



NWO-I

Board Report and Financial Statements 2020

This is an English translation of an official Dutch financial statement. This financial statement is an English translation of the financial statement prepared on June 17th 2021. In case of any discrepancies or possible differences in interpretation between the English translation and the financial statement prepared on June 17th 2021, the latter prevail. The original and official Dutch financial statements are available [here](#).

Foundation for Dutch Scientific Research Institutes (NWO-I)



Colophon

Cover photo

NWO institute NIOZ's three research ships stuck in port during the first lockdown. All fieldwork was postponed due to COVID-19. Much to the frustration of the researchers. All the logistical stops are being pulled out in an attempt to keep the research work in the field and laboratories going as much as possible. After all, nature takes its course and there must be as little interruption of time series as possible. *Credits: NIOZ/Justin Sinner*

Contact details of NWO-I

Correspondence address:	PO Box 3021, 3502 GA Utrecht
Visiting address:	Winthontlaan 2, 3526 KV Utrecht
Telephone:	(030) 600 12 11
Website:	www.nwo-i.nl
Email:	info-NWOI@nwo.nl
VAT number:	NL002882243B01
Chamber of Commerce number:	41150068
For contact:	info-NWOI@nwo.nl

Facts and figures

The Foundation for Dutch Scientific Research Institutes (**NWO-I**) is a research organization under the Dutch Research Council (NWO). This foundation has its registered office in Utrecht. NWO-I consists of the following nine institutes:

- AMOLF | Physics of functional complex matter
- ARCNL | Advanced Research Center for Nanolithography
- ASTRON | Netherlands Institute for Radio Astronomy
- CWI | Centrum Wiskunde & Informatica
- DIFFER | Dutch Institute for Fundamental Energy Research
- Nikhef | National Institute for subatomic physics
- NIOZ | Royal Netherlands Institute for Sea Research
- NSCR | Netherlands Institute for the Study of Crime and Law Enforcement
- SRON | Netherlands Institute for Space Research

In addition, there are about 110 working groups at universities (BUW: Administrative Unit for Research Groups at Universities) that are part of NWO-I. Finally, NWO-I has a central office, which supports the Foundation Board and the institutes.

Who finances the research?

NWO-I is part of NWO, which receives a budget for its institutes from the Ministry of Education, Culture and Science. NWO-I also receives funding awarded by the European Union, the government and from collaborations with universities, industry and other public and private parties.

How many people work at NWO-I?

At the end of 2020, NWO-I employed 1,703 FTE (1,824 people), including

- 564 FTE (608 people) scientific personnel;
- 431 FTE (435 people) PhD students;
- 708 FTE (781 people) technicians and other staff.

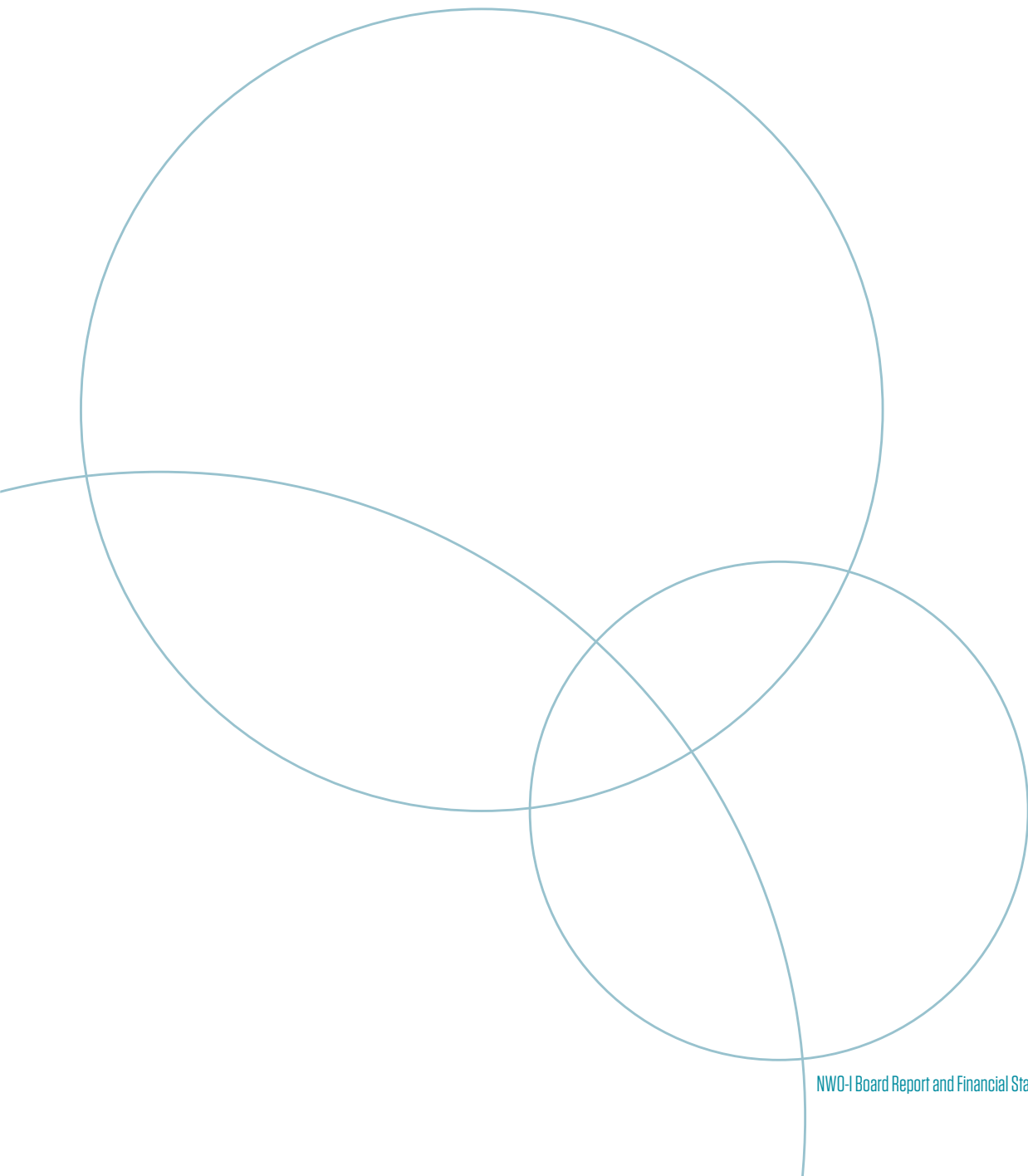
The researchers at the institutes collectively produced a total of 77 dissertations, 1,534 scientific (referenced) publications, 1,175 other publications and 6 patents in 2020. Approximately 75 PhD students also received their doctorates in a university working group.

