Fern Farms' strategic direction and ensuring appropriate risk and sustainability practices, including our response to the uncertainty stemming from climate change.

The Board-approved Risk Management Policy reinforces the directors' role in ensuring an effective risk management approach is embedded across the organisation. This policy confirms our commitment to proactively manage risks and opportunities (including those related to climate change) in an efficient and consistent manner in order to:

- drive sustainable growth and enhance value by delivering on our strategic objectives and stakeholder expectations;
- allow opportunities to be pursued in an informed way through effective decision-making;
- strengthen business resilience; and
- ensure a safe environment for Silver Fern Farms' customers, suppliers, employees and the communities in which we operate.

The Board-level RSC was established in 2021 to provide strategic guidance and feedback to both the Board and Executive team on the continuing maturity, effectiveness and implementation of our ERM programme.

The RSC assists the Board in discharging its responsibility to exercise due care, diligence and skill in relation to the oversight and effective management of material and emerging business risks, including climate-related risks.

The RSC also assists the Board with oversight, review and approval of our strategic approach to sustainability and the integration of sustainability considerations into business planning, strategy, risk management processes and culture. The RSC provides strategic guidance and monitors progress on the initiatives being undertaken to address the sustainability issues deemed most relevant to our business performance (based on internal and external perspectives). These issues, captured under our Sustainability Action Plan (refer **Strategy**), include Climate Innovation - creating a climate positive future.

Board oversight

The RSC meets at least four times per year (and at such other times as considered necessary). Regular climate-related reporting to the RSC includes:

- the quarterly CSRO report which provides updates on existing and developing climate-related matters, emerging risks and opportunities, progress towards our agreed greenhouse gas (GHG) emission reduction targets and climate related policy work;
- biannual reporting on the performance against agreed and annual key performance indicators and deliverables under the Sustainability Action Plan, including in relation to climate change;
- business unit risk profiles, presented by the respective executive member every 12 – 18 months, covering material and emerging risks across their areas of accountability, including any new or evolving climate-related risks; and
- the annual Material Business Risks Report which explores global emerging trends and captures a range of material strategic and operational risks. These risks map to and inform our strategy.

Supplementing these regular reports, the RSC receives briefings from management throughout the year on sustainability issues and endorses (for Board approval) all key sustainability and risk policies. As part of its responsibilities, the RSC oversees Silver Fern Farms' climate scenarios and the identified climate-related risks and opportunities, to ensure these are considered during strategy development and implementation.

Risk and sustainability have intentionally been grouped together under the RSC due to their interdependent nature, with good risk management enabling a sustainable and enduring business model and vice versa, a focus on sustainability enabling good risk management.

This structure provides a cohesive, connected and embedded approach to managing climate-related uncertainties and is replicated at a business unit level under the CSRO to ensure climate challenges and opportunities remain front of mind in strategic discussions and decision making.

The Board actively seeks to expand its climate-related knowledge and capability, drawing on the subject matter experts within Silver Fern Farms, in particular the CSRO and the broader Sustainability and Risk Team.

To further support appropriate oversight and decision-making in relation to climate-related matters, the directors undertake additional training, have access to insights and advice from external experts, and build knowledge and experience through their other business, industry and governance roles.

A number of Silver Fern Farms' directors are members of Chapter Zero New Zealand, the national chapter of the Climate Governance Initiative. This global network of Board directors is committed to taking action on climate change. Its stated mission is "to mobilise, connect, educate and equip directors and boards to make climate-smart governance decisions, thereby creating long term value for both shareholders and stakeholders".

Cambridge Institute for Sustainability Leadership (CISL)

CISL is an impact-led institute within the University of Cambridge that galvanises leadership globally to transform economies for people, nature and climate. Over the last four years, a number of Board directors, alongside Executive team members and management, have attended CISL sustainability programmes in Melbourne, including:

- The Board Director Programme
- The Business and Sustainability Executive Leadership Programme
- The Sustainability Practitioner Programme

In addition, Silver Fern Farms' CSRO is currently a faculty member of the Melbourne programme, and has been for the last 10 years.

Management's role

The promotion of a strong risk management culture across Silver Fern Farms, focused on risk awareness and the application of the ERM framework, ultimately rests with the CEO and Executive team.

Our Executive team is entrusted by the Board with ensuring climate-related factors are considered when making key decisions, with the team accountable for:

- identifying and assessing climate-related risks and opportunities with the potential to impact on business objectives at both an enterprise and business unit level;
- escalating any material climate-related risks to the Board for review and attention;
- monitoring evolving and emerging risks;
- developing, recommending and advancing strategies to effectively mitigate risks or pursue opportunities; and
- ensuring climate-related matters are incorporated into strategic planning and budgetary processes.

Each executive provides a six-monthly attestation to the RSC, stating that they are continuing to embed effective risk management practices, in line with the Silver Fern Farms' ERM Framework, into day-to-day operations, including business planning and decision-making processes. Under this attestation, any key exceptions are noted to give the RSC visibility of potential concerns.

Within the Executive team, our CSRO has direct responsibility for maintaining and reviewing Silver Fern Farms' climate-specific risk profile and for shaping and driving delivery of the Sustainability Action Plan, both of which facilitate climate risk and opportunity management.

Silver Fern Farms operates on the premise that risk management is everyone's responsibility.

While effective risk management starts with the 'tone at the top' as directed by the Board, all staff have a role in driving a positive risk culture.

As such, the identification and day-to-day management of climate-related risks is expected and undertaken across Silver Fern Farms' full value chain. This enterprise-wide approach assists in embedding climate considerations into business activities and decision making, promotes greater accountability, and improves understanding of climate-related risks and opportunities.

To support our people to identify, analyse and effectively address climate uncertainty, the Sustainability and Risk team (led by the CSRO) actively engages with the business to integrate thinking and action on climate matters directly into business planning and activities. Management's responsibilities include:

- developing appropriate strategy, policy, processes and risk management tools;
- creating awareness and supporting the business on key sustainability initiatives;
- facilitating robust discussion and informed decision-making on sustainability issues, including climate change; and
- facilitating regular review and updates through to the Executive team, CEO and RSC.

More broadly, the team engages with both industry and government to advocate for a more collective, system-wide response to shared sustainability problems, including the drivers and consequences of climate change.

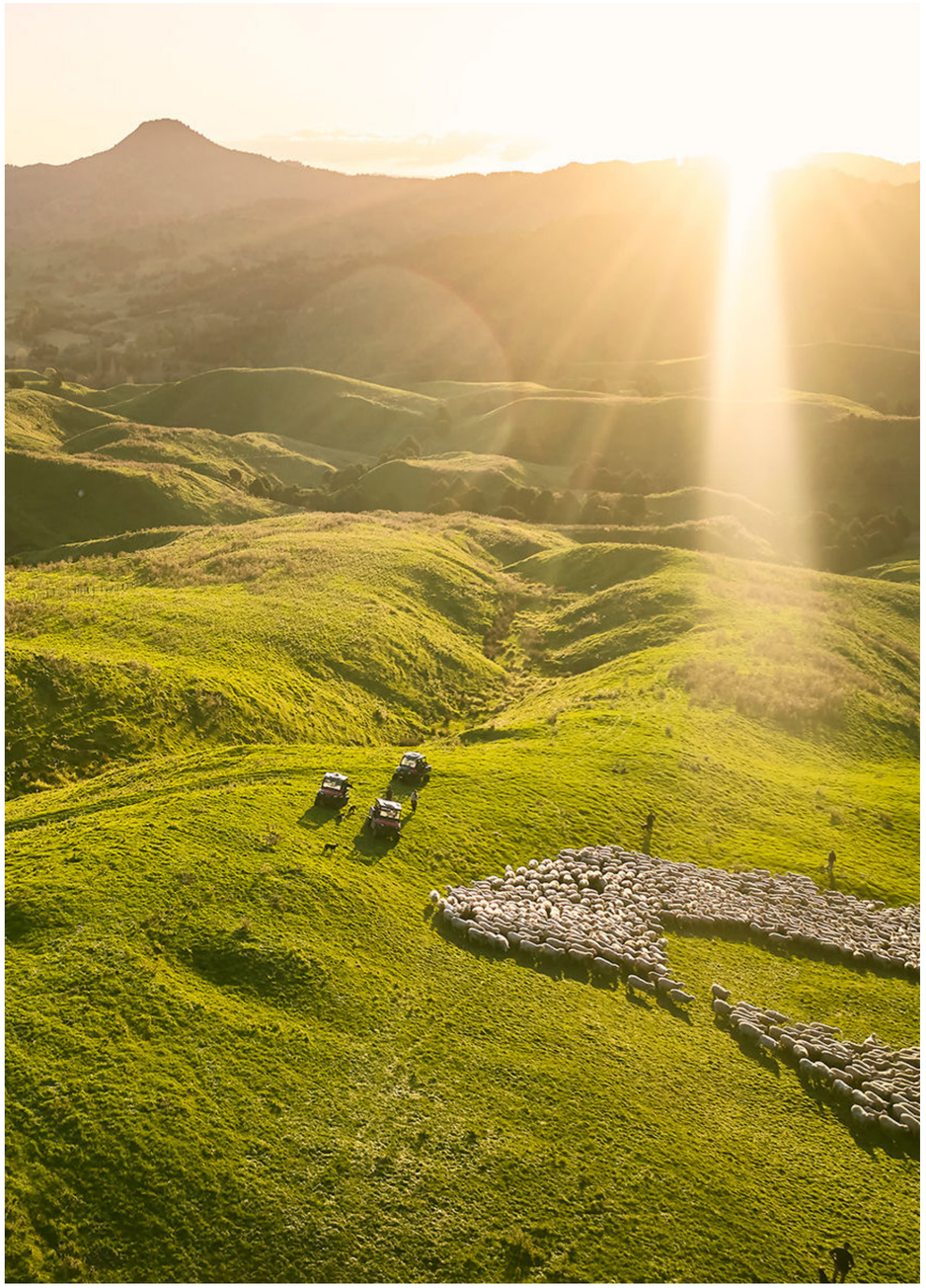
Linking remuneration to climate-related risks and opportunities

The remuneration of the CEO, the Executive team and senior management is directly linked to the achievement of Silver Fern Farms' strategic ambition through the discretionary Short-Term Incentives (STI) Programme.

The Board offers this programme to encourage individual and collective ownership of the business strategy, and to recognise performance against the financial and strategic development goals.

STI remuneration is determined through the target scorecard, which provides a shared set of key performance indicators. Under the 2025 Financial Year targets, 50% of the weighting is given to strategic development, with the strategic goal "Becoming a Trusted Nature Positive Producer" carrying a weighting of 7.5%.

While not explicit, the value derived from climate-related market opportunities are also captured under our sales and growth targets, as we look to provide market-driven incentivisation and rewards back to livestock suppliers undertaking positive climate action on-farm.



03

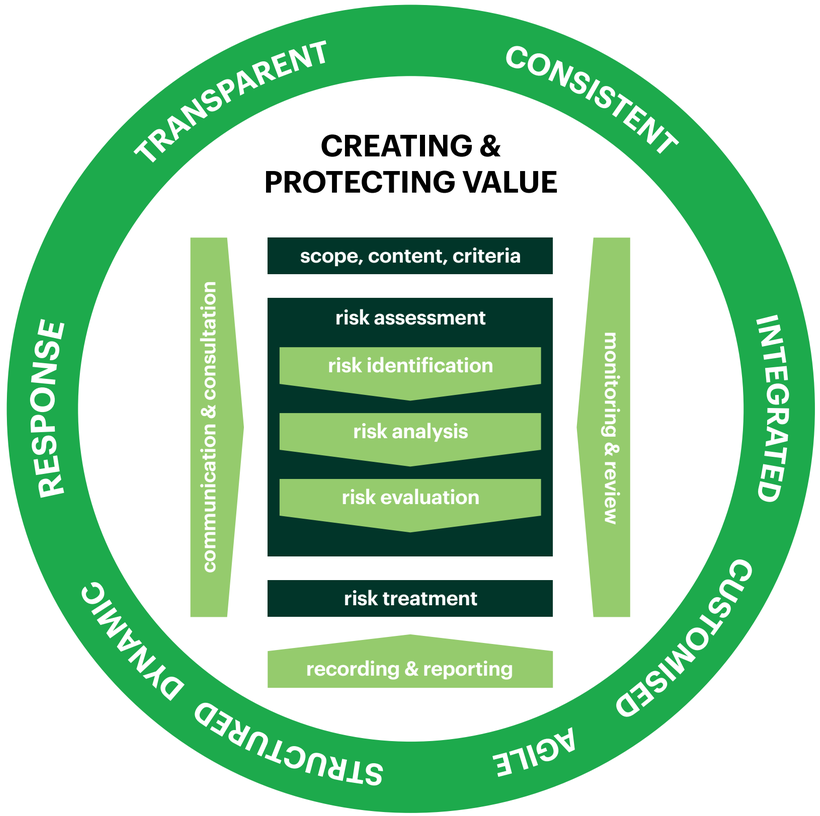
Risk Management

ERM framework

Silver Fern Farms recognises the essential role of risk and opportunity management in ensuring long-term business performance and stability.

To drive sustainable growth and resiliency, while enhancing stakeholder trust, we must anticipate, articulate, and respond to risks affecting both our strategic objectives and our operations. This includes understanding the implications of evolving trends and uncertainties that strategically affect our business model and our ability to deliver enduring value, such as climate change.

ERM Framework



As articulated under our Risk Management Policy, our ERM framework provides a valuable strategic tool allowing a single, integrated and company-wide view of risk, irrespective of the type of uncertainty.

Based on the principles of the global risk management standard, ISO 31000:2018, the ERM framework enables Silver Fern Farms to effectively manage and prioritise its risks by setting out disciplines that can be embedded into day-to-day business operations and decision-making processes.

All employees having a responsibility to apply the ERM framework within their individual roles. This includes actively identifying, assessing, and treating risks in their business area and reporting any significant risks to the appropriate people.

Climate change uncertainties are fully incorporated into our ERM framework in order that all risks, regardless of type, are assessed and prioritised in a consistent manner. This also ensures that climate-related risks and opportunities are integrated holistically into key business processes.

Risk appetite

At Silver Fern Farms, we accept risk as part of doing business - we seek to balance an appropriate level of risk against the returns expected.

The amount of risk we are willing to take in the pursuit of our strategic objectives – our risk appetite – is set by the Board, who hold ultimate accountability for risk governance and oversight.

Our risk appetite should inform decision-making, project management and business as usual operations. As such, our risk appetite has been integrated into our risk management process tools to ensure it is considered whenever a risk assessment is undertaken.

Recognising that the Board's risk appetite changes as both internal and external conditions evolve, it is evaluated and agreed every three years (at a minimum), with the most recent review having been completed in the first half of 2024.

The ERM framework requires that all identified risks at a strategic, business unit and project level are assessed against the Risk Assessment Tools.

Under these tools, a common likelihood versus consequence matrix, individualised for Silver Fern Farms' operations, is used to assess and determine a risk rating for all risks, including climate-related risks.

