Eawag
Swiss Federal Institute of
Aquatic Science and Technology

Annual Report 2023

eawag
aquatic research

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Annual Report

Rounding differences: the figures presented in this document may not add up precisely to the total amounts presented in the tables. Changes are calculated on unrounded amounts and may differ from a figure that is based on the rounded amounts presented in the tables.

Management report

Performance report

The performance report provides an overview of Eawag's most important activities in the field of teaching, research as well as knowledge and technology transfer. These activities are in line with Eawag's strategy, which is described in the development plan.

Teaching

In 2023, Eawag continued to be involved in teaching in the ETH Domain and elsewhere. Based on current research, a wide range of programmes covered Eawag's strategic priorities. The lecture programme, which took place at various universities in Zurich, Basel, Neuchâtel and Bern as well as at schools in the ETH Domain, focused on the use of water and its impact on ecosystems. In 2023, Eawag researchers taught over 6,743 lecture hours, making a significant contribution to education, including in environmental systems science and environmental engineering, in the ETH Domain, at cantonal universities and at universities of applied science. Eawag researchers supervised 160 doctoral students and over 180 bachelor's and master's theses. A new bachelor's and master's degree programme in biodiversity was established at the University of Zurich, with Eawag playing a key role in its conception.

Another mainstay of Eawag teaching are the internationally oriented summer schools. Now for the 14th time, the established event on "Environmental Systems Analysis" also took place in 2023. The Massive Open Online Courses (MOOCs) developed in collaboration with EPFL were also used by around 1,000 new learners per month in 2023.

Together with the three research institutes of the ETH Domain, intensive work was carried out in 2023 on the "Lead Campus", which will bring together the interdisciplinary and advanced training programmes of the research institutes in 2024. The project enables the institutions to provide a more comprehensive and professional service through the skilful use of synergies.

Research

In 2023, Eawag continued to combine excellent work in the field of basic research with application-oriented research. In doing so, Eawag provided solutions – in some cases in close cooperation with partners in the field – for current challenges in the areas of water management, biodiversity and measures to adapt to climate change.

An important approach adopted by Eawag is based on a scientifically sound description of the problem, which is being transferred step by step via a pilot phase into large-scale technical implementation with the close involvement of the relevant partners from industry and administration. This approach forms the basis of the research area dealing with micropollutants in wastewater, which was recently awarded the Sandmeyer Prize by the Swiss Chemical Society.

Another example that successfully combines basic research with practical application is the research carried out at Eawag on closing nutrient cycles. Based on the principles developed in previous research projects and their implementation in the Water Hub of the NEST building operated jointly with Empa, resource-oriented wastewater treatment will now be further developed and applied as a closed system in space travel. Eawag doctoral students funded by the ESA MEliSSA programme have been researching such systems for some time now. In 2023, Eawag was officially accepted as a partner in the MEliSSA consortium (Micro-Ecological Life Support System Alternative).

The Blue-Green Biodiversity research initiative in collaboration with WSL, funded as a joint initiative of the ETH Domain, focuses on biodiversity at the interface between aquatic and terrestrial ecosystems. As part of this joint initiative, a new neighbourhood in a district in Bern was also established as a real-life laboratory. This new district, which is currently being planned and is also being built on a greenfield site, allows researchers to collect data before and during the construction phase and to investigate the effects of urbanisation on a wide range of environmental factors, such as water balance, heat balance and biodiversity. The transdisciplinary approach on which the real-life laboratory is based offers the opportunity to combine various aspects such as biodiversity, noise and light pollution, land use, hydrogeology, heat research and social sciences. In addition, Eawag continued to investigate the impact of climate change on bodies of water in Switzerland and the consequences of the observed changes on the structure of ecosystems and the organisms living in them. A multi-phase research programme on climate change and aquatic biodiversity, launched jointly with the FOEN in the year under review, will allow this research area to be further expanded at Eawag and provide an important basis for making the necessary adjustments to protect biodiversity.

Knowledge and technology transfer

In 2023, Eawag actively participated in political processes and contributed its expertise to many consultations and hearings on guidelines and legislation at the national and cantonal level. The constant, close collaboration with representatives of relevant associations and authorities within the framework of application-related research projects supported this commitment enormously. In 2023, for example, a recommendation for the implementation of the revised Water Protection Act was developed together with the Federal Office for the Environment, the institutions of the ETH Domain and other partners.

In order to improve its advisory activities and the necessary exchange with practitioners, Eawag actively supported the establishment of platforms such as “Process Engineering Micropollutants” or “Water Quality” several years ago and welcomed the decision to continue this collaboration beyond 2023.

The practice-oriented Eawag courses (PEAK) are tailored to the respective target group and are aimed at specialists from engineering and environmental offices in administration, industry, non-governmental organisations and business. The declared aim of this advanced training programme is to impart the latest knowledge from research and to promote exchange in both directions between science and practice among participants. In 2023, the PEAK catalogue included seven training courses. Eawag also supports advanced training programmes offered by its partner institutions and participates in specialist conferences in the water sector.

Wastewater-based epidemiology remained a key topic in 2023. In order to support this topic and the efforts to establish a competence centre, which is currently being set up, the Eawag Directorate defined the thematic focus “Health” in the year under review and supported an initiative of the same name within the ENRICH framework (Joint Initiative of the ETH Domain to strengthen collaboration between the four research institutes) in collaboration with the three research institutes of the ETH Domain.

In the recycling economy sector, the technology based on the black soldier fly for the extraction of valuable animal feed from waste was transferred to the spin-off "Eclose" in 2023 based on years of research at Eawag.

International positioning and collaboration

Despite Switzerland's non-association with the European Research Framework Programme, Eawag researchers succeeded in acquiring projects at the European level and further expanding collaboration with partners abroad.

While the Eawag Info Day is designed as an exchange event for practitioners and administrators in Switzerland, Eawag also participates in formats that appeal to an international audience. For example, Eawag was heavily involved in the UN Water Conference 2023 in New York, the World Water Week in Stockholm and the ETH Domain's appearance at the World Economic Form (WEF) in Davos. Eawag's initiative for awarding scholarships to students in the Global South was continued.

Collaboration in the ETH Domain

Numerous joint appointments between the ETH Domain and the universities of the ETH Domain form a strong basis for collaboration. In addition, Eawag is also committed to close collaboration between the four research institutes of the ETH Domain and values the institutionalised exchange within the framework of ENRICH, the joint initiative of the ETH Domain to strengthen collaboration between the four research institutes. In the ongoing joint Blue-Green Biodiversity initiative of the ETH Domain, two new projects could be launched in 2023 under Eawag management. ENGAGE, a joint initiative of the ETH Domain managed by Eawag, was approved in 2022 and got off to a good start in the year under review.

Role in society and national mission

Eawag still sees vocational training as an important task and in 2023 continued to make a significant contribution to the training of laboratory technicians specialising in chemistry, laboratory technicians specialising in biology, ICT specialists and business management assistants in the services and administration sector. The training is organised in close cooperation with companies in the private sector. In 2023, nine apprentices successfully completed their training and all those who completed their apprenticeship found a job or started advanced training. Numerous former employees from the research areas of Eawag took on positions of management or as decision-makers in the Swiss water sector. Eawag was thus also an important networking centre for the Swiss water sector in 2023. Intensive dialogue with authorities, industry associations and private planning offices continues to form the basis of many close and productive partnerships.

One example of such a long and productive partnership is the National River Monitoring and Survey Programme (NADUF). This programme was launched jointly by Eawag and the Swiss Confederation over 50 years ago and has since made it possible to continuously monitor water quality in Swiss watercourses and measure the development of concentrations of a wide variety of water constituents. In 2023, the apprentices from Eawag's analytical and training laboratory continued to provide active support in analysing diverse water samples, thereby making a significant contribution.

The mission of the Ecotox Centre, which Eawag operates jointly with the EPFL, follows the same direction. In 2023, the Centre for Research and Training in Ecotoxicology was once again a central point of contact for a wide variety of stakeholders in this field. This centre provides specific expertise in a practical manner and ensures networking with important European players at the interface between science and regulatory requirements.

Extraordinary events

At the beginning of the year under review, Professor Martin Ackermann took over the management of Eawag from Professor Janet Hering, who stepped down after 16 successful years and retired. During the course of the year, a generational change took place in the Directorate. In addition to the remaining members of the Directorate, Gabriele Mayer and Professor Carsten Schubert, Dr Christian Stamm joined the Directorate as Deputy Director along with Professor Florian Altermatt, Professor Lenny Winkel and Dr Sara Marks. This means that a versatile team of experienced researchers is now ready for the challenges ahead, given the changing framework conditions. The new Directorate is broadly positioned to continue strengthening transdisciplinary and interdisciplinary research alongside basic research, often in close collaboration with players from practice, federal offices and industry.

The new Directorate, which was established in the reporting year, has set itself the goal of developing solutions to the challenges facing society, such as the climate crisis, the transition to a sustainable society and the loss of biodiversity.

At the end of 2023, Professor Tove Larsen and Professor Rik Eggen stepped down from the Directorate and retired.

Future prospects

Eawag plans to strengthen the thematic areas of biodiversity and the water cycle and would like to expand its activities with regard to the effects of climate change on freshwater systems and in the issue of health. The activities are to be consciously coordinated from "technology readiness levels" to "policy readiness levels" – in other words, from knowledge to application.

The expected decline in federal funding for research, education and innovation in general as well as for the ETH Domain will probably limit Eawag's strategic flexibility in the future. The new Directorate is working on measures to optimise the use of free funds in order to respond more strategically to current developments and tackle the challenges ahead. In future, the development of new forms of third-party funding will also be of considerable importance.

Human resources

Staff structure and headcount

As of 31 December 2023, Eawag's headcount (excluding interns, academic guests and temporary staff paid by the hour) amounted to 536 people and 477.14 full-time equivalents (FTEs). This is divided between the functions of science, technology, administration, students and apprentices. This represents an increase of 4.66 per cent compared to the previous year 2022. The proportion of women increased again and now stands at 50.18 per cent (including students and apprentices).

Eawag's international character as a leading research institution in the field of aquatic research is reflected in the fact that its employees come from 46 different countries. Staff are funded not only by federal funds, but also by acquired competitive research funds. As of 31 December 2023, the financing of the FTEs (excluding students and apprentices) is distributed as follows:
Origin of employees

- Other foreign countries 14.37%
- EU countries 30.22%
- Switzerland 55.41%

Human resources policy and development

Eawag fulfils its social responsibility and provides modern human resources policy instruments that allow employee performance and work motivation to be maintained at a high level. Eawag stands for equality between men and women and pays great attention to a barrier-free workplace culture. Diversity is an integral part of Eawag's corporate strategy. To ensure the continuation and ongoing development of diversity, flexible working time models, integrated health management and advanced training opportunities are offered in order to retain first-class and employable staff both in research and in the technical and administrative areas. Internal training focuses on the areas of management development, occupational health management and occupational safety.

Eawag has been investing in language courses for years in order to take account of its wide-ranging internationality. The advanced training measures are continuously reviewed and further developed. In addition, external individual specialised training courses are supported financially on an ongoing basis in order to maintain employees' qualifications at the current high level. Eawag is increasingly focusing on digitalisation so that work processes can be made more efficient in future. The 86 doctoral students employed at Eawag have access to excellent infrastructure, specific training opportunities and customised innovation platforms. Workshops on career planning and the funding of academic transition grants are offered to researchers with temporary project positions in order to promote their qualifications for the labour market. The Eawag Partnership Programme for Developing Countries offers students from developing countries the opportunity to conduct research at Eawag, to network and to bring the know-how they have acquired to their home countries. The Eawag Postdoc Fellowship for young researchers is an integral part of the promotion and networking of talent.

