



ILMATIEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

SUSTAINABILITY REPORT OF THE FINNISH METEOROLOGICAL INSTITUTE 2023





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Director General's review



Picture: Veikko Somerpuro

The World Economic Forum conducts annual assessments of global risks. For several years now, extreme weather phenomena and failure in climate change mitigation and adaptation have been at the top of the list of most probable risks with the most significant impacts. These risks threaten human lives and, when materialised, may also cause major economic damage.

Finland has been a member of the UN World Meteorological Organisation (WMO) since its establishment in 1950. The UN Sustainable Development Goals are essentially linked to the activities of the WMO and the national meteorological institutes that are its members – including us. Mitigating climate change and adapting to it, improving air quality and preparing for extreme weather phenomena will promote the realisation of several UN SDGs and also reduce the likelihood of the aforementioned global risks and the damage they cause. In this report, we present our efforts on these themes in 2023.

Last year, we exported our expertise and technology to 23 different countries to help our sister institutions develop weather-related services to support preparedness. We conducted research and developed methods for assessing the impacts of climate change. We promoted open access to our data. As a result of international satellite cooperation, we are getting increasingly accurate information on potentially hazardous weather phenomena. We continued our cooperation with the Ukrainian Hydrometeorological Institute. These are some examples of the handprint of our efforts.

We want to support different actors in society, both in Finland and internationally, to allow everyday life that is safe, smooth and sustainable.

In 2023, we continued to develop our sustainability efforts at the Finnish Meteorological Institute. We conducted a collaborative project with Aalto University that helped spur the development work. To lay the groundwork for the sustainability programme, we conducted a relevance analysis among our line managers and employees. The development of the sustainability programme will continue in 2024.

In our daily work at the Finnish Meteorological Institute, we strive to ensure that no-one gets caught off guard by the weather or the conditions – not today or in the decades to come.

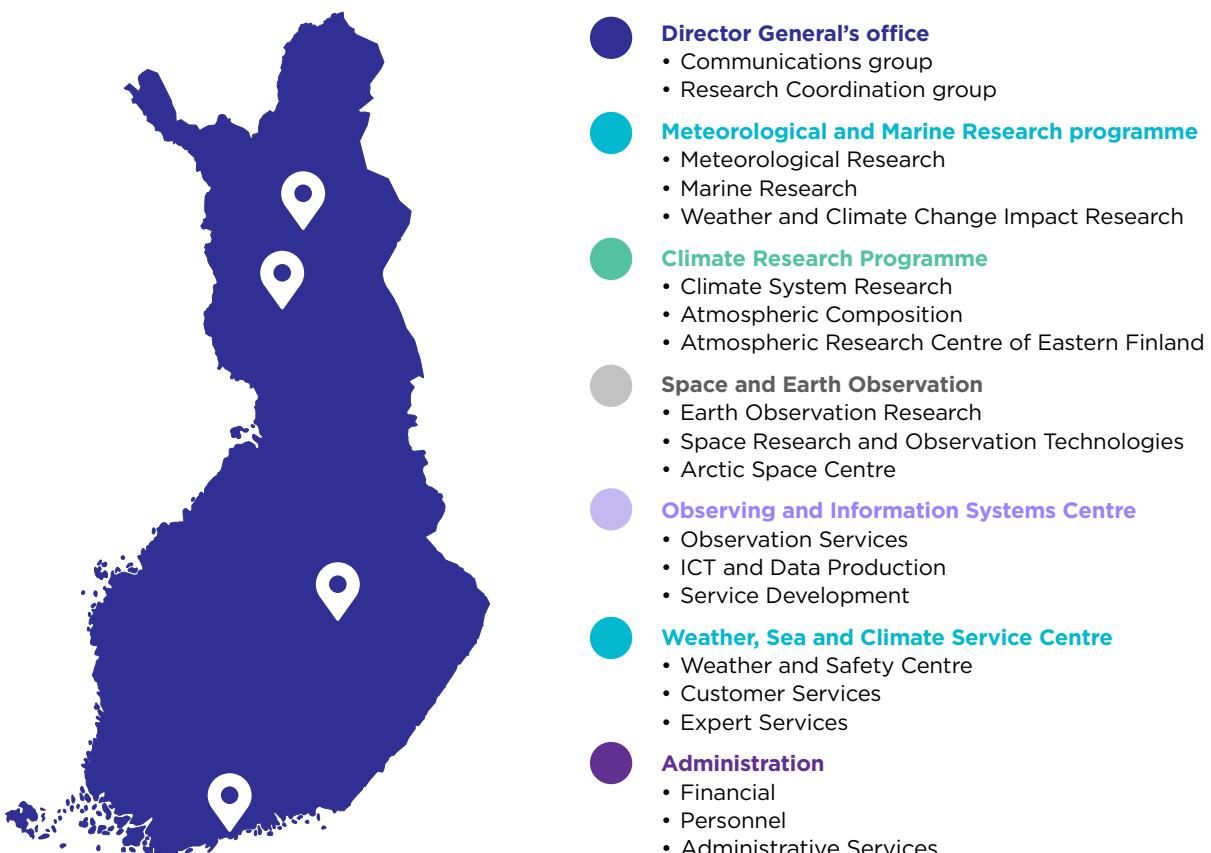
Petteri Taalas
Director General
Finnish Meteorological Institute

The Finnish Meteorological Institute produces information for a safe tomorrow

The Finnish Meteorological Institute observes and studies the atmosphere, inner space and seas. It also produces services on the weather, sea, climate, air quality and inner space for the needs of public security, business life and citizens. The Finnish Meteorological Institute is an administrative branch of the Ministry of Transport and Communications, and its activities are governed by the Act on the Finnish Meteorological Institute 212/2018.