Contents

Colophon	2
Facts and figures	3
NWO-I Foundation	5
Foreword	6
1 Introduction	8
2 Key developments	9
3 Strategy and research	11
4 Finances	22
5 Personnel	35
6 Housing, sustainability and occupational health and safety	38
7 Organization and governance	42
List of abbreviations	51
NWO-I Foundation	53
Financial Statements	54
1 General accounting policies	54
2 Balance sheet valuation accounting policies	57
3 Accounting policies for the statement of income and expenditure	62
4 Balance sheet on December 31, 2020 after result appropriation	65
5 Statement of income and expenditure after result appropriation	65
6 Cash flow statement	66
7 Notes to the balance sheet	67
8 Notes to the statement of income and expenditure	82
9 Notes to cash flow statement	95
10 Events after the balance sheet date	95
Other information	96
11 Independent auditor's report	96
12 Provisions in the articles on result appropriation	96
List of abbreviations	101

NWO-I Foundation

Board Report 2020



Foreword

The year 2020 was an unruly yet promising period for the Foundation for Dutch Scientific Research Institutes (NWO-I). Of course, the global coronavirus pandemic tested the organization's agility. Employees worked from home and research work largely ground to a halt. Temporary academic staff were in danger of bearing the brunt of these delays, but a special coronavirus fund initiated by the Ministry of OCW prevented that and contracts were extended where necessary. The crisis also gave rise to new perspectives: virtual communication made contact faster and easier, there was more freedom in how people organized their time, and savings were made on travel times and costs. Even after the coronavirus crisis had ended, a mix of home and on-site work could remain significant: *hybrid* working.

Following the portfolio review by the KNAW and NWO institutes, a number of steps were taken in 2020 to increase the national role and added value of these institutes for the field of knowledge. The boards of both organizations established the Permanent Committee on National Institutes. This body will advise the boards on new developments to which the institutes should also respond, for example by adjusting the missions of the institutes. Meanwhile, the NWO institutes continued to work vigorously on their positions and built on existing and new partnerships. NSCR, CWI, and NIOZ adjusted their scientific strategy and programs and strengthened collaborations with universities. Together with various parties including universities, NSCR endorsed a five-year research program for police research. ARCNL explored collaboration with the University of Groningen and the Nikhef partnership was expanded in 2020 to include Maastricht University. SRON will move to new buildings on the Leiden University campus in 2021, intensifying its ties with this university and with Delft University of Technology and other knowledge partners.

