

# Transition planning and climate scenario analysis:

Food, Agriculture and  
Forest Products



**About this guide | 3**

**Executive summary | 4**

**① Key considerations for transition planning | 5**

**② Transition planning challenges | 8**

**③ Regulatory and stakeholder context | 10**

**④ Highlighting examples of good practice | 14**

**⑤ The role of climate scenario analysis in transition planning | 20**

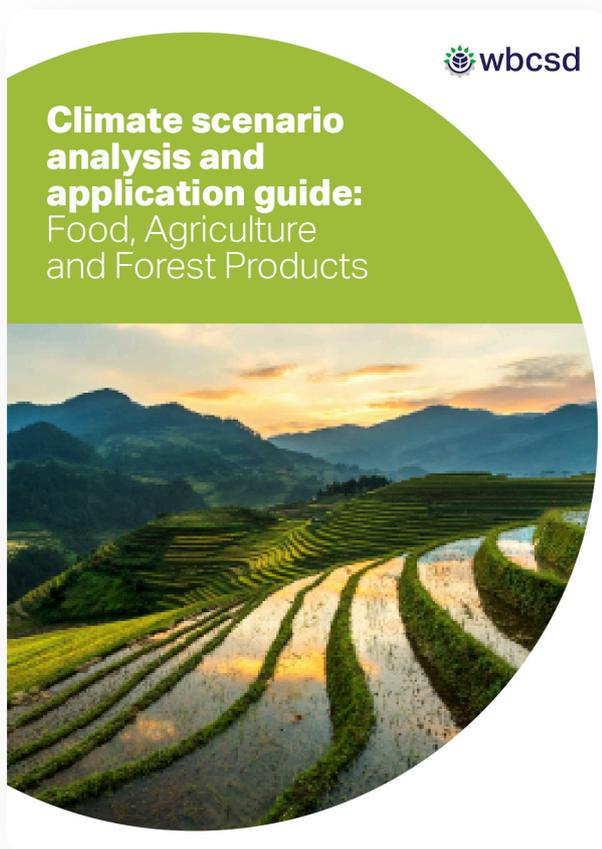
**⑥ Themes for enhancement of transition plans | 23**

# About this guide

This report is a collaboration between PwC UK and WBCSD and is a companion guide to the [Climate Scenario Tool](#) and [Climate scenario analysis and application guide: Food, Agriculture and Forest Products](#) launched in November 2022.

It presents learnings from the development of the [Climate Scenario Tool](#) and its application to transition planning, including the development of climate transition plans and how scenario analysis can be used to inform them.

This material provides high-level perspectives on requirements and challenges to develop transition plans and key components that should be included in their design and implementation. It is intended to provide introductory information and background about climate transition planning and scenarios analysis. While familiarity with the [Climate Scenario Tool](#) is helpful, it isn't necessary to gain an understanding of transition planning and scenarios analysis through this guide.



# Executive summary

The future is unpredictable. A range of future states and temperature outcomes due to climate change are plausible, with a wide array of potential risks and opportunities to businesses.

Conducting scenario analysis across a range of scenarios is critical to investigate the characteristics of different transition pathways—to inform transition plans, drive strategic action and to build climate change resiliency and adaptation into business performance.

No single climate scenario can form the basis for a transition plan. The plan should reflect a company's assessment against a range of potential outcomes and consider a combination of mitigative and adaptive measures to facilitate its transition.

Scenario analysis can be applied to support and enhance transition planning. Key themes and considerations include:

- A transition plan should consider scenario analysis to inform its roadmap and vice versa, as well as considering other aspects such as contributions to a just transition and whether the company can influence its suppliers and customers to decarbonize.

- Rather than simply articulating a decarbonization trajectory and a target date, a climate transition plan should overlay climate risk and employ scenario analysis to drive the timing of deployment of specific actions and set the required governance processes.

Management actions and areas of focus to integrate scenario analysis in transition planning should consider:

- 1. Taking ownership of climate transition:** By raising awareness of possible business trajectories to alternative future states.
- 2. Building a coherent narrative:** Performing analysis of sensitivities across a range of scenarios builds an understanding of the sensitivities of business performance to scenario outcomes and pathways.
- 3. Providing clear transition strategies:** Companies can use scenario analysis to explore the business resilience of key material and at-risk commodities and geographies under different transition pathways and to map transition activities to different scenario futures – effectively, to “stress test” transition plans.

- 4. Establishing a common basis for climate action:** Conducting climate scenario analysis against a clear set of sector-relevant scenarios provides a common basis to understand how organizations have examined future market uncertainties and designed a strategic response.
- 5. Motivating more granular data and analysis:** Scenario analysis motivates organizations to analyze business performance at more granular levels and to consider vulnerabilities and opportunities at localized or sub-regional levels.
- 6. Setting credible targets and quantifying metrics:** Detailed climate-related scenario analysis can inform realistic climate-related targets, including setting interim GHG emissions reduction and net zero targets.
- 7. Building the case for funding and investment:** Being transparent on how scenario analysis has informed strategic transition plans supports investor dialogue and engagement.

# ① Key considerations for transition planning

## WHAT IS A TRANSITION PLAN?

Analysis of transition plan disclosure indicates that less than 0.5% of companies report a credible transition plan and that a majority of companies don't provide evidence of a credible plan to transition to net-zero by 2050.<sup>1</sup> As firms must adopt more rigorous approaches to respond to climate change and report on their actions, effective transition planning has become an important strategic capability relying on scenario analysis as a core element to inform planning and decision-making.

There is general agreement over the definition and primary objectives of a transition plan – that it should:

- **Demonstrate ambition, action and accountability.**<sup>2</sup> Companies are encouraged to take an ambitious approach, which emphasises concrete short-term action. There should be a greater level of accountability to stakeholders for delivery of the plan, especially through effective reporting on progress.

- **Outline how an organization will pivot its existing business model** toward one that is aligned with a scenario with an agreed temperature target (e.g., 1.5°C) based on the latest climate science recommendations (such as the SBTi [Net-Zero standard](#),<sup>3</sup> [FLAG framework](#)<sup>4</sup> etc.).
- **Act as an accountability mechanism** for companies and their external stakeholders.
- Provide **evidence that the company is aligning relevant aspects of its business with its climate-related goals** and emissions reduction targets.
- **Be a clear and critical input to business strategy and risk and opportunity management** over the short term and long term.
- **Be anchored in quantitative metrics and targets** that are actionable, credible and subject to corporate governance processes.

It is important to make the distinction that a **climate transition plan is not a net zero roadmap**. The SBTi Net-Zero Standard, for instance, sets rules on how to build a net zero roadmap. While there are some overlaps between a transition plan and a net zero roadmap, the net zero roadmap sets out targets and related activities around decarbonization whereas the transition plan sets out how the organization is preparing to transform to deliver these, along with transformational activities to address risks and opportunities from climate change.

Below are examples of elements that might be needed for a good transition plan in addition to those needed for a net zero roadmap.

**Table 1:** Elements needed for a transition plan in addition to those required for a Net Zero roadmap

FEATURES OF A NET ZERO ROADMAP	FEATURES OF A GOOD TRANSITION PLAN		
Actions needed to meet Net Zero target	Actions needed to meet Net Zero target	Board oversight	Scope 1, 2 & 3 Footprint
How actions contribute to meeting targets	How actions contribute to meeting targets	Mechanisms in place to ensure targets are met	Other carbon metrics e.g. carbon price, investments in R&D
Timeline of when actions need to start/end	Timeline of when actions need to start/end	Description of reporting framework and review process	Carbon offsetting strategy
Interim targets to be met	Interim targets to be met	Considerations around wider influence e.g. suppliers/ customers	Policy engagement to date and future plans
	Considerations around the just transition	Integration of physical and transition risks and opportunities	How risks and opportunities will be addressed

Source: PwC

## DEVELOPING A TRANSITION PLAN

The following elements can be considered as common high-level principles for a credible transition plan upon which core elements may be built.