The Finnish Meteorological Institute employs approximately 760 people (725.05 person-years in 2023). The headquarters of the Finnish Meteorological Institute is located in Helsinki. It also has other locations in Kuopio, Rovaniemi and Sodankylä. In addition, the Finnish Meteorological Institute carries out sounding activities in Jokioinen.

In addition to the Director General and its Office, the Finnish Meteorological Institute has six divisions: Administration; Observing and Information Systems Centre; Weather, Sea and Climate Service Centre; Meteorological and Marine Research Programme; Climate Research Programme; and Space and Earth Observation Centre.



International cooperation is an integral part of the meteorological sector. Our strategic goal is to be an international pioneer within our field. We seek leadership in the international community so that we can contribute to the development of our sector and promote the impact of our activities.

Together with our partners, we produce increasingly versatile, the best Nordic data on weather conditions, so that the conditions will not surprise anyone now or in the future. We anticipate the changing needs of our customers and other stakeholders to best serve our stakeholders. The prerequisites for success will help us achieve our strategic goals and vision. Our everyday activities are guided by our values: collaboration, impact and pioneering.





Picture: Jaakko Vähämäki

Sustainability at the Finnish Meteorological Institute

Sustainability and sustainable action are woven into the Finnish Meteorological Institute's mission and everyday work. We promote economic, social, environmental and research sustainability in our activities. Examples of the activities and results of action related to sustainability at the Finnish Meteorological Institute in 2023 have been compiled in this sustainability report.

The sustainability report has been prepared by a cross-organisational working group, which included representatives from the divisions of Administration, Weather, Marine and Climate Services, Climate Research and Communications. In addition, several experts from the Finnish Meteorological Institute have produced information for the report. The Management Group of the Finnish Meteorological Institute has approved the sustainability report.

We publish the sustainability report annually according to the State Treasury's guidelines. In autumn 2022, the Finnish Meteorological Institute launched a collaboration project with Aalto University aimed at developing its sustainability activities. The project assessed the sustainability activities of the Finnish Meteorological Institute, interviewed the Finnish Meteorological Institute's stakeholders and mapped out the best practices. As the result of the project, the Finnish Meteorological Institute received several proposals for developing its sustainability activities.

The development of the Finnish Meteorological Institute's sustainability programme was launched in 2023. During the year, workshops focusing on relevance analysis were organised for line managers and personnel. Work on the Finnish Meteorological Institute's sustainability programme, including its objectives and indicators, will continue in 2024.

The handprint of our activities and the UN Sustainable Development Goals

In the sustainability report, we discuss our activities related to four of the UN Sustainable Development Goals.



Ensure healthy lives and promote well-being for all at all ages (SDG 3)

- SDG 3.9. Significantly reduce the number of deaths and diseases caused by hazardous chemicals and the pollution and contamination of air, water and soil by 2030.



Make cities and human settlements inclusive, safe, resilient and sustainable (SDG 11)

- SDG 11.b By 2020, substantially increase the number of cities and human settlements by adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation of and adaptation to climate change, resilience to disasters, and develop and implement holistic disaster risk management at all levels in line with the Sendai Framework for Disaster Risk Reduction 2015–2030.



Take urgent action to combat climate change and its impacts (SDG 13)

- SDG 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- SDG 13.2: Integrate climate change measures into national policies, strategies and planning.
- SDG 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.



Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (SDG 17).

- SDG 17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.



Good health and well-being (SDG 3)

The Finnish Meteorological Institute is responsible for numerous statutory tasks related to air quality and related services for authorities, different sectors of society and citizens in Finland. For example, we produce national air quality forecasts and air quality measurement services and assessments for cities and industry in Finland. In addition, we are responsible for the activities of the National Reference Laboratory for Air Quality and the Air Chemistry Laboratory and for monitoring air quality in Finland's background areas far removed from potential sources of emissions as part of international agreements and legislation.

Demand for air quality measurement services in industry and cities has kept growing, resulting in even more air quality measurement stations in Finland. In 2023, there were 29 measuring stations, which was three more than in 2022. Two of the new stations were in Rovaniemi and one in Sotkamo.

In 2023, we expanded the Air quality in Finland service by adding black carbon, i.e. soot, to the service. Black carbon concentrations can now be monitored in real time in our online service. Black carbon is an air pollutant harmful to human health, and it contributes to climate change.

During 2023, negotiations were ongoing in the EU on the new Ambient Air Quality Directive, to be continued in 2024. The main objective of the new Directive is to reduce air pollution in the EU to achieve a clean and healthy environment for citizens by 2050. This non-pollution target includes stricter air quality standards, increased measurement obligations, communications, and improving the legal protection of and compensation for citizens. In this process, the Ministry of the Environment relied heavily on the expertise of the Finnish Meteorological Institute, for example when participating in the negotiations of the Council Working Party on the Environment between Member States, when formulating new legislative proposals and when preparing Finland's statements. The aim of these efforts is to produce more effective legislation in the EU, which is also practical from the Finnish perspective.

The Finnish Meteorological Institute's expertise in air quality is also exported. The aim is to strengthen the ability of developing countries to produce better air quality services for their citizens. The Finnish Meteorological Institute has carried out various projects aimed at improving air quality in more than 30 countries. Many projects have developed comprehensive monitoring and management of air quality in the target country, from legislation to improving air quality. In 2023,

air quality projects were carried out in the following countries: Tajikistan, Kyrgyzstan, Uzbekistan, Vietnam, Indonesia, Rwanda, Kenya, Ethiopia, Tanzania, Ukraine and Turkish Cypriot community.

