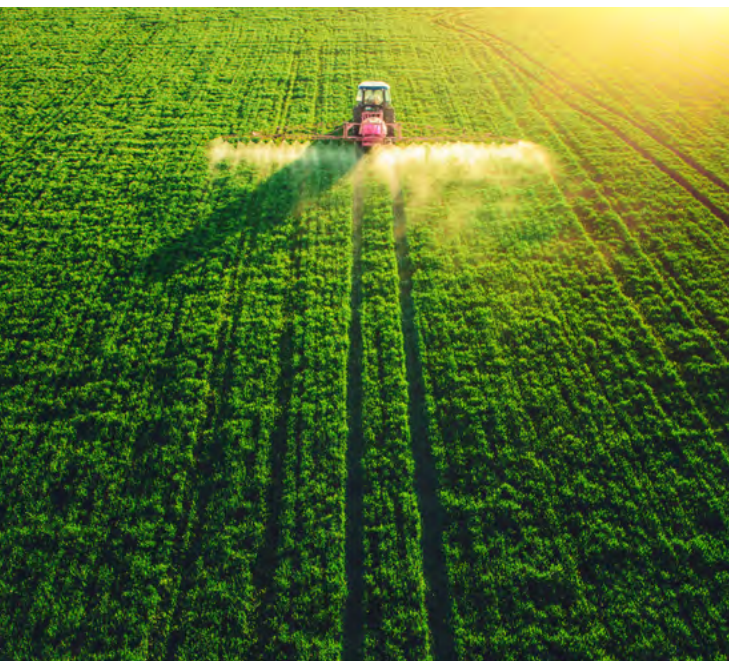




# TCFD Report

2023







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# Introduction

The Task Force on Climate-related Financial Disclosures (TCFD) framework provides capital markets with decision-useful information on an organization’s climate risks and opportunities.

This is Bonnefield Financial's inaugural TCFD report.

TCFD is not new to Bonnefield. In 2020, Bonnefield publicly supported the TCFD. Bonnefield made a partial public TCFD disclosure the same year, and again in 2021.

However, Bonnefield undertook an in-depth internal process in 2023 that resulted in cross-functional information to disclose in accordance with the TCFD recommendations.

This report reflects the findings organized under the recommended disclosure topics:

- Governance
- Investment Strategy
- Risk Management
- Metrics

This report is based on Bonnefield’s investment portfolio as at December 31, 2022. At that time, Bonnefield’s investment funds solely managed farmland.



## Bonnefield Financial by the Numbers

2009	\$1.4 Billion	6 <sup>1</sup>
Inception	Assets Under Management	Managed Investment Vehicles
34	139K	112
Employees	Acres Under Management	Tenant Farmers

## Provinces Operated In



British Columbia • Alberta • Saskatchewan  
Manitoba • Ontario • New Brunswick • Nova Scotia

# Executive Summary

Key Bonnefield Taskforce on Climate-related Financial Disclosures for the 2022 calendar year include:



Governance

### Board Oversight

The Board is responsible for fostering a risk management culture, approving the Climate Change Policy, and receiving climate-related information from management.

### Management Responsibility

Bonnefield management, led by the Investment Committee, makes operational and risk management decisions that are required to implement and report on the Climate Change Policy.



Strategy

### Risks and Opportunities

Bonnefield is experienced in evaluating climate-related risks and opportunities from the perspective of farmland portfolio management. Bonnefield has identified a number of significant climate-related opportunities and risks.

### Financial Impacts

Under Bonnefield’s Core farmland investment strategy, there are currently more financially significant opportunities than risks from the impacts of climate change.

### Scenario Analysis

Scenario analysis reveals that the Core farmland investment strategy is resilient to the potential future impacts of climate-related policies, market behavior and technology, as well as climatic changes.



Risk

### Identifying and Assessment

Bonnefield has a comprehensive process to identify and assess significant climate-related risks that could contribute to the volatility of investment returns.

### Management

Bonnefield uses a variety of risk management processes to manage or mitigate significant climate-related risks.

### Integration

Bonnefield’s climate risk management process is a well-integrated component of its overall risk management system.