Equal opportunities

Eawag's Equal Opportunity Committee has been restructured into three areas: Diversity in Recruitment, Diversity & Belonging and Visibility & Internal Recognition in order to deal more specifically and effectively with recruitment processes, selection procedures and gender equality issues. The cross-institutional Diversity & Inclusion department enables Eawag to tackle cross-institutional issues and utilise synergies usefully. Eawag project groups revised structures, directives and the website with a focus on inclusion and gender sensitisation. Eawag is characterised by a gender-balanced recruitment policy and succession planning, which also includes senior management positions in particular. Eawag has developed a multi-year gender strategy that is oriented towards the objectives of the ETH Zurich. With programmes such as Fix the Leaky Pipeline, High Potential University Leaders Identity & Skills Training (H.I.T.), COFUND-Postdoc and, We advance and CONNECT (Connecting Women's Careers in Industry and Academia), Eawag and its partner companies have entered the next round. CONNECT brings the careers of women in STEM disciplines in academia, the private sector and administration closer together in order to promote sustainable exchange.

The compatibility of family life and career is essential for Eawag. The Tailwind programme makes financial resources available to mothers to ease their burden during the first months of motherhood. Eawag now has a breastfeeding and family room that can be used primarily by mothers and families. Female scientists on the tenure track receive an automatic extension of their appointment when they start a family. Tenure track positions are now also being offered on a part-time basis. Fathers can apply for a temporary reduction in their employment level. In addition to its continued commitment to childcare solutions, Eawag also supports lower-income parents by contributing to costs.

Increasing the proportion of women, especially in management positions, was the focus in 2023 and is also one of the primary HR targets for 2024. Eawag was able to significantly increase the proportion of women in management positions from 33.85 to 37.09 per cent.

Organisation and governance

Organisation

Eawag is a federal institution under public law and is part of the ETH Domain together with the two Federal Institutes of Technology ETH Zurich and EPFL and the research institutes Paul Scherrer Institute (PSI), Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) and Swiss Federal Laboratories for Materials Science and Technology.

The ETH Board is the strategic management and supervisory body of the ETH Domain. The status, structure and tasks of the ETH Domain are described in the ETH Act of 4 October 1991. Based on Article 27 of the ETH Act, the ETH Board issued the ordinance on the research institutes of the ETH Domain. The structure of Eawag is governed by the organisational regulations. Eawag is managed by its director and the members of the Directorate appointed by the ETH Board.

Governance

Political management of the ETH Domain is the responsibility of the Federal Parliament and the Federal Council. The ERI Message and the corresponding performance mandate serve as central management instruments. Financing is provided through the annual credit authorisation by Parliament.

The ETH Board concludes the target agreements with the institutions, allocates the federal funds accordingly and approves the institutions' development plans. The Board fulfils its supervisory function with regard to Eawag in various ways. In addition to annual inputs from the institutions on the objectives in the ETH Domain's annual report, the fulfilment of the strategic objectives is reported on in the context of the dialogue discussions between Eawag and the ETH Board, which also take place annually.

In addition, the ETH Board conducts internal audits on risk management and financial supervision. The Swiss Federal Audit Office (SFAO) is responsible for the external audits of the ETH Domain's institutions.

Eawag reports in various ways: the ETH Board's annual report on the ETH Domain sets out the fulfilment of the strategic objectives and the use of the Federal Government's financial contribution. An interim evaluation of the ETH Domain is carried out halfway through each performance period. The self-evaluation report to be prepared for this purpose provides information on the status of target achievement in the corresponding performance period. At the end of the performance period, a final report, which is submitted to the Federal Assembly for approval, summarises the achievement of the objectives over the four-year period.

Internal governance is mainly ensured in the meetings of the Directorate and via the committees assigned to the Directorate, such as risk management. The Directorate is also responsible for Eawag's Compliance Guide, Research Integrity regulations and the approval of the annual ICS report.

Secondary employment

Employees are obliged to assess their secondary employment with regard to compliance with their contractual obligations and the potential endangering of Eawag's reputation and/or financial interests, and to inform their line manager if there are any indications of this.

Secondary employment requires the prior approval of the Directorate in all cases, if
- it concerns the assumption of a Board of Directors mandate or a management function in a company,
- the secondary employment consists of an activity in favour of a spin-off or another company,
- Eawag infrastructure or personnel is utilised, or
- a significant risk of endangering Eawag’s reputation or financial interests is to be expected or exists.

In addition, the secondary employment of members of the Directorate is reported annually and reviewed by the ETH Board.

Secondary employment of members of the Directorate as of May 2023:

Martin Ackermann, Professor, Director (since 01.01.2023)
- Chair of the Board of Trustees, Rübel Geobotanical Research Institute Foundation, Zurich, Switzerland

Christian Stamm (since 01.04.2023)
- Chair of the Board of Trustees, Foundation for Practical Environmental Protection Switzerland (Pusch), Zurich, Switzerland
- Member of the Steering Board, World Food System Centre, Zurich, Switzerland

Florian Altermatt (since 01.04.2023)
- President of the Biodiversity Forum, Academy of Natural Sciences (SCNAT), Bern, Switzerland
- Member of the Board of Trustees, Info Fauna Foundation/Swiss Centre of the Cartography of Fauna (SZKF/CSCF), Neuchâtel, Switzerland
- Member of the Jury (call “Modelling biodiversity and ecosystem service loss to advance resilience”), SwissReFoundation, Zurich, Switzerland

Rik Eggen
- Member of the Research Committee, Empa, Dübendorf, Switzerland
- Member of the Strategic Advisory Group, Assessment of Water Bodies FOEN, Bern, Switzerland
- Vice Chair of the Board, glaTec, Technology and Transfer Centre, Dübendorf, Switzerland

Tove Larsen
- Member of the Advisory Board, Life Sciences, University of Applied Sciences Northwestern Switzerland FHNW, Switzerland
- Member of the Advisory Board, Institute for Environment and Natural Resources (IUNR), ZHAW Zurich University of Applied Sciences, Switzerland
- Adjunct Professor, Danish University of Technology, Denmark
- Member of the Advisory Board, Water Institute, University of Waterloo, Canada

Lenny Winkel (since 01.04.2023)
- Member of the Board, ETH Women Professors Forum, Zurich, Switzerland
- Member of the Jury, Houtermans Award Committee, European Association of Geochemistry (EAG), Aubiere, France
- Member of the Editorial Board, Environmental Science: Processes & Impacts, Royal Society of Chemistry, London, UK

Risk management at Eawag

Present situation

Eawag enjoys a high reputation for its research and teaching both in Switzerland and internationally. This valuable reputation is ensured, among other things, by competent and prudent employees (human capital), well-functioning business processes, excellent infrastructure and stable basic financing.
All of these assets are exposed to risks and can be severely damaged by negative events. This can also significantly endanger operational and strategic goals.

As a management and supervisory body, the ETH Board defines objectives and requirements for the risk management process in the six institutions of the ETH Domain. Identification and assessment of individual risks, strategies for dealing with them and appropriate controlling should ensure that the institutional objectives can be met in an impact-oriented, cost-efficient and forward-looking manner. The design and implementation of risk management at Eawag are based on existing directives issued by the Federal Government and the ETH Board as well as recognised norms and standards (in particular ISO 31000). Appropriate risk avoidance measures should ensure the safety of people, property and other (including non-material) assets to the greatest possible extent, and maintain Eawag's ability to function and innovate. The aim of Eawag's risk policy is to recognise and assess the risks to Eawag's operations and activities in a prudent and timely manner, and to raise awareness of these risks and to take suitable measures in line with the cultural diversity and organisation of the institution.

The risk management processes support and inform Eawag's Directorate and management and the ETH Board with regard to the early detection and proactive management of these risks. Eawag's risk management is aimed in particular at measures designed to prevent a negative deviation in the achievement of objectives.

Responsibility and the risk management process

In accordance with the autonomy of the six institutions in the ETH Act as the basis for their performance in teaching, research and knowledge and technology transfer, each institution is responsible for managing the risks existing in its own area. The presidents of the Federal Institutes of Technology and the directors of the research institutes bear the ultimate responsibility for risk management within their institution. The two Federal Institutes of Technology and the four research institutes have introduced their own risk management processes based on the guidelines of the ETH Board. The includes the identification and assessment of individual risks, strategies for overcoming them and appropriate controlling. Eawag has a risk manager who coordinates and controls the risk management processes. The risk manager is supported by the other responsible members of the Eawag risk organisation. The effective implementation of risk management is periodically reviewed by the Directorate and the ETH Board's internal audit department, which reports to the ETH Board's Audit Committee.

Risk management includes specific specialist topics such as security, internal control system (ICS), compliance management, information security, export control and business continuity management (BCM).

Risk situation

Risks

Eawag's individual profile is reflected in its risk catalogue. Compared to the other institutions of the ETH Domain, the relatively small size of Eawag plays a role in the profile of the core risks and their assessment.

Identified risks and their potential impact are described in detail and assessed on the basis of the two dimensions of probability of occurrence and financial impact. In addition, particular attention is paid to the potential impact of a risk to Eawag's reputation.

Eawag updates its risk catalogue at least once a year, taking into account new developments and changing risk situations. The catalogue includes the following risk categories:
- financial and economic risks
- legal risks
- property risks, technical risks and natural hazards
- personal and organisational risks
- technological and scientific risks
- social and political risks
- environmental and ecological risks
- specific real-estate risks

Core risks are those with a potentially high financial impact and an above-average probability of occurrence that could directly endanger the fulfilment of the institution's statutory duties or pose a high risk to the reputation. The risk organisation (internal risk committee) meets at least once a year to discuss the risk situation at Eawag and draws up a risk report under the direction of the risk manager. This was also presented to the Eawag Directorate in 2023 and submitted for approval. As part of this annual reporting, Eawag informs the responsible bodies of the ETH Board about its core risks in particular with regard to the current status, scope and potential impact of these risks. In the event of extraordinary changes in risk or extraordinary loss events, the ETH Board, as the supervisory body of the ETH Domain, is informed immediately and in a timely manner.

Eawag has identified its core risks in the following areas:
- quality of teaching, research and services
- cyber-attacks and loss of data processing systems and data integrity
- loss of key personnel
- significant loss of financial resources and failure to exploit third-party funding potential
- damage or loss of research infrastructure
- accidents to people at the workplace, at research facilities or during field work
- difficulties in recruiting qualified specialists
- major losses and catastrophic natural events or crises

Risk management instruments and measures

The basic principles of risk management provide for Eawag to insure itself against any losses, subsidiary to other measures, taking into account the individual risk situation of the institutions. In the case of insurance policies, an appropriate cost-benefit ratio must be sought and the relevant public procurement provisions must be complied with. These insurance policies must meet the standard customary in the Swiss insurance market and must be taken out with an insurance institution authorised in Switzerland.

Eawag is responsible for taking out its own insurance policies and managing its own insurance portfolio. In its directives, the ETH Board stipulates that the two Federal Institutes of Technology and the four research institutes must take out the following insurance policies as basic cover in addition to the statutory prescribed insurance policies:

– property and business interruption insurance
– business liability insurance
– insurances that are necessary for the most comprehensive cover possible for core risks

It should be noted that not all core risks can be insured or that their insurance is not financially viable. Eawag has taken out property insurance and business liability insurance to cover losses. Eawag has also smaller insurance policies for specific operational risks, as stipulated in the directives.