1. Aligns with an economywide net zero transition. Targets, expected emissions trajectories and plans should be compatible with meeting a defined global temperature target by a specific time, ideally a 1.5°C scenario with low or no-overshoot. The plan should cover the whole organization and any exclusions must not be material to the company and/or to the natural environment.
2. Focuses on concrete actions that emphasize the near term and are backed up by clear governance mechanisms. The plan should set out actions to be taken in the short-term and long-term along with

interim milestones that can be used to assess progress and explain how actions are in line with the transition to a net-zero economy. The plan should be integrated into, and coherent with, the overall business and investment strategy and backed up by clear governance processes.

3. Enables periodic reporting and verification in a transparent manner. Verification should be enabled, for example, through an annual report on progress with the adoption of quantifiable and timebound key performance indicators and a defined stakeholder feedback mechanism.

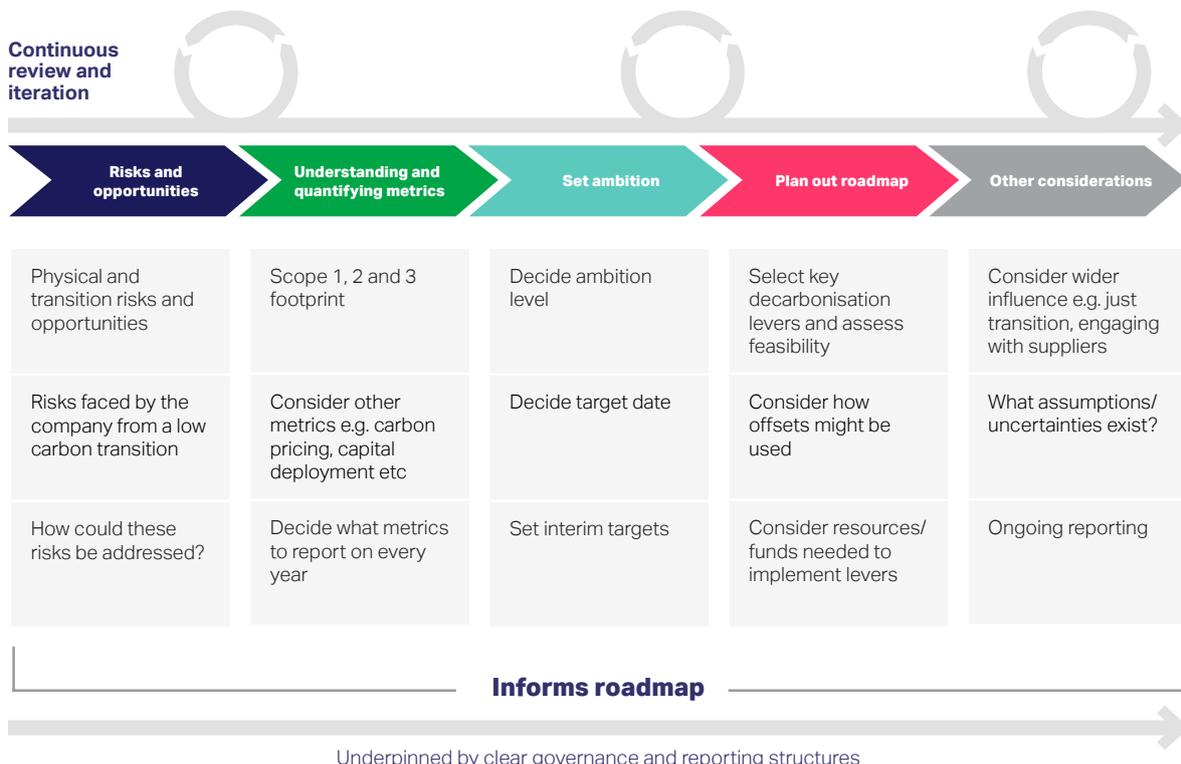
## CORE DEVELOPMENT STAGES

Organizations will initiate transition planning from a range of starting points depending on their experience and the maturity of activities related to transition planning.

Regardless of the starting point, they will need to conduct a series of key development steps, including:

1. Establishing a governance structure and conducting a baseline review of risks and opportunities;
2. Understanding and quantifying key metrics;
3. Setting ambition levels, timelines and targets;
4. Planning a transition roadmap;
5. Incorporating considerations such as just transition, ongoing reporting and stakeholder management.

**Figure 1:** Key steps for developing a transition plan



Source: PwC

Transform to Net Zero offers a set of key elements of Climate Transition Action Plans (CTAP)<sup>5</sup> as a useful reference based on their experience of developing transition plans.<sup>a</sup>

**Table 2:** Eleven Key Elements of Model Climate Transition Action Plans

1.	<b>Near- and long- term science-based targets</b> to reach 1.5°C-aligned value chains, including a target year for net zero GHG emissions, and in line with Race to Zero criteria. Targets should be verified by a third party to be consistent with the latest climate science and should also be consistent with relevant sector-specific guidance, as available.
2.	<b>Robust governance structures</b> that establish ownership and accountability to deliver targets, including: a. Board-level oversight; b. Roles and responsibilities of management, with representation across all relevant business functions; and c. Elements to drive employee engagement through skill development, training and change management to align the business culture with a net zero transformation.
3.	<b>Information about how climate considerations are integrated into financial planning</b> to demonstrate alignment between the CTAP and business strategy. This should include information on how climate considerations are integrated into capital allocation and financing decisions, expected changes in capital allocation and financing decisions, and high-level information on the impact of capital allocation and financing decisions on climate objectives.
4.	<b>GHG emissions accounting</b> of complete and consistent Scope 1, 2, and 3 emissions inventories that have been verified by a third-party, enabling measurement of progress towards targets. The CTAP should be underpinned by the emissions inventories but does not necessarily have to include the full inventory itself.
5.	<b>Low carbon and other climate-related initiatives</b> to decarbonize business operations and value chains and implement the near- and long- term science-based targets. This could include the following types of initiatives: a. Innovation of low-carbon products and services; b. Actions to address the portfolio of high emissions products and services; c. Integration of emissions considerations into decision-making (e.g., use of internal carbon pricing); and d. Evolving business models to pivot towards lower carbon areas.
6.	<b>Net zero-aligned carbon removal plans</b> with time bound KPIs. CTAPs should include information on companies' general approach to emissions reductions within the value chain enroute to net zero, and how removals will address residual emissions in the target year.
7.	<b>Value chain engagement strategy</b> that articulates how the organization will encourage suppliers, peers, and customers to transition to a low-carbon economy. This can include education and incentives offered to suppliers to reduce Scope 3 emissions, and to customers to promote low-carbon products and services. These strategies should be guided by time bound KPIs.
8.	<b>Policy engagement strategy</b> to create an environment that enables 1.5°C-aligned GHG reductions in the real economy. The strategy should highlight collaboration with industry peers intended to send joint market signals to policymakers. An organization's policy engagement should be aligned with its CTAP.
9.	<b>Cross-issue evaluation of impact</b> that adopts a systems approach to consider interlinkages between climate, nature, and society. Planned decarbonization activities should address concerns related to nature and biodiversity and social impacts on communities.
10.	<b>Strategy to promote a just and inclusive transition</b> that addresses the disproportionate distribution of climate impacts and climate transition costs on under-resourced communities. CTAPs can include opportunities for co-creation with affected communities that seek to counter injustices and build resilience.
11.	<b>Transparency and reporting</b> covering all aspects of the CTAP. Organizations should disclose key assumptions including transition pathway uncertainties, possible implementation challenges, and respective contingency plans. Annual reporting should show progress against goals and targets. The CTAP's activities, metrics, and targets should be periodically reviewed and updated, and organizations should be open about what is not currently included in the CTAP but will be addressed in the future.

**Source:** Transform to Net Zero, September 2022

<sup>a</sup> See also [The Transition Plan Taskforce Implementation Guidance](#), which discusses four key stages to preparing a transition plan – (1) Baseline current position; (2) Setting ambition; (3) Developing an action plan; (4) Ensuring accountability for delivery.

