

UNDP BIOFIN – TNFD Training

LEAP - Prepare

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Climate Risk Services

UNDP

BIOFIN
The Biodiversity Finance Initiative

Meet the team

- Climate Risk Services' CEO **Gerhard** has a wealth of experience in the climate and nature field, previously working for consultancies, banks, governments, and the IUCN. He also holds an MBA from the University of Oxford.

- As a senior analyst at Climate Risk Services, **Ben** specialises in nature-related risk for financial institutions and corporates. Ben holds a Masters degree from Imperial College London in Environmental Technology (environmental economics and policy).



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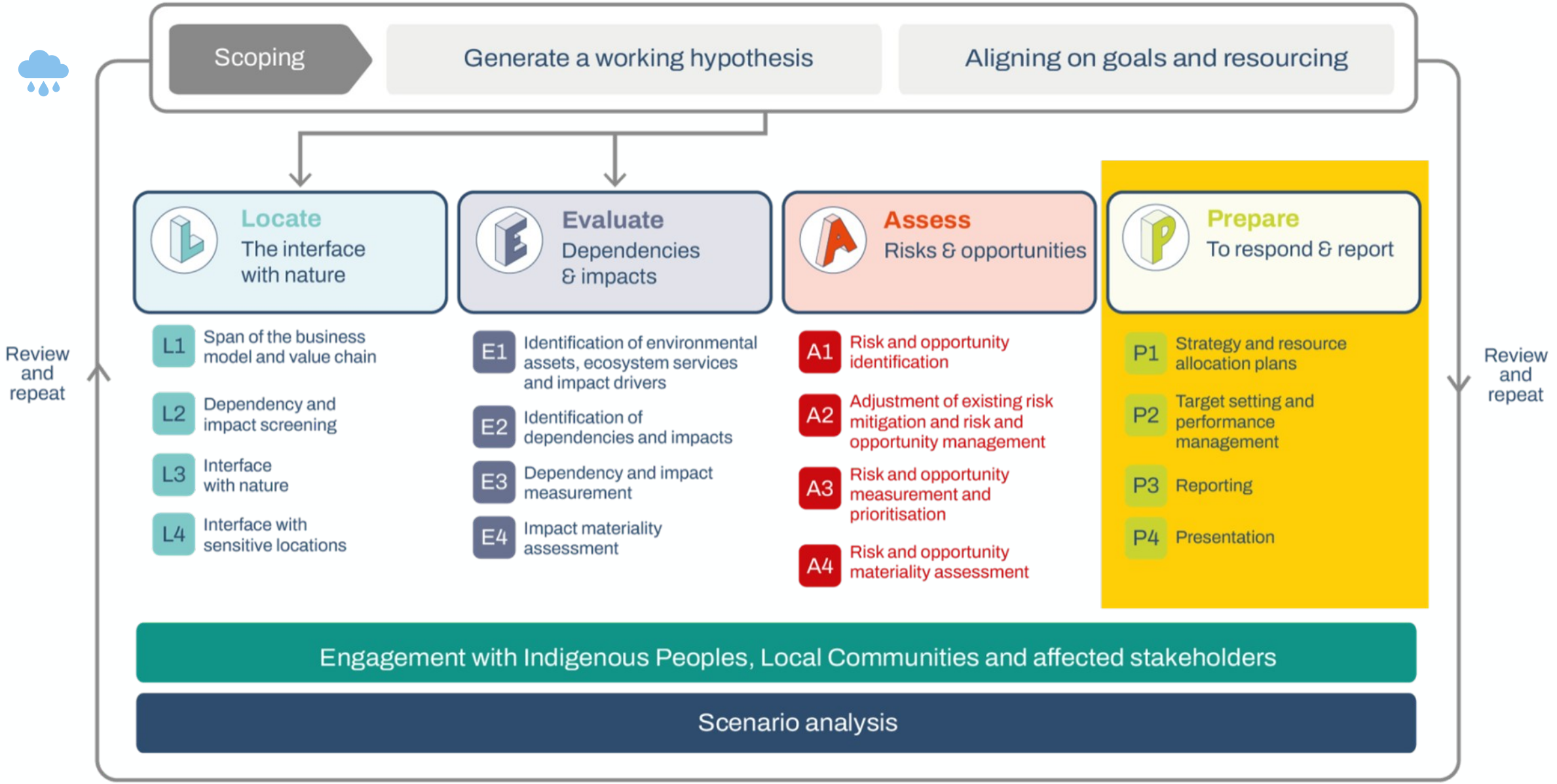
In this video…