The successful continuation of existing programs and their national added value also requires constant attention and flexibility on the part of the NWO institutes. NIOZ was given the green light to replace its national research fleet, enabling the Netherlands to maintain its excellent international scientific position in maritime research and continue to contribute significantly to global climate challenges. ASTRON responded adequately when the construction of both a nearby wind and solar farm and the roll out of the 5G network threatened to cause major disruptions and interference at the LOFAR and Westerbork radio telescopes and initiated the development of new algorithms to compensate for the effects of the disruptions. AMOLF, ARCNL and DIFFER worked with three Top Sectors to write a new National Materials Agenda that describes materials science solutions for major societal challenges such as countering climate change and the energy transition. AMOLF, CWI and DIFFER also participated in applications for the new National Growth Fund established by the cabinet in 2020. Substantial investment is needed in Dutch quantum research and innovation potential including the production and application of "green" hydrogen.

Major societal developments also prompted NWO-I to be especially alert in 2020. The renewed sense of urgency surrounding societal inequality, with the *Black Lives Matter* movement being perhaps the most prominent expression, calls for significant efforts from NWO-I as well. In 2020, the NWO institutes and office recognized the importance of ongoing collaboration to address the significant challenges of promoting greater diversity and inclusion in scientific work. Many actions are still needed to achieve the policy goal of moving toward full-scale *open science*. NWO-I took a crucial step by aiming to maximize its publications in *open access journals* by 2020. The organization also got to work on the national *position paper* "Room for Everyone's Talent; Towards a New Balance in Recognizing and Valuing Scientists. Culture, attitude and "good behavior" are receiving increasing attention in thematics and regulations, as well as within NWO-I's strategic human resources policy.

In 2020, NWO-I further shaped its new governance with the appointment in the fall of a new board of directors, consisting of Miriam Luizink as NWO-I Director, and Jan van der Boon as NWO-I Director of Operations. Together, they continue to work diligently with the institutes and the office to establish a robust organization with effective management practices.

The power of accessible and open science has proven more important than ever over the past year in combating the coronavirus pandemic by, for example, making all new knowledge immediately available to everyone free of charge. At the same time, the pandemic sometimes formed the very stage for much negative social criticism of that same science. Distressing, but it shows the fragility of society and science. Simultaneously, it demonstrates that science resonates with a broad audience. NWO-I therefore feels encouraged in part by the positive assessment of NWO as a whole by the 2020 evaluation committee headed by Prof. Rinnooy Kan. The committee concluded that NWO is ready to act as "the voice" for science, and its "tower of strength". NWO-I will wholeheartedly help pick up this gauntlet based on its own role to keep society and science connected. Each of the over 1,800 employees demonstrated their agility and showcased the organization's collective ability throughout the past year. I am proud of that and thank everyone for their tremendous efforts. I hope we continue on this path together in 2021, because our work is as necessary as it is important.

Marcel Levi
President of NWO-I

1 Introduction

You have before you the 2020 annual report of the Foundation for Dutch Scientific Research Institutes (NWO-I). In this annual report, NWO-I provides administrative and financial accountability for its work in 2020. With this publication, NWO-I renders account to its financiers and society at large.

This annual report is divided into three parts. The first part consists of the board report, containing an overview of events and financial developments in 2020. It also contains a description of how the NWO-I organization is structured.

The second part contains the financial statements, which include the accounting policies, balance sheet, statement of income and expenditure, cash flow and notes thereto.

The third part is the audit opinion from the independent auditor and the provisions from the articles of incorporation governing the appropriation of the result.

About the NWO institutes

NWO has national research institutes to provide focused and decisive action on the international front of important research areas. The NWO institutes each have a scientific mission of national and international strategic importance and make a specific and unique contribution to the Netherlands' research system. These contributions complement those of other research institutes, both in terms of the research at the Netherlands' universities and in terms of applied research by, for example, the Applied Research Organizations (TO2) and national knowledge institutes. Consequently, all NWO institutes work closely with many of these knowledge institutes. The research and facility development at NWO institutes are fueled by curiosity and societal challenges, and they hold leading international positions in their field. The NWO institutes realize knowledge and solutions with scientific and societal impact by conducting, making accessible and disseminating that research in a pioneering way, with integrity and excellence.

Scientific and societal questions of national strategic importance, and particularly the development and operation of (large) scientific infrastructure to answer those questions, require research with long-term commitment and pooling of multidisciplinary expertise and facilities. Our institutes provide the stability, long-standing expertise, facilities, and scientific reputation needed to do so. At the same time, our institutes remain responsive and agile to respond quickly and vigorously to new developments, such as gravitational wave research (see chapters 3.2 and 3.3). Because the institute missions are determined by the NWO Executive Board on a regular basis and updated when necessary, NWO is able to introduce innovations at short notice and respond decisively to developments in science and to questions from society that require fundamental and applied research to be answered.

2 Key developments

In many aspects, 2020 proved to be a remarkable year for NWO-I, characterized by several significant developments that profoundly impacted the organization. These included the renewal of the national research fleet, endeavors centered around the added value of the institute portfolio, the implementation of a new governance structure for NWO-I, and the far-reaching consequences of the coronavirus pandemic and the subsequent containment measures.

