ACT

ACT ADAPTATION METHODOLOGY

VERSION 2.0 | October 2023

ACKNOWLEDGEMENTS

AUTHORS AND FUNDERS

EDITORIAL **Stephia LATINO** (ADEME);

Romain POIVET (ADEME | World Benchmarking Alliance); **Robert BELLINI** (ADEME)

ACKNOWLEDGMENTS

A critical review of the ACT Adaptation draft methodology from February 2022 has been conducted by two independent groups of experts:

- Adelphi Consult GmbH: Walter Kahlenborn and Linda Hölscher
- Adaptation Leader & Climate Adaptation Works: Ira Feldman; Karl Schultz; Linus Adler; Leila d'Heurle; Paul Forte

The critical review comments have led to an improved draft ACT Adaptation methodology.

The draft methodology from June 2022 has been tested and revised thanks to 13 international volunteer companies from various sectors (see list of companies in annex), with the help of Climate Sense consultancy and the support of a Steering Committee.

ADEME warmly thank all these contributors for their implication, which led to the improvement of the ACT Adaptation methodology and enabled its development and finalization.

Contents

1. Introduction

The world has already exceeded +1°C global warming compared to the pre-industrial period (1850-1900). Climate change has been definitively linked with severe and widespread consequences across the globe (see the World Weather Attribution initiative). Thus, adaptation to the current and future climate system is essential and must be taken into consideration alongside mitigation efforts. All actors (private actors, companies, territories, governments etc.) have to start acting now to adapt.

Article 7 of the Paris Agreement defines the global goal of "enhancing adaptive capacity, strengthening resilience and reducing vulnerabilities to climate change"[1]. It also requires that all Parties should engage in adaptation planning and implementation through, for example, national adaptation plans, vulnerability assessments, monitoring and evaluation, and economic diversification.

Despite the growing concern for adaptation, there is a lack of standardized and operational frameworks for analysing physical risks and assessing the adaptation strategies of private actors. Existing standards provide generic guidelines and recommendations (e.g. ISO 14090 and ISO 14091). This ACT Adaptation methodology is not a risk analysis methodology, i.e. it does not provide guidance and tools to analyse the potential negative consequences from physical climate events or trends on the company. ACT Adaptation rather aims at assessing the quality and comprehensiveness of company's adaptation strategy, from their physical risk analysis to their governance, taking into account the entire value chain. As a result, an ACT Adaptation assessment does not quantify the company's level of climate resilience, but it quantifies and qualifies to what extent a company has implemented a comprehensive, coherent, effective and robust adaptation strategy along its entire value chain.

The principles and structure of ACT Adaptation are consistent with those of ACT Mitigation. These two parts of the ACT initiative[2] are independent but can be combined to obtain a comprehensive climate strategy assessment. The ACT Adaptation methodology has been developed based on:

- ADEME's expertise regarding adaptation to climate change
- Preliminary methodological discussions and tests in 2021 of a v0 version of the ACT Adaptation methodology through ACT Initiative sectoral Technical Working Groups (Agriculture & Agrofood, Iron & Steel, Glass, Pulp & Paper, Chemicals and Aluminium); and a public consultation;
- A v1 version issued in beginning of 2022, submitted to an independent critical review by two experts: Adelphi Consult GmbH and Climate Adaptation Leader & Climate Adaptation Works.
- Road Test of the ACT Adaptation draft methodology with 13 volunteer companies, the support of a Steering Committee and the consultancy Climate Sense (see Appendix 1 for more information).

This methodology provides companies with a framework for assessing the comprehensiveness of their adaptation strategy, while guiding them to further improve it. Companies can also use this methodology to understand what makes a robust adaptation strategy, in order to start developing it. This methodology is intended to provide explanations, context and references to the ACT Adaptation analyst, so that, beyond the maturity assessment, it can provide the company with feedback and recommendations.

[1] https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/new-elements-and-dimensions-of-adaptation-under-the-paris-agreement-article-7

[2] https://actinitiative.org/

2. Principles

The application of principles is fundamental to ensuring the quality and comprehensiveness of the adaptation strategy assessment. The principles are the basis for, and will guide the application of, the requirements in the present methodology. The principles ensure the strategy's consistency between physical risks, adaptive capacity, adaptation activities and governance.

COMPREHENSIVENESS of adaptation measures designed – All of the risks identified in the physical risk analysis are addressed by the measures included in the adaptation strategy.
CONSISTENCY with results of the physical risk analysis - The adaptation measures and activities of the company are clearly based on and aligned with the results of the physical risk analysis. It also relies on defined thresholds and levels of increased physical risks.
EFFECTIVENESS of measures in adaptation strategy - The anticipated extent to which adaptation reduces climate risk, through reduced exposure or vulnerability and enhanced resilience.
FEASIBILITY - The degree to which adaptation response options are considered possible and desirable, taking into consideration barriers, enablers, synergies, and trade-offs, balancing diverse perspectives and values.
INCREASING Adaptive capacity - The adaptation strategy is likely to increase the company's adaptive capacity.
VERIFIABILITY - The data required for the assessment is verified or verifiable and sufficiently relevant.

TABLE 1: PRINCIPLES FOR IMPLEMENTATION

RATIONALE

These principles form the basis of the assessment for all the indicators of the ACT Adaptation methodology. The analyst shall have these principles in mind during the whole assessment (e.g. during the preliminary answers to the questionnaire, indicators' assessment, data provided, etc.), in order to evaluate the company's strategy quality and consistency.

3. Scope of ACT Adaptation

3.1. Scope of the document

This document presents the ACT Adaptation methodology. It includes the framework and scope of the methodology, indicators with their description, maturity matrix and rationale, data requirement and collection, guidance and scoring system for assessment (see Contents – page 4). It also includes appendixes with the aim of enhancing the methodology and providing complementary support to the assessment.

The examples of climate-related risks and opportunities are not exhaustive. Any other risk or opportunity that is relevant to the company and its specific sector can be considered and analysed.

3.2. Scope of the ACT Adaptation methodology

The ACT Adaptation methodology evaluates a company's physical risk analysis and adaptation strategy, as well as its governance and strategy. Although specific adaptation measures do depend on the sector, size, location or activity of a company, the general framework for analysing its climate-related risks and opportunities can be standardised. Adaptation principles and measures, as well as governance and strategy, have general features, no matter the size or sector of the company. Thus, this methodology applies to all sectors and can be used by companies of various sizes and geographical locations. It is not intended to give a "stand-alone and exhaustive list of activities that could be viewed as contributing to adaptation under all circumstances" (TEG (2020), *Taxonomy Report, Technical Annex)* but rather to check whether all relevant elements and actions have been taken into account in the climate-change adaptation of the company. It aims at guiding companies through adaptation 'best efforts' for improving a strategy; and at providing a framework that operationalizes the concepts related to Adaptation pathways in order to achieve a comprehensive adaptation strategy.

This ACT Adaptation methodology is consistent with ACT Mitigation methodologies regarding its structure (e.g. maturity matrices, modules, etc.) and the use of indicator- and module-level weightings. However, the two methodologies are independent and the corresponding evaluation can be carried out separately.

4. Boundaries

The boundaries refer to the areas of a company's activities and influence to which the methodology can be applied.

In terms of temporal boundaries

- Past events fall within the scope of the methodology, since they can help the analyst to understand the company's track record in terms of its vulnerability to hazards and thus may help to build its adaptive capacity.
- Current climate events are also within its scope, since the world's climate is already changing and influencing the company's activity.
- However, this methodology is strongly future-orientated, with equal regard to exposure, vulnerabilities, risks and opportunities, on the one hand, and the adaptation strategy, on the other. Anticipating future climate change through scientific scenarios and company planning is key.

The analysis and adaptation measures must be consistent within the expected lifetime of the activity.

In terms of activities: nature and location

As illustrated in Figure 1, company activities are broken down into three scopes of process and control.

- Scope A represents the direct scope of the company, that is to say, assets directly controlled or operated by the company (e.g. equipment, vehicles, buildings, etc.).
- Scope B corresponds to the stakeholders with which the company is in direct contact, including network infrastructures (e.g. water, electricity, waste removal, rank 1 suppliers).
- Scope C represents the stakeholders with which the company is in indirect contact upstream or downstream of the value chain, such as rank 2 suppliers on which the company's direct suppliers depend.

These three scopes are part of the analysis in ACT Adaptation: they reflect the reliance of companies on internal and external elements to conduct and deliver their activities. As a consequence, hazards occurring at all stages of the value chain, from network infrastructure (e.g. water, electricity) to suppliers or clients of any rank (i.e. scope B or C in Figure 1), can affect the company directly or indirectly. Thus, the 3 scopes and the complete value chain are included within the system boundaries. A list of activities included in each scope is presented in Appendix 3 and may guide the analysis.

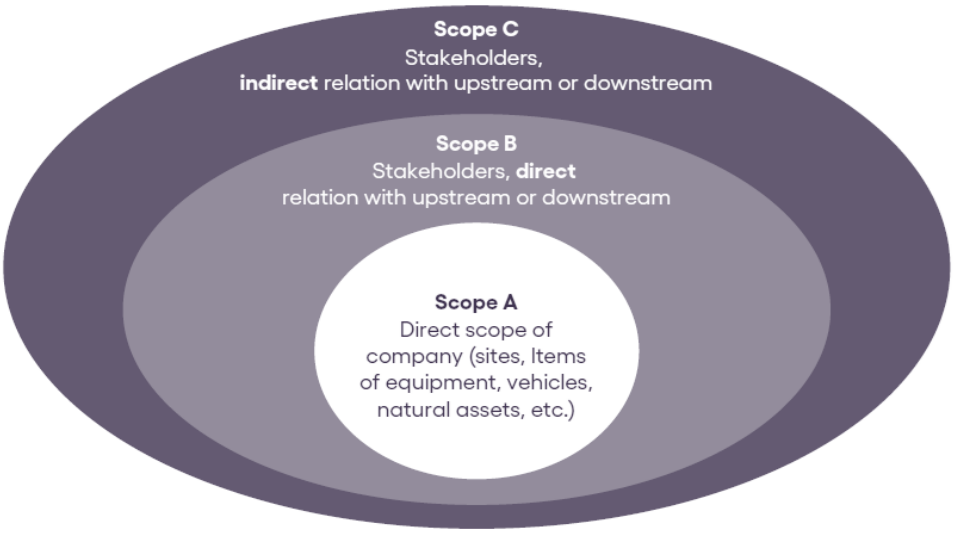


FIGURE 1: SCOPES OF ANALYSIS INCLUDED IN ACT ADAPTATION (FROM OCARA METHODOLOGY, CARBONE 4, 2021)

In this ACT Adaptation methodology, the value chain is broken down into 6 parts (see Table 2).

Value chain components within the scope of ACT Adaptation	Examples
Raw materials	Access to raw materials for production, inputs needed for production or the company's activity
Production, operations, processes, and infrastructures	Buildings and facilities, equipment, industrial processes, offices, outdoors near the facilities
People	Employees, workers, clients, customers; their security, working conditions and health
Network and systems	Water, energy, and telecommunication networks
Logistics and transports	Materials and inputs transport for the activity, transport distribution
Demand & sales	Demand for products and services, customer behaviour, markets, and lifestyles

TABLE 2: VALUE CHAIN PARTS WITHIN THE SCOPE OF ACT ADAPTATION

What each of the 6 value chain components (detailed in Table 2) contains and means depends on the company's sector and must be defined and discussed during the assessment. Appendix 4 presents a more detailed but non-exhaustive list of what each of these 6 value chain components may include in terms of activity.

Each value chain component must be considered at a preliminary stage of the assessment (see Section 7.3 for guidelines and advice on the assessment process) to check whether it is crucial to

the company's activity and if it is particularly vulnerable to climate change (see indicator 4.2). Following this screening, the relevant value chain components correspond to the boundaries of the complete assessment.

Analysis and adaptation measures must be consistent with the specific nature and location of the facilities. Location is an important aspect to consider in the company's activities concerning the three scopes, not only as a part of adaptation measures, but also regarding the company's overall adaptation strategy. It is a very significant factor regarding a company's assets and activities since climate impacts are always location-specific.

5. Methodological framework

5.1. General

This chapter details the ACT Adaptation methodology, as well as the steps for applying the methodology to a company's adaptation strategy (see also Section 7 for more elements on the data requirements and the assessment process).

The first motive for an ACT Adaptation methodology is to complement the ACT Mitigation methodologies with the same approach consisting in assessing how ready a company is to climate transition[3]. The bibliographical review for the development of the ACT Adaptation methodology includes publications from the World Resource Institute (WRI), the Intergovernmental Panel on Climate Change (IPCC) and the ISO standards. The Physical climate risks dimension also draws on publications from Carbone 4 and the Institute for Climate Economics (I4CE). The indicators and the structure of the Adaptation dimension mainly draw upon reports from ADEME. Modules and indicators include recommendations from the European Taxonomy (EU Taxonomy), the European Bank for Reconstruction and Development (EBRD, 2018), the Task Force on Climate-related Financial Disclosures (TCFD) and ISO 14090 standard. All references can be found in Section 9 – Sources.

The objective of the assessment is to evaluate the maturity of a company's adaptation strategy. The goal of an adaptation strategy is to minimize negative consequences from climate change for the company and to take advantage of opportunities (climate-resilient in the sense of the TCFD). Based on appropriate governance, the company seeks to ensure that the adaptive capacity and adaptation activities planned or implemented are relevant and proportionate to the risks and opportunities identified.

ACT Adaptation is consistent with ISO 14090 and ISO 14091 frameworks. However, ACT Adaptation is intended to be more operational and covers, in one single framework, more aspects regarding adaptation to climate change for companies than most standards and recommendations. In Section 7.2 and Appendix 6, a table of comparison between the ACT Adaptation framework and indicators, and other adaptation standards and recommendations is available.

[3] See the website : https://actinitiative.org/assess-your-strategy/

5.2. ASSESSMENT FRAMEWORK

As a starting point, the ACT Assessment framework proposes five guiding questions as the basis to steer the development of the ACT Adaptation methodology and create consistent ACT ratings. It is recommended that the analyst start the company assessment with these five guiding questions.

FIGURE 2: ACT ADAPTATION 5 GUIDING QUESTIONS

The assessment framework shall remain similar for the development of all ACT methodologies. It is here adapted to the context and elements of ACT Adaptation. These five questions express the dynamic vision of companies progressing towards adaptation to climate change:

- Starting by being aware of climate change impacts to which the company needs to adapt (Q1),
- the methodology will then evaluate the associated means to be deployed to address this need and adapt to climate change through pathways (Q2),
- it considers measures already implemented (Q3, Q4)
- and finally, the methodology aims to validate that the company's business model and adaptation strategy are consistent and credible (Q5).

RATIONALE

The key question to begin our assessment is "**Does the company recognise the need to adapt to climate change?"** Very often, due to market or investor pressures, companies have a short-term vision that prevents from building a proper adaptation strategy. This first question is then essential to place the company within a long-term vision: is it aware of climate change and its consequences on the company business? Is it explicitly committed to the adaptation process and willing to adapt? Does it have long term, strategic objectives that cope with climate change?

Once we are sure that the company is aware of the need to adapt to climate change and committed to the process, we shall seek to understand what the company is planning to do. The key question is then "What is the pathway the company has drawn up to adapt to climate change?". In the dialogue between the assessor and the company, this question is a direct consequence of the recognition that "something must be done" to adapt to climate change.

While the companies' intentions and strategy to adapt to climate change are extremely important, past actions and current performance will also be considered. The key questions then relate to "What is the company doing at the present?" and "What has the company done in the recent past?". To a large extent, the answer to these questions not only determines the adaptation gap, but also makes its commitments well-founded and credible.

Finally, from the 4 questions discussed above a fifth key question then emerges, which is "how do all these plans and actions fit together?" to ensure a comprehensive, coherent, effective, and feasible adaptation strategy, encompassing the principles presented in Section 2.

5.3. DATA SOURCES

For an ACT Adaptation assessment to be relevant, the company should at least have realized a physical risks analysis; and started to think about and implement its adaptation governance and some measures.

In order to carry out a company-level assessment, many data points, whether quantitative or qualitative, need to be gathered from various sources. While the analyst is encouraged to leverage on available public data disclosure where existing (e.g. CDP questionnaire, the upcoming CSRD ESRS E1 template[4]), where such framework is lacking ACT relies on voluntary provision of data by the assessed companies. The nature and format of data provided might differ from one company to another. In addition, external data sources might be consulted in order to streamline the process, ensure fairness, and provide additional value for verification and validation. Some of this third-party data may be replaced by reported data from companies, provided that there is a rationale for doing so.

The ACT Adaptation principles for implementation (e.g. Comprehensiveness, Consistency, etc.: see Table 1) drive data collection. Information on the credibility of the data used for the assessment shall eventually complement the ACT ratings. The quality of data used for this assessment is of very high importance and determines the quality of the assessment of the company's adaptation strategy.

For example, if a piece of data is asserted by the company without verifiable evidence, the assessor shall not take it into account in the maturity assessment.

[4] See EU Commission website: https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

Section 7 presents and details the documents and data sources for the ACT Adaptation assessment.

5.4. METHODOLOGY STRUCTURE

The ACT adaptation methodology relies on three dimensions that make it possible to ensure the high quality and comprehensiveness of the company's adaptation strategy and its associated plan: Governance & Strategy, Physical climate risks, and Adaptive capacity and adaptation activities. Within each dimension, sets of indicators provide insights and assessment of the company's adaptation strategy. The application of the principles presented in Section 2 is fundamental to ensuring the quality and comprehensiveness of the company's adaptation strategy. ACT Adaptation methodology relies to a great extent on the Adaptation pathways method (see Glossary and Annex 1): the indicators within the different dimensions enable an operational application of the Adaptation pathways method.

Each one of the three dimensions contains several modules. A module is evaluated through several indicators, but each indicator is independent of the others. Thus, many indicators have adaptation topics and elements that echo each other, and all indicators are complementary. Each indicator is assessed using a maturity matrix.

The maturity matrix is built on five levels of progressive maturity, from Basic to Best Adaptive Practice (see Table 3). For most of the indicators, the five levels of maturity are described in the matrix of the indicators to frame and describe different shades of practices. When only three levels of maturity are described, the analyst shall still assess and position the company's performance somewhere on the five possible levels of maturity.

Evaluation level	Basic	Standard	Advanced	Next Practice	Best Adaptive Practice
Score	0	0.25	0.5	0.75	1

TABLE 3: MATURITY MATRIX SCORING

The level of maturity that the company reaches for a given indicator results in a corresponding score between 0 and 1 (see Table 3). The assessor shall supply a short narrative supporting its judgment with respect to each indicator for the level of maturity achieved and listing the specific data provided by the company from which it draw its conclusions.

The five levels of the maturity matrix are similar to those used in ACT Mitigation methodology, except for the last of them, "Best Adaptive Practice (instead of "Low-carbon transition aligned"), in order to better suit adaptation to climate change terminology.

In this ACT Adaptation methodology, an 'in between' scoring system is introduced (see Section 8.2 for more details) for the sake of a more progressive and more flexible approach to maturity.

5.5. INDICATORS

Table 4 lists the modules and indicators used within the ACT Adaptation methodology.

DIMENSION	MODULE	INDICATOR
GOVERNANCE & STRATEGY	1. INTERNAL GOVERNANCE	1.1 Strategic objectives over the different time horizons
		1.2 Adaptation leadership and responsibilities
	2. COHERENCE WITH EXTERNAL STRATEGIES & DIALOGUE	2.1 Coherence with external adaptation strategies
		2.2 Working/Dialogue with interested parties
	3. ENVIRONMENTAL AND SOCIAL SAFEGUARDS	3.1 Do No Significant Harm Principle
PHYSICAL CLIMATE RISKS	4. DATA AND VALUE CHAIN	4.1 Climate data and scenarios
		4.2 Criticality of the value chain[5]
	5. PHYSICAL CLIMATE RISK ANALYSIS	5.1 Risks
		5.2 Opportunities
ADAPTIVE CAPACITY AND ADAPTATION ACTIVITIES	6. ORGANISATION	6.1 Decision-making processes
		6.2 Internal learning system
		6.3 Diversification of activities
	7. FINANCE	7.1 Financial capacity
		7.2 Mainstreaming of climate adaptation into investment decisions
	8. TECHNOLOGIES AND NATURE-BASED SOLUTIONS	8.1 Technologies and nature-based solutions for adaptive capacity
	9. HUMAN	9.1 Competence and expertise
		9.2 Training and capacity building
		9.3 Adaptation measures for working conditions

TABLE 4: ACT ADAPTATION INDICATORS

[5] See section 4 for the value chain components included in ACT Adaptation.

Rationale

Governance and Strategy: As a systemic challenge, adaptation to climate change is a multi-level and multi-agent subject, as well as a multi-thematic policy. Governance refers to "the system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders. It involves a set of relationships between an organisation's management, its board, its shareholders and other stakeholders. Governance provides the structure and processes through which the objectives of the organisation are set, progress against performance is monitored, and results are evaluated" (TCFD, June 2017). Therefore, as stated in ISO 14090 and confirmed in the case studies "*How to make business decisions to adapt to climate change?*" by ADEME 2021, the climate governance of the company shall take on commitment and responsibility on systemic grounds. This refers to internal governance as well as to external governance with communities and other stakeholders.

Consistent and efficient governance and decision-making is based on analysis of the physical hazards to which the company is exposed and the effect these may have on the company.

Physical risks are the potential for adverse consequences for human or ecological systems from climate-related hazards (German Environment Agency, 2022).

Climate-related hazards are the potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. In this ACT Adaptation methodology, the term hazard refers to climate-related physical events or trends or their physical impacts. There are two types of hazards:

- **Acute physical hazards** refer to those that are event-driven and brief events, including increased severity of extreme weather events, such as tropical cyclones or floods.
- **Chronic physical hazards** are slow trends and longer-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause sea-level change or chronic heat waves.