### Metrics

### Description

Key climate-related risk management metrics include:

- Cultivated acres practicing sustainable crop rotation: 97%
- Cultivated acres with a third-party agrologist inspection: 100%\*
- Assets at elevated risk of heavy rainfall inundation: 6%

### Greenhouse Gas

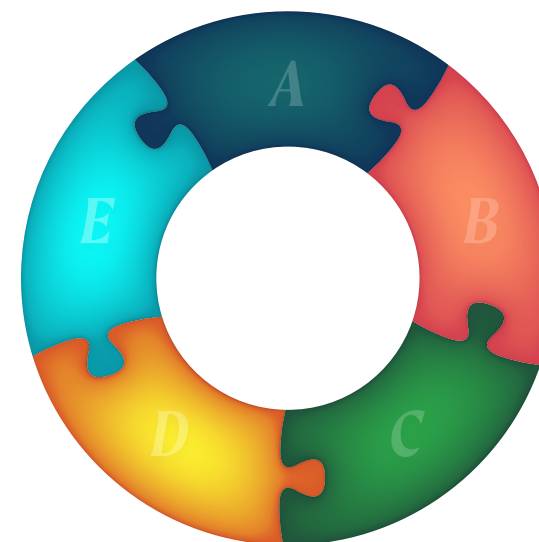
Bonnefield has no significant sources of Scope 1 or 2 emissions as defined by the Greenhouse Gas Protocol since it does not operate its farmland properties, but has estimated the Scope 3 emissions associated with tenant’s operations. Bonnefield includes 100% of its cultivated farmland acres in its GHG calculations.

\*Rounded



# Governance

Bonnefield's climate governance is based on a matrix model where some key individuals participate at more than one level. This interactive governance model supports climate change **decision-making and risk management** from the top down.



- A Board**  
Climate-related policy, oversight, and management accountability
- B Investment Committee**  
Decisions on climate-related recommendations in investments and capital expenditures
- C Partners/Senior Principals**  
Advocate for climate-related recommendations for their portfolio
- D Investment Management Team**  
Climate-related investment and asset evaluations and recommendations
- E ESG Working Group**  
Cross-functional information interchange on relevant climate change issues

## Metrics and qualitative examples

Communicate materiality and importance into climate-related processes





# Strategy

Incorporating climate change into investment strategy starts with knowledge of the key risks and opportunities.

Climate change’s role in the overall Canadian Core Farmland investment strategy is increasingly validated by Bonnefield’s firsthand experience.

The experience to date is that opportunities from climate change outweigh the risks.

## Risks and Opportunities

- There are two sources of risk and opportunity in Bonnefield’s assessment:
- Economic transition to a low carbon economy
    - If an economic transition occurs it will be associated with profound economic impacts.
  - Physical impact of changing weather
    - Whether or not an energy transition occurs, there is a risk of increasing severe weather.

In accordance with TCFD, these are the categories Bonnefield uses in its assessment of climate-related risks and opportunities:

### Economic Transition

- Government Policy
- Market Influences
- Technological Change

### Physical Change

- Acute (Extreme) Weather Events
- Chronic Weather Pattern Changes

# Economic Transition

## Risks

### Policy Risks

GHG emissions reduction policies are identified as a significant potential risk as they might increase operating costs. Policies to increase energy efficiency are also potentially important.

The value of fund investments is not expected to be impacted because other factors would counteract the impact of cost increases.

### Market Risks

A potential market risk is pressure on Bonnefield tenants to adopt regenerative agriculture practices. It would cause a short-term increase in operating costs. The value of fund investments is not expected to be impacted because the cost increases would be offset by lower operating costs particularly due to reduction in inputs.

## Opportunities

### Policy Opportunities

- Potential policy changes that could create opportunities include:
- Establishing a trusted and well-functioning market for carbon offsets
  - Creating more demand for carbon offsets from Net Zero emissions
- as they would facilitate the sale of carbon credits. This could be an potential source of revenue that is uncorrelated with tenant rents.

### Technological Opportunities

- Technological progress spurred on by climate change provides significant opportunities including:
- Technological breakthroughs simplifying high-tech farming practices
  - AI-driven “big data” driving continuous operational improvement
- The potential impacts of technology including:
- Maintaining or increasing crop yields despite the physical risks of climate change
  - Decreasing operating costs
  - Facilitating the advancement of carbon markets



# Physical Change

## Risks

### Acute Weather Events

The most significant acute weather-related risks to Bonnefield’s farm assets are heavy rainfall inundation (pluvial flooding), extreme heat waves, and hail. Increased incidents of extreme weather could potentially cause crop damage, soil erosion, uninsured losses and diminished asset values in high-risk locations

### Chronic Weather Pattern Changes

The most significant chronic climate-related risks are drought, increased weather variability and unpredictability, rising average temperatures and heat stress, and increased precipitation. In the event these incidents increase, potential impacts include damage to crops and assets, increased disease and fungus, and reduced asset values in high-risk locations.

