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BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 14002-3

Environmental management systems — Guidelines for using ISO 14001 to address environmental aspects and conditions within an environmental topic area —

Part 3: Climate

ICS: 03.100.70; 13.020.10; 13.020.40

ISO/TC 207/SC 1

Secretariat: **BSI**

Voting begins on:
2025-09-02

Voting terminates on:
2025-11-25

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms, definitions and abbreviated terms	1
3.1 Terms and definitions	1
3.2 Abbreviated terms	7
4 Planning actions	8
4.1 General	8
4.2 Understanding the organization and its context related to climate change	8
4.2.1 General	8
4.2.2 Responsibilities of top management	8
4.2.3 Understanding climate-related internal and external issues	9
4.2.4 Review of relevant needs and expectations of interested parties	10
4.2.5 Review of climate change related environmental aspects and impacts	11
4.2.6 Determine risks and opportunities to be addressed	13
4.2.7 Manage change	17
4.3 Determine appropriate actions	17
4.3.1 General	17
4.3.2 Actions for climate change mitigation and adaptation	19
5 Taking action	23
5.1 General	23
5.2 Environmental objectives in relation to climate change	24
5.2.1 General	24
5.2.2 Setting objectives, targets, and key performance indicators for climate change mitigation	24
5.2.3 Setting objectives, targets, and key performance indicators for climate change adaptation	26
5.3 Support actions	27
5.3.1 General	27
5.3.2 Resources	27
5.3.3 Competence and awareness related to climate change mitigation and adaptation	27
5.3.4 Communication and Reporting	28
5.3.5 Documented information	28
5.4 Operational controls	29
5.4.1 General	29
5.4.2 Operational control related to climate change mitigation	29
5.4.3 Operational control related to climate change adaptation	29
5.4.4 Life cycle perspective	30
5.4.5 Emergency preparedness and response	31
5.5 Performance Action	32
5.6 Unintended consequences of actions taken	32
6 Evaluating the effectiveness of actions	33
6.1 General	33
6.2 Monitoring, measurement, analysis and evaluation	33
6.2.1 General	33
6.2.2 Indicators of performance	34
6.3 General effectiveness of actions	35
6.4 Evaluating the effectiveness of the climate change mitigation and adaptation strategy	36
7 Improvement	36
Annex A (informative) Example of a manufacturing site – PMA Manufacturing	38

ISO/DIS 14002-3:2025(en)

Annex B (informative) Example of a research university – Four Seasons State University (FSSU)	41
Annex C (informative) Additional guidance and initiatives	44
Annex D (informative) Supplementary Guidance on the use of this International Standard	59
Annex E (informative) Correspondence between ISO 14001:2015 (+A1+A2) and ISO 14002-3	65
Annex F (informative) Overview of measures to reduce sector-specific anthropogenic GHG emissions	70

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 207, Environmental management, Subcommittee SC 1, Environmental management systems.

A list of all parts in the ISO 14002 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

0.1 Background

The climate crisis is putting lives and livelihoods at risk across the globe, especially for the most vulnerable. As the impact on people and nature will only intensify in the coming decades, this calls for fundamental shifts in prevailing development politics and business practices and urgent and transformative actions. Virtually all economic activity leads to a certain degree of direct or indirect contribution to global climate change. Organizations affect global climate, and can in turn, be affected by changing climate and environmental conditions. Until recently, the climate change dialogue has been largely focused on mitigation issues relating to the reduction in emissions of greenhouse gases. However, adaptation is as urgent as mitigation. It is therefore prescient to globally ramp up actions to become more resilient to the changing climate while continuing to reduce our greenhouse gas emissions. This document aims to guide organizations to become more climate resilient and prepare for the inevitable impacts of the climate crisis whilst simultaneously managing and reducing their GHG emissions.

Overall, the level of adaptation required is dependent on the rate and scale of global greenhouse gas emissions reduction and geographic location, as some regions of the world are much more vulnerable to the effects of climate change. The level of adaptation that individual organizations may be required to implement is not dependent only on their own mitigation efforts because the risks they face today are due to past cumulative global emissions over several decades.

Successful climate change mitigation and adaptation are integral to achieving sustainable development and the United Nations' Sustainable Development Goals (SDGs).

This document is designed for compatibility with other standards related to climate change mitigation and adaptation. It is based on ISO 14002-1 and follows the same approach and order of elements as ISO 14001 but does not address every subclause. Many organizations apply the general ISO 14001 framework to manage their interactions with the environment. This document provides guidance and examples focused on applying the ISO 14001 framework to address climate-related environmental aspects and impacts, as well as climate-related environmental conditions, vulnerabilities and dependencies that can have an effect on the organization. It supports organizations to plan action(s) where needed in relation to environmental impacts, risks and opportunities at their site(s) and in the life cycle of their products and services.

0.2 Risk-based approach

This document enables organizations to address:

- actual and potential adverse or beneficial climate related environmental impacts originating from their activities or their supply chains;
- actual and potential impacts of climate change on the organization itself, including risks and opportunities related to climate change.

Potential effects of climate change on the organization can include acute and chronic physical threats (e.g. increasing frequency of extreme weather events) as well as transitional risks and opportunities related to changes in regulations, technology, and the market. The organization's reputation and its opportunity to contribute to sustainable development from a life cycle perspective can also be affected.

The magnitude of climate-related risks and opportunities can be influenced by various context-related factors such as physical, social, economic, and environmental factors that determine vulnerability to climate change, including an organization's geographic location, availability of natural resources, conditions of existing infrastructure, characteristics of the built environment, sensitivity of the workforce, and adaptive capacity.

0.3 Holistic approach to climate change mitigation and adaptation

An environmental management system conforming to ISO 14001 requires an organization to determine and address significant environmental aspects and impacts associated with its activities, products, and services, as well as environmentally related risks and opportunities for the organization that need to be addressed

in relation to its context. This process involves using a life cycle perspective as part of a comprehensive evaluation of the various impacts an organization can have on the environment and how it depends on it.

This document provides guidance on addressing climate related environmental impacts, as well as the impacts of climate change on the organization, addressing both climate change mitigation and climate change adaptation. An organization can control or reduce its climate-related environmental aspects such as greenhouse gas emissions through climate change mitigation. In addition, an organization can consider its internal and external context and how it is affected by climate change and take action to minimize potential adverse effects or leverage beneficial effects through climate change adaptation.