The chosen hazards classification for ACT Adaptation is presented in the Glossary of this document. We encourage the assessor to use this classification, however any other hazards classification that covers the same hazards can be used.

Climate-related hazards may have an impact on the company's complete value chain and affect it in various ways. An analysis of the risks and opportunities related to these climate hazards along the different parts of the value chain is essential in order to understand where, how and when to adapt to climate change. Different methodologies for the analysis of these physical climate risks and opportunities exist (see the beginning of the Physical climate risk dimension – Section 6), but a number of steps and characteristics remain common and key to an effective, exhaustive, and comprehensive analysis (e.g. scenario analysis, financial costs from climate change etc.). The Physical risks module and its indicators cover all of these aspects.

The third dimension focuses on **adaptive capacity and adaptation activities**, which contribute to making the company more flexible, capable of quickly adapting to changes, and even more competitive. According to ISO 14090 (and exemplified in ADEME (2019), *Adaptive capacity of businesses to the impacts of climate change: case studies)*, four major capacities permit a company

to reinforce its adaptation to climate change: organisational capacity (governance, exchange and decision-making bodies), financial resources (financing available to implement actions), technological resources (technologies, techniques and new solutions) and human resources (the specific skills and working time that the company mobilises). These elements make up the four modules of the Adaptive capacity and adaptation activities dimension of ACT Adaptation.

6. Indicator descriptions

Governance & strategy dimension

1. INTERNAL GOVERNANCE

1.1 STRATEGIC OBJECTIVES OVER THE DIFFERENT TIME HORIZONS

DESCRIPTION & REQUIREMENTS	1.1 STRATEGIC OBJECTIVES OVER THE DIFFERENT TIME HORIZONS
SHORT DESCRIPTION OF INDICATOR	This indicator measures how the company's long-term (i.e. beyond 20 years) strategy, pathways, or approach addresses climate change and the impacts thereof on its activities and business. It considers how physical risks and adaptation are formalised and integrated into corporate projects and policies. This indicator also assesses whether the company has defined time horizons (i.e. short, medium, and long-term) that are appropriate to its activity, sector and adaptation needs. Finally, it takes into account how this adaptation strategy or approach is internally disseminated and known.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not developed any long-term (i.e. beyond 20 years) adaptation strategy or approach.	• The company understands the importance and implications of time horizons (i.e. short, medium, and long term) for its adaptation to climate change. • The company has identified some major adaptation gaps and issues in its long-term (i.e. beyond 20 years) adaptation. The company recognises the need to adapt to climate change regarding all time horizons, through corporate projects and policies.	• The company has defined short- and medium-term horizons that are appropriate to its activity, sector and adaptation needs. • It has identified adaptation gaps regarding the long-term (i.e. beyond 20 years). It is starting to put in place an adaptation strategy in some corporate projects and policies (e.g. major action plans, risk management policies, annual budgets, review and guiding strategy). • The company's adaptation strategy is beginning to be internally disseminated and known.	• The company has defined short- and medium-term horizons that are appropriate to its activity, sector and adaptation needs. • It has established a long-term (i.e. beyond 20 years) adaptation strategy in at least the major corporate projects and policies (e.g. major action plans, risk management policies, annual budgets, review and guiding strategy). It takes into account how climate change may affect the adaptation measures. • The company's adaptation strategy is internally disseminated and broadly known.	• The company has defined short- and medium-term horizons that are appropriate to its activity, sector and adaptation needs. • All relevant corporate projects and policies are intended to be adapted to climate change and its consequences through the establishment of a long-term (i.e. beyond 20 years) adaptation strategy. • It is revised and updated when necessary (e.g. changes in strategies, or environmental requirements, knowledge, etc.). • The company's adaptation strategy is internally disseminated and broadly known.

HOW THE ANALYSIS WILL BE DONE

The assessment evaluates the extent to which the company is aware of climate change and its impacts on the company, and translates this knowledge into a strategic vision. It also evaluates the extent to which the company mainstreams climate risks and adaptation into long-term strategy and corporate projects. It shall also be accompanied by short- and medium-term horizon definitions and objectives.

The assessor shall make the following four components explicit:

- a narrative of the company's strategic vision or/and adaptation approach in the long-term (i.e. beyond 20 years). For the initial maturity levels, a written adaptation strategy is not necessarily required.

- the definition of the time horizons: short- and medium-term, as well as the company's related adaptation objectives. These time horizons shall be agreed upon between the assessor and the company in relation to its activity, sector, size and needs. It shall also be coherent with the company's decarbonisation strategy and the related horizons since adaptation and mitigation need to be developed and implemented in complementarity.

  However, in all cases, the long-term horizon shall be considered to be 20 years and beyond, consistently with ISO 14090.

  The time horizons defined in this step are used with regard to other indicators in the ACT Adaptation methodology.

- the number of corporate projects that integrate adaptation to climate change. They are used by the assessor to validate or challenge the company's strategic adaptation objectives. In particular, the analyst checks whether any strategic project may go against the adaptation objectives.

- the extent and effectiveness of internal dissemination to assess the extent to which the company's adaptation strategy is internally known (e.g. communication channels and processes used among the stakeholders involved, as well as frequency). Not all of the company's staff members need to know precisely what the adaptation strategy is. It shall be proportionate to the company's need to adapt and the current gaps.

The elements assessed by means of this indicator shall be put into perspective with regard to what is appropriate and necessary to the company's specific situation.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 1.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR	The governance and strategic bodies within the company enable and are the main drivers of its adaptation. Indeed, climate change directly or indirectly affects all aspects of the company and its activities. Only the company's governance is capable of supporting and driving systemic change by providing a long-term strategy, as well as short and medium-term objectives, and corporate projects that are consistent and adapted to future climate impacts. A company's adaptation strategy needs to translate into a strategic vision and lead to the mainstreaming of climate risks and adaptation considerations into the long-term strategy and decisions about corporate projects. This fundamental aspect is included in all of the main recommendations and standards regarding adaptation to climate change (see Appendix 6 – indicator 1.1). For example, in the TCFD[6], "organisations should provide […] a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organisation's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms.". It is recommended that they also "describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning." (Strategy recommended disclosure b).

1.2 ADAPTATION LEADERSHIP AND RESPONSIBILITIES

DESCRIPTION & REQUIREMENTS	**1.2 ADAPTATION LEADERSHIP AND RESPONSIBILITIES**
SHORT DESCRIPTION OF INDICATOR	This indicator assesses how well the organisation has formalised an organisational structure that clearly defines roles and responsibilities, permits effective delivery of actions, and is capable of remaining flexible to new opportunities for improved actions. It checks whether an adaptation leader, who manages and supervises, among other thing, the actions described in indicator 1.1, has been appointed. This indicator also considers how well the organisation is able to embed actions on climate change into its existing (or develop new) operational management systems and into its work programmes, by assessing the extent to which departments and related key employees are involved in the risk decisions and have assimilated climate constraints, the company's strategy, and the related time horizons.

[6] TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• No one is in charge of or supervising climate change issues. • Departments are not Involved in risk decisions or operational measures.	• The adaptation macro-measures and the long-term strategy, pathways or approach are for the most part managed or supervised by the individual/committee with the highest responsibility for climate change (manager/officer level). • Departments are not involved in the risk decisions or operational measures.	• The adaptation macro-measures and the long-term strategy, pathways or approach are for the most part managed or supervised by the individual/committee with the highest responsibility for climate change (i.e. senior manager/officer level). • The internal stakeholders involved and in charge of the company's physical risks assessment and development, implementation and monitoring of the adaptation strategy are beginning to be identified. • Thus, some of the relevant departments and related key employees are involved in the risk decisions or operational measures and have assimilated climate constraints, the company's strategy, and the related time horizons.	• The adaptation macro-measures and the long-term strategy and pathways are for the most part managed or supervised by the individual/committee with the highest responsibility for climate change (senior manager/officer level), closely related to the decision-making structure within the company. • The internal stakeholders involved and in charge of the company's physical risks assessment and development, implementation and monitoring of the adaptation strategy have been identified. • Thus, most of the relevant departments and related key employees are involved in the risk decisions or operational measures and have assimilated climate constraints, the company's strategy, and the related time horizons.	• The adaptation macro-measures, the long-term strategy, and pathways, as well as the monitoring are for the most part managed or supervised by the individual/committee with the highest responsibility for climate change (Board or individual/sub-set of the board or other committee appointed by the board). • The internal stakeholders involved and in charge of the company's physical risks assessment and development, implementation and monitoring of the adaptation strategy are identified and broadly known within the company. • Thus, all relevant departments and related key employees are involved in the risk decisions or operational measures and have assimilated climate constraints, the company's strategy, and the related time horizons. • There is a systemic vision.

HOW THE ANALYSIS WILL BE DONE

The analyst examines the adequacy of the position of the individual(s) or board in charge of the company's adaptation strategy, as well as its qualifications, competencies, responsibilities, and missions in relation to climate adaptation within the company. It shall also consider whether different departments make risk decisions or take operational measures for which they are responsible. The analysis includes identifying the dynamics between the individual in charge of company adaptation strategy and the departments making risk decisions or taking operational measures (e.g. communication channels, data assessment, methodology for the identification of departments affected by climate-related impacts, frequency of monitoring and evaluation of the strategy, etc.). Finally, this indicator also assesses the identification of internal stakeholders in charge of development and implementation (e.g. mapping) of the company's adaptation strategy, as well as their qualifications. All of these individuals with leadership roles or responsibilities with regard to adaptation shall take decisions aligned with the adaptation objectives defined by the company over the different time horizons (i.e. indicator 1.1).

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 1.2 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR	Among other aspects, the company's business model should be profitable and integrate physical climate risks and a climate adaptation strategy. The higher the position of the climate head within the organisation, the more effectively physical risks and adaptation are expected to be integrated into the company strategy, ensuring that actions are implemented, supervised, and monitored. This information is requested in various standards and guidance such as ISO or TCFD (see Appendix 6 – indicator 1.2 for comparison with other adaptation standards/recommendations. For example, as mentioned in the TCFD[7], under Governance, recommended disclosure a) and b), the company should "describe the board's oversight of climate-related risks and opportunities." and "describe management's role in assessing and managing climate related risks and opportunities".

2. COHERENCE WITH EXTERNAL STRATEGIES & DIALOGUE

2.1 COHERENCE WITH EXTERNAL ADAPTATION STRATEGIES

DESCRIPTION & REQUIREMENTS	**2.1 COHERENCE WITH EXTERNAL ADAPTATION STRATEGIES**
SHORT DESCRIPTION OF INDICATOR	This indicator evaluates whether the company considers "existing and emerging regulatory requirements related to climate change"[8] and the extent to which its adaptation strategy (or approach) and pathways are thus coherent and consistent with them, as well as with "sectoral, regional and/or national adaptation efforts"[9]. The development and implementation of a process or method for this purpose is analysed in this indicator. It also checks whether the related time horizons are taken into account by the company for its adaptation strategy and pathways.

[7] TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

[8] TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

[9] TEG. (2020), *Taxonomy: Final report of the Technical Expert Group on sustainable Finance*

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not investigated the consistency of its adaptation strategy with neither international, national, regional or local efforts and strategies, nor with sectoral ones.	• The company is starting to investigate and become aware of international, national, regional, and local adaptation efforts and strategies; as well as sectoral efforts and plans or the adaptation pathways of the sector.	• The company is developing a process or method in order to identify the relevant external adaptation strategies (i.e. international, national, regional, and local adaptation efforts and strategies; as well as sectoral efforts and plans or the adaptation pathways of the sector) in relation to its adaptation situation. • It is beginning to adjust its adaptation strategy to the relevant external strategies in order to stay consistent and take into account the ongoing external structuring actions taking place.	• The company has developed and implemented a process or method in order to identify the relevant external adaptation strategies (i.e. international, national, regional, and local adaptation efforts and strategies; as well as sectoral efforts and plans or the adaptation pathways of the sector) in relation to its adaptation situation. • The company's adaptation strategy is for the most part consistent with (or even more ambitious than) the relevant external strategies identified. • It is also adjusting its adaptation strategy in order to take into account the ongoing external structuring actions taking place. • The company has also incorporated the time horizons of the relevant related efforts, plans and strategies identified.	•The company has developed and implemented a process or method in order to identify the relevant external adaptation strategies (i.e. international, national, regional, and local adaptation efforts and strategies; as well as sectoral efforts and plans or the adaptation pathways of the sector) in relation to its adaptation situation. • The company's adaptation strategy is consistent with (or even more ambitious than) the relevant external strategies identified. • It has also adjusted its adaptation strategy to take into account the ongoing external structuring actions taking place. • The company has also incorporated the time horizons of the relevant related efforts, plans and strategies identified. • It has a vision that is articulated with the adaptation pathways of other relevant companies, sectors and local entities in order to promote synergies and avoid contradictory actions. • When necessary, the company revises others' strategies and pathways in order to ensure that its strategy remains consistent.

HOW THE ANALYSIS WILL BE DONE

The analyst shall assess whether the company has a method, and a process in place, or a person who is in charge of analysing other actors' existing relevant adaptation efforts and plans, as well as adaptation requirements and regulations. The analyst's expertise is required in order to identify the most relevant external strategy. The assessor shall also analyse the extent to which they are consistent and articulated, by checking synergies and comparing the following: hazards identification, physical climate risks assessment, adaptation measures and strategy, deployment over the different time horizons, monitoring system, etc.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 2.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR

This indicator is aligned with several of the main adaptation standards and recommendations: TCFD, EBRD, ISO, Taxonomy, EFRAG, UBA **(see Appendix 6 – indicator 2.1)**. It is thus an essential aspect of adaptation to climate change to be taken into account.

2.2 WORKING AND DIALOGUE WITH INTERESTED PARTIES

DESCRIPTION & REQUIREMENTS	2.2 WORKING AND DIALOGUE WITH INTERESTED PARTIES
SHORT DESCRIPTION OF INDICATOR	This indicator focuses on exchanges and engagements between the company and the relevant interested parties (i.e. stakeholders, persons or organisations capable of affecting, being affected by, or perceiving themselves to be affected by a decision or activity –ISO 14090:2019) regarding adaptation to climate change and the related strategies, efforts and plans. It evaluates the extent to which the governance of climate adaptation in a company and thus its strategy is carried out in coordination and cooperation with relevant sectoral stakeholders and local actors in regions where the company operates.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not undertaken any discussion or engagements with relevant local actors or sectoral stakeholders in the development of its adaptation strategy and pathways.	• The company is undertaking analysis of stakeholders (e.g. sectoral and local actors, suppliers, distributors, key customers, shareholders, etc.) to determine who needs to be involved in the physical risks analysis and the adaptation processes (i.e. strategy, pathways, measures) of the company and its value chain in order to engage in the relevant exchanges.	• Exchanges and engagements are in progress with some relevant sectoral stakeholders identified (e.g. sectoral actors, suppliers, distributors, key customers, shareholders, etc.) and local actors in order to identify, assess and manage climate-related physical risks, as well as involve them in physical risk analysis and adaptation processes (i.e. strategy, pathways, measures). • The company has thus identified 'Who Does What' in terms of adaptation among these sectoral and local actors. • These exchanges and engagements are beginning to make the company understand what the boundaries of its systems are and who is directly about to influence decisions or be affected by them. • It is also beginning to contribute to the development of the adaptation strategy.	• Exchanges and engagements with most of the relevant sectoral stakeholders (e.g. sectoral actors, suppliers, distributors, key customers, shareholders, etc.) and local actors are in place and occur with a frequency appropriate to the company's need. It contributes to the development of the company's adaptation strategy and pathways by helping to identify, assess and manage climate-related physical risks, as well as adaptation activities. • The company has thus identified the 'Who Does What' in terms of adaptation among these sectoral and local actors. • These exchanges and engagements enable the company to understand what its system's boundaries are and who is directly about to influence decisions or be affected by them. • The company is involved in the local and sectoral collective assessment of physical risks, as well as in the co-construction and sharing of adaptation activities and plans. • It also contributes to the development of a community of learning on adaptation.	•Exchanges and engagements with all relevant sectoral stakeholders (e.g. sectoral actors, suppliers, distributors, key customers, shareholders, etc.) and local actors are in place and occur with a frequency appropriate to the company's need. • The company has thus identified 'Who Does What' in terms of adaptation among these sectoral and local actors. • These exchanges and engagements enable the company to understand what its system's boundaries are and who is directly about to influence decisions or be affected by them. • The company is involved in the local and sectoral collective assessment of physical risks, as well as in the co-construction and sharing of adaptation activities and plans. • It has regular exchanges with local actors in order to follow and assess adaptation actions put in place with the relevant geographical scope and with the sectoral stakeholders for the sectoral adaptation measures. • It also contributes to the development of a community of learning on adaptation.

HOW THE ANALYSIS WILL BE DONE	The analysis shall determine whether the company has identified the relevant interested parties (i.e. sectoral stakeholders and local actors) to engage with (e.g. through a listing of the external stakeholders identified by the company, particularly within Scope C, or a description of the methods used for this identification) and how (e.g. methodology used to identify the outside relevant stakeholders potentially affected by climate-related risks). Exchanges and engagements may take the form, for example, of workshops, information collection or sharing of experiences. The analyst shall assess the extent to which the company has engaged and organised regular exchanges with these relevant interested parties, and how (e.g. methodology used by the company to consistently collaborate with the stakeholders). The analyst shall also assess how these exchanges and engagements have resulted in positive outcomes for the company's adaptation strategy and that of others. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 2.2 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	Physical risks, as well as adaptation measures, imply a variety of actors and stakeholders (e.g. local actors, suppliers, clients, etc.). This can lead to information asymmetries and create inefficiencies, hence the need for cooperation and dialogue, as assessed by this indicator. Thus, the company's process for analysing physical risks and defining an adaptation strategy should involve other actors and stakeholders in order to ensure overall consistency with relevant stakeholders' adaptation plans and efforts (i.e. sectoral, local, etc.). This enables the company to identify, assess and manage climate-related risks that are capable of affecting several stakeholders and can be tackled more effectively through coordinated actions, while promoting synergies and avoiding maladaptation. It is aligned with guidelines from ISO 14090 and ISO 14091, and disclosure requirements from EFRAG[10] (see Appendix 6 – indicator 2.2).

3. ENVIRONMENTAL AND SOCIAL SAFEGUARDS

3.1 DO NO SIGNIFICANT HARM PRINCIPLE

DESCRIPTION & REQUIREMENTS	**3.1 DO NO SIGNIFICANT HARM PRINCIPLE**
SHORT DESCRIPTION OF INDICATOR	This indicator evaluates to what extent the company's adaptation strategy and the measures it contains include considerations or safeguards to ensure that their implementation does not significantly harm, or even has a positive impact, on other environmental objectives: climate change mitigation, biodiversity, health, pollution, resource depletion, etc. This indicator constitutes a "check box" which shall be applied to all components of the company's adaptation approach, strategy and pathways.

[10] EFRAG (2022), *[Draft] ESRS E1 Climate Change, Exposure Draft*

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The adaptation strategy and pathways do not contain safeguards to ensure that the adaptation actions they include do not significantly harm, and may, on the contrary, even have a positive impact on climate change mitigation, biodiversity, health, pollution, resource depletion, etc, as well as adaptation efforts by other stakeholders and local actors.	• The company is aware that its actions are liable to have an environmental and social impact (such as on climate mitigation, biodiversity, health, pollution, water scarcity etc.). • The adaptation strategy and pathways are beginning to take these different kinds of impact into account, without any specific methodology.	• The adaptation strategy contains some safeguards to ensure that the adaptation actions it includes partly consider other environmental and social issues (such as impact on climate mitigation, biodiversity, health, pollution, water scarcity etc.). • The company tries to check every adaptation measure included in the strategy and pathways in terms of this principle, by means of a defined methodology that is applied ex ante on some actions.	• The adaptation strategy contains some safeguards to ensure that the adaptation actions it includes partly consider other environmental and social issues (such as impact on climate mitigation, biodiversity, health, pollution, water scarcity etc.). • Every adaptation measure included in the strategy and pathways is checked in terms of this principle by means of a defined methodology that is applied ex ante on some actions. • Indeed, as part of the strategy and CSR commitment, the company has been carrying out an initial environmental and social impacts assessment with regard to its adaptation pathways.	• The adaptation strategy contains safeguards to ensure that the adaptation actions it includes do not significantly harm, and may, on the contrary, even have a positive impact on climate change mitigation, biodiversity, health, pollution, resource depletion, water scarcity, etc., as well as adaptation efforts by other stakeholders and local actors. • Every adaptation measure included in the strategy and pathways is checked in terms of this principle and revised when necessary (e.g. changes in strategies, or environmental requirements, knowledge, etc.). • This environmental and social assessment is integrated into the decision-making process.

HOW THE ANALYSIS WILL BE DONE

The analyst shall check that adaptation measures and the company's adaptation strategy contain safeguards to ensure that no significant harm is done (or even that the measures have positive impacts) with regard to climate change mitigation, biodiversity, health, pollution, resource depletion, etc. The analyst may check references made by the company to the EU Taxonomy DNSH criterion or a methodology developed or applied by the company that checks these elements.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 3.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR

These criteria to ensure that no significant harm is done with regard to climate change mitigation, biodiversity, health, pollution, etc. are present in various recommendations, including the EU Taxonomy[11], which specifies that adaptation actions and measures taken by the company should not cause any harm, or should, on the contrary, even have a positive impact.

[11] TEG. (2020), *Taxonomy: Final report of the Technical Expert Group on sustainable Finance*

Physical climate risks dimension

Climate physical risks can be analysed and determined by means of various methods. For example:

- The risk evaluation method, in which risks are assessed in terms of their severity and probability of occurrence (ADEME, 2020)
- The method whereby risks evaluation arises from the interaction between hazard (triggered by an event or trend related to climate change), vulnerability (susceptibility to harm) and exposure (people, assets or ecosystems at risk). (IPCC, 2014)
- The thresholds method, in which climate hazards and thresholds are identified (ADEME, 2020)

Definitions relating to these different methods are available in Section 10 – Glossary, and further details are provided in Appendix 5.