1. Introduction to the Prepare step
2. Case studies

Key Objectives

- We are covering the following topics so that you can…

Prepare



Source: TNFD (2023) Guidance on the identification and assessment of nature -related issues: the LEAP approach

Prepare

What is the purpose of the prepare step?

The prepare step is to decide how your organisation should respond to the material nature-related risks/opportunities identified earlier in LEAP.

Tips

- *As a practitioner this looks like taking the results of L-E-A into internal discussions*
- *The key outputs of prepare are:*
  - *setting nature-related targets,*
  - *producing/publishing TNFD-aligned disclosures,*
  - *factoring nature-related risks/opportunities into internal risk management and governance*
- *This is another good opportunity to bring nature and climate together.*



The mitigation hierarchy

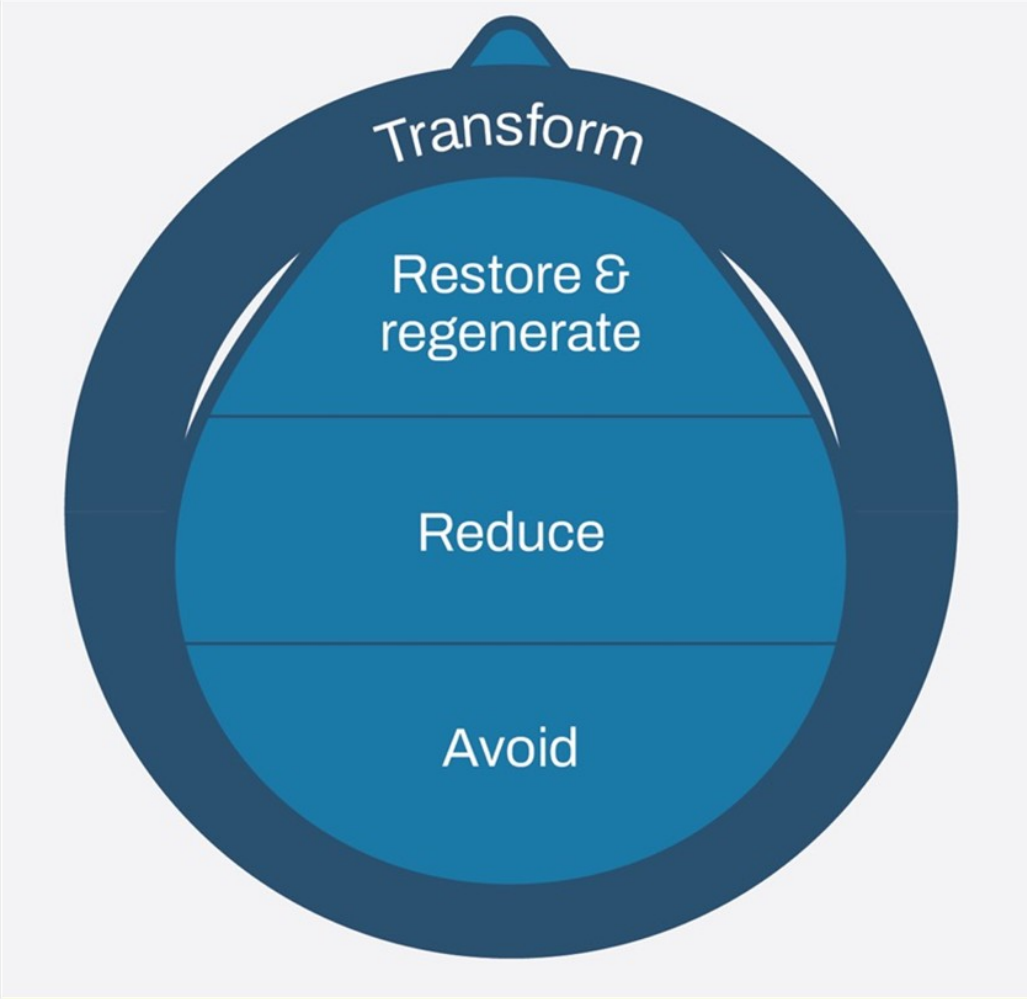
How can you respond to risks?