Disclosure of risks

As part of the annual financial statements, the institute ensures that the risks are fully recognised within the existing reporting. Based on the estimated probability of occurrence, the risks are recognised either under provisions (less than 50-per cent probability of occurrence) or in the notes under contingent liabilities.

Internal control system

Eawag operates an internal control system (ICS) based on the requirements of the ETH Board, such that the relevant financial processes and the corresponding accounting and financial reporting are identified at an early stage, assessed and covered by suitable key controls. The ICS comprises those processes and measures that ensure proper bookkeeping and accounting and accordingly form the basis of all financial reporting. It thus ensures a high quality of financial reporting. Eawag views the ICS as a tool for the continuous improvement of processes.

Financial statements

Statement of financial performance

CHF 1,000	2023	2022	Notes
Federal financial contribution	63,989	59,018	
Federal contribution to accommodation	3,279	3,399	
Total federal contribution	67,268	62,417	5
Continuing education	75	133	6
Swiss National Science Foundation (SNSF)	6,369	5,069	
Swiss Innovation Agency (Innosuisse)	211	243	
Special federal funding of applied research	5,085	5,775	
EU Framework Programmes for Research and Innovation (EU-FPs)	832	1,349	
Industry-oriented research (private sector)	448	876	
Other project-oriented third-party funding (incl. cantons, municipalities, international organisations)	2,065	1,488	
Research contributions, mandates and scientific services	15,010	14,800	7
thereof transitional measures Confederation	320	115	7
Other revenue	466	515	8
Operating revenue	**82,819**	**77,866**	
Personnel expenses	57,111	56,288	9, 21
Other operating expenses	19,870	18,264	10
Depreciation	2,885	3,862	16
Transfer expenses	138	153	11
Operating expenses	**80,004**	**78,566**	
Operating result	**2,815**	**–700**	
Net finance income/expense	283	132	12
Surplus (+) or deficit (–)	**3,098**	**–568**	

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Balance sheet

CHF 1,000	31.12.2023	31.12.2022	Notes
Current assets			
Cash and cash equivalents	55,351	50,580	13
Current receivables from non-exchange transactions	12,164	9,163	14
Current receivables from exchange transactions	2,703	968	14
Current financial assets and loans	28,647	28,343	17
Prepaid expenses and accrued income	1,615	2,798	15
Total current assets	**100,479**	**91,853**	
Non-current assets			
Property, plant and equipment	19,822	19,963	16
Intangible assets	71	97	16
Non-current receivables from non-exchange transactions	13,628	8,842	14
Total non-current assets	**33,520**	**28,901**	
Total assets	**133,999**	**120,754**	
Liabilities			
Current liabilities	2,871	2,330	18
Accrued expenses and deferred income	2,391	2,107	19
Short-term provisions	3,059	2,699	20
Short-term liabilities	8,320	7,136	
Dedicated third-party funds	32,568	22,785	22
Net defined benefit liabilities	11,078	6,443	21
Long-term provisions	1,925	1,840	20
Long-term liabilities	45,571	31,068	
Total liabilities	**53,891**	**38,204**	
Equity			
Valuation reserves	13,551	19,092	
Donations, grants, co-financing	2,132	1,828	
Reserves with internal dedication	33,499	27,213	
Reserves without dedication	36,650	40,799	
Accumulated surplus (+)/deficit (–)	–5,725	–6,382	
Total equity	**80,108**	**82,551**	
Total liabilities and equity	**133,999**	**120,754**	

Statement of changes in equity

CHF 1,000	Valuation reserves	Donations, grants, co-financing	Teaching and research reserves	Infrastructure and administration reserves	Reserves with internal dedication	Reserves without dedication	Accumulated surplus(+)/ deficit (–)	Total equity
2022								
Value as of 01.01.2022	10,680	1,689	16,250	9,000	25,250	42,230	–5,143	74,706
Items directly recognised in equity:								
Revaluation of defined benefit liability	**8,412**							**8,412**
Surplus (+) or deficit (–)							**–568**	**–568**
Transfers in current period		**139**					**–139**	**–**
Transfer of reserves with internal dedication			–37	2,000	**1,963**	**–1,963**		**–**
Appropriation of reserves						**532**	**–532**	**–**
Total changes	***8,412***	***139***	*–37*	*2,000*	***1,963***	***–1,431***	***–1,238***	***7,844***
Value as of 31.12.2022	**19,092**	**1,828**	**16,213**	**11,000**	**27,213**	**40,799**	**–6,382**	**82,551**
2023								
Value as of 01.01.2023	19,092	1,828	16,213	11,000	27,213	40,799	–6,382	82,551
Items directly recognised in equity:								
Revaluation of defined benefit liability	**–5,541**							**–5,541**
Surplus (+) or deficit (–)							**3,098**	**3,098**
Transfers in current period		**304**					**–304**	**–**
Transfer of reserves with internal dedication			2,008	4,278	**6,286**	**–6,286**		**–**
Appropriation of reserves						**2,138**	**–2,138**	**–**
Total changes	***–5,541***	***304***	*2,008*	*4,278*	***6,286***	***–4,149***	***657***	***–2,443***
Value as of 31.12.2023	**13,551**	**2,132**	**18,221**	**15,278**	**33,499**	**36,650**	**–5,725**	**80,108**

As hedge accounting is not applied at Eawag, no items are recognised under the reserves from hedging transactions.

The infrastructure and administration reserve includes the dedicated savings from the previous years for the planned building in Kastanienbaum (CHF 11 million). On the other hand, a reserve of CHF 4.3 million was established in the reporting year due to delays in the conversion of the laboratory building.

Cash flow statement

CHF 1,000	2023	2022	Notes
Cash flows from operating activities			
Surplus (+) or deficit (–)	**3,098**	**–568**	
Depreciation	2,885	3,862	16
Net finance income/expense (non-cash)*	–304	–139	12
Increase/decrease in net working capital	–2,727	–3,716	
Increase/decrease in net defined benefit liabilities	–906	352	21
Increase/decrease in provisions	444	–137	20
Increase/decrease in non-current receivables	–4,786	–2,186	14
Increase/decrease in dedicated third-party funds	9,783	4,424	22
Cash flows from operating activities*	**7,487**	**1,893**	
Cash flows from investing activities			
Investments			
Purchase of property, plant and equipment	–2,717	–2,513	16
Purchase of intangible assets	–	–106	
Increase in current and non-current financial assets	–	–	17
Total investments*	*–2,717*	*–2,619*	
Divestments			
Disposal of property, plant and equipment	–	9	16
Total divestments	**–**	**9**	
Cash flows from investing activities*	**–2,717**	**–2,610**	
Cash flows from financing activities			
Cash flows from financing activities	–	–	
Total cash flow	**4,770**	**–717**	
Cash and cash equivalents at the beginning of the period	**50,580**	**51,297**	**13**
Total cash flow	4,770	–717	
Cash and cash equivalents at the end of the period	**55,351**	**50,580**	**13**

*Deviation from published figures in the 2022 financial report due to change in presentation in the reporting year

Notes to the financial statements

1 Business activity

Eawag is a global leader in aquatic research. The combination of natural, engineering and social sciences allows water to be investigated across the continuum from relatively pristine natural waters to fully engineered wastewater management systems. Eawag offers its professors, scientific staff and doctoral students a unique research environment, promoting active engagement with stakeholders from industry and society.

Eawag is an independent institute within the ETH Domain.

2 Basis of accounting

These financial statements cover the reporting period from 1 January 2023 to 31 December 2023. The reporting date is 31 December 2023. The reporting is prepared in Swiss francs (CHF). All figures are shown in thousands of Swiss francs (CHF 1,000) unless otherwise indicated.

Legal basis
The legal basis of Eawag's accounting is formed of the version of the following (including directives and regulations) in effect in the reporting period:

- Federal Act on the Federal Institutes of Technology of 4 October 1991 (ETH Act; SR 414.110)
- Ordinance on the Domain of the Swiss Federal Institutes of Technology of 19 November 2003 (Ordinance on the ETH Domain; SR 414.110.3)
- Ordinance on the Finance and Accounting of the ETH Domain of 5 December 2014 (SR 414.123)
- Accounting Manual for the ETH Domain (version 7.1)

Accounting standards
The financial statements of Eawag have been prepared in accordance with the International Public Sector Accounting Standards (IPSAS). The underlying accounting provisions are set out in the Accounting Manual for the ETH Domain (Art. 34 Directives, Ordinance on the Finance and Accounting of the ETH Domain, SR 414.123).

IPSAS issued but not yet applied
The following IPSAS were issued before the reporting date:

Standard	Title	Effective date
IPSAS 43	Leases	01.01.2025
IPSAS 44	Non-current Assets Held for Sale and Discontinued Operations	01.01.2025
IPSAS 45	Property, Plant and Equipment	01.01.2025
IPSAS 46	Measurement	01.01.2025
IPSAS 47	Revenue	01.01.2026
IPSAS 48	Transfer Expenses	01.01.2026
IPSAS 49	Retirement Benefit plans	01.01.2026

The above-mentioned standards and improvements to the IPSAS have not been applied early in the present financial statements. Eawag is currently analysing the expected impacts of the following standards on the annual financial statements:
- IPSAS 43 Leases replaces the previous standard for Lease Accounting IPSAS 13. IPSAS 43 introduces a uniform approach for lessees for the financial reporting of lease agreements, according to which assets are to be recognised for the rights to use the leased assets, and liabilities are to be recognised for the pay-

ment obligations incurred, for all lease agreements in the balance sheet. For leased items of small value and for short-term leases, the application expedients can be used. The standard also includes various expedients for its initial application. In contrast to the previous disclosure of expenditure from operative leases, depreciation on rights of use and interest expenditure from the accrued interest of lease liabilities will be recognised in future. Eawag expects that the first-time application of IPSAS 43 will have a significant impact on the financial statements. However, a reliable estimate of the impact of the application of IPSAS 43 can only be made once our detailed analyses have been completed.
- IPSAS 44 Non-current Assets Held for Sale and Discontinued Operations governs the accounting and measurement of assets held for sale and specifies the presentation and disclosure of discontinued operations.
- IPSAS 45 Property, Plant and Equipment replaces the previous standard on the same topic, IPSAS 17. The new standard includes an additional measurement model ("current operational value"). The capitalisation and disclosure of cultural items that meet the definition of property, plant and equipment are also included in the standard.
- IPSAS 46 Measurement introduces principles for initial and subsequent measurements that apply to all IPSAS. On the one hand, it includes for the first time general guidelines on the fair value. It also introduces an additional new measurement model ("current operational value"), which provides an alternative measurement basis for certain public sector assets.
- IPSAS 47 Revenue replaces the previous standards IPSAS 9 Revenue from Exchange Transactions, IPSAS 11 Construction Contracts and IPSAS 23 Revenue from Non-Exchange Transactions. Under the new standard, it must be determined for accounting purposes whether the revenue originates from a binding agreement or whether there is no binding agreement in place. A binding agreement is an agreement that confers both rights and obligations on the parties that can be enforced by legal or equivalent means. The difference affects both the time at which the revenue is recognised and the recognition of assets and liabilities that are associated with revenue transactions.
- IPSAS 48 Transfer Expenses contains provisions on the recognition and disclosure of transfer expenses and thus closes an existing gap in the IPSAS. As is the case with IPSAS 47 Revenue, the standard is based on the concept of binding agreements. The recognition of transfer expenses depends on whether the transaction includes an enforceable right to the fulfilment of the obligations (by the recipient of the transfer). Such an enforceable right is recognised by the transferor and subsequently recognised as an expense when the enforceable right expires.