An organization that intends to strengthen its environmental management efforts on climate change mitigation and adaptation should recognize the interrelation of climate with other environmental media and respective ecosystems. It should be aware that its plans and implementation to improve its mitigation and adaptation actions can potentially incur adverse environmental impacts on media like soil and water, or on terrestrial and aquatic ecosystems. To avoid such unintended consequences, this document encourages an organization to take a holistic approach when taking mitigation and adaptation action. Figure 1 shows how ISO 14001, and the parts of the ISO 14002 series can be applied using a holistic approach.

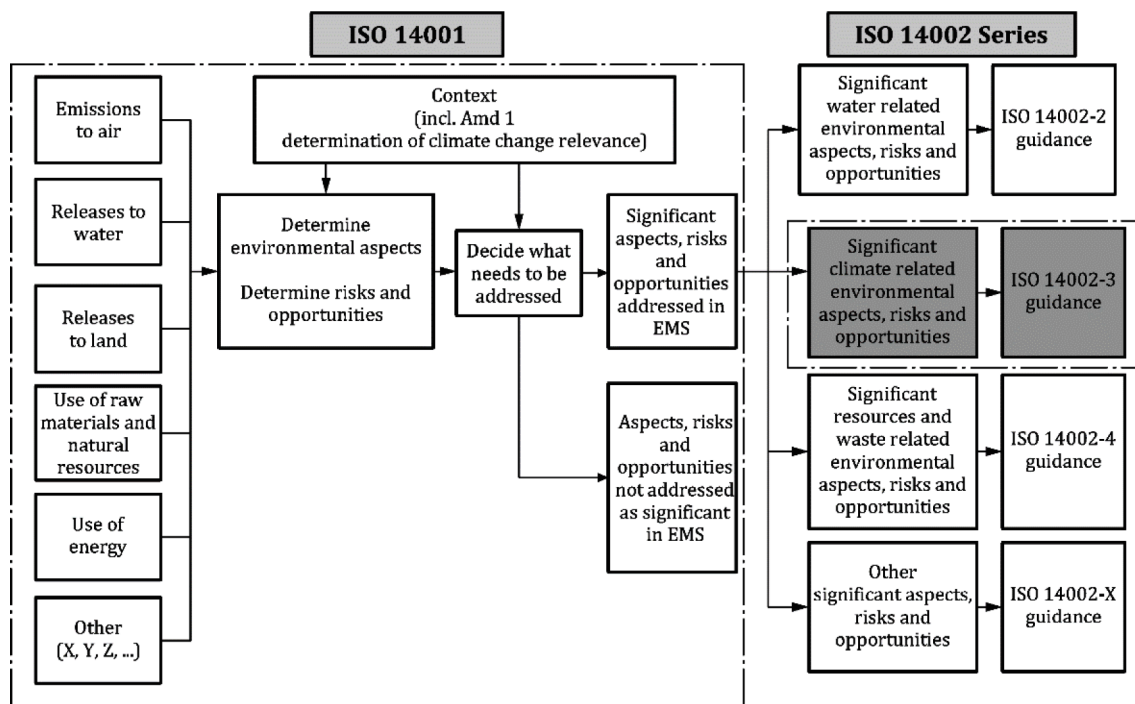


Figure 1 — Interaction between ISO 14001 and the ISO 14002-series

0.4 Using this document to address the environmental topic area of climate within an environmental management system

An organization can use this document to help determine the most appropriate way to address and embed climate change mitigation and climate change adaptation within its environmental management system. This can be related to, for example:

- specific commitment(s) in the organization's environmental policy, (e.g. reduction of greenhouse gas emissions, or enhancement of infrastructure resilience, improved energy efficiency, conservation of ecosystems and related biodiversity);
- one or more of its significant environmental aspects or compliance obligations related to climate, energy use, or air pollution associated with greenhouse gases;
- compliance with applicable climate-related permits;
- commitments related to an organization's social responsibility;

- specific risks and opportunities that need to be addressed for climate-related environmental conditions or dependencies;
- management of life-cycle aspects related to products or services.

Climate change mitigation and adaptation should be implemented following the existing ISO 14001 framework, based on a Plan-Do-Check-Act (PDCA) cycle. Related frameworks for climate change adaptation, such as ISO 14090 follow a similar cycle and include additional guidance, organized in different elements.

[Figure 2](#) illustrates a merging of PDCA and adaptation cycles.

Climate change adaptation should start with preparing the ground for adaptation in a structured way, and assessing impact, risk and vulnerability to climate change with consideration of current and future climate conditions, as well as transboundary issues to avoid maladaptation. Identifying, assessing and prioritizing adaptation options are part of the planning process. The adaptation options should be implemented, monitored and evaluated, consistent with the check and act phases in the PDCA cycle.