Through its approach to this second dimension (Physical climate risks), ACT Adaptation focuses on the key steps and elements constituting a physical risk analysis, without giving preference to any method, since the latter depends on each company's specific situation and preferences.

4. DATA AND VALUE CHAIN

4.1 CLIMATE DATA AND SCENARIOS

DESCRIPTION & REQUIREMENTS **4.1 CLIMATE DATA AND SCENARIOS**

SHORT DESCRIPTION OF INDICATOR

This indicator corresponds to the company's maturity in terms of climate data analysis, weather variability and scenarios, within the scope and boundaries defined by the company with the analyst (see Section 4), and within the different time horizons (as defined in indicator 1.1). It corresponds to a key step of physical risks analysis. This indicator also takes climate-related uncertainties into account.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not conducted any climate projections or climate scenario analysis.	• The company considers past and current weather events in its regular risk analysis. • The company has explored some climate data and projections, but no specific resources are dedicated to climate scenarios.	• The company considers historical and current weather events and variability in its regular risk analysis. • It draws up climate projections based on available climate data and projections across at least one climate scenario. • The analysis covers the medium term (defined by the company – ind. 1.1) and the long term (i.e. beyond 20 years), and start to consider uncertainties. • This scenario analysis needs to be consistent with the lifespan of the company's activities, infrastructure, projects and investments, and appropriate to its needs.	•The company considers historical and current weather events and variability in its regular risk analysis. • Climate data and projections are based on at least two contrasted climate scenarios. • The analysis covers the medium term (defined by the company – ind. 1.1) and the long term (i.e. beyond 20 years), and takes into account uncertainties pertaining to these time horizons. • This scenario analysis needs to be consistent with the lifespan of the company's activities, infrastructure, projects and investments, and appropriate to its needs.	• The company has built up a consistent set of climate data from reliable data sources. • It establishes state-of-the-art projections across a range of future climate scenarios and a variety of sources. • The analysis covers the medium term and the long term (i.e. beyond 20 years) as defined in indicator 1.1. • It takes into account uncertainties pertaining to these time horizons (consistently with the lifespan of the company's activities, infrastructure, projects and investments, and appropriate to its needs).

HOW THE ANALYSIS WILL BE DONE

The analysis focuses on:

- The time scale: historical time series, current climate, mid-term and long-term projections
- The use of different climate scenarios. The Representative Concentration Pathways (RCP) or the Shared Socioeconomic Pathways (SSP) are the most common and preferred. Two scenarios should be preferentially considered: a scenario that limits global warming to +2°C compared to the pre-industrial period and a worst-case scenario for physical risk analysis to more effectively account for exposure and vulnerability. However, any other relevant climate scenarios, projections and data (e.g. mean, extremes and variability) may be used for this indicator, as long as sources and justifications are provided, and the number of scenarios analysed is complied with. The analyst shall check consistency with national recommendations if they exist.
- The quality of data: sources, year of availability, length of time series, consistency, etc.
- The range of scenarios, climate models, multiplicity of sources for data and narratives, and the search for new sources (i.e. state of the art analysis) (See the EBRD's recommendations in Appendix 6 – indicator 4.1 and full document)
- The sources and level of uncertainties
- The possible inclusion of qualitative scenarios analysis (See for example the TCFD's recommendations in Appendix 6 – indicator 4.1).

The climate data and scenario analysis shall be used by the company to study the physical climate risks within the boundaries determined with the assessor, that is to say the value chain components included in the assessment (See section 4 for boundaries and see Section 6.4 for guidelines).

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 4.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR	Analysis of past weather events can help the company to understand how it has been affected in the past, and climate projections and scenarios to understand how it could be affected in the future. Climate projections help to determine the level of exposure to hazards according to climate change scenario and the different time horizons, they are thus useful for physical risks analysis and moreover in order to inform the company's adaptation strategy. However, they include a certain level of uncertainty that varies according to the data source and the time horizon analysed. Analysing physical risks and adaptation thanks to various climate scenarios and data sources enables the company to take various uncertainties into account and helps it to adapt adequately and proportionally to climate impacts. Many standards (ISO, TCFD, EBRD, IPCC, etc.) recommend the analysis of climate projections and scenarios in order to analyse physical climate risks (See Appendix 6). A climate scenario that limits global warming to well below +2°C compared to the pre-industrial period is taken as a reference point since it is aligned with the Paris Agreement goal and the level of ambition of ACT Mitigation methodologies. A worst-case scenario should also be considered since it enables the company to more effectively take into account physical risks that could dramatically affect it.

4.2 CRITICALITY OF THE VALUE CHAIN

DESCRIPTION & REQUIREMENTS	**4.2 CRITICALITY OF THE VALUE CHAIN**
SHORT DESCRIPTION OF INDICATOR	This indicator evaluates the company's maturity in terms of analysis of the relevant and critical value chain components with respect to climate change. Climate data and scenarios analysis (including scenarios of the company's possible development) undertaken by the company (indicator 4.1) contribute to this identification. This indicator is based on the three scopes (A, B and C) and the six value chain parts introduced in Section 4 and detailed in Appendix 3 and 4. This indicator is an important first step in the physical risk assessment since it contributes to determining the scope and boundaries of the ACT Adaptation assessment (See Section 7.3 for more guidelines and advice) and is essential for the assessment of indicators 5.1 and 5.2.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not identified the relevant activities and value chain components that are likely to be at risk with regard to climate change.	• The company only focuses on scope A and the related relevant activities that are likely to be at risk with regard to climate change.	• The company has identified all relevant activities and value chain components within scopes A and B that are likely to be at risk with regard to climate change, based on the analysis of at least one climate scenario and the company's possible development scenarios (indicator 4.1). • It is beginning to involve the relevant stakeholders and interested parties regarding these at-risk components.	• The company has identified all relevant activities and value chain components within scopes A, B and C that are likely to be at risk with regard to climate change, based on the analysis of at least one climate scenario and the company's possible development scenarios (indicator 4.1). • It involves the relevant stakeholders and interested parties regarding these at-risk components.	• The company has identified all relevant activities and value chain components within scopes A, B, and C that are likely to be at risk with regard to climate change, based on the analysis of a range of future climate scenarios and the company's possible development scenarios (indicator 4.1). • It also involves the relevant stakeholders and interested parties regarding these at-risk components. • The analysis includes all activities and value chain components that would critically affect the company if climate change and its hazards were to have a (severe) impact on them. • This screening is verified and updated when necessary (e.g. new climate scenario analysis, knowledge updates or new impacts experienced on the value chain).

HOW THE ANALYSIS WILL BE DONE

The analyst's role is to assess how climate scenarios and the company's possible development scenarios are integrated into the analysis of the most critical value chain activities. The company is expected to consider the current and possible future effects of climate change on the value chain activities. If the company does not provide any development scenario, the analyst takes a business-as-usual scenario. The analyst shall also examine, as far as possible and based on their expertise, possible changes in the value chain: changes in product specifications, suppliers, transport infrastructure, etc. The analysis also checks that the relevant stakeholders in the value chain components determined as critical are involved.

Redundancy and diversity are means of alleviating strong dependency on resources or suppliers and shall be positively evaluated. The company can rely on any methodology to determine the value chain activities that could be most affected by climate change and most critical for the company, as long as it specifies the methodology used in detail. For instance, dynamic mapping of the key processes and value chain provides a simple model to work with. Other characterisations of the value chain include: the minimum level of activity accepted, the maximum interruption time allowable, potential redundancy, supplier evolution, or how much a given segment of the value chain contributes to the company activity. The company shall provide the information regarding the climate scenarios and the scenarios used for its own possible development (from indicator 4.1) in order to evaluate the critical activities along the value chain. Once the value chain has been characterised, the impact chain analysis method can help the company to qualitatively determine the critical components and activities, or those most at risk, in order to thus include them within the boundaries of the assessment.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 4.2 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR	Considering the complete value chain in order to analyse the hazards that could affect it is essential to tackling all the possible negative effects and cascading impacts on the company. However, in order to conduct an in-depth and precise analysis, it is better to focus on the activities and parts of the value chain that are either essential to the company or liable to have a critical impact the company's functioning if affected. For this purpose, a range of climate scenarios and scenarios of the company's possible development should be taken into consideration. Most of the adaptation recommendations and standards include this analysis of the critical components directly in the physical risk assessment as an essential preliminary step (See Appendix 6 – indicator 4.2).

5. PHYSICAL CLIMATE RISK ANALYSIS

5.1 RISKS

DESCRIPTION & REQUIREMENTS	**5.1 RISKS**
SHORT DESCRIPTION OF INDICATOR	This indicator aims to assess the maturity of the company physical risks analysis, For the most important hazards identified by means of data and scenarios (in indicator 4.1), over the expected lifetime of the company's assets and the different time horizons (short, medium, and long-term horizon – i.e. indicator 1.1), it focuses on assessing: • the relevance and comprehensiveness of the method used to analyse these physical risks, • whether the complete value chain has been considered with a focus on the components determined as critical (indicator 4.2), • whether it enables prioritisation of the risks to be managed, • and whether it is revised when necessary. This indicator also expresses the evaluation of the potential financial impacts of its material physical risks (e.g. losses or damages, impacts on owned assets, potential future increase/decrease in net turnover and costs due to business interruptions, increased supply prices, value-at-risk, critical financial thresholds, resulting in potential erosion of margins, risk of lower return on investment, reduced ability to reach agreed levels of service or business interruption, potential decrease in demand, etc.). These risks along the complete value chain (See Appendix 4 for details of the activities included in the six ACT Adaptation value chain parts) may include, for example (non-exhaustive lists of physical risks): disruptions; shortages; increased costs of supplies due to scarcity; changes in input and resource prices; disruptions or reduced productivity of operations or production capacity due to impacts on fixed capital or physical damage to assets (e.g. production facilities, infrastructure, stocks & equipment), variations in energy costs, stress on working conditions or natural resources (e.g. water stress and scarcity); permanent loss; relocation costs; damage to transportation infrastructure (road, water, fluvial and rail) and subsequent impacts; permanent loss and relocation costs;

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• Climate-related risks concerning the company are not considered.	• For the major activities and value chain components determined as at-risk (in indicator 4.2) and thus relevant for analysis, some of the potential relevant and material risks have been considered, for the most important hazards identified by means of data and scenarios (in indicator 4.1). • There is on-going reflexion on ensuring that the method used is comprehensive, appropriate to the company's situation, robust, effective and considers at least scope A components of the value chain.	• For the activities and value chain components determined as at-risk (in indicator 4.2) and thus relevant for analysis, some of the potential relevant and material risks have been considered and analysed, for the most important hazards identified by means of data and scenarios (in indicator 4.1). • There is reflexion on ensuring that the method used is comprehensive, appropriate to the company's situation, robust, effective and considers scope A and B components of the value chain. • The company prioritises some risks in order to take actions. • Financial and performance impacts from its material physical risks are beginning to be assessed, taking potential variations within the time horizons into consideration (e.g. losses or damages, impacts on owned assets, potential future increase/decrease in net turnover and costs due to business interruptions, increased supply prices, value-at-risk, critical financial thresholds, resulting in potential erosion of margins, risk of lower return on investment, reduced ability to reach agreed levels of service or business interruption, potential decrease in demand, etc.).	• For the activities and value chain components determined as at-risk (in indicator 4.2) and thus relevant for analysis, most of the potential relevant and material risks have been considered, analysed, and qualified, for the most important hazards identified by means of data and scenarios (in indicator 4.1). • The method used is comprehensive, appropriate to the company's situation, robust, effective and considers all or almost all of the value chain (Scope A, B and, as far as possible, C). • It makes it possible for the risks to be arranged in order of importance and thus prioritised in terms of actions. • Financial and performance impacts from its material physical risks are assessed and estimated over the short and medium term (e.g. losses or damages, impacts on owned assets, potential future increase/decrease in net turnover and costs due to business interruptions, increased supply prices, value-at-risk, critical financial thresholds, resulting in potential erosion of margins, risk of lower return on investment, reduced ability to reach agreed levels of service or business interruption, potential decrease in demand, etc.).	• For the activities and value chain components determined as at-risk (in indicator 4.2) and thus relevant for analysis, all the potential relevant and material risks have been considered, analysed, qualified and, if possible quantified, for the most important hazards identified by means of data and scenarios (in indicator 4.1). • The method used is comprehensive, appropriate to the company's situation, robust, effective and considers the whole of the value chain (Scope A, B and C). • It makes it possible for the risks to be arranged in order of importance and thus prioritised in terms of actions. • Financial and performance impacts from its material physical risks are assessed and estimated over the short and medium term (e.g. losses or damages, impacts on owned assets, potential future increase/decrease in net turnover and costs due to business interruptions, increased supply prices, value-at-risk, critical financial thresholds, resulting in potential erosion of margins, risk of lower return on investment, reduced ability to reach agreed levels of service or business interruption, potential decrease in demand, etc.). • It also considers potential reputational risks and risks to licence to trade. • This physical risks analysis is revised and updated when necessary (e.g. new climate scenario analysis, knowledge updates or new impacts experienced on the value chain), checking the potential evolution of impacts on the company in the short and medium term.

HOW THE ANALYSIS WILL BE DONE	The analysis focuses on the methodology used to assess the company's material physical risks (see Appendix 5 for a short presentation of three possible approaches) and the related potential financial impacts, considering the entire value chain and the most important hazards identified, over the different time horizons. The company's maturity score for this indicator depends on the scope and boundaries defined between the analyst and the company (i.e. indicator 4.2 and Section 4). In the process the company may incorporate peer review, expert judgments, or any kind of exchanges. Any risk that is considered relevant to the company's activity shall be analysed. For the company's financial risks attributable to climate change, a variety of methodology and metrics are possible, as long as they appear relevant to the company's situation and its adaptation needs. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 5.1 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	Forward-looking assessment of physical risks analysis and analysis of related financial impact is a requirement or a recommendation in all adaptation standards (see Appendix 6 – indicator 5.1). For example, the EFRAG mentions (AG 22.) that "the undertaking shall disclose the outcome of its processes to identify and assess climate-related impacts, risks and opportunities, i.e. disclose separately its material impacts on climate change, material climate-related physical risks and transition risks and material climate-related opportunities. In addition, the undertaking shall describe the current and anticipated effects of these impacts, risks and opportunities on its value chain and where in its value chain material climate-related impacts, risks and opportunities are concentrated[12]". This is an essential step in order to determine the company's material physical risks over its value chain and the different time horizons to adapt to climate change.

5.2 OPPORTUNITIES

DESCRIPTION & REQUIREMENTS	**5.2 OPPORTUNITIES**
SHORT DESCRIPTION OF INDICATOR	This indicator is aimed at assessing maturity in terms of identification of potential climate-related opportunities as analysed by the company for the complete value chain, over at least the short- and long-term (beyond 20 years), with regard to the hazards assessed by means of data and scenarios (in indicator 4.1). These opportunities will vary depending on the region, market and sector in which the organisation operates. These opportunities for different sectors and industries (See Appendix 4 for details of the activities included in the six ACT Adaptation value chain parts) may be, for example: anticipation of higher or lower demand for specific goods due to physical climate impacts, and adjustment of production accordingly; providing customers with

[12] EFRAG (2022), *[Draft] ESRS E1 Climate Change, Exposure Draft*

responsive energy services that help manage variability in temperature and energy consumption[13].

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company does not consider climate-related opportunities.	• Climate-related opportunities are beginning to be considered, with regard to the hazards assessed by means of data and scenarios (in indicator 4.1). • These opportunities may take into account any aspect relevant to the company's situation (e.g. management of existing, emerging and future physical climate risks, responding to market shifts, developing or promoting new products or catering to new markets, improving internal processes, etc.).	• Some relevant climate-related opportunities are considered, with regard to the hazards assessed by means of data and scenarios (in indicator 4.1). • These opportunities may take into account any aspect relevant to the company's situation (e.g. management of existing, emerging and future physical climate risks, responding to market shifts, developing or promoting new products or catering to new markets, improving internal processes, etc.).	• The most relevant climate-related opportunities are considered and clearly identified over at least the short and long-term (beyond 20 years), with regard to the hazards assessed by means of data and scenarios (in indicator 4.1). • This analysis of opportunities may take into account adaptation gains and any aspect relevant to the company's situation (e.g. management of existing, emerging and future physical climate risks, responding to market shifts, developing or promoting new products or catering to new markets, improving internal processes, etc.).	• The most relevant climate-related opportunities are considered, clearly identified, and estimated over at least the short and long-term (beyond 20 years), with regard to the hazards assessed by means of data and scenarios (in indicator 4.1). • This analysis of opportunities may take into account adaptation gains and any aspect relevant to the company's situation (e.g. management of existing, emerging and future physical climate risks, responding to market shifts, developing or promoting new products or catering to new markets, improving internal processes, etc.). • It is revised and updated when necessary (e.g. new climate scenario analysis, knowledge updates or new impacts experienced on the value chain).

HOW THE ANALYSIS WILL BE DONE

The analysis focuses on the methodology used by the company to assess its climate-related opportunities. The company may incorporate peer review, expert judgments, or any kind of exchanges into the process. The methodology shall be appropriate to the scope of the company, its activity and adaptation needs. It shall consider the hazards assessed by means of data and scenarios (in indicator 4.1) in order to determine opportunities at least in the short- and long-term. The company's maturity score for this indicator depends on the scope and boundaries defined between the analyst and the company (i.e. indicator 4.2 and Section 4). This analysis of climate-related opportunities shall be revised when necessary (e.g. new climate scenario analysis, knowledge updates or new impacts experienced on the value chain).

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 5.2 for mapping with other adaptation standards/recommendations.

[13] From EBRD & GCECA. (2018), *Advancing TCFD Guidance on physical climate risks and opportunities.*

RATIONALE OF THE INDICATOR

Assessment of climate-related opportunities is included in most adaptation recommendations and standards (see Appendix 6 – indicator 5.2). For example, the EFRAG mentions (AG 22.) that "the undertaking shall disclose the outcome of its processes to identify and assess climate-related impacts, risks and opportunities, i.e. disclose separately its material impacts on climate change, material climate-related physical risks and transition risks and material climate-related opportunities. In addition, the undertaking shall describe the current and anticipated effects of these impacts, risks and opportunities on its value chain and where in its value chain material climate-related impacts, risks and opportunities are concentrated[14]". Thus climate-related opportunities form a part of the company's physical climate risks assessment, and contribute to the construction and development of the adaptation strategy. As for the EFRAG, in ACT Adaptation the physical risks analysis is separated from the opportunity analysis. Thus, it may imply a different methodology and lead to specific company strategy and business decisions.

[14] EFRAG (2022), *[Draft] ESRS E1 Climate Change, Exposure Draft*

Adaptive capacity and adaptation activities dimension

A well-designed and comprehensive adaptation strategy needs to consider the company's existing adaptive capacities. It should include measures to increase capacities to enable adaptation. It should also include specific adaptation activities that have been designed on the basis of the results of the physical risk analysis and should specifically address the risks identified therein. See glossary (section 10) for definitions of adaptation, and adaptive capacities.

6. ORGANISATION

6.1 DECISION-MAKING PROCESSES

DESCRIPTION & REQUIREMENTS	6.1 DECISION-MAKING PROCESSES
SHORT DESCRIPTION OF INDICATOR	This indicator is aimed at assessing the methods, indicators and tools set up by the company to enable, articulate, facilitate, and implement decisions relating to various aspects of physical risks analysis (i.e. dimension 2), over the different time horizons and the relevant value chain components, while coping with uncertainties. It checks to what extent these decision-making processes are operational, robust, flexible, and suitable for the company size and business, as well as whether they avoid maladaptation and are updated when necessary. Finally, it analyses whether the stakeholders and interested parties that have been determined as having a potential influence on the decisions, or as being affected by them (indicator 2.2), are integrated into these decision-making processes. In other words, this indicator assesses the extent to which an organisation is capable of factoring adaptation to climate change into its decision-making processes, identifying and delivering meaningful responses, and monitoring, updating and improving responses over time in relation to the company's adaptation objectives.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not engaged in setting up any methods, indicators, or tools for decision-making.	• The need for methods, indicators and tools for decision-making that are capable of helping to reduce the material physical risks analysed (including financial aspects), and maximizing opportunities (respectively indicator 5.1 and 5.2) has been recognised and formalised. • The company understands that these decision-making processes need to be operational, robust, flexible, and suitable for the company size and business, and also need to seek to avoid maladaptation. • It is also investigating and staring to consider the importance of articulating decision-making with time horizons and relevant stakeholders.	• The company investigates which methods, indicators and tools, with regard to the analysis of data and scenarios (indicator 4.1), could help to reduce the material physical risks analysed (including financial aspects), maximize opportunities (respectively indicator 5.1 and 5.2) and address uncertainties. • The company also investigates how it could seek to avoid maladaptation. • There is reflexion with regard to ensuring that the decision-making processes are operational, robust, flexible and suitable for the company size and business. • It covers some of the relevant activities and value chain components defined as at-risk (indicator 4.2) and is articulated over the short, medium (defined by the company - indicator 1.1) and long term (beyond 20 years). • Some of the stakeholders and interested parties that have been determined as having a potential influence on decisions or as being affected by them (indicator 2.2), are integrated into these decision-making processes.	• The company is putting in place methods, indicators and tools enabling decision-making, with regard to the analysis of data and scenarios (indicator 4.1), reducing the material physical risks analysed (including financial aspects), maximizing opportunities (respectively indicator 5.1 and 5.2) and coping with uncertainties. • The decision-making processes seek to avoid maladaptation. • These decision-making processes are operational, robust, flexible, and suitable for the company size and business. • They cover most of the relevant activities and value chain components defined as at-risk (indicator 4.2) and are articulated over the short, medium (defined by the company - indicator 1.1) and long term (beyond 20 years). • Most of the stakeholders and interested parties that have been determined as having a potential influence on decisions or as being affected by them (indicator 2.2), are integrated into these decision-making processes.	• The company has set up methods, indicators and tools enabling decision-making, with regard to the analysis of data and scenarios (indicator 4.1), reducing the material physical risks analysed (including financial aspects), maximizing opportunities (respectively indicator 5.1 and 5.2) and coping with uncertainties. • It guarantees that the company is updating, when it appears relevant (e.g. evolution of knowledge or the company's environment) to do so, its risk analysis, governance, strategy, adaptation pathways, training etc., while seeking to avoid maladaptation. • These decision-making processes are operational, robust, flexible, and suitable for the company size and business. • They cover all of the relevant activities and value chain components defined as at-risk (indicator 4.2) and are articulated over the short, medium (defined by the company - indicator 1.1) and long term (beyond 20 years). • Stakeholders and interested parties that have been determined as having a potential influence on decisions or as being affected by them (indicator 2.2), are integrated into these decision-making processes.