Risk Assessment Tools

Likelihood			Minimal	Minor	Moderate	Major	Extreme
			1	2	3	4	5
	E	Almost Certain	L 8	M 13	H 18	C 23	C 25
	D	Likely	VL 5	L 10	M 15	H 20	C 24
	C	Possible	VL 3	L 7	M 12	H 17	C 22
	B	Unlikely	VL 2	L 6	M 11	H 16	C 21
	A	Rare	VL 1	VL 4	L 9	M 14	H 19
			Consequence				

Consequence is considered across a range of categories, including internal performance, external connection and value realisation measures. Climate-related risks are assessed against each consequence category to fully explore and assess the potential impacts. Climate considerations include:

- the physical climate change effects on the environment and community;
- potential weather conditions and land use conversions impacting on business continuity;
- social licence to operate implications through the lens of our customers and reputation; and
- our ability to obtain both our financial and strategic goals and effectively transition to a low emissions economy.

Likelihood is based on either (i) the potential for the risk to occur within the next five years, or (ii) its probability over an agreed period. While acknowledging the physical and transitional impacts already being felt (highlighted in **Strategy**), consequences from climate change are expected to accelerate over longer time horizons. The adoption of the probabilistic approach to likelihood allows these extended timeframes to be considered.

Based on the ratings determined for each risk, the Risk Assessment Tools guide the business on how a risk should be treated and the frequency of review. All climate-related risks deemed material (classified as high or critical) must be escalated to the Board.

Reporting and Escalation Table

Risk Rating	Very Low (VL)	Low (L)	Medium (M)	High (H)	Critical (C)
Treatment	Manage as part of business-as-usual processes	Risk monitoring required; treatment considered if practicable	Risk treatments to be undertake if reasonably practicable	Treatment plan required to reduce risk in timely manner	Decisive action required to immediately reduce risk
Review	No ongoing review required	Review risk annually at a minimum	Review risk quarterly at a minimum	Review risk monthly at a minimum	Review risk as frequently as required (monthly at a minimum)
Ownership	Activity Manager/ Supervisor	Department Manager/Site Manager	Senior Manager/Regional Manager	Executive Team Member	CEO & Executive Team Member
Escalation	Department Manager/Site Manager	Senior Manager/Regional Manager	CEO & Executive Team Member	CEO & Board	CEO & Board

Integrating climate-related risks

Our Sustainability and Risk Team assists the business in reviewing their business area-specific risk profiles.

Climate-related risks are considered across all parts of the value chain as part of this process and are monitored on an ongoing basis as part of the ERM framework.

A specific climate-related risk and opportunity profile has also been established. In building out these risks and opportunities, reference has been made to the work of the Climate Change Commission, government policy (both domestic and in the markets we serve), the Climate Leaders Coalition, the Aotearoa Circle, briefings and advice from climate change specialists, reports produced by government agencies and the United Nations, climate related consumer insights and market analysis, and insights from our livestock suppliers.

Conversations are held with representatives from across the business to further understand and expand on potential climate-related risks and opportunities, ensuring differing perspectives are captured and considered. In turn, the outputs from these conversations are shared as part of individual business unit risk workshops to ensure climate thinking is integrated across all levels of the organisation.

In undertaking scenario analysis and assessing climate-related risks and opportunities, Silver Fern Farms considers our entire value chain, in line with our plate to pasture strategy, including 100% owned-subsidiaries. We do not assess the specific climate impacts of our joint ventures and partnerships, including Centre for Climate Action Joint Venture Limited (trading as AgriZeroNZ) and Prism Earth Limited (Prism Earth), within our disclosures reporting. However, we note that our investments in both AgriZeroNZ and Prism Earth are a direct result of understanding and seeking to address material climate-related risks and opportunities across our value chain.

To ensure material risks and opportunities (including those related to climate change) are considered as part of capital allocation decisions, our risk management process aligns with and is embedded into key business activities.

- **Strategic planning**
  Business units develop strategic plans considering the material risks and opportunities included in their risk profiles.
- **Budget allocation**
  Business unit budgets are developed in alignment with strategic plans, ensuring capital is applied to both managing risks and pursuing opportunities.
- **Project management**
  Projects are selected and implemented by the business unit to address risks or pursue opportunities; risks associated with the execution of those projects are identified, analysed, managed and monitored in alignment with Silver Fern Farms' risk appetite.
- **Management reporting**
  Risk, control and treatment information is incorporated into periodic reporting, with the frequency of reporting dictated by the severity of the risk (in accordance with our risk reporting and escalation table).

04

Strategy

Our climate imperative

The risks posed by climate change are considerable. With 2024 being the warmest year on record, and the global average near-surface temperature reaching 1.55°C above pre-industrial levels[2], Aotearoa, New Zealand's natural and managed land and water systems, coastal areas, glaciers and oceans are already being affected. Increases in the severity and frequency of existing natural hazards are being witnessed, with more extreme weather, flooding, heatwaves, and droughts. New risks are also anticipated - slow-onset gradual climatic changes will lead to sea-level rise, ocean warming, more hot days, and changing rainfall patterns.

Silver Fern Farms' exposure is not only limited to physical effects. Significant market, regulatory and technology changes are expected as the world moves towards a low-emissions economy. Evolving climate change policy and regulation may restrict access to global markets, lift emissions pricing, and / or reduce access to capital. Consumer perceptions on the emissions intensity of red meat, particularly beef, may alter both sentiment and demand, while emerging technologies could either threaten or support traditional protein markets.

While the extent and speed of these changes remain uncertain, it is clear that Silver Fern Farms, our livestock suppliers, and the broader red meat industry face significant disruption and need to take action. As a business, we are continuing to focus our efforts on reducing GHG emissions, both within our operations and across our supply chains. However, we must also prepare for widespread, systematically pervasive and potentially irreversible consequences stemming from further rises in average global temperatures.

Climate resiliency and transition planning is fundamental to ensuring our long-term viability and must be integrated into the heart of our operations.

As such, we are repositioning our business to adapt to climate change and its likely disruption. Our focus and commitment to developing a nature positive business model that is proactively responding to these climate challenges is encapsulated in our purpose: Creating Goodness from the Farms the World Needs.

Under this purpose, Silver Fern Farms is building the foundations for a strong and enduring company with a pivotal role in shaping the future of farming within Aotearoa, New Zealand. It is centred not only on responding to potential harm but also on seizing opportunities that will drive our position as a leading provider of sustainable protein and deliver benefits to our stakeholders, the communities and the environment in which we operate, and the wider agribusiness sector.

2 World Meteorological Organization, *State of the Global Climate Report (2024)* – In: press release: WMO confirms 2024 as warmest year on record at about 1.55°C above pre-industrial level: WMO, 10 January 2025.

Climate scenario analysis process

Scenario analysis is a critical component in the analysis of our climate-related risks and opportunities. Previously Silver Fern Farms' climate scenarios have been heavily informed by material published by the Ministry for the Environment, the Climate Change Commission, and more recently the Aotearoa Circle.

However, in 2024, we undertook a detailed review of our climate scenarios, working collaboratively with Fonterra Co-operative Group Limited (Fonterra) and Livestock Improvement Corporation Limited and drawing on external reference scenarios, data sources and modelling, to develop core scenario elements that were common across our businesses, such as temperature outcomes, emissions pathways, and high-level narratives.

Further iterations were undertaken internally, consulting with key stakeholders and technical experts, to ensure these scenarios reflect Silver Fern Farms' individual business model and specific operating environment.

The resulting scenario narratives have been built based on the perceived interactions between key driving forces that will influence the direction of future change, covering political, economic, social, technological, legal and environmental elements.

These scenarios describe three credible pathways, relevant for the agriculture sector and specifically Silver Fern Farms, that support assessment of our climate-related risks and opportunities, allow the resiliency of our strategy to be tested and inform the evolution of our business model over the longer term.

They have been reviewed by Silver Fern Farms' Executive team and RSC as part of our governance process.

Scenario rationale

The selection of these three scenarios was guided by the requirements of the NZCS, with consideration also given to the Aotearoa Circle's Agriculture Sector Climate Change Scenarios (ASCCS)[2], published in 2023.

With the accelerating pace of global warming and deteriorating climate outcomes (as predicted in recent IPCC reports[3] and evidenced by rising average temperatures, including the record temperatures experienced during 2023 and 2024), coupled with little progress being made in reducing emissions at a global level, we deemed the ability to achieve an orderly transition (as described under the ASCCS' "Orderly" 1.5˚C transition scenario) was increasingly implausible. Hence our 1.5˚C (**Sharp Corrections**) scenario suggests a delayed, more disruptive global response giving rise to significantly higher transition risks.

Our discretionary scenario (**Slow Followers**) also differs from the corresponding ASCCS scenario. This scenario focuses on the risks associated with a fragmented global response. In particular, this scenario explores the implications for Silver Fern Farms and the Aotearoa, New Zealand farming sector in the event Aotearoa, New Zealand adopts a "bare minimum" approach while key markets (namely the EU and China) take a more aggressive positive stance on climate change. This scenario aligns strongly to the "Strong Followers" scenario in the Aotearoa Circle's Energy Sector Climate Change Scenarios[4] published in July 2024.

Our third scenario (**Hothouse**) speaks to the probability of rampant global warming, due to limited additional climate action being taken by governments. This scenario is in line with the both the ASCCS and the Energy Sector Climate Change Scenarios. However, the detailed narrative has been updated and individualized to capture nuances for Aotearoa, New Zealand dairy and red meat farming.

- **Time horizons**
  The time horizons over which these scenarios are considered are predominantly aligned with the NIWA climate projections, namely: 2021-2040 (short), 2041-2060 (medium) and 2061-2100 (long term) with 2100 as the end point.

- **Modelling**
  Silver Fern Farms has not undertaken its own modelling in the construction of these scenarios and has relied on external data sources, as referenced in the scenario summaries and key indicators in this document.

- **Limitations**
  While scenarios can provide useful insights into potential climate-related impacts, they are not predictions of the future. Each scenario offers a distinct hypothetical (but plausible) climate trajectory, that assists in building resilience into our strategy and business model. Given the intrinsically complex nature of these scenarios and the underlying assumptions and projections on which they are based, these scenarios do not reflect Silver Fern Farms' view of the most likely future climate outcomes, nor do they represent our preferred outcome.

Reference Pathways and Scenarios

- Shared Socioeconomic Pathways (SSPs) in the IPCC Sixth Assessment Report on Climate Change:
- Representative Concentration Pathways (RCPs) in the IPCC Fifth Assessment Report on Climate Change:
- Network for Greening the Financial System (NGFS) scenarios:
- Shared Climate Policy Assumptions for New Zealand (SPANZ) scenarios:
- New Zealand's Climate Change Commission / He Pou a Rangi scenarios:

2 https://cdn.prod.website-files.com/67d0fe67637ca866ec5f5b1f/684a6ba0aea5ec5258fb666d_April%2B2023_Aotearoa%2BCircle%2BAgri%2BAdaptation%2BClimate%2BScenarios-compressed.pdf
3 IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]
4 https://cdn.prod.website-files.com/67d0fe67637ca866ec5f5b1f/6812d723778407029b472458_Energy%20Scenarios-compressed.pdf

Climate scenario overview

	Sharp corrections	Slow followers	Hothouse
Scenario Summary	Policy action on climate is delayed until a severe natural disaster near 2030 alters public opinion, prompting a sudden and disruptive transition. Coordinated global efforts drive technological progress, but abrupt policy shifts challenge high-emission industries.	Climate action is divided, with varying levels of ambition among countries that are insufficient to limit warming to 1.5°C. While the EU and China adopt aggressive policies, Aotearoa, New Zealand's economics-driven "bare minimum" approach harms its reputation.	Uncontrolled emissions and inadequate climate measures (beyond existing regulation) lead to rampant global warming. Governments abandon Paris Agreement targets, prioritising food and energy security as severe and permanent climate impacts worsen.
Global warming at 2050[2]	1.6°C	2.0°C	2.2°C
Global warming at 2100[1]	1.5°C	2.7°C	3.6°C
Physical risk severity	**Low to Moderate**	**High**	**Extreme**
Transition risk severity	**Low then high**	**Moderate**	**Low**
Policy ambition - global	Highly ambitious and coordinated post-2030	Inconsistent but moderate overall	Low
Policy ambition - NZ	Ambitious and blunt post-2030	Slow and lagging	Limited
Technology advancements	Fast from 2030	Moderate	Slow
Customer / consumer behaviour change	Fast from 2030	Slow to moderate; inconsistent globally	Slow
Socio-political instability	Moderate	High	Extreme
Reference pathways and scenarios	• IPCC SSP1 – 1.9 / 2.6 'Taking the Green Road' • NGFS 'Sudden Wake Up Call' & 'Net Zero Emissions' • SPANZ '100% Smart' • CCC Further Behaviour Change	• IPCC SSP2-4.5 'Middle of the Road' • NGFS 'Low Policy Ambition' & 'Fragmented World' • SPANZ 'Kicking & Screaming' • CCC Headwinds	• IPCC SSP3-7.0 'Regional Rivalry' • NGFS 'Diverging Realities' & 'Current Policies' • SPANZ 'Unspecific Pacific' • CCC Current Policy

2 *Intergovernmental Panel on Climate Change* (IPCC), Summary for Policymakers. (2021) - In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., et al], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, page 14.

Scenario 1: Sharp Corrections (1.5°C)

Annual emissions do not decrease in the near term, with international action on climate change remaining relatively limited throughout the 2020s. However, at the end of the decade, a severe and devastating natural disaster triggers a sudden change in public opinion, prompting an unanticipated and accelerated transition.

Climate regulations are rapidly enacted, with a greater global focus placed on methane reduction, and coordinated efforts across the public and private domains drive significant technology advances. Global warming is successfully restricted to 1.5°C by 2100, with net GHG emissions projected to reach zero by 2050. While tipping points in the earth system have largely been avoided, the abrupt policy change places significant strain on parts of the global economy, specifically within emissions-intensive sectors.

Customers demand aggressive emission targets and credible transition plans from food producers. Large-scale destocking and land-use change occurs in the early 2030s as farmers struggle to comply with stringent polices aimed at curbing Aotearoa, New Zealand's emissions and achieving its international commitments. However, by the late 2030s, Aotearoa, New Zealand's farming system benefits from the development of cost-effective methane inhibitors and the country remains a source of high-value protein.

New Zealand red meat supply

- 2020s: Continuation of current trends, with localised disruption due to severe weather events.
- 2030s: Sharp reduction in cattle numbers as strict methane policies limit herd size.
- 2040s: Minor uplift in national herd size as use of methane inhibitor technologies increases stocking rates (within methane caps).

New Zealand red meat demand

- 2020s: Continuation of current trends.
- From-2030: Consumers and customers seek to minimise their emissions footprint, shifting from animal to alternative proteins. A significant decrease in the consumption of red meat occurs, particularly for beef due to the perceived contribution to climate change. However demand remains for animal products that meet stringent sustainability expectations, particularly where alternatives are difficult to replicate.

Alternative proteins

- From 2030: Consumer desire for lower emissions foods, combined with reduced herd sizes, leads to a significant uplift in investment, acceptance and increase in consumption of non-animal proteins (plant-based and lab-grown) with significant technological advancements made.