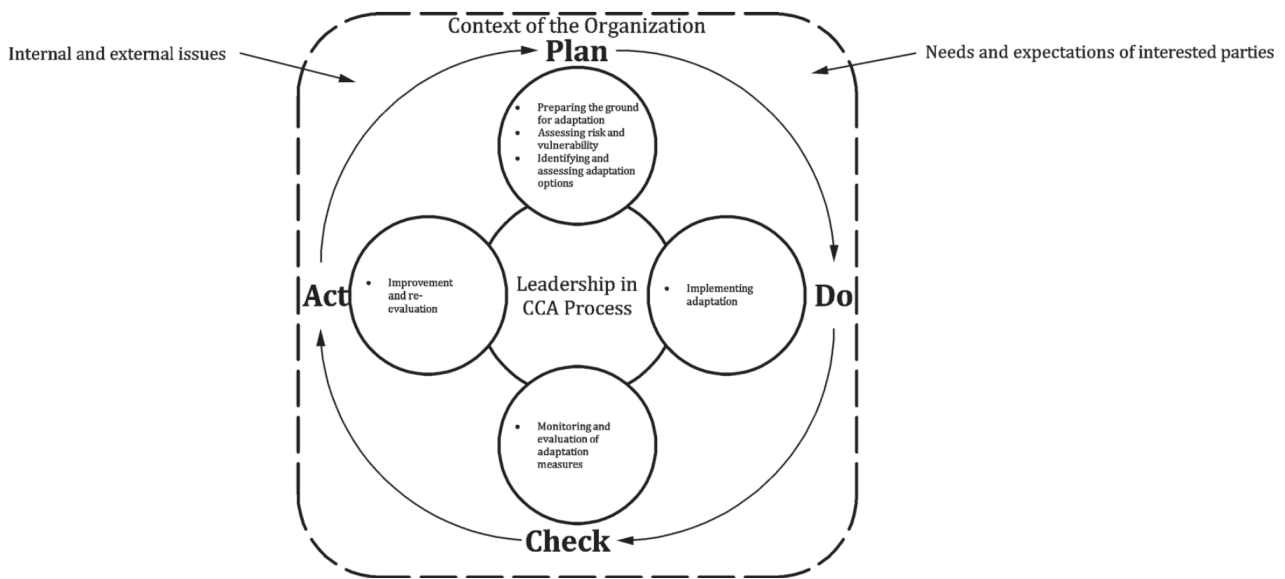


Figure 2 — Adaptation Cycle (adapted from ISO 14001 and EEA Climate ADAPT)

As shown in [Figure 2](#), adaptation to climate change is not static. It is a continuous process that needs to be reevaluated and adjusted regularly in accordance with a changing climate and state of the art knowledge.

[Annex E](#) ([Table E.2](#)) provides additional information regarding the climate adaptation process.

References to other standards and helpful guidance can be found in [Annex B](#).

0.5 Case studies

The guidance provided in this document includes three case studies of organizations applying the ISO 14001 framework to address climate-related environmental aspects and environmental impacts, the impacts of climate change on the organization, and the associated risks and opportunities that need to be addressed. The organizations in these case studies are fictional and serve as illustrative examples in diverse contexts, including different business and service sectors and different geographic locations and environmental conditions.

These cases are provided to illustrate how this document can be applied, with examples from different settings and perspectives, and are not intended as models or templates for applying ISO 14001 or this document. The first of these cases represents a dairy company and is incorporated in the main body of the document, with examples shown in each clause as appropriate. The other case in [Annex A](#) and [Annex B](#) represent a medium sized polyurethane manufacturer and a large research university.

0.6 Benefits

The benefits of applying this document can include:

- fulfilling compliance obligations related to climate change, energy use and air quality, as well as supporting just transition and public socio-economic policies;
- enhancing environmental performance and fostering resilient ecosystems by achieving environmental objectives through the improved management of climate-related environmental aspects;
- protecting the environment through prevention or mitigation of adverse climate related environmental impacts on natural resources and ecosystems;
- preventing and mitigating climate-related business risks and leveraging opportunities in an organization's operations and its supply chain, in response to changing environmental conditions;
- aligning the environmental management system with the organization's strategic direction, to support specific environmental policy or organizational commitments related to climate change mitigation and adaptation;
- supporting climate-related global goals for sustainable development (e.g. the UN SDGs);
- contributing to conformity with international agreements and conventions related to climate change.

These benefits can also lead to cost reductions, security of supply and production, better relations with relevant interested parties, improved public image, or the maintenance of a “social license to operate”.

Environmental management systems — Guidelines for using ISO 14001 to address environmental aspects and conditions within an environmental topic area —

Part 3: Climate

1 Scope

This document is intended for organizations seeking to address climate-related environmental aspects, environmental conditions, and the associated risks and opportunities within an environmental management system according to ISO 14001. It addresses the environmental topic area of climate from both perspectives, mitigation and adaptation.

This document is applicable to any organization, regardless of type, size, and nature. It applies to the environmental aspects, impacts, risks and opportunities of the organization's activities, products and services that the organization determines it can either control or influence as well as the effects of changing environmental conditions while considering a life-cycle perspective.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14001, *Environmental management systems — Requirements with guidance for use*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO 14001 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Terms and definitions

3.1.1

environmental topic area

area of interest or concern for environmental management in an organization in relation to its surroundings

[SOURCE: ISO 14002-1:2019, 3.1]

3.1.2

climate

statistical description of weather in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years

Note 1 to entry: The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization.

Note 2 to entry: The relevant quantities are most often near-surface variables such as temperature, precipitation, and wind.

[SOURCE: ISO 14090:2019, 3.4]

3.1.3

climate action

any initiative to achieve climate change measures or goals based on the *mitigation* (3.1.9) and/or *adaptation* (3.1.5) priorities under climate change policies

Note 1 to entry: Climate action intends to:

- a) Reduce or prevent emissions or enhance GHG *removals* (3.1.20); and
- b) Reduce *vulnerability* (3.1.32), maintain and increase resilience, and increase *adaptive capacity* (3.1.7) of human and ecological systems from adverse impacts of climate change.

[SOURCE: ISO 14080:2018, 3.1.1]

3.1.4

climate change

change in *climate* (3.1.2) that persists for an extended period, typically decades or longer

Note 1 to entry: Climate change might be due to natural processes, internal to the climate system, or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land, water, or raw materials and natural resource use.

[SOURCE: ISO 14090:2019, 3.5]

3.1.5

adaptation

process of adjustment to actual or expected *climate* (3.1.2) and its effects

Note 1 to entry: In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.

Note 2 to entry: In some natural systems, human intervention can facilitate adjustment to expected climate and its effects.

[SOURCE: ISO 14090:2019, 3.1]

3.1.6

adaptation plan

action plan identifying and addressing the impacts of *climate change* (3.1.4) in the area of responsibility of the organization

Note 1 to entry: Such a plan of action may contain priorities and planned activities for identifying and addressing impacts of *climate change* (3.1.4), including those associated with climate variability and extremes. It may include a mix of policies, projects, programs and measures, which are updated periodically.

[SOURCE: ISO/TS 14092:2020, 3.14, modified – local removed from the term and “a local government or community” has been changed to “the organization”]

3.1.7

adaptive capacity

ability of systems, institutions, humans, or other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences

[SOURCE: ISO 14090:2019, 3.2]

3.1.8

climate goals

International long-term goals based on *mitigation* (3.1.9) and *adaptation* (3.1.5) priorities

Note 1 to entry: International climate goals are defined in the Paris Agreement.

