



SunRice transforms natural resources into nourishing and delicious food products globally. Our success depends upon the sustainability of our environment and our ability to respond and adapt to a changing climate as it impacts that environment. The SunRice strategy and risk management approach has reflected this over many years, leading to our development of a diversified rice supply chain and a strong agricultural research and development agenda.

But as the frequency and severity of extreme weather events increase, it is even more important that our strategy, governance, and risk management practices remain responsive to these changes and for the potential impacts on SunRice to be transparently communicated.

We are committed to action and to playing our part in achieving the goal of the Paris Agreement – limiting global warming to well below 2°C and targeting 1.5°C.¹ Irrespective of our ambition and commitment, we nonetheless must prepare for and proactively manage risks and opportunities arising from an alternative scenario where this goal is not achieved.

It is in this context that SunRice voluntarily committed to progress towards adopting all of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In FY2022, we completed a formal scenario analysis to further embed this approach in the Group's strategy and reporting. This work is aligned with our commitment to achieve net zero by 2050 at the latest and is supported by our commitment to set near-term company-wide emission reduction targets with the Science Based Targets Initiative (SBTi) in line with climate science.

# Our approach to scenario analysis

Climate scenario analysis can be a powerful tool to allow organisations to articulate potential risks and opportunities as a result of a changing climate. Per the TCFD, scenarios are hypothetical constructs that provide a way for organisations to consider how the future might look if certain trends continue or certain conditions are met.2

SunRice undertook a climate scenario analysis exercise to develop three distinct scenarios: The Green Road (below 2°C), The Wake-up Call (2–3°C) and Climate Inaction (above 4°C). Each climate scenario describes a plausible set of environmental, government policy, economic, and socioeconomic changes associated with a defined temperature outcome.

The approach involved broad consultation with SunRice Directors, senior members of our leadership team, and subject matter experts in logistics, consumer insights, agronomics, nutrition, research and development, packaging, finance, legal, procurement, engineering, sales and marketing, sustainability, operations and risk. Employees across all business units and global operations of the SunRice Group were involved.

The process considered the impact of these scenarios on the current SunRice business model and our Growth Strategy and identified the most material risks and opportunities that may occur under each of the three climate scenarios. The range of strategic responses to these risks and opportunities was also considered, some of which are already in place or being actively pursued.

- 1. Above pre-industrial levels by the end of the century.
- 2. Recommendations | Task Force on Climate-related Financial Disclosures (fsb-tcfd.org).

#### Climate scenarios

The climate scenarios prepared are based on the sixth assessment report from the Intergovernmental Panel on Climate Change (IPCC) released in August 2021. They incorporate both the Representative Concentration Pathways (RCP) and Shared Socioeconomic Pathways (SSP) global models that have been translated into SunRice's specific scenarios and enhanced with additional research that is relevant to the SunRice business and geographical operations.

While SunRice's scenario analysis process described three plausible scenarios, the research utilised to support these scenarios is not static, and the likelihood of any one scenario eventuating is considered to be equal to another scenario. SunRice will continue to review and monitor the evolution of our environment and leverage available science information to update scenarios in the future.

## A summary of each scenario is provided below.



# The Green Road (below 2°C)

The world quickly shifts to decarbonisation, limiting fossil fuel consumption and implementing coordinated climate policy to curb emissions. This scenario sees high levels of private and public investment into technology supporting decarbonisation and a strong societal change demanding a different approach to production and consumption.

## By 2030:

- Global carbon price upwards of \$130/t CO2-e
- Immediate acceleration of investment and deployment of decarbonisation technologies
- Society increasingly conscious of environmental impacts, increasing plant-based consumption

# By 2050:

- Cost of logistics, which rose significantly to 2040, begin to decline as transport systems switch to nonfossil fuel alternatives
- Packaging taxes for non-circular products
- Land-use focuses on high-calorie production and carbon sequestration
- Heatwaves and severe rainfall events significantly more frequent and intense, slight increase in time spent in extreme drought in the Riverina
- Climate migration in low-latitude countries



# The Wake-up Call (2-3°C)

Current policy settings remain in place in the near term with a significant change in global approach from 2030 onwards. This shift sees rapid implementation of climate policy, with a very high carbon price implemented globally, and those industries that cannot decarbonise being stranded. Physical impacts cause moderate economic damage globally.