## Opportunities

### Acute Weather Opportunities

While climate change is likely to increase incidents of extreme weather, Bonnefield focuses on assets that are:

- In regions where extreme weather impacts are less likely
- Have site characteristics that protect from extreme weather damage

In addition, Bonnefield assets demonstrate additional physical risk resilience due to the risk management system’s focus on soil health.<sup>2</sup>

The impact of this opportunity is that Bonnefield assets could potentially see:

- Increased demand
- Increased valuations

### Chronic Weather-Related Opportunities

Chronic weather changes to Canada’s traditionally cold climate are increasing farm productivity and the amount of arable land. The opportunities arising from this include:

- Increasing average temperatures and growing days
- Increasing ability to grow higher-value crops

The potential impact is to increase the value of fund assets:

- In locations with increasing yields
- In locations that are (or will be) able to grow increasingly higher-value crops
- That can demonstrate continued access to water





# Testing Resiliency of Investment Strategy Through Scenario Analysis

TCFD disclosures include reporting the outcome of scenario analysis<sup>3</sup>. In scenario analysis, investment managers examine climate-related risks and opportunities under different scenarios to determine how they are affected, and how to manage them.<sup>4</sup> In addition, scenario analysis may identify significant new risks and opportunities.

Scenario analysis is intended to support investment strategy. By challenging “status quo” assumptions about the future, scenario analysis encourages lateral thinking in the Investment Management Team about important risks and opportunities.

The three scenarios selected for analysis are all generally accepted scenarios developed by leading international organizations. They all have aspects that are well-suited to test the resiliency of Bonnefield’s risks and opportunities.

- 1. **Smooth Transition to a Low Carbon Economy Scenario**  
(International Energy Agency – Net Zero Energy 2022 Scenario)<sup>5</sup>
- 2. **Disruptive Transition to a Low Carbon Economy Scenario**  
(Inevitable Policy Response – Forecast Policy Scenario)<sup>6</sup>
- 3. **Middle-of-the-road Emissions Only Scenario**  
(UN Intergovernmental Panel on Climate Change (IPCC) 6th Assessment – Middle of the Road Scenario (SSP2-4.5))<sup>7</sup>

The time period for scenario analysis is present day to mid-century. Summaries of the key details of the scenarios relevant to Bonnefield’s risks and opportunities are in the Appendix.

Bonnefield uses the detail in the scenarios to **qualitatively** evaluate any changes to the importance of a risk or opportunity.

The qualitative finding was that there are more opportunities than risks under the two Transition scenarios and the Emissions Only Scenario.

In addition, a number of new opportunities were identified that would create additional revenue and diversify revenue sources from farms.

Bonnefield’s Investment Management team and the other professionals that support them have a deep understanding of the range of possibilities that may affect the outcomes of investment decisions. This understanding supports risk management.

Overall, the results of analysis of all three scenarios is that within and beyond the investment time horizon the current strategy is appropriate and resilient.







# Risk Management

Bonnefield’s risk system is focused on managing significant risks that could cause return volatility.



The risk management system uses multi-faceted controls such as diversification, insurance or other techniques.

Climate-related risks are managed within the following key elements of the risk management system:

## Portfolio Risk Controls

- Core investment philosophy
- Policies/guidelines on risk exposures
- Diversification strategies

## Risk Control through Underwriting Practices

- Evaluating and quantifying potential financial impacts of risks

## Risk Control through Investment Governance

- Investment Committee assesses risk evaluations
- Determines acceptable additional risk exposures to portfolios

## Leasing

- Tenant selection and diversification
- Lease alignment with asset management controls

## Active Asset and Property Management

- Mitigate climate-related risks during ownership period through:
  - Capital investments
  - Lease management
  - Property management
  - Monitor potential risks

## Research and Analysis

- Research program supports risk management
- Quantification of financially important ecological and sustainability characteristics



# Metrics

## Snapshot of Bonnefield’s Key climate change metrics for 2022.

Quantitative information is key to Bonnefield’s climate change management. In 2022, Bonnefield completed its initial Greenhouse Gas Emissions inventory and updated annual metrics on other indicative sustainability variables. Trends in metrics identify opportunities to improve risk management related to climate change.