## ② Transition planning challenges

Transition planning capabilities are still maturing.<sup>b,6</sup> The Transition Plan Taskforce highlighted in early 2022 that only 43 companies of the UK's 100 largest publicly listed companies declared having a transition plan in place.<sup>7</sup> Still, of those presenting plans, there are inconsistencies in the content and scope of transition plans as well as variation in the coherency and level of detail presented.<sup>8</sup>

For organizations operating in the Food, Agriculture and Forest Products sectors, transition plans are largely still underdeveloped and the practice is still emerging. As of January 2022, only 21 of the 50 highest GHG-emitting North American food companies tracked by Ceres' Food Emissions 50 initiative have set any short-term emissions reduction targets inclusive of Scope 3 emissions, which is the largest source of emissions in this sector. None have published a climate transition plan.<sup>9</sup>

The limited number and extent of variation across transition plans appear to be consistent with the low level of company disclosure of the resilience of strategies under different climate-related scenarios. This continues to have the lowest level of disclosure across the 11 recommended

TCFD disclosures. In the latest [TCFD 2022 status report](#),<sup>10</sup> only 17% of companies in the Agriculture, Forestry, and Other Land Use (AFOLU) sector reported on the resilience of strategy. This highlights the need for companies to conduct climate scenario analysis to build resiliency assessment capabilities as a fundamental input to the production and delivery of actionable and credible transition plans.

Some common challenges may explain this lack of development of transition plans:

- **Difficulties in aligning business strategy and business planning time horizons.** The time horizons for assumptions relating to a climate transition plan will extend further into the future than a company's core business plans. This presents a challenge both in terms of accuracy and also in clearly defining the assumptions within the climate transition plan report and broader alignment with TCFD reporting.

- **The maturity of companies' external impact assessments.** Firms are starting to specify which accounting standards or benchmarks they use, but work is required to identify and incorporate environmental and social KPIs that consider the external impacts of an organization's decarbonization pathway. As the approach to providing assurance is still emerging, demonstrating to key stakeholders that transition plans are sufficiently transparent, credible and robust is a challenge.
- **Challenges around data availability.** A lack of adequate coverage and the availability and quality of data across business operations, supply chains and value chains make it challenging to measure, report and compare climate risks and performance (e.g., Scope 3 emissions).

<sup>b</sup> Only ~47% of companies disclosing under the Task Force on Climate-related Financial Disclosures (TCFD) reported impact on business strategy and financial planning (TCFD, 2022 Status Report, October 2022). Only ~30% of companies disclosing to CDP are developing a low-carbon transition plan (CDP, March 2, 2022).

- **Elements that are not commonly reflected in current transition plans** include:
  - > Details that outline short-term emissions reduction initiatives and approaches to increasing the portfolio of low-carbon products and services.
  - > Commitments to develop and disclose internal policies on controversial issues (e.g., fossil fuels such as oil sands, offsets, etc.).
  - > Future emission reduction initiatives, where management of low-carbon products and commitments to controversial issues – such as the reliance on the scale of impact of future carbon capture and storage technologies – are not commonly addressed in transition plans.
- **Lack of guidance on measuring and reporting around emerging issues**, such as biodiversity, and social issues, such as the just transition. While there is little emphasis on these issues in current reporting frameworks, they could become more key to transition planning in the future.
- **Lack of specific guidance around adaptation vs. mitigation.** Companies may struggle to understand where adaptation should be used vs. mitigation to progress toward key targets due to a lack of guidance in existing recommendations. For example, where should risk be managed by adapting to align with a plausible future world and where is a long-term mitigation strategy required?
- **Regulations are still developing and the approach to providing assurance is still emerging.** Regulations around transition plan disclosure are not universally applied. For example, while the Securities and Exchange Commission (SEC) is proposing regulations around climate-related disclosures in the U.S., there is a lack of global alignment of regulations around transition plans. This presents challenges for companies trying to disclose their approach.

# 3 Regulatory and stakeholder context

## REGULATORY CONTEXT

There is increasing pressure globally to make transition plans mandatory and guidelines are being developed to define requirements. The UK government formed the [Transition Plan Taskforce](#) (TPT)<sup>11</sup> to define guidelines for mandatory disclosure. In the U.S., the SEC released proposed [Rules to Enhance and Standardize Climate-Related Disclosures for Investors](#),<sup>12</sup> including disclosure of details on companies' use of scenario analysis. Other guidance, either developed or under development, includes [TCFD](#),<sup>13</sup> [CDP](#),<sup>14</sup> [GFANZ](#)<sup>15</sup> and [IGCC](#).<sup>15</sup> The emerging guidance provides perspectives on what components should be included in transition plans, although these can vary by organization.

**Figure 2:** Transition plan regulation and requirements are evolving rapidly across several jurisdictions and climate-related governing bodies



The emergence of guidance and potential regulation underscores the importance of scenario analysis as a key component of transition planning. Much of the existing guidance follows a similar structure to the TCFD recommendations, reflecting four key pillars: governance, strategy, risk management, and metrics and targets. In general, there is some overlap between guidance from different organizations, including requirements around scenario analysis. However, there are discrepancies in the recommended elements of a transition plan between different guidance documents.

The TPT and the Glasgow Financial Alliance for Net Zero (GFANZ) have respectively produced transition plan recommendations for the real economy and financial institutions, constructed on common foundations and components.

This is a significant step that aligns frameworks produced for alternative users and facilitates cross-sectoral dialogue and engagement.

### GLASGOW FINANCIAL ALLIANCE FOR NET ZERO (GFANZ)

The increasing significance of transition plans and the importance of the finance community understanding them has been underscored by GFANZ, which has established a Real Economy Transition Plans workstream to support businesses in accelerating the development and implementation of credible transition plans and to enable financial sector support of these efforts.

The GFANZ report, [Expectations for Real-economy Transition Plans](#),<sup>17</sup> outlines components of transition plans that financial institutions will be looking for from real economy companies to inform their allocation of capital and services, and how financial institutions can engage. The report aims to help companies understand and navigate the growing expectations of financial institutions that are aligning their investment and finance strategies with net zero.

GFANZ highlights transition plans as the most effective way for companies to provide financial institutions with information regarding their net zero transition strategy and level of ambition to accelerate the transition. In their view, real-economy transition plans should:

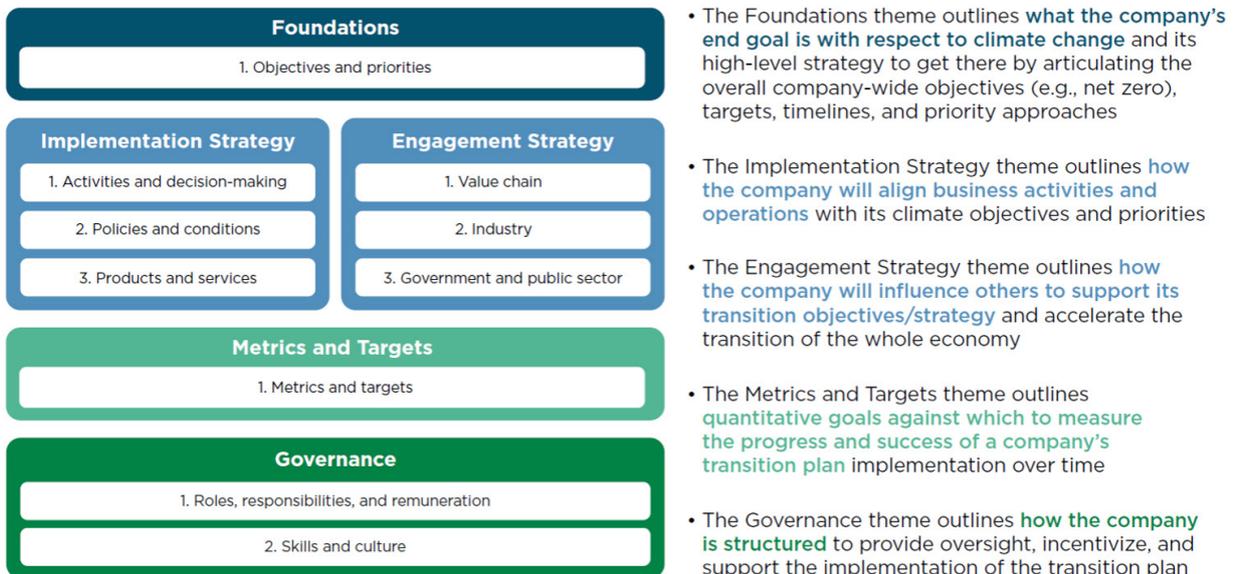
- Articulate the company's overall approach to the net zero transition;
- Include information about climate objectives, targets, action, progress and accountability mechanisms;
- Help define the overall role and ambition in the transition;
- Enable financial institutions to assess the credibility of climate objectives and make comparison across sectors, regions and peers;
- Facilitate transparency to stakeholders as a reporting mechanism.