# By 2030:

- Disaggregated climate policy exists globally, with leaders and laggards forming. Border adjustment carbon pricing is applied in leading markets
- Fossil fuel consumption decreases slowly but steadily, impacting farming and transport practices
- Physical climate change impacts begin to affect the global economy, initially in the low latitudes
- Significant and rapid decisions taken to implement climate action as 2030 approaches

### By 2050:

- Global carbon price in excess of \$200/t CO2-e
- Industries that are unable to decarbonise become stranded. investment in technology is focussed on absolute necessity sectors, including agriculture
- Extreme heat days increase by 50%, highest daily maximums reach >5°C above pre-industrial levels. Moderate increase in time spent in extreme drought in the Riverina, increasing variability in rice yields
- Climate migration in low-latitude countries



# **Climate Inaction (above 4°C)**

Global climate policy settings remain stable or regress, leading to a world in which global warming reaches upwards of 4°C by the end of the century. Fossil fuel use continues at current rates into the 2040s, and economic decline in the 2050s impacts all aspects of the global economy.

#### By 2030:

- No additional climate policies introduced, some markets regress their climate stance
- Widespread droughts occur twice as often
- 1 in 50 year heatwaves are 9 times more frequent and 2°C more intense, increasing risks to personal safety

# By 2050:

- Global mean temperatures increase 3°C, time spent in extreme drought in the Riverina increases by 10%
- Agricultural yield varies significantly year-on-year and nationalistic policies are implemented to protect national interests
- 1 in 50 year heatwave events are 26 times more frequent with temperatures 4°C higher than pre-industrial averages
- Global supply chains are significantly disrupted by economic crises and physical impacts
- Sea levels rise, creating impacts for low-lying agricultural regions
- Climate migration in low-latitude countries

#### **Climate-related themes**

Our process identified specific risks and opportunities with two key themes, which are outlined below. It also generated a high degree of internal engagement and learning opportunities, increasing the general level of awareness and understanding of climate change and its related impacts on current and future strategic and operational issues.

# A. Increasing complexity in global supply chain demands a continued and renewed focus

A changing climate under all scenarios will increase the importance of effective management of sourcing and logistics through a flexible supply chain. This is due to two key supply chain risks: the risk of identifying a reliable source of quality products which can be procured to meet consumer demand, and the risk of the increasing complexity of transporting such products to relevant global markets without significantly increasing the cost of goods.

Under The Green Road and The Wake-up Call scenarios, the implementation of a global price on carbon presents cost challenges to supply chains which are fossil fuel-driven, and leads to increased production costs for suppliers of key SunRice products and inputs. Further, the physical impacts experienced under all scenarios continue to disrupt supply chains as severe weather events damage infrastructure and cause delays to shipments of products.

Under the Wake-up Call and Climate Inaction scenarios, entire regions become unsuitable for rice growing (deltas and low-lying arable lands). Our existing strategy of early identification of suitable growing regions for short and medium grain rice becomes more important.

An increasingly erratic climate also influences consumer preferences in certain markets. A shift to support decarbonisation leads to increased prevalence of plant-based meals, therefore impacting consumption behaviours and expectations from corporations in general and SunRice in particular. This presents opportunities for our Global Rice business with an increased role for rice to play in the overall human nutrition profile.

# Strategies and mitigation:

Insights from the climate scenarios will form part of the suite of information and data used such as business intelligence and other macro-economic analysis to inform the Group's strategy and to enhance our diversification approach and our local presence in geographically distant sourcing regions. Insights from disruptions brought by COVID-19 have also been integrated into our climate risk mitigation and global sourcing strategy. In addition, we will continue to expand our view of consumer insights to understand specific opportunities created by changing consumer climaterelated preferences and intend to optimise our supply chain to reduce emissions in accordance with our commitments.

# B. Climate-related challenges to rice production volumes globally demands continued and targeted focus on research and development

Physical impacts on agricultural systems will affect the ability for our growers and suppliers to produce high quality products in the regions we currently rely on. Access to water, increased severity of damaging weather events, and more frequent and intense droughts will weigh on production expectations.