The TNFD recommends responding to risks with the mitigation hierarchy as a core principle.

This is the SBTN's action framework "AR3T"

The framework is a hierarchy of interventions, starting with avoiding harm and ending with deep systemic transformation

- **Avoid** – Prevent negative impacts before they occur (e.g. no deforestation).
- **Reduce** – Minimize ongoing environmental pressures (e.g. emissions, water use).
- **Regenerate** – Enhance ecosystems through nature-positive practices (e.g. agroecology).
- **Restore** – Recover degraded ecosystems to a healthier state (e.g. reforestation).
- **Transform** – Shift systems, strategies, and mindsets for long-term sustainability.



Targets

How does the TNFD recommend setting targets?

- Targets play an important role in Prepare

  prepare action → determine metrics → set targets for metrics → track progress

- Targets should be set with **stakeholder engagement** (e.g. local communities and affected stakeholders)
- Targets should (where possible) be **aligned to international goals** such as the targets of the Kunming-Montreal GBF

  There are three groups of **GBF targets**:

  - reducing threats to biodiversity
  - meeting people's needs through sustainable use and benefit sharing
  - tools and solutions for implementation and mainstreaming

Case Studies

Prepare case study – Vale S.A.

How did Vale undertake the prepare step?

Vale prepared disclosures aligned to the TNFD's core global disclosure metrics (excluding the 2-placeholder metrics).

They did not disclose their targets etc.

LEAP Approach

Prepare

*Principal indicators and core measurements related to already published indicators**