Standards that entered into force during the reporting period

On 1 January 2023, IPSAS 42 Social Benefits and part of the Improvements to IPSAS, 2021 entered into force. The initial application of these standards had no material impact on the financial statements. IPSAS 41 Financial Instruments also entered into force on 1 January 2023. This standard was applied early by Eawag as of 1 January 2022.

3 Accounting policies

The accounting policies are derived from the basis of accounting. The financial statements present a true and fair view of Eawag's financial position, financial performance and cash flows.

The financial statements are based on historical cost. Exceptions to this rule are described in the following presentation of the accounting principles.

The annual financial statements of Eawag are included in the consolidated financial statements of the ETH Domain.

Currency translation

Transactions in a currency other than the functional currency are translated using the exchange rate at the transaction date.

At the reporting date, monetary items in foreign currencies are translated at the closing rate and non-monetary items using the exchange rate at the transaction date. The resulting currency translation differences are recognised as finance income or finance expense.

The principal currencies and their exchange rates are:

		Closing rate as of		Average rate	
Currency	**Unit**	**31.12.2023**	**31.12.2022**	**2023**	**2022**
EUR	1	0.9298	0.9874	0.9717	1.0048
USD	1	0.8418	0.9250	0.8988	0.9550
GBP	1	1.0716	1.1187	1.1171	1.1791
JPY	1,000	5.9650	7.0540	6.4100	7.2950
SGD	1	0.6378	0.6898	0.6692	0.6923

Revenue recognition

Each inflow of funds is assessed to determine whether it is an exchange transaction (IPSAS 9) or a non-exchange transaction (IPSAS 23). In the case of an exchange transaction (IPSAS 9), the revenue is generally recognised when the goods are delivered or the services rendered. For project agreements, the performance obligation not yet satisfied is allocated to liabilities. The revenue is recorded and reported by reference to the stage of completion of the project, based on the costs incurred in the reporting period.

In the case of a non-exchange transaction (IPSAS 23), a distinction is made between whether or not there is a performance or repayment obligation. If there is such an obligation, the corresponding amount is recognised as a liability at inception of the agreement and released to the surplus or deficit according to the stage of completion, based on the resources consumed.

If there is neither an exchange nor a performance or repayment obligation in accordance with IPSAS 23, as is usually the case with donations, revenue is recognised in the surplus or deficit in full in the reporting period and the net assets/equity of Eawag increased accordingly.

Revenue is structured as follows:

- Total federal contribution
  The contributions granted by the Federal Government to the ETH Domain include the federal financial contribution (in the narrower sense) and the federal contribution to accommodation. Both types of revenue are classified as non-exchange transactions (IPSAS 23).

  Federal contributions are recognised in the year in which they are paid. Unused funds from federal financial contributions result in reserves under equity.

  The contribution to accommodation corresponds to the accommodation expense, which is equal to an imputed rent for the buildings owned by the Federal Government and used by Eawag. Accommodation expense is reported within other operating expenses.

- Continuing education
  Cost contributions to continuing education and further training as well as administration fees are classified as an exchange transaction (IPSAS 9). As a rule, revenue is accounted for on an accrual basis when the goods are delivered or the services rendered.

- Research contributions, mandates and scientific services
  Project-related contributions are given to Eawag by various donors with the aim of promoting teaching and research. Project financing primarily relates to multi-year projects. Depending on the nature of the contributions, they are classified as either an exchange or a non-exchange transaction.

- Donations and bequests
  Revenue from donations and bequests is classified as a non-exchange transaction (IPSAS 23). Such grants, where there is no conditional repayment risk, are usually recognised as revenue in full when the agreement is signed.

  Donations also include in-kind contributions, which are distinguished as follows:

  - Goods in-kind are recognised as assets in accordance with the applicable provisions when the agreement is signed.

  - Donated rights to use assets in the sense of an operating lease are recognised as revenue and expense. Donated rights to use assets in the sense of a finance lease are measured at their fair value at inception of the agreement, if this is known, and depreciated over their useful life. If a performance obligation exists, it is stated as a liability and revenue recognised annually according to the services received. If there is no performance obligation, revenue is recognised upon recognition of the asset as a whole.

  - Services in-kind received are not recognised, but are instead disclosed and commented upon in the notes if they are material.

  Due to the high number and the difficulty in elicitation, separability and measurement of rights of use and services in-kind within research agreements, these are not recognised. There is only a general description of the research activity in the notes section.

- Other revenue
  Among other items, other revenue includes other service revenue and real estate revenue. This revenue is classified as an exchange transaction (IPSAS 9). As a rule, revenue is accounted for on an accrual basis when the goods are delivered or the services rendered.

Cash and cash equivalents
Cash and cash equivalents comprise cash on hand, demand and term deposits with financial institutions and funds invested with the Federal Government if their total term or the remaining term to maturity on the date of acquisition is fewer than 90 days. Cash and cash equivalents are measured at their nominal amount.

Receivables
Receivables from exchange (from goods and services) and non-exchange transactions are presented separately in the balance sheet.

In the case of receivables from non-exchange transactions (IPSAS 23), such as for SNSF and EU projects and from other donors, it is probable that there will be an inflow of funds in relation to the total contractual project volume. Therefore, the total amount of the project is usually recognised as a receivable at the inception of the agreement if the fair value can be measured reliably. If the recognition criteria cannot be met, information is disclosed under contingent assets.

Non-current receivables of over CHF 10 million are stated at amortised cost using the effective interest method. Current receivables are stated at cost.

Property, plant and equipment
Items of property, plant and equipment are stated at cost less accumulated depreciation. They are depreciated over their estimated useful life using the straight-line method. The estimated useful lives are as follows:

Asset category	Useful life Research institutes
Immovable assets	
Property	unrestricted
Leasehold improvements up to CHF 1 million	10 years
Leasehold improvements from CHF 1 million	according to components[1]
Buildings and structures	according to components[2]
Biotopes and geotopes	unrestricted
Movable assets	
Machinery, equipment, tools, devices	5–10 years
Passenger vehicles, delivery vehicles, trucks, aircraft, ships, etc.	4–7 years
Furnishings	5–10 years
IT and communication	3–7 years
Large-scale research plants and equipment	10–40 years[3]

1 In the case of items of property, plant and equipment with a purchase value of CHF 1 million or above, it is checked whether components (with a value that is significant in relation to the total purchase value) need to be recognised and depreciated separately because they have a different useful life (components approach).
2 Useful life depends on the type of building, its purpose and the fabric of the building (20–100 years). Assets under construction are not yet depreciated.
3 This practice is deviated from in exceptional cases.

Capitalised leasehold improvements and installations in leased premises are depreciated over the estimated useful life or over the term of the lease if shorter.

In the event of additions to property, plant and equipment with a purchase value of CHF 1 million or above, it is checked whether components with a purchase value that is significant in relation to the total purchase value need to be recognised and depreciated separately because they have a different useful life (components approach).

Investments that have future economic benefits or are of public interest over several years and can be measured reliably are recognised as assets and depreciated over the estimated useful life.

The residual value of property, plant and equipment that is scrapped or sold is derecognised at the time of the asset's physical disposal. The gains or losses resulting from the derecognition of an item of property, plant and equipment are recognised as operating revenue or operating expenses.

Movable cultural items and works of art are not recognised as assets. An inventory of these items is kept.

Intangible assets
Intangible assets are recognised at cost. Standard software is amortised over three years using the straight-line method. Other intangible assets with an amortisation period required to be determined individually are amortised over their estimated useful life using the straight-line method.

Impairments of non-financial assets (property, plant and equipment and intangible assets)
Property, plant and equipment and intangible assets are reviewed annually for indications of impairment. If specific indications are identified, an impairment test is performed. If the carrying amount permanently exceeds the value in use or net realisable value, then the difference is recognised as an impairment in the surplus or deficit.

Financial assets
Eawag recognises loss allowances for expected credit losses (ECL) for financial assets which are valued at amortised cost. Eawag measures the loss allowances on receivables in the amount of the expected credit losses over the term (simplified approach). The amount of the loss allowance is measured in the amount of the 12-month credit loss to be expected on the following financial instruments (three-level approach):
- Loans which have a low default risk at the balance sheet date, and
- Bank deposits for which the default risk has not significantly increased since initial recognition.

Loss allowances for receivables from non-exchange transactions and for receivables from exchange transactions are always measured in the amount of the credit loss to be expected over the term (simplified approach) using a loss allowance matrix. The probability of default is based on experience, supplemented where possible with currently observed data and an assumption of future development. No loss allowance is recognised for the share for which a performance obligation according to IPSAS 23 is still recorded in the balance sheet.

In determining whether the default risk of a financial asset has significantly increased since the initial recognition, and in estimating expected credit losses, Eawag takes into account appropriate and reliable information, which is relevant and available without undue expenditure of time and money. This comprises both quantitative as well as qualitative information and analyses which are based on previous experiences of Eawag and well-founded assessments, including forward-looking information, where possible. Among other things, Eawag assumes that the default risk of a financial asset has significantly increased if it is overdue by more than 30 days.

Presentation of the loss allowance for expected credit losses in the balance sheet
Impairments on financial assets which are measured at amortised cost are deducted from the gross book value of the assets.

Acceptance of loss allowance
The gross book value of a financial asset is derecognised if Eawag, after reasonable assessment, does not assume that the financial asset is recoverable either completely or in part. For this purpose, Eawag carries out an individual estimate of the time and amount of the acceptance of the loss allowance. Here, Eawag fundamentally expects collection of the financial asset to be possible. If Eawag does not expect any significant redemption, the amount is used and the asset derecognised.

Financial assets and loans
At initial recognition, a financial asset is classified and measured as follows at Eawag:
- At amortised cost (AC):
  - These are debt instruments that are held in order to collect contractual cash flows which are exclusively principal and interest payments. These include primarily loans and fixed deposits.
  - Originated loans and fixed deposits are stated either at amortised cost (nominal value of less than CHF 10 million, and current loans and fixed deposits of over CHF 10 million) or at amortised cost using the effective interest method (non-current loans and fixed deposits of over CHF 10 million).
  - The amortised costs are reduced by impairment expenditure. Interest earnings, foreign exchange gains and losses as well as impairments are recognised in surplus or deficit. A gain or loss from derecognition are recognised in surplus or deficit.

- At fair value through surplus or deficit (FV statement of financial performance):
  - The financial assets held for trade purposes as well as derivative financial instruments are recognised at fair value through surplus or deficit. Fluctuations in value and dividends are recognised in surplus or deficit.

Investment property
Eawag does not own any investment property.

Current liabilities
Current liabilities are usually recognised on receipt of the invoice. This item also includes current accounts with third parties (including social insurance institutions). Current liabilities are measured at their nominal amount.

Provisions
Provisions are recognised when a past event gives rise to a present obligation, an outflow of resources is likely and the amount can be estimated reliably.

Defined benefit plans

Net defined benefit liabilities presented in the balance sheet are measured in accordance with the methods of IPSAS 39. They correspond to the present value of the defined benefit obligations (DBO), less the fair value of the plan assets. A description of the pension scheme and the insured persons of the ETH Domain can be found in Note 21 Defined benefit plans.