2.1 Renewal of the national research fleet

In spring 2020, the Executive Board made the final decision for the renewal of the national research fleet managed by NWO institute NIOZ. The fleet consists of three research ships and has been in need of replacement for a number of years; the ships are well past their economic and practical lifespan. The decision to proceed with the renewal was made in spring 2019, but it was contingent on the determination of whether NIOZ's application in the call for Large-Scale Scientific Infrastructures would be approved. NIOZ's application focused on acquiring and further developing advanced scientific equipment for the RV *Anna Weber-van Bosse*, the upcoming research vessel that will replace the current RV *Pelagia*. With the approval of this application, the decision for the renewal of the research fleet became final. At that time, the European tender for the replacement of the medium-sized ship, intended for research on the Wadden Sea, was already at an advanced stage. The decision to award the construction of this vessel, which will be called RV *Wim Wolff*, was made in late 2020. The commission for the construction of the smallest ship RV *Adriaen Coenen* was granted at the end of 2020.

2.2 National role and added value of the institutes

In addition to scientific excellence, NWO requires its institutes to fulfil a national role and deliver added value to the field of knowledge. Although the report "Portfolio review of the NWO and KNAW institutes" published in 2019 concluded that all NWO institutes provide significant added value, a number of steps were taken in 2020 to further increase the national added value, both of individual institutes and of the portfolio of the national institutes as a whole.

Strategy changes at CWI, DIFFER, NSCR and NIOZ

At the request of the NWO Executive Board, two authoritative experts surveyed the current positioning and programming of the NWO institutes NSCR and CWI in 2019 and 2020, respectively. The two exploratory studies gave rise to recommendations on how to further increase the value added to the field of knowledge by the institutes. Both institutes used the recommendations from these studies to adjust their scientific strategy and program in consultation with university partners, with broad national support being the starting point. This will inform an adjustment of these institutes' scientific strategy in 2021.

In 2020, the NWO institute DIFFER initiated a national effort to explore avenues for further supporting Dutch energy research. This included the potential development of a large-scale scientific facility dedicated to materials research for energy applications. In 2021, DIFFER will further expand on this initiative and submit a proposal to the NWO Executive Board outlining how the institute intends to implement this endeavor in the future.

At the end of 2020, NWO Institute NIOZ released a new scientific strategy. Building on steps taken in the previous strategic period, the institute is focusing even more emphatically on establishing and coordinating national marine and maritime research programs.

Establishment of PCNI

In the summer of 2020, the NWO and KNAW Executive Boards jointly established the Permanent Committee on National Institutes (PCNI). This committee will begin advising the two boards on developments to which the portfolio of institutes can respond and will organize a biennial strategic conference to that end, consulting the entire field of knowledge.

2.3 Changing the governance of NWO-I

For the NWO-I Foundation, 2020 also marked the elaboration and implementation of new governance. Over the course of 2018 and 2019, it became clear that the organization lacked decisiveness; joint processes and decision-making proved difficult to establish. The institutes also lacked a figurehead who could act as the institutes' ambassador to the outside world.

At the end of 2019, the Central Works Council (COR) agreed to the NWO-I Foundation Board's proposal that NWO-I's governance be modified. As part of this effort, the recruitment of two new directors was initiated: a new NWO-I director was to become ultimately responsible for the entire foundation and take on many of the foundation board's duties. This NWO-I director would also become the manager of the institute directors. A new director of operations for NWO-I would be responsible for addressing the challenges related to joint operations.

During 2020, the foundation's articles were amended. On October 1, these were executed and the new governance structure became a fact. At the same time, the new NWO-I director, Miriam Luizink, took office. Jan van der Boon had started as NWO-I director of operations a month earlier. Both directors immediately set sail to further develop NWO-I into a decisive and dynamic institute organization, where the various organizational units reinforce each other and scientific work at the institutes flourishes, supported by a strong office.

2.4 Global outbreak of coronavirus

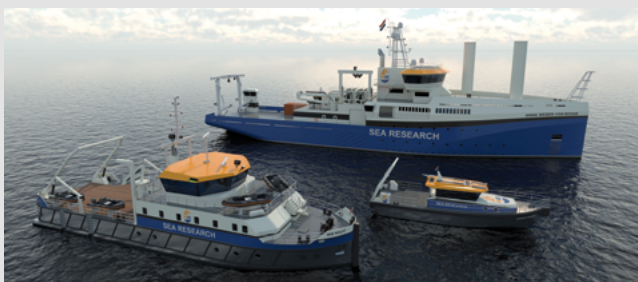
The global coronavirus crisis impacted NWO-I as well. During the first lockdown from mid-March to May 2020, scientific work at the on-site institutes was largely interrupted. Each institute took appropriate measures - within the constraints of national policy and of its own organization - to allow work to continue as much as possible. The position of young researchers, including doctoral students and postdocs, received special attention. Temporary appointments were in danger of expiring too early, which could lead to delays and major impact on future careers. To protect the researchers concerned, the board established a coronavirus Fund with additional resources. This made it possible to extend appointments of junior researchers if necessary.