New Zealand Population[2] In 2073	6.6m
New Zealand Carbon Price[3] For 2050, per tonne	$428
New Zealand sea level rise In 2050[4]	+0.23m
New Zealand annual average temperature[5] For 2100 relative to 1995-2014 baseline	+0.8°C
New Zealand extreme rainfall[4] For 2100 relative to 1995-2014 baseline	+4%
New Zealand extreme heat (>30°C)[4] For 2100 relative to 1995-2014 baseline	+1 days
New Zealand net emissions[6] For 2050	20 $MtCO_2$-e
Electricity from renewable sources[5] By 2050	96%
Global oil price/barrel[7] USD in 2050	US$25
New Zealand native forestry[5] For 2050 relative to 2005	+0.8Mha
New Zealand potential evapotranspiration deficit[4] For 2100 relative to 1995-2014 baseline	175mm

2 Stats NZ / Tatauranga Aotearoa, *National population projections: 2022(base)–2073* (2022)
3 Treasury NZ / Te Tai Ōhanga, *Assessing climate change and environmental impacts in the CBAx tool* (2024)
4 NZ Sea Rise Programme, *Maps* (2023), Ministry for the Environment, *Coastal hazards and climate change guidance* (2024)
5 Ministry for the Environment / Manatū Mō Te Taiao, *Aotearoa New Zealand Climate Projections Map* (2024) and additional multi-model mean data request (28/4/2025)
6 Climate Change Commission / He Pou a Rangi, *Scenarios dataset for the Commission's 2021 Final Advice (output from ENZ model)* (2021)
7 International Energy Agency, *Global energy and climate model – Documentation 2024* (2024)

Scenario 2: Slow Followers (2.7°C)

The world becomes increasingly divided, with a divergent climate policy response among countries. While the majority of nations make efforts to decarbonize, there are varying levels of ambition. Collectively the global rate of emissions reduction is insufficient to limit global warming to 1.5°C, with global average temperature rise on track to exceed 2.5°C by 2100.

A number of our key trading partners, most noticeably the EU and later China, implement aggressive climate policies and invest heavily in low-emissions technology that yield environmental and cost benefits for their economies by the 2040s. In contrast, Aotearoa, New Zealand adopts a "bare minimum" approach, lagging behind and making slower progress towards achieving net zero. Domestic policy is principally focused on compliance with international requirements and adaptation measures; weak targets are adopted, and agriculture continues to be exempt from carbon charges. Aotearoa, New Zealand suffers reputational damage due to perceived climate inaction; products are increasingly commoditised and access to the "advanced climate" economies becomes challenging.

Farming profitability becomes increasingly marginal in regions with the greatest exposure to the effects of climate change and the higher frequency of droughts and flooding creates widespread issues across Aotearoa, New Zealand's rural communities.

New Zealand red meat supply

- 2020s: Continuation of current trends, with localised disruption due to severe weather events.
- From 2040: Physical impacts of climate change make animal agriculture increasingly difficult in certain regions of Aotearoa, New Zealand. The resulting decline in the national herd size is gradual in some areas and sharp in others (particularly after significant weather events).

New Zealand red meat demand

- 2020s: Continuation of current trends.
- 2030s: Consumers and customers in the EU and later China demand stringent sustainability credentials, while other markets have different priorities. Aotearoa, New Zealand businesses must drive harder on sustainability than domestic policy settings require to maintain access to EU and China.
- 2050s: Aotearoa, New Zealand policy settings catch up to the EU, but the reputational impact from delaying action devalues and commoditises Aotearoa, New Zealand products in high-value markets.

Alternative proteins

- Continuation of current trends. Alternatives are part of many diets and novel alternatives that mimic red meat continue to emerge at a moderate rate. However, animal protein sources remain predominant.

New Zealand Population[2] In 2073	7.1m
New Zealand Carbon Price[3] For 2050, per tonne	$214
New Zealand sea level rise In 2050[4]	+0.24m
New Zealand annual average temperature[5] For 2100 relative to 1995-2014 baseline	+2.3°C
New Zealand extreme rainfall[4] For 2100 relative to 1995-2014 baseline	+7%
New Zealand extreme heat (>30°C)[4] For 2100 relative to 1995-2014 baseline	+2.3 days
New Zealand net emissions[6] For 2050	24 $MtCO_2$-e
Electricity from renewable sources[5] By 2050	96%
Global oil price/barrel[7] USD in 2050	US$58
New Zealand native forestry[5] For 2050 relative to 2005	0.5Mha
New Zealand potential evapotranspiration deficit[4] For 2100 relative to 1995-2014 baseline	195mm

2 Stats NZ / Tatauranga Aotearoa, *National population projections: 2022(base)–2073* (2022)
3 Treasury NZ / Te Tai Ōhanga, *Assessing climate change and environmental impacts in the CBAx tool* (2024)
4 NZ Sea Rise Programme, *Maps* (2023), Ministry for the Environment, *Coastal hazards and climate change guidance* (2024)
5 Ministry for the Environment / Manatū Mō Te Taiao, *Aotearoa New Zealand Climate Projections Map* (2024) and additional multi-model mean data request (28/4/2025)
6 Climate Change Commission / He Pou a Rangi, *Scenarios dataset for the Commission's 2021 Final Advice (output from ENZ model)* (2021)
7 International Energy Agency, *Global energy and climate model – Documentation 2024* (2024)

Scenario 3: Hothouse (3.6°C)

The world continues with business as usual for the coming decades. Currently implemented climate-related policies are preserved in the near-term, but with exploitation of fossil fuels continuing relatively unabated, this existing regulation is insufficient to halt significant global warming. GHG emissions approximately double from current levels by 2100 and warming reaches 3.6˚C. Consequently, irreversible sea level rise, extreme weather events and prolonged periods of droughts across much of the globe occur, contributing to resource scarcity, increasing social unrest, and large-scale migration. Excess mortality escalates substantially, driven by high temperatures, increased disease prevalence, and acute severe weather events.

By 2035, Paris Agreement targets have been largely abandoned, as government efforts are focused on food and energy security. Increased international tensions lead to greater protectionist policies. Demand for cheap protein grows, with nation states and large multinationals investing heavily in the mass production of food (including cultivated protein). The acceptance and use of genetic technologies increases and consumers place less importance on sustainability, reducing Aotearoa, New Zealand's competitive advantage. International conglomerates dominate food production, benefitting from greater access to capital and regional diversification.

With banks unwilling to lend to areas heavily exposed to floods, droughts, and heatwaves, the increasing cost of adaption, the higher prevalence of pests and disease, concerns over animal welfare and challenges accessing insurance, farming is no longer viable in the regions most impacted by weather events and climate change.

New Zealand red meat supply

- 2020s: Continuation of current trends, with localised disruption due to severe weather events.
- From 2040: Physical impacts of climate change are extreme and devastating. Pasture-based farming is no longer viable in much of Aotearoa, New Zealand. While some farmers transition to housed systems, the costs are largely prohibitive. National herd size declines significantly.

New Zealand red meat demand

- 2020s: Continuation of current trends.
- From 2040: As climate impacts worsen and food insecurity increases, people seek any affordable nutrition. Red meat becomes a rarely consumed luxury item as availability declines and prices increase.

Alternative proteins

- Cheap proteins that can be grown indoors are popular - initially insects then later lab-grown proteins as technology advances enable scale efficiencies by 2050.

New Zealand Population[2] In 2073	8.3m
New Zealand Carbon Price[3] For 2050, per tonne	$35
New Zealand sea level rise In 2050[4]	+0.28m
New Zealand annual average temperature[5] For 2100 relative to 1995-2014 baseline	+3.4°C
New Zealand extreme rainfall[4] For 2100 relative to 1995-2014 baseline	+10%
New Zealand extreme heat (>30°C)[4] For 2100 relative to 1995-2014 baseline	+5.6 days
New Zealand net emissions[6] For 2050	40 $MtCO_2$-e
Electricity from renewable sources[5] By 2050	92%
Global oil price/barrel[7] USD in 2050	US$75
New Zealand native forestry[5] For 2050 relative to 2005	0.2Mha
New Zealand potential evapotranspiration deficit[4] For 2100 relative to 1995-2014 baseline	216mm

2 Stats NZ / Tatauranga Aotearoa, *National population projections: 2022(base)–2073* (2022)
3 Treasury NZ / Te Tai Ōhanga, *Assessing climate change and environmental impacts in the CBAx tool* (2024)
4 NZ Sea Rise Programme, *Maps* (2023), Ministry for the Environment, *Coastal hazards and climate change guidance* (2024)
5 Ministry for the Environment / Manatū Mō Te Taiao, *Aotearoa New Zealand Climate Projections Map* (2024) and additional multi-model mean data request (28/4/2025)
6 Climate Change Commission / He Pou a Rangi, *Scenarios dataset for the Commission's 2021 Final Advice (output from ENZ model)* (2021)
7 International Energy Agency, *Global energy and climate model – Documentation 2024* (2024)

Climate-related risks and opportunities

Our climate-related risks and opportunities were identified and analysed with reference to our three climate scenarios. Evaluations were based on both quantitative and qualitative factors, using information and data from internal technical experts and key external sources, including industry bodies and government agencies.

In undertaking the materiality assessment using our Risk Assessment Tools, the effect of each climate scenario on individual risks were considered.

The time horizons considered for climate-related risks and opportunities are principally aligned with our scenario analysis and take account of internal planning cycles, external climate change ambitions and modelling horizons, and the intergenerational perspectives of our livestock suppliers / co-op shareholders.

Short term (S) (current generation)	Medium term (M) (next generation)	Long term (L) (future generation)
+ 10 years	+ 30 years	+ 60 years
Now - 2040	2041 - 2060	2061 – 2100
Aligned to the period covering our strategic plan, baseline financial modelling and global climate change ambitions under the Paris Agreement 2030	Aligned to the longer-term strategic outlook, capital planning considerations, and the mid-century time horizon used by both IPCC and NIWA	Aligned to the life span of major assets and the intergenerational outlook of our farmer suppliers and the end of century time horizon used by both IPCC and NIWA

Grass Curve Impacts

It is likely that there will be a change in the pasture growth curve and in both the quantity and quality of feed grown, however it is difficult to predict what this change will look like due to the number of variables involved.

- An increase in atmospheric CO_2e will increase pasture production (modelled to increase by between 10% and 20% over the next 100 years).
- Total pasture production may increase in the south due to an extended growing season.
- Increased drought, changes in pasture composition and the potential spread of subtropical grass and pasture pests may mean that not all regions will realise this increased production and may, in fact, have decreased pasture production.
- Increasingly unpredictable weather cycles could lead to significant differences in on-farm production between years.
- An increase in temperature will change nitrogen cycling in the soil leading to increased winter growth rates but less growth in late spring and summer.
- A decrease in rainfall in the north and east will have a negative impact on groundwater recharge as well as irrigation and pasture production.
- Warmer temperatures will result in a decline in the protein concentration of pasture. This can lead to a reduction in animal performance due to inadequate protein nutrition particularly for finishing lambs or lactating animals.
- Increases in temperature can cause a reduction in leaf quality resulting in a reduced feed intake.
- Alterations in the seasonal distribution of feed supply will require management changes such as deferred grazing. This can lower feed quality and animal performance.
- The increased autumn and winter pasture growth may result in farmers lambing or calving earlier to make use of this changed feed supply. This will require selection of animals with the ability to have variability in their reproductive seasonality.[2]

2 Beef and Lamb NZ, *Adapting to a changing climate* (2021)

Climate-related risks: Physical

Greater livestock variability and declining supply volumes

- Greater seasonal variability in the availability of livestock supply stemming from the increasing intensity and frequency of droughts, flooding and other severe weather events.
- Decline in livestock volumes and shift in livestock mix, quality and timing due to the effects of longer-term climatic change on the grass-curve, suitability of land for agriculture, changes in the production value of the land for other uses (eg. horticulture), and / or prevalance of pests and disease.

Reduced access to financial services

- Greater difficulty accessing and / or rising cost of insurance due to the increasing frequency of extreme weather events.

Heightened supply change fragility and disruption

- Increasing disruption to the transport and logistics network as a result of climatic changes and events.
- Disruption to the delivery of essential plant consumables and of third-party services (eg. toll processing) due to severe weather events.

Operational disruption and damage to infrastructure

- Damage to or impaired processing and warehouse infrastructure as a result of climate change and events.
- Inability to discharge wastewater or stormwater due to damaged infrastructure and / or environmental constraints stemming from climate change and events.
- Disruption to energy and water supply required in processing due to climate change events.

Increased operational impact on mana whenua

- Climatic changes exacerbate the impact of Silver Fern Farms' operations on Māori self-determination, taonga, areas of cultural significance and cultural practices (eg. diminishing of mahinga kai) leading to mana whenua exercising their rights under regulation and policy to impose conditions on our operations.

Heightened food quality and safety concerns

- Increasing spread of pest and disease due to changes in climate leads to food quality and safety issues.

Increasing market access restrictions

- Heightened geopolitical tensions arising from increased climate-induced resource scarcity and food security concerns disrupts market access and blocks trade.

Climate-related risks: Physical

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Greater livestock variability and declining supply volumes	Greater seasonal variability in the availability of livestock supply stemming from the increasing intensity and frequency of droughts, flooding and other severe weather events	● ●	● ● ●	● ● ● ●	• Reduced quantity and quality of supply. • Variability of supply throughout the year making it difficult to plan. • Underutilisation of processing assets and extended shutdowns. • Inability to meet customer demand and fulfil orders. • Reduced ability to service programmes requiring supply 52 weeks of the year. • Increased cost of supply. • Animal welfare concerns during intense weather events.	• Investigating supplementary livestock supply. • Aligning premiums and contracts to reward supply over critical periods. • Incentivising livestock suppliers to adopt nature positive farming practices to build farmer resilience and improved farmland health, through the payment of a nature positive premium for NZFAP+ certified suppliers. • Creating programmes that concentrate on smaller volume, higher value products that provide price premiums (e.g. Net Carbon Zero). • Expanding our 5th Quarter business to extract higher value from all parts of the animals we process through new, potentially higher value premium opportunities. • Providing voluntary carbon sequestration contracts that create financial incentives for livestock suppliers to maintain and grow vegetation on-farm. • Exploring new revenue streams, including investigating potential to commercialise Net Carbon Zero-related intangible assets and intellectual property.
	Decline in livestock volumes and shift in livestock mix, quality and timing due to the effects of longer-term climatic change on the grass-curve, suitability of land for agriculture, and prevalence of pests and disease	● ● ●	● ● ● ●	● ● ● ●	• Reduced quantity and quality of supply. • Reduced ability to meet customer demand. • Reduced ability to service programmes requiring supply 52 weeks of the year, and supply value-add programmes, such as our Net Carbon Zero product. • Increased cost or change in farming systems, including need for grain feeding and housing. • Underutilisation of infrastructure or stranded assets. • Reduced viability of our 100% Aotearoa, New Zealand grass-fed value proposition.	
Operational disruption and damage to infrastructure	Damage to or impaired processing and warehouse infrastructure as a result of climate change and events	● ● ●	● ● ● ●	● ● ● ●	• Damage to processing infrastructure inhibiting the processing of products. • Damage to warehouse and coldchain infrastructure inhibiting transport and delivery of products and supplies. • Inability to meet demand of customers and fulfil orders on time and to specification. • Animal welfare issues if livestock cannot be processed. • Extended asset shutdowns due to repair work. • Loss of buildings / key infrastructure, increasing capital expenditure. • Higher insurance costs and difficulty obtaining insurance.	• Our processing sites offer network redundancy and diversification of risk. • Considering climate vulnerabilities across our network as part of our 2035 Future Network Plan. • De-risking of infrastructure projects through assessment of potential climate-related risks and impacts. • Assessing return to service processes under our Network Design Roadmap. • Continuing to improve business continuity and crisis management planning. • Implementation of wastewater improvement plans across processing sites. • Improving our water and energy use efficiencies, and exploring waste to value for energy.
	Inability to discharge wastewater or stormwater due to damaged infrastructure and / or environmental constraints stemming from climate change and events	● ●	● ● ●	● ● ●	• Effluent and pollutants entering the waterways. • Breach of regulatory requirements, for example unlawful discharge of effluent and resulting fines. • Reputational risk stemming from the environmental impacts of any discharge. • Inability to discharge in low flow conditions causing disruption to processing.	
	Disruption to energy and water supply required in processing due to climate change and events	● ● ●	● ● ● ●	● ● ● ●	• Business disruption as unable to process products. • Spoilage and wastage due to inability to keep product at the required temperature. • Inability to meet demand of customers and fulfil orders on time and to specification. • Animal welfare issues if livestock cannot be processed.	