The defined benefit obligations and the service costs are determined annually by external experts using the projected unit credit actuarial valuation method. The calculation is made based on information about the beneficiaries (salary, vested benefits, etc.) and using both demographic (retirement rates, disability rates, mortality rates, etc.) and financial (salary or pension trends, returns, etc.) assumptions.
The amounts calculated are discounted to the valuation date by applying a discount rate. Changes in estimates of economic conditions can significantly affect defined benefit obligations.

The defined benefit obligations were measured based on the current membership base of the ETH Domain's pension scheme as of 31 October 2023, using actuarial assumptions as of 31 December 2023 (e.g. BVG 2020 actuarial tables) and the plan provisions of the ETH Domain pension scheme. The results were then adjusted using estimated pro rata cash flows as of 31 December 2023. The fair value of the plan assets is used including estimated performance as of 31 December 2023.

The inclusion of risk sharing in the measurement of pension liability occurs in a two-level judgement and requires the definition of additional assumptions. As with the other financial and demographic assumptions, these assumptions are from the employer's perspective. In the first step, it is checked whether a structural funding gap based on BVG currently exists or may arise. If this is the case, any performance measures (conversion rate reduction and accompanying measures such as the contribution of retirement assets, adjustment of amounts) are taken into consideration in the calculations. Any funding gap based on IPSAS that remains is split up mathematically in a second step between the employer and employee. The assumption is that the employer's share of the financial shortfall is limited to 64 per cent as per the current scale for regulatory savings contributions. The employee share is distributed according to the past and future expected service years at a flat rate in an acquired and outstanding share. The part that has already been acquired reduces the cash value of the employer's pension liability, while the outstanding part reduces the future service costs of the employer.

Effects from plan amendments have no longer been recognised on the statement of financial performance since the introduction of risk sharing, but rather are recognised directly in equity as part of the revaluation of the liability.

Any net pension plan asset from a defined benefit plan is recognised at the lower value of the excess cover (after deduction of the employee's contribution of 50 per cent) and the cash value of an economic benefit in the form of refunds or reductions of future contribution payments (asset ceiling).

Current service cost, past service cost resulting from plan amendments, gains and losses on settlement, administrative costs and interest on the net defined benefit liabilities are presented in the statement of financial performance within personnel expenses.

Plan amendments and settlements are recognised immediately in the surplus or deficit in the period in which they occur, provided they result in vested benefits. Actuarial and investment gains and losses on defined benefit plans are recognised directly in equity in the reporting period in which they occur.

Dedicated third-party funds

Liabilities from projects that arise from non-exchange transactions (IPSAS 23) are presented in the balance sheet as dedicated third-party funds. They are allocated solely to non-current liabilities because the projects usually last for several years and the current portion of the liability cannot be determined in most cases due to the nature of the projects.

They are measured based on the outstanding performance obligations as at the reporting date, which are calculated from the total contractual project volume less services performed up to the reporting date.

Equity

Net assets / equity is the residual interest in the assets of an entity after deducting all its liabilities. Equity is structured as follows:

- Valuation reserves (recognition in equity)
  - This position contains revaluation reserves for net defined benefit liabilities. Actuarial and investment gains and losses on defined benefit obligations or plan assets are recognised in equity.

- Donations, grants and co-financing
  This item includes unused third-party funds from donations and bequests as well as from other grants that have conditions attached, but are not required to be classified as liabilities. These funds are exclusively from non-exchange transactions (IPSAS 23). The result generated from the management of third-party funds and the reserves for fluctuations in the value of the securities portfolio (risk capital) are also allocated to this category.

  Eawag has neither reserves from donations or grants nor co-financing; only the results generated from the management of third-party funds are reported under this item.

- Reserves with internal dedication
  - Teaching and research reserves
    This item indicates that various internal and external commitments exist and appropriate reserves have to be recognised to cover them.
  - Infrastructure and administration reserves
    These include reserves for delayed construction projects and for dedicated savings for specific infrastructure projects and administration projects.

- Reserves without dedication
  Unused funds for which there are no contractual or internal provisions in accordance with IPSAS are presented as reserves without dedication. They are not restricted in terms of time or purpose.

  Reserves must have been generated. They are recognised and released within equity.

- Accumulated surplus / deficit
  The accumulated surplus / deficit shows the cumulative results as at the reporting date. It comprises the surplus / deficit carried forward, the surplus / deficit for the period and increases or decreases (transfers in the current period) in the result generated from the management of third-party funds as well as the allocations to and releases from the reserves (appropriation of surplus or deficit).

  The surplus / deficit carried forward changes annually as part of the appropriation of the surplus / deficit. The surplus / deficit for the period includes the portion of the result not yet distributed.

Contingent liabilities and contingent assets

A contingent liability is either a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of an uncertain future event not wholly within the control of the entity, or a present obligation that arises from past events but is not recognised because of its low probability of occurrence (less than 50 %) or because the obligation cannot be measured reliably, as a result of which the criteria for recognising a provision are not met.

A contingent asset is a possible asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of an uncertain future event not wholly within the control of the entity.

Financial commitments
Financial commitments are presented in the notes if they are based on events prior to the reporting date, they will definitely lead to obligations to third parties after the reporting date and their amount can be measured reliably.

Cash flow statement
The cash flow statement shows the cash flows from operating activities, investing activities and financing activities. It is presented using the indirect method, i.e. cash flows from operating activities are based on the surplus or deficit for the period, adjusted for the effects of transactions of a non-cash nature. "Total cash flow" represents the change in the balance sheet item "Cash and cash equivalents".

4 Estimation uncertainty and management judgements

Estimation uncertainty in the application of accounting policies
Preparation of the annual financial statements is dependent on assumptions and estimates in connection with accounting principles, where management has a certain margin of discretion. Although these estimates are based on management's best knowledge, the actual results may differ.

This applies to the following items in particular:

- Useful life and impairment of plant, property and equipment
  The useful life of plant, property and equipment is defined and periodically reviewed bearing in mind the current technical environment and past experience. A change in the estimate may affect the future amount of the depreciation charges and the carrying amount.

  Estimates that could lead to a reduction in the carrying amount (impairment) are likewise made in the course of the regular impairment test.

- Provisions as well as contingent assets and liabilities
  Provisions as well as contingent assets and liabilities involve a higher degree of estimation with respect to the probability and scale of cash inflows and outflows. As a result, they may therefore lead to a higher or lower cash outflow depending on the actual outcome of a past event.

- Defined benefit plans
  The net defined benefit liabilities and assets are calculated based on long-term actuarial assumptions for the defined benefit obligations and for the expected returns on plan assets. These assumptions may differ from actual future developments. The determination of the discount rate and future salary and pension trends as well as demographic development (future life expectancy, disability and likelihood of the employee leaving) and assumptions about risk sharing between the employer and employee are an important component of the actuarial valuation.

- Discount rates
  Uniform discount rates have been defined for use in discounting non-current receivables, liabilities and provisions. They are based on a risk-free rate and a premium for credit risk. However, because of the current interest rate situation, these discount rates are subject to some uncertainties.

- Loss allowance for expected credit losses
  In the measurement of the loss allowance due to expected credit losses for receivables from non-exchange transactions and for receivables from exchange transactions, the key assumptions for determining probabilities of default are subject to estimation uncertainties.

Management judgements in the application of accounting policies
Neither in the reporting year nor in the previous year were there any management judgements in this regard having a material effect on the annual financial statements.

5 Total federal contribution

Federal financial contribution

CHF 1,000	**2023**	**2022**
Basic federal financial contribution	58,159	56,423
ETH Board incentive and seed capital funding	107	186
Strategic programs according to ERI	826	72
Various	2,750	–
Credit reallocation from federal investment credit	2,050	2,240
Credit reallocation within ETH Domain	97	97
Federal financial contribution	**63,989**	**59,018**

The federal financial contribution was used to achieve the goals specified in the performance mandate 2021–2024.

The various item primarily includes the one-off equipment loan for the new director’s appointment.

Federal contribution to accommodation

CHF 1,000	**2023**	**2022**
Federal contribution to accommodation	**3,279**	**3,399**

The federal contribution to accommodation is used to cover rental expenses for federally owned properties. The total rental amount in the ETH Domain is allocated by the ETH Board Real Estate staff to the individual institutions according to a formula.

6 Continuing education

CHF 1,000	**2023**	**2022**
Continuing education	**75**	**133**

Continuing education mainly comprises income from PEAK and other courses as well as the Eawag Info Day.

7 Research contributions, mandates and scientific services

CHF 1,000	**2023**	**of which revenues (IPSAS 23)**	**of which revenues (IPSAS 9)**	**2022**	**of which revenues (IPSAS 23)**	**of which revenues (IPSAS 9)**
Swiss National Science Foundation (SNSF)	6,369	6,369	–	5,069	5,069	–
Swiss Innovation Agency (Innosuisse)	211	211	–	243	243	–
Special federal funding of applied research	5,085	477	4,608	5,775	772	5,003
EU Framework Programmes for Research and Innovation (EU-FPs)	832	832	–	1,349	1,349	–
Industry-oriented research (private sector)	448	–	448	876	–	876
Other project-oriented third-party funding (incl. cantons, municipalities, international organisations)	2,065	900	1,165	1,488	540	948
Total research contributions, mandates and scientific services	**15,010**	**8,789**	**6,221**	**14,800**	**7,972**	**6,828**

Teaching and research projects are generally multi-year activities (approx. 3–5 years).

In the reporting year, the EU Framework Programmes for Research and Innovation include direct federal (SERI) funding for Horizon Europe bridging measures of CHF 320,000 (previous year: CHF 115,000).

8 Other revenue

CHF 1,000	**2023**	**2022**
Licences and patents	11	7
Sales	5	6
Real estate revenue	289	319
Profit from disposals (property, plant and equipment)	–	–
Other miscellaneous revenue	161	183
Total other revenue	**466**	**515**

Real estate revenue includes, in particular, income from the rental of guest house apartments. The other miscellaneous revenue is attributable to various relatively small amounts.

9 Personnel expenses

CHF 1,000	**2023**	**2022**
Professors	–	–
Scientific personnel	29,825	29,150
Technical and administrative personnel, apprentices, trainees	18,368	17,708
IC, Suva and other refunds	–306	–365
Total salaries and wages	**47,887**	**46,493**
Social insurances OASI/DI/IC/MB	2,875	2,796
Net pension costs	4,723	5,745
Accident and sickness insurance Suva (BU/NBU/KTG)	124	158
Employer's contribution to Family Compensation Fund (FAK/FamZG)	538	527
Total social insurance schemes and pension expenses	**8,261**	**9,225**
Other employer contributions	–248	–235
Temporary personnel	7	73
Change in provisions for untaken leave and overtime	359	–114
Change in provisions for contributions to long-service awards	85	18
Other personnel expenses	761	826
Total personnel expenses	**57,111**	**56,288**

The increase in staff salaries is in line with expectations and continues to result to a significant extent from appointments for research projects.

10 Other operating expenses

CHF 1,000	**2023**	**2022**
Expenses for goods and materials	2,916	2,768
Premises costs	5,918	5,791
Other operating costs	11,036	9,705
Total other operating expenses	**19,870**	**18,264**

The increase in other operating expenses was mainly due to higher IT expenses (+ CHF 1 million).

11 Transfer expenses

CHF 1,000	**2023**	**2022**
Scholarships and grants to students and doctoral students	–	–
Contributions to research projects	138	153
Other transfer expenses	–	–
Total transfer expenses	**138**	**153**

Eawag provides financial support for various research projects run by other public institutions (universities, higher education establishments, etc.).

