



SLOVENSKI STANDARD
oSIST prEN ISO 14002-2:2022
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Sistemi ravnanja z okoljem - Smernice za uporabo ISO 14001 pri upoštevanju okoljskega vidika in pogojev znotraj okoljskih tematskih področij - 2. del: Voda (ISO/DIS 14002-2:2022)

Environmental management systems - Guidelines for using ISO 14001 to address environmental aspects and conditions within an environmental topic area - Part 2: Water

Umweltmanagementsysteme - Leitlinien für die Nutzung von ISO 14001 zur Behandlung von Umweltaspekten und -zuständen innerhalb eines Umweltthemengebiets - Teil 2: Wasser

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

Part 2: Water

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Planning actions	3
4.1 General.....	3
4.2 Understanding the organization and its context related to water.....	3
4.2.1 Conduct a water related review.....	3
4.2.2 Review water related environmental aspects and impacts.....	4
4.2.3 Determine risks and opportunities that need to be addressed.....	5
4.2.4 Establish a baseline.....	5
4.2.5 Manage change.....	6
4.3 Determine appropriate actions to address risks and opportunities.....	6
5 Taking action	8
5.1 General.....	8
5.2 Environmental objectives.....	9
5.3 Support actions.....	10
5.4 Operational controls.....	11
5.4.1 General.....	11
5.4.2 Types of control.....	11
5.4.3 Life cycle perspective.....	12
5.4.4 Emergency preparedness and response.....	12
5.5 Unintended consequences of actions taken.....	13
6 Evaluating the effectiveness of actions	14
6.1 General.....	14
6.2 Monitoring, measurement, and analysis.....	14
6.2.1 General.....	14
6.2.2 Indicators of performance.....	15
7 Improvement	17
Annex A (informative) Example of a public water utility - Ames Community Water System	18
Annex B (informative) Example of a dairy cooperative - Pavitra Dairy Ltd.	22
Annex C (informative) Example of a chemical facility - AB Chemical	25
Annex D (informative) Clarification of concepts	29
Bibliography	30

ISO/DIS 14002-2:2022(E)

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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

Water is a critical element for the functioning of all living systems on earth and therefore also for human life and wellbeing. Ecosystems and related biodiversity, also seen as natural capital, can only produce their multiple values and provide their natural services when appropriately preserved, their resilience maintained, and the respective planetary boundaries respected by economy and society. Protection of water resources is an integral part of sustainable development and is essential for achieving the United Nations' Sustainable Development Goals (SDGs), specifically SDG 6 - clean water and sanitation and SDG 14 - life below water. Furthermore, protection of water resources has an indirect impact on SDG 2 - zero hunger, SDG12 - responsible consumption and production, SDG13 - climate action, and SDG15 - life on land.

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 water related environmental aspects, as well as environmental conditions that can have an effect on the organization. It supports organizations to plan action(s) where needed in relation to environmental impacts, and to water dependencies and vulnerabilities at their site(s), in the watershed, and in the life cycle of their products and services. This includes strategic planning and taking actions about:

- protecting aquatic ecosystems and ecosystem services as well as related ecosystems contributing to water balance (e.g. forests);
- protecting water supplies and ensuring water availability;
- minimizing the use of water and water consumption;
- protecting and enhancing water quality;
- adapting and responding to water related environmental conditions, such as seawater rise, changing precipitation patterns, or gradual changes in water availability and quality; and
- preparing for foreseeable water related events, such as flooding and droughts.

This document is designed for compatibility with other standards related to sustainable use and protection of water resources. It follows the same approach and order of elements as ISO 14001 but does not address every clause.

0.2 Risk-based approach towards water related environmental impacts and water dependency

The document refers to water related environmental impacts and water dependencies including an organization's supply chain, when reasonable. When applying this guidance, organizations should take a risk-based approach that addresses:

- potential adverse impacts on water resources and aquatic ecosystems, originating from their activities or, if appropriate, their supply chains, and
- potential effects on the organization itself, related to the dependency on, and vulnerability to, water.