Climate-related risks: Physical

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Increased operational impact on mana whenua	Climatic changes exacerbate the impact of Silver Fern Farms operations on Māori self-determination, taonga, areas of cultural significance and cultural practices (e.g. diminishing of mahinga kai) leading to mana whenua their rights under regulation and policy to impose conditions on our operations.	● ●	● ● ●	● ● ●	• Increased operational impacts on waterways, and natural fauna and flora. • Reputational risk with cultural practices and areas of cultural significance negatively impacted; decline in community engagement. • Loss of social licence to operate. • Tightening of resource conditions and subsequent restrictions in operating limits.	• Implementation of our Te Ara Huri strategy which gives effect to our deeper understanding of te ao Māori and strengthens our own sense of identify and duty to kaupapa Māori, which supports deeper and more meaningful relationships with mana whenua across our localities. • Delivering "Promise to Place", the agent through which we engage and embed that sense of duty into the places and spaces we share.
Reduced access to financial services	Greater difficulty accessing and / or rising cost of insurance due to the increasing frequency of extreme weather events.	● ●	● ● ●	● ● ● ●	• Higher operating costs due to increase in insurance premiums. • Increase in asset and infrastructure repairs not covered by insurance. • Deferral of other capital investment due to funds being diverted to asset and infrastructure repairs.	• Continuing to actively engage with insurers and exploring alternative options (eg. captives / self-insure options). • De-risking of infrastructure projects through assessment of potential climate-related risks and impacts that could impact on the insurability of the resulting assets. • Embedding business continuity practices that help limit disruption to operations.
Heightened supply change fragility and disruption	Increasing disruption to the transport and logistics network as a result of climatic changes and events.	● ● ●	● ● ● ●	● ● ● ●	• Animal welfare issues. • Supply delays. • Failure to deliver on time. • Spoilage of product or product quality issues. • Higher transportation costs. • Significant alteration to network design, routes, and transport methods. • Inability to process if waste cannot be removed. • Inability for staff to access sites.	• Decarbonisation of national road freight, including livestock, through optimising distance travelled and fuel types. • Collaborating with logistics providers to ensure a secure, and increasingly sustainable, export supply chain, including through our partnership in the shipping joint venture, Kotahi. • Undertaking vendor and supply chain due diligence to identify suitable partners able to reach customers and drive supply chain reliability. • Providing optionality through market diversification. • Potential to explore supply of product from outside of Aotearoa, New Zealand and / or hold product closer to market. • Improving sales and operations planning process to support increased focus on sustainability and potential to hold product closer to market. • Preferred supply partnerships with vendors that can demonstrate redundancy in their manufacturing operations if regional supply constraints arise due to supply chain impacts from climate-related events.
	Disruption to the delivery of essential plant consumables and / or third-party services (eg. toll processing) due to severe weather events.	● ●	● ● ●	● ● ●	• Disruption to plant operations and / or reduced ability to process products. • Inability to meet demand of customers and fulfil orders on time and to specification. • Animal welfare issues if livestock cannot be processed.	

Climate-related risks: Physical

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Heightened food quality and safety concerns	Increasing spread of pest and disease from climate change leading to food quality and safety issues.	●	● ●	● ●	• Higher incidence of animal disease / medical conditions (e.g. facial eczema in sheep). • Processing site closure for extermination. • Product loss and wastage. • Food safety and quality issues and the associated reputational and regulatory risks.	• Risk Organism Response Programme in place across all processing sites, detailing traceability systems, livestock controls, product controls, personnel controls and cleaning / disinfection procedures. • All products subject to New Zealand Food Safety System Standards, with routine sampling for pathogens conducted by the National Microbiological Database programme to ensure standards are met. • Certification under the Global Food Safety Initiative Standards ("GFSI"), a global standard for the safe and ethical production of food. • Completion of due diligence and routine verification of food safety programmes and controls in place at third-party or co-processors of our branded products to confirm they remain appropriate; third-party or co-processors are also expected to have GFSI certification or be working towards it.
Increasing market access restrictions	Heightened geopolitical tensions arising from increasing climate-induced resource scarcity and food security concerns disrupts market access and blocks trade.	● ●	● ● ●	● ● ●	• Inability to access existing markets, due to physical or political restrictions (eg. conflict, sanctions). • Supply delays. • Failure to deliver on time. • Spoilage of product or product quality issues. • Higher transportation costs.	• Providing optionality through market diversification. • Placing ourselves closer to the market through regional offices, corporate and customer relationships and key accounts. • Collaborating with logistics providers to ensure a secure, and increasingly sustainable, export supply chain, including through our partnership in the shipping joint venture, Kotahi. • Maintaining strong government relations and engagements with Beef and Lamb / Meat Industry Association (MIA) / Ministry for Primary Industries (MPI). • Tracking of policy movements and seeking specialist advisory support through organisations such as Control Risks/EIU.

Climate-related risks: Transition

Greater Livestock variability and declining supply volumes

- Decline in red meat farming as a result of evolving climate policy, increasing regulatory costs, future pricing of agricultural emissions, restricted access to capital and incentivisation of land use changes towards forestry.

Heightened supply change fragility and disruption

- Inability of suppliers of essential plant consumables or third-party services (eg. toll processing) to keep pace with changing climate-related regulations and market obligations.

Increasing market access restrictions

- Increasing market access restrictions and trade barriers due to changes in international climate change regulation, amplified by the potential for divergent requirements between Aotearoa, New Zealand domestic policy and key markets.

Reduced access to financial services

- Reduced access to capital as a result of climate inaction, limiting investment in infrastructure and growth.

Rising operational and supply chain costs and complexity

- Increased processing, warehousing and logistics costs as a result of climate change policy, carbon costs and capital investment required for a low-emissions transition.
- Inability to effectively respond to new climate-related opportunities or meet evolving climate policy and regulation due to reliance on legacy systems and increasing operational complexity.

Director liability and litigation

- Greater levels of director liability and litigation in relation to climate change

Changing consumer/market sentiment

- Decreasing demand for Silver Fern Farms' products as consumer preferences shift towards low emission protein sources, amplified by perceived inaction on climate change by red meat producers.
- Rising pressure from interest groups and / or increasing industry regulation over product claims due to accelerating green-washing concerns.

Climate-related risks: Transition

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Greater livestock variability and declining supply volumes	Decline in red meat farming as a result of evolving climate policy, increasing regulatory costs, future pricing of agricultural emissions, restricted access to capital, incentivisation of land conversion towards forestry and the rise of more profitable land uses.	● ●	● ● ● ●	● ● ● ●	• Reduced quantity of livestock supply. • Inability to meet customer demand. • Reduced ability to service programmes requiring supply 52 weeks of the year, and supply value-add programmes, such as our Net Carbon Zero product. • Increased cost of supply. • Underutilisation of infrastructure or stranded assets. • Reduced viability of our 100% Aotearoa, New Zealand grass-fed value proposition.	• Supporting farmer education, alongside industry partnerships. • Working with livestock suppliers and the government to help inform climate policy and regulation. • Creating programmes that concentrate on smaller volume, higher value products that provide price premiums (e.g. Net Carbon Zero). • Providing voluntary carbon sequestration contracts that create financial incentives for livestock suppliers to maintain and grow vegetation on-farm. • Expanding our 5th Quarter business to extract higher value from all parts of the animals we process through new, potentially higher value premium opportunities. • Encouraging banks and international livestock acreditations such as GAP to recognize NZFAP+, so the livestock suppliers meeting this standard automatically comply with the sustainability requirements of capital providers and customer markets. • Partnering with other major agribusiness, banks and the Aotearoa, New Zealand government to accelerate investment in methane reduction solutions via AgriZero. • Developing dairy beef programme to benefit from emissions discount from dairy. • Exploring new revenue streams, including investigating potential to commercialise Net Carbon Zero-related intangible assets and intellectual property. • Building new revenue streams for suppliers based on ecosystem services and the natural capital assets on-farm. • Continuing discussions with key existing and future customers to understand their appetite to fund sustainability / decarbonisation initiatives on-farm.
Reduced access to financial services	Reduced access to capital as a result of climate inaction, limiting investment in infrastructure and growth.	● ●	● ● ●	● ● ● ●	• Cost of debt increases while access to debt decreases as lenders consider climate risk in lending. • Inability to invest in capital projects or significant opportunities, including processing site upgrades or marketing campaigns, due to lack of funding. • Increased cost for alternative financing structures (outside mainstream banks).	• Delivering against our Climate Action and Transition Targets and Pathways. • Working with banks to recognize NZFAP+, so the livestock suppliers meeting this standard automatically comply with the sustainability requirements of capital providers. • Use of sustainability linked loans to embed our sustainability and climate ambition within our financing arrangements. • Demonstrating our commitment to climate action through partnerships and accreditations, including Toitū carbonreduce/ Elevate certification, transparent reporting against our SBTi validated targets, and membership of the Climate Leaders Coalition, Sustainable Business Council and Aotearoa Circle.

Climate-related risks: Transition

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Rising operational and supply chain costs and complexity	Increased processing, warehousing and logistics costs as a result of climate change policy, carbon costs and capital investment required for a low-emissions transition.	● ●	● ● ●	● ● ●	• Higher fuel and electricity costs. • Significant capital investment to upgrade processing sites to a lower emissions footprint. • Delays and loss in production due to upgrade requirements. • Landfill closures or increases in landfill rates results in higher operational costs. • Increased build and maintenance costs as a result of embedded carbon products. • Higher fuel costs for domestic and international transportation. • Reduced ability to access markets as it becomes too costly for freight companies to service markets that are a long distance away.	• Reducing our overall energy requirement and reliance on coal. • Exploring alternate waste solutions across procurement, 5th Quarter and through Farm Gate signals. • Optimizing transport to reduce emissions through route planning and fuel selection. • Participation in the New Zealand Council of Cargo Owners, through which major exporters can raise climate-related challenges and infrastructure needs with the Aotearoa, New Zealand Government. • Influencing logistics providers to reduce emissions and improve efficiencies through our partnership in Kotahi, aiming to have a carbon neutral fleet by 2050. • Accounting for the transition from carbon-intensive utilities to more sustainable options, as part of 2035 Future Network Plan. • Undertaking a core modernization programme of work to replace / upgrade legacy systems.
	Inability to effectively respond to new climate-related opportunities or meet evolving climate policy and regulation due to reliance on legacy systems and increasing operational complexity.	●	● ●	● ●	• Reduced demand for our products. • Loss of preferred vendor status. • Significant capital investment to upgrade legacy systems to comply with new regulations / obligations.	
Heightened supply change fragility and disruption	Inability of suppliers of essential plant consumables or third-party services (eg. toll processing) to keep pace with changing climate-related regulations and market obligations.	● ●	● ● ●	● ● ●	• Inability of supply chain partners to keep up with global climate policy and regulation requirements. • Increased cost of supply chain partners to comply with climate regulation. • Increased costs for alternative suppliers and services. • Potential downtime and disruption of operations. • Increased maintenance and repair costs. • Increased operational complexity.	• Undertaking vendor and supply chain due diligence to identify suitable partners able to reach customers and drive supply chain reliability. • Embedding our Vendor Code of Conduct which includes climate related expectations. • Favouring reusable and repairable consumables.
Director liability and litigation	Increased director scrutiny in relation to climate change.	●	● ●	● ●	• Increased legal and compliance costs. • Difficulty attracting quality Board members due to our climate risk profile and increased legal risks. • Reputational impact of any action against directors for not considering climate risks in business decisions. • Potential litigation, fines and penalties. • Increased costs for Directors and Officers (D&O) insurance.	• Establishment of risk management and governance practices that increase visibility over climate related risks and issues allowing them to be considered in business decisions. • Delivering against our Climate Action and Transition Targets and Pathways. • Demonstrating our commitment to climate action through partnerships and accreditations, including Toitū carbonreduce/ Elevate certification, transparent reporting against our SBTi validated targets and membership of the Climate Leaders Coalition, Sustainable Business Council and Aotearoa Circle.

Climate-related risks: Transition

RISK KEY

LOW	●
MEDIUM	●●
HIGH	●●●
CRITICAL	●●●●

RISK GROUP	RISK DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL IMPACTS	MANAGEMENT RESPONSE
		S	M	L		
Increasing market access restrictions	Increasing market access restrictions and trade barriers due to changes in international climate change regulation, amplified by the potential for divergent requirements between Aotearoa, New Zealand domestic policy and key markets.	● ●	● ● ● ●	● ● ● ●	• Potential loss or restricted access to new and / or existing markets. • Potential lock out of Aotearoa, New Zealand from free trade agreements due to inability to meet climate expectations of some markets. • Increased costs related to climate-related regulatory instruments (eg. EU's carbon border adjustment mechanism). • Inability of supply chain partners to keep up with global climate policy and regulation requirements. • Increased costs to comply with international climate change regulations and access markets. • Price increases required relative to prices of local competitors reducing demand. • Increased operational complexity.	• Undertaking vendor and supply chain due diligence to identify suitable partners already adopting climate protection steps and who are likely to comply with future climate regulation. • Embeding Vendor Code of Conduct which includes climate related expectations. • Creating programmes that concentrate on smaller volume, higher value products that provide price premiums (e.g. Net Carbon Zero). • Transparent reporting against SBTi validated targets. • Building out our nature positive value proposition and creating a leadership position in market by supporting the transition to a nature positive farming system, underpinned by data and the digitalisation of proof points (eg. Nature Positive Index Reporting) that provide proof over promise, demonstrate our credentials, and meet market requirements.
Changing consumer / market sentiment	Decreasing demand for Silver Fern Farms' products as consumer preferences shift towards low emissions protein sources, amplified by perceived inaction on climate change by red meat producers.	● ●	● ● ● ●	● ● ● ●	• Reduced demand for our products, especially commodity meat. • Consumer shift towards alternative protein sources. • Expectation that emissions are reduced across the supply chain, for example low emissions packaging, increasing costs. • Loss of preferred vendor status.	• Leveraging of Net Carbon Zero product range for further markets. • Developing our nature positive value proposition which includes a focus on low emissions products. • Driving premium brand position at the less price-elastic end of the market and targeting premium customers / channels / consumers to ensure value offsets volume. • Exploring new revenue streams, including investigating potential to commercialise Net Carbon Zero-related intangible assets and intellectual property and exploring launch of a nature positive investment platform pilot alongside Toha. • Undertaking vendor and supply chain due diligence to identify the best partners to reach customers. • Demonstrating our action on climate change by delivering against our Climate Action and Transition Targets and Pathways and through partnerships and accreditations, including Toitū carbonreduce/Elevate certification, SBTi validated targets, and membership of the Climate Leaders Coalition, Sustainable Business Council and Aotearoa Circle. • Undertaken customer insight and profiling work to better understand and tap into changing consumer preferences and demands. • Building out our nature positive value proposition and creating a leadership position in market by supporting the transition to a nature positive farming system, underpinned by data and the digitalisation of proof points (eg. Nature Positive Index Reporting) that provide proof over promise, demonstrate our credentials, and meet market requirements. • USDA label approval process. • Independent, Toitū carbonzero certification of our net-carbon zero products. • Transparent reporting on and external assurance over GHG emissions, including through sustainability linked loan.
	Rising pressure from interest groups and / or increasing industry regulation over product claims due to accelerating green-washing concerns.	● ●	● ● ● ●	● ● ● ●	• Reduced demand for our products. • Loss of preferred vendor status. • Increased costs for compliance with new regulations. • Increased operational complexity and regulatory oversight of claims and labelling. • Legal action for truth of labelling breaches.	