HOW THE ANALYSIS WILL BE DONE

The analyst shall assess the internal procedures, tools, methods, and/or monitoring systems in place within the company that contribute and help the company to reduce its analysed physical risks (indicator 5.1) and maximize its opportunities (indicator 5.2). The company's maturity for this indicator is evaluated on the basis of how these decision-making processes include and deal with:

- Uncertainties.
- The different time horizons and the related risks identified, as well as the related adaptation objectives.
- Inclusion of the relevant value chain components.
- Whether and to what extent they are operational, robust, flexible, and suitable for the company size and business.
- Whether and to what extent, they avoid maladaptation.
- Whether and to what extent, they are updated when necessary.
- The stakeholders and interested parties involved in the process.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 6.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR

Most economic sectors will face important challenges in the coming years, due to the effects of climate change combined with the ecological transition. Companies must improve their decision-making and adaptation action plans over the different time horizons. Indeed, short- and medium-term decisions can still have an impact on the long-term risks and thus on the company' strategy in term of adaptation. This indicator reflects how the systemic concepts of adaptation to climate change are made operational and rely on several other indicators.

Moreover, a company's adaptation strategy must avoid maladaptation of practices (see glossary in Section 10).

This decision-making process is included in the majority of the main adaptation recommendations and standards (see Section 7 and Appendix 6). For example, the TCFD mentions that the company should disclose "how the board monitors and oversees progress against goals and targets for addressing climate-related issues[15]" (Governance recommended disclosure a). It is also included in ISO 14090 and ISO 14091 with regard to the necessary implementation planning, monitoring, evaluation, and reporting.

[15] TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

6.2 INTERNAL LEARNING SYSTEM

DESCRIPTION & REQUIREMENTS	6.2 INTERNAL LEARNING SYSTEM
SHORT DESCRIPTION OF INDICATOR	This indicator assesses the existence or development of an internal learning system that enables the company to learn from its own experience in terms of physical risks and adaptation in order to capitalise on knowledge and build up adaptive capabilities.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company does not have any internal learning system.	• The company has ad hoc non-compulsory processes (e.g. monitoring and evaluation) aimed at analysing how on-going or past projects perform, with respect to physical risks and adaptation to climate change.	• In its projects, the company has official and compulsory processes (e.g. monitoring and evaluation) in order to capture internal and external climate change adaptation learning.	• In its projects, the company has official and compulsory processes (e.g. monitoring and evaluation) in order to capture internal and external climate change adaptation learning. • It also has processes to take learning outcomes from project to project and retain institutional memory when people leave.	• The company has implemented processes (e.g. monitoring and evaluation) to learn from its own experience and is also part of a wider community of learning with regard to adaptation. • The company refers to it on a regular basis in order to update and improve its adaptation strategy/pathways.

HOW THE ANALYSIS WILL BE DONE	The analyst shall assess whether any process or initiative is developed or in place to ensure that the company learns from its experiences. It may include, for example, monitoring and evaluation of learning, routine feedback, etc. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 6.2 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	This aspect is included principally in ISO 14090 and is part of the implementation plan. Having internal learning systems in place within the company is essential for reflection upon experiences, previous implementation, and knowledge gained in order to build up its adaptive capacity and adjust its adaptation plan accordingly.

6.3 DIVERSIFICATION OF ACTIVITIES

DESCRIPTION & REQUIREMENTS 6.3 DIVERSIFICATION OF ACTIVITIES

SHORT DESCRIPTION OF INDICATOR

This indicator considers the maturity of the company when diversification of activities is required in order to counterbalance physical climate risks. For example, a farm can diversify its crops or initiate non-farming activities in order to secure complementary revenue in case of climate hazards.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not considered any diversification of activities.	• The company is considering whether diversification of its activities is relevant and feasible, on the basis of its climate physical risk analysis and its long-term (i.e. beyond 20 years) adaptation strategy, pathways, or approach.	• The company is developing a diversification strategy based on what has been identified as relevant and feasible. This diversification is effected in accordance with the sector (e.g. suppliers and customers) and the region (e.g. employment area). It is integrated into the company's adaptation pathways.	• The company is implementing its diversification strategy in accordance with the sector (e.g. suppliers and customers) and the region (e.g. employment area). It is integrated into the company's adaptation pathways.	• Where relevant and feasible, the company has diversified its activities on the basis of its climate physical risk analysis, its long-term adaptation strategy, and in accordance with the sector (e.g. suppliers and customers) and the region (e.g. employment area). It is integrated into the company's adaptation pathways. • It may include strategic retreat (e.g. due to coastal floods) when this is relevant for the company due to the materiality of its physical risks (dimension 2). • The company has reinforced synergies and avoided potential antagonisms. • This diversification is monitored (e.g. in terms of impacts such as higher revenues or lower interannual variability) and updated when necessary (e.g. environmental changes or knowledge updates).

HOW THE ANALYSIS WILL BE DONE

The analysis shall assess whether diversification of the activity is a feasible and relevant solution in order to reduce its physical risks. It also needs to check whether these potential relevant diversifications have been implemented and are aligned with and integrated into the company's long-term adaptation objectives and related strategy. It may be based on the business plan and/or balance sheet, and take into account the complementarity, synergies and overlaps of the various activities.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 6.3 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR

Diversification of activities is a basic principle of resilience.

7. FINANCE

7.1 FINANCIAL CAPACITY

DESCRIPTION & REQUIREMENTS **7.1 FINANCIAL CAPACITY**

SHORT DESCRIPTION OF INDICATOR

This indicator assesses the financial resources and capacity engaged in adaptation measures and in coping with losses relating to the physical risks identified and the company's adaptation pathways. It also considers whether a share of R&D is dedicated to adaptation and whether it is relevant to the company's adaptation objectives over the different time horizons.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not dedicated any financial resources to adaptation measures or to coping with losses.	___	• The company has started to dedicate financial resources, as well as access to critical finance and cost of capital to implementing adaptation measures in close relation to its adaptation pathways, and to coping with losses (e.g. R&D employees, patented innovations, etc.). • It is considering and starting to dedicate the share of adaptation R&D that would be aligned with the adaptation targets defined in the short, medium and long term.	___	• The company dedicates a relevant and sufficient amount of financial resources, as well as access to critical finance and cost of capital to implementing adaptation measures in close relation to its adaptation pathways, and to coping with losses (e.g. R&D employees, patented innovations, etc.). • The share of adaptation R&D is aligned with the adaptation targets defined in the short, medium and long term.

HOW THE ANALYSIS WILL BE DONE

The analysis shall check whether the company takes the potential impact of climate change into account in its financial planning in order to adapt to it (i.e. investment in research and development, operating costs and revenues, capital expenditure and capital allocation, acquisitions or divestments, access to capital, etc.). The analyst has to understand the specificity of the company and thus its adaptation needs in order to judge whether this dedicated financial amount is relevant to and aligned with the company's adaptation objectives.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 7.1 for mapping with other adaptation standards/recommendations.

RATIONALE OF THE INDICATOR

As mentioned in the TCFD report[16], under the Strategy, recommended disclosure b), the company should "describe the impact of climate-related risks and opportunities on the organisation's […] financial planning", including in the following areas: investment in research and development, operating costs and revenues, capital expenditure and capital allocation, acquisitions or divestments, access to capital.

As an example of additional cost due to climate change: a company may implement nature-based solutions to reduce its vulnerability to heavy rains and heat waves. Such solutions require additional investments with respect to normal maintenance of buildings and surroundings.

7.2 MAINSTREAMING OF CLIMATE ADAPTATION INTO INVESTMENT DECISIONS

DESCRIPTION & REQUIREMENTS **7.2 MAINSTREAMING OF CLIMATE ADAPTATION INTO INVESTMENT DECISIONS**

SHORT DESCRIPTION OF INDICATOR

This indicator assesses the integration of climate adaptation into investment decisions. That is to say that it considers whether investment decisions are compatible with increasing physical climate risks. It also checks whether relevant decisions are thus taken and if they are aligned with the company's long-term adaptation objectives.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not integrated climate adaptation into its investment decisions.	• The company understands how investment decisions and increasing physical climate risks can interact.	• The company has started to consider whether its investment decisions are compatible with increasing physical climate risks.	• The company has considered and evaluated whether investment decisions are compatible with increasing physical climate risks. • Most of the relevant decisions are taken accordingly.	• The company has considered and evaluated whether investment decisions are compatible with increasing physical climate risks. • The internal governance (ind. 1.2) ensures that all relevant decisions are taken accordingly and are coherent with the company's long-term objectives, as well as with the adaptation pathway it has set. • Investment decisions are revised when necessary (e.g. environmental changes or knowledge updates).

HOW THE ANALYSIS WILL BE DONE

The analysis evaluates maturity in mainstreaming climate adaptation into investment decisions. It checks whether the company has taken investment decisions that are consistent with increasing physical climate risks and its long-term adaptation objectives. It also verifies whether a specific management plan has been developed. This assessment may be done for example by looking at the company's potential criteria or the methodology used with regard to this issue.

See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 7.2 for mapping with other adaptation standards/recommendations.

[16] TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

RATIONALE OF THE INDICATOR

As mentioned in the TCFD report, under the Strategy, recommended disclosure c), "organisations should describe how resilient their strategies are to climate related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organisation, scenarios consistent with increased physical climate-related risks".

Investment decisions made by the company, that will necessarily last several years or decades, should be resilient to a changing climate since related impacts are already occurring and will increase over time. Such consideration is essential to ensuring the company's financial stability and the viability of its projects with regard to increasing physical climate risks. In case of past investments, decisions may imply selling the asset, decommissioning it or reducing its risks for example.

As an example: if a company plans thermal insulation of its building, it should consider resilience to future heat waves when dimensioning the building renovation.

8. TECHNOLOGIES AND NATURE-BASED SOLUTIONS

8.1 TECHNOLOGIES AND NATURE-BASED SOLUTIONS FOR ADAPTIVE CAPACITY

DESCRIPTION & REQUIREMENTS **8.1 TECHNOLOGIES AND NATURE-BASED SOLUTIONS FOR ADAPTIVE CAPACITY**

SHORT DESCRIPTION OF INDICATOR

This indicator assesses the company's technical maturity by considering the existence and availability of technology and/or nature-based solutions (see Section 10 – Glossary) for the improvement of its adaptive capacity with respect to the identified physical risks and opportunities, and its specific needs. The indicator also takes into account whether relevant and existing technologies and/or nature-based solutions are implemented, prioritised and up-to-date. Finally, it also checks whether nature-based (or 'green') solutions are given preference as compared to other types of adaptation solutions, and whether there is any maladaptation.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not identified if technologies or nature-based solutions exist and are relevant to the improvement of its adaptive capacity.	• The company has reviewed technologies and nature-based solutions already implemented in similar business sectors.	• The company has analysed whether technologies or nature-based solutions exist for the improvement of its adaptive capacity. • It has identified those that are relevant for its activities and geographical context while considering the viability of nature-based (or 'green') solutions over 'grey' solutions for addressing adaptation through measures and pathways.	• The company has analysed whether technologies or nature-based solutions exist for the improvement of its adaptive capacity. • It has identified those that are relevant for its activities and geographical context while considering the viability of nature-based (or 'green') solutions over 'grey' solutions for addressing adaptation through measures and pathways. • The company has checked that the identified solutions are not maladaptations.	• The company has analysed whether technologies or nature-based solutions exist for the improvement of its adaptive capacity. It has identified those that are relevant for its activities, and geographical context and in relation to its adaptation pathways. • The company has implemented such technologies or nature-based solutions while prioritising, whenever possible, nature-based (or 'green') solutions over 'grey' solutions for adaptation to climate change. • The company has checked that the identified solutions are not maladaptations. • These solutions are revised when necessary (e.g. environmental changes or knowledge updates).

HOW THE ANALYSIS WILL BE DONE	The analyst shall assess whether the company has analysed and identified if relevant technologies or nature-based solutions exist for the improvement of its adaptive capacity. It shall check how such identification has been done, whether it is relevant to the company's situation and context, and whether it prevents maladaptation. The analysis also checks whether the identified solutions are planned and implemented by the company, and if nature-based solutions are, when possible, given preference over other technologies ('grey' solutions). **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 8.1 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	Technologies and nature-based solutions enable companies to improve their adaptive capacity. They should be developed specifically to address the company's physical risks and adaptation needs. As mentioned in the EU Taxonomy for adapted activities, the company should "consider the viability of 'green' or 'nature-based' solutions over 'grey' solutions to address adaptation"[17], and thus when possible, prioritise them. Indeed, they address various challenges simultaneously, while providing human well-being, ecosystem services and biodiversity benefits.

9. HUMAN

9.1 COMPETENCES AND SKILLS

DESCRIPTION & REQUIREMENTS	**9.1 COMPETENCES AND SKILLS**
SHORT DESCRIPTION OF INDICATOR	This indicator assesses the skills, knowledge and expertise, be they internal or external, regarding physical risks and adaptation to climate change that the company has access to, in order to develop and implement adaptation measures. Collaborations or partnerships concerning climate adaptation expertise are within the scope of this indicator.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not developed specific expertise in climate adaptation, either internally or externally.	• The company relies on external expertise regarding physical risks and adaptation to climate change.	• The company for the most part relies on external expertise regarding physical risks and adaptation to climate change. • At least one key employee of the company has the expertise to implement adaptation measures.	• The company can rely, if necessary, on external expertise regarding physical risks and adaptation to climate change. • The company has built up expertise by relevant and key employees to implement adaptation measures.	• Internal expertise is available within the company. • Enough relevant and key employees have expertise to implement, monitor and update adaptation measures. • The company can mobilise external expertise when necessary to complement its expertise.

[17] TEG. (2020), *Taxonomy: Final report of the Technical Expert Group on sustainable Finance* – P23

HOW THE ANALYSIS WILL BE DONE	The maturity analysis is based on the degree to which this expertise is brought externally or is internal, as well as the number of key employees with the relevant expertise. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 9.1 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	Knowledge and expertise in adaptation to climate change enable the company to work on its adaptive capacity, implement adaptation measures, keep them up to date and develop a comprehensive adaptation strategy. It is also essential to the physical risks analysis. This expertise preferably needs to be available internally or built up in order to maintain the knowledge within the company and develop adaptation measures and a strategy that correspond to the company's need and situation as closely as possible. Failing this, in the early adaptation maturity stage the company may rely on external expertise.

9.2 TRAINING AND CAPACITY BUILDING

DESCRIPTION & REQUIREMENTS	**9.2 TRAINING AND CAPACITY BUILDING**
SHORT DESCRIPTION OF INDICATOR	This indicator takes into account the availability of training and the provision of information related to physical risks and adaptation within the company. It also considers the extent to which employees and key decision-makers are trained and thus have the relevant expertise.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company does not have any adaptation strategy regarding the training of its employees and its key decision-makers.	• The company has assessed the physical climate risks and adaptation knowledge gaps and the related potential needs for its relevant employees and key decision-makers in terms of training, professional development approaches (e.g. coaching and mentoring, peer to peer networks for sharing practice, etc.). The development of such training is aimed at developing a corporate culture of climate change.	• The company is raising awareness and has started to inform its relevant employees and key decision-makers regarding physical climate risks and adaptation, especially the individual/committee with the highest responsibility for climate change (i.e. indicator 1.2), through adapted training, professional development approaches (e.g. coaching and mentoring, peer to peer networks for sharing practice, etc.). It contributes to developing a corporate culture of climate change.	• Most of the relevant employees and key decision-makers, including the individual/committee with the highest responsibility for climate change (i.e. indicator 1.2), are receiving training and provision of information on physical climate risks and adaptation (through for example professional development approaches: e.g. coaching and mentoring, peer to peer networks for sharing practice, etc.). It contributes to developing a corporate culture of climate change.	• All relevant employees and key decision-makers, including the individual/committee with the highest responsibility for climate change (i.e. indicator 1.2), have the required knowledge regarding physical climate risks and adaptation to climate change, as well as its consequences on business and operational decisions thanks to adapted training, professional development approaches (e.g. coaching and mentoring, peer to peer networks for sharing practice, etc.). It contributes to developing a corporate culture of climate change. • The training and information provided are updated when necessary, regularly checked and shared.

HOW THE ANALYSIS WILL BE DONE	The analysis is based on the availability of physical risks and adaptation training for employees and the sharing of information within the company. The analyst shall check the relevance, comprehensiveness and effectiveness of its content, as well as whether it is up-to-date. The level of maturity achieved will also depend on the number of employees and key decision-makers that have received such training. In the maturity description, for Next Practice, the proportion of trained employees ("most of the relevant employees") can be interpreted as training applying to around 60% of employees; and for Best Adaptive Practice, it applies to more than 80% of employees. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 9.2 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	The training of employees regarding physical risks and adaptation is essential in order to integrate these aspects into employees' missions and corporate projects, and develop adaptation measures and a related strategy. Indeed, adaptation to climate change relies on notions that are complicated to understand and many different disciplines that might not necessarily have been present in the company's core business, hence the need for training. Information-sharing between employees within the company, together with training, increases the company's adaptive capacity. Indeed, it enables the sustainable integration of physical risks, adaptation issues and subjects into employees' missions.

9.3 ADAPTATION MEASURES FOR WORKING CONDITIONS

DESCRIPTION & REQUIREMENTS	**9.3 ADAPTATION MEASURES FOR WORKING CONDITIONS**
SHORT DESCRIPTION OF INDICATOR	This indicator takes into account whether the company has a plan or adaptation measures in order to reduce the potential negative consequences of climate change on its employees' health and working conditions (mainly those assessed in the physical risk analysis, in indicator 5.1). This indicator also assesses whether these adaptation measures are planned in the short, medium and long-term when relevant, if they are coherent with the company's adaptation pathways and overall strategy and if they are up-to-date.

Basic	Standard	Advanced	Next practice	Best Adaptive Practice
• The company has not done anything to adapt working conditions to climate change consequences.	• The company is investigating measures to adapt working conditions to climate change consequences.	• The company has started to consider how to adapt working conditions and reduce the potential negative consequences of climate change by measures that can be implemented in the short-term.	• The company is implementing adaptation measures to working conditions that are relevant and effective. • Measures in the short, medium- and long-term have started to be investigated in coherence with plans and pathways in progress.	• The company is implementing adaptation measures to working conditions that are relevant and effective. • It has identified measures to adapt working conditions to climate change consequences in the short, medium- and long-term in coherence with plans and pathways defined. • These measures are revised when necessary (e.g. environmental changes or knowledge updates).

HOW THE ANALYSIS WILL BE DONE	The analyst shall assess the measures of adaptation of working conditions carried out. The analyst's expertise is required in order to assess the relevance of the measures with respect to company location, working conditions (indoor, outdoor, shifts, specific exposure) or worker characteristics (age, team organisation, etc.). They shall also check whether the adaptation plan aims at reducing the potential negative consequences of climate change identified in employees' health and working conditions and how. Finally, it shall assess whether these adaptation measures are revised when necessary. **See Section 7 for Data requirements and the assessment process; and Appendix 6 – indicator 9.3 for mapping with other adaptation standards/recommendations.**
RATIONALE OF THE INDICATOR	Climate change impacts can affect employees' health and working conditions in the occurrence of droughts, heatwaves or storms, for example. Thus, it is essential for the company to implement effective and regularly updated adaptation measures for working conditions.

7. Data requirements and the assessment process

7.1. Data requirements for the ACT Adaptation assessment

The assessor needs data and documents in order to attest to and score the level of maturity achieved for each indicator of the ACT Adaptation methodology. The **Verifiability principle** (see Section 2) states that the data required for the assessment is verified or verifiable and sufficiently relevant. It also contributes to ensuring a certain level of comparability and homogeneity between assessments.

This section provides a non-exhaustive list and examples of data and documents capable of supporting the assessment process and completion of the Verifiability principle. It is important to note that, as adaptation to climate change is an emerging topic, as well as being transversal, multi-dimensional and company-specific, there are still gaps in the literature, requirements, available resources, etc.