Our activities in 2023

New tools tested in air quality research



In 2023, the RI-URBANS project tested new tools for air quality research. The researchers wanted to particularly examine how the sources of small atmospheric particles, or aerosols, can be determined in real time. One of the test sites was Helsinki Region Environmental Services' supersite measurement point in Helsinki, where researchers examined the composition of particles and tried to assess their origin over one year. The project assessed the suitability and usefulness of the tools at different stations of the air quality measurement network in Finland. The development of the SILAM model of urban air was also continued in 2023. SILAM is a distribution model developed by the Finnish Meteorological Institute that can be used to assess the movement of different substances in the atmosphere. Researchers developed the model for illustrating the spread of ultra-small particles that are harmful to health.

Sustainable cities and communities (SDG 11)

The Finnish Meteorological Institute strives to improve the safety of cities and residential communities by producing information on weather, seas, climate and its change, and natural disasters. Warnings about hazardous weather are produced all year round at all times of the day. The information can be used by different actors in society, including those maintaining critical infrastructure. The purpose of the services is to give operators time to prepare and to describe the impacts of harmful and dangerous conditions on their activities. The Emergency Response Centre of the European Commission makes use of the preparedness information produced by the Finnish Meteorological Institute and its European sister institutions in its plans to send humanitarian aid to different locations.

The Finnish Meteorological Institute's research activities continuously produce new information to support local and regional adaptation in a changing climate. Among other things, the projects develop climate economic preparedness and prepare sector-specific climate risk management reports for such purposes as construction and urban planning, so that changing climate risks are taken into account in a way that considers the special features of the area in question.

In addition, the Finnish Meteorological Institute participates in the development of weather and climate models in order to produce better forecasts for constantly changing conditions.

Our activities in 2023

Research data helps to prepare for the effects of hot weather

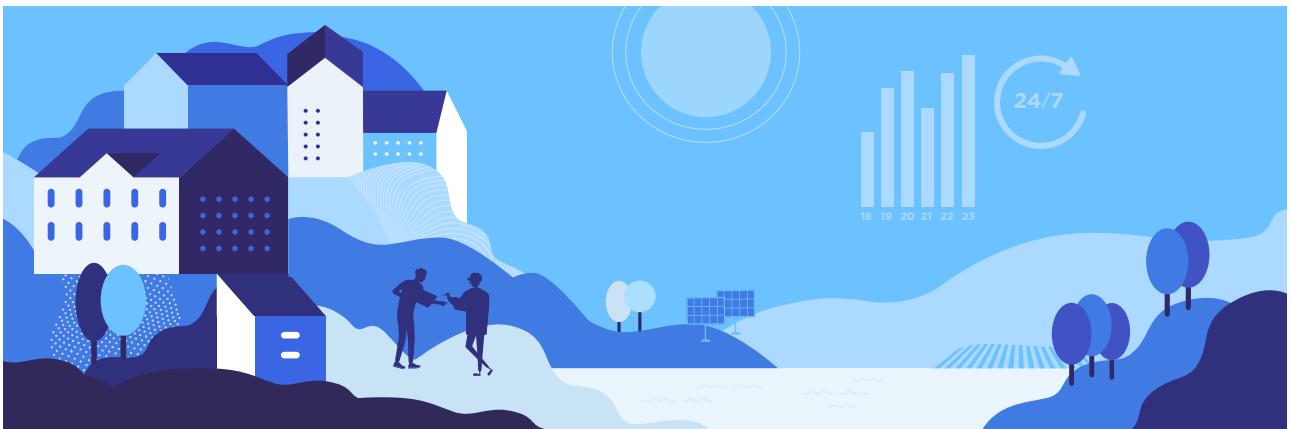


The HEATCLIM project carried out in 2020–2023 produced new scientific information on the health hazards of high temperatures and social and societal factors related to heat sensitivity. In the project, the Finnish Meteorological Institute examined how often heat waves will occur in the future and how harsh they will become as a result of climate change. We also studied how heat could be forecast over a period of a few weeks. This information helps to adapt to the impacts of climate change. In 2023, the project published two scientific studies on hot weather and a summary of research related to the heat island phenomenon. In line with the recommendations issued by the project, it is important to be better prepared for the overheating of living spaces and the subsequent harmful health impacts as heat waves increase and the population ages. In addition to rapidly executable measures, such as active use of heat warnings, there should be a focus on long-term solutions in construction and urban planning.

The Download Observations service was updated



A new version of the Finnish Meteorological Institute's Download Observations service was released in October 2023. The service allows any online user to search for observations on weather, radiation, the sea and air quality, free of charge. The updated service offers more versatile information while being easier to use. Special attention has been paid to the accessibility of the service. The service utilises the Finnish Meteorological Institution's open data. The Download Observations service on the Finnish Meteorological Institute's website: en.ilmatieteenlaitos.fi/download-observations



Climate action (SDG 13)

The Finnish Meteorological Institute promotes climate change mitigation and adaptation by conducting climate research and developing tools to support the implementation and impact assessment of mitigation and adaptation measures. The Institute's research data supports decision-making internationally, nationally and locally. Our research supports climate change mitigation measures, for example by producing information on the possibilities of carbon sequestration in terrestrial ecosystems. In addition, we promote adaptation to climate change in different sectors of society with the aim of developing an understanding of the urgency, significance and prioritisation of the measures together with operators.