Supporting growers through the development of more resilient crops will be increasingly important as chronic climate change accelerates under the Wake-up Call and Climate Inaction scenarios. While SunRice already supports research and development of resilient and more efficient crops, continuing to identify future risks to growers and developing solutions to these risks will remain a priority to source rice and supply our markets with high quality products.

As we enter into new growing regions, the ability to provide resilient crops and resilient farming techniques can ensure we mitigate the worst impacts of climate change on our supply

Additionally, in the Green Road scenario, management and reduction of emissions related to agricultural production will become increasingly important.

The emergence of a price on emissions (between \$130/t and \$200/t for carbon depending on the scenario) from agricultural production, will pose a challenge to our growers and our operations.

SunRice has a key role to play in supporting a reduction in emissions from rice production and to partner with growers in a transition to lower emission practices, limiting their potential production cost increases and the impact of rice production on global emissions. The Australian rice industry's focus on specific practices which can have the impact of reducing emissions provides a natural advantage and leverage for SunRice which, once appropriately documented, can be leveraged in other markets.

# Strategies and mitigation:

SunRice is well placed to respond to this opportunity by continuing to develop its research and development programs that focus on improving rice varieties and agronomic practices that reduce emissions and water use. While SunRice currently uses selective breeding techniques as part of the Pure Seed Program, the changing climate conditions and the need to feed an increasing population may challenge this approach in the future. The inclusion of a program which explores genetically modified rice may become necessary or inevitable.

The nutritional expertise of our CopRice business has been leveraged to develop formulations and additives in stockfeed that contribute to reduce emissions. This work will continue to gain momentum to support downstream customers in their emission reduction objectives.

# Summary of risks and opportunities<sup>3</sup>

Through multiple workshops, SunRice has identified and assessed six climate-related risks, three climate-related opportunities and two that are both a risk and an opportunity for the Group:







Below 2°C Scenario

2°C-3°C Scenario

Above 4°C Scenario

# Risk



Reduction in average volume of Riverina rice harvested and/or large variability in crop size year-on-year

Physical: Chronic







Shipping and supply chain disruption

Physical: Acute Transition: Policy







Research and development towards climate crop resilience

Physical: Chronic **Transition:** Policy

**Opportunity** 









Change in consumer preference and demand for environmentally friendly products

# Transition:

Market and reputation







Operational and technological advancement improving the effectiveness and carbon footprint of our manufacturing process

# Transition:

Technology and Policy













## Both



Redefinition of our global sourcing network

Physical: Chronic







Implementation of a carbon price on agricultural production

# Transition: Policy







Impact of severe weather events on assets

Physical: Acute









Geopolitical risk

Physical: Chronic







Reduction in rural labour market and agricultural workforce wellbeing

Physical: Acute







Perceived inaction to understand and manage climate risks

# **Transition:**

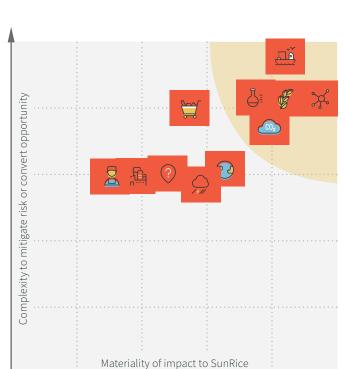
Legal and Reputation







3. **Physical risks:** Risk of direct damage to assets and property due to changing climate condition, more frequent and intense weather events. Includes acute (event driven) risks and chronic (longer-term) risks. **Transition risks:** Risk of disruption from adjustment to lowcarbon economy due to policy, technology, social changes. Includes market (varied and complex) risks and reputational risks. For further  $detail\ see\ \underline{Recommendations\ of\ the\ Task\ Force\ on\ Climate-related}$ Financial Disclosure.



Risks and opportunities most material to SunRice

# The following table provides further details on the various risks and opportunities.

Risk / opportunity or both

#### Risk or opportunity description

#### Strategic initiatives to mitigate risks and convert opportunities

**Materiality of impact** 



### Redefinition of our global sourcing network

**Risk and opportunity** 

Physical: Chronic





Under both scenarios, climate conditions in certain rice growing regions are projected to worsen.