Note 2 to entry: The Paris Agreement defines the following mitigation and adaptation goals:

- a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels pursuing efforts to limit the temperature increase to 1,5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks (3.1.29) and impacts of *climate change* (3.1.4).
- b) Increasing the ability to adapt to the adverse impacts of *climate change* (3.1.4) and foster climate resilience and low greenhouse gas emission development, in a manner which does not threaten food production.
- c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

[SOURCE: ISO 14097:2021, 3.1]

3.1.9

mitigation

human intervention to reduce greenhouse gas (GHG) emissions or enhance GHG removals

[SOURCE: ISO 14068-1:2023, 3.2.15]

3.1.10

baseline

quantified greenhouse gas emissions and GHG removals of an organization at a specified time against which assessment of progress to *net zero* can be performed

Note 1 to entry: Emissions and GHG removals are separate parts of the baseline and calculation of emissions reduction only refers to the baseline emissions.

Note 2 to entry: The Greenhouse Gas Protocol (GHGP) provides further information on baselines, which it refers to as “base years”.

[SOURCE: ISO 14064-1:2019, 3.3.6; modified, Note 2 to entry added]

3.1.11

base year

specific, historical period identified for the purpose of comparing GHG emissions and GHG removals or other GHG-related information over time

[SOURCE: ISO 14064-1:2019, 3.2.10]

3.1.12

climate projection

simulated response of a climate system to a scenario of future emission or concentration of greenhouse gases and aerosols, generally derived using climate models

Note 1 to entry: Climate projections are distinguished from climate predictions in order to emphasize that climate projections depend upon the emission/concentration/radiative forcing scenario used, which are based on assumptions concerning, for example, future socioeconomic and technological developments that may or may not be realized.

[SOURCE: ISO 14091:2021, 3.7]

3.1.13

climate risk

the potential of negative impacts of *climate change* (3.1.4) that reflects the interaction among *vulnerability* (3.1.32), *exposure* (3.1.18) and *hazard* (3.1.21)

Note 1 to entry: Climate risk can be reduced by enhancing the *adaptive capacity* (3.1.7), strengthening the *resilience* of the ecology, society and economy.

[SOURCE: ISO 14080:2018, 3.3.3]

3.1.14

climate scenario

plausible and often simplified representation of the future *climate* (3.1.2), based on an internally consistent set of climatological relationships that has been constructed for explicit use in investigating the potential consequences of anthropogenic *climate change* (3.1.4)

Note 1 to entry: climate scenarios often serve as input to impact models, which model the potential impacts of climate change.

[SOURCE: ISO 14091-2:2020, 3.6; “which model the potential impacts of climate change.” Added in Note 1 to entry]

3.1.15

indirect GHG emission

GHG emission that is a consequence of, and within the boundary of, the subject, but that arises from GHG sources that are not owned or controlled by the entity

[SOURCE: ISO 14068-1:2023, 3.2.6]

3.1.16

ecosystem

dynamic complex of plant, animal and micro-organism communities, and their non-living environment interacting as a functional entity

EXAMPLE Deserts, coral reefs, wetlands, rain forests, boreal forests, grasslands, urban parks, cultivated farmlands.

Note 1 to entry: Ecosystems can be influenced by human activity.

[SOURCE: ISO 14008:2019, 3.1.6]

3.1.17

exposure

presence of people, livelihoods, species or *ecosystems* (3.1.18), environmental functions, services, resources, infrastructure, or economic, social and cultural assets in places and settings that can be affected

Note 1 to entry: Exposure can change over time, for example as a result of land use change.

[SOURCE: ISO 14090:2019, 3.6]

3.1.18

global warming potential

GWP

index, based on radiative properties of GHGs measuring the radiative forcing following a pulse emission of a unit mass of a given GHG in the present-day atmosphere integrated over a chosen time horizon, relative to that of carbon dioxide (CO₂)

Note 1 to entry: The Intergovernmental Panel on Climate Change (IPCC) publishes and regularly updates GWP values for various time horizons, including 20, 100 and 500 years.

Note 2 to entry: GWP100 is the internationally accepted standard for national emissions accounting, as agreed at the United Nations level. GWP100 is commonly used for corporate emissions accounting and reporting programmes. GWP100 may have limitations when making decisions around short-lived gases.

[SOURCE: ISO 14068-1, 3.2.11; modified, Note 2 to entry added]

3.1.19

GHG removal

Withdrawal of a GHG from the atmosphere by a GHG sink

Note 1 to entry: Examples of ways in which GHG removals can be achieved include reforestation, carbon sequestration in soils, sustainable bioenergy with carbon capture and storage, and direct air carbon capture and storage.

Note 2 to entry: In this document, the term “GHG removal” includes durable storage of GHGs.

[SOURCE: ISO 14068-1:2023, 3.2.7, modified, Note 2 to entry has been added]

3.1.20

hazard

potential source of harm

Note 1 to entry: The potential for harm can be in terms of loss of life, injury or other health impacts, as well as damage and loss of property, infrastructure, livelihoods, service provision, *ecosystems* ([3.1.16](#)) and environmental resources.

Note 2 to entry: In this document, the term usually refers to climate-related physical events or trends or their physical impacts on environmental conditions.

Note 3 to entry: Hazard comprises slow-onset developments (e.g. rising temperatures over the long term) as well as rapidly developing climatic extremes (e.g. heatwave or a landslide) or increased variability.

[SOURCE: ISO 14090:2019, 3.7; modified, “on environmental conditions” added in Note 2 to entry]

3.1.21

indicator

quantitative, qualitative or binary variable that can be measured or described, representing the status of operations, management, conditions or impact

Note 1 to entry: The term impact in this definition can include both environmental and climate change impact.

[SOURCE: ISO 14031:2021, 3.4.1; modified, Note 1 to entry added]

3.1.22

life cycle perspective

consideration of the environmental aspects relating to a product (or service) during its entire life cycle

[SOURCE: ISO 14050:2020, 3.6.33, modified – (or service) has been added]

3.1.23

maladaptation

actions intended to contribute to climate change *adaptation* ([3.1.5](#)), but which can lead to increased risk of adverse climate-related outcomes, increased *vulnerability* ([3.1.32](#)) to *climate change* ([3.1.4](#)), or diminished welfare, now or in the future

Note 1 to entry: Maladaptation is a cause of increasing concern to adaptation planners, where intervention in one location or sector can increase the *vulnerability* ([3.1.32](#)) of another location or sector, or increase the vulnerability of the target group to future climate change.