This can include acute and chronic physical threats (e.g., from extreme events like the flooding of an organization's premises, or the accumulation of pollution in an organization's water supply) as well as transitional risks and opportunities related to actual or potential changes in regulation, technology, the market, or to the organization's reputation, and opportunities for contributions to sustainable development from a life cycle perspective.

ISO/DIS 14002-2:2022(E)

The magnitude of water related risks and opportunities is influenced by various context-related factors (e.g., climatic, geographical, ecological, socio-economic factors, water footprint of the organization, or applicable compliance obligations), including:

- an organization's vulnerability to water scarcity, water quality, changes in ecosystem services, flooding, and climate change;
- the condition or quality of water bodies or aquatic ecosystems an organization can have an impact on or depends upon;
- increasing competition for water use or conflict over safe access to water resources in a particular location;
- the condition of infrastructures, including water supply and wastewater treatment.

0.3 Holistic approach to the management of water

An environmental management system according to ISO 14001 requires an organization to evaluate its activities, products, and services in order to determine its significant environmental aspects as well as relevant risks and opportunities that need to be addressed. This process involves applying 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.

An organization that intends to focus its environmental management efforts on water should recognize the interrelations of water with other environmental media and respective ecosystems. It should be aware that the actions it plans and implements to improve water quality or availability could incur adverse impacts on other environmental media like soil and air, or impacts on terrestrial ecosystems. For example, aeration basins or ponds used in wastewater treatment can emit volatile organic compounds to air, and taking action to enhance biodegradation of trichloroethylene in contaminated groundwater can lead to the formation of daughter products such as vinyl chloride that are even more hazardous in the ecosystem, and to humans. To avoid such unintended consequences, this document encourages an organization to take a holistic approach when managing water.

Figure 1 shows how ISO 14001 and standards in the ISO 14002 series can be applied using a holistic approach.