65,000
ha of total area impacted in Brazil

38,000
Amazon Region

27,000
Atlantic Rainforest

49,000
Mines and structures

13,000
Railroads

3,000
Ports

956,000
ha of protected areas

799,000
Obligatory

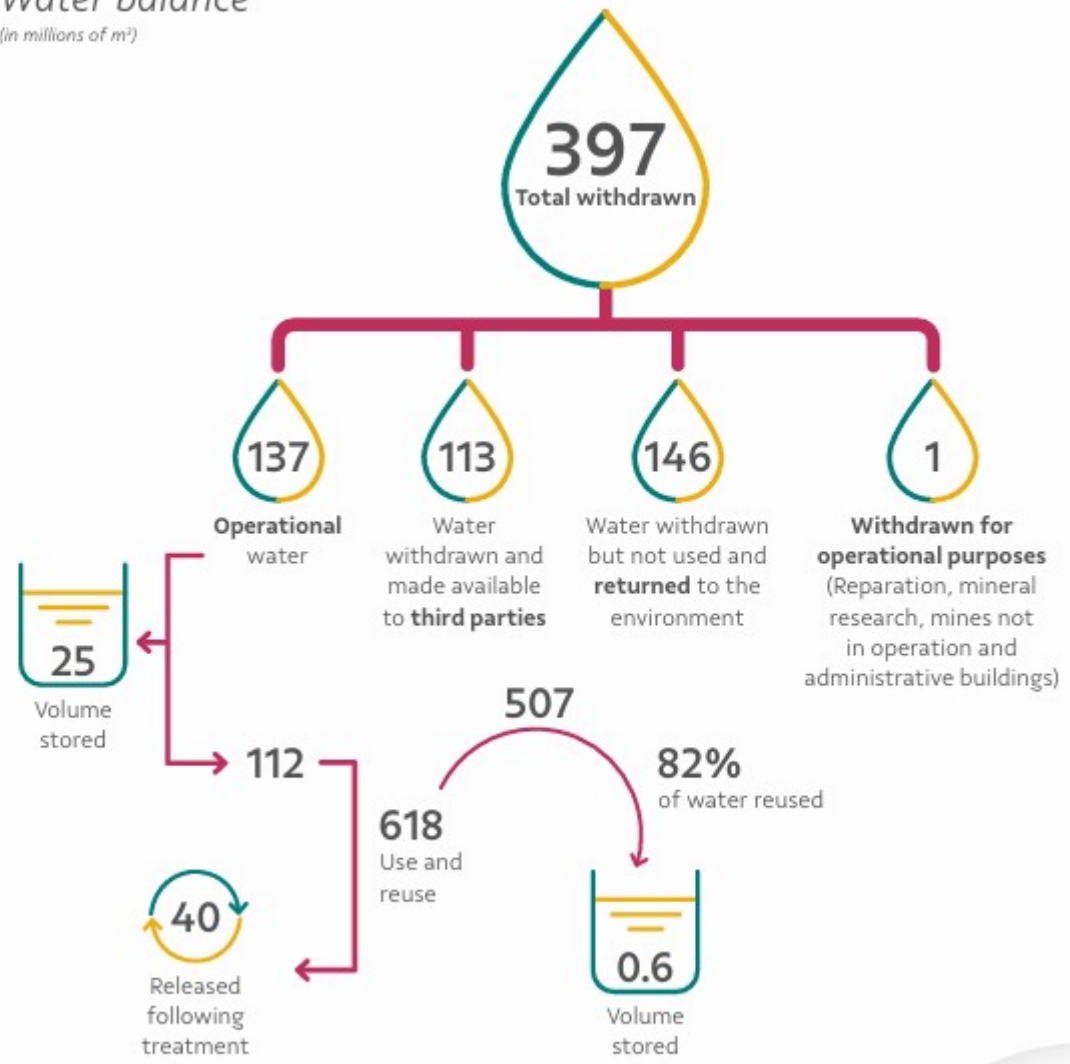
165,000
voluntary

For each ha altered/ impacted in the world we protect 11 ha

*Indicators published in the 2022 Integrated Report, 2022 ESG Databook, 2022 CDP (the most up-to-date data available during the creation of the pilot) (2023).

Water balance

(in millions of m³)



Prepare case study – Vale S.A.

How did Vale undertake the prepare step?

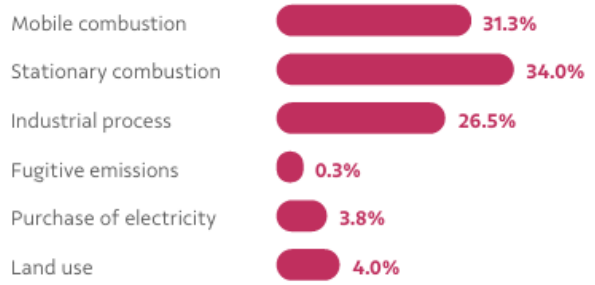
LEAP Approach

Prepare

Scopes 1 and 2 GHG emissions

(in millions of tons of CO_2e)

Emissions/Year	2017 (base year)	2020	2021	2022
Scope 1	10.9	8.4	8.7	8.6
Scope 2 (market based)	1.3	0.4	0.3	0.3
Total	**12.2**	**8.8**	**9.0**	**8.9**



Scope 3 GHG emissions

(in $MtCO_2e$)



Emissions of particulate material (PM)

(in kt)

	2019	2020	2021	2022
Nickel	6.6	7.3	3.3	2.6
Pelletizing	2.1	1.6	1.4	1.6
Manganese	0.4	0.1	0.1	-
Total	**9.1**	**9.0**	**4.8**	**4.2**