[SOURCE: ISO 14093:2022, 3.1.3.9, modified – Note 1 to entry has been added.]

3.1.24

offsetting

counterbalancing of the carbon footprint, by retiring a carbon credit(s)

Note 1 to entry: The final step in the process of offsetting is retire the carbon credits in a public registry by, or in behalf of, the entity. The registries use “to cancel” as synonymous with “to retire” and the terms are effectively interchangeable. The two terms “retire” and “cancel” result in the same outcome of ensuring that the carbon credits cannot be used again or further traded.

[SOURCE: ISO 14068-1:2023, 3.3.3.1]

3.1.25

physical risk

risk resulting from event-driven (acute) or longer-term (chronic) shifts in climate patterns associated with *climate change* (3.1.4)

Note 1 to entry: Physical risk may have financial implications for organizations, such as direct impact to assets and indirect impacts on supply chains owing to changes in water availability, sourcing, and quality, food security, and for organizations' premises and operations, supply chain, transport needs and employee safety owing to extreme temperature changes.

Note 2 to entry: Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events such as cyclones, hurricanes, or floods.

Note 3 to entry: Chronic physical risks refer to long-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause such as sea-level rise or chronic heat waves.

[SOURCE: ISO 14097:2021, 3.27; modified, "such as" added in Note 3 to entry.]

3.1.26

resilience

adaptive capacity (3.1.7) of an organization in a complex and changing environment

Note 1 to entry: The Intergovernmental Panel on Climate Change (IPCC) defines resilience as "capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation".

[SOURCE: ISO 14097:2021, 3.5]

3.1.27

sensitivity

degree to which a *system* or species is affected, either adversely or beneficially, by *climate* (3.1.2)

Note 1 to entry: The effect may be direct (e.g. 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).

[SOURCE: ISO 14091:2021, 3.10]

3.1.28

transition risk

risk related to transition to a lower-carbon economy

Note 1 to entry: The transition risk is related to policy, legal, technology, and market changes to address *mitigation* (3.1.9) and *adaptation* (3.1.5) requirements related to *climate change* (3.1.4).

Note 2 to entry: Transition risk results in varying levels of impact on the financial performance and reputation of the organization.

[SOURCE: ISO 14097:2021, 3.25, modified – Note 3 to entry has been deleted]

3.1.29

vulnerability

propensity or predisposition to be adversely affected

Note 1 to entry: Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

[SOURCE: ISO 14090:2019, 3.15]

3.1.30**carbon neutrality**

state of being carbon neutral

Note 1 to entry: The Intergovernmental Panel on Climate Change (IPCC) distinguishes between carbon neutrality, a condition in which CO₂ emissions are balanced by CO₂ removals, and greenhouse gas (GHG) neutrality, in which all GHG emissions are balanced by GHG *removals* (3.1.20). The definition of carbon neutrality in this document is equivalent to the IPCC definition of GHG neutrality.

[SOURCE: ISO 14068-1:2023, 3.1.2]

3.2 Abbreviated terms

CCA	Climate Change Adaptation
CCM	Climate Change Mitigation
CCS	Carbon capture and storage
CCU	Carbon capture and utilization
CDR	Carbon dioxide removal
CFCs	Chlorofluorocarbons
CFP	Carbon Footprint
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	carbon dioxide equivalent
EF	Emission Factor
EMS	Environmental Management System
GHG	Greenhouse Gas
GHGP	Greenhouse Gas Protocol
GWP	Global warming potential
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
KPI	Key performance indicator
NBS	Nature-based solution(s) also be known as ecosystem-based adaptation
NDC	Nationally determined contribution
NF ₃	Nitrogen trifluoride
N ₂ O	Nitrous oxide
PDCA	Plan-Do-Check-Act
PFCs	Perfluorocarbons

SBTi	Science Based Targets Initiative
SDGs	Sustainable Development Goals
SF ₆	Sulfur hexafluoride
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organization

4 Planning actions

4.1 General

An organization that has significant environmental aspects, or actual or potential risks and opportunities associated with climate change, should gain commitment from top management to establish a suitable mitigation and adaptation strategy. This involves planning appropriate action(s) to mitigate and adapt to climate change and its effects and should include a review of the organization's context with respect to climate change.

4.2 Understanding the organization and its context related to climate change

4.2.1 General

An organization's success to address climate change depends on top managements' willingness to demonstrate leadership and commitment by taking responsibility and accountability (4.2.2), the comprehensive identification and assessment of climate-related internal and external issues (4.2.3), and an organization's ability to meet the needs and expectations of interested parties (4.2.4).

To inform the planning process in relation to CCM and CCA, an organization should identify and determine the significance of their climate-related environmental aspects and corresponding impacts (e.g. its effects on environmental conditions (4.2.5)).

The decision on appropriate actions to minimize an organization's contribution to climate change and its ability to adapt to changing environmental conditions, should be guided by the organization's determination of climate-related risks and opportunities that need to be addressed (4.2.6). To keep up with the accelerated pace of climate change and changing environmental conditions, organizations can benefit from adopting a procedural approach to manage change (4.2.7).

4.2.2 Responsibilities of top management

Top management should demonstrate leadership, commitment, and accountability related to CCM and CCA by using risk-based thinking in establishing a strategic direction. This involves defining a clear and ambitious vision for the organization ensuring the integrity and quality of its climate strategy, its policy, and its climate goals, as well as ensuring the integration thereof into its existing management system(s) and providing the resources and support for persons working under the organization's control to deliver the planned CCM and CCA actions.

Examples of strategic approaches for CCM and CCA can include:

- a) establishing a carbon neutrality strategy that prioritizes actions that eliminate or reduce GHG-emissions in consideration of the organization's technological options and its financial, operational, and business requirements rather than opting for actions that only offset emissions;
- b) GHG removal enhancements within the boundaries, and offsetting remaining GHG emissions outside the boundaries of the organization;

- c) establishing a strategy to manage direct and indirect physical and transition risks and vulnerabilities and leverage opportunities of adaptation, regardless of options a) and b).