12 Net finance income / expense

CHF 1,000	2023	2022
Finance income		
Interest income	304	139
Foreign currency gains	23	38
Other finance income	–	–
Total finance income	**326**	**177**
Finance expense		
Interest expense	–	–
Foreign currency losses	39	34
Other finance expense	4	11
Total finance expense	**43**	**45**
Total net finance income/expense	**283**	**132**

Income on interest consists exclusively of income from investments with the federal government.

13 Cash and cash equivalents

CHF 1,000	31.12.2023	31.12.2022
Cash	38	42
Swiss Post	2,062	4,339
Bank	251	200
Short-term deposits (<90 days)	53,000	46,000
Total cash and cash equivalents	**55,351**	**50,580**

Short-term deposits are wholly invested in federal financial instruments. These do not earn interest.

Cash and cash equivalents are not subject to any disposal restrictions.

14 Receivables

CHF 1,000	**31.12.2023**	**31.12.2022**
Receivables from non-exchange transactions		
Receivables from project contracts and donations	25,432	17,646
Other receivables	361	360
Loss allowance	–1	–1
Total receivables from non-exchange transactions	**25,792**	**18,005**
of which current	12,164	9,163
of which non-current	13,628	8,842
Receivables from exchange transactions		
Trade accounts receivable	2,688	943
Other receivables	20	30
Loss allowance	–5	–5
Total receivables from exchange transactions	**2,703**	**968**
of which current	2,703	968
of which non-current	–	–

In both the reporting and the previous year, no losses on receivables were recorded.

Receivables outstanding for more than 30 days amount to CHF 218,000.

15 Prepaid expenses and accrued income

CHF 1,000	**31.12.2023**	**31.12.2022**
Interest	–	–
Prepaid expenses	1,428	2,616
Other prepaid expenses and accrued income	187	182
Total prepaid expenses and accrued income	**1,615**	**2,798**

Prepaid expenses essentially comprise the fees payable in advance for the library databases based on contracts. A larger volume is still being negotiated, which has led to a decrease in advance payments and thus in deferred income.

Other prepaid expenses and accrued income are derived from current IPSAS 9 (exchange transaction) projects.

16 Property, plant and equipment and intangible assets

CHF 1,000	Large-scale research plants and equipment, machinery, furnishings, vehicles	Information and communication	Advance payments, movable assets under construction	Total movable assets	Leasehold improvements	Assets under construction	Total immovable assets	Total property, plant and equipment	Total intangible assets
Purchase value									
Value as of 01.01.2023	**35,241**	**761**	**50**	**36,052**	**25,953**	**881**	**26,834**	**62,885**	**215**
Additions	478	16	203	697	–	2,020	2,020	2,717	–
Reclassifications	50	–	–50	–	–	–	–	–	–
Disposals	–515	–98	–	–613	–	–	–	–613	–
Value as of 31.12.2023	**35,255**	**679**	**203**	**36,136**	**25,953**	**2,900**	**28,853**	**64,990**	**215**
Accumulated depreciation									
Value as of 01.01.2023	**26,154**	**606**	**–**	**26,761**	**16,162**	**–**	**16,162**	**42,923**	**117**
Depreciation	1,858	74	–	1,932	927	–	927	2,858	27
Disposals value adjustments	–515	–98	–	–613	–	–	–	–613	–
Value as of 31.12.2023	**27,497**	**582**	**–**	**28,080**	**17,089**	**–**	**17,089**	**45,168**	**144**
Balance sheet value as of 31.12.2023	**7,757**	**97**	**203**	**8,057**	**8,864**	**2,900**	**11,765**	**19,822**	**71**
thereof leased assets				–	–		–	–	–

Eawag does not have any leased property, plant and equipment or leased intangible assets. There are no disposal restrictions or pledged tangible or intangible assets.

The leasehold improvements are located in or on federally owned buildings and property.

The non-mobile installations under construction relate to the ongoing renovation of the laboratory building.

CHF 1,000	Large-scale research plants and equipment, machinery, furnishings, vehicles	Information and communication	Advance payments, movable assets under construction	Total movable assets	Leasehold improvements	Assets under construction	Total immovable assets	Total property, plant and equipment	Total intangible assets
Purchase value									
Value as of 01.01.2022	**34,436**	**733**	**242**	**35,411**	**25,695**	**–**	**25,695**	**61,106**	**109**
Additions	1,242	82	50	1,375	258	881	1,139	2,513	106
Reclassifications	242	–	–242	–	–	–	–	–	–
Disposals	–679	–55	–	–734	–	–	–	–734	–
Value as of 31.12.2022	**35,241**	**761**	**50**	**36,052**	**25,953**	**881**	**26,834**	**62,885**	**215**
Accumulated depreciation									
Value as of 01.01.2022	**24,848**	**597**	**–**	**25,445**	**14,349**	**–**	**14,349**	**39,795**	**109**
Depreciation	1,976	64	–	2,040	1,813	–	1,813	3,853	9
Disposals value adjustments	–669	–55	–	–724	–	–	–	–724	–
Value as of 31.12.2022	**26,154**	**606**	**–**	**26,761**	**16,162**	**–**	**16,162**	**42,923**	**117**
Balance sheet value as of 31.12.2022	**9,087**	**154**	**50**	**9,291**	**9,791**	**881**	**10,672**	**19,963**	**97**
thereof leased assets				–	–		–	–	–

17 Financial assets and loans

CHF 1,000	31.12.2023	31.12.2022
Current financial assets and loans		
Other financial assets	28,647	28,343
Loans	–	–
Total current financial assets and loans	**28,647**	**28,343**

Current financial assets consist exclusively of financial assets placed in accordance with the agreement between the Federal Finance Administration and the ETH Board concerning Treasury relations between the Federal Finance Administration and the ETH Board (19 August 2021). The assets in question are third-party funds already received and temporarily deposited with the Federal Treasury before being used in teaching and research.

The increase corresponds to the credited interest income.

18 Current liabilities

CHF 1,000	**31.12.2023**	**31.12.2022**
Trade payables	608	813
Liabilities to social insurance institutions	1,189	929
Other current liabilities	1,074	587
Total current liabilities	**2,871**	**2,330**

Other current liabilities mainly include withholding taxes not yet invoiced by the cantons.

19 Accrued expenses and deferred income

CHF 1,000	**31.12.2023**	**31.12.2022**
Interest	–	–
Deferred income	1,614	1,413
Other accrued expenses and deferred income	777	694
Total accrued expenses and deferred income	**2,391**	**2,107**

Deferred income comprises income from IPSAS 9 (exchange transaction) projects which is only to be recognised as revenue in the new accounting period.

20 Provisions

CHF 1,000	**31.12.2023**	**31.12.2022**
Provisions for untaken leave and overtime	3,059	2,699
Other long-term employee benefits (IPSAS 39)	1,925	1,840
Other provisions	–	–
Total provisions	**4,984**	**4,539**

Changes in 2023

CHF 1,000	Provisions for untaken leave and overtime	Other long-term employee benefits (IPSAS 39)	Other provisions	Total provisions
Value as of 01.01.2023	**2,699**	**1,840**	**–**	**4,539**
Additions to provisions	359	419	–	778
Reversal	–	–	–	–
Use of provisions	–	–334	–	–334
Value as of 31.12.2023	**3,059**	**1,925**	**–**	**4,984**
of which current	3,059	–	–	3,059
of which non-current	–	1,925	–	1,925

Changes in 2022

CHF 1,000	Provisions for untaken leave and overtime	Other long-term employee benefits (IPSAS 39)	Other provisions	Total provisions
Value as of 01.01.2022	**2,813**	**1,822**	**41**	**4,676**
Additions to provisions	–	272	–	272
Reversal	–	–	–	–
Use of provisions	–114	–254	–41	–409
Value as of 31.12.2022	**2,699**	**1,840**	**–**	**4,539**
of which current	2,699	–	–	2,699
of which non-current	–	1,840	–	1,840

Other long-term employee benefits (IPSAS 39) are future long-service awards. These are calculated pro rata, taking account of staff turnover.

21 Defined benefit plans

All employees and pensioners of Eawag are insured under the pension scheme maintained by the ETH Domain at the collective institution "Swiss Federal Pension Fund PUBLICA" (PUBLICA).

Legal framework and responsibilities
Legal requirements
Swiss pension plans must be run through a legally separate, trustee-administered pension institution. The law prescribes minimum benefits.

Organisation of the pension scheme
PUBLICA is an independent, state-run institution under public law.

The Board of Directors (Kassenkommission) is PUBLICA's most senior governing body. In addition to management, it is also responsible for the oversight and supervision of PUBLICA's Executive Board. The Board of Directors has 16 members, eight representing the insured members and eight representing the employers from among all the affiliated pension plans. This means that PUBLICA's most senior governing body is made up of an equal number of employee and employer representatives.

Each pension scheme has its own governing body made up of equal numbers of representatives. Among other things, it is involved in concluding the affiliation contract and decides on the appropriation of any surpluses.

Each governing body is made up of nine employer representatives and nine employee representatives from the entities.

Benefits from the pension plans
In accordance with IPSAS 39, the pension plans are classified as defined benefit plans.

The pension solution is defined in the terms of the ETH Domain pension scheme applicable to employees and professors, which form part of the affiliation contract with PUBLICA. There are pension plans for different groups of insured persons. The different pension plans provide benefits in excess of the minimum benefits required by law in the event of disability, death, old age and departure; i.e. they are what are known as "enveloping" plans (obligatory and extraordinary benefits).

The employer and employee savings contributions are set as a percentage of the insured salary. A risk premium is charged for death and disability insurance. The administrative costs are paid by the employer.

The old-age pension is calculated from the credit balance in the retirement fund as at the retirement date multiplied by the conversion rate specified in the terms. Employees have the option of drawing the retirement benefits as a lump sum. In addition, employees have the option of making additional savings contributions.

The risk benefits are determined depending on the projected savings capital, which attracts interest, and on the conversion rate.

Investment of assets
Investments are made by PUBLICA for all pension schemes (with the same investment profile) collectively.

As PUBLICA's most senior governing body, the Board of Directors bears overall responsibility for asset management. It is responsible for issuing and amending the investment policy and determines the investment strategy. The Investment Committee advises the Board of Directors on investment-related issues and oversees compliance with the investment policy and strategy.

Responsibility for implementing the investment strategy rests with PUBLICA's Asset Management. Asset Management also makes tactical decisions to deviate temporarily from the investment strategy weightings in order to generate added value compared to the existing strategy. Where individual asset classes are built up or reduced over a number of years, a pro rata strategy is calculated so as to enable transactions to be diversified over time.

Risks for the employer
The Parity Commission of the ETH Domain's pension scheme made up of equal numbers of representatives can change the funding system (contributions and future benefits) at any time. The Parity Commission may collect restructuring contributions from the employer if the scheme is underfunded within the meaning of pension law (Article 44 of the Occupational Pension Ordinance (BVV 2)) and if other measures are without success. If these are used to fund benefits in excess of the statutory minimum, the employer must indicate their agreement with this.

Risk sharing (sharing of risk between insured persons and the employer), which was introduced in 2020, remains unchanged (details can be found in Note 3 Accounting policies). Assumptions used for the valuation as at 31 December 2023 led to a funding gap under IPSAS, thus leading to the application of the expanded risk sharing approach.