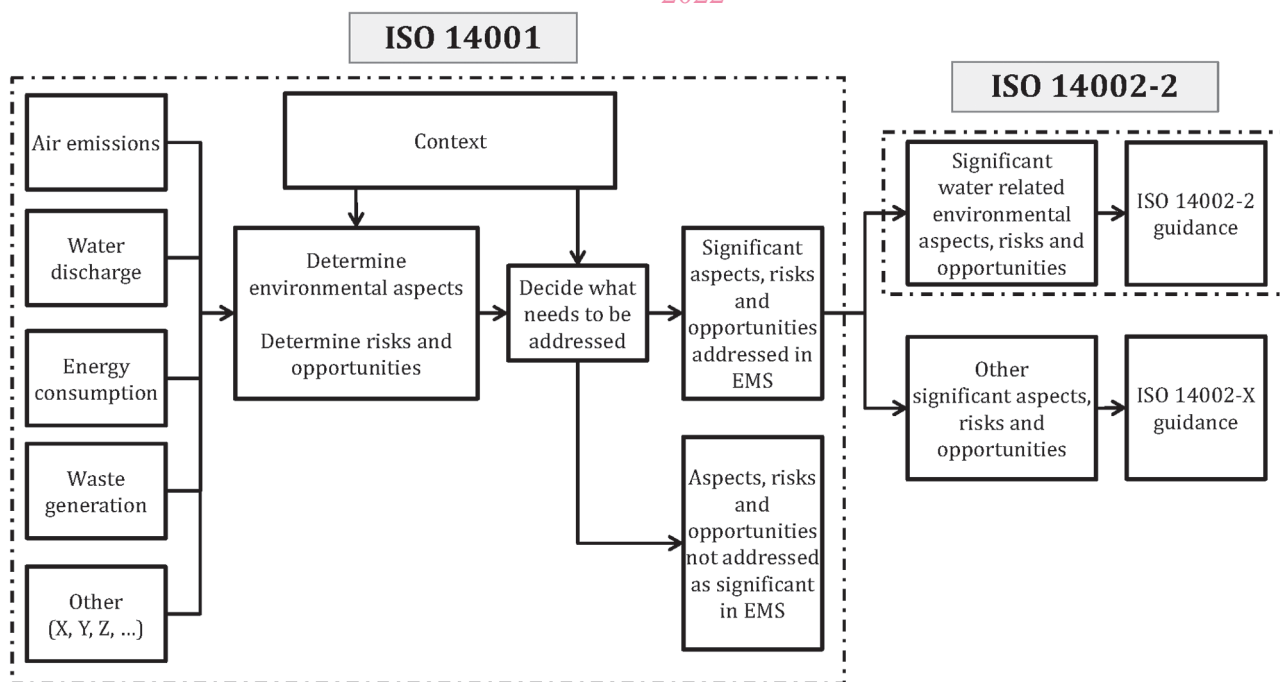


Figure 1 — Interaction between ISO 14001 and ISO 14002 series of standards

0.4 Using ISO 14002-2 to address water related risks and opportunities within an environmental management system

An organization can use ISO 14002-2 to help determine how best to address risks and opportunities associated with its water related environmental aspects or conditions. This can be related to, for example:

- specific commitment(s) in the organization’s environmental policy. e.g., related to prevention of water pollution, efficient use of water, preservation of aquatic ecosystems and related biodiversity, or sustainable use of marine ecosystem services;
- one or more of its significant environmental aspects or compliance obligations related to water use, water conservation, water pollution, aquatic ecosystems and species, ecosystem services, etc.;
- compliance with applicable legal requirements and permits; and
- specific risks and opportunities that need to be addressed for water related environmental conditions.

The guidance provided in ISO 14002-2 includes four case studies of organizations applying the ISO 14001 framework to address water related environmental aspects and environmental conditions. The organizations in these case studies are fictional, and serve as illustrative examples in diverse contexts, including different industry sectors known to have water related environmental aspects, and different geographic locations and environmental conditions. These cases are provided to illustrate how this document could be applied, with examples from different settings and perspectives, and are not intended as models or templates for applying ISO 14001 or ISO 14002-2.

The first of these cases represents a paper mill and is incorporated in the main body of the document, with examples shown in each clause as appropriate. The other three cases, representing a water utility, a dairy cooperative, and a chemical manufacturing facility are provided for further reference in [Annexes A, B, and C](#). [Annex D](#) clarify the usage of some concepts and wordings in this standard, and is recommended to read to correctly understand these concepts and wordings.

0.5 Benefits

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The benefits of applying ISO 14002-2 can include:

- fulfilling compliance obligations related to water withdrawal, water consumption, and water quality, and supporting public policies;
- enhancing environmental performance and fostering resilient ecosystems by achieving environmental objectives through the management of water related environmental aspects;
- protecting the environment through prevention or mitigation of adverse impacts on water resources and ecosystems;
- preventing and mitigating water 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, e.g., to support specific environmental policy or organizational commitments related to sustainable use and protection of water resources; and
- Supporting water related Sustainable Development Goals (SDGs).
- contributing to compliance with international agreements and conventions related to water as well as the transition to a circular economy (reuse and recycling of water).

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”.

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

Part 2: Water

1 Scope

This document is intended for organizations seeking to address water related environmental aspects, environmental conditions, and the associated risks and opportunities within an environmental management system according to ISO 14001.

The document addresses issues for environmental management related to water quantity and quality, such as water withdrawal, efficient use of water, and water discharge, as well as approaches to cope with water related events like flooding and droughts. The document considers the interconnections of water with other environmental media and takes a holistic approach to the management of water due to its impacts on ecosystems, ecosystem services, related biodiversity, as well as human life and well-being.

This document provides general guidance and applies to organizations irrespective of their size, type, financial resources, location, and sector. It is applicable to all types of water and considers a life cycle perspective.

2 Normative references

There are no normative references.