**"Companies with credible transition plans may increasingly be able to access products and services tailored to low-carbon business models. In contrast, companies that do not have credible transition plans may face higher costs and/or restricted access to financial products and services (e.g., higher costs of capital) depending on the decision-making process of their financial institutions."**

- Expectations for Real Economy Transition Plans, GFANZ

Accordingly, GFANZ has identified five core transition plan components from existing practice guidance, standards and regulatory frameworks, with associated sub-components regarded as most relevant for evaluating an organization's transition plan and tracking its implementation (Figure 3 and Table 3). The framework in Table 3 provides a bridge between the real economy and financial sectors that can be a common basis to facilitate real economy and financial institution engagement.

**Figure 3:** Components of real-economy transition plans relevant for financial institutions



**Source:** Extracted from "Expectations for Real-Economy Transition Plans", GFANZ, September 2022

**Table 3:** Mapping of components of real-economy transition plans against existing initiatives

THEME	COMPONENT	SUB-COMPONENT	DISCLOSURE AND DATA COLLECTION			TARGET-SETTING & VALIDATION		ASSESSMENT TOOLS		
			TCFD	ISSB	CDP	SBTI	TPI-CP	ACT	CA 100+	TPI-MQ
<b>Foundations</b>	Objectives and priorities	• Objectives and over-arching strategy								
		• Governing principles <sup>16,17</sup>								
<b>Implementation Strategy</b>	Activities and decision-making	• Business planning and operations								
		• Financial planning								
		• Sensitivity analysis								
	Policies and conditions	• Transition-related policies								
		• Nature-based impact								
	Products and services	• Products and services								
<b>Engagement Strategy</b>	Value chain	• Clients/portfolio companies and suppliers								
	Industry	• Industry peers								
	Government and public sector	• Government and public sector								
<b>Metrics and Targets</b>	Metrics and targets	• GHG emissions metrics								
		• Sectoral pathways								
		• Carbon credits <sup>18</sup>								
		• Business and operational metrics								
		• Financial metrics								
		• Nature-based metrics								
<b>Governance</b>	Roles, responsibilities, and remuneration	• Board oversight and reporting								
		• Roles and responsibilities								
		• Incentives and remuneration								
	Skills and culture	• Skills and trainings								

Source: Extracted from “Expectations for Real-economy Transition Plans”, GFANZ, September 2022

### CLIMATE BONDS INITIATIVE

Climate Bonds Initiative (CBI) has identified a key challenge for organizations to demonstrate the credibility of their future transition and avoid greenwashing.

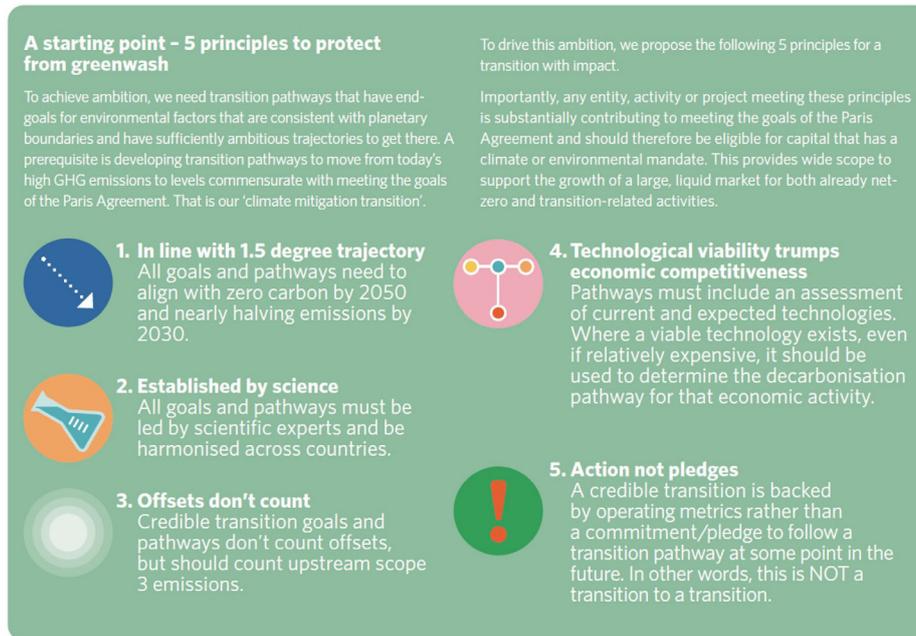
In its discussion paper, Transition Finance for Transforming Companies: Tools to address companies' transitions and their SLBs,<sup>18, 21</sup> CBI proposes a framework for identifying credible, Paris-aligned transitions and a set of hallmarks and principles to support the growth

of the climate transition bond market and to build confidence for investors, clarity for bankers and credibility for issuers.

CBI recognizes that with forward-looking targets, Sustainability Linked Bonds (SLBs) are key to financing the transition and provide an opportunity for companies' net zero targets to be linked to access to sustainable finance. However, CBI highlights concerns about the relevance, reliability and ambition of transition pathways and the difficulty in assessing and comparing targets across companies and against wider goals such as the Paris Agreement targets.

CBI proposes five principles<sup>19</sup> (Figure 4) and Five Hallmarks of a Credibly Transitioning Company (Figure 5) for use by a range of stakeholders to set or assess the credibility of transitions and to drive ambition in key company targets and willingness and capability to deliver on the targets.

**Figure 4:** Five transition principles



**Source:** Climate Bonds Initiative - extracted from "Financing Credible Transitions", 2020

**Figure 5:** The Hallmarks of a credibly transitioning company



**Source:** Climate Bonds Initiative - extracted from "Transition finance for transforming companies", September 2022

CBI's view of the strategic importance of the Hallmarks is underscored by their market offerings for assessing credible transitions expanding certification to include credible transition entities and expanding market screening to include all SLBs and transition-labeled Use of Proceed bonds.

# 4 Highlighting examples of good practice

## REGULATORY CONTEXT

To help bring to life the principles and practices for building robust and credible transition plans, the following examples provide an overview of how some leading companies are approaching transition planning.

### Bayer – using scenario analysis to respond to climate change

To achieve net zero across its value chain, Bayer is working to better understand and shape its future business models (see a [summary of Bayer's 2021 Climate Program](#)).

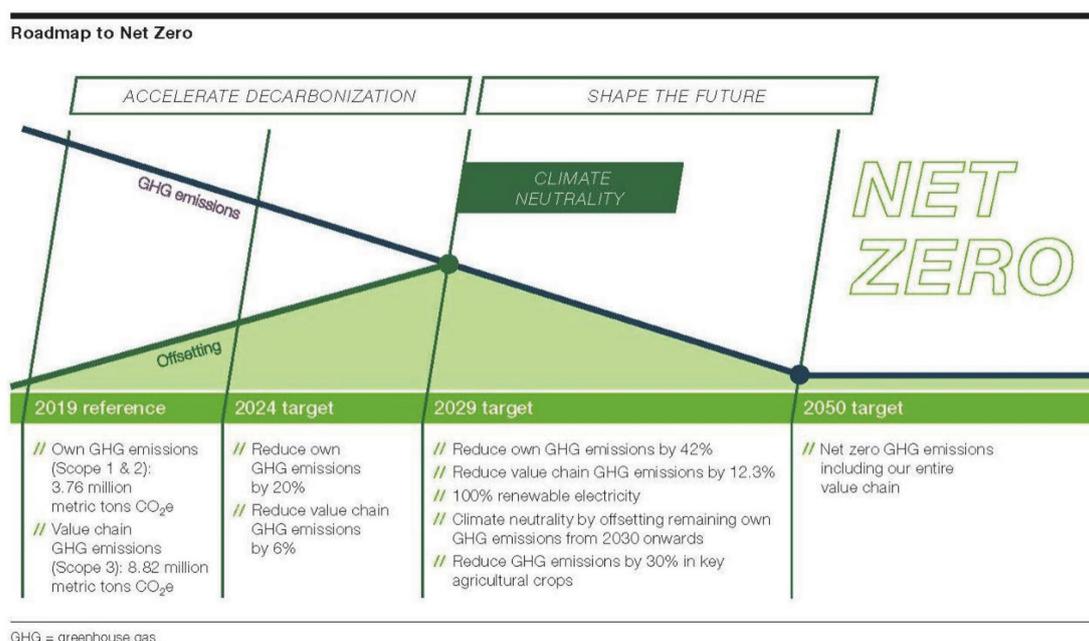
The scenario analysis performed by the company has significantly contributed to building its approach to strategically respond to climate change and define its Net Zero Roadmap.