Despite the impact on the work and personal lives of NWO-I employees, the coronavirus crisis also made new things possible: virtual meetings made for faster and easier contact, more freedom to schedule one's own time was created, and travel time and costs were saved. All of this prompted NWO-I to consider whether a combination of working from home and on site - *hybrid working* - is feasible even after the coronavirus measures would expire.

Renewal of national research fleet

Impression of the newly built national research fleet, consisting of a large ocean-going ship (RV Anna Weber - van Bosse) a medium-sized ship intended for mudflat research (RV Wim Wolff) and a small ship (RV Adriaen Coenen).

Construction of the smallest two ships will begin in early 2021.



3 Strategy and research

This chapter discusses the main strategic and scientific developments surrounding the portfolio of institutes as a whole, the national infrastructure, national and international collaborations, and the development of generic science policy within the NWO-I Foundation. Furthermore, you will read about several scientific highlights from our institutes. We will conclude with an overview of scientific output.

3.1 Strategic management of the institute portfolio

At the request of KNAW and NWO, a committee chaired by Prof. Daan Frenkel evaluated the entire portfolio of KNAW and NWO research institutes. The committee's report was released in February 2019. It provides concrete directions on how KNAW and NWO can jointly bring more strategic direction to the institute portfolio so that the institutes can respond more quickly to societal developments and national scientific needs. In its report, the committee stated that the institute system has added value for Dutch science, but advised taking further steps to enhance it even more. The committee listed a number of criteria for measuring added value. Additionally, the committee called upon the KNAW and NWO to establish a process that allows national stakeholders such as universities and Applied Research Organizations (TO2) to participate in discussions regarding potential changes in the portfolio's direction.

In response to the report, NWO and KNAW established the Permanent Committee on National Institutes (PCNI) in the first half of 2020, chaired by Professor Wim van Saarloos. The PCNI's task is to provide the boards of KNAW and NWO with solicited and unsolicited advice on developments to which the institute portfolio should respond. To this end, the committee will hold a strategic conference once every two years with stakeholders from across the country to identify topics of high scientific interest that require an institutional approach. The committee met for the first time after summer 2020 and, in close contact with the boards of KNAW and NWO, plans to organize the first strategic conference in the fall of 2021. The PCNI's advice could have potentially significant implications for NWO-I's institutes. In response to a recommendation, NWO's Executive Board may decide to adjust the mission or strategy of one or more institutes.

3.1.1 Exploratory studies for NSCR and CWI

In recent years, the board of NWO, which determines the missions of the institutes, has been focused on increasing the national integration and added value of the NWO institutes. In 2019 and 2020, two exploratory studies were carried out for the NWO institutes NSCR and CWI at the request of the Executive Board. In each study, an external authoritative expert in the institute's research field made a tour of the country to solicit thoughts on the direction the institute might take in the future to further increase the institute's added value to the national field. The exploratory reports were published in late 2019 and early 2020 and both institutes have started the process of shaping the recommendations from these exploratory reports over the past year. In doing so, both CWI and NSCR will engage with all the relevant university parties in 2021 to arrive at a scientific program with national support, and agreement on how the institute adds value to the relevant field. These rounds of discussions will result in adjustments to the strategy of both institutes over the course of 2021.

Artificial intelligence from CWI as route planner for radiation therapy

Researchers at the Centrum Wiskunde & Informatica (CWI), in collaboration with the Radiotherapy Department at Amsterdam UMC, have developed software that uses artificial intelligence to suggest multiple radiation treatment plans for each patient at lightning speed. This is normally a very labor-intensive process. The software acts as a kind of "route planner" for the physician: based on a patient's data, it presents a number of "routes" for radiation therapy, representing the trade-offs between delivering a sufficient dose of radiation to the tumor and minimizing damage to surrounding organs. Doctors can use this not only to make a good plan faster, but also to arrive at better plans. Amsterdam UMC treated the first patient with a radiation treatment plan created by the AI software on March 17, 2020. The innovative method was initially used to treat prostate cancer with internal radiation therapy, but the AI software is relatively easy to extend to other types of cancer. A follow-up project has therefore been planned.

3.1.2 Funding the institute portfolio

In 2020, the NWO Executive Board took the final decision to renew the national research fleet managed by NIOZ. In recent years, many attempts have been made to secure external funding for this purpose, unfortunately to no avail. When deciding on the fleet renewal, it was therefore recognized that the funding for future costs would primarily need to be sourced from within the budget of NWO-I. The budget was already under pressure in earlier years because of the costs of the NWO-I office, which currently lacks long-term funding. In recent years, the NWO Executive Board has consistently allocated incremental funds for this purpose. In August 2020, the Executive Board decided to once again supplement this shortfall for 2021. However, they also acknowledged the need for a structural solution to address this deficit.