Overall assessment: Reporting documents

- TCFD Report
- Financial Report / Financial performance statement
- Extra financial Report (notably for EU companies the upcoming CSRD E1 template)
- Universal Registration Document (URD)
- Corporate Social Responsibility (CSR) group policy; relevant Assessment by the CSR team; Sustainability Report
- Environmental policy
- Environmental, Social and Governance (ESG) Report/policy; ESG risks and opportunities
- Taxonomy Report
- Carbon Disclosure Project (CDP) questionnaire
- Sustainable Development Goals (SDGs) Report

For the dimension 1 – Governance & strategy and dimension 3 – Adaptive capacity and adaptation activities:

- Strategic plan; Group commitment
- Climate strategy
- Group management chapter of Reporting documents; Risk management (e.g. flood plan/procedure/risk management)
- Resilience plan
- Adaptation projects; options/solutions; policy; plan

For the dimension 2 – Physical climate risks:

- Physical Risk assessment and opportunity analysis: documents describing the methodology that has been used and applied
- Incident reports & historical events/damages
- Scenario analysis methodology; climate data and projections used
- Exposure maps, mapping or tool
- Risk grid
- Aggravating factors review/assessment; vulnerability diagnostic

- Climate change impact analysis/assessment
- Financial risk analysis and costs evaluation considering physical risks (e.g. stress test, losses or damages, impacts on owned assets, potential future increase/decrease in net turnover and costs due to business interruptions, increased supply prices, value-at-risk, critical financial thresholds, resulting in potential erosion of margins, risk of lower return on investment, reduced ability to reach agreed levels of service or business interruption, potential decrease in demand, etc.).
- Climate-related opportunities analysis/assessment/report

Documents that are more informal but can still be useful for the assessment

- Meeting minutes, restitution documents
- Slides, presentation document and supporting materials from training, events, workshops, meetings, etc.
- Internal newsletters, webinars, surveys, notes
- Feedback reports
- Articles mentioning press releases, website

Indicator 1.2

- Identification of the person(s) leading/in charge of physical risks and adaptation topics in the company: job title, description, résumé and position in the management structure
- Climate service; persons, department; Climate governance chapter in Reporting documents
- Table of affected departments by climate-related impacts

Indicator 2.1

- Document setting out the comparison with external stakeholders' strategies:
    - Hazard identification
    - Physical climate risks assessment (with levels: different, similar, consistent)
    - Adaptation strategy development and goals
    - Adaptation strategy deployment / Monitoring / Evaluation
- Other open points of comparison judged relevant by the company/assessor
- Reference/mention of Local Urban Plans, natural hazard prevention plans, other sectoral or local actors' Risk assessments, etc.

Indicator 2.2

- Methodology used to identify outside relevant stakeholders potentially impacted by climate-related risks
- Stakeholder mapping analysis / matrix
- A listing of the external stakeholders identified by the company (particularly within Zone C) or a description of the methods used for this identification.
- Methodology used by the company to consistently collaborate with the outside stakeholders (specifically regarding the long-term vision of the company's adaptation strategy) / The method of involvement of these different stakeholders in the physical risk analysis process and the adaptation strategy.
- A listing of the stakeholder organisations within and external to the company in charge of the collaboration.
- Documents or evidence of commitments and discussions with different stakeholders;

Indicator 3.1

- Examples or evidence of how the Do No Significant Harm Principle (DNSH) criteria of the Taxonomy Report are used
- Water management chapter in Reporting document(s)

Indicator 6.1

- Description of the internal processes and methods for decision-making (e.g. top down/bottom up)
- Internal tools for monitoring decision-making related to climate adaptation
- Climate-related decision-making methodology by “highest climate change officer” and the departments involved
- Climate monitoring strategy

Indicator 7.1

- Register of the financial resources for adaptation, investments (e.g. R&D, adaptation projects, etc.) for adaptation
- Investment criteria chapter in Reporting documents

Indicator 7.2

- Methodology applied/used to check whether investment decisions are compatible with increasing physical climate risks
- A report on financial costs from climate risk impacts
- Possibly a listing of the stakeholders within the company in charge of the assessment and decision-making

Indicator 9.1

- Map of internal competencies and forecast HR management
- Contracts or partnerships/collaborations

Indicator 9.2

- Share of trained employees and their positions
- Training material: Presentations, webinars, etc.

Indicator 9.3

- Adaptation plan and measures for working conditions stated in the internal working rules
- Health & safety management systems

7.2. DATA COLLECTION: TABLE OF COMPARISON BETWEEN ACT ADAPTATION AND OTHER ADAPTATION STANDARDS AND RECOMMENDATIONS

Several standards and recommendations are emerging concerning physical risks management and adaptation to climate change. Among others, these include the following:

- CDP Climate Change Questionnaire (2023) **(1)**
- TCFD **(2)** :
  - TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*
  - TCFD (2021), *Guidance on Metrics, Targets, and Transition Plans*
  - TCFD (2021), *Guidance on Scenario Analysis for Non-Financial Companies*
- EBRD & GCECA. (2018), *Advancing TCFD Guidance on physical climate risks and opportunities* **(3)**
- ISO 14090. (2019), *Adaptation to climate change – Principles, requirements and guidelines* **(4)**
- ISO 14091 (2021), *Adaptation to climate change – Guidelines on vulnerability, impacts and risk assessment* **(5)**
- EFRAG **(6)**,
  - Consulted version: (2022)**,** *[Draft] ESRS E1 Climate Change, Exposure Draft*
  - Last version: (July 2023), ANNEX 1 to the Commission Delegated Regulation (EU), supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards
- TEG **(7)**:
  - TEG. (2020), *Taxonomy: Final report of the Technical Expert Group on sustainable Finance*
  - TEG. (2020), *Taxonomy Report, Technical Annex: Updated methodology & Updated Technical Screening Criteria.*
- German Environment Agency (2022), *How to perfom a robust climate risk and vulnerability assessment for EU taxonomy reporting? Recommendations for companies* **(8)**

These standards and recommendations are among the most developed regarding physical risks and adaptation to climate change or the most broadly known up to date.

This document thus includes a table of comparison between the ACT Adaptation indicators and these standards and recommendations:

> Table 5 presents a **summarised and visualised comparison** highlighting that:
  - the ACT Adaptation methodology is aligned with the main standards and recommendations on adaptation, taking into account the key related concepts and aspects;
  - it is more precise and demanding;
  - it also includes aspects not covered anywhere else.

- Appendix 6 presents the comparison in an **extensive form, with specific sections and title references,** that is aimed at assisting the assessment process by both providing some resources for understanding adaptation concepts and by facilitating data collection. **Both companies and analyst are strongly advised to rely on it.**

Indicator	CDP (1)	TCFD (2)	EBRD (3)	ISO 14090 (4)	ISO 14091 (5)	EFRAG (6)	Taxonomy (7)	UBA (8)
1.1 Strategic objectives over the different time horizons								
1.2 Adaptation leadership and responsibilities								
2.1 Coherence with external adaptation strategies								
2.2 Working/Dialogue with interested parties								
3.1 Do No Significant Harm Principle								
4.1 Climate data and scenarios								
4.2 Inclusion of all critical components of the value chain								
5.1 Risks								
5.2 Opportunities								
6.1 Decision-making processes								
6.2 Internal learning system								
6.3 Diversification of activities								
7.1 Financial capacity								
7.2 Mainstreaming of climate adaptation into investment decisions								
8.1 Technologies and nature-based solutions for adaptive capacity								
9.1 Competences and expertise								
9.2 Training and capacity building								
9.3 Adaptation measures for working conditions								

LEGEND:

	Only covered by ACT Adaptation. Other recommendations/standards do not detail this aspect as ACT Adaptation does.
	Partial alignment between ACT Adaptation and the recommendations/standards (most of the time because ACT Adaptation is more precise or more demanding); Or covered differently
	Aligned. The recommendation/standard can help the ACT Adaptation assessment process.

TABLE 5: COMPARISON TABLE BETWEEN ACT ADAPTATION AND OTHER ADAPTATION STANDARDS AND REQUIREMENTS. FOR EACH ACT INDICATOR (LINE), THE LEVEL OF ALIGNMENT WITH MAJOR STANDARDS AND RECOMMENDATIONS (COLUMNS) CAN BE APPRECIATED.

8. Rating

8.1. Score

The ACT Adaptation rating is a number score from 0 (worst) to 20 (best). It is calculated using the score attributed to each indicator (see Section 5.3 and 5.4), based on the maturity matrices.

The rating can be broken down into three sub-scores, Governance & strategy; Physical climate risks; Adaptive capacity and adaptation activities, as a percentage. These scores are combined through an arithmetical average and re-based on 20 in order to provide the final score.

Score out of 20		
Sub-score Governance & strategy	**Sub-score Physical climate risks**	**Sub-score Adaptive capacity and adaptation activities**

$$Perf.score = \frac{1}{3}\left(Score_{Gov.\&strategy} + Score_{Physical\ climate\ risks} + Score_{Adapt.capacity\ and\ activities}\right) * 20$$

Example:

11.53		
Governance & strategy 50%	**Physical climate risks 69%**	**Adaptive capacity and adaptation activities 54%**

TABLE 6: ACT ADAPTATION SCORING AND AN EXAMPLE

8.2. SCORING SYSTEM

INDICATORS

Each indicator is given a score based on the maturity level as determined through the assessment:

Evaluation level	Basic	Standard	Advanced	Next Practice	Best Adaptive Practice
Score	0	0.25	0.5	0.75	1

TABLE 7: MATURITY MATRIX SCORING

Before scoring, the assessor is responsible for validating the achievement of every qualitative aspect of a given stage, as described in the maturity matrices.

However, in some cases the assessor might want to refine the scoring and qualify intermediate situations: this is the reason for the introduction of an 'in-between' scoring system (see Table 8). It allows for greater flexibility and better consideration of the specificity of the company being assessed.

Evaluation level	Basic		Standard		Advanced		Next Practice		Best Adaptive Practice
Score	**0**	0.125	**0.25**	0.375	**0.5**	0.625	**0.75**	0.875	**1**

TABLE 8: MATURITY MATRIX SCORING WITH POSSIBLE 'IN-BETWEEN' SCORING

The 'in-between' scoring is not to be given priority but can be used in transitional phases whenever at least two elements of the next maturity level have been achieved by the company: the 'in-between' scoring thus more accurately reflects the company's progress toward adaptation to climate change.

DIMENSIONS

The indicator scores in each module contribute to the Dimension Score according to the following formula (see also Table 9):

Governance & Strategy

$$Score_{Gov.\&strategy} = \frac{1}{5}(ind.1.1 + ind.1.2 + ind.2.1 + ind.2.2 + ind.3.1)$$

How to interpretate the scoring:

- The scoring is a linear combination of the indicators. Therefore indicators 1.1 and 1.2 have the same weight as indicators 2.1 and 2.2, meaning that the internal governance matters as much as consistency with external strategies.
- Maturity with regard to DNSH (indicator 3.1) is not a *sine qua non* of the strategy but rather results in co-benefits and thus additional points.

Physical climate risks

$$Score_{Physical\ climate\ risks} = ind.4.1 \times ind.4.2 \times \frac{ind.5.1 + ind.5.2}{2}$$

How to interpret the scoring:

- If *ind*.4.1=0 or *ind*.4.2=0, then the dimension score is 0: this means that the physical climate risk evaluation (the dimension Score) is meaningful only if the company has covered a minimum analysis regarding climate data and scenarios (ind. 4.1) and the analysis of the criticality of the value chain (ind. 4.2).

Adaptive capacity and adaptation activities

$$Score_{Dim.3} = \frac{1}{9}(\underbrace{ind.6.1 + ind.6.2 + ind.6.3}_{\text{Organisation}} + \underbrace{ind.7.1 + ind.7.2}_{\text{Finance}} + \underbrace{ind.8.1}_{\text{Technologies and solutions}} + \underbrace{ind.9.1 + ind.9.2 + ind.9.3}_{\text{Human}})$$

How to interpret the scoring:

- The scoring is a linear combination of the indicators: all of the adaptive capacities and adaptation activities are of equal importance, yet none is unconditional.

DIMENSION	MODULE	INDICATOR	SCORING SYSTEM
GOVERNANCE & STRATEGY	1. INTERNAL GOVERNANCE	1.1 Strategic objectives over the different time horizons	Score of dimension 1 (in %) = (sum of the maturity scores obtained for all of the indicators of the dimension 1) / 5
		1.2 Adaptation leadership and responsibilities	
	2. COHERENCE WITH EXTERNAL STRATEGIES & DIALOGUE	2.1 Coherence with external adaptation strategies	
		2.2 Working/Dialogue with interested parties	
	3. ENVIRONMENTAL AND SOCIAL SAFEGUARDS	3.1 Do No Significant Harm Principle	
PHYSICAL CLIMATE RISKS	4. DATA AND VALUE CHAIN	4.1 Climate data and scenarios	Score of dimension 2 (in %) = *Ind*.4. 1 × *Ind*.4.2 x ((*Ind*.5.1 + Ind.5.2)/2)
		4.2 Criticality of the value chain[18]	
	5. PHYSICAL CLIMATE RISK ANALYSIS	5.1 Risks	
		5.2 Opportunities	
ADAPTIVE CAPACITY AND ADAPTATION ACTIVITIES	6. ORGANISATION	6.1 Decision-making processes	Score of dimension 3 (in %) = (sum of the maturity scores obtained for all of the indicators of the dimension 1) / 9
		6.2 Internal learning system	
		6.3 Diversification of activities	
	7. FINANCE	7.1 Financial capacity	
		7.2 Mainstreaming of climate adaptation into investment decisions	
	8. TECHNOLOGIES AND NATURE-BASED SOLUTIONS	8.1 Technologies and nature-based solutions for adaptive capacity	
	9. HUMAN	9.1 Competences and expertise	
		9.2 Training and capacity building	
		9.3 Adaptation measures for working conditions	

TABLE 9: ACT ADAPTATION DIMENSION SCORING SYSTEM

[18] Value chain parts: Raw materials ; Production, operations, processes and infrastructure; People (workers, employees, clients, etc.); Networks and systems (water, energy and telecommunication); Logistics and transport; Demand & sales

The assessor shall present the Dimension and Global Score as a measurement of progress. The score calculation is sufficiently generic to be relevant to any type of company whatever its sector, size or geographical location. Thus, the weightings do not vary according to the company's sector or the value chain components considered in the assessment. However, as detailed in section 6, the assessor takes into account the specificities of the company, the extent to which the value chain and its components and activities are considered in the physical risks analysis, and the development of the adaptation strategy.

9. Process and outputs

9.1. Assessment process: guidelines & advice

The ACT Adaptation assessment enables the company to have a detailed and operational adaptation checklist in order to determine its areas of progress and to attest to the ones it has already developed.

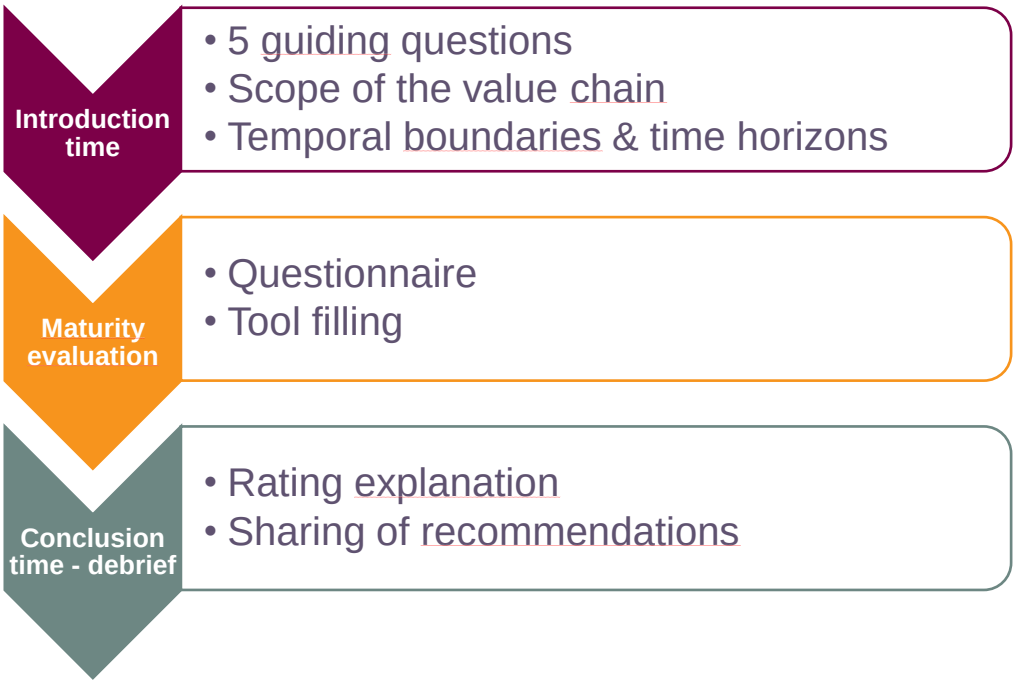


FIGURE 3: STEPS OF THE ASSESSMENT PROCESS

Following the ACT Adaptation Road Test (see Appendix 1) and the related assessment of 13 companies' adaptation strategies, some non-exhaustive guidelines and advice are gathered here on the ACT Adaptation assessment process:

- ✓ Having a discussion at the start of the assessment to map out how climate change is affecting the business along the value chain in order to include the obvious and less obvious value chain components, activities and aspects within the scope is highly recommended (i.e. indicator 4.2). This enables the mapping of decisions that the company makes that are likely to be particularly vulnerable to a changing climate. It determines what comes within the scope of the assessment and enables scoring in relation to the agreed boundary rather than the whole.
- ✓ The time horizons considered are also highly important and shall cover the lifetimes of the company's activities and assets, as well as the long-term (i.e. indicator 1.1).
- ✓ The dimensions and the related indicators can be assessed in any order that seems relevant for the company and its specific situation.

A possible order for assessment of the dimensions, according to the Road Test process, is by starting with dimension 1, followed by dimension 2 and then (or at the same time) dimension 3.

- ✓ After the final report has been delivered to the company, it is highly recommended to allow for discussion time between the analyst and the company in order to avoid any remaining misunderstanding and encourage the company to take the next steps in its adaptation journey.

9.2. Outputs

This **methodology** provides companies with a framework for assessing the comprehensiveness of their adaptation strategy, while guiding them to further improve it. Companies can also use this methodology to understand what makes a robust adaptation strategy, in order to start developing it.

This methodology is intended to provide explanations, context and references to the ACT Adaptation analyst, so that they can not only evaluate the maturity score but more importantly provide the company with feedback and recommendations.

Trained analysts and companies have access to an **Excel tool** to assess the company's adaptation strategy maturity. The ACT Adaptation maturity matrices scores highlight the company's gaps and progress. The Excel tool enables the analyst, with the involvement of and inputs from the company, to provide a detailed and comprehensive assessment, and to compute the final scores.

The analyst then presents their assessment through a **Power Point Report**, delivered to the company, which highlights the key learning points, the strengths and areas of improvement of the company's adaptation strategy, as well as the analyst's recommendations.

These two documents are dedicated to the company. They may remain confidential or be made publicly available to reflect the maturity of its adaptation strategy.

10. Sources

ADEME. (2019), *Adaptive capacity of businesses to the impacts of climate change: case studies, 2019*

ADEME. (2020), *Assessing the impacts of Climate Change on a Company: A compendium of international experience 2020*.

ADEME. (2021), *Diagnostic How to make business decisions to adapt to climate change, Methods and case studies in France and internationally, Climate change adaptation 2021.*

Carbone 4. (2017), *CRIS Climate Risk Impact Screening, The methodology guidebook.*

Carbone 4. (2021), *OCARA, Analysis framework of corporate climatic resilience, Methodological guide*

CDP Climate Change Questionnaire (2023)

EBRD & GCECA. (2018), *Advancing TCFD Guidance on physical climate risks and opportunities.*

EFRAG (2022), *[Draft] ESRS E1 Climate Change, Exposure Draft*

German Environment Agency (2022), *How to perfom a robust climate risk and vulnerability assessment for EU taxonomy reporting? Recommendations for companies*

IPCC. (2014), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.*

IPCC. (2022), *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Final Draft*

ISO 14090. (2019), *Adaptation to climate change – Principles, requirements and guidelines*

ISO 14091 (2021), *Adaptation to climate change – Guidelines on vulnerability, impacts and risk assessment*.