Bayer analyzed the possible effects of climate change across different scenarios and used these to understand the impact of climate drivers on its business and identify measures for mitigating risks and capitalizing on opportunities. This analysis enabled the company to develop transition strategies and solutions to help farmers increase their resilience to the effects of climate change and reduce GHG emissions while cultivating healthy and sustainable crops.

For example:

- Supporting carbon sequestration giving farmers the tools and methods to increase the carbon retained in the soil and ensure it remains there, enabling them to measure and earn from it.
- Reducing emissions from rice cultivation – training farmers in sustainable practices related to GHG emissions reduction, water efficiency and integrated weed management to improve environmental footprint and productivity, along with introducing dry seeded rice products with improved production and reduced GHG emissions.

Figure 6: Bayer's Roadmap to Net Zero<sup>20</sup>

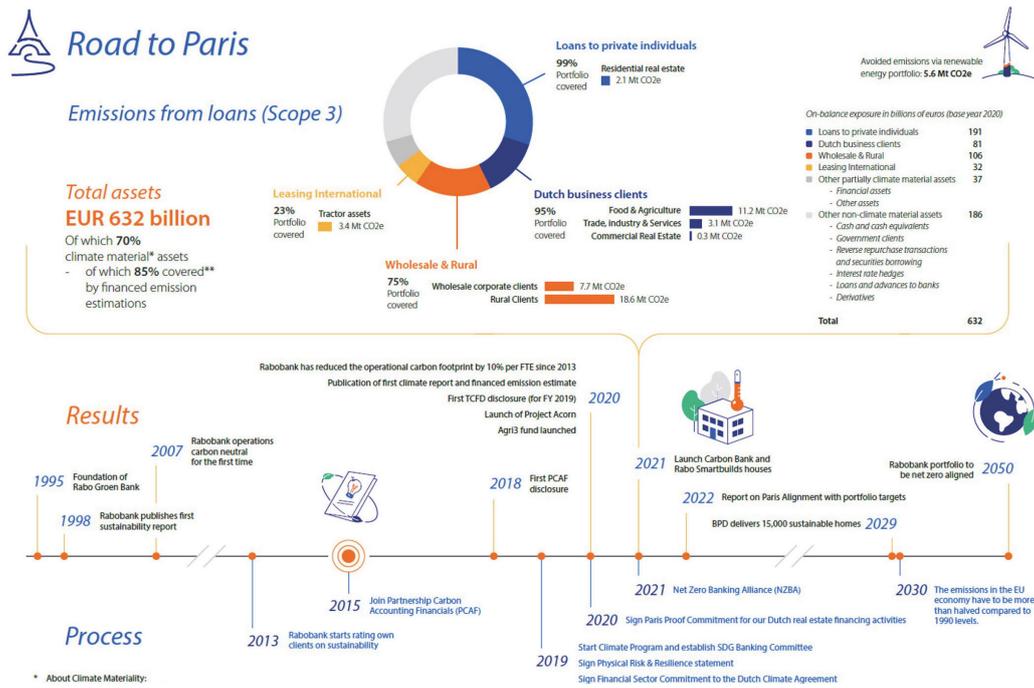


Source: Bayer

## Rabobank - aligning transition planning and financial solutions

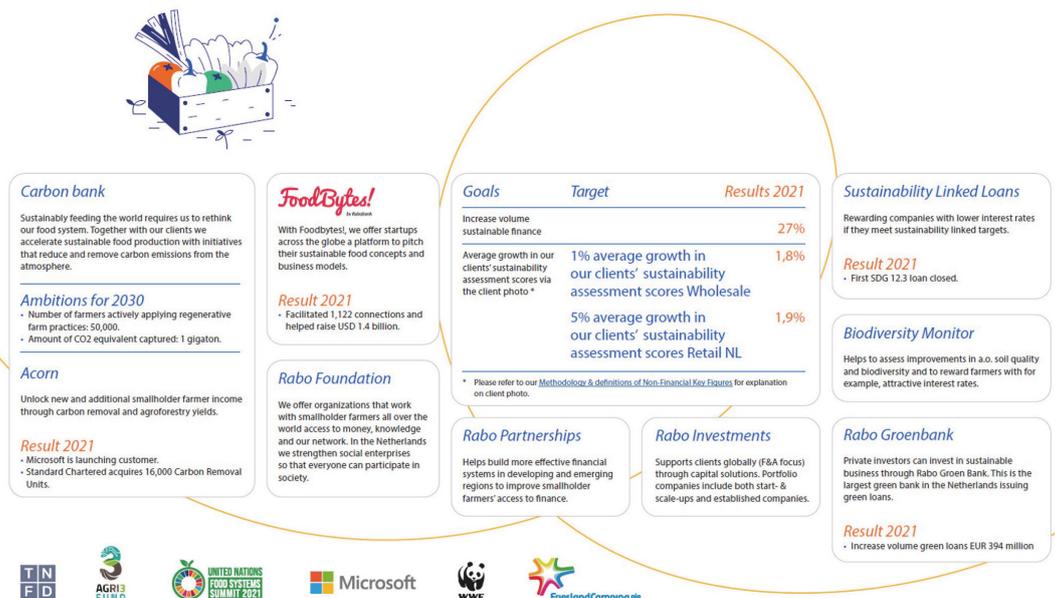
In its report [Our Impact in 2021](#), Rabobank assesses the requirements and interconnections across Food, Climate and Energy and Inclusive Society to deliver transition solutions that facilitate sustainable business models. The report provides details of the bank's four-step approach to align its loan and investment portfolio with the Paris Climate Agreement targets, including using scenario analysis to support its benchmarking and target-setting.

**Figure 7: Rabobank-Road to Paris, from Our Impact in 2021<sup>21</sup>**



## Our Contribution to the Food Transition

Ensuring together that there is enough healthy food for everyone. Food that is produced within the planetary boundaries.



Source: Rabobank

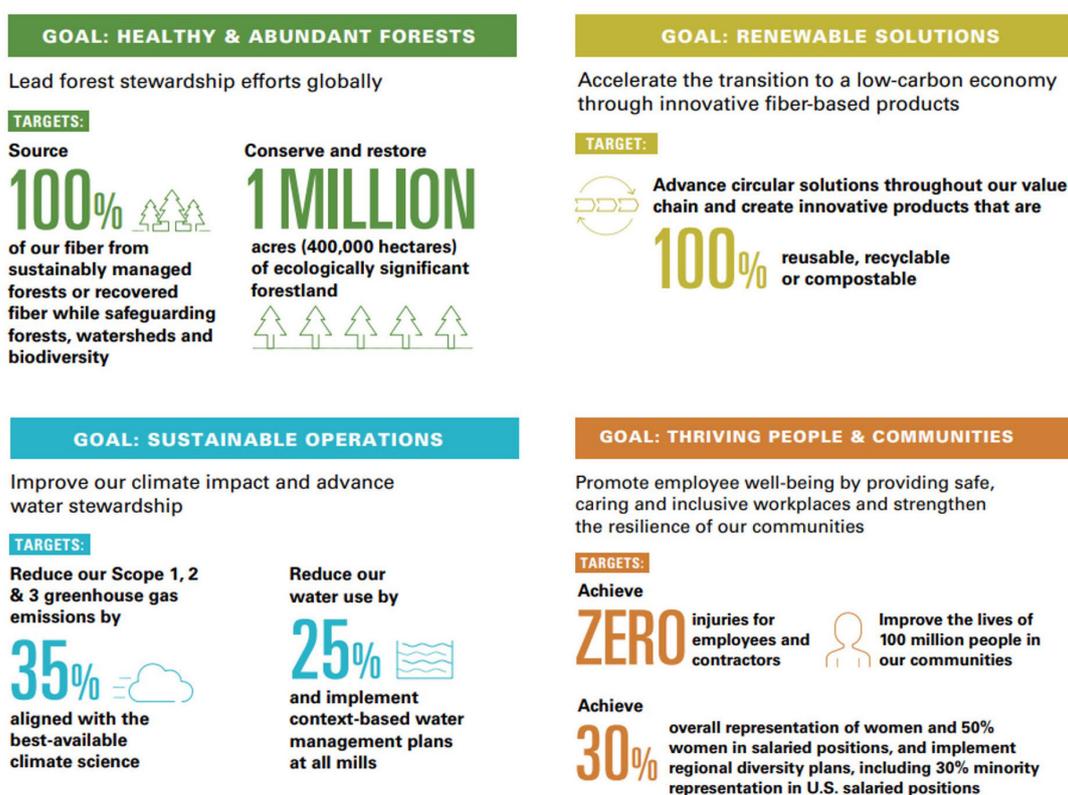
## International Paper – building decision-useful intelligence

International Paper is one of the world’s leading producers of fiber-based products. The company creates:

- Packaging products that protect and promote goods, enable worldwide commerce and keep consumers safe.
- Pulp for diapers, tissue and other personal hygiene products that promote health and wellness.