The new NWO-I director, in office since October 1, 2020, will work with the institutes to develop a proposal that will be presented to the Executive Board in summer 2021. This involves looking at balancing the budgets of the institutes. There is also an emphasis on developing a joint business operation, focused on decisiveness and efficiency, with a corresponding *fit-for-purpose* office. Significant intervention in the missions or *raison d'être* of individual institutes is not at issue here. For these kinds of adjustments, NWO and KNAW seek advice from the PCNI through the aforementioned process.

3.2 Scientific infrastructure

Many of the NWO institutes give Dutch researchers access to national or international scientific infrastructure. In many cases, the institutes themselves develop crucial (components of) large international scientific infrastructures, such as the CERN particle accelerator, the Square Kilometer Array (SKA; a radio astronomical instrument), or measurement instrumentation for space missions. Often, this occurs within large international consortia where NWO institutes represent the Dutch contribution to the development and construction of technological instrumentation, the maintenance and utilization of this infrastructure, and the advanced analysis of results required for scientific users. These are often scientific projects that take decades of preliminary study, development, construction, testing, and integration of components before the scientific experiments for which they are intended can be conducted.

3.2.1 SPICA mission not selected by ESA

In 2020, European space agency ESA and Japanese space agency JAXA decided to discontinue their joint space mission SPICA after a long process of development since 2007. SPICA was to be a cooled space telescope that was to exceed the spectral sensitivity of the existing Herschell and Spitzer space telescopes by a factor of fifty to one hundred. NWO Institute SRON had been involved as Principal Investigator for the SAFARI measurement instrument aboard the space telescope SPICA since 2009. Given the decision by ESA and JAXA, much of the development work will not be continued for the time being. This illustrates the complexity of the

international playing field and the difficult choices facing a research institute like SRON. Decisions on the selection of space missions require scientific as well as financial and political choices, so there is always a risk that a mission will ultimately not be selected. SRON is currently exploring new options in addition to the other major projects it is already working on for the medium and long term. One example is the ESA mission ATHENA, scheduled for launch in 2031, which will investigate how large structures such as galaxies and clusters form, among other objectives.

3.2.2 Granting of application "FuSe" from the National roadmap

The NWO Executive Board awarded €12 million to the "FuSe (Fundamental Sciences E-infrastructure)" research program in June 2020. Nikhef and ASTRON's FuSe project will facilitate Dutch researchers to extract original and relevant scientific results from the vast amount of data produced by three of the largest global scientific facilities: the Large Hadron Collider (LHC at CERN), the underwater neutrino telescope KM3NeT and the Square Kilometer Array (SKA).

Light highway of the future between CERN and Nikhef ready to go

SURF and Nikhef have established a new data connection with accelerator lab CERN in Geneva, capable of transmitting up to 400 Gigabits (12 full DVDs of information) per second. That is four times faster than the best networks today and the fastest international data line in the world. The connection to CERN uses SURF's existing fiber optic, which was able to transmit 100 Gbit/s already. The varying bit rates are transmitted using different colors of light and then separated at the receiver end. In 2019, SURF and Nikhef successfully tested the high-speed techniques on a ring network from Amsterdam via Utrecht and Delft to Leiden and back. The new connection anticipates the tidal wave of measurement data that CERN will deliver in the coming years, when the LHC accelerator starts shooting protons at each other with even higher intensity.

3.2.3 DISTURB

NWO Institute ASTRON, the company S&T and KNMI (Royal Netherlands Meteorological Institute) have completed the design of DISTURB, a warning system for explosions of energy on the sun's surface that temporarily cause greatly increased radiation. Both the Ministry of Defense and KNMI want to be able to warn military and civilian users of antenna systems about these larger bursts that could have important consequences for energy transport and data traffic. For ASTRON, it is interesting to gain a better understanding of space weather.

3.2.4 Einstein Telescope

The 2017 Nobel Prize for Physics went to the study of gravitational waves, an exciting and new field characterized by an intense collaboration between astronomers and astroparticle physicists. In 1916, Albert Einstein hypothesized the existence of gravitational waves based on his general theory of relativity. They were detected directly for the first time about one hundred years later.

NWO Institute Nikhef was involved in the detection of these first gravitational waves. Together with the province of Limburg, Nikhef has been investigating the possibilities and feasibility of building a third-generation gravitational wave detector in South Limburg: the Einstein Telescope (ET) for several years. The ET Pathfinder project began in late 2019 for this purpose. With European, national and regional funding, the first mini version of the ET is being built in a laboratory in Maastricht. There, groundbreaking techniques will be tested on this mini version to get a good idea of the technical feasibility of building the final ET. During 2020, the laboratory was completed, and construction of the ET Pathfinder made a flying start. A consortium of countries including the Netherlands, led by Italy, applied in 2020 to have the ET included in the ESFRI roadmap, the prestigious European Roadmap for Research Infrastructures.