The Mekong Delta in Vietnam and other lowlying regions are particularly vulnerable to rising sea levels and saltwater intrusion while other regions like India, Australia and the U.S. will become drier and hotter.

On the contrary, other rice producing regions like Northern China and South America are predicted to be less impacted by drastic changes in climate creating significant opportunities for SunRice.

Most initiatives described below are already implemented:

- Continuous monitoring of climate science and conditions in current and potentially future growing rice regions.
- Geographical diversification of the Group's international supply sourcing strategy and operational facilities, as a hedge against climatic variability in different parts of the world.
- Development of new or young rice growing regions planting Australian origin varietals.
- Continuous investment in consumer preference insights and brand tiering strategy to identify substitutable rice origins.

Potential for significant and ongoing risk and opportunity on both established and emerging sourcing origins or regions that may become suitable in the future for large scale rice production.

#### Timeframe of impact:

5-10 years overall with progress expected in shorter term



# Implementation of a carbon price on agricultural production

**Risk and opportunity** 

Transition: Policy





For both scenarios a price on greenhouse gas (GHG) emissions, including on agricultural production, is predicted to be implemented creating the potential for production cost inflation and a shift in the consumer consumption habits.

Opportunities however exist to reduce emissions in rice production by leveraging existing research and development in the Australian rice system, and to abate the release of GHG within SunRice's operations or the operations of its suppliers.

- Continued investment in research and development of rice varieties and production techniques reducing the global emissions footprint. More specifically in Australia, leveraging our integrated supply chain advantage and the direct relationship with Australian growers to partner with them on reducing "on-farm" GHG emissions as part of our Rice Emissions Reduction
- Partnering with our customers to develop supplementary feed additives reducing GHG emissions from ruminants.

Potential for material financial risk and moderate opportunities.

#### Timeframe of impact:

3–5 years depending on locations



## Research and development towards climate crop resilience

**Opportunity** Physical: Chronic **Transition:** Policy







Under all scenarios, physical manifestation of chronic alteration of climate will impact agricultural yields.

Developing resilient crops capable of withstanding more extreme conditions (e.g. heat, cold, salinity, drought) may become a necessity.

Consumer sentiment, and policy restrictions which currently restrict Genetically Modified Organisms (GMO) uptake may shift, representing for SunRice a new avenue to explore.

- Acceleration of our breeding research and development program to develop shorter season varieties whilst maintaining and improving crop yield.
- Continuous monitoring of consumer preferences, regulation, and technology evolution for potential GMO uptake.
- Specific investment in research and development programs with key regions to support R&D into climate friendly rice crops and practices and identify potential value for growers and other supply chain stakeholders.
- Australian Rice Emissions Reduction program as above.

Potential for material opportunities on SunRice's sourcing capabilities.

# Timeframe of impact:

>10 years overall with progress expected in shorter term

Risk or opportunity description

Strategic initiatives to mitigate risks and convert opportunities

**Materiality of impact** 



Reduction in average volume of Riverina rice harvested and/or large variability in crop size year-on-year

Risk

Physical: Chronic







Under all scenarios, a change in climatic conditions, water or carbon policy may present a situation influencing our supplies of Australian rice. In the most extreme scenario, droughts in the Riverina could increase in frequency and severity, with an increase of between 2% and 10% of time spent in extreme drought.

This poses a risk to rice supply and to utilisation of Australian production assets introducing variability in our earnings profile as well as creating challenges in respect of retaining Australian-based rice industry knowledge and expertise.

The risks outlined are not new to SunRice. Mitigating actions have been tested and their efficiency has been proven, as evidenced by the Group's ongoing growth in line with strategy. Such actions will continue with a focus on continuous improvement in our ability to respond and adapt, including:

- Continuing to engage with state and federal government authorities to improve general security water allocation for agriculture in the Riverina and to look for partnerships to secure the future of the Australian rice industry.
- Management of stock carryover and production cadence to stretch our crop consumptions over periods of drought.
- Attractive paddy prices and overall agricultural value proposition to maintain and grow the pool of rice growers (e.g. yield and productivity improvements, soil regeneration).
- Research and development investment (refer to above).
- The continued diversification and investment in our global sourcing network (discussed above) provides further mitigation.