UNFCC (2015), *Paris Agreement, Article 7*

UNEP (2022), *5th UN Environment Assembly,* Nairobi, 2nd of March 2022

TEG. (2020), *Taxonomy: Final report of the Technical Expert Group on sustainable Finance*

TEG. (2020), *Taxonomy Report, Technical Annex: Updated methodology & Updated Technical Screening Criteria.*

TCFD (2017), *Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures*

TCFD (2021), *Guidance on Metrics, Targets, and Transition Plans*

TCFD (2021), *Guidance on Scenario Analysis for Non-Financial Companies*

WRI. (2021), *Assessing physical risks from climate change: Do companies and financial organizations have sufficient guidance? - Working Paper*

11. Glossary

ACT	The Assessing low-Carbon Transition (ACT) initiative was jointly developed by ADEME and CDP in 2015 with the pilot project. It is now hosted by the World Benchmarking Alliance (WBA). ACT is a joint voluntary initiative of the UNFCCC secretariat Global Climate Agenda. https://actinitiative.org/
ACTIONS THAT DO NOT (SIGNIFICANTLY) HARM MITIGATION, BIODIVERSITY, HEALTH AND POLLUTION	According to the European Taxonomy proposed by the Technical Expert Group, economic activities making a substantial contribution to climate change mitigation or adaptation must be assessed to ensure they do not cause significant harm to all remaining environmental objectives. An activity contributing to climate change adaptation must avoid significant harm to climate change mitigation and the other four environmental objectives (and vice versa): - Sustainable use and protection of water and marine resources - Transition to a circular economy, waste prevention and recycling - Pollution prevention and control - Protection of healthy ecosystems This assessment ensures that progress against some objectives is not made at the expense of others and recognises the reinforcing relationships between different environmental objectives. (TEG, 2020)
ADAPTATION	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. Adaptation options exist in all sectors, but their context for implementation and potential to reduce climate-related risks differs across sectors and regions. Some adaptation responses involve significant co-benefits, synergies and trade-offs. Increasing climate change will increase challenges for many adaptation options. Adaptation and mitigation responses are underpinned by common enabling factors. These include effective institutions and governance, innovation and investments in environmentally sound technologies and infrastructure, sustainable livelihoods and behavioral and lifestyle choices. (IPCC, 2014)
ADAPTATION NEEDS	The circumstances requiring action to ensure the safety of populations and security of assets in response to climate impacts (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
ADAPTATION PATHWAYS	A series of adaptation choices involving trade-offs between short-term and long-term goals and values. These are processes of deliberation to identify solutions that are meaningful to people in the context of their daily lives and to avoid potential maladaptation (IPCC, AR6 WGII Assessment Report Final Draft).
ADAPTATION TRAJECTORY	The combination and sequencing of actions to adapt to different types and levels of response (some being implemented now and others being reserved for the future) to reach the long-term target that the actors concerned have set. The definition of several trajectories of adaptation makes it possible to consider several ways of implementing adaption over time and to imagine possible branching between trajectories as a function of the observed evolution of the climatic and socioeconomic situation. (ADEME, 2019)

ADAPTIVE CAPACITY	The ability of systems, institutions, humans and other organisms to adjust to potential damage, take advantage of opportunities, or respond to consequences. (IPCC, 2014)
ADAPTIVE MANAGEMENT	A process of iteratively planning, implementing, and modifying strategies for managing resources in the face of uncertainty and change. Adaptive management involves adjusting approaches in response to observations of their effect and changes in the system brought on by resulting feedback effects and other variables. (IPCC, 2014)
ADEME	Agence de la Transition Ecologique; The French Ecological Transition Agency (ADEME webpage)
ANALYST / ASSESSOR	Person in charge of the ACT assessment.
ASSESS	Under the ACT Adaptation methodology, to evaluate the quality and the comprehensiveness of a company's adaptation strategy. The ACT assessment and rating are based on consideration of a range of indicators. Indicators may be reported directly from companies. Indicators may also be calculated from different data sources supplied by the company (ACT Framework).
CASCADING IMPACTS	Cascading impacts (i.e. series of impacts) from extreme weather/climate events occur when an extreme hazard generates a sequence of secondary events in natural and human systems that result in physical, natural, social or economic disruption, whereby the resulting impact is significantly larger than the initial impact. Cascading impacts are complex and multi-dimensional, and are associated more with the magnitude of vulnerability than with that of the hazard (modified from Pescaroli & Alexander, 2015) (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
CLIMATE CHANGE	A change in climate, attributed directly or indirectly to human activity, that alters the composition of the global atmosphere and that is, in addition to natural climate variability, observed over comparable time periods (UNFCCC).
CLIMATE GOVERNANCE	The structures, processes, and actions through which private and public actors seek to mitigate and adapt to climate change (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
CLIMATE PROJECTION	A climate projection is the simulated response of the climate system to a scenario of future emission or concentration of greenhouse gases (GHGs) and aerosols, generally derived using climate models. Climate projections are distinguished from climate predictions by their dependence on the emission/concentration/radiative forcing scenario used, which is in turn based on assumptions concerning, for example, future socioeconomic and technological developments that may or may not be realized. (IPCC, 2014)
CLIMATE-RELATED OPPORTUNITY	The potential positive impacts related to climate change on an organisation. It will vary depending on the region, market and industry in which an organisation operates. The acute and chronic changes in climate that the world will experience – even if the objectives of the Paris Agreement are fulfilled – are significant and will create market shifts. (EBRD, 2018).
CLIMATE-RELATED HAZARD	The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and

environmental resources. In this ACT Adaptation methodology, the term hazard refers to climate-related physical events or trends or their physical impacts.

Acute physical hazards refer to those that are event-driven and brief events, including increased severity of extreme weather events, such as tropical cyclones or floods.

Chronic physical hazards are slow trends and longer-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause sea-level change or chronic heat waves (derived from IPCC, 2014).

The classification of physical hazards chosen for ACT Adaptation and thus to be preferred is the following. **However, any other hazards classification that covers the same hazards can be used**.

CHRONIC PHYSICAL HAZARDS	Includes	Definition
Sustained temperature rise	Urban heat island	A gradual increase in overall temperature.
Change in precipitation patterns		Increase or decrease in precipitation annually and seasonally.
Water Stress/scarcity	Degraded water quality	High ratio of total water withdrawals to available renewable surface and groundwater supplies.
Sea level change	Costal erosion	Change to the height of sea level, both globally and locally (relative sea-level change) over seasonal, annual, or longer timescales due to (1) a change in ocean volume as a result of a change in the mass of water in the ocean (e.g. due to melting of glaciers and ice sheets), (2) changes in ocean volume as a result of changes in ocean water density (e.g. expansion under warmer conditions), (3) changes in the shape of the ocean basins and changes in the Earth's gravitational and rotational fields, and (4) local subsidence or uplift of the land.
Ocean acidification		Ocean acidification refers to a reduction in the pH of the ocean over an extended period, typically decades or longer, which is caused primarily by uptake of carbon dioxide (CO_2) from the atmosphere, but can also be caused by other chemical additions or subtractions from the ocean. Anthropogenic ocean acidification refers to the component of pH reduction that is caused by human activity.
Ice melt/permafrost melt		Progressive loss of sea ice, glacier, or ground (soil or rock and included ice and organic material) that remains at or below 0°C for at least two consecutive years.

ACUTE/EXTREME PHYSICAL HAZARDS	Includes	Definition
Extreme temperatures	Freeze	Temperature that is rare (unusually low or high) in a particular place and at a particular time of year. An extreme event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations.

		Heatwave	
	**Drought**	Severe low-water levels	A period of abnormally dry weather long enough to cause a serious hydrological imbalance. Drought is a relative term; therefore any discussion in terms of precipitation deficit must refer to the particular precipitation-related activity that is under discussion. A period with an abnormal precipitation deficit is defined as a meteorological drought. A megadrought is a very lengthy and pervasive drought, lasting much longer than normal, usually a decade or more.
	**Wildfires**		Uncontrolled fires that burn in wildland vegetation, often in rural areas.
	**Extreme precipitation**		Precipitation that is rare (unusually low or high) in a particular place and at a particular time of year. An extreme event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations.
	**Hail**		A form of precipitation consisting of solid ice.
	**Extreme sea level (storm surge)**		The temporary increase, at a particular locality, in the height of the sea due to extreme meteorological conditions (low atmospheric pressure and/or strong winds).
	**Flood**	River Flood Pluvial Flood Groundwater Flood Coastal Flood	The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods and glacial lake outburst floods.
	**Landslides**	Mass movements	A mass of material that has moved downhill because of gravity, often assisted by water when the material is saturated.
		Shrinkage-swelling of clay soils (SSCS)	Clay soils can have their consistency change according to their water content. In a humid context, clayey soil appears supple and malleable, while the same soil dried out will be hard and brittle. Variations of volume, greater of lesser according to the structure of the soil and the minerals present, accompany these modifications of consistency.
	**Extreme winds**	Storm	Wind speed that is rare (unusually low or high) in a particular place and at a particular time of year. An extreme event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations.
	**Tornadoes**		A violently rotating column of air touching the ground; usually attached to the base of a thunderstorm.

	**Tropical cyclones**	The general term for a strong, cyclonic-scale disturbance that originates over tropical oceans. Distinguished from weaker systems (often named tropical disturbances or depressions) by exceeding a threshold wind speed. A tropical storm is a tropical cyclone with 1-minute average surface winds between 18 and 32 m s–1. Beyond 32 m s–1, a tropical cyclone is called a hurricane, typhoon, or cyclone, depending on geographic location.
	**Dust Storm**	The result of terminal winds raising large quantities of dust into the air and reducing visibility at eye level (1.8 meters) to less than 1,000 meters.

Note: The definitions of these hazards from the WRI and the IPCC are examples, any other relevant definition and corresponding indicator will be appropriate.

Sources : WRI based on a review of reports from the IPCC (2014a, 2021, 2018, 2019a, 2019b), Géorisques, and adapted from I4CE

COMPANY	A commercial business (ACT Framework).
CRITICAL COMPONENTS OF THE VALUE CHAIN	Activities, processes, facilities, or elements of the value chain that are essential to the functioning of the company. The company's business greatly depends on them and thus deterioration due to climate change impacts is not acceptable and is liable to be critical to the company's functioning and business. (derived from OCARA, Carbone 4)
DATA	Facts and statistics collected for reference and analysis (e.g. the data requested from companies for assessment under the ACT project indicators) (ACT Framework).
DECISION POINTS	Points or thresholds beyond which it will be appropriate to activate the next action of the trajectory after the actions already implemented have reached their limits (ADEME, 2021).
EMISSION SCENARIO	A plausible representation of the future development of emissions of substances that are potentially radiatively active (e.g. greenhouse gases (GHGs), aerosols) based on a coherent and internally consistent set of assumptions about driving forces (such as demographic and socio-economic development, technological change, energy and land use) and their key relationships. Concentration scenarios, derived from emission scenarios, are used as input to a climate model to compute climate projections. (IPCC, 2014)
EXPOSURE / EXPOSURE	The presence of people; livelihoods; species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected. (IPCC, 2014)
EXPOSURE METRICS	Metrics designed to assess the degree to which a company's value chain (e.g. assets, operations, supply chain, and customers) has the potential to be impacted by physical climate hazards due to its geographic location. These metrics should link part of a company's value chain (e.g. physical assets) with specific physical climate hazards (e.g. tropical cyclones). (IPCC, 2014)

FINANCIAL RESOURCES	The funds available to implement its adaptive capacity. (ADEME, 2019)
FLEXIBLE ADAPTATION PATHWAYS METHOD	Method which consists of elaborating adaptation trajectories combining and ordering immediate actions and more ambitious actions, to be implemented when the former are no longer sufficient, by setting up a monitoring system throughout the implementation to anticipate the crossing of thresholds and a possible change of trajectory (Alexandre Magnan) (ADEME, 2021).
GOVERNANCE	The system by which an organisation is directed and controlled in the interests of shareholders and other stakeholders (Cadbury, *Report of the Committee on the Financial Aspects of Corporate Governance*, London, 1992.). Governance involves a set of relationships between an organisation's management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organisation are set, progress against performance is monitored, and results are evaluated (OECD, *G20/OECD Principles of Corporate Governance*, OECD Publishing, Paris, 2015.).
HUMAN RESOURCE	The internal skills and working time that the company uses to improve its adaptive capacity. (ADEME, 2019)
IMPACTS	The consequences of realised risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather/climate events), exposure, and vulnerability. Impacts generally refer to effects on lives, livelihoods, health and wellbeing, ecosystems and species, economic, social and cultural assets, services (including ecosystem services), and infrastructure. Impacts may be referred to as consequences or outcomes, and can be adverse or beneficial (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
INDICATOR	An indicator is a quantitative or qualitative piece of information that, in the context of the ACT project, can provide insight into a company's adaptation strategy quality and comprehensiveness (ACT Framework).
INTERESTED PARTIES	Person or organisation that can affect, be affected by, or perceive itself to be affected by a decision or activity (ISO14090:2019)
MALADAPTATION (MALADAPTIVE ACTIONS)	Actions that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas (GHG) emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future. Most often, maladaptation is an unintended consequence (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
MITIGATION (OF CLIMATE CHANGE)	Human intervention to reduce emissions or enhance the sinks of greenhouse gases (IPCC, AR6 WGII Assessment Report Final Draft, 2022).
NATURE-BASED SOLUTIONS (NBS)	Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits (5th UN Environment Assembly, Nairobi).

ORGANISATIONAL CAPACITY	The governance bodies, exchanges, decision-making processes and the management mode that contribute to its adaptive capacity. (ADEME, 2019)
PHYSICAL CLIMATE RISKS	The potential for adverse consequences for human or ecological systems from climate-related hazards (German Environment Agency, 2022) Risks from climate change impacts can be analysed and determined through different methods, for example: • The risk evaluation method, in which risks are assessed through their severity and probability of occurrence (ADEME, 2020) • The method whereby risks evaluation arises from the interaction between hazard (triggered by an event or trend related to climate change), vulnerability (susceptibility to harm) and exposure (people, assets or ecosystems at risk). (IPCC, 2014) • The thresholds method, in which climate hazards and thresholds are identified (ADEME, 2020)
PLAN	A detailed proposal for doing or achieving something (ACT Framework).
REPRESENTATIVE CONCENTRATION PATHWAYS (RCP)	Scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases (GHGs) and aerosols and chemically active gases, as well as land use/land cover (Moss et al., 2008). The word 'representative' signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. The term pathway emphasizes that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (Moss et al., 2010). RCPs usually refer to the portion of the concentration pathway extending up to 2100, for which Integrated Assessment Models produced corresponding emission scenarios. Extended Concentration Pathways (ECPs) describe extensions of the RCPs from 2100 to 2500 that were calculated using simple rules generated by stakeholder consultations and do not represent fully-consistent scenarios. Four RCPs produced from Integrated Assessment Models were selected from the published literature and are used in the present IPCC Assessment as a basis for the climate predictions and projections presented in WGI AR5 Chapters 11 to 14 (IPCC, 2013b): <u>RCP2.6</u> One pathway where radiative forcing peaks at approximately 3 W/m^2 before 2100 and then declines (the corresponding ECP assuming constant emissions after 2100). RCP2.6 is representative of a scenario that aims to keep global warming likely below 2°C above pre-industrial temperatures. The increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to be 0.3°C to 1.7°C under RCP2.6. <u>RCP4.5 and RCP6.0</u> Two intermediate stabilization pathways and scenarios in which radiative forcing is stabilized at approximately 4.5 W/m^2 and 6.0 W/m^2 after 2100 (the corresponding ECPs assuming constant concentrations after 2150). The increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to be 1.1°C to 2.6°C under RCP4.5, 1.4°C to 3.1°C under RCP6.0. <u>RCP8.5</u> It is the scenario with very high GHG emissions. One high pathway for which radiative forcing reaches >8.5 W/m^2 by 2100 and continues to rise for some amount of time (the

	corresponding ECP assuming constant emissions after 2100 and constant concentrations after 2250). Scenarios without additional efforts to constrain emissions ('baseline scenarios') lead to pathways ranging between RCP6.0 and RCP8.5. The increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to be 2.6°C to 4.8°C under RCP8.5. Relative to 1850–1900, global surface temperature change for the end of the 21st century (2081–2100) is projected to likely exceed 1.5°C for RCP4.5, RCP6.0 and RCP8.5 (high confidence). Warming is likely to exceed 2°C for RCP6.0 and RCP8.5 (high confidence), more likely than not to exceed 2°C for RCP4.5 (medium confidence), but unlikely to exceed 2°C for RCP2.6 (medium confidence). (IPCC, 2014)
RESILIENCE	Capacity of social, economic and environmental systems to withstand a hazardous event, trend or disturbance, by responding or reorganising in such a way as to maintain the capacity to adapt, learn and change (IPC, 2014)
SENSITIVITY	The degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g. a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g. damages caused by an increase in the frequency of coastal flooding due to sea-level rise) (IPCC, AR6 WGII Assessment Report Final Draft).
SCENARIO ANALYSIS	Process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organisation to explore and develop an understanding of how the physical (and transition risks) of climate change may impact its businesses, strategies, and financial performance over time (Recommendations of the TCFD, 2017).
SCOPE A	The direct scope of the company, meaning the assets controlled or operated directly by the company (e.g. buildings, facilities, vehicles, natural assets etc.) (OCARA, 2021).
SCOPE B	The stakeholders with which the company is in direct contact, including network infrastructures (e.g. water, electricity, waste removal, rank 1 suppliers) (OCARA, 2021).
SCOPE C	The stakeholders with which the company is in indirect contact upstream or downstream of the value chain, for example, rank 2 suppliers on which the company's direct suppliers depend (OCARA, 2021).
SECTOR	Segment of organisations performing similar business activities in an economy. A sector generally refers to a large segment of the economy or grouping of business types, while "industry" is used to describe more specific groupings of organisations within a sector. (TCFD, 2017).
STRATEGY	A plan of action designed to achieve a long-term or overall aim. In business, this is the means by which a company sets out to achieve its desired objectives; long-term business planning (ACT Framework).
SUPPLIER	A person or entity that is the source for goods or services (e.g. a company that provides engine components to an automotive manufacturing company) (ACT Framework).

STRANDED ASSETS	Investments already made but which, before the end of their economic life (assumed at the time of the investment decision), are no longer able to provide an economic return, as a result of climate change impacts and related physical risks to the assets in question. For example, a hydraulic dam for which the future decline in rainfall and the increase in droughts has not been considered (IEA).
TECHNICAL RESOURCES	The technologies, techniques and new solutions that contribute to improving its adaptive capacity. (ADEME, 2019)
THRESHOLD	Identifying the stages beyond which the operation of a system is significantly or irreversibly compromised, and understanding how climate change interacts with these functional thresholds, threshold analysis allows us to identify different levels of risk. The identification of these different risk thresholds in space and time then allows us to prioritise and sequence incremental adaptation solutions. (ADEME, 2020)
TIPPING POINT	A level of change in system properties beyond which a system reorganises, often abruptly, and does not return to the initial state even if the drivers of the change are abated. (IPCC, 2014)
TRANSFORMATION	A change in the fundamental attributes of natural and human systems. (IPCC, 2014)
UNCERTAINTY	A state of incomplete knowledge that can result from a lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from imprecision in the data to ambiguously defined concepts or terminology, incomplete understanding of critical processes, or uncertain projections of human behavior. Uncertainty can therefore be represented by quantitative measures (e.g. a probability density function) or by qualitative statements (e.g. reflecting the judgment of a team of experts) (see Moss and Schneider, 2000; IPCC, 2004; Mastrandrea et al., 2010) (IPCC, AR6 WGII Assessment Report Final Draft). It can also be defined as the degree to which future developments and outcomes (of a force) are unpredictable within the time horizon of a scenario. One test of uncertainty is when experts within the company cannot agree on the outcome (TCFD, 2020). **Climate uncertainties** depend on the level of future greenhouse gas emissions, the different climate models, the difficulty to determine climate extremes, or the development of estimates (ISO 14091).
VULNERABILITY	The propensity or predisposition to be adversely affected – encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. (IPCC, AR6 WGII Assessment Report Final Draft).
VULNERABILITY METRICS	Metrics designed to assess the propensity of different parts of a company's value chain to suffer negative impacts when exposed to and then impacted by physical climate hazards. These metrics should assess specific characteristics of a company's value chain (e.g. water intensity) that may make that part of the value chain more or less likely to suffer negative impacts from physical climate hazards (WRI, 2021).

Appendix 1: ACT Adaptation Road Test – volunteer companies

The ACT Adaptation Road Test of the draft methodology took place from July 2022 to January 2023, with the support of Climate Sense consultancy and 13 enthusiastic volunteer companies:

- Pierre & Vacances – Center Parcs
- SNCF
- Decathlon
- ENGIE
- Labeyrie Fine Foods
- Lacoste
- Liberty Steel Group
- Vinci Autoroutes
- EDF
- Séché Environnement
- Tereos
- Worldline
- P1 Investment Management

For more information on the Road Test, the ACT Adaptation Road Test Anonymised Report is available (March 2023) on the ACT Initiative website.

Appendix 2: (Flexible) Adaptation pathways method (from ADEME, Climate Change Adaptation 2021)

What does it involve?

Elaborating adaptation trajectories by combining and ordering immediate actions and more ambitious actions to be implemented when the former are no longer sufficient.

What is the value added for the company?

- ✓ Adjusting its strategy over time, according to the change in climate risks.
- ✓ Initiating first actions with a precise vision of future actions.
- ✓ Avoiding the risk of under or over-investment.

The Key points of the method

- Starting the process: Defining a long-term adaptation objective and identifying a list of adaptation actions of different types and scope.
- Developing trajectories: Combining and ordering the actions in one or more trajectories, which describe the possible options to achieve the adaptation goal.
- Identifying “thresholds” or decision points: Determining the thresholds beyond which it will be appropriate to activate the next action of the trajectory after the actions already implemented have reached their limits.
- Monitoring and steering the strategy: Setting up a monitoring system throughout the implementation to anticipate the crossing of thresholds and a possible change of trajectory.

How does it help with climate change adaptation?

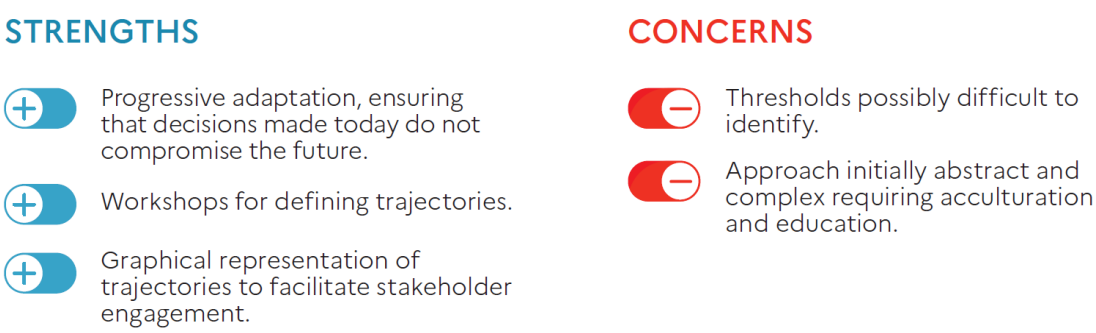
The adaptation pathways approach allows decisions to be made based on incomplete information on the climate risk challenge for the company.

A flexible approach

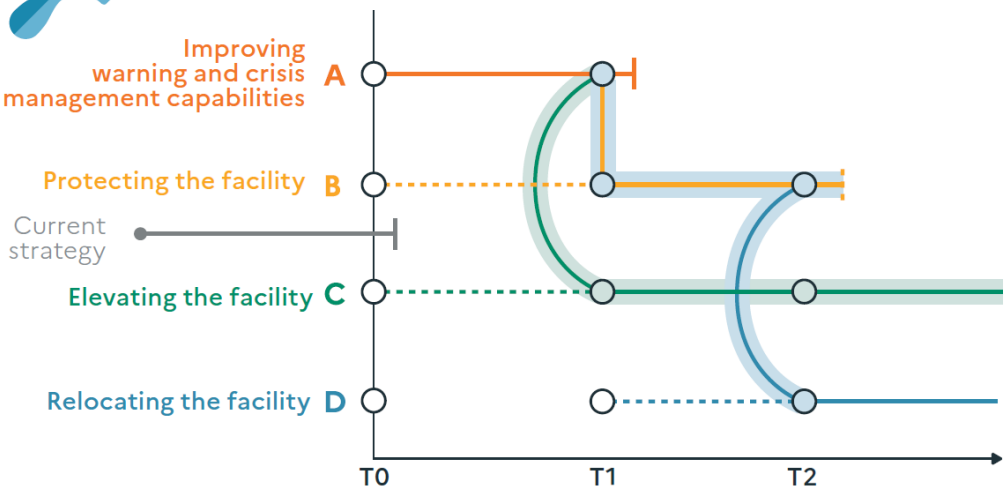
Adaptation pathways are flexible because they enable the "as we go along" strategy to be adjusted on the basis of incremental knowledge on climate change and the climate risk challenge for the company.