3.2.5 DUBBLE

DUBBLE - short for Dutch Belgian Beamline - is a Belgian-Dutch research facility at the European Synchrotron Radiation Facility (ESRF), a large measurement facility in Grenoble. DUBBLE gives Dutch and Belgian researchers better access to the experiments. It is a treaty organization that includes the Netherlands and Belgium as members via the so-called Benesync consortium. The Netherlands and Belgium work together to facilitate 'DUBBLE,' two measuring stations at the ESRF where specific experiments are carried out with the ESRF's bundles.

NWO's Executive Board decided in 2019 to terminate participation in DUBBLE as of January 1, 2022. The decision followed a national call for a financial commitment from universities for the continued existence of this facility. When this failed to materialize, the decision became final, and in 2020 NWO and the Belgian partners signed an agreement on the terms under which NWO will exit as of January 1, 2022. Dutch researchers will continue to have access to the ESRF through Dutch participation in the organization, though competition for research proposals is expected to increase.

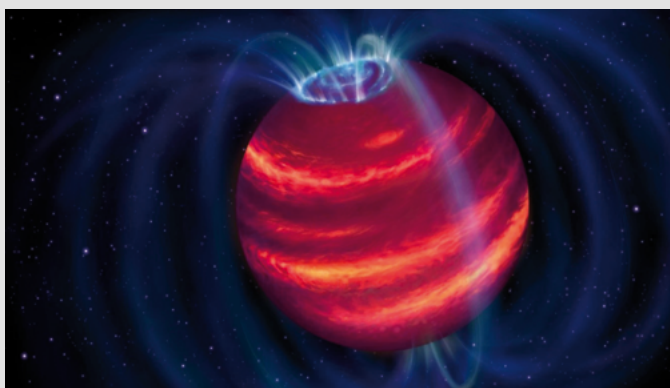
3.2.6 LOFAR

On June 12, 2020, NWO institute ASTRON celebrated the 10th anniversary of LOFAR, the world's largest radio telescope with the lowest frequency range detectable on Earth's surface. ASTRON develops and manages LOFAR, with 54 monitoring stations spread across nine countries. Many discoveries have been made with LOFAR over the past decade. The Dutch part of the facility recently underwent a major update. The scientific exploitation of LOFAR and of ASTRON's Westerbork Radio Telescope in Dwingeloo has been threatened on several fronts in recent years: first by the construction of a nearby wind farm, later that of a solar farm, and in 2020 the decision to roll out 5G data traffic in the Netherlands. These developments each cause disturbances and interference, forcing ASTRON to develop algorithms to filter out these disturbances where possible.

Brown dwarf discovered with LOFAR

Astronomers at ASTRON and Leiden University discovered a so-called "brown dwarf" using the LOFAR radio telescope: a faint object, named Elegast, that is heavier than Jupiter, but considerably lighter than the sun. This discovery opens up new possibilities for using radio telescopes in the search for other faint objects related to Jupiter-like exoplanets. Brown dwarfs emit radio waves that contain information about their magnetic field strength. Until recently, radio observations could only measure strong magnetic fields, about 100 times the strength of an ordinary refrigerator magnet, and signals from Jupiter-like planets were too weak for existing (infrared) surveys. LOFAR's low observation frequency allows it to measure magnetic fields equivalent to one refrigerator magnet, that astronomers hypothesize to occur on the coldest brown dwarfs and large exoplanets. The goal is to understand the magnetism of these exoplanets and how it affects their ability to support life.

Artist's impression of Elegast. The blue loops represent the magnetic field lines. Charged particles moving along these lines emit the radio waves detected by LOFAR. Some particles reach the poles and generate aurorae similar to the northern lights.
Credit: ASTRON/Daniëlle Futselaar



In 2020, with support from the Ministry of Education, Culture and Science and NWO, ASTRON set out to transform the foundation that manages the LOFAR telescope into a European Research Infrastructure Consortium (ERIC), a special legal status for infrastructures managed by multiple European countries. This change in international legal status will give LOFAR a firmer position in the European landscape and ensure long-term stability and a shared vision among partner countries.

3.2.7 SKA

The international Square Kilometer Array (SKA) is to become the world's most powerful radio telescope, developed by a consortium of various countries. NWO institute ASTRON coordinates the Dutch participation in SKA and is a key partner in the development of the facility. Much of the technology set to be developed for SKA is based on LOFAR (see above). The design for the SKA antennas, a process that took 6 years, will be completed in 2020. ASTRON co-coordinated this international collaboration of 9 institutes across 6 countries. There will be 130,000 such antennas installed in Australia.