The definitive funding ratio in accordance with the Occupational Pensions Act (BVG) was not yet available at the time the annual financial statements were authorised for issue. The provisional regulatory funding ratio for the ETH Domain's pension scheme at PUBLICA, in accordance with the Occupational Pension Ordinance (BVV 2), was 99.3% at the end of 2023 (2022: 97.2%, definitive). The provisional economic funding ratio for the ETH Domain's pension scheme at PUBLICA was 92.2% at the end of 2023 (2022: 96.5%, definitive). The external expert of the PUBLICA pension fund concluded in Spring 2023 that the ETH Domain pension scheme can overcome the deficit itself, i.e. with a better performance on the financial markets. According to its assessment, the ETH Domain's pension scheme does not exhibit any structural problems. Based on this opinion, the Board of Directors has recommended to the Parity Commission of the ETH Domain's pension scheme that it not take any restructuring measures for the time being. The Parity Commission of the ETH Domain's pension scheme has agreed with this assessment.

Special events

The benefits of the insurance plan were adjusted in the current reporting period: the final age of bridging pensions for women will be gradually increased to 65 and the regulatory conversion rates for women born in 1964 or later will be aligned with those for men as of 1 January 2025. The increase in the final age of women's bridging pensions constitutes a change in the plan. The adjustment of the conversion rates for women is seen as a change in the financial assumptions under the expanded risk-sharing approach.

Net defined benefit liabilities / assets

CHF 1,000	**31.12.2023**	**31.12.2022**
Present value of defined benefit obligations	197,200	181,614
Less fair value of plan assets	–186,122	–175,171
Recognised net defined benefit liabilities (+) / assets (–)	**11,078**	**6,443**

The overall increase in net defined benefit liabilities of CHF 4.6 million results from an increase in the present value of defined benefit obligations and relatively lower growth of the fair value of plan assets. The decrease in the discount rate (31 December 2023: 1.5 % / 31 December 2022: 2.2 %) and the experienced variance essentially in-creased the net defined benefit liabilities by CHF 12.1 million and CHF 4.1 million respectively. Compensating for this, assumptions regarding salary development and the projected interest for retirement assets led to an reduction in the net defined benefit liabilities of CHF 4.2 million. Plan assets increased by CHF 11.0 million due to the positive return on investment.

Net pension costs

CHF 1,000	**2023**	**2022**
Current service cost (employer)	4,324	5,600
Past service cost	184	–
Interest expense from defined benefit obligations	3,990	829
Interest income from plan assets	–3,861	–770
Administrative costs (excl. asset management costs)	86	86
Total net pension costs incl. interest expense recognised in statement of financial performance	**4,723**	**5,745**

Net pension costs are CHF 1.0 million lower than in the previous year. The decrease is mainly due to the lower current service cost (decrease of CHF 1.3 million), which is partially offset by higher past service costs. The decrease in current service cost is primarily due to the change in the discount rate. Under IPSAS 39, the calculation of the current service cost is based on the discount rate of the previous year, and the decrease in service cost for the 2023 period reflects the significant increase in the discount rate in 2022. Past service cost includes the effect of the mentioned gradual adjustment of the OASI bridging pension for women.

In the previous year, the employer's participation in the financing of the bridging pension was reduced, which led to negative costs. Employer's contributions of CHF 5.6 million and employees' contributions of CHF 3.3 million are expected for the coming financial year.

Revaluation recognised in equity

CHF 1,000	31.12.2023	31.12.2022
Actuarial gains (–) and losses (+)	11,957	–27,263
from change in financial assumptions	7,895	–24,454
from change in demographic assumptions	–	–
from experience adjustments	4,062	–2,809
Return on plan assets excl. interest income (gains [–] / losses [+])	–6,416	18,851
Revaluation amount recognised in equity	**5,541**	**–8,412**
Cumulative amount of revaluation recognised in equity (gain (–) / loss (+))	**–13,551**	**–19,092**

The revaluation loss recognised in equity for 2023 amounts to CHF 5.5 million (2022: profit of CHF 8.4 million). This results in positive valuation reserves of CHF 13.6 million as of 31 December 2023 (2021: CHF 19.1 million).

The actuarial losses from the change in financial assumptions mainly result from the reduction in the discount rate (CHF 12.1 million). The loss was mitigated by the lower interest rate on retirement assets and lower expected salary trend (CHF 4.2 million).

Furthermore, experience-based losses reduced the cumulative revaluation gains recognised in equity by CHF 4.1 million.

The return on plan assets recognised in equity is attributable to the gain on investments based on a return of 3.7 % compared to the net interest on plan assets of 2.2 %, which corresponds to the discount rate of the previous year.

Change in present value of defined benefit obligations

CHF 1,000	2023	2022
Present value of defined benefit obligations as of 01.01.	**181,614**	**206,370**
Current service cost (employer)	4,324	5,600
Interest expense from defined benefit obligations	3,990	829
Employee contributions	3,358	3,244
Benefits paid in (+) and paid out (–)	–8,227	–7,166
Past service cost	184	–
Actuarial gains (–) / losses (+)	11,957	–27,263
Present value of defined benefit obligations as of 31.12.	**197,200**	**181,614**

The weighted average term arising from defined benefit obligations is 12.6 years as of 31 December 2023 (2022: 12.0 years).

Change in fair value of plan assets

CHF 1,000	2023	2022
Fair value of plan assets as of 01.01.	**175,171**	**191,867**
Interest income from plan assets	3,861	770
Employer contributions	5,629	5,393
Employee contributions	3,358	3,244
Benefits paid in (+) and paid out (–)	–8,227	–7,166
Administrative costs (excl. asset management costs)	–86	–86
Return on plan assets excl. interest income (gains (+) / losses (–))	6,416	–18,851
Fair value of plan assets as of 31.12.	**186,122**	**175,171**

Transition of net defined benefit liabilities

CHF 1,000	2023	2022
Net defined benefit liabilities as of 01.01.	**6,443**	**14,503**
Net pension costs incl. interest expense recognised in statement of financial performance	4,723	5,745
Revaluation amount recognised in equity	5,541	–8,412
Employer contributions	–5,629	–5,393
Net defined benefit liabilities (+) / assets (–) as of 31.12.	**11,078**	**6,443**

Major categories of plan assets

Percentage	**Listed**	**Not listed**	**31.12.2023**	**Listed**	**Not listed**	**31.12.2022**
Liquidity	4	–	4	6	–	6
Bonds (in CHF) Confederation	7	–	7	6	–	6
Bonds (in CHF) ex. Confederation	8	–	8	8	–	8
Government bonds (in foreign currencies)	15	–	15	19	–	19
Corporate bonds (in foreign currencies)	7	–	7	8	–	8
Mortgages	3	–	3	3	–	3
Shares	30	–	30	26	–	26
Real estate	8	9	17	8	8	16
Commodities	3	–	3	2	–	2
Other	–	6	6	–	6	6
Total plan assets	**85**	**15**	**100**	**86**	**14**	**100**

PUBLICA bears the actuarial and investment risks itself. The investment strategy is defined in such a way that benefits under the policy can be provided at maturity.

There is no known pension plan real estate used by the employer.

Principal actuarial assumptions used as at the reporting date

Percentage	**2023**	**2022**
Discount rate as of 01.01.	2.20	0.40
Discount rate as of 31.12.	1.50	2.20
Expected salary development	1.70	2.40
Expected pension development	0.00	0.00
Interest on retirement savings	1.50	2.20
Share of employee contribution to funding gap	36.00	36.00
Life expectancy at age 65 – women (no. of years)	24.59	24.48
Life expectancy at age 65 – men (no. of years)	22.82	22.70

As was the case in the previous year, the discount rate is now based on the return from the fixed-interest high-yield corporate bonds (previous year: the spot interest rates for federal bonds published by the Swiss National Bank on a monthly basis) and the expected capital flows from the ETH Domain pension scheme to PUBLICA based on the previous year's data. The expected future salary development is based on economic reference values. The rate of pension increase is the rate of pension increase expected for the average remaining term based on the financial position of the pension plan. The share of employee contribution to any funding gap is based on the current graduation of the savings contributions under the policy. The generation tables in BVG 2020 are applied for assumptions on life expectancy.

Sensitivity analysis (change in present value of defined benefit obligations)

	31.12.2023		**31.12.2022**	
CHF 1,000	**Increase in assumption**	**Decrease in assumption**	**Increase in assumption**	**Decrease in assumption**
Discount rate (change +/– 0.25%)	–4,336	4,588	–5,191	4,866
Expected salary development (change +/– 0.25%)	476	–473	535	–539
Expected pension development (change +/– 0.25%)	3,509	n/a	3,678	n/a
Interest on retirement savings (change +/– 0.25%)	948	–931	1,217	–1,204
Share of employee contribution to funding gap (change +/– 10%)	–855	856	–	–
Life expectancy (change +/–1 year)	4,422	–4,515	4,481	–5,196

The change in defined benefit obligations upon adjustment of the actuarial assumptions is determined in the sensitivity analysis. Only one of the assumptions is adjusted at a time, while the other parameters remain unchanged.

The discount rate, the assumptions made on salary trends and on interest on retirement savings as well as the share of employee contribution to the funding gap have been increased or lowered by fixed percentage points. The sensitivity of the assumption relating to expected pension development has been tested for increases only, as it is not possible to reduce pension benefits. In the previous year, there was no funding gap in accordance with IPSAS, which is why the sensitivity to the change in employee contributions was not reported. The sensitivity to life expectancy has been calculated by lowering or increasing life expectancy by a flat-rate factor, as a result of which the life expectancy of most age categories has been increased or reduced by about one year.

22 Dedicated third-party funds

CHF 1,000	31.12.2023	31.12.2022	thereof transitional measures Confed-eration 31.12.2023	thereof transitional measures Confed-eration 31.12.2022
Swiss National Science Foundation (SNSF)	22,135	18,032	1,948	269
Swiss Innovation Agency (Innosuisse)	504	363	–	–
EU Framework Programmes for Research and Innovation (EU-FPs)	4,072	1,539	3,449	365
Special federal funding of applied research	4,100	1,297		
Industry-oriented research (private sector)	–	–		
Other project-oriented third-party funding	1,757	1,554		
Donations and bequests	–	–		
Total dedicated third-party funds	**32,568**	**22,785**	**5,397**	**634**

Eawag researchers were able to acquire new projects, particularly in the area of SNSF research grants.

23 Financial risk management and additional information about financial instruments

General

Financial risk management is embedded in the general risk management of Eawag, in respect of which annual reports are made to the ETH Board (see Annual Report, chapter Risk management at Eawag, p. 12).

Financial risk management primarily addresses:
- credit risk (default risk),
- liquidity risk, and
- market risk (interest rate, foreign currency and other price risk).

The focus of risk management remains on credit risk. There are guidelines governing the investment of financial resources in order to reduce credit and market risk. The counterparties to a large proportion of the receivables and claims arising from financial assets are of high credit standing and solvency. Risk concentrations only exist in respect of those counterparties, which is why credit risk is regarded as low.

Furthermore, there are receivables and financial assets in foreign currencies which are hedged according to prevailing circumstances in order to minimise the risk.

Compliance with and the effectiveness of the guidelines are ensured by the internal control system (ICS).

Credit and default risk

The default risk is the risk of financial losses, if one contractual party of a financial instrument does not fulfil its contractual obligations. The maximum exposure to credit risk corresponds to the carrying amounts in the balance sheet. The actual risk is very low due to the fact that the counterparties to a large proportion of the financial assets are the Federal Government and other public-sector institutions.

The table below shows the maximum exposure to credit default risk of the financial assets broken down into type of counterparty.