Climate-related opportunities

Promotion of sustainable agricultural practices

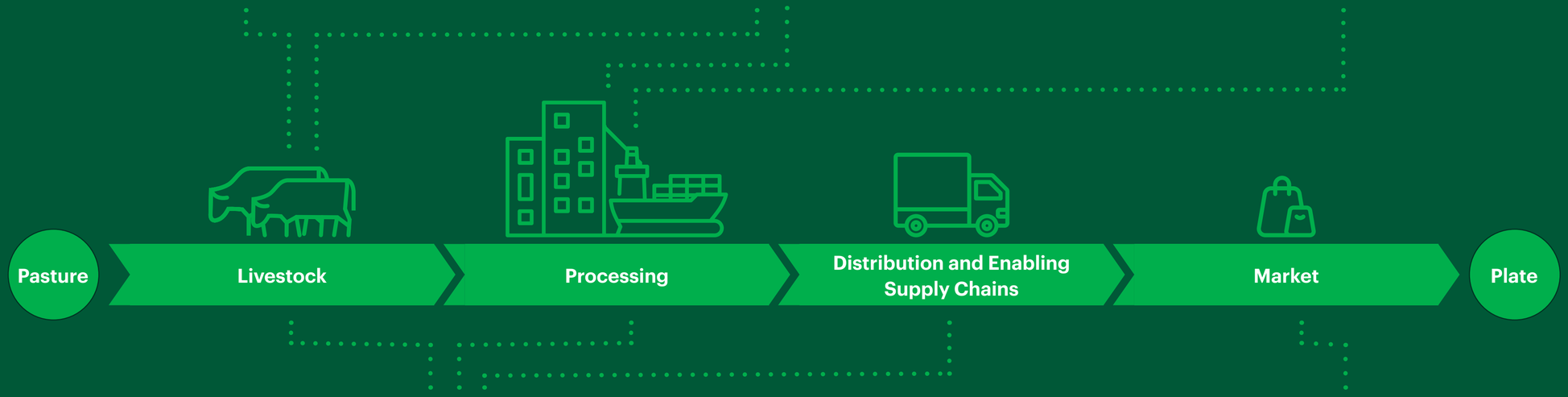
- Adoption and promotion of nature positive agricultural practices across livestock suppliers that support resilience and long-term viability of Aotearoa, New Zealand farming.

Access to new forms of capital

- Improved access to new forms of capital that promote and incentivise adoption and investment in sustainability business practices.

Improvements in operational resilience, efficiency and cost

- Investment in climate-related improvements at site that drive operational efficiency, optimise existing assets, support resilience and drive cost reductions.



Advances in technology R&D

- Improved access to new forms of capital that promote and incentivise adoption and investment in sustainability business practices.

Growth of existing and new revenue streams

- Increasing demand for Silver Fern Farms products due to rising international food security concerns and the positioning of Aotearoa, New Zealand agriculture as a resilient and sustainable food player.
- Development of net carbon zero and nature positive value propositions that demand additional premiums.
- Expansion of revenue streams beyond red meat, including eco-services, development of IP based on Net Carbon Zero and Nature Positive programmes, carbon and biodiversity markets, and carbon sequestration.

Climate-related opportunities

OPPORTUNITY KEY

LOW	●
MEDIUM	●●
HIGH	●●●

OPPORTUNITY GROUP	OPPORTUNITY DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL BENEFITS	MANAGEMENT INITIATIVES
		S	M	L		
Promotion of sustainable agricultural practices.	Adoption and promotion of nature positive agricultural practices across livestock suppliers that support resilience and long-term viability of Aotearoa, New Zealand farming.	● ●	● ● ●	● ● ●	• Grow market by changing consumer perspectives that all red meat has negative impacts on the environment. • Grow market share by focussing on how Aotearoa, New Zealand's sustainable farming practices make our product healthier and better for the environment. • Enhance customer and consumer relationships by offering sustainable products. • Enable price premiums to improve our revenue, incentivise beef and sheep farming, reduce land conversion and drive continued on-farm investment to protect, restore and expand the amount of native bush and tree plantings so farm environments are better able to capture carbon, and become more biodiverse. • Attract new forms of funding to further support on-farm emissions reduction and nature positive outcomes.	• Supporting farmer education, alongside industry partnerships. • Providing voluntary carbon sequestration contracts that create financial incentives for livestock suppliers to maintain and grow vegetation on-farm. • Incentivising livestock suppliers to adopt nature positive farming practices to build farmer resilience and improved farmland health, through the payment of a nature positive premium for NZFAP+ certified suppliers. • Delivery of the Nature Positive programme roadmap aimed at driving nature positive outcomes, including: – developing and piloting nature positive index reporting to support on-farm insights; – building a suite of on-farm technology partners that enables nature positive action; and – paying a market-linked nature positive livestock premium for participating suppliers. • Working with banks to recognize NZFAP+, so the livestock suppliers meeting this standard automatically comply with the sustainability requirements of capital providers. • Monitoring and evaluating changes in regional farming conditions and practices.
	Climatic changes lead to improved farming conditions and increased productivity in different regions of Aotearoa, New Zealand	● ●	● ● ●	● ● ●	• Increased quantity and quality of supply. • Improved utilisation of processing assets. • Increased ability to meet customer demand and extend market reach. • Increased ability to service programmes requiring supply 52 weeks of the year. • Reduced cost of supply. • Stimulus for greater industry collaboration including across dairy sector.	
Advances in technology R&D	Investment in technology R&D to reduce GHG emissions and / or improve GHG traceability.	● ●	● ● ●	● ● ●	• Optimise and investigate initiatives to reduce on-farm emissions, reducing exposure to the future cost of carbon, both for livestock suppliers and for us. • Increase livestock supplier loyalty. • Enhance customer relationships by investing in technology R&D that could reduce their supply chain (scope 3) emissions. • Grow market by changing consumer perspectives that all red meat has negative impacts on the environment. • Create potential value streams through the commercialisation of technology developments.	• Partnering with other major agribusiness, banks and the Aotearoa, New Zealand government to accelerate investment in methane reduction solutions via AgriZero. • Partnering in adjacent R&D spaces to support the transition to a low carbon/nature positive economy and commercialisation of IP, for example, Prism Earth, and Toha.
Access to new forms of capital	Improved access to new forms of capital that promote and incentivise adoption and investment in sustainability business practices.	●	● ●	● ●	• Access to new forms of capital, with potentially more favourable conditions and / or discounted rates. • Incentivise climate-related activities under the Climate Action and Transition Targets and Pathways 2023—2030. • Enhance reputation as a climate conscious organisation.	• Establishment of a sustainability linked loan to embed our sustainability and climate ambition within our financing arrangements (being renegotiated in 2025). • Continuing discussions with key existing and future customers to understand their appetite to financially incentivise livestock suppliers to adopt on-farm sustainability practices, and in turn support the decarbonisation of their supply chains.

Climate-related opportunities

OPPORTUNITY KEY

LOW	●
MEDIUM	●●
HIGH	●●●

OPPORTUNITY GROUP	OPPORTUNITY DESCRIPTION	TIME HORIZON & SEVERITY			ANTICIPATED OPERATIONAL BENEFITS	MANAGEMENT INITIATIVES
		S	M	L		
Improvements in operational resilience, efficiency and cost	Investment in climate-related improvements at site that drive operational efficiency, optimise existing assets, support resiliency and drive cost reductions.	●	● ●	● ●	• Optimise asset utilisation and reduce waste. • Lower fuel and electricity costs. • Improve processing cost per animal. • Reduce exposure to carbon price. • Comply with changes in climate-related regulation. • Strengthen local iwi and community relationships and support consent renewals by reducing dependency on natural elements, eg. water uptake from local waterways. • Improve our reputation.	• Improving our water and energy use efficiencies, and exploring waste to value for energy. • Exploring alternate waste solutions across procurement, 5th Quarter and through Farm Gate signals. • Encouraging a culture where reductions in waste and unnecessary input across our processes are identified regularly. • Identifying and investigating circular future initiatives, supported by the implementation of a circular economy measurement tool.
Growth of existing and new revenue streams	Increasing demand for Silver Fern Farms products due to decline in natural global protein supply, rising international security concerns and the positioning of Aotearoa, New Zealand agriculture as a resilient and sustainable food player.	●	● ● ●	● ● ●	• Grow market share by responding to consumer demand for a sustainable protein source. • Support preferred supplier arrangements with customers due to resiliency and sustainability. • Enable price premiums to improve our revenue, incentivise beef and sheep farming, reduce land conversion and drive continued on-farm investment to build farmer resilience and improved farmland health. • stimulus for greater industry collaboration.	• Creating programmes that concentrate on smaller volume, higher value products that provide price premiums (e.g. Net Carbon Zero). • Demonstrating our action on climate change by delivering against our Climate Action and Transition Targets and Pathways and through partnerships and accreditations, including Toitū carbonreduce certification and membership of the Climate Leaders Coalition, Sustainable Business Council and Aotearoa Circle. • Launch and continuing expansion of Net Carbon Zero product range in markets. • Developing our nature positive value proposition which includes a focus on low emissions products. • Expansion of Prism Earth joint venture to uncover opportunities that maximise carbon asset realisation and optimise future farming specific land use. • Expanding our fifth quarter business to extract higher value from all parts of the animals we process through new, potentially higher value premium opportunities. • Investigating potential to commercialise Net Carbon Zero-related intangible assets and intellectual property. • Exploring launch of nature positive investment platform pilot alongside Toha and Silver Fern Farms Good by Nature Biodiversity Fund.
	Development of net carbon zero and nature positive value propositions that demand additional premiums.	● ●	● ● ●	● ● ●	• Grow market by changing perspectives that all red meat has negative impacts on the environment. • Maintain or grow market share through a differentiated value proposition. • Enhance customer and consumer relationships by offering low emissions / nature positive products that respond to their sustainability goals and reduce their supply chain (scope 3) emissions. • Enable price premiums to improve our revenue, incentivise beef and sheep farming, and reduce land conversion. • Create new value streams for our livestock suppliers, with market-linked nature positive premiums and /or carbon sequestration payments.	
	Expansion of revenue streams beyond red meat, including eco-services, development of IP based on Net Carbon Zero and Nature Positive programmes, carbon and biodiversity markets, and carbon sequestration.	● ●	● ● ●	● ● ●	• Diversification of revenue streams reducing risk and reliance on volatile commodity markets. • Enhance relationships with livestock suppliers. • Improve our reputation.	

Current impacts

In recent years, the effects of climate change, both physical and transitional, have been felt across the breadth of our value chain. Examples illustrating the types of impacts we've experienced since 2023, which may be attributable to climate change, are provided in the table below (this is a representative view only).

We note that the weather events referred to cannot solely be ascribed to climate change and may reflect typical weather fluctuations expected across the agricultural sector and broader supply chain. However, climate change is undoubtedly contributing to an increase in the severity and frequency of these types of events.[1]

Given the complex and mutli-dimensional aspects of climate change, coupled with the often indirect nature of the resulting impacts, financial quantification is challenging. While no material financial effects have been directly attributable to climate change over the last two years (except as noted below concerning Cyclone Gabrielle), the examples presented illustrate the growing influence of climate events and the transition to a low-emissions economy, both of which are likely to result in increasingly significant financial ramifications for our business and supply partners.

Pasture	Livestock	Processing	Distribution and Enabling Supply Chains	Market	Plate
Greater livestock variability and declining supply volumes	**Operational disruption and damage to infrastructure**	**Heightened supply change fragility and disruption**	**Changing consumer / market sentiment**	**Growth of existing and new revenue streams**
During September / October 2024, parts of Otago and Southland received heavy rain and snow. Records indicated that by mid-September, areas of Southland had experienced 200% of their average monthly rainfall. Coinciding with seasonal lambing, dead lamb production was reportedly double normal levels across this period (according to skin processor NZAGRI Development[2]). Furthermore, severe damage to paddocks and pasture contributed to poor feed conditions for surviving ewes and lambs. By annual weaning in December, the impact of these conditions was evident, with low availability of inspect weight lambs for processing. Based on reported South Island lamb numbers in the 2024 - 2025 season, versus the 5-year average phasing profile, the financial impact on Silver Fern Farms' gross margin for lamb due to this weather event (and the subsequent reduction in lamb volumes) was potentially in the vicinity of -$1.5m over December 2024 / January 2025.	In February 2023, Aotearoa, New Zealand was struck by Cyclone Gabrielle, which led to significant devastation, wide-spread damage and loss of life. Two of Silver Farn Farms' processing plants, Dargaville and Pacific, were materially impacted by the cyclone, with flooding and power outages causing plant shutdowns for a number of weeks. The third party-owned Whakatu cold store, critical for blast freezing, was also affected by power outages. Silver Fern Farms' insurance claim for the cyclone damage and business disruption stands at $29.5m. The business also faced additional negative impacts that are difficult to quantify related to management workload, operational complexity, relationship goodwill (customers, suppliers), strategic delivery and commercial risk management. A NIWA-led study found that climate change increased the amount of total rainfall during the event by 10%[3], supporting the view that Cyclone Gabrielle was intensified by human-induced global warming.	The prolonged and ongoing drought in Central America impacted the performance of the lock system in the Panama Canal in late 2023 / early 2024. As a result, the Panama Canal Authority significantly reduced the daily transit capacity for vessels which led to transit delays, reduced capacity, surcharge implementation and rate increases. While Silver Fern Farms did not incur any direct financial costs, the reduction in capacity created logistics challenges. The Panama Canal constraints compounded an already stretched ocean freight network which massively tightened up container equipment supplies and forced an intermodal (Ship/ Road/ Rail/ Ship) model across America in order to continue receipting product in time from the US West Coast and minimise delay in shipments into / out of Europe and Asia.	Increased regulatory scrutiny over "green" claims, was witnessed during 2024, with the US Department of Agriculture (USDA) challenging Silver Fern Farms' Net Carbon Zero claim on pack ahead of our planned US rebrand in early 2025. Despite the Net Carbon Zero offering being independently assured, time delays and additional costs were incurred to gain the necessary approvals to continue using Net Carbon Zero on labels. Time and resources were also invested to support future applications processes, with representatives of Silver Fern Farms meeting in person with the Food Safety Inspection Service (FSIS) in Washington DC.	A circa $19m shift in demand from UK wholesalers to retailers over 2024 stemmed from the appeal of Silver Fern Farms' Nature Positive proposition and sustainability attributes. This move towards the higher-value, premium retailer channel is estimated to have generated in the vicinity of $1.8m in additional value. Furthermore, Silver Fern Farms' Net Carbon Zero offering has provided a differentiated proposition that has increased accessibility and brand presence, which has driven the expansion of our product range in South Island stores and triggered conversations with key US customers, both existing and potential.