A long-term perspective

Without trying to "predict" the future, the company, using adaptation pathways, has a long-term perspective right from the start of planning.



IN PRACTICE WHAT DO ADAPTATION TRAJECTORIES LOOK LIKE ?



FICTIONAL EXAMPLE

Because of the threat of sea level rise and frequent flooding at one of its facilities, the company's current strategy, limited to crisis management and repairs, will soon no longer be sufficient. **Four actions** would allow the facility to improve its resilience to this risk (*see diagram*). **Actions** B, C and D are costly, and the current available information does not allow the company to know which one will be optimal when crisis management (Action A) is no longer sufficient.

At **time T0**, the company will implement action A to improve its forecasting and risk response capabilities. When the sea level has reached a certain level (at **time T1**), two trajectories will emerge :

In the green trajectory : the company decides to raise its infrastructure (Action C). It anticipates that this action, if well calibrated, would allow the infrastructure to withstand the risk in the long term.

In the blue trajectory, the company decides to protect its infrastructure (Action B). This action is less costly than Action C, but it is possible (though not certain) that in the longer term it will not be sufficient. If the average sea level continues to rise, the facility would have to be relocated. The relocation would have to be sufficiently anticipated to prepare for decommissioning, land purchase, construction, etc.

To implement these trajectories, the company must now :

- identify the indicators to be monitored (for example, sea level rise in cm) and the thresholds beyond which decisions must be made
- improve its ability to choose between actions. Thus, when making decisions, cost-benefit analyses and/or multi-criteria analyses will allow the company to make choices based on the available information.

Appendix 3: The 3 scopes of analysis (from OCARA, Carbone 4)

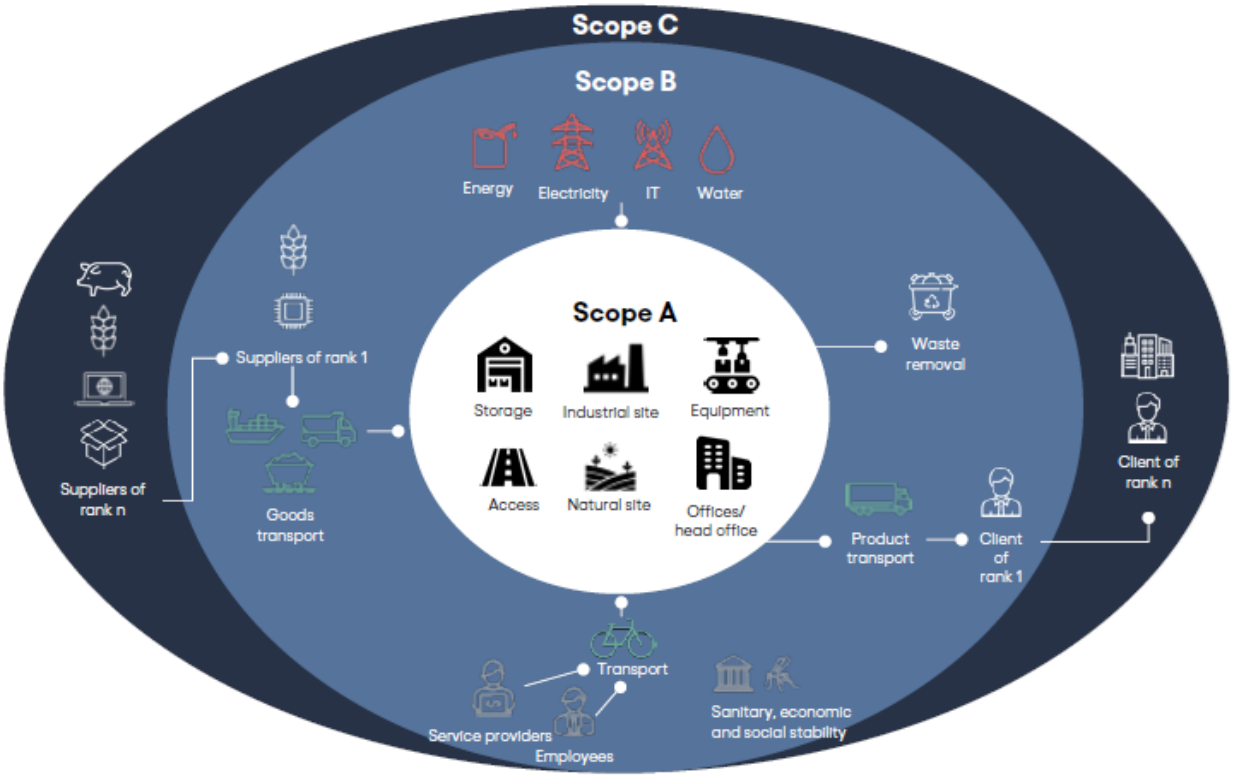


FIGURE 4: BREAKDOWN OF THE COMPANY AND ITS LINKS OF DEPENDENCE INTO 3 SCOPES (FROM OCARA, CARBONE 4, 2021)

ACTIVITIES INCLUDED IN EACH SCOPE

Scope A	Scope B	Scope C
1. Integrity of buildings and constructions	7. Availability and quality of supplies – Direct perimeter (scope A) of main suppliers of rank 1	17. Relevance of the offer to the market
2. Maintaining storage conditions of raw materials, products and waste	8. Outlets of products and services – Direct scope (scope A) or main clients of rank 1	18. Value chain of suppliers of rank 1
3. Maintaining working and production conditions	9. Supply and distribution of goods – Availability and quality of transport networks	19. Value chain of clients of rank 1
4. Integrity and proper functioning of equipment	10. Worker mobility (employees and service providers) – Availability and quality of transport networks	20. Value chain of infrastructures and networks supplying the company
5. Services rendered by natural assets exploited by the company	11. Availability and quality of electricity supply to sites	
6. Other physical goods exploited by the company and necessary for its operation	12. Availability and quality of supply of gas, steam, heating and cooling	
	13. Availability and quality of water supply to sites	
	14. Availability and quality of telecom and internet networks	
	15. Removal of waste and effluents	
	16. Stability of the political, regulatory and socioeconomic environment	

TABLE 10: ACTIVITIES INCLUDED IN EACH SCOPE THAT ENSURE THE COMPANY RUNS SMOOTHLY (FROM OCARA, CARBONE 4, 2021)

Appendix 4: Non-exhaustive list of activities/process included in the 6 ACT Adaptation value chain parts (derived from OCARA, Carbone 4)

Value chain parts in the scope of ACT Adaptation	Activity/Process that the value chain can include	Activity/Process description
Raw materials	Suppliers of agriculture, forestry and livestock products (food, textiles, leather, skins, oleaginous products, etc.)	This process addresses the availability and quality of supplies of agricultural, forestry or livestock products (food, textiles, hides, furs, oilseeds).
	Suppliers of metal, metallurgical and mineral products (of mineral origin, e.g. glass, cement, steel, etc.)	This process covers the availability and quality of supplies of metal, metallurgical or mineral products (of mineral origin, such as glass, cement, steel, etc.).
	Suppliers of various items of equipment and machines	This process covers the availability and quality of supplies of equipment and machinery (all types).
	Other uses of ecosystems (biomass energy, non-cultivable natural materials, game, etc.)	—
	Stability of political, regulatory and socioeconomic environment in the countries /regions where suppliers are active	This process addresses the ability of suppliers to rely on the political, regulatory and socio-economic stability of their countries/regions of operation. It includes essential services such as hospitals, schools, police, fire brigade, military, financial, legal institutions, etc.
Production, operations, processes and infrastructures	Integrity of service buildings	This process deals with the physical integrity of tertiary buildings (e.g. office buildings, stadiums, hotels, shops, laboratories, hospitals, etc.), which enables them to perform their function. It includes their structure, roof, envelope, façade, sewage system, electricity, HVAC system, interior fittings, etc.
	Integrity of warehouses	This process addresses the physical integrity of warehouses, which enables them to perform their storage function. It includes their structure, roof, envelope, façade, sewage system, electricity, HVAC system, interior fittings, etc.
	Integrity of industrial buildings	This process addresses the physical integrity of industrial buildings, which enables them to perform their production function. It includes their structure, roofing, envelope, façade, sewage system, electricity, HVAC, interior fittings, etc.
	Practicality of internal roads	This process deals with the practicability of the internal road system (roads, paths, streets, etc.). It does not refer to the access roads to the site but to the roads that allow traffic to flow within the site. It includes the wearing course, base course, supporting soil, etc.
	Integrity of external areas	This process addresses the integrity of the external areas, which may include car parks, gardens, wasteland, terraces, etc.

	Maintaining indoor production conditions	This process addresses the maintenance of indoor production conditions (temperature, humidity, etc.) necessary for the proper functioning of production machines, tools and equipment.
	Maintaining outdoor production conditions	This process deals with maintaining the outdoor production conditions (temperature, humidity, etc.) necessary for the proper functioning of the machines, tools and production equipment.
	Networks and data centres on site, other data reception / transmission equipment (integrity and operation)	This process addresses the integrity and operation of digital optical networks, copper, data centres, servers and other equipment located on the company's site (whether owned or used).
People	Maintaining indoor working conditions (employees and service providers on site)	This process addresses the maintenance of indoor working conditions (temperature, humidity, etc.) necessary for the productivity, safety and good health of workers and contractors on site.
	Maintaining outdoor working conditions (employees and service providers on site)	This process addresses the maintenance of outdoor working conditions (heat, humidity, etc.) necessary for the productivity, safety and good health of workers and contractors on site.
	Commuting - employees – road/rail	This process addresses the safety, timeliness and conditions of transport for employees commuting by road / train
Network and systems	Electricity supply equipment (integrity and operation)	This process addresses the integrity of power supply equipment. This includes switches, meters, transformers, generators, power outlets, charging stations, etc.
	Water supply equipment (integrity and operation)	This process addresses the integrity of water supply equipment. It includes pumps, pipes, valves, meters, etc.
	Water network - water quality & quantity available	This process addresses the quality and the available quantity of the water consumed from the water system.
	Water treatment equipment	This process addresses the integrity of on-site water treatment equipment. It includes water disinfection, sedimentation, filtration, recovery, potability, pumping, sanitation, distribution, irrigation, etc.
	Electricity	This process addresses the continuity and quality of the company's supply (voltage, frequency) from the grid/self-consumption of electricity from solar energy/wind power, or other sources.
	Gas	This process addresses the continuity and quality of the company's gas supply.
	Availability and quality of telecom and internet networks	This process addresses the availability and quality of telecom and internet networks. This includes access to the internet network, computer network, mobile phone network, fibre optic network, etc.
Logistics and transports	Fleet of conventional road vehicles	This process addresses the integrity and operation of conventional road vehicles operated by the company. It includes city cars, light commercial vehicles, SUVs, non-refrigerated trucks, etc.
	Other vehicle fleets (specific vehicles, e.g. refrigerated vehicles, construction machines, boats, etc.)	This process addresses the integrity and operation of other road vehicles operated by the company. It includes refrigerated trucks, construction equipment, boats, etc.
	Commuting – on-site service providers– road/rail	This process addresses the safety, timeliness and conditions of transport of on-site contractors commuting by road / train.
	Transport upstream of company – road/air/river/maritime/rail	This process covers the continuity, fluidity, deadlines and conditions of transport for the road/air/river/maritime/rail networks used by suppliers to ensure the supply of goods to the company.

	Transport downstream of company – road/air/river/maritime/rail	This process covers the continuity, fluidity, deadlines and conditions of transport for the road/air/river/maritime/rail networks used by the company to ensure the distribution of its goods.
	Transport between company sites – road/air/river/maritime/rail	This process covers the continuity, fluidity, deadlines and transport conditions for road/air/river/maritime/rail networks that ensure flows between the company's various sites.
Demand & sales	Clients in the sector of agricultural, forestry or livestock products (food, textiles, leather, skins, oleaginous products, etc.) / in the sector of various items of equipment and machines / in the sector of other manufactured products / etc.	This process covers the ability to contract with customers in the agriculture, forestry or livestock sector / in the miscellaneous equipment and machinery sector / in other manufactured products / etc. and their ability to take delivery of the products and services they purchase.
	Quality of products sold - effect in their lifetime	This process is aimed at studying the evolution of the quality of products sold in a context of global warming (potential impacts of the multiplication of heat waves, disruption of the cold chain, etc.).
	Relevance / attractiveness of product	This process focuses on the relevance of the products and services marketed by the company and the demand for them in the face of various climatic hazards modified by global warming. In order to survive, some companies may have to rethink their business models: entire sectors of products and services could be affected (e.g. ski resorts, technical clothing for extreme cold, demand for housing located near the coast, etc.).
	Stability of the political, regulatory and socioeconomic environment in the regions where clients are active	This process addresses the stability of the political, regulatory and socio-economic environment in the countries/regions where customers are active.

TABLE 11: NON-EXHAUSTIVE LIST OF ACTIVITIES/PROCESSES INCLUDED IN EACH OF THE 6 VALUE CHAIN COMPONENTS CONSIDERED IN THE ACT ADAPTATION METHODOLOGY (DERIVED FROM OCARA, CARBONE 4, 2021)

Appendix 5: Physical climate risks analysis, example of three methods (ADEME, 2020)

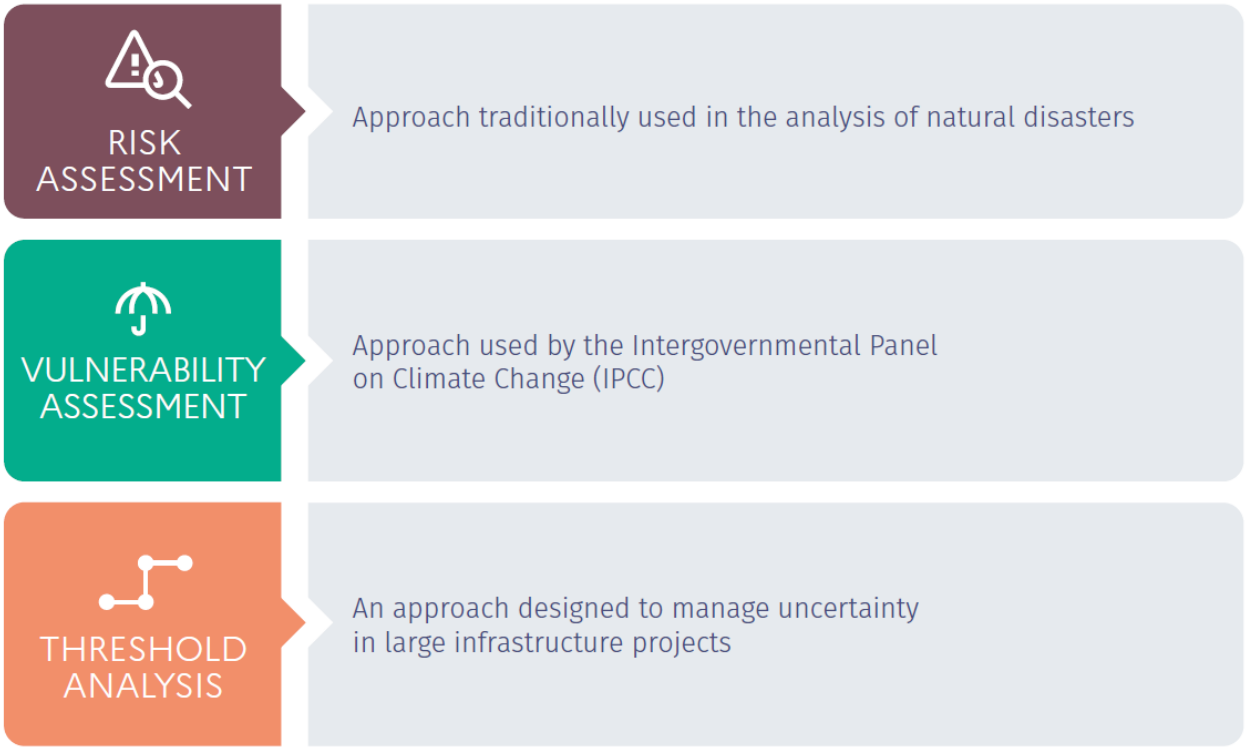


FIGURE 5: THE THREE APPROACHES TO CLIMATE CHANGE IMPACT ASSESSMENT INDICATED BY THE EN ISO 14090 STANDARD (FROM ADEME, 2020)

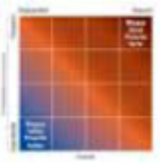
METHODOLOGY	What	How	OPERATIONAL RESULTS
PROBABILITY OF OCCURENCE	What are the hazards that threaten my activities? What is the likelihood of these hazards occurring?	✔ Qualitative rating of the probability level based on past and future scenarios, scientific studies, etc. ✔ Quantitative rating (probabilistic risk modelling)	*Qualitative rating* 1. Improbable - Unlikely event 2. Rare - May occur only a few times over the life of the installation 3. Likely - At least once a year 4. Frequent - At least once a month
GRAVITY	How serious are the consequences of these hazards for my business?	✔ Qualitative scoring, e.g. in the workshop (give scores at the level of losses and gains corresponding to each impact)	*Notation qualitative* 1. Negligible - No/low damage 2. Significant - Damage not threatening current activity 3. Serious - Reversible damage disrupting normal activity 4. Major - Irreversible damage, danger to the durability of the installation
RISK	Identification of the impacts threatening my activities and characterisation of the level of risk associated with each impact (high, low), enabling me to prioritise the impacts to be dealt with first		 *Risk Matrix (Source: EPE (2014))*

TABLE 12: THE RISK ASSESSMENT APPROACH (ADEME, 2020)

METHODOLOGY	What	How	OPERATIONAL RESULTS
EXPOSURE	Depending on the geographical location of my value chain, to which hazards am I exposed, and to what extent (with regard to my activity)?	✓ Study of past and present exposure to climatic hazards ✓ Study of future climate change scenarios - Qualitative *(narrative scenarios)* - Quantitative *(climate projection)*	*To identify:* • **Past impacts:** interviews with key people in the company, workshops, bibliographical research, etc. · **Future developments:** analysis of projections provided by sites/ databases (see chapter 4) for several scenarios (e.g. PCR 4.5, 8.5) and for several time horizons (to 2030, 2050, 2100...).
×			
VULNERABILITY	How sensitive is my value chain to the climatic hazards to which I am exposed? What is my capacity to react and adapt to the impacts of climate change?	✓ Rating the sensitivity of the different functions of the company ✓ Study of the resources and organisational capacities available to deal with the consequences of climate change ***(e.g. financial resources, emergency procedures implemented, etc.).***	Qualitative rating of the sensitivity of the company's functions to: · Higher temperatures · Increasingly scarce water resources · Potential disruptions to road transport · Deterioration of ecosystems, etc.
=			
RISK	Identification of the impacts (negative and positive) of climate change on my activities across my value chain		 *Map of risk hotspots. (Source: Verisk Maplecroft 2015)*

TABLE 13: THE VULNERABILITY ASSESSMENT APPROACH (ADEME, 2020)

METHODOLOGY	What	How	OPERATIONAL RESULTS
CLIMATIC HAZARDS	What are the hazards that threaten my activities? How will they change?	✓ Identification of the hazards likely to impact my activities ✓ Choice of an indicator that allows me to follow the evolution of the hazard	*A network operator* · Example of relevant hazards: Rising temperatures · Indicator: Extremely high maximum daily temperature (°C)
×			
FUNCTION THRESHOLDS	What are the components of my system? What are the threshold values beyond which performance will be unacceptably compromised?	✓ Mapping the components of my system and their interaction ✓ Identification of threshold values for the operation of system components ✓ Study and monitoring of the actual proximity to these thresholds	· Identification of components: rails, cables, etc. · Threshold values for rail temperatures: 45°C: considerable impact / 60°C: critical threshold · Monitoring of temperature evolution
=			
RISK	Identification of critical thresholds beyond which climate change impacts affect the effectiveness of a system. This makes it possible to prioritise where and when action will be needed.		 *Adaptation trajectories Source: Fazey & al 2014)*

TABLE 14: THE THRESHOLD ANALYSIS APPROACH (ADEME, 2020)

Appendix 6: Comparison table between ACT Adaptation and other recommendations and standards on adaptation

Indicator 1.1 Strategic objectives over the different time horizons

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C1.1b) Provide further details on the board's oversight of climate-related issues. > Governance mechanisms into which climate-related issues are integrated (column 2) (C2.1a) How does your organization define short-, medium- and long-term time horizons? (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.	Governance recommended disclosure a) Describe the board's oversight of climate-related risks and opportunities. "In describing the board's oversight of climate-related issues, organizations should consider including a discussion of the following: – processes and frequency by which the board and/or board committees (e.g. audit, risk, or other committees) are informed about climate-related issues, – whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures" Strategy recommended disclosure a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. "Organizations should provide the following information: – a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the	Recommendation 2: Assess physical climate risks over the duration of an asset's lifetime or over the lifetime of a financial instrument. Recommendation 7: Describe risk management processes for physical climate change impacts	§4.4 Mainstreaming and embedding §5 Pre-planning §6.2.4 Thresholds analysis §7.3.4 Short, medium and long-term lifespan decisions §7.4.8 Implementation, monitoring and evaluation, reporting and communication §7.4.6 Adaptive capacity §8.2 Implementation plan §10 Reporting and communication	§5 Preparing a climate change risk assessment §5.5 Setting the time horizon	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > 16., 18., AG 23. Disclosure Requirement E1-3 – Measurable targets for climate change mitigation and adaptation > AG 30. Disclosure Requirement E1-4 – Climate change mitigation and adaptation action plans and resources > 28. Climate-related specific application guidance on ESRS 2 Disclosure Requirements IRO 1 and IRO 2 on	Technical Annex - Principle 1: The economic activity reduces all material physical climate risks to the extent possible and on a best effort basis. Screening criteria for an activity enabling adaptation B1.1 & B1.2 Screening criteria for 'adapted activities' A1 & A1.1	(P24) ""The magnitude of the current or future climate-related hazard is not known for some hazards, because the required scientific basis is lacking or insufficient. How to deal with uncertainties in the climate risk assessment is a decision for the company's management (or the people responsible for the climate risk assessment)."

	useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms," Strategy recommended disclosure b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. →See full TCFD document Strategy recommended disclosure c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. "Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks. Organizations should consider discussing: – where they believe their strategies may be affected by climate-related risks and opportunities; – how their strategies might change to address such potential risks and opportunities;" C. The Scenario Process E Key Issues Considered and Areas for Further Work - 8. Time Frames for Short, Medium, and Long Term				materiality assessment > AG17.		