**33,000**  
**Metric Tonnes**  
of Greenhouse Gas Emissions<sup>8</sup>

Based on 100% of Bonnefield’s farmland investments



**97%**  
**of Farmland**  
practicing sustainable crop rotation<sup>9</sup>

Protect against climate change



**99.8% of**  
**cultivated acres**  
required to report under Bonnefield’s  
Standard of Care<sup>10</sup>

Focus on governance and risk management



**98%**  
**of assets**  
reporting average or above average  
organic matter content<sup>11</sup>

Crop health to support resiliency



**100%**  
**of Farmland**  
inspected by third-party agrologist<sup>12</sup>

Identify climate risks and opportunities



**6% of Farmland**  
at elevated risk of flooding  
in very heavy rainfall<sup>13</sup>

Risk management focus





# Conclusion & Recommendations

Bonnefield’s Core Farmland investment strategy produces more financially significant opportunities than risks from the impacts of climate change. This conclusion is based on Bonnefield’s internal process undertaken in 2023 to evaluate the impacts of climate change during its investment horizon.

This finding was supported by a qualitative scenario analysis of climate-related risks and opportunities beyond the current investment horizon. In addition, the process identified new potential opportunities.

An investment strategy that is net positively affected by climate change is supported by an effective governance and risk management system that works to mitigate climate-related risks.

Bonnefield is building and evaluating metrics that help the organization to assess its performance on climate change management.



# Appendix

## Scenario 1 – International Energy Agency (IEA) Net Zero Energy (NZE) 2022 Scenario

Net Zero Energy is a scenario that describes a smooth, streamlined economic transition to a low fossil fuel energy system. This scenario envisions the average global temperature increase held to 1.5 °C by 2050 increase through a wholesale drop in carbon-only emissions.

The transition occurs without disrupting the economy or growth rates due to global government climate policy coordination, and investments in infrastructure (e.g., green grids) and new technology on a massive scale, which is economically highly stimulative. There is no discussion about the food system in this scenario.

## Scenario 2 – Principles for Responsible Investment’s Inevitable Policy Response (IPR) Scenario

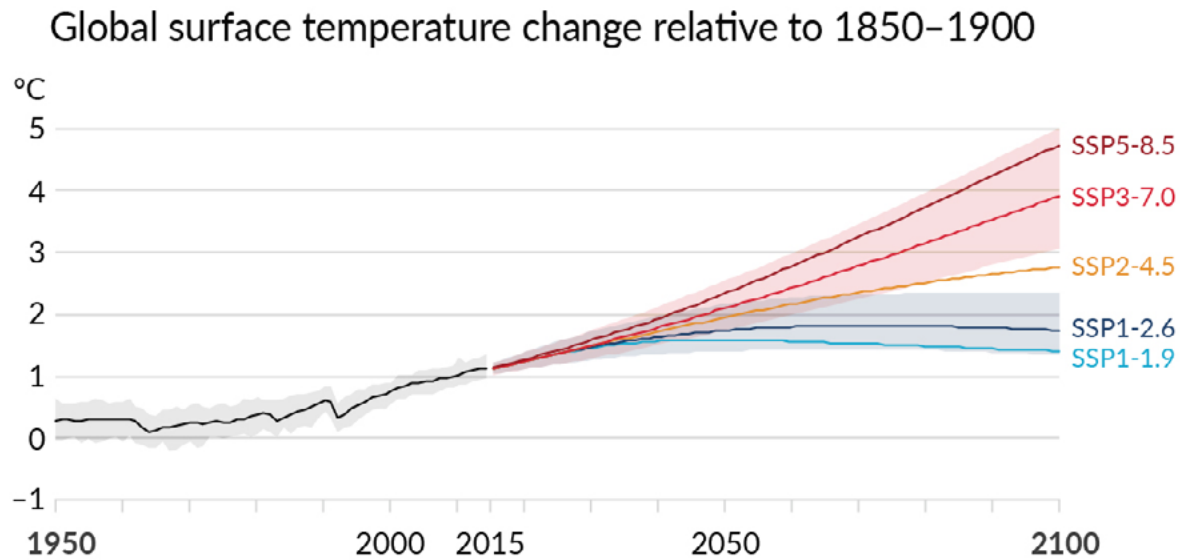
This scenario investigates the consequences of a forceful but uncoordinated response by governments, and then financial markets, to climate change. The thesis of IPR is that it is inevitable that governments will act more decisively than they have so far as the realities of climate change become increasingly apparent.