In spring 2023, we published an open-for-all service on our website where users can view a wind and solar energy production forecast. The forecast converts the sunshine and wind over the following few days into kilowatt-hours. The information lets users anticipate when there is plenty of solar power available so that they can time their consumption accordingly. Conversely, consumption can be reduced if cloudy and windless weather has been forecast because it means that wind power will be scarce.

In 2023, we participated actively in the activities of the Climate Change Panel, the Nature Panel, the Forest Bioeconomy Panel and the recently established Sámi Climate Council. These bodies operate at the interface between science and policy and aim to promote decision-making based on reliable and up-to-date scientific knowledge. As part of these scientific panels, we were involved in preparing several reports that support the preparation of policy measures and, for example, in submitting expert opinions to parliamentary committees. The scientific expertise of the Finnish Meteorological Institute was extensively utilised in the panels' research projects. In addition, we have actively participated in several ministry-funded and Government-funded projects, developing climate risk management together with Finnish actors to support an effective and knowledge-based adaptation policy.

The Director General of the Finnish Meteorological Institute chaired the national IPCC working group. In 2023, the sixth IPCC assessment cycle came to a conclusion. A report summarising the key results of the three special reports was published in March 2023. Together with the IPCC working group, we communicated the summary report extensively to Finnish media and organ-

ised an open-for-all event at the Think Corner of the University of Helsinki before the publication to offer background information on the content of the report.

During the year, information related to climate change was distributed in many ways to various target groups in different channels.

The Finnish Meteorological Institute maintains and develops the climateguide.fi website together with the Finnish Environment Institute and the Natural Resources Institute Finland. To strengthen mutual cooperation, the institutes concluded a cooperation agreement for the content producers of the website in 2023. The website provides research-based information on climate change, its impacts, ways of adapting to it and its mitigation.

During the year, several news items on the impacts of climate change, its mitigation and adapting to it were published on our website. We also organised training on climate change for journalists in autumn 2023. As part of the central government's steering group for climate communications, we participated in commissioning the Climate Barometer 2023 survey and communicating the results. The survey examined Finns' views on climate change and climate policy in the run-up to the parliamentary elections.

Our activities in 2023

New tool helps to examine the impacts of climate change



A new visualisation tool based on modelling the future lets anyone view tailored information on the impacts of climate change by 2040. The results help to illustrate how climate change will affect different people in Finland in different ways. The tool offers food for thought for reflecting on the necessity and fairness of emission reductions. The tool on the climateguide.fi website: <https://www.climateguide.fi/articles/how-could-climate-change-affect-you>

Climate expert training meets the needs of business and industry

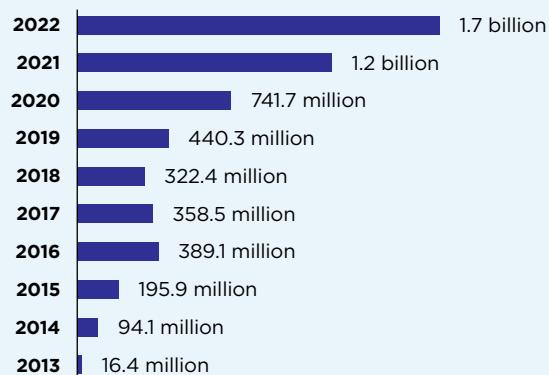


The Finnish Meteorological Institute has been involved in creating new specialisation training for climate experts to meet the needs of business and industry. The two-year education programme, meant to be studied alongside work, focuses on aspects such as climate change science, mitigation and climate action. The programme includes topical, sector-specific perspectives on climate themes and provides comprehensive knowledge and skills for working with climate issues. Another aim of the programme is to support the networking of professionals specialising in climate expertise. The main coordinator of the project is the Institute for Atmospheric and Earth System Research (INAR) of the University of Helsinki. The training programme started in March 2024.

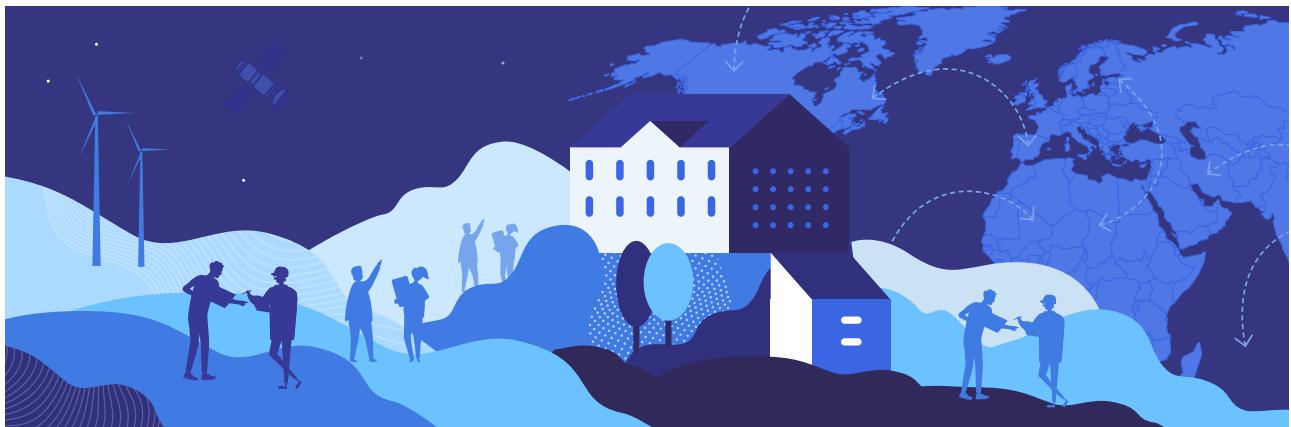
Open data expanded



In 2023, a weather forecast for Finland prepared by a meteorologist was added to the range of open data. This feature has been the most requested among the users of open data. The Finnish Meteorological Institute's open data has been available for ten years already. At the moment, most of the material produced by the Finnish Meteorological Institute is available as open data. Through the open data interface, datasets produced by the Finnish Meteorological Institute can be downloaded in machine-readable format free of charge. Measured by download volumes, the most popular open datasets of the Finnish Meteorological Institute in the past ten years have been Finnish weather observations, weather forecast models, lightning observations and radar images.