[Vision 2030](#) represents IP’s long-range goal and commitment to becoming a more sustainable corporation that protects the planet and improves people’s lives while delivering strong financial results

**Figure 8:** Core components and goals of IP’s Vision 2030



Applying scenarios across different temperature outcomes and pathways enables International Paper to build business decision-useful intelligence for factors impacting potential future production and use of forest products.

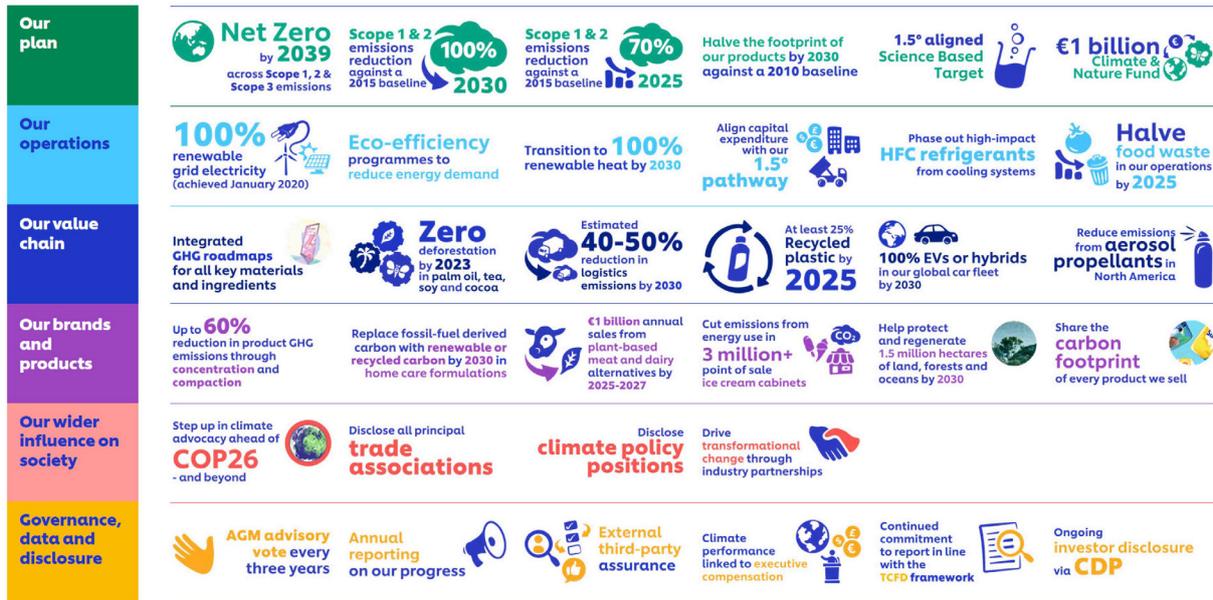
This more granular and sophisticated information enables the company to better understand the dynamics and resiliency of its supply chains to proactively integrate risk and opportunities and climate adaptation activities into climate transition planning and business transformation.

For example, through the use of science-based targets and the application of scenario analysis, the company can assess GHG emissions, carbon sequestration trajectories and the profiles of forestry and land use across scenarios and geographic. These assessments help IP to determine goals and activities that are central to their sustainable forestry transition plans and global forest stewardship strategies.

## Unilever – taking action across the business

[Unilever’s Climate Transition Action Plan](#) provides a clear public-facing explanation of its approach to climate transition that provides transparency on the scope (inclusions and exclusions), foundations, principles and governance underpinning its plans and actions.

**Figure 9:** Unilever Climate Transition Action Plan<sup>22</sup>



Source: Unilever

Table 4 provides some illustrations from the AFOLU sector of how scenario analysis can link to real economy transition planning components.

**Table 4:** How scenario analysis can link to real-economy transition planning components in the AFOLU sector

Industry and value chain	Climate-related risk/opportunity	Example scenario variables	Transition plan elements	GFANZ theme	Related examples
Agriculture – input providers	Technological advances	Yield growth; production costs; land use change; emissions	Product and service - efficiency gains, increase yield, prevent land use change, precision agriculture, soil management	Implementation strategy	<a href="#">Bayer - Sustainability Report 2021. Transformation toward sustainable agriculture. pp7-9</a>  <a href="#">Corteva - 2021 Sustainability &amp; ESG Report. Sustainable Innovation. pp14-19</a>
	Impacts of carbon pricing mechanisms	Raw material costs, GHG emissions; Shifts in product demand; Technology pathways	Current and emerging GHG regulation - changes in taxation, production costs and practices	Implementation strategy  Metrics and targets	<a href="#">Nutrien, ESG report 2022 - Strategic Implications. Identified Climate-Related Risks and Opportunities</a>
Food – processor and manufacturers	Market changes – consumer preferences	Crop and livestock commodity demand; market size; diet shift	Product and service – plant-protein	Implementation strategy	<a href="#">Danone - Integrated Annual Report, pp45-52</a>
	Demand to transition to more sustainable agriculture practices	Regional level commodity supply; commodity demand analysis; production costs; yield-enhancing technology pathways	Stakeholder engagement; Supply chain engagement	Objectives and priorities  Engagement strategies	<a href="#">Kellogg, Example 10, Expectations for Real-economy transition plans</a>
	Change to product portfolio	Product mix; commodity mix; production costs; product price; diet shift pathways	Activities and decision-making/ products and services	Implementation strategy	<a href="#">Nestlé, Example 8, Expectations for Real-economy transition plans</a>

**Table 4** (Continued)

Industry and value chain	Climate-related risk/opportunity	Example scenario variables	Transition plan elements	GFANZ theme	Related examples
<b>Farmers</b>	Increased input costs make production methods expensive for farmers	Production costs, commodity yield growth; input efficiency; land cover; land use change	Product and service - price sensitivity; market growth analysis; commodity transition; revenue sensitivity	Implementation strategy  Engagement strategies	<a href="#">Food, Agriculture and Forest Products TCFD Preparer Forum, pp46-58</a>  <a href="#">Corteva - 2021 Sustainability &amp; ESG Report, p33</a>
<b>Investors</b>	Clarity of investment cases to realize carbon drawdown by scaling up climate-smart, soil-centric agriculture practices	Production yield; commodity price variation; market size; technology and policy pathway analysis	Transition funding; technology and innovation pathway; Supply chain incentivization	Engagement strategies  Metrics and targets	<a href="#">Transformative investment in climate smart agriculture, Climate-Smart</a>  <a href="#">Soil Tech Landscape Analysis, pp3641</a>
<b>Forest management</b>	Climate positive land use	Land cover; Land use change; Timber/ pulpwood/ food production; Yield improvement; CO <sub>2</sub> mitigation potential; avoided deforestation; forest restoration	Zero deforestation commitments and regular reporting of progress across key commodities  Investment in reforestation, afforestation or restoration of degraded land	Engagement strategies  Metrics and targets	<a href="#">Food, Agriculture and Forest Products TCFD Preparer Forum, pp46-58</a>  <a href="#">Forest Sector Net-Zero Roadmap</a>
	Protected areas increase risk for supply chains relying on deforestation	Commodity prices; emissions and composition across supply chains; Land cover; Land use change	Transition-related policies  Clients/portfolio companies and suppliers  Government and public sector	Implementation strategy  Engagement strategies	<a href="#">Transition Scenarios for Tropical Agriculture, Section 3- Industry transition risks and opportunities</a>
<b>Retailers</b>	Targeted value creation through creating transparency around current GHG emissions along the entire value chain	Production of meat, dairy and alternative products/ commodities; GHG emissions; CO <sub>2</sub> abatement potential	Activities and decision-making	Implementation strategy  Metrics and targets	<a href="#">M&amp;S Plan A: Our Planet</a>  <a href="#">M&amp;S Annual Report 2022, pp72-77</a>
<b>Cross-sector</b>	Transparency about the key issues and potential challenges	Use scenario analysis to be clear on ranges of performance and uncertainty; build clarity on what can and cannot be achieved and to identify key enabling requirements	Stakeholder engagement	Foundations	<a href="#">Climate Transition Action Plans – Transformation Guide (various case studies)</a>