1 IPCC AR6 (2021) states it is an "established fact" that human-caused GHG emissions have increased the frequency and/or intensity of some weather and climate extremes since pre-industrial times.
2 Radio New Zealand article: *More lamb deaths, feed running low in wet Southland spring* (23 September 2024)
3 Dáithí A. Stone, Christopher J. Noble, Greg E. Bodeker, Sam M. Dean, Luke J. Harrington, Suzanne M. Rosier, Graham D. Rye, Jordis S. Tradowsky, *Cyclone Gabrielle as a Design Storm for Northeastern Aotearoa New Zealand Under Anthropogenic Warming* (2024).

Anticipated future impacts

As with many businesses assessing the potential consequences of climate change, Silver Fern Farms' financial results are influenced by a broad range of intersecting, and sometimes interdependent, global and domestic drivers, that act either to suppress or compound returns. This means it is challenging to separate out the individual effects of any one variable, including those related to climate change, both physical and transitional.

To address the challenges of assessing the potential climate-related financial impacts, Silver Fern Farms has opted to consider three specific case studies transversing our value chain that provide a representative view of the potential effects that might be encountered by the business.

These cases are ring-fenced and do not consider the broader economic ramifications in play, should these business cases play out as stated.

These cases do not present a comprehensive view of all financial impacts we may incur, but they do indicate the significant impact climate change could have on our enduring value as a business, if we do not continue to invest resources into appropriate mitigating actions or fail to capture the opportunities identified. By embracing a forward-thinking mindset, we aim to turn these climate challenges into catalysts for growth and development. Our efforts will not only safeguard our operations but also contribute to the broader goal of limiting climate change.

Anticipated financial impacts of climate change – case studies

Greater livestock variability and declining supply volumes

Risk/ opportunity 	**Transition risk** Decline in red meat farming as a result of evolving climate policy, increasing regulatory costs, future pricing of agricultural emissions, restricted access to capital, incentivisation of land conversion towards forestry and the rise of more profitable land uses
Potential financial impact 	An indicative reduction in gross margin of circa **$21m** by 2034 due to climate transition impacts on livestock volumes

Livestock is the primary input into our supply chain. The impact of increasing levels of climate policy and the associated cost of implementation, regulation fatigue, volatile carbon pricing and potential for reduced access to capital for our livestock suppliers may impact on the viability of farming, in turn impacting on the level and cost of supply. Additional costs passed through the supply chain, land use change driven by volatile farm returns and incentives supporting the conversion of pastoral land into exotic forestry, or the inability (or unwillingness) of farmers to adapt to transition measures, could further hasten the move away from beef and sheep farming.

The Climate Change Commission's modelling provides an indication of the scale of livestock volume decline that could be faced under various scenarios. Therefore, to estimate the potential livestock decline stemming from a significant lift in global and domestic climate policy, we have used the difference in livestock volumes between two of the Climate Change Commission's scenarios[2]:

- further Behaviour Change modelling, assuming this is a proxy for an accelerated, policy-driven, transition environment (as represented under our Sharp Corrections scenario); and
- current Policy Reference case, where we have assumed any declines in livestock figures are primarily from non-climate-related / existing factors.

Based on the livestock volume differential between these two scenarios, we have estimated a potential gross margin impact to Silver Fern Farms of circa -$21m by 2034. In assessing this impact, we have assumed no change to our current market share and no CPI adjustment to the average gross margin levels per head in 2024.

2 Climate Change Commission / He Pou a Rangi, *Scenarios dataset for the Commission's 2021 Final Advice (output from ENZ model)* (2021)

Anticipated financial impacts of climate change – case studies

Operational disruption and damage to infrastructure

Risk/ opportunity 	**Physical risk** Damage to or impaired processing and warehouse infrastructure as a result of climate change and events
Potential financial impact 	Estimated material damage and business interruption costs of **$35 – 55m** stemming from a severe weather event at a large plant during peak season (before insurance)

A sudden, severe weather event has the potential to damage assets and disrupt operations at our processing sites. This could limit our ability to process stock, raising potential animal welfare risks, and causing flow-on effects down our supply chain to customers and consumers. Given the expansive nature of our supply network and the spread of our processing sites across Aotearoa, New Zealand, the physical impacts will vary depending on location. Furthermore, due to the seasonal nature of our business, the financial impacts of an event will be heavily influenced by its timing.

As a case study, we have assessed the potential financial consequences stemming from a severe, acute weather event occurring over the next 10 years that results in prolonged loss of production at a large multi-species site during the peak processing season. This scenario, which suggests material damage and business interruption costs in the vicinity of $35 – 55m, is at the higher end of anticipated outcomes and has been informed by the effects of Cyclone Gabrielle on our plant operations.

This cost estimate includes:

- the gross margin lost from a production outage of four weeks;
- minimum wages for production staff during this outage;
- damage or destruction of a percentage of assets requiring repair or replacement, and subsequent re-commissioning;
- damage to a percentage of inventory held, requiring product to be downgraded or disposed of; and
- costs of other support, principally staff time used to support the recovery that would normally be focused on business-as-usual activities.

It is anticipated that a significant portion of this calculated financial impact would be offset through insurance. However, as the frequency and severity of events increases, insurance is likely to become more costly or difficult to source. A 25% increase in both premiums and excess, alongside a 25% increase in insurance deductibles / reduction in insurable events, could leave Silver Fern Farms exposed to a cost of $12 – 27m under this scenario.

Anticipated financial impacts of climate change – case studies

Growth of existing and new revenue streams

Risk/ opportunity 	**Opportunity** Development of net carbon zero and nature positive value propositions that demand additional premiums.
Potential financial impact 	Additional estimated EBITDA of up to circa **$30m** per annum by 2030 from new commercial opportunities under our Nature Positive Programme.

Silver Fern Farms is focused on capitalising on the various asset types on farms, including forests, healthy soil, and the sustainable farming practices of our livestock suppliers, in order to provide new revenue streams for both Silver Fern Farms and its livestock suppliers.

Through our Nature Positive Programme, a range of commercial opportunities are being advanced, and further initiatives are being pursued which include expanding of the Net Carbon Zero product portfolio, leveraging intangible assets and building on our journey towards becoming a becoming a trusted nature positive producer. Current activities are forecast to deliver up to circa $30m in additional EBITDA in 2030, albeit these projections remain highly uncertain (and subject to commercial sensitivities).

In addition to the direct financial impacts, there are several indirect commercial benefits (which have not been quantified) – these include brand equity enhancements, business reputation, leadership voice, strengthening social license to operate, increasing resilience to disruption, catalysing innovation and collaboration, and contributing to the restoration and revitalisation of global ecosystems.

Our strategy

Our purpose “Creating goodness from the farms the world needs”, launched in 2022, repositions our business in terms of our shared commitment to build a successful, resilient and sustainable business, creating enduring value for all our varied stakeholders.

Our Plate to Pasture strategy drives the delivery of this purpose and is underpinned by five strategic goals. This strategy places a nature positive approach at the centre of our value proposition, our business operations and our supply partnerships, and emphasises our pledge to doing good by nature, enabled through a clear and enduring Sustainability Action Plan.

Our Purpose
Creating goodness from the farms the world needs

Our Values

Always caring
Our Manaakitanga

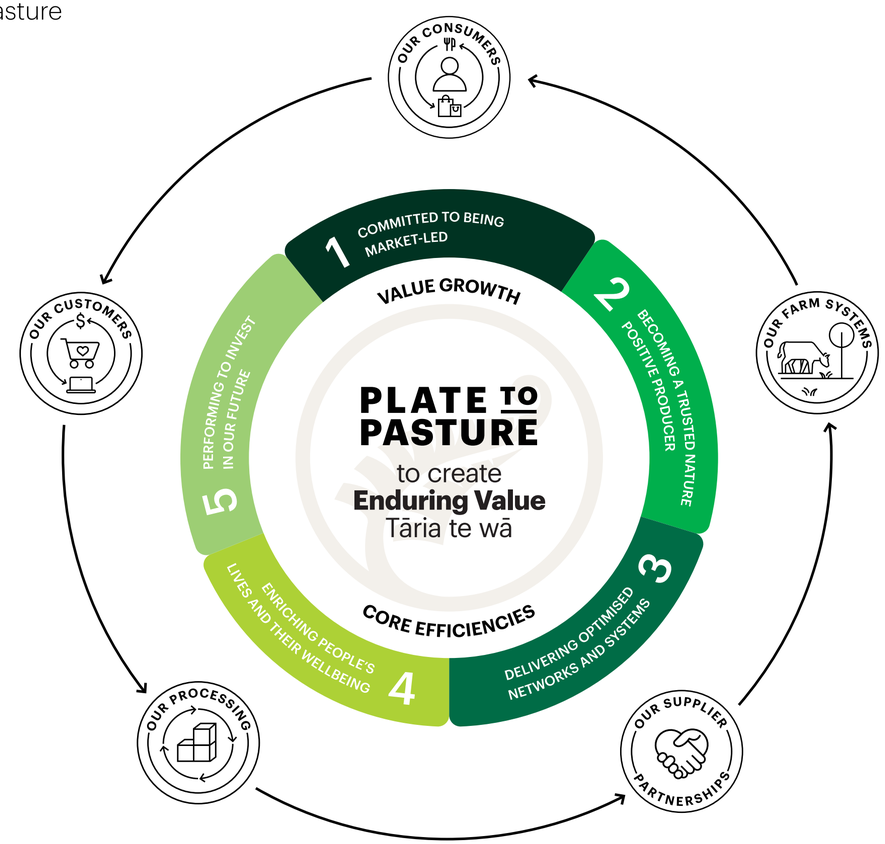
Unstoppable together
Our Kotahitanga

Improving tomorrow
Our Kaitiakitanga

Our Sustainability Action Plan
Good by Nature

Our Bicultural Framework
Te Ara Huri

Our Strategy
Plate to Pasture



Our Goals

01
Committed to being market-led

02
Becoming a trusted nature positive producer

03
Delivering optimised networks and systems

04
Enriching people’s lives and their wellbeing

05
Performing to invest in our future

Through our Sustainability Action Plan, we are embedding sustainability across our business.

This demands not merely doing less harm, but doing greater good by ultimately enhancing the ecosystems, communities and places we operate in. Our Sustainability Action Plan is designed to support and accelerate Silver Fern Farms' transformation to the world's most trusted, nature positive producer and deliver on our purpose of creating goodness from the farms the world needs.

Reflecting our action-orientated approach, we are undertaking a range of initiatives to drive our vision and respond to consumer and market demands for sustainably produced red meat. This will position Silver Fern Farms as a leader in sustainable food production in a rapidly changing world. The Sustainability Action Plan is focused on the eight issues that matter most to our stakeholders and ensures we remain future fit and focused on the areas where we can make the most difference. The plan covers aspects of our business from on-farm where the animals are raised to when a customer disposes of packaging, and is aligned to the global framework for sustainable development, the Sustainable Development Goals.

Climate Innovation – Creating a climate positive future – is one of these material issues, and specifically considers how Silver Fern Farms can reduce emissions across the value chain, create low carbon opportunities, and build business resiliency.

A nature positive future

We are committed to supporting a holistic approach to farming focused on outcomes measurement and continuous improvement rather than inputs. At Silver Fern Farms, we are underpinning our approach to nature positive in five key areas, which will help us continue to meet consumer expectations for premium quality, sustainably grown red meat. These are:

- **Climate and emissions**
- Biodiversity
- Soil Health
- Water Quality
- Animal Welfare

Climate Innovation

Creating a climate positive future

Enhancing Nature

When nature thrives we all thrive

Circular Future

Creating value - the path to zero waste

People & Wellbeing

Enriching people's lives through work

Disruptive Innovation

Creating options for value and growth

Trust & Connection

Most trusted partner

Community & Belonging

Together we are stronger

Te Ao Māori

Respecting our unique Aotearoa/New Zealand identity

Transition planning and integrated resilience

The New Zealand Climate Standards define a transition plan as "an aspect of an entity's overall strategy that describes an entity's targets, including any interim targets, and actions for its transition towards a low-emissions, climate-resilient future."

Our Climate Action and Transition Targets and Pathways and our Carbon Roadmap, published online, outline both the actions we are taking to reduce GHG emissions and the near- and long-term targets we aim to achieve as we work towards a net-zero future.

However, we consider transition planning as part of our broader, integrated resilience approach to climate change that covers mitigation, adaptation and transition aspects. This holistic approach considers the full breadth of our value chain from a climate lens to identify imperatives that will strengthen the climate-related resiliency of our business. These imperatives (shown below) have been informed by our climate-related risks and opportunities and are reflected in the management actions described earlier.

These imperatives are strongly linked through to our enterprise and business unit priorities driving delivery of the five strategic goals under the Strategic Plan 2030.

Secure Livestock Supply

1 Respond to changing livestock patterns, resulting from climatic impacts
2 Reduce vulnerability of animals on-farm to climatic changes and events
3 Deliver financial returns and incentives that promote nature-positive farming

Resilient Plant Operations

1 Increase resiliency of plant assets to severe weather events
2 Reduce dependency on high GHG emitting fuel sources
3 Secure ongoing sources of water supply, both surface and underground

Strong Distribution and Supply Chain

1 Drive emission efficiency across all parts of the supply chain and distribution network
2 Maintain flexibility across global shipping markets
3 Increase optionality across third party/ supply chain partners to strengthen network resiliency

Dynamic Market Response

1 Increase options to reduce on-farm emissions in response to market concerns on climate change
2 Create low-carbon product options and explore alternate nature positive revenue streams
3 Reduce dependency on livestock supply through diversification of value from farm

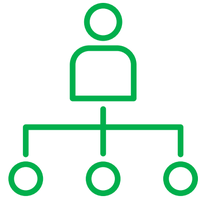
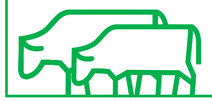
Clear Leadership

1 Inform government policy and promote appropriate market dialogue
2 Ensure business continuity in the case of an extreme climatic event
3 Influence primary sector to accelerate adaption activities and increase resiliency

Scan QR Code for our Climate Action and Transition Targets and Pathways and for our Silver Fern Farms' Carbon Roadmap

Building climate resiliency within our Strategic Plan 2030

The multifaceted nature of our climate response and its integration into our Strategic Plan 2030 is highlighted in the table below, which demonstrates the multiple connections between our climate resiliency imperatives and our strategic goals.