When developing mitigation and adaptation strategies, top management should recognize the interrelation between CCM and CCA and potential changes in environmental aspects.

4.2.3 Understanding climate-related internal and external issues

In determining climate-related internal and external issues organizations should use the latest credible sources of information, considering both internal and external issues arising from slow onset (chronic) climate hazards and sudden (acute) hazards resulting from extreme weather events, as well as considering both current and future climate variability.

Sources of information can include:

- Climate projections and models showing the potential impacts of climate change, tools that translate their outputs, as well as research products and synthesis reports;
- monitoring of the impacts of weather/climate and their consequences (e.g. weather-related downtime(s) or fault rate(s));
- anecdotal experience of weather/climate impacts and their consequences (e.g. weather-related business disruption(s));
- subject-matter expertise;
- technical specifications that set out operating limits for equipment, processes or activities.

Examples of internal issues can include:

- a) An organization's strategic direction and capabilities for CCM and CCA, considering its:
 - continued suitability of the business model and EMS;
 - adaptive capacity and extent of internal resources, cross-functional collaboration and agreement amongst different functional units (e.g. procurement department and research & design department); and
 - extent of affiliation with external partners and partnerships (e.g. academic institutions, research institutes, the civil society and NGOs).
- b) Organizational culture and capability to meet current and future needs and expectations of interested parties, code of conduct requirements;
- c) Sensitivity and exposure of the organization's activities, products, services, production processes, assets, people, suppliers and infrastructure to the potential effects of climate change (e.g. increasingly adverse weather patterns);
- d) Costs related to climate change efforts taken by an organization, which can relate to either operational (OPEX) or capital (CAPEX) costs.

Examples of external issues can be:

- e) Demographic: Involuntary migration due to climate change.
- f) Economic: The economic impacts of climate change will have an effect on a cycle or series of cycles of economic expansion and contraction. Most likely these will be negative due to the large investments required by governments in climate solutions.
- g) Social: Cultural and social circumstances, such as public or industry perceptions of the impacts of climate change and urgency of climate action, economic conditions, or poverty levels in the surrounding community.

- h) Technological: Technological and competitive circumstances including available technology and emerging academic or industry research and development related to NBS or carbon capture, utilization and storage.
- i) Ecological: Changing environmental conditions and associated hazards as a result of climate change that can affect (or be affected by) the organization, such as changes in temperature, precipitation or sea level.
- j) Political/legal: Internationally agreed climate goals, e.g. the long-term temperature goal of 1,5 °C / 2,0 °C (see [Figure 3](#) below). International and national policies (e.g. energy security policies, policies to promote innovation and encourage climate finance in the area of decarbonization) and existing or emerging legal and other requirements (e.g., climate disclosures required at international, national, regional or local levels, carbon peak or carbon neutrality targets, or obligatory participation in emissions trading or reduction schemes).

NOTE 1 National policymaking, global trade governance and the WTO can influence the organizations investment, intellectual property, research and development, trade, and service.

NOTE 2 Some technological advancements can be subject to regulatory requirements.

[Figure 3](#) shows the relationship between the top-down driven climate goal and how this is cascaded down towards organizational levels (blue downward pointing arrows), and the bottom-up mandatory or voluntary contributions of organizations' emission reductions towards their respective economic sector, a country's NDC, and ultimately the internationally agreed climate goal (green upwards pointing arrows).

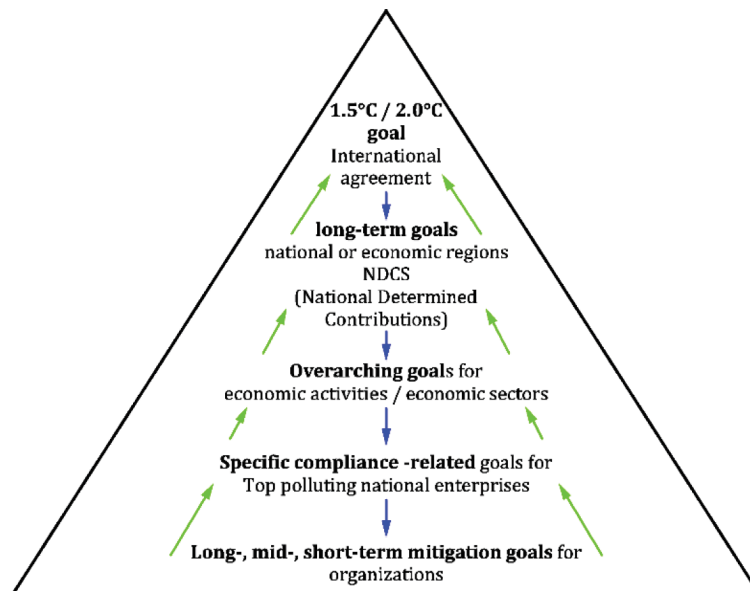


Figure 3 — Relation between top-down driven long-term temperature goal and bottom-up organizations' mandatory or voluntary contribution

4.2.4 Review of relevant needs and expectations of interested parties

An organization and its public image can be positively or negatively affected by its ability to meet climate change-related needs and expectations of interested parties. When deciding on how to address identified risks and opportunities ([4.2.6](#)), the organization should review information on climate change-related needs and expectations of interested parties, including those it has adopted as its compliance obligations as well as its own organizational objectives.

Review of information related to interested parties and their needs and expectations with regard to CCM and CCA can be associated with, for example:

- government agencies (e.g., in meeting international, national or regional CCM and CCA goals and their expectations that organizations will meet legal requirements);

- investors/asset managers (e.g., ability to adapt to changing requirements of responsible investment policies);
- financial institutions (e.g., ability of an organization to create mid- and long-term value, market stability, adaptive capacity/resilience);
- applicable reporting requirements, guidance or templates;
- private-sector partner (e.g., fair competition, collaborations with the scientific community, industry association or professional body requirements or guidance);
- general public interest in CCM and CCA;
- changes in customers' expectations (e.g., increasing demand for sustainable products and services, including financial products);
- employees and labor unions (e.g., potential implications for health and job security);
- interests of Non-Government Organizations' (NGO) and environmental and civil society activists.