Maximum exposure to credit risk

CHF 1,000	Total	Federal Government	European Commission FP *	SNSF, Innosuisse, OASI social service, Suva	SNB and banks with government guarantee	PostFinance and other banks	Other counterparties (e.g. cantons, foundations)	Other counterparties (e.g. private companies)
31.12.2023								
Cash and cash equivalents	55,351	53,038	–	–	251	2,062	–	–
Receivables from non-exchange transactions	25,792	2,932	3,068	13,369	–	–	6,423	–
Receivables from exchange transactions	2,703	1,482	–	–	–	–	1,153	67
Financial assets and loans	28,647	28,647	–	–	–	–	–	–
Prepaid expenses and accrued income	187	–	–	–	–	–	–	187
Total	**112,679**	**86,099**	**3,068**	**13,369**	**251**	**2,062**	**7,576**	**254**
31.12.2022								
Total previous period	**98,078**	**76,432**	**1,199**	**11,019**	**200**	**4,339**	**4,605**	**286**

* In the column European Commission, the receivables are disclosed against European universities which have emerged from EU research framework programmes, as well as the outstanding receivables from the temporary measures for Horizon 2020 and Horizon Europe (direct financing from the State Secretariat for Education, Research and Innovation SERI). The temporary measures for non-accessible programme parts from Horizon Europe are shown in the column of the respective sponsor (SNSF, Innosuisse).

Estimate of expected credit losses as of 31 December 2023

– Cash and cash equivalents
Eawag deposits cash and cash equivalents in the accounts set up for this purpose at PostFinance, cantonal banks, other banks and at the FFA. All counterparties have an investment grade rating from a recognised rating agency. Eawag therefore assumes that no significant increase in the credit risk has occurred since the initial recognition and determines the expected credit losses, due to the short-term nature of the financial instruments, on the basis of the 12-month credit loss.

– Receivables from non-exchange transactions and receivables from exchange transactions
Eawag applies a loss allowance matrix to determine the expected credit losses on receivables from non-exchange transactions and receivables from exchange transactions. The changes in the reporting year are negligible and did not lead to any adjustment of the valuation allowance.

– Financial assets and loans
The short-term financial assets and loans as of 31 December 2023 are exclusively financial assets invested with the Federal Government, which are valued at cost. Eawag assesses the credit risk as low. No valuation allowance was booked.

Liquidity risk

The liquidity risk is the risk that Eawag might possibly not be able to meet its financial obligations according to contract by the delivery of means of payment or other financial assets. Eawag has processes and principles in place which guarantee that adequate liquidity is available to settle current and future obligations.
This includes maintaining an adequate reserve of liquidity and tradeable securities.

Contractual maturities of financial liabilities

CHF 1,000	Total carrying amount	Total contract value	Up to 1 year	1–5 years
31.12.2023				
Non-derivative financial liabilities				
Current liabilities	2,871	2,871	2,871	–
Leasing liabilities	–	–	–	–
Financial liabilities	–	–	–	–
Accrued expenses and deferred income	777	777	777	–
Derivative financial liabilities	**–**	**–**	**–**	**–**
Total	**3,648**	**3,648**	**3,648**	**–**
31.12.2022				
Total previous period	**3,024**	**3,024**	**3,024**	**–**

Financial liabilities arise, most notably, from current operating liabilities. Under normal circumstances, expenses and investments are financed with self-generated funds.

All financial liabilities are covered by liquidity and by short-term deposits with the Federal Government. Liquidity risk is low.

Market risk

The market risk is the risk that the market prices, such as exchange rate, interest rates or share prices, change and thus the revenues of Eawag or the value of the financial instruments held are influenced.

Interest rate and price risk

Interest rate risk is not hedged. A one percentage point increase or decrease in the interest rate would increase or reduce surplus or deficit by around CHF 310,000 (previous year: CHF 329,000).

The ETH Board issued the investment guidelines based on Art. 34c paragraph 2 of the ETH Act (SR 414.110), which came into effect on 1 August 2021. Eawag defined its own investment strategy on this basis. The risk capacity is determined using the value-at-risk approach. The investment strategy and the amount of the invested assets must be selected in such a way that sufficient risk capital is available or can be formed in order to cover the calculated value at risk.

Foreign currency risk

The majority of the receivables and liabilities in foreign currencies are in euros and US dollars; they can be hedged using derivatives according to prevailing circumstances. Net of hedges, a fluctuation in the exchange rate of these two currencies of +/–10 per cent would impact on the statement of financial performance as follows:

Sensitivity to foreign currency risk

	31.12.2023					31.12.2022				
CHF 1,000	**Total**	**CHF**	**EUR**	**USD**	**Other**	**Total**	**CHF**	**EUR**	**USD**	**Other**
Net currency balance	**84,889**	**84,547**	**175**	**170**	**–2**	**77,595**	**77,585**	**–20**	**83**	**–54**
Sensitivity affecting financial performance +/– 10%			18	17				2	8	
Closing rate			0.9298	0.8418				0.9874	0.9250	

Net surplus or deficit by valuation category

	2023		
CHF 1,000	**Amortised cost**	**Fair Value through surplus or deficit**	**Financial liabilities**
Interest income (+) / interest expense (–)	304	–	–
Currency translation differences, net	–16	–	–
Total net surplus or deficit by category	**287**	**–**	**–**
	2022		
Interest income (+) / interest expense (–)	139	–	–
Currency translation differences, net	5	–	–
Total net surplus or deficit by category previous year	**143**	**–**	**–**

Classes and categories of financial instruments

CHF 1,000	Amortised cost	Fair Value through surplus or deficit	Financial liabilities measured at amortised cost	Total carrying amount
		31.12.2023		
Cash and cash equivalents	55,351			55,351
Receivables from non-exchange transactions	25,792			25,792
Receivables from exchange transactions	2,703			2,703
Financial assets and loans	28,647	–		28,647
Prepaid expenses and accrued income	187			187
Financial liabilities*		–	3,648	3,648
		31.12.2022		
Financial assets**	98,078	–		98,078
Financial liabilities*		–	3,024	3,024

* Current liabilities, leasing liabilities, financial liabilities, accrued expenses and deferred income
** Cash and cash equivalents, receivables from non-exchange transactions, receivables from exchange transactions, financial assets and loans, prepaid expenses and accrued income

Eawag does not hold any held-to-maturity financial assets.

Estimation of fair value

Because of their short-term maturity, the carrying amount of cash and cash equivalents and the carrying amounts of current loans, fixed deposits, receivables and current liabilities are a reasonable approximation of fair value.

The fair value of non-current receivables from non-exchange transactions and non-current loans is calculated based on the payments falling due in the future, which are discounted at market interest rates.

Capital management

Managed capital is defined as equity excluding valuation reserves. Eawag seeks to create a solid equity base. This base enables the implementation of the performance mandate to be guaranteed. Legal regulations prohibit Eawag from raising funds in the capital market.

24 Contingent liabilities and contingent assets

Contingent liabilities

There are no contingent liabilities.

Contingent assets

There are no contingent assets.

25 Financial commitments

CHF 1,000	31.12.2023	31.12.2022
Financial commitments <= 1 year	1,716	1,070
Financial commitments from 1 to 5 years	992	1,106
Total financial commitments	**2,708**	**2,176**

The financial commitments relate to equipment, software or services that have been firmly ordered, but not yet supplied.

In addition, Empa and Eawag operate a communal guest house, with Empa acting as the primary tenant. This is recorded in Empa's accounts. Each year, any expenses not covered by guest house rental income are settled internally between Eawag and Empa.

26 Operating leases

There are no fixed-term lease agreements.

27 Remuneration of key management personnel

Remuneration of key management personnel

CHF 1,000	2023	2022
Directorate	**1,836**	**1,837**

Key positions

Full-time equivalent	2023	2022
Directorate	**5.33**	**5.30**

The Directorate of Eawag consists of seven people: the Director, the Deputy Director, the Head of Operations and four other members of the Directorate, two of whom hold a professorship at ETH Zurich or the University of Zurich and are also employed there.

In the reporting year, the Directorate was temporarily staffed with eight people to ensure an orderly handover. Two people have left the Directorate due to retirement and four people have been elected to the Directorate.

28 Events after the reporting date

Eawag's annual financial statements were approved by the Director and the Deputy Director on 26 February 2024. No significant events have occurred to date which would necessitate a disclosure in or an adjustment to Eawag's annual financial statements as at 31 December 2023.

The annual financial statements are published in German, English and French. The German version of the annual financial statements is binding.

EIDGENÖSSISCHE FINANZKONTROLLE
CONTRÔLE FÉDÉRAL DES FINANCES
CONTROLLO FEDERALE DELLE FINANZE
SWISS FEDERAL AUDIT OFFICE

Reg. Nr. 937.23405.003

Report of the statutory auditor

to the Director of the Swiss Federal Institute of Aquatic Science and Technology, Dübendorf

Report on the audit of the financial statements

Opinion

We have audited the financial statements of the of the Swiss Federal Institute of Aquatic Science and Technology (Eawag), which comprise the statement of financial performance 2023, the balance sheet as of 31 December 2023, the statement of changes in equity and the cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion the financial statements (pages 15 to 47) present fairly, in all material respects, the financial position of the Eawag as of 31 December 2023, and its financial performance and its cash flows for the year then ended in accordance with the International Public Sector Accounting Standards (IPSAS) and legal requirements and the Accounting Manual for the ETH Domain.

Basis for Opinion

We conducted our audit in accordance with Swiss Law, International Standards on Auditing (ISAs), Swiss Standards on Auditing (SA-CH) and article 35a^{ter} of the Federal Act on the Federal Institutes of Technology (SR 414.110). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent based on the Federal Audit Office Act (SR 614.0) and the requirements of the audit profession and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

The Management Board of the Eawag is responsible for the other information in the annual report. The other information comprises all information included in the annual report, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information in the annual report and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information in the annual report and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. In this context, please refer to the section “Report on other legal and regulatory requirements” at the end of this report.

Responsibilities of the Management Board of the Eawag for the financial statements

The Management Board of the Eawag is responsible for the preparation and fair presentation of the financial statements in accordance with the International Public Sector Accounting Standards (IPSAS) and the legal requirements (Ordinance on the ETH Domain, SR 414.110.3; Ordinance on the Finance and Accounting of the ETH Domain, SR 414.123; Accounting Manual for the ETH Domain), and for such internal control as the Management Board determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Management Board of the Eawag is responsible for assessing the Eawag’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern.

Auditor’s responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor’s report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISAs and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Swiss law, ISA’s and SA-CH we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Eawag’s internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.

- Conclude on the appropriateness of the Management Board of the Eawag's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Eawag's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the notes to the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Eawag to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Management Board of the Eawag and the Audit Committee of the ETH Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on other legal and regulatory requirements

In accordance with PS-CH 890, we confirm that an internal control system exists, which has been designed for the preparation of the financial statements according to the instructions of the ETH Board.

In accordance with Art. 21 par. 2 of the Ordinance on the Finance and Accounting of the ETH Domain, we confirm that no contradictions exist between the personnel reporting in the annual report (management report) and the financial statements. Likewise, we confirm that no contradictions exist between the financial figures in the annual report (management report) and the financial statements.

Furthermore, in accordance with Art. 21 par. 2 of the Ordinance on the Finance and Accounting of the ETH Domain, we confirm that risk management has been appropriately conducted according to the instructions of the ETH Board.

We recommend that the financial statements submitted to you be approved.

Berne, 26 February 2024 SWISS FEDERAL AUDIT OFFICE

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