Picture 1. Development of the Finnish Meteorological Institute's open data download volumes in 2013–2022. The graph shows a significant increase in both the amount of material that has been made publicly available and the amount of data downloaded over a period of 10 years. The removal of the registration requirement in 2019 increased download volumes.



Partnerships for the goals (SDG 17)

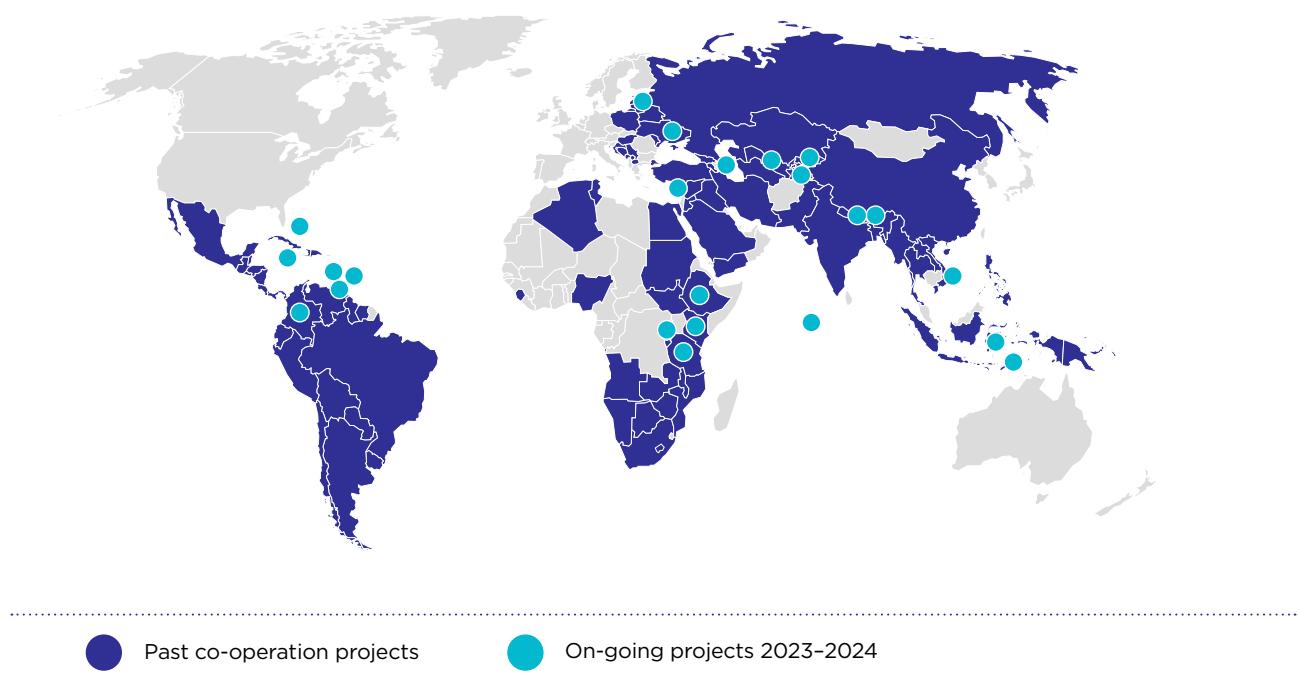
The Finnish Meteorological Institute represents Finland in the World Meteorological Organisation, which is the UN's specialised agency for matters of weather, climate and water resources, whose tasks include hosting the Intergovernmental Panel on Climate Change (IPCC). The WMO aims to ensure that its 193 member states have access to the best technical and material opportunities to manage statutory weather services and the associated warnings. To achieve this, the WMO promotes the free exchange of weather observation data and products between member states. In summer 2023, we participated in a congress organised by the WMO.

In addition to the WMO, the Finnish Meteorological Institute also represents Finland in the European Centre for Medium-Range Weather Forecasts ECMWF and the European Organisation for the Exploitation of Meteorological Satellites EUMETSAT. The ECMWF guarantees the availability of weather forecasting models for its member states and is also a key player in Copernicus, the Earth Observation component of the European Union's space programme, which provides high-quality information on climate change, atmospheric composition, floods and fire hazards, and in the EU Destination Earth initiative, which is developing a prototype for a digital twin of the Earth. The information and products produced by EUMETSAT satellites are essential for weather forecasting models and important for monitoring the environment and climate change. The European Union has entrusted EUMETSAT to use four Sentinel satellite missions of the Copernicus Space Component to monitor the atmosphere, the oceans and the climate. EUMETSAT will perform these tasks in cooperation with the European Space Agency (ESA) and is already making use of the Sentinel-3 and Sentinel-6 ocean missions.

Other important international cooperation bodies include EUMETNET, a European cooperation network between meteorological institutes, and the Nordic cooperation network NORDMET.