Further examples of transition plans across a range of sectors are available in the [Climate Transition Action Plans – Transformation Guide](#)<sup>23</sup> from Transform to Net Zero and the GFANZ Expectations for [Real economy Transition Plans](#).<sup>24</sup>

# ⑤ The role of climate scenario analysis in transition planning

Climate scenario analysis should inform transition planning, provide guardrails for planning goals, and challenge or support a transition strategy. No single climate scenario can form the basis for a transition plan – the plan should reflect the company’s assessment against a range of potential outcomes and consider a combination of mitigative and adaptive measures to facilitate its transition.

The Transition Plan Taskforce cites response to climate-related risks and opportunities as one of the key elements to include in a transition plan to create a well-rounded disclosure. Climate scenario analysis can provide a view of the potential risks and opportunities that may affect a company’s operations and highlight the possible consequences of inaction, be it a manifesting risk or a missed opportunity. Climate scenario analysis should inform a company’s strategy and allow it to identify priority areas for action.

A transition plan needs to convince management, the market and investors that a company will implement actions at both the strategic and operational level to realize climate transition commitments aligned with a 1.5°C outcome pathway. It should demonstrate how a company can build resilience and agility to proactively address future climate-related risks. Accordingly, it is necessary to assess and understand the sensitivity of future performance

and the robustness of business capabilities under a range of scenarios, temperature outcomes and policy and innovation pathways. This is precisely what effective scenario analysis should support.

A transition plan should consider scenario analysis to inform its roadmap and vice versa, as well as considering other aspects such as **contributions to a just transition** and whether the company can **influence its suppliers and customers to decarbonize**.

Rather than simply articulating a decarbonization trajectory and a target date, a climate transition plan should **overlay climate risk and employ scenario analysis to drive the timing of deployment** of specific actions and set the **required governance processes**.

A core element of transition planning is the incorporation of decisive, deliverable actions that reflect how strategy, business model, operating model and value creation may be impacted by climate risks and opportunities presented by transitioning to a low-carbon economy. The transition plan should consolidate the insight and strategic actions identified from the application of scenario analysis, including:

- Engagement and education
- Strategic adaptation and resilience
- Public and policy engagement
- Assessing financial impact
- Reporting and disclosure

Scenario analysis should be an indirect but critical input to transition planning to drive strategic action. The following are key areas where it can inform the development of transition plans or is important to support their implementation and impact:

## 1. Taking ownership of climate transition

- Transition planners need to be clear on why transition planning is essential to the organization and ensure there is clear leadership from management to drive climate transition. Climate scenario analysis can be used as a tool to highlight the uncertainties of future performance and possible impacts on the market context and business performance.
- By raising awareness of possible business trajectories to alternative future states, management can be educated and motivated to take ownership of climate transition and drive the quality of transition plans. The [Climate Scenario Tool](#) can be used to engage and educate key stakeholders.

## 2. Building a coherent narrative for transition

- Performing analysis of sensitivities across a range of scenarios builds an understanding of the sensitivities of business performance to scenario outcomes and pathways.
- By exploring and understanding the variation and uncertainty of future performance, scenario analysis can be used to justify the narrative that supports the assumptions, strategic rationale and drivers of transition plans.
- In turn, the analysis supports the identification and articulation of the transition activities and levers that the company will engage in driving transition activities, e.g., alternative sourcing of commodities, subsidy shifts for commodities, investment in R&D, data capture across the value chain, fleet emissions reduction, etc.
- The [Climate Scenario Tool](#) can be used to explore how company-relevant variables may change over time under different scenarios.

## 3. Providing clear transition strategies

- Companies can use scenario analysis to explore the business resilience of key material and at-risk commodities and geographies under different transition pathways and to map transition activities to different scenario futures – effectively to “stress test” transition plans.
  - By examining all plausible climate scenarios and the range of impacts that could affect the business, organizations can define plausible extremes of drivers and establish guardrails within which an adaptation strategy or transition plan is set.
- ## 4. Establishing a common basis for climate action
- Conducting climate scenario analysis against a clear set of sector-relevant scenarios (which the [Climate Scenario Tool](#) aims to provide) provides a common basis for investors and ratings agencies to understand how organizations have examined future market uncertainties and utilized that insight in the design of a strategic response.
  - Transparency on the approach to assessing climate uncertainties gives stakeholders confidence in the rationale and robustness of climate adaptation strategies and motivates recognition and reward of positive climate action and resilience measures.

## 5. Motivating more granular data and analysis

- The conduct of scenario analysis motivates organizations to analyze business performance at more granular levels and to consider vulnerabilities and opportunities at localized or sub-regional levels.
- As part of the analysis, it is necessary to review and challenge the validity of transition assumptions across different levels of granularity (e.g., the impact of technology in Europe or North America vs. emerging economies) and to reflect variations in the transition strategy and activities.
- In turn, organizations must consider the alignment of aggregated and disaggregated analyses and how, for example, strategies at a sub-regional level are implemented and reflected in an aggregated approach.
- By performing climate scenario analysis at different levels of granularity, organizations can better understand the sensitivity of the aggregated structure, demonstrate the robustness of transition plans and inform the estimated costs of transition.
- By applying climate scenario analysis at a more granular level, organizations are required to examine data quality and coverage across their value chains and supply chains and decide how to balance qualitative and quantitative assessments of risk, opportunity and resilience.

## 6. Setting credible targets and quantifying metrics

- Detailed climate-related scenario analysis can inform realistic climate-related targets, including setting interim GHG emissions reduction targets and net zero GHG emissions targets.
- By examining performance over time and across different scenario pathways, the context and validity of the targets can be presented. This builds confidence in the relevance and alignment of target values and in setting interim targets and monitoring metrics to track transition performance.

- By establishing interim targets and monitoring metrics informed by scenario analysis, organizations are more strongly positioned to explain the criteria required for transition adaptation, to assess their transition against expectations, and to be agile in their transition journey.

## 7. Building the case for funding and investment

- A clear representation of how scenario analysis has informed strategic transition plans can be used as the foundation for investor dialogue and to explain why the business wishes to secure investment.

- For example, changes in commodity prices or provision can drive a supply constraint that requires finance to adapt, innovate or implement new technology.
- Combined with cross functional discussion, scenario analysis can be used to demonstrate capital and operational expenditure requirements under different scenario outcomes and critically inform a transparent investment case to support transition activities and strategy.

# ⑥ Themes for enhancement of transition plans

Through development of the scenarios for Food, Agriculture and Forest Products and discussion with companies and technical advisors on their role in supporting transition planning, a set of themes emerged on how the approach to transition planning might be enhanced.

## **Transition needs to have a credible trajectory**

Transition is a journey that must follow a credible trajectory that sets a clear path toward achieving targets. A future step change in performance cannot reliably deliver it. There needs to be a systemic response showing sector participants moving along the same pathway, well ahead of 2050. This means transition plans need to contain front-end and mid-term interim targets aligned to end-state targets and clearly represent pathways that do not defer transition.

## **Be open about what is and is not included in the transition plan, and why**

To build stakeholder confidence in the accuracy and coverage of transition plans, it is important to discuss the elements that are not covered by the transition plan and why. Discussions with stakeholders highlight a greater confidence in transition plans that are supported by clear disclosures of the elements that are not captured and reasons for exclusion.