Potential for material financial impact

Timeframe of impact: > 10 years



## **Shipping and supply** chain disruption

Risk

Physical: Acute

**Transition:** Policy







Under all climate scenarios, tropical cyclones, typhoons and flooding episodes are projected to increase in frequency and intensity.

Shipping routes and supporting infrastructure (roads, ports, and other logistics equipment) may be significantly impacted, increasing the likelihood of damaged products during transit and challenging SunRice's ability to provide product on time and in full, missing out on sales opportunities.

The introduction of a carbon tax or other shipping regulation for greener vessels to be used may temporarily limit cargo availability and increase supply chain cost.

SunRice, like many other companies, has successfully been navigating supply chain disruptions brought by COVID-19, limiting adverse impacts on profitability. Mitigating actions include:

- Diversified and strong contractual relationships with shipping companies.
- A broad network of supply options available for shortening supply chain and reducing distances between the origin of supply and the end customer.
- Consideration of strategically placed stock holding hubs.
- Investing in supply resilience by broadening the pool of strategic suppliers.
- Management of portfolio complexity and continuous partnership with customers to adapt recipes when specific ingredients aren't available or are at a prohibitive cost.

Potential for significant and ongoing financial impact

> Timeframe of impact: 3-5 years

# Risk / opportunity or both

#### Risk or opportunity description

scenarios, extreme weather events such as

tropical cyclones, typhoons, bush fires and

floods are projected to increase in intensity.

severe rainfall or storm events may impact

facilities used to process or store rice and result in periods when certain assets in the

SunRice system are unavailable or damaged.

An increase in frequency or intensity of

#### Strategic initiatives to mitigate risks and convert opportunities

#### **Materiality of impact**



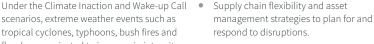
## Impact of severe weather events on assets

Risk

Physical: Acute







- Asset resilience assessments and plans.
- Up-to-date business continuity plans.

Considered to have moderate to minor operational downtime and safety risks

Timeframe of impact:

<3 years



# Geopolitical risk

Risk

Physical: Chronic **Transition:** Policy









This may impact trade flows and food security in some regions.

- Leveraging and strengthening existing supply chain globally to improve flexibility and secure sourcing options.
- Leveraging expertise in product storage to review potential for additional localised storages.
- Leveraging relationships with long term supply partners and ongoing Government engagement.

Potential for moderate impact

Timeframe of impact:

>5 years



# Reduction in rural labour market and agricultural workforce wellbeing

Risk

Physical: Acute





Under the Climate Inaction scenario. economic activity could be reduced due to extreme heat affecting labour conditions. Agricultural regions around the world (and notably in Australia, India and South-East Asia) may see a decrease in production yields impacting in turn global food supply.

- Continuous investment in safety measures and improved working conditions to protect workers.
- Additional investment in equipment and facilities.

Considered to have a minor impact

Timeframe of impact:

>10 years



# Perceived inaction to understand and manage climate risks

Risk

# Transition:

Legal and Reputation







Investors (equity and debt) who perceive lack of appropriate action to manage climate-related risks may limit investment or take legal action against the company.

Other SunRice stakeholders' decisions (such as suppliers, customers, end consumers and employees) may also be influenced by the effective management of climate-related risks, affecting the Group's operations.

- Continue to proactively engage with key stakeholders to understand expectations of climate-risk management and SunRice's performance in this area.
- Commitment to reduce emissions (Net Zero target achieved by or before 2050) and support global decarbonisation in line with climate science with the Science-Based Targets initiative (SBTi).
- Disclosure of climate risk management, and alignment with better practice reporting including TCFD.

Considered to have a minor impact

Timeframe of impact:

3-5 years

#### Risk / opportunity or both

# Risk or opportunity description

Consumers are expected to become

increasingly aware of the environmental

impact of their food, moving to plant-based

diets and reducing the food miles associated

with products. Providing locally sourced,

for SunRice in the Green Road scenario.

high-quality rice will present opportunities

#### Strategic initiatives to mitigate risks and convert opportunities

# Materiality of impact



# Change in consumer preference and demand for environmentally friendly products

**Opportunity** 

**Transition:** Market and Reputation





SunRice has mature processes in place to understand consumer sentiment and demand for products, and to capitalise on opportunities (innovation, new product development, broad portfolio of brands).