This is an important scenario for agriculture. IPR is one of the first models that comprehensively integrate land use and the associated investment opportunities in nature-based solutions. In particular, this scenario describes government policy that drives significant levels of reforestation and reduces the amount of global agricultural land.<sup>14</sup>



## Scenario 3 – UN Intergovernmental Panel on Climate Change (IPCC) 6th Assessment – Middle of the Road Scenario (SSP2-4.5)

This is a new scenario from the IPCC, which is the leading international body on climate change. It was released between 2021-2022. The 6th Assessment synthesizes all the research to date by the world’s climate scientists. The chart below summarizes the assumed temperature paths of five scenarios. The Middle of the Road Scenario is depicted by the gold line.



Source: <https://www.ipcc.ch/report/ar6/wg2/figures/summary-for-policymakers>

This scenario is one in which annual CO<sub>2</sub>-equivalent emissions hover around current levels before beginning to decline by mid-century which results in significant additions to the Greenhouse Gases in earth’s atmosphere. Progress toward sustainability is slow as there are no changes in society, the economy or policy.

The value of evaluating this emissions-driven scenario is that it provides an opportunity focus on weather impacts. Under this scenario, global temperatures rise by 1.5°C by 2040 and by 2.7°C by the end of the century. The IPCC has said the global goal should be 1.5°C in order to avoid the worst weather impacts of climate change<sup>15</sup>.





## About Bonnefield Financial

Bonnefield is a leading Canadian farmland and agriculture investment manager, providing financing to progressive farmers and agricultural operators through land-lease and non-controlling equity solutions. Bonnefield is dedicated to preserving farmland for farming, and the firm partners with growth-oriented operators to help them grow, reduce debt, and finance retirement and succession. The firm's investors are individuals and institutional investors who are committed to the long-term future of Canadian agriculture. [www.bonnefield.com](http://www.bonnefield.com)

## Footnotes

- 1 – Includes three LP V feeder funds
- 2 – Bonnefield standard leases include requirement for certain soil health practices
- 3 – Climate scenarios are constructed, plausible depictions of the future. Scenarios are not forecasts, but present a cohesive story of how the future could unfold
- 4 – PRI, 2020. Strategy and Governance Disclosure 13.4
- 5 – International Energy Agency, 2022. Global Energy and Climate Model Documentation
- 6 – PRI 2021. Inevitable Policy Response 2021 Policy Forecast Executive Summary
- 7 – IPCC, 2013. Climate Change Synthesis Report Summary for Policymakers
- 8 – Prepared in accordance with WRI/WBCSD’s Greenhouse Gas Protocol’s Corporate Accounting and Reporting Standards for quantifying corporate GHG emissions, under the operational control approach. GHG emissions were calculated for a total of ~105k cultivated acres
- 9 – Based on percentage of cultivated acres
- 10 – Limited acreage did not require reporting for 2022 due to inherited contract terms or certain parcels not being actively farmed
- 11 – Soil test conducted every 3 years. Data does not include assets in Bonnefield Canadian Farmland Evergreen LP. For the purpose of the analysis, results of less than 2% soil organic matter (SOM) are considered below average
- 12 – Based on cultivated acres owned for 12 month period or greater
- 13 – Metric defined as percentage of leasable assets in a “wet climate”, with “imperfect” or worse draining soils, that lack tile drainage. A “wet climate” is defined as per the UN IPCC 2019 Refinement, Volume 4, Chapter 3. “Imperfectly” drained soils are defined as per the Canadian National Soil Database, Detailed Soil Survey Maps on an acre weighted basis
- 14 – PRI Association, 2021: The Inevitable Policy Response: Investor Brief for Asset Managers
- 15 – IPCC, 2018: Summary for Policy Makers. Global Warming of 1.5°C

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