The Finnish Meteorological Institute's production of operative weather models functions as part of the MetCoOp cooperation, which produces probability forecasts at the kilometre scale; it is an example of joint weather model production between Finnish, Swedish, Norwegian and Estonian meteorological institutes. In 2023, an agreement was concluded to include Latvia in the co-production from the start of 2024. MetCoOp is part of the more extensive United Weather Centre (UWC) collaboration consisting of 11 countries' meteorological institutes (the Nordics, Estonia,

Over 100 countries of development co-operation



Latvia, Lithuania, the Netherlands, Ireland and Spain). The UWC is a weather model collaboration network divided into two operational centres: MetCoOp and UWC West. In addition, the Institute's research activities are closely linked to many international collaboration networks and also serve scientific cooperation on the North-South axis.

The beginning of 2023 saw the start of a three-year RODEO project, led by the Finnish Meteorological Institute, which aims to make valuable meteorological data openly available to everyone. This is revolutionary, because in the future, users will be able to access cross-border European weather data in one place. The project involves 11 European meteorological institutes, the European Centre for Medium-Range Weather Forecasts ECMWF and the European cooperation network EUMETNET.

In 2023, the Finnish Meteorological Institute carried out about 40 international development projects in 23 countries. The projects exported both expertise and Finnish technology to developing countries to help them safeguard people and property. Project activities have grown in recent years, and 2023 reached a record-breaking project portfolio and funding situation.

Ukrainian weather services developed with Finnish support



Picture: Anton Tkachenko

With funding from the Finnish Ministry for Foreign Affairs, the Finnish Meteorological Institute has been engaged in development cooperation with the Ukrainian Hydrometeorological Center (UHMC) since 2022. Key objectives of the cooperation include the modernisation of weather service production methods and the exchange of weather and early warning information with European sister institutions and partners. During 2023, the SmartMet Alert tool developed by the Finnish Meteorological Institute was successfully introduced in Ukraine to make weather warnings and their impact assessments compatible with the European system. Meteorologists in Kiev and marine service experts in Odessa were trained to use the tool. As part of the project, a peer-reviewed scientific study on the effects of war on the air quality in Ukraine was also published.

New satellite for better weather information



Picture: Eumetsat

In 2023, the European Organisation for the Exploitation of Meteorological Satellites EUMETSAT launched the MTG-II satellite into space to better detect and identify clouds and their properties, dust, smoke and wildfires. As a first for a satellite aimed at Europe, there is also a lightning imager on board to produce information on the location, intensity and movement of thunderstorms. The information gathered by the satellite helps meteorologists make more accurate weather forecasts and prepare society for weather situations that pose a danger. The primary purpose of the MTG satellite is to produce weather information for its European Member States. However, the MTG satellite also has an excellent ability to produce weather observation data for the African region due to its permanent placement in orbit on the equator above Africa. For this reason, EUMETSAT, together with its member states, supports Africa by making satellite data available to African countries as well. This will help African countries prepare for weather events that pose a local hazard and warn them of such events.



Picture: Layla Höckerstedt

The footprint of our activities

Environmental sustainability

The Finnish Meteorological Institute is involved in the WWF Green Office programme. We monitor the negative impacts that our activities have on the environment and develop ways to reduce these impacts. Regularly monitored issues include the energy consumption, waste volumes and paper consumption of the Finnish Meteorological Institute's office building, and commuting.

As part of Senate Properties' carbon neutrality targets, the Dynamicum premises of the Finnish Meteorological Institute in Kumpula, Helsinki use zero-emission electricity and district heating. There are solar panels on the roof of the Finnish Meteorological Institute's office, producing 18.7 MWh of electricity in 2023.

The Finnish Meteorological Institute has diverse waste sorting possibilities and the sorting rate is at a good level. In 2023, more waste ended up in recycling and reuse compared to the previous year.

The consumption of office paper has decreased significantly thanks to secure printing and electronic documents and has stabilised to a very low level, although paper consumption in the office increased slightly compared to the previous year as a result of an increase of staff working at the office.

Due to the nature of the Finnish Meteorological Institute's international activities, the largest single source of carbon dioxide emissions comes from flight kilometres. In 2023, commuting returned close to the pre-pandemic level. Air and train travel increased from the previous year. In accordance with the State Travel Regulations, the recommendation is to take trips shorter than 500 kilometres by train instead of by plain. In 2023, train trips and short flights were included as a Green Office indicator to allow us to monitor how their mutual ratios develop in post-pandemic times.

TOTAL CO2 EMISSIONS

TOTAL EMISSIONS

1,651.71 tCO₂

Part of the emission factors are carbon dioxide equivalent factors.

EMISSION INTENSITY

2.20 tCO₂

per employee



CONSUMPTION

ENERGY

5.1 million
kWh



WATER

4.5 million
liters



MOBILITY

9.2 million
pkm



PAPER

888 kg



DEVICES

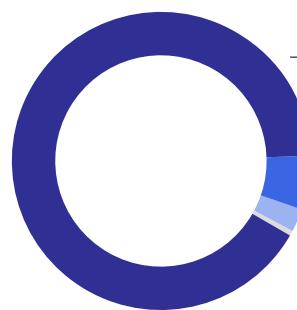
320 pcs



WASTE

93,983 kg

CONSUMPTION



93% Transport



96% Air transport 4% Road transport 0% Public transport 0% Water transport

6% Procurements



99% Office equipment

1% Paper

2% Waste



31% Paper 25% Other in total 20% Mixed waste 13% Energy waste 12% Biowaste

0% Energy
and water

In everyday work at the office, environmentally sustainable choices are promoted with campaigns. The Finnish Meteorological Institute participates in the annual energy saving week, the Earth Hour campaign and the Kilometrikisa cycling competition, among other events. In 2023, the Finnish Meteorological Institute participated in events such as the Workplaces on the Move week and drew lots for prizes among employees who had commuted by walking, biking or other non-motorised means. The Finnish Meteorological Institute favours plant-based alternatives for catering meetings.