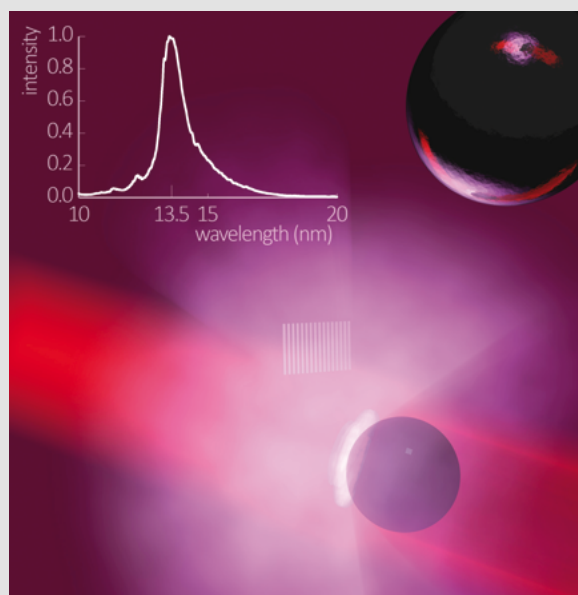
3.3 Developments in national and international cooperation

The NWO institutes collaborate internationally and nationally with many parties. This is constantly evolving as emphases in research shift or new opportunities for collaboration arise.

How does tin plasma emit EUV light at the atomic level?

The latest state-of-the-art lithography machines use EUV light to print extremely small structures on chips. The light source in these machines is plasma created by using a laser to heat a drop of the metal tin to plasma; this plasma emits light with a wavelength of 13.5 nanometers, which can be used to apply structures several nanometers wide to chips.

Researchers at ARCNL - working closely with the Los Alamos National Laboratory in the US - unraveled how this tin plasma emits EUV light at the atomic level and made some unexpected discoveries. Not just one but almost all the excited energy states of tin were found to have the right energy to emit EUV light. This fundamental research with the tin drop source and laser setup revealed the unusual properties of tin plasma. The researchers expect this to help optimize EUV sources in the future.



3.3.1 ARCNL explores collaboration with new university partners

ARCNL is a partnership between NWO, the University of Amsterdam, the Vrije Universiteit Amsterdam, and the company ASML. The institute has been collaborating with researchers from universities across the country in joint research projects since its inception. Over the past year, ARCNL has explored whether this collaboration with some universities could take a more structural form. Concrete decisions on this are expected to be made in 2021.

3.3.2 National Materials Agenda

In December 2020, Professor Albert Polman of NWO institute AMOLF presented the National Materials Agenda to State Secretary Mona Keijzer. The agenda was created by the MaterialenNL Platform, a collaboration of three Top Sectors: Chemistry, Energy and High-tech Systems & Materials. The agenda describes materials science solutions to major societal challenges such as combating climate change, the energy transition, health, the transition to a circular and sustainable economy and strengthening national, digital security. The research programs of the NWO institutes AMOLF, ARCNL and DIFFER also contribute to the agenda.

Heat control in a fusion reactor



In the middle of a fusion reactor, it is improbably hot. The red-hot hydrogen plasma is kept suspended inside the reactor, but there is always hydrogen escaping from this interior. This must be cooled on the way to the wall to prevent damage to the reactor wall. DIFFER researchers worked with the EPFL Swiss Plasma Center to develop an innovative measurement and control method to cool these hot escaping particles from the fusion plasma in an extremely controlled manner. To do this, they merged all kinds of techniques and developed a closed-loop control technology system, which constantly adjusts. The researchers used a camera system (MANTIS) developed at DIFFER (together with EFPL and MIT) for this research. They modified the camera system to convert real-time images to data, based on which a computer model would calculate the optimal cooling. The researchers expect the approach to be applicable in other fusion reactors as well, such as ITER and DEMO.

Materials research for energy

DIFFER launched a national exploration in 2020 on how to further support Dutch energy research by developing a large-scale scientific facility specifically for materials research for energy applications. DIFFER could play an important role in this area, with years of experience in the design and management of large facilities for nuclear fusion research, such as Magnum PSI. In consultation with all relevant national partners, DIFFER is investigating what the national needs are and where the institute can add the most value. DIFFER hopes to complete this and submit a proposal to the Executive Board for the development of the new facility in 2021.

3.3.3 Growth fund proposals QuantumDeltaNL and Groenvermogen

The cabinet decided in September 2020 to allocate 20 billion euros over five years for scientific investments that contribute to economic growth. The funds, held in the National Growth Fund, are intended for knowledge development, physical infrastructure and research, development and innovation. The first round of applications in 2020 was open for submission of a select number of proposals with support from various line departments.

The NWO institutes AMOLF and CWI participated as partners in the QuantumDeltaNL proposal