Strategic Plan 2030 - strategic objectives	Climate resiliency imperatives: Secure Livestock Supply	Resilient Plant Operations	Strong Distribution and Supply Chain	Dynamic Market Response	Clear Leadership
Committed to being market-led	By building a trusted and differentiated global nourishment brand, we are looking to increasingly shift from a volume to value-based business that provides price premiums and ensures farming remains financially viable relative to other land uses.		Our collaboration with logistics providers, and in particular our shipping joint venture Kotahi, supports continuity of supply through to our global customers. 	Development of a differentiated market proposition, underpinned by strong sustainability credentials and more specifically a Nature Positive offering, should drive new and enhanced revenue streams for the business, supporting a shift from volume to value.	Taking a leadership role through the co-design and / or expansion of our Net Carbon Zero and Nature Positive value propositions in conjunction with key customers will provide products in market that address the role of agriculture in climate change, while incentivising climate-positive changes on-farm.
Becoming a trusted nature positive producer	Delivery of our Enterprise Nature Positive roadmap, and specifically the design of a nature positive farming system, will strengthen farming viability through the development of a premium, in-market, nature positive product portfolio.	Targets under our sustainability linked loan are driving a strong cross-business focus on reducing GHG emissions, improving water intensity use, understanding biodiversity, and minimising waste to landfill, which improves the efficiency of our plant operations and reduces dependencies on external utilities. Loan targets are further enabled by the 5-year Capex Plan for water, energy, and waste.	Through the expanded roll out of our Vendor Code of Conduct, we will be working alongside our supplier base to drive improved climate chain action and accountability.	The successful development of a Nature Positive investment platform pilot alongside Toha will provide further options to extend revenue streams beyond red meat and reward both Silver Fern Farms and our livestock suppliers for undertaking actions that reduce emissions and improve farmland health.	Continued investment and leadership in the public-private joint venture, AgriZeroNZ, will drive funding of innovative pathways and solutions to reduce on-farm emissions, while encouraging effective industry and government engagement on biogenic methane and optimising capital spend across market players.
Delivering optimised systems and networks	By developing the tools and relationships to build our on-farm nature data stack, we are seeking to understand the condition of our environment and ecosystems in ways that can be verified with transparency.	The delivery of a full sustainability data and reporting tool will support trackability and traceability of key emissions metrics across our operations to drive accountability and a more dynamic response as we transition to a low-emissions, climate-resilient future.	Through the identification and optimisation of global distribution networks and order fulfilment models, we are seeking to strengthen resiliency across our supply chain to accommodate our dynamic operating environment, including the potential impacts stemming from climate change.		Through the establishment of Prism Earth alongside Lynker Analytics, Silver Fern Farms is taking a leadership position in the use of technology and data science to advance the understanding of climate-related risks and opportunities faced by land-based businesses and delivering evidence-based proof points to support their compliance with market obligations
Enriching people's lives and their wellbeing	Through a focus on understanding and mapping our future capability requirements, coupled with learning centred on driving our sustainability aspirations, we will ensure the organisation has the skills, expertise and knowledge needed to deliver future value and transition to a nature positive producer.				
Performing to invest in our future 	Through our Net Carbon Zero and our Nature Positive value propositions Silver Fern Farms is actively creating opportunities in market that secure higher premiums and deliver improved farm gate returns to strengthen supplier loyalty, while also managing market-related climate transition risks to protect market access and revenue streams.	The 2035 Future Network Plan will inform our network footprint and investment, based on our perceived future processing needs and capabilities. Among other factors, this plan will consider the vulnerability of our existing site network to climatic change and severe weather events, including potential challenges securing water supply and affordable energy sources.	The national cold storage strategy will address concerns over long-term accessibility to sufficient cold chain storage capacity and will look to leverage existing assets and strategic relationships supported by automation and process improvement.	The development of our future state business blueprint, will position Silver Fern Farms to take advantage of new value creation opportunities and Nature Positive revenue streams, reducing dependency on livestock volumes. 	Across the organisation we are working to embed ongoing business continuity training and awareness, including scenario planning and annual crisis management exercises to ensure we can appropriately respond to any unexpected incidents, including severe weather events.

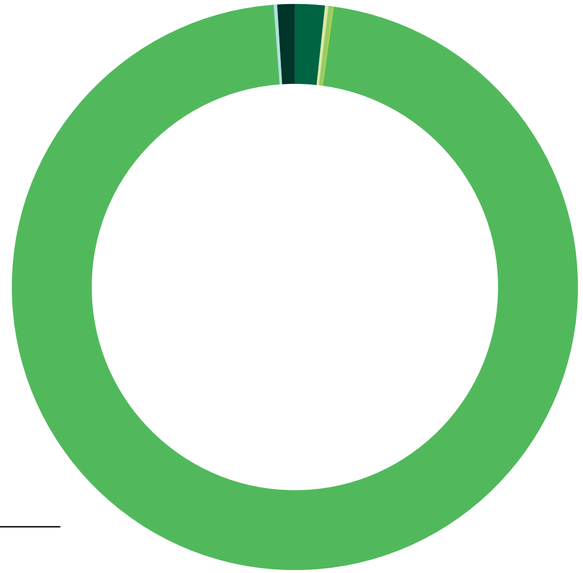
05

Metrics & Targets

GHG measurement standards and methodology

Silver Fern Farms is committed to managing and reducing our carbon footprint. As such, we are focused on better understanding our emissions profile and reporting transparently against our GHG reduction goals in line with internationally recognised, science-based methodology.

2024 emissions



1.0% **Scope 1**
Organisations direct GHG emissions

0.2% **Scope 2**
Emissions associated with the generation of electricity, heating/ cooling or steam purchased for own consumption

0.2% **Scope 3**
Emissions from employee commuting

96.6% **Scope 3**
Indirect emissions on Supplier Farms (FLAG) (purchased goods and services)

0.2% **Scope 3**
Upstream fuel and energy related emissions

1.7% **Scope 3**
Emissions from transportation of goods

0.1% **Scope 3**
Other

Silver Fern Farms releases an annual GHG Inventory Data Update, prioritising rigor in the way we measure and report emissions across our value chain.

All reported emissions are certified by Toitū Envirocare in accordance with ISO 14064-1:2018 and the technical requirements of the Toitū carbonreduce Programme. Our Scope 1 and 2 emissions are reported with reasonable assurance, while our scope 3 emissions are reported with limited assurance. The organisational boundaries have been set using operational control (whereby 100% of emissions from operations over which Silver Fern Farms or one of its subsidiaries has the full authority to introduce and implement its operating policies are included). At present, we do not report emissions for any subsidiaries or any other entity in which we have an investment albeit we are working towards this goal to better meet the requirements of the SBTi.

Scope 1 and 2 emissions are generated within Silver Fern Farms' direct operations, the Scope 3 boundaries extend from supplying farms to the receiving port for international shipment of goods or the local sales delivery point for sale of goods within Aotearoa, New Zealand. In 2024, Scope 3 reporting was extended to include upstream fuel and energy related emissions, and emissions from employee commuting. Future inventories will include additional scope 3 reporting as we move forward to meet the requirements of the Toitū Elevate programme and the requirements of SBTi and the GHG Protocol. The calculation methodology applied takes the approach of emissions = activity data x emissions factor. Emissions factors are provided by Toitū (Carbon Management -Toitū Envirocare (toitu.co.nz)) using Global Warming Potentials (GWP) from the IPCC fifth assessment report (AR5) as the preferred GWP conversion. For farm emissions, a life cycle assessment (LCA) derived emissions factor has been applied, with the LCA analysis for each species certified in accordance with ISO 14067:2018 and the Technical Requirements of the Toitū Net Carbon Zero Programme. The inventory includes biogenic emissions from the stationary combustion of wood biomass and food manufacturing sludge. No removals have been applied to this GHG Inventory.

The most recent inventory report, and reports prior to 2022, can be found in the Key Sustainability Documents section of our website. The 2024 Inventory includes a full table of historic emissions reporting by year.

Scan QR Code for GHG Inventory Reports

Measuring our climate impact

Silver Fern Farms first measured our GHG inventory in 2018, with our emissions from 2022 to the most recent reporting period summarised by scope in the table below.

Audited GHG emissions by Scope 2021-2024

	Reported Emissions (tCO_2e)			
	2021	**2022**	**2023**	**2024**
Scope 1 (Organisation direct GHG emissions)	65,205	62,191	64,002	47,984
Scope 2 (Emissions associated with the generation of electricity, heating/cooling or steam purchased for own consumption)	19,045	17,795	11,472	10,462
Scope 3 (Organisations Indirect GHG emissions)	10,183*	2,859,209	3,344,514	4,874,221
Total	94,433	2,939,195	3,419,988	4,932,666

* Excludes enteric fermentation of livestock supplier farms and international freight

Audited Scope 1 and 2 Emissions: The SBTi requirement for a consistent base year across FLAG and non-FLAG targets has necessitated updating our non-FLAG Scope 1 and 2 absolute reduction target base year from 2020 to 2021.

Audited Scope 3 Emissions: Our methodology and completeness of scope 3 has developed significantly since 2021. Prior to 2022, scope 3 emissions from enteric fermentation of livestock supplier farms and international freight were not included; these were introduced in 2022. In 2023, emissions from agricultural waste applied to soils were added to the Inventory, and in 2024 a more specific LCA methodology was used to report on on-farm emissions. We also recalculated the Inventory to meet the requirements of SBTi target validation. These were validated by SBTi at 385k tCO_2e total Non-FLAG emissions, and 5,225k tCO_2e FLAG emissions. These will be subsequently audited by Toitū, and any changes will be incorporated into published Inventory data in 2026.

Measuring our climate impact

Scope 1 emissions, which are dominated by activities at our 14 processing sites, have reduced by 26.4% since 2021. The non-farm energy and industrial (E&I) emissions have reduced by 26.48% largely through Coal Out activities. FLAG emissions have reduced 24% against the 2021 base year, this variation is due to the combined effects of reduced stock holdings and to the adoption of the more specific LCA methodology for calculating emissions.

Stationary combustion from coal is the largest emissions source and at 19,945 tCO_2e in 2024, it represented 41.6% of reported scope 1 emissions. Our commitment to Coal Out by 2030 has seen these emissions reduce by 44.1% since 2021, driven by investment in the decarbonisation of process heat through the installation of industrial heat pumps at our Belfast, Finegand and Pareora sites, and the installation of a biomass boiler at Te Aroha.

Combustion of natural gas and wastewater treatment are the next largest sources of scope 1 emissions at 12,036 tCO_2e, and 9,801 tCO_2e respectively. Energy efficiency and water efficiency plans are in place for all processing sites and will incrementally reduce these emissions.

The remaining activities generating Scope 1 emissions (in descending order of impact) are:

- stationary combustion of wood;
- combustion of fuel in company vehicles (encompassing operational transportation and including livestock and sales representatives);
- leakage of refrigerants; and
- on-farm emissions from livestock held on company holding farms for short periods prior to processing.

Scope 2 emissions are from electricity consumption at our processing plants (10,451 tCO_2e, 99.9%, from the Aotearoa New Zealand national grid), and at our Shanghai office hub (11 tCO2e, 0.1%, from the China grid).

Previously, emissions from the importation of hot water to our Hawera processing plant were included in scope 2. These are now reported as direct energy consumption in scope 1, following the acquisition of the adjoining Hawera By Products plant.

Collectively, scope 1 and 2 emissions have reduced 30.6% against the 2021 baseline. However, there is a risk that scope 2 emissions will increase due to greater burning of fossil fuels to generate electricity for the national grid when hydro lake levels are low.

Scope 3 - Farm emissions, primarily the production of methane from enteric fermentation and nitrous oxide from the addition of livestock waste (urine) to soil, dominate scope 3 and total GHG inventory, representing 96.6% of total emissions in 2024 (or 4,764,303 tCO_2e).

In the 2024 reporting period, reported scope 3 emissions increased by 1,507,539 tCO_2 relative to the 2023 period, despite similar stock numbers being processed. This was due to the introduction of the more specific LCA methodology for determining emissions.

Other material scope 3 emissions (in descending order) include:

- freight of goods at 82,501 tCO_2e (1.7% of Scope 3 emissions);
- employee commuting at 11,899 tCO_2e (0.2% of Scope 3 emissions); and
- upstream fuel and energy related emissions at 12,773 tCO_2e (0.2% of Scope 3 emissions).

Employee commuting, and upstream fuel and energy related emissions were included in reporting for the first time in 2024.

The following Scope 3 emissions categories are not yet included in our Scope 3 Reporting boundary:

- emissions from investments;
- emissions from upstream leased assets;
- emissions from processing of sold products;
- emissions from end-of-life treatment of sold products;
- emissions from downstream leased assets; and
- emissions from franchises.

In 2025 Silver Fern Farms is working to report emissions across a larger operational boundary (to include use of products sold and emissions from investments in order to meet the requirements of the GHG Protocol and SBTi).

Measuring our climate impact

Emissions Intensity is reported on an emissions per revenue, and an emissions per tonne of product (fresh carcass weight) basis under the Toitū carbonreduce Programme.

An additional product metric, tCO_2e / fresh carcass weight (t), is of value for tracking performance against the SBTi FLAG Beef Commodity pathway.

Emissions Intensity	2021	2022	2023	2024
Revenue All emissions (tCO_2e)/$[2]	0.000036	0.0009	0.0012	0.0019
Product All emissions (tCO_2e)/fresh carcass weight all species (t)[1]	0.34	9.81	11.57	17.42
Product Mandatory emissions under the Toitū carbonreduce Programme (tCO_2e)/fresh carcass weight all species (t)	0.34	0.32	0.31	0.26
Scope 3 FLAG Beef Commodity emissions (tCO_2e/fresh carcass weight beef (t))[3]	17.93	17.90	18.03	17.90

2 Our methodology and completeness of scope 3 reporting has developed significantly since 2021 impacting the comparability of "All Emissions" intensity year on year. We recalculated the Inventory to meet the requirements of SBTi target validation. These were validated by SBTi at 385k tCO_2e total Non-FLAG emissions, and 5,225k tCO_2e FLAG emissions. These will be subsequently audited by Toitū, and any changes will be incorporated into published Inventory data in 2026.

3 LCA methodology retrospectively applied to historical data

Climate impacts on assets and business activities

Physical risks, transition risks and climate-related opportunities affect all parts of our value chain.

Physical climate impacts threaten operations at 100% of our assets. The increasing prevalence of extreme weather, flooding events and sea level rise threaten to damage and disrupt operations at our processing sites, which may limit our ability to process stock, raise animal welfare risks, and cause flow-on effects for our customers and consumers. Of most concern are our processing sites at Pareroa on the coast, Finegand on the Clutha river, Hāwera on the Tawhiti Stream, and Belfast on the Waimakariri River.