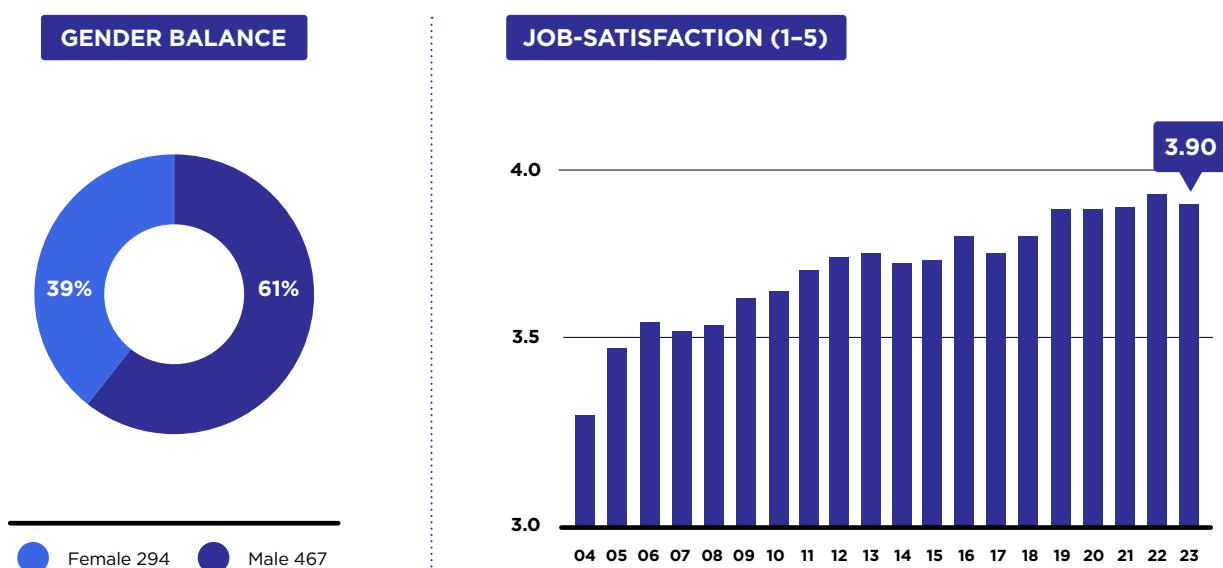
Social sustainability

In accordance with its strategy, the Finnish Meteorological Institute is a healthy and developing workplace. The annual job satisfaction survey conducted in 2023 yielded excellent results once again, as the personnel's overall job satisfaction index was at 3.9 (scale 1-5). Themes related to job satisfaction development in 2023 included hybrid and remote work, collaboration and interaction as well as the organisation of work and management.

In 2023, the Institute began preparing a personnel strategy. The cornerstones for preparing the strategy are personnel involvement and the openness of the preparations. All members of personnel were able to participate in the preparation of the strategy through additional questions in the job satisfaction survey. The preparations will continue during 2024 with joint personnel workshops.

In 2023, we invested in personnel well-being, maintaining work ability and skill development in many different ways. The range of occupational health care services was expanded by introducing services that especially support mental health. For work ergonomics, lectures and workplace visits by an occupational physiotherapist were organised. The competence of supervisors was developed with coaching on the early support model and change management coaching. In addition, the branches and units organise coaching and events for their respective personnel. HR offered support to supervisors with everyday HR matters, such as supporting work ability and recruitment.

A great number of recruitments were carried out in 2023. Vacancies in the Institute are filled either through the internal registration procedure or as a public call for applications. In order to support the career development of personnel, information on vacancies is also communicated internally, and personnel are encouraged to develop their skills also by applying for new positions. Recruitments comply with the central government's joint recruitment process and investments are made in applicant communications. Each year, the Finnish Meteorological Institute offers



internships to Finnish and international students as well as short work practice opportunities for secondary school student, non-military service placements and other positions supporting employment as agreed with the TE Centre (employment centre).

The Finnish Meteorological Institute prepares an annual equality and non-discrimination plan. The measures of the plan promote equal pay, equal recruitment practices, equal opportunities for career development and professional development, the creation of equal and non-discriminating working opportunities, the balancing of work and private life, and management at different stages of a career. In the 2023 job satisfaction survey, the result of the question “Gender equality is realised in my work community” was 4.37 and the result of the question “Equality of people is realised in my work community” was 4.28 (scale 1–5).

Research sustainability

The Finnish Meteorological Institute conducts research in three fields: meteorology and marine sciences, climate, and space.

The Finnish Meteorological Institute is committed to complying with the Code of Conduct for Research Integrity and Procedures for Handling Alleged Violations of Research Integrity (the RI guidelines) produced by the Finnish Advisory Board on Research Integrity (TENK). The Finnish Meteorological Institute has a support person for research ethics, who is appointed by the Director of Research and serves as the contact person for questions related to research ethics and as provider of advice on such matters.

The Finnish Meteorological Institute complies with national and European principles of open science in its activities and has invested heavily in the implementation of these principles in recent years. Open science promotes the extensive utilisation of research in society and promotes the efficiency and quality of research.