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3 Terms and definitions

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

ISO and IEC maintain terminological 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

environmental topic area

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

[SOURCE: ISO 14002-1, 3.1]

3.2

environmental aspect

element of an organization's activities or products or services that interacts or can interact with the environment

Note 1 to entry: An environmental aspect can cause (an) environmental impact(s). A significant environmental aspect is one that has or can have one or more significant environmental impact(s).

ISO/DIS 14002-2:2022(E)

Note 2 to entry: Significant environmental aspects are determined by the organization applying one or more criteria.

[SOURCE: ISO 14001:2015, 3.2.2]

3.3 environmental condition

state or characteristic of the environment as determined at a certain point in time

[SOURCE: ISO 14001:2015, 3.2.3]

3.4 environmental impact

change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects

[SOURCE: ISO 14001:2015, 3.2.4]

3.5 risks and opportunities

potential adverse effects (threats) and potential beneficial effects (opportunities)

[SOURCE: ISO 14001:2015, 3.2.11]

3.6 life cycle

consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal

Note 1 to entry: The life cycle stages include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal.

[SOURCE: ISO 14001:2015, 3.3.3]

3.7 water consumption

the organization's portion of water use that is neither returned to the original water source after being withdrawn nor available for reclamation

[SOURCE: ISO 46001:2019, 3.31, Note 1 deleted]

3.8 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]

3.9 ecosystem service

benefit people obtain from ecosystems

Note 1 to entry: These are generally distinguished into provisioning, regulating, supporting and cultural services. Ecosystem services include the provisioning of goods (e.g., food, fuel, raw materials, fibre), regulating services (e.g., climate regulation, disease control), and non-material benefits (cultural services) (e.g., spiritual or aesthetic benefits). The supporting services are necessary for the production of all other ecosystem services (e.g., soil formation, nutrient cycling, water cycling) and are also referred to as "ecosystem functions".

Note 2 to entry: Ecosystem services are sometimes called “environmental services” or “ecological services”.

[SOURCE: ISO 14008:2019, 3.2.11]

4 Planning actions

4.1 General

An organization that has an interest in sustainable use and protection of water resources, or that can have significant environmental impacts associated with water should gain commitment from its leadership, and from related interested parties where relevant, and undertake a process to identify and plan appropriate actions to address water related risks and opportunities. This can involve a review of information and circumstances to:

- gain an understanding of the organization’s context in relation to water, and
- establish baselines for water-related environmental performance and conditions.

An organization can benefit from taking a broad perspective in this review, considering activities that are directly connected to the water balance of the organization, its sites or units (i.e. related to water inputs and outputs), and other environmental aspects such as releases to soil or emissions to air (e.g., particulate matter, acid rain precursors, etc.) that can lead to water pollution.

4.2 Understanding the organization and its context related to water

4.2.1 Conduct a water related review

When deciding on appropriate actions to address water related risks and opportunities, an organization should review and consider its internal and external issues and circumstances in relation to water use, dependency, vulnerabilities, and related compliance obligations to be addressed in its EMS. This consideration should also include taking a life cycle perspective of an organization’s activities, products, and services including water related impacts in their supply chain.

Gathering detailed information can be useful as the basis for identifying risks and opportunities that need to be addressed, including related strategies, objectives, and targets.

Important information for review related to water can include operational and watershed related information, and information related to the organization's environmental aspects and impacts, for example:

- quantity of water used (water withdrawn, consumed, or returned to the original water source);
- characteristics of wastewater generated, e.g., the level of treatment and effluent quality;
- quality of water required for the organization’s activities;
- status of water availability, extraction, and impacts on access to water;
- geographic features or characteristics of the site (e.g., catchment, drainage, or river basin);
- local water sources, river basin, and catchment information (e.g., water balance, water quality, important water related areas, other water users, and governance framework) considering national and transboundary situations;
- interested parties and their relevant needs or expectations;
- sensitivity of ecosystems to changes in water quantity and quality;
- specific compliance obligations (e.g., permits, licenses, voluntary agreements);