Emissions of SO_x

(in kt)

	2019	2020	2021	2022
Nickel	71.0	90.2	66.1	66.5
Pelletizing	11.4	7.5	8.2	7.1
Logistics	2.3	0.5	2.0	1.9
Other businesses	1.5	0.9	1.2	0.2
Total	**86.2**	**99.1**	**77.5**	**75.7**

Emissions of NO_x

(in kt)

	2019	2020	2021	2022
Nickel	12.2	15.2	8.0	5.7
Pelletizing	11.5	14.1	18.1	19.8
Logistics	1.6	0.5	3.0	2.9
Iron ore	11.8	16.5	18.3	15.6
Other businesses	3.2	0.9	1.4	0.8
Total	**40.3**	**47.2**	**48.8**	**44.7**

N.B.: The reduction of NOx emissions, noted in the nickel business, is due to the reduction in the production at PTVI in 2022 and operational improvements.

*Indicators published in the 2022 Integrated Report, 2022 ESG Databook, 2022 CDP (the most up-to-date data available during the creation of the pilot) (2023).

Prepare case study – Cibus Capital

How did Cibus undertake the prepare step?

Determining what to disclose

Risks and Opportunities

Cibus will not be reporting the TNFD's core global disclosure indicators and metrics for nature-related risks and opportunities in 2023/24. Due to current limitations in methodologies, data and scenario analysis, it is not feasible to provide quantitative disclosures on potential investment losses.[23] For now, Cibus' risk quantification is limited to assessing financial exposure to high-risk sectors and environmentally sensitive locations, aligned with the TNFD's core disclosure metrics for financial institutions.

Prepare case study – Cibus Capital

How did Cibus undertake the prepare step?