4.2.5 Review of climate change related environmental aspects and impacts

The organization should review its climate-related environmental aspects and their associated impacts and identify those that have climate-related risks and opportunities that need to be addressed via the EMS through CCA as well as CCM, taking a life cycle perspective. The most commonly considered climate-related environmental aspects are GHG emissions from CO₂, CH₄, N₂O, NF₃, SF₆ and other appropriate GHG groups (HFCs, PFCs) from activities, products and services such as:

- combustion processes including imported energy and transportation;
- physical/chemical processes including fugitive emissions;
- the organization's land use and land change;
- the use and disposal of products from the organization;
- to the extent possible, GHG emissions of products used by the organization.

To gain better understanding of its climate-related environmental aspects and impacts, an organization should use a GHG inventory to identify and quantify GHG emissions and GHG removals, using standardized methods (see [Annex C](#), [Table C.2](#)). This enables an organization in the determination of significance of its identified climate-related environmental aspects, and thus its environmental impact and the related risks and opportunities that need to be addressed.

Organizations should also consider that environmental impacts can be exacerbated by the impacts of climate change, including extreme weather. For example, during periods of reduced water levels, effluent discharge to rivers can have increased adverse impact, as the increased concentration of a pollutant can trigger potential eco-toxicity and fish kill.

Prior to developing its GHG inventory, an organization should establish its GHG inventory boundary, which involves:

- determining location and site specific information;
- defining a time period;
- identifying GHG emissions and GHG removals associated with its operations;
- categorizing emissions as direct and indirect GHG emissions and GHG removals, and
- choosing the scope of accounting and reporting for indirect emissions.

Once an organization has defined its GHG boundary, it should quantify:

- direct emissions from owned and controlled sources (Scope 1);
- indirect emissions from the generation of purchased energy (Scope 2);
- indirect emissions (not included in Scope 2) that occur in the value chain, including both up-stream and down-stream emissions (Scope 3).

NOTE 1 The text in brackets indicates the terminology used by the GHG Protocol. The emissions categories used in the ISO standards differ from the scope categories used by the GHG Protocol. ISO 14068-1 Carbon neutrality [Annex C](#) provides a comparison of the emissions categories used by the ISO standards and the scopes used by the GHG Protocol.

[Figure 4](#) illustrates an exemplary situation that indirect emissions that are not owned or controlled by an organization often contribute the largest part of GHG emissions, but given the limited possibility to directly influence or control, data is often scarce or less accurate. This can limit an organization's ability to accurately determine climate-related risks and opportunities when reviewing their environmental aspects and impacts. There is an inverse proportional relationship between the largest source of GHG emissions in an organization, typically indirect GHG emissions (Scope 3) (grey upward pointing arrow), and the possibility of direct control and influence (orange downwards pointing arrow) and data availability for Scope 3 data (blue downwards pointing arrow).

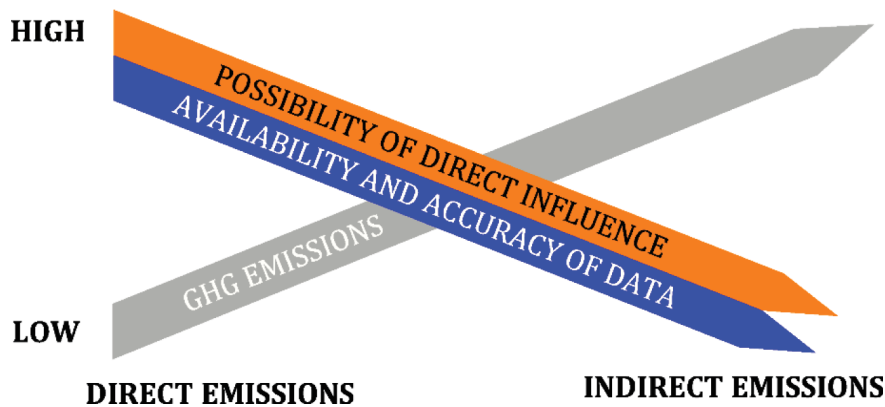


Figure 4 — Relationship between Emissions, level of influence and data availability

The definition of a GHG boundary and development of a GHG inventory, taking data availability and level of influence into account, can assist an organization in setting corresponding climate-related objectives, targets, and key performance indicators ([5.2.1](#)). An organization can choose to set specific reduction targets for direct and indirect (Scope 1, 2, 3) emissions, using either ISO 14064-1:2018 or the GHGP Corporate Standards.

The main differences between ISO 14064-1:2018 and the GHGP Corporate Standard and the GHGP Corporate Value Chain (Scope 3) Standard are:

- a) the extent to which indirect GHG emissions have to be included in the quantification;
- b) different uses of the location-based versus market-based approach for reporting indirect energy emissions.

NOTE 2 ISO 14064-1 is considered to be consistent with the GHGP Corporate Standards if the corresponding Scope 3 categories are part of the GHG footprint and a life cycle perspective is used for all categories.

[Table C.3](#) in [Annex C](#) compares the GHG categories in ISO 14064-1:2018 and the GHGP Corporate Standards.

At the time of writing this document, the concept of avoided emissions, referred to as Scope 4 emissions by the GHG Protocol, are being discussed. The concept refers to emission reductions that occur as a result of the use of the product or service (e.g., avoided emissions by video conferencing versus traveling, avoided emissions from energy savings achieved from the use of insulation material, or avoided emissions from using washing powder allowing lower washing temperatures). Organizations are encouraged to invest in

research and development to improve their products and services to reduce related GHG emissions. For avoided emissions (Scope 4) please refer to guidance provided in ISO 14064-1. Avoided emissions should be reported separately from the GHG emissions inventory in order to avoid double counting.

When compiling GHG inventory data and quantifying GHG emissions and GHG removals, an organization should use up to date information for the calculation of GHG emissions, including EFs and the GWPs. GHG emissions should be expressed in an internationally harmonized manner, in CO₂e.

To calculate the GHG emissions arising from a certain activity, the activity data are multiplied by a specific EF times the respective GHG's GWP₁₀₀. Using the IPCC GWP factor for a 100-year period (GWP₁₀₀) allows comparison of different GHGs.