Indicator 1.2 Adaptation leadership and responsibilities

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C1.1) Is there board-level oversight of climate-related issues within your organization? (C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues. (C1.1b) Provide further details on the board's oversight of climate-related issues. (C1.1c) Why is there no board-level oversight of climate-related issues and what are your plans to change this in the future? (C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues. (C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets? (C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).	Governance recommended disclosure a) Describe the board's oversight of climate-related risks and opportunities. "– whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, and – how the board monitors and oversees progress against goals and targets for addressing climate-related issues." Governance recommended disclosure b) Describe management's role in assessing and managing climate-related risks and opportunities. "In describing management's role related to the assessment and management of climate-related issues, organizations should consider including the following information: – whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues, – a description of the associated organizational structure(s),	___	§6.2.4 Thresholds analysis §6.3 Assessing adaptive capacity §8.1 Leadership and commitment §8.2 Implementation plan	§5 Preparing a climate change risk assessment §5.3 Establishing a project team Annexes G ; H	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23	___	(P23) "it makes sense to formally or informally include all relevant departments in the adaptive capacity assessment and adaptation planning." "In the case of medium climate risks, it is plausible that the company's responsible persons decide on a case-by-case basis whether it makes sense to implement adaptation solutions and create an adaptation plan" (P22) 4.4 Implementation: Identifying and assessing adaptation solutions

	– processes by which management is informed about climate-related issues, and – how management (through specific positions and/or management committees) monitors climate-related issues." TCFD's Guidance on Scenario Analysis for Non-Financial Companies: >C. The Scenario Process >2.1 Engaging Stakeholders						

Indicator 2.1 Coherence with external adaptation strategies

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g. limits on emissions) as well as other relevant factors considered."	Recommendation 7: Describe risk management processes for physical climate change impacts	§7.2 Policy, strategy and planning context	§5 Preparing a climate change risk assessment - 5.1 Establishing the context	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > 19. ; AG 25.	Technical Report - "The obligation to be consistent with sectoral, regional, and/or national adaptation efforts remains." Technical Annex - Principle 2: The economic activity does not adversely affect adaptation efforts by others. (P24) Screening criteria for 'adapted activities' an economic activity - A2	(P23) "The implemented adaptation solutions must also meet certain requirements, e.g. being "consistent with local, sectoral, regional or national adaptation strategies and plans".

Indicator 2.2 Working and dialogue with interested parties

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
Section C15 on Biodiversity : see questionnaire (C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related matters within your organization? (C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity? (C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity? (C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year? (C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments? (C15.6) Does your organization use biodiversity indicators to monitor performance across its activities? // Specific sectors // (C-AC4.4/C-FB4.4/C-PF4.4) Do you implement agriculture or forest management practices on your own land with a climate change mitigation and/or adaptation benefit? (C-AC4.4a/C-FB4.4a/C-PF4.4a) Specify the agricultural or forest management practice(s) implemented on your own land with climate change mitigation and/or adaptation benefits and provide a corresponding emissions figure, if known	___	___	§4.9 Systems thinking §5 Pre-planning §6.2.4 Thresholds analysis §7.4 Adaptation plan - 7.4.9 Interested parties' engagement §8.2 Implementation plan §10 Reporting and communication	§5 Preparing a climate change risk assessment - 5.9 Participatory approach §5 Preparing a climate change risk assessment - 5.1 Establishing the context	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23	___	___

Indicator 3.1 Do No Significant Harm Principle

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
Section C15 on Biodiversity : see questionnaire (C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related matters within your organization? (C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity? (C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity? (C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year? (C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?	Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g. limits on emissions) as well as other relevant factors considered."	___	§4.7 Sustainability §4.8 Synergy between adaptation and mitigation of climate change	___	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG 26. Disclosure Requirements E1-4 – Climate change mitigation and adaptation action plans and resources > AG 33.	Technical Report - 2.1.1 Sectors covered – and not covered yet – by the Taxonomy "The technical screening criteria for substantial contribution to climate change adaptation can, in principle, apply to any economic activity. [...]." Technical Report - 2.3.3 Areas of development in the technical work Evolution in adaptation principles (SC and DNSH) as a result of regulatory changes Technical Annex - Principle 2: The economic activity does not adversely affect adaptation efforts by others. Screening criteria for 'adapted activities' an economic activity A2.1 DNSH to environmental objectives 3-6 and to climate change adaptation	(P23) "Our interpretation of the legal requirements is such that a list of adequate and effective adaptation solutions, including an assessment (e.g. qualitative cost-benefit ratio), seems necessary. [...]. These requirements for substantial contribution depend on the economic activity and include DNSH requirements for other environmental objectives."

Indicator 4.1 Climate data and scenarios

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities? (C3.2) Does your organization use climate-related scenario analysis to inform its strategy? (C3.2a) Provide details of your organization's use of climate-related scenario analysis.	Strategy recommended disclosure c) Describe the resilience of the organization's strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario. "Organizations should consider discussing: – the climate-related scenarios and associated time horizon(s) considered. Refer to Section D for information on applying scenarios to forward-looking analysis." Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks. [...] Organizations should also consider disclosing the following: – processes for assessing the potential size and scope of identified climate related risks and – definitions of risk terminology used or references to existing risk classification frameworks used."	Recommendation 6: Perform forward-looking assessments of physical climate risks Recommendation 13: Consider current and desired GHG concentration pathways and related warming projections as a basis for scenario analysis of physical climate risks and opportunities Recommendation 14: Integrate scenario analysis of physical climate risks and opportunities into existing planning processes to ensure strategic, flexible and resilient businesses and investments Recommendation 15: Avoid standardised scenario analysis in	§4.5 Robustness §6 Assessing climate change impacts including opportunities – §6.1 General §6.5 Identifying uncertainties §7.3 - 7.3.4 Short, medium and long lifespan decisions	§5.5 Setting the time horizon §6.3 Acquiring and managing data - 6.3.1 Gathering data ; 6.3.2 Evaluating data quality and results Annex B Annex H	Climate-related specific application guidance on ESRS 2 Disclosure Requirements IRO 1 and IRO 2 on materiality assessment > AG 14. ; AG17. Climate-related scenario analysis > AG 19., AG 21.	Technical Annex - Principle 1: The economic activity reduces all material physical climate risks to the extent possible and on a best effort basis. Screening criteria for an activity enabling adaptation B1.1 Technical Annex - 2.1 Work process - conceptual approach Screening criteria for 'adapted activities' an economic activity A1.2	(P7) "In case an economic activity has a lifespan of less than ten years, no assessment of the future risks and scenarios is necessary. For activities with a longer lifespan, current and future climate risks based on climate projections have to be considered (see Table 2)." (P14) "In the climate risk assessment, the materiality of the physical climate risks is estimated for each system element of the investigation object. [...]. The Climate Delegated Act distinguishes between two time periods: one of up to ten years and one for ten years or more. Therefore, this recommendation defines the current state as the period up to ten years. The future is specified as the period from 2031 to 2060, since climate data is often available for this 30-year period."

	Risk Management recommended disclosure b) Describe the organization's processes for managing climate-related risks. See full TCFD document. Risk Management recommended disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management. "Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management." 3. Recommended Approach to Scenario Analysis 4. Applying Scenario Analysis 5. Challenges and Benefits of Conducting Scenario Analysis TCFD's Guidance on Scenario Analysis for Non-Financial Companies document TCFD's Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities document	order to have a more comprehensive range of outcomes Recommendation 16: Consider data from a wide variety of sources and scales when developing scenario analysis of physical climate risks and opportunities Recommendation 17: Take account of scientific uncertainty inherent in climate data and in scenario analysis of physical climate risks and opportunities					(P18-19) Box 3 on climate scenarios and climate data (P16) Current climate-related hazard (time horizon below 10 years) Future climate-related hazard (time horizon of more than 10 years) (P16) "Climate data rarely represent an assessed hazard directly; rather, climate parameters are used as indicators to assess climate-related hazards. For example, the number of heat days with maximum temperatures above 30 °C may be an indicator for heat waves. Depending on the investigated impacts of the climate-related hazard, different indicators are useful"

Indicator 4.2 Criticality of the value chain

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities? (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities. (C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.	Strategy recommended disclosure b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. "Organizations should consider including the impact on their businesses and strategy in the following areas: – Products and services – Supply chain and/or value chain [...]" Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks. [...] Organizations should also consider disclosing the following: – processes for assessing the potential size and scope of identified climate related risks and – definitions of risk terminology used or references to existing risk classification frameworks used." Risk Management recommended disclosure b) Describe the organization's	Recommendation 3: Disclose locations that are critical to value chains Recommendation 6: Perform forward-looking assessments of physical climate risks Recommendation 7: Describe risk management processes for physical climate change impacts	§4.9 Systems thinking §6 Assessing climate change impacts including opportunities - 6.1 General §7.4 Adaptation plan - 7.4.2 Scope of the plan and boundaries of the system	§4.2.2 Value-based judgements §5 Preparing a climate change risk assessment - §5.1 Establishing the context §6.1 Screening impacts and developing impact chains	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > 17. Climate-related specific application guidance on ESRS 2 Disclosure Requirements IRO 1 and IRO 2 on materiality assessment > AG 14 Climate-related specific application guidance on ESRS 2 Disclosure Requirement SBM 1 (paragraph 47 (d)) on the resilience of the strategy and business model > AG 7.	___	(P9) 4. Climate Risk Assessment - 4.1.2 Determining investigation objects for economic activities in the manufacturing sector (P9) "The identification of investigation objects in procurement and transportation is more complex than for production sites. We therefore recommend paying attention to proportionality concerning the level of detail when selecting investigation objects in the areas of procurement and transportation." (P15) "Climate impact chains do not have to be based on complex analyses and model calculations; they are also suitable as a visualisation tool for qualitatively identified impact relationships

	processes for managing climate-related risks. See full TCFD document. Risk Management recommended disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management. "Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management."						

Indicator 5.1 Risks

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C2.1b) How does your organization define substantive financial or strategic impact on your business? (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities. (C2.2a) Which risk types are considered in your organization's climate-related risk assessments? (C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?	Strategy recommended disclosure a) Describe the climate related risks and opportunities the organization has identified over the short, medium, and long term. "– a description of the specific climate-related issues for each time horizon (short, medium, and long term) that could have a material financial impact on the organization, and – a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization. Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to Tables 1 and 2 (pp. 10-11)." Strategy recommended disclosure b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. See full TCFD document. Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe their risk management processes for identifying and assessing climate-related risks. An	Recommendation 1: Assess exposure to all first-order physical climate impacts - Hazards Recommendation 2: Assess physical climate risks over the duration of an asset's lifetime or over the lifetime of a financial instrument Recommendation 4: Provide detailed information on the financial impacts of recent extreme weather events Recommendation 5: Disclose the impacts of weather variability on value chains Recommendation 6: Perform forward-looking assessments of physical climate risks	§6 Assessing climate change impacts including opportunities - 6.1 General §6.2.4 Thresholds analysis §9 Monitoring and evaluation §10 Reporting and communication §7.3 - 7.3.4 Short, medium and long lifespan decisions	§4.2 Assessing climate change risk - 4.2.1 Objectives ; 4.2.2 Value-based judgements §5.5 Setting the time horizon §6.2 Identifying indicators §7.1 Climate change risk assessment report Annex H	Disclosure Requirement E1-15 – Potential financial effects from material physical risks > AG 74. Climate-related specific application guidance on ESRS 2 Disclosure Requirements IRO 1 and IRO 2 on materiality assessment > AG. 14., AG 17., AG22.	Technical Annex - Principle 1: The economic activity reduces all material physical climate risks to the extent possible and on a best effort basis. Screening criteria for an activity enabling adaptation B1.1 Technical Annex - The technical screening criteria proposed by the TEG contain quantitative thresholds where possible. Where this is not possible, the criteria are qualitative,	(P7) 3. Overview: key steps of a climate risk assessment (P8) 4. Climate Risk Assessment (P14) 4.3.2 Understanding impact relationships "To assess the overall materiality of the physical climate risks (Section 4.3.5) you need to - understand significant interrelationships between the climate-related hazards and the system elements of the investigation object (Section 4.3.2), - gather information on current and future climate-related hazards (Section 4.3.3), and - gather information on the sensitivity of the possibly affected system elements (Section 4.3.4)."

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business. (C2.3b) Why do you not consider your organization to be exposed to climate-related risks with the potential to have a substantive financial or strategic impact on your business?	important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks. [...] Organizations should also consider disclosing the following: – processes for assessing the potential size and scope of identified climate related risks and – definitions of risk terminology used or references to existing risk classification frameworks used." Risk Management recommended disclosure b) Describe the organization's processes for managing climate-related risks. See full TCFD document. Risk Management recommended disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management. "Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management." E Key Issues Considered and Areas for Further Work - 8. Time Frames for Short, Medium, and Long Term	Recommendation 18: Disclose qualitative information that is relevant to the company and its investors				describing an action or set of actions to be demonstrated which avoid significant harm.	

Indicator 5.2 Opportunities

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities. (C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business? (C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business. (C2.4b) Why do you not consider your organization to have climate-related opportunities?	Strategy recommended disclosure a) Describe the climate related risks and opportunities the organization has identified over the short, medium, and long term. "– a description of the specific climate-related issues for each time horizon (short, medium, and long term) that could have a material financial impact on the organization, and – a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization. Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to Tables 1 and 2 (pp. 10-11)." Strategy recommended disclosure b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. See full TCFD document. Risk Management recommended disclosure a) Describe the organization's processes for identifying and assessing climate-related risks. "Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks. [...] Organizations should also consider disclosing the following: – processes for assessing the potential size and scope of identified climate related risks and – definitions of risk terminology used or references to existing risk classification frameworks used."	Recommendation 8: Identify opportunities based on managing physical climate risks and related market shifts Recommendation 9: Assess physical climate opportunities over timeframes relevant to business planning Recommendation 10: Disclose physical climate opportunities for business at the segment level; for critical facilities, disclose climate resilience benefits at the facility level Recommendation 12: Include physical climate opportunities for business in qualitative disclosures	§6 Assessing climate change impacts including opportunities - 6.1 General §6.2.4 Thresholds analysis §8.2 Implementation plan §9 Monitoring and evaluation §10 Reporting and communication §7.3 > 7.3.4 Short, medium and long lifespan decisions	§4.2.2 Value-based judgements §7.1 Climate change risk assessment report	Climate-related specific application guidance on ESRS 2 Disclosure Requirements IRO 1 and IRO 2 on materiality assessment > AG. 14, AG22.	—	—

Indicator 6.1 Decision-making processes

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	Governance recommended disclosure a) Describe the board's oversight of climate related risks and opportunities. "– whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, and – how the board monitors and oversees progress against goals and targets for addressing climate-related issues." Governance recommended Disclosure b) Describe management's role in assessing and managing climate-related risks and opportunities. "– how management (through specific positions and/or management committees) monitors climate-related issues" Risk Management recommended disclosure b) Describe the organization's processes for managing climate-related risks. See full TCFD document. Risk Management recommended disclosure c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management. "Organizations should describe how their processes for identifying, assessing, and	Recommendation 7: Describe risk management processes for physical climate change impacts Recommendation 17: Take account of scientific uncertainty inherent in climate data and in scenario analysis of physical climate risks and opportunities	§4.3 Flexibility §4.5 Robustness §5 Pre-planning §6 Assessing climate change impacts including opportunities > 6.1 General §6.2.4 Thresholds analysis §6.3 Assessing adaptive capacity §6.5 Identifying uncertainties §7.3.3 Decision-making approaches §7.3.4 Short, medium and long lifespan decisions §7.4.1 General (from 7.4 Adaptation plan) §8.2 Implementation plan §9 Monitoring and evaluation §10 Reporting and communication	§4.2 Assessing climate change risk - 4.2.1 Objectives §5.5 Setting the time horizon §5.6 Gathering relevant information §5.8 Transparency §6.3.2 Evaluating data quality and results §6.6 Interpreting and evaluating the findings §7.1 Climate change risk assessment report Annexes G ; H	Climate-related scenario analysis > AG 19. Disclosure Requirement E1-3 – Measurable targets for climate change mitigation and adaptation > 20., 22., 23., 24., AG 30. Disclosure Requirement E1-4 – Climate change mitigation and adaptation action plans and resources > 28., 29., 30., AG 30., AG 32., AG 33.	Technical Annex - 2.1 Work process - conceptual approach Technical Annex - Principle 3: The economic activity has adaptation-related outcomes that can be defined and measured using adequate indicators. Screening criteria for 'adapted activities' an economic activity A1, A1.1, A3 and A3.1	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions (P23) Use of indicators to help determining the adaptive capacity (P24) "The magnitude of the current or future climate-related hazard is not known for some hazards, because the required scientific basis is lacking or insufficient. How to deal with uncertainties in the climate risk assessment is a decision for the company's management (or the people responsible for the climate risk assessment)."

	managing climate-related risks are integrated into their overall risk management." E Key Issues Considered and Areas for Further Work - 8. Time Frames for Short, Medium, and Long Term Principle 3: The economic activity has adaptation-related outcomes that can be defined and measured using adequate indicators. TCFD's Guidance on Scenario Analysis for Non-Financial Companies document - D. Strategic Management Using Scenarios						

Indicator 6.2 Internal learning system

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	—	—	§5 Pre-planning §6.2.4 Thresholds analysis §7.3.1 General (from 7.3 Decision-making) §7.4.6 Adaptive capacity §8.2 Implementation plan	§5 Preparing a climate change risk assessment - §5.1 Establishing the context	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23.	—	—

Indicator 6.3 Diversification of activities

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	—	Recommendation 7: Describe risk management processes for physical climate change impacts	§6.3 Assessing adaptive capacity	—	—	—	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions

Indicator 7.1 Financial capacity

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.	Strategy recommended disclosure b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. See full TCFD document.	Recommendation 7: Describe risk management processes for physical climate change impacts	§5 Pre-planning §6.3 Assessing adaptive capacity	Annexes G ; H	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23 Disclosure Requirements E1-4 – Climate change mitigation and adaptation action plans and resources > AG 34. Disclosure Requirement E1-15 – Potential financial effects from material physical risks > 67.	___	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions (P23) Use of indicators to help determining the adaptive capacity

Indicator 7.2 Mainstreaming of climate adaptation into investment decisions

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C3.5) In your organisation's financial accounting, do you identify spending/revenue that is aligned with your organisation's climate transition? (C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organisation's climate transition. (C3.5b) Quantify the percentage share of your spending/revenue that was associated with eligible and aligned activities under the sustainable finance taxonomy in the reporting year. - but not sure it applies to adaptation (C3.5c) Provide any additional contextual and/or verification/assurance information relevant to your organisation's taxonomy alignment.	Strategy recommended disclosure c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. "Organizations should describe how resilient their strategies are to climate related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks."	—	—	—	—	—	—

Indicator 8.1 Technologies and nature-based solutions for adaptive capacity

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	—	—	§6.3 Assessing adaptive capacity	Annexes G ; H	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23	Technical Report - 2.3.3 Areas of development in the technical work Evolution in adaptation principles (SC and DNSH) as a result of regulatory changes ("...consider the viability of 'green' or 'nature-based' solutions over 'grey' solutions to address adaptation."	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions

Indicator 9.1 Competences and expertise

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
(C1.1d) Does your organization have at least one board member with competence on climate-related issues?	___	___	§5 Pre-planning §6 Assessing climate change impacts including opportunities - 6.1 General §6.3 Assessing adaptive capacity	§5 Preparing a climate change risk assessment §5 Preparing a climate change risk assessment - 5.1 Establishing the context §5.3 Establishing a project team Annexes G ; H	Disclosure Requirement E1-2 – Policies implemented to manage climate change mitigation and adaptation > AG. 23	___	(P14) "However, the processing and preparation of suitable climate data for a climate risk assessment requires specialised knowledge. In order to perform a successful climate risk assessment, this expertise must be available within the company (rare), be built up or be brought in externally. For external support, there are consultancies offering climate risk assessments as a service." (P22) 4.4 Implementation: Identifying and assessing adaptation solutions

Indicator 9.2 Training and capacity building

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA
—	—	—	§6.2.4 Thresholds analysis §6.3 Assessing adaptive capacity	Annexes G ; H	—	—	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions (P23) Use of indicators to help in determining the adaptive capacity

Indicator 9.3 Adaptation measures for working conditions

CDP	TCFD	EBRD	ISO 14090	ISO 14091	EFRAG	Taxonomy	UBA (8)
—	—	—	—	—	—	—	(P22) 4.4 Implementation: Identifying and assessing adaptation solutions (P23) Use of indicators to help in determining the adaptive capacity