There is also an appetite for organizations to be more transparent on how far they can assess along the value chain and where there are

boundaries of control or a lack of data that prevent or reduce the effectiveness of transition activities or necessitate a qualitative rather than a quantitative approach.

## **Greater clarity on mitigation vs. adaptation measures**

There is often a lack of sufficient distinction between climate adaptation and mitigation actions. These can be easy to conflate, and it can be unclear in transition plans that there is a clear distinction between climate change mitigation and climate change adaptation activities. Companies should be clear about what adaptation actions they will take ownership of and in what timeframe. For example, diversifying crops so they can better adapt to changing climates or adopting regenerative agriculture and managing food, water and other natural resources wisely in the context of a changing climate. Completing physical risk analysis and scenario analysis at the relevant level of granularity is a useful tool for examining the local risks and opportunities that are strategically addressed through transition plans and strategy.

## **More dynamic assessment of transition plans is needed**

Transition plans reflect a strategy focused on company performance over a 25-to-30-year timeframe and a range of potential future states. Plans are developed at a point in time and require ongoing assessment of actual versus planned performance and the relevance of the transition plan and its underlying assumptions.

There is currently a lack of consistency in the frequency and triggers by which transition plans are reviewed and updated. Ensuring transition plans are integrated into strategy planning cycles and enterprise risk management processes can support the monitoring of performance and a regular review of assumptions. Scenario analysis linked to risk measurement and assessment can help organizations build in thresholds that could trigger a review of assumptions.

## **Think beyond only climate to take a holistic approach**

By designing solutions with a broader range of social, ecological and economic goals in mind, businesses can identify opportunities, be clear about trade-offs and boundaries of transition strategies, reflect and include considerations of the just transition and reduce costs in the long run.

Inclusion of just transition elements within transition strategies and plans is necessary for stakeholders and investors to ensure climate actions consider the impacts on individuals, workers and communities. The GFANZ workstream proposes disclosure components encouraging company descriptions of supporting just transition on real-economy transition.<sup>25</sup>

# Endnotes

- <sup>1</sup> [CDP, New CDP data shows companies are recognizing the need for climate transition plans but are not moving fast enough amidst incoming mandatory disclosure, February 2023](#)
- <sup>2</sup> [The Transition Plan Taskforce Disclosure Framework, Transition Plan Taskforce, November 2022](#)
- <sup>3</sup> [SBTi, SBTi Corporate Net Zero Standard, October 2021](#)
- <sup>4</sup> [SBTi, Forest, Land, and Agriculture Science Based Target Setting Guidance, January 2022](#)
- <sup>5</sup> [Transform to Net Zero, Climate Transition Action Plans, September 2022](#)
- <sup>6</sup> [FTSE Russell. Mind the gaps: Clarifying corporate carbon, May 2022.](#)
- <sup>7</sup> Transition Plan Taskforce, TPT Presentation to TPT Delivery Group, March 2022
- <sup>8</sup> [Transition Plan Taskforce, A Sector-Neutral Framework for private sector transition plans - Call for Evidence, May 2022](#)
- <sup>9</sup> [CERES, The investor guide to climate transition plans in the US food sector, May 2022](#)
- <sup>10</sup> [TCFD, 2022 Status Report, October 2022](#)
- <sup>11</sup> [Transition Plan Taskforce, October 2022](#)
- <sup>12</sup> [SEC, SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors, March 2022](#)
- <sup>13</sup> [TCFD, Task Force on Climate-related Financial Disclosures Guidance on Metrics, Targets,](#)
- <sup>14</sup> [CDP, Climate Transition Plan: Discussion Paper, November 2021](#)
- <sup>15</sup> [GFANZ, Towards a Global Baseline for Net-zero Transition Planning, June 2022](#)
- <sup>16</sup> [IGCC, Corporate Climate Transition Plans: A Guide to Investor Expectations, March 2022](#)
- <sup>17</sup> [GFANZ, Expectations for Real Economy Transition Plans, September 2022](#)
- <sup>18</sup> [Climate Bonds Initiative, Transition Finance for Transforming Companies, September 2022](#)
- <sup>19</sup> [Climate Bond Initiative, Financing Credible Transitions: Summary Note, September 2020](#)
- <sup>20</sup> [Bayer, Climate Program, 2021](#)
- <sup>21</sup> [Rabobank, Our Impact in 2021](#)
- <sup>22</sup> [Unilever, Climate Transition Action Plan, 2022](#)
- <sup>23</sup> [Transform to Net Zero, Climate Transition Action Plans, September 2022](#)
- <sup>24</sup> [GFANZ, Expectations for Real economy Transition plans, Appendix B, September 2022](#)
- <sup>25</sup> [GFANZ, Expectations for Real economy Transition plans, Appendix B, September 2022](#)

## DISCLAIMER

This report is the outcome of the collective work of the WBCSD team and the Food, Agriculture and Forest Products Forum. The views in this report represent a broad consensus of the Forum. It does not necessarily, in all details, represent the individual views of each Forum member or their company. Unless otherwise stated, the positions expressed in this report do not represent the views of any of the external organizations that are acknowledged for their help and input.

## ACKNOWLEDGMENTS

WBCSD sincerely thanks Vivid Economics and Josh Fettes, Gordon Darling, Sarah Douch and Dom del Re from PwC.

WBCSD acknowledges and sincerely thanks the members of the Food, Agriculture and Forest Products Forum without whose expertise this work would not have been possible.

**Bayer** – Nicolas Schweigert

**Cargill** – Dana Boyer

**CMPC** – Andrés Yaksic Beckdorf, Felipe Naranjo De Lucca, Nicolas Gordon Adam

**Corteva** – Rory Nussbaumer, Anjali Marok

**Danone** – Marie-Pierre Bousquet

**International Paper** – Sophie Beckham, Matt Inbusch

**Mondi Group** – Anthony Campbell, Gladys Naylor, Gregory Salmon

**Olam Food Ingredients** – Adam Dixon-Warren, Andrew Van Hagt, Ria Bakshi

**Rabobank** – Luke Disney

**Royal DSM** – Salla Sulasuo, Lucie van de Steeg

**Tyson Foods** – Justin Ransom, Katherine Pickus

**Viterra** – Bart de Rijk

**Weyerhaeuser** – Vaughan Andrews

WBCSD would like to thank representatives from the following organizations that provided expert advice to the Project Team and Food, Agriculture and Forest Products Forum throughout the development of the scenarios and supporting guides:

**BSR** – Maria Troya

**Climate Bonds Initiative** – Michael Bullen, Chris Moore, Ewan Thomson, Oluwatoyin Oyekenu, Rachel Hemingway

**Cornell University** – College of Agriculture and Life Sciences – Daniel Mason-D'Croz

**PBL Netherlands Environmental Assessment Agency** – Jonathan Doelman

**Potsdam Institute for Climate Impact Research** – Franziska Gaupp, Jan Dietrich, Alexander Popp

**Orbitas** – Niamh McCarthy

**Tropical Forest Alliance** – Petra Tanos

**United Nations Environment Programme Finance Initiative** – Sarah Kemmitt

**World Wildlife Fund** – Emily Moberg

Additionally, WBCSD would like to thank the Potsdam Institute for Climate Impact and Research for its development and maintenance of the open-source Model of Agricultural Production and its Impact on the Environment (MAGPIE), which is the model that provides the foundation for these scenarios.

This project is funded by the Gordon and Betty Moore Foundation and the Royal Norwegian Ministry of Climate and Environment.

GORDON AND BETTY  
**MOORE**  
FOUNDATION

 **NICFI**  
Norway's International Climate and Forest Initiative

## ABOUT WBCSD

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing "how-to" CEO-guides from these insights; by providing science-based target guidance including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical regions.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of a world where 9+ billion people are living well, within planetary boundaries, by mid-century.

[www.wbcd.org](http://www.wbcd.org)

Follow us on [Twitter](#) and [LinkedIn](#)

## Copyright

Copyright © WBCSD,  
February 2023.

**World Business Council  
for Sustainable Development**

Geneva, Amsterdam, New Delhi, London, New York City, Singapore

[www.wbcsd.org](http://www.wbcsd.org)