Opportunity considered to have a moderate financial impact

Timeframe of impact: >5 years



Operational and technological advancement improving the effectiveness and carbon footprint of our manufacturing process

Opportunity

**Transition:** Technology and Policy





In the Green Road scenario a decarbonised economy will require a managed approach to resource allocation and efficiency. This will provide opportunities to reskill labour, optimise energy use in production, reduce waste, and cooperate with partners to develop improved technological outcomes for current processes and practices (notably packaging).

- Partnerships within the rice industry and across other industries to develop materials and products supporting a transition to a decarbonised economy.
- Flexible manufacturing processes to respond to evolving technologies.
- Invest in circular economy beyond our current valorisation of by-products and support emerging sectors such
- Progress on net zero pathway to improve efficiency and transition to renewable energies.

Opportunity considered to have a minor financial impact

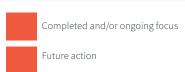
Timeframe of impact: 3-5 years



# **Progress and Next Steps**

An overview of SunRice's progress since committing to adopting the recommendations of the TCFD and the next areas of focus is included below.

TCFD Elements	Actions	Progress			Commentary
		FY2020	FY2021	FY2022	
Governance The organisation's governance around climate-related risks	Embed Board governance approach to climate-related risks in Board Committee structure				Board oversight of climate-related risks and opportunities delegated to the Finance Risk and Audit Committee which reviews and challenges Management on risk management, monitors risk appetite compliance and endorses strategy, material investment decisions and annual budgets having regards to climate considerations
					Expanded Safety, Health and Environment Committee to include Sustainability, renamed Safety, Health and Sustainability Committee (SHS Committee). SHS Committee has oversight of Group climate-related targets and will provide support and advice to the Finance Risk and Audit Committee on climate-related issues, including progress towards Group targets. The SHS Committee has climate competency and experience
	Embed management's role in assessing and managing climate-related risks and opportunities				TCFD steering committee formed, headed by the SunRice Group CFO and Company Secretary (membership updated to reflect move of sustainability function into Company Secretary function)
					Dual responsibility delegated to the Group Risk management and sustainability functions in respect of implementing TCFD recommendations including actions to progress recommendations, and monitoring and reporting of climate-related issues
Strategy The actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	Climate-related risks and opportunities are identified over the short, medium, and long term				Climate-related strategy incorporated into global supply chain diversification and specifically considered and called out in risk management system (for FY2020)
	Impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning are considered				Completion of climate scenario analysis and assessment, through business-wide workshops of the main risks and opportunities for each scenario
	Resilience of the organisation's strategy, taking into consideration different climate-related				Incorporation of the risks and opportunities into strategy updates and financial planning
	scenarios, including a 2°C or lower scenario is considered				Continue to develop and update scenarios



TCFD Elements	Actions	Progress			Commentary
		FY2020	FY2021	FY2022	
Risk Management The processes used by the organisation to identify, assess, and manage climate-related risks	The organisation's processes for identifying, assessing and managing climate-related risks				Climate-related risks incorporated into the Group risk management framework. They are periodically monitored and reported to the Finance Risk and Audit Committee (for FY2020)
					First TCFD disclosure document released outlining climate Scenario process for identifying risks
	Alignment into the organisation's overall risk management				Material investment decisions (merger and acquisition, global sourcing expansion, innovation and product development etc) consider climate matters
					Establish a working group for assessing and reporting financial impacts of climate-related risks and opportunities
Metrics and Targets The metrics and targets used to assess and manage relevant climate-related risks and opportunities	Metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process				Commitment to SBTi and initial short term target disclosed
					Establish working group for aligning targets to strategy and risk management and to identify key climate indicators for continuous monitoring to inform operational and strategic decisions
	Continued disclosure of Scope 1 and Scope 2 emissions				Scope 1 and 2 GHG disclosed in AR. Continue to disclosure and work towards SBTi validated target
	Scope 3 emissions analysis for management and future reporting				Work towards SBTi validated target and disclosure of Scope 3 emissions (including detailed scope 3 boundaries). Outline process for rice-related scope 3 disclosures
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets				Work toward SBTi validated targets



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