Disclosing responses to risks →

Results	The Summer Berry Company	Amaretto Almonds	Withcott Seedlings	Prunus Nuts
Key Nature Dependencies	• Surface water • Ground water • Climate regulation • Pollination • Disease control • Pest control	• Surface water • Ground water • Climate regulation • Pollination • Pest control	• Surface water • Ground water • Water quality • Climate regulation • Genetic materials	• Surface water • Ground water • Climate regulation • Pollination • Mass stabilisation and erosion control
Key Dependencies at Risk	• Surface water • Ground water	• Surface water • Ground water • Climate regulation • Pollination • Pest control	• Surface water • Ground water • Water quality • Climate regulation	• Surface water • Ground water • Climate regulation • Pollination • Mass stabilisation and erosion control
Operational Impact	• Water stress, scarcity and irregular supply • Water use restrictions • Reduced crop yields • Reduced crop quality • Soil degradation, impacting cover cropping • Altered planting schedules	• Water stress, scarcity and irregular supply • Water use restrictions • Reduced crop yields • Reduced crop quality • Increased reliance on artificial pollination • Lower pollination success • Increased pest infestations • Increased storm and flood incidences	• Water stress, scarcity and irregular supply • Water use restrictions • Production gaps • Asset underutilisation • Reduced growth rates, survival and quality of seedlings • Increased diseases and pests	• Water stress, scarcity and irregular supply • Water use restrictions • Heat stress, affecting labour productivity • Reduced crop yields • Reduced crop quality • Increased reliance on artificial pollination • Lower pollination success • Increased pest infestations • Soil erosion due to storm and flood incidences
Direct Economic Impacts	• Higher operating costs for irrigation • Increased CapEx for infrastructure investments. • Lower revenues from lower yields	• Higher operating costs for irrigation, pest management and pollination • Increased CapEx for infrastructure investments • Lower revenues from lower yields	• Higher operating costs for irrigation, pest control and disease management • Reduced revenue due to lower production, seedling mortality, and decreased quality • Lower operational efficiency from underutilised assets	• Higher operating costs for irrigation, pest and disease control, pollination services and erosion control measures • Lower revenue from reduced yields and lower-quality almonds • Higher costs related to pest management and disease control
Indirect Economic Impacts	• Market price volatility • Decreased revenue predictability • Higher crop insurance premiums • Higher fossil fuel costs • Reduced customer demand due to reduced product quality • Loss of contracts due to inconsistent production • Reduced labour requirements due to reduced productive areas / yields			
Key Risk Mitigation Initiatives	**Water self-sufficiency:** • Since 2022, the company has prioritised rainwater harvesting, with over 50% of all water used in Portugal and 100% of greenhouse irrigation water in the UK sourced from rain in 2023. **Infrastructure improvements:** • Investments in additional reservoirs and integrated water storage systems are planned at the Portugal site. **Forward planning:** • In the UK, water abstraction is prioritised during floods to ensure reservoirs are filled. • Genetic selection avoids water-intensive varieties to reduce future resource strain.	**Water self-sufficiency:** • Amaretto plans to expand its drainage system in 2024 to improve flood resilience, following extreme weather in the Murray-Darling Basin since 2017. **Water management infrastructure:** • A pump has been installed to capture and store stormwater runoff for irrigation purposes. • Drip lines have been upgraded to improve water efficiency. • Precision irrigation expected to save 1ML/Ha a year. **Pollination protection:** • Native corridors have been planted at both sites to improve floral resources for pollinators. • BeeHero technology is used to monitor and maintain the health of nearly 3,000 hives.	**Water use management:** • In 2023, Withcott installed flow meters to capture water use data to identify opportunities for conservation and develop a water management program. • Withcott have also installed an ultra-filtration unit to remove impurities from their water supply to mitigate quality risks. **Pest and disease management:** • Withcott are looking to trial surveillance software to better manage disease and enable more prescriptive use of chemicals.	**Cover cropping:** • Cover cropping is being implemented across all planted land to support healthier, stronger soils that will be more resilient against erosion caused by rainfall. **Soil baseline testing:** • Prunus have partnered with a third-party to conduct in-depth soil, foliar and enzyme analyses, identifying the most effective treatments for each grove to preserve and enhance the health of the natural ecosystems.
Key Risk Mitigation Opportunities	**LED light expansion:** • In the UK, light levels are likely to become more varied due to climate change and the effects on weather and cloud cover. To mitigate the associated yield risks, the company should investigate the business case for expanding LED lighting across all productive areas of the UK glasshouse. **Habitat restoration:** • While the UK team has started to implement measures to support biodivesity, they lack a formal plan. The Portugal site's seven-year Habitat Restoration Plan, which includes hedgerows, wildlife corridors and ecological islands, serves as a model. Developing a similar detailed plan for the UK will strengthen habitat support, improve pest and disease control and enhance pollination, contributing to greater resilience.	**Environmental plantings:** • Amaretto plan to investigate native plantings on unutilised land to help restore native ecosystems and enhance biodiversity, as well as potentially generate Australian Carbon Credit Units ('ACCUs') to offset emissions and unlock additional revenue. **Solar installation** • Amaretto are currently investigating the viability of a solar project to improve self-sufficiency and generate significant annual savings.	**Seed supply risk:** • Seed supply risk should be assessed to mitigate any future damage linked to climate change. **Biodiversity:** • To support ecological harmony, protect vital ecosystem services and help manage pests and diseases naturally, Withcott should engage a consultant to develop a long-term biodiversity program for the site. **Water recycling:** • Fertiliser-enriched water is returned to their dam for recycling. To further reduce reliance on groundwater, Withcott should explore opportunities to capture recycling data and implement strategies to enhance recycling rates.	**Renewable energy plan:** • Given Prunus' extensive land area and strong sun exposure, the company is well-positioned to significantly capitalise on solar power as a renewable energy source, reducing susceptibility to future energy price shocks. **Resource efficient infrastructure:** • Prunus plan to develop a fertigation system to consolidate the use of resources. They plan to install humidity and temperature sensors for flexible and effective irrigation during volatile weather conditions.

Climate Risk Services

Thank you!

Building a climate-smart, net zero and nature-positive future together.

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