For further information on GHG emissions and GHG removals, GHG inventory categories, their quantification and reporting, additional guidance standards are provided in [Table C.1](#) and [Table C.2](#) in the Annex.

NOTE 3 ISO 14064 and the GHG Protocol provide globally recognized methodologies for quantifying GHG emissions.

Organizations should consider that climate-related environmental aspects are not exclusively related to GHGs, i.e., they can arise from environmental aspects such as emissions of water vapor, soot and black carbon, land use change, and deforestation. For guidance on NBS see [4.3.2](#).

4.2.6 Determine risks and opportunities to be addressed

Climate-related risks and opportunities refer to the potential adverse and beneficial effects of climate change on an organization and can be categorized as physical and transition risks and opportunities.

Physical climate risks can be either acute or chronic. Acute physical risks arise from weather related events such as storms, hurricanes, floods, droughts or heatwaves, which are increasing in severity and frequency. Chronic physical risks arise from longer-term shifts in climatic patterns including changes in precipitation and temperature which can result in sea level rise and pH changes, reduced water availability, chronic heat waves, biodiversity loss and changes in soil productivity. [Figure 5](#) below shows the relationship between sensitivity, exposure to hazard, organizational adaptive capacity and physical risk and links these concepts to the context of the organization.

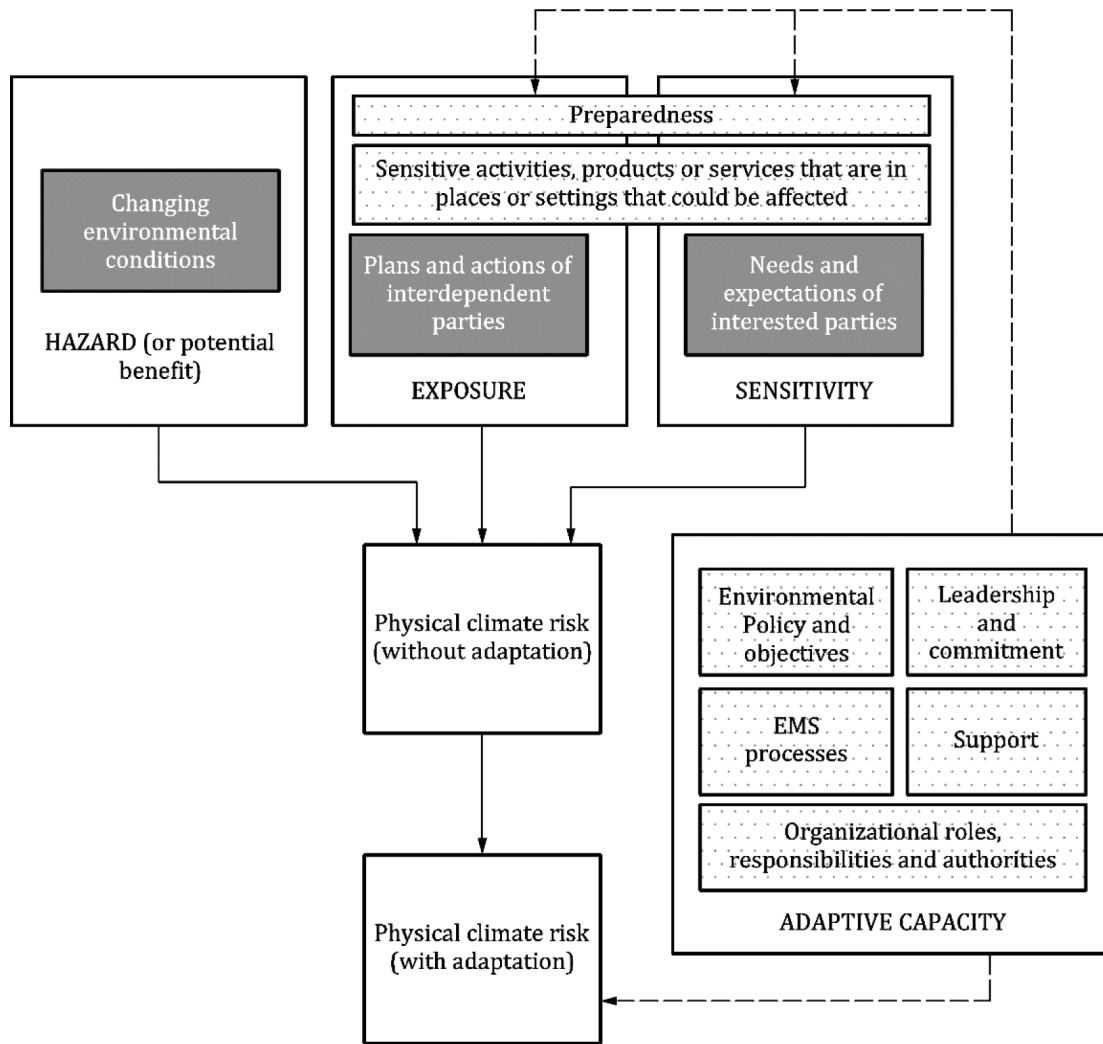


Figure 5 — Linking internal (light grey) and external (dark grey) context with the concepts of CCA risk (based on ISO 14091, Annex A)

NOTE The dotted line means that adaptation actions have been implemented.

Transition risks and opportunities arise from efforts to transition to a lower-carbon economy. They can relate to policies, technology, markets and reputation and can carry financial implications for an organization, such as increased operating costs or asset impairment due to new or amended climate-related regulations. The organization's financial performance can also be affected by shifting consumer demands and the deployment of new technology.

Climate-related opportunities refer to the potential positive effects arising from CCM and CCA action for an organization such as circular economy business models or product-service-combinations.

When determining the climate-related risks and opportunities, an organization should take the identified internal and external issues (4.2.3), interested parties' needs and expectations (4.2.4), and environmental aspects and impacts (4.2.5) into account, e.g.:

- direct effects on people, infrastructure, assets or processes relevant to the organization due to the limited availability of cooling water, when river temperatures rise and flows decrease;
- indirect effects in other locations that have the potential to affect the organization through dependencies, such as supply chains;
- effects on wider organizational objectives as well as other environmental objectives;