According to the National Climate Change Risk Assessment, the exposure of Aotearoa, New Zealand's buildings to climate hazards is already considered major and is expected to grow to an extreme exposure by 2050[2]. Damage from continued flooding caused by sea level rise and storm events may eventually render our higher-risk buildings unusable or uninsurable from the mid-century, leading to a number of stranded assets.

Our business model is equally exposed to increasing uncertainty over the ability to source sufficient livestock volumes due to the greater frequency of acute weather events such as heatwaves, flooding, and drought, and chronic shifts in weather patterns and climate conditions which threaten the level, quality, species mix, geographic spread and timing of livestock supply over the longer term.

These risks will be exacerbated by disruption to supply chain logistics from physical climate impacts.

Transition impacts, including changing climate policy and regulation as we transition to a low-emissions economy, will impact on the cost of processing, warehousing and logistics, with increased compliance costs, the rising price of carbon and asset upgrade requirements expected to impact 100% of our assets.

More stringent climate policy in the agriculture sector, and the cost of implementation, regulation fatigue, and potential for reduced access to capital, may impact on the viability of farming, in turn impacting on the level and cost of livestock supply. Land use change driven by declining farm returns, and incentives supporting the conversion of pastoral land into exotic forestry, or the inability (or unwillingness) of suppliers to adapt to transition measures could further accelerate a decline in beef and sheep farming.

Greater levels of regulation may also impact supply into global markets. This could be through increased compliance obligations, labelling or reporting requirements, and / or additional carbon-related tariffs. These risks are highlighted by the number of "sustainability-related" regulatory processes underway in the EU and China and by the increasing environmental conditions included in free trade agreements. The additional work (and cost) to comply with these new regulations can be considerable, while the introduction of carbon border taxes may put us at a price disadvantage in key markets.

As with physical and transition risks, climate-related opportunities straddle all parts of our business activities.

Supporting livestock suppliers to continue adopting agricultural practices that build farmer resilience, maintain productivity, reduce the impact of climate change on-farmland health and improve biodiversity, will allow them to capitalise on the increasing demand for protein while shoring up longer term livestock volumes.

Capitalising on the various asset types on farms, including forests, healthy soil, the sustainable farming practices of our livestock suppliers, could provide new revenue streams for both Silver Fern Farms and its livestock suppliers and on-farm nature-related data (as already demonstrated through the Net Carbon Zero programme). Heightened demand for carbon offsets, biodiversity offset schemes and ecosystem services in response to growing climate-related regulations in key markets, provide further opportunities for further diversification beyond our current red meat-centred offering.

Carbon-related cost pressures and capital requirements as we transition to a low carbon economy provide a financial incentive to explore alternative approaches to operating our plant network which could ultimately increase on-site resilience and efficiency. For example, our energy transition plans could reduce reliance on higher cost fuel sources and allow investigation of on-site renewable energy opportunities, while a focus on water circularity and a reduction in water use intensity, in response to drought conditions, could drive optimisation of existing processes, strengthening local iwi relationships and supporting consent renewals.

2 Table 11, Ministry for the Environment. (2020). *National Climate Change Risk Assessment for Aotearoa New Zealand: Main report – Arotakenga Tūraru mō te Huringa Āhuarangi o Āotearoa: Pūrongo whakatōpū*. Wellington: Ministry for the Environment.

Capital deployment

Silver Fern Farms continues to deploy capital into projects or investments specifically addressing climate-related risks and opportunities.

As part of our risk assessment process, climate-related risks and opportunities are considered when deploying capital and making funding decisions in relation to new projects and opportunities.

Furthermore, our understanding of the potential impacts of physical climate change and the transition towards a low emissions economy on our long-term business model and the broader agriculture sector, has been highly influential on the repositioning of Silver Fern Farms' purpose, strategy and our top strategic goals through to 2030, including our stated imperative of "becoming a trusted nature positive producer". As such, climate change factors are intrinsically integrated into capital deployment considerations.

These factors are also considered through the opportunity matrix, an internal tool designed to support the prioritisation of new projects and opportunities. This tool, applied across all projects that are strategic in nature and / or value accretive, contains assessment criteria which evaluate an opportunity's impact on (1) each of our strategic goals, including "Becoming a nature positive producer" and (2) our risk profile, including material climate risks.

Carbon sequestration payments

Silver Fern Farms does not apply an internal emissions price; however, carbon is priced as part of Silver Fern Farms' Net Carbon Zero range. This proposition is an Aotearoa, New Zealand first, where the equivalent of 100% of the end-to-end emissions of each product sold have been absorbed by woody vegetation growing within the farms where the animals are raised. When a farmer joins the programme and their carbon sequestration services are purchased, they are paid a current rate of $50 per tonne of carbon per annum for their supply of carbon removals through permanent woody indigenous vegetation.

Capital deployment

Key investments in recent years specifically related to climate have included:

AgriZeroNZ - Silver Fern Farms is a founding partner in the 50:50 Government-industry joint venture (JV), AgriZeroNZ, which aims to accelerate the delivery of methane reduction solutions through a commercial focus. The JV operates as a catalyst for the decarbonisation of agriculture by seed-funding agritech innovations that will reduce FLAG emissions in Aotearoa New Zealand farming systems. Silver Fern Farms has invested $9.1 million over 2023 and 2024, with the investment impact being two-fold: (i) opening up meat and co-product supply with emissions related claims, and (ii) fulfilling requirements of carbon certifications, maintaining global competitiveness, and preserving access to market volumes that are vulnerable to carbon pricing restrictions.

Prism Earth - In 2024, Silver Fern Farms partnered with data science and technology company Lynker Analytics to form a new JV called Prism Earth. Prism Earth is an applied science consultancy, combining best-in-class technology and scientific know-how to uncover opportunities that maximise carbon asset realisation, optimise future land use and support market access. Recently, Prism Earth has developed satellite technology for the measurement of deforestation and biodiversity in Australia and Aotearoa, New Zealand to demonstrate beef sector conformance to the new EU deforestation regulations.

Decarbonisation of process heat - As part of the coal-out by 2050 commitment and our investment in processing heat decarbonisation, Silver Fern Farm has upgraded aging engineering assets to newer, more efficient and lower emitting models. Energy transition Industrial heat pump projects have cost $9.7 million, with Government funding support of $3.9 million (via the Government Investment in Decarbonising Industry (GIDI) Fund)[2]. An additional $12 million project to install an electric boiler at Belfast is in the installation phase. Further emissions reductions are being captured through OPEX based operational efficiency projects.

Processing Heat Decarbonisation Projects – Cost, Progress and Carbon Reductions

Project	Status	Capital Cost ($1,000's)	Target Emissions Reduction (tCO_2e)
Heat Pump installation Belfast	Complete	$1,700	2,974
Heat Pump Installation Finegand	Complete	$4.600	8,286
Heat Pump Installation Pareora	Complete	$3,400	5,589
Finegand engine room oil heat recovery	Complete	$61	400
Finegand washing upgrades	Complete	$10	400
Belfast Electrical Boiler & Hot Water Infrastructure	In progress	$12,000	2,104
Waitane pellet boiler and heat recovery	Planning phase	$4,000	1,510
Additional Finegand heat recovery projects	Planning phase	TBC	TBC
Total excluding TBC items		**$25,711**	**21,263**

2 https://www.eeca.govt.nz/co-funding-and-support/approved-gidi-projects/

Our climate targets are in line with our contribution to limiting global warming to 1.5°C.

In 2020, we committed to a science aligned target of a 42% reduction in Scope 1 and 2 emissions, using 2020 as our baseline. In 2025, to meet the SBTi validation requirement to have aligned base years for forestry land and agricultural emissions reduction targets (FLAG, farm-based emissions) and E&I, we set updated targets. These are in-line with our contribution to limiting global warming to 1.5°C as validated by the SBTi:

Emissions	Target
SBTI validated Absolute Targets	
Scope 1 and 2 E&I (non-FLAG)	42.7% reduction in absolute scope 1 and 2 E&I GHG emissions by 2030 from a 2021 base year. Target boundary includes land-related emissions and removals from bioenergy feedstocks.
Scope 1 FLAG	36.4% reduction in absolute scope 1 FLAG GHG emissions by 2032 from a 2021 base year. Target includes FLAG emissions and removals.
Scope 3 E&I (non FLAG)	32.5% reduction in absolute scope 3 E&I GHG emissions by 2032 from a 2021 base year. Target boundary includes land-related emissions and removals from bioenergy feedstocks.
Deforestation	No deforestation across primary deforestation-linked commodities, with a target date of December 31, 2025.
SBTI validated Intensity Targets	
Scope 3 Beef Commodity FLAG	Reduction in scope 3 FLAG GHG emissions from purchased beef by 16% per tonne of fresh weight by 2032 from a 2021 base year. Target includes FLAG emissions and removals.

Additional targets above and beyond the SBTi validated targets have been set for Sheep and Venison as follows:

Emissions	Target
Non-SBTI validated	
Scope 3 Sheep FLAG	10% absolute reduction in sheep emissions by 2032 from a 2021 base year.
Scope 3 Venison FLAG	Supplier engagement target.

Performance against these new targets will be tracked going forward.

Climate targets

In addition to our emissions targets, Silver Fern Farms tracks a number of activity-based measures, as outlined in the table below.

Our sustainability linked loan targets create financial accountability for our targets alongside the existing accountability of our leaders. All targets are set against material sustainability issues, and those 2022-2024 targets listed reduce emissions directly (Scope 1 & 2 emissions and waste) or indirectly (NZFAP Plus) through supporting suppliers in their own emissions reduction actions. Our targets and performance for the last three years are shown in the table below. New sustainability linked loan targets have been set for the 2025-2027 term, 2025-2027 targets continue the ambition of the previous term for direct (Scope 1 and waste) and indirect emissions reductions (NZFAP+ and biodoverity).

Sustainability linked loan target 2022 - 2024 term:	**Performance**
Reduction in Scope 1 and 2 emissions (baseline = 2020)	
Year 1 - 2022, 5%	1%
Year 2 - 2023, 16%	6.7%
Year 3 - 2024, 26%	27.8%
Adoption of the NZFAP+ assurance programme (baseline = 2021)	
Year 1 - 2022, 200 suppliers are members	217 members
Year 2 - 2023, 400 suppliers are members and 200 suppliers are certified	518 members, 299 certified
Year 3 - 2024, 600 suppliers are members and 400 suppliers are certified	655 members, 436 certified
Reduction of total waste to landfill - non-organic (baseline = 2022)	
Year 1 - 2022, ≥5% reduction at 6 sites	28.25%
Year 2 - 2023, ≥5% reduction at all sites	1.33%
Year 3 - 2024, ≥10% reduction at all sites	20.4%
Reduction of total waste to landfill - organic[2] (baseline = 2021)	
Year 1 - 2022, 70% reduction	26.25%
Year 2 - 2023, 80% reduction	7.6% increase
Year 3 - 2024, 90% reduction	96.4%

2 Organic waste is defined in our Sustainability Linked Loan agreement as ovine skins and bovine facepieces

Climate targets

Sustainability linked loan target 2025-2027 term:		2025	2026	2027
NZFAP+	Adoption of the NZFAP+ assurance programme (baseline = 2024)	750 suppliers are members of and 600 are certified	900 suppliers are members of and 700 are certified	1000 suppliers are members of and 800 are certified
GHG emissions	Reduction in Scope 1 emissions (baseline = 2021)	44,484 tCO_2e (c.32% reduction)	41,984 tCO_2e (c.36% reduction)	40,684 tCO_2e (c.38% reduction)
	Increase farmer suppliers reporting emissions data	Establish Scope 3 reporting and supplier emissions data methodology	100 suppliers are reporting emissions data	200 suppliers are reporting emissions data
	Maintain GHG emissions Intensity of scope 3 beef at less than SBTi Oceania beef intensity	Scope 3 beef emissions Intensity <22.65 tCO_2e/tonne fresh weight each year		
Waste	Reduction in waste to landfill - non-organic (baseline = 2022)	20% reduction	25% reduction	30% reduction
	Reduction in waste to landfill - organic (baseline = 2021)	Organic waste to landfill not exceeding 322.4 Tonnes per year		
Biodiversity	Development of Biodiversity data and action plans	Biodiversity data methodology developed and tested on 25 Farms	Biodiversity mapped, with action, for 300 farms and 65 farms have a Biodiversity Plan	Biodiversity mapped, with action, for 600 farms and 100 farms have a Biodiversity Plan

Food Waste

Silver Fern Farms is a founding member of the Kai Commitment[2]; a voluntary initiative focused on measuring and reducing food waste. Aligned with Sustainable Development Goal 12.3, Kai Commitment partners aim to halve food waste in Aotearoa, New Zealand by 2030. As Aotearoa New Zealand's representative in the global Food Pact Network, the Kai Commitment contributes to an international effort led by the Waste and Resources Action Programme (WRAP). Strategic activities to reduce food waste are included in our Sustainability Action Plan under the Circular Future Material issue: converting waste to value. An example of this approach includes the production of collagen from ovine skins.

Silver Fern Farms has committed to reducing food waste by 50% from a 2023 baseline. Food waste is reported using both the WRAP definition, which aligns with international customer expectations, and the Kai Commitment definition, which reflects national standards in Aotearoa New Zealand. The primary distinction for Silver Fern Farms lies in the classification of tallow sold for Biofuel production and the sale of skin and hides: under the Kai Commitment definition, these are considered food waste, whereas WRAP does not classify them as such.

	Food Loss Waste Kai Commitment definition	Food Loss Waste WRAP definition	Progress to Kai Commitment Target
2023	15.6%	0.86%	(baseline year)
2024	16.6%	0.82%	6% increase against baseline

Exclusions

Kai Commitment food waste excludes the sale of skins and hides sold as intended (for example for leather products) and includes skins and hides that were not sold as intended (for example those that were composted or sent to landfill). WRAP data includes the sale of skins and hides sold as intended and skins and hides that were not sold as intended.

Pharmaceutical sales and any food waste in wastewater have been excluded.

2 https://kaicommitment.org.nz/

Coal Out

In addition to our sustainability linked loan targets, Silver Fern Farms has set progressive targets to achieve its commitment to coal-out by 2050.

Coal Use (baseline - 37,204 tCO_2e in 2018)	Reduction to date (%)
Halve coal use to 18,602 tCO_2e by end of 2026	92.8% (in progress)
Phase out coal use to zero by end of 2030	46.4"% (in progress)

Customer metrics

Along with our internal science-aligned climate, coal use, and sustainability linked loan targets, customers undertake assessments of our sustainability credentials using Silver Fern Farms submitted data. These provide an opportunity to capture sustainability premiums as we are benchmarked against other suppliers in the category.

Thesis[2] is a performance assessment system used by retailers and suppliers to benchmark sustainability performance within manufacturing sectors. Silver Fern Farms' participates in this benchmarking for a key customer. Our submitted information for the organisation and for beef supply is analysed and ranked within the tool.

In 2024 our Thesis Supply Chain Sustainability Beef assessment was 82%, and we were ranked first within the Woolworths Beef category.

Other metrics

We have included the key performance indicators that were considered relevant to this disclosure. In future disclosures we will add additional metrics as appropriate and as the data is available.

2 https://sustainabilityconsortium.org/thesis/

SILVER FERN FARMS

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Good by nature

Climate-related Disclosures