The Finnish Meteorological Institute sought to promote open science at the European level. The Institute participated in three international projects that develop and implement the European Open Science Cloud (EOSC) environment. The EOSC initiative aims to provide a multidisciplinary environment open to European researchers and other operators, allowing them to publish and use research data and tools for research and education.

In 2023, (according to preliminary information,) the Finnish Meteorological Institute published 383 scientific publications, 238 of which were openly available. The amount of openly available publications was approximately 62% of all publications.

The impact of the research was promoted by communicating results to the general public and collaborating with data users.

Researchers who are at the beginning of their careers are an important part of the Finnish Meteorological Institute's research community. Young researchers have established a network to start cooperation with young researchers from other Finnish research institutes. In April 2023, the Finnish Meteorological Institute organised an event that brought together, for the first time, researchers at the early stages of their careers who work on environmental issues and the health impacts of climate change.

The Finnish Meteorological Institute employs many foreign researchers. In 2023, we paid particular attention to the fact that our work community communicates in English in addition to Finnish.

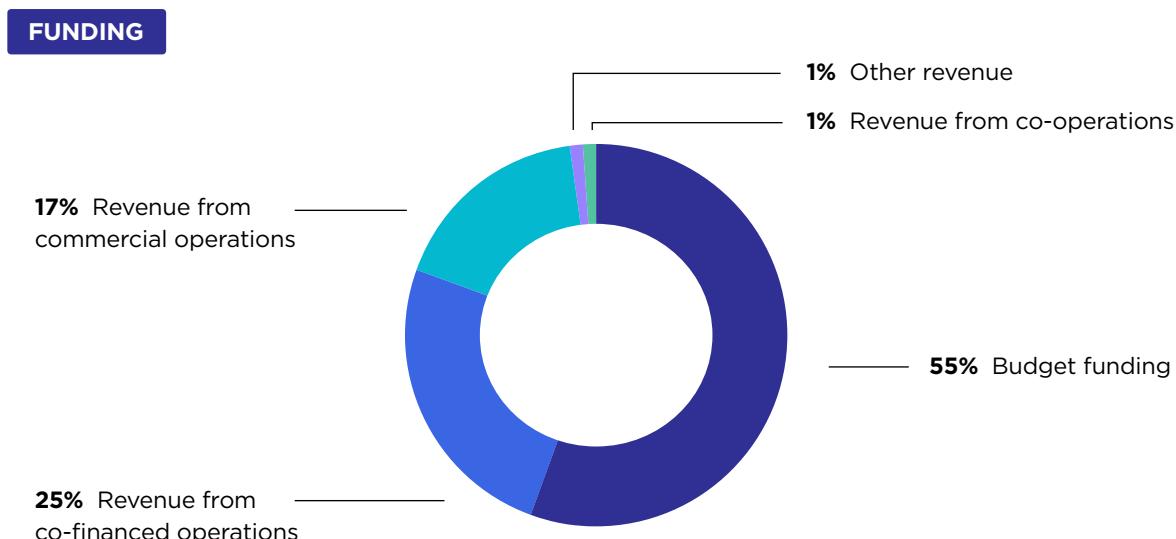
Financial sustainability

The financial operations of the Finnish Meteorological Institute are governed by the State Budget Act and Decree and the regulations and instructions based on them. In 2023, there were no misconducts concerning the funds or assets of the Finnish Meteorological Institute.

The total expenditure of the Finnish Meteorological Institute was EUR 95.5 million in 2023. Expenditure increased by EUR 10.2 million from the previous year, mainly due to an investment in the update of high-performance computing capacity. The increase in revenue was approximately EUR 6 million, focusing especially on jointly funded projects and business activities.

The Finnish Meteorological Institute's financial information is available in more detail [in the financial statements](#).

In addition to the Act on Public Procurement and Concession Contracts, our procurements are guided by the Finnish Meteorological Institute's procurement strategy and procurement rules,



which contain guidelines on matters and requirements related to sustainability. During the planning and the initial phase of the procurement, we consider the potential risks related to the goods and services to be procured. This way we can determine for which product groups requirements must primarily be set. We take into consideration the environmental, social and economic aspects related to sustainability both in our competitive tendering and during the contract period. We also examine the life cycle impacts of procurements according to the principles of sustainable development.

The perspective of innovation is also part of our sustainability-oriented thinking in procurement. Cost targets for public procurement and the need to improve the quality of service and to act more sensibly encourage the Finnish Meteorological Institute to make innovative procurements. The Finnish Meteorological Institute strives to achieve 10% of the target for innovative procurements and evaluates the achievement of the target. In 2023, the Finnish Meteorological Institute did not achieve its target.

In 2023, we used the Criteria Bank prepared and maintained by Motiva (www.kriteeripankki.fi) for defining the sustainability of public procurements. The Criteria Bank allows users to search for sustainability criteria applicable to procurements based on the product or service to be procured and the sustainability target for the procurement.

The procurements also support the Finnish Meteorological Institute's Green Office activities. This is also part of our procurement strategy: in line with our action plan, we use our public procurements to support Finland's goal of being carbon neutral by 2035 and implementing the circular economy.

We also consider the sustainability of our service contract partners. For example, Compass Group, who provides the restaurant services at Dynamicum, offers the daily option of "climate lunch" and pays particular attention to the origin of the fish they use. Another example is LTQ cleaning services, who follow their LTQ Green & Clean sustainability concept and monitor their operations with a footprint calculator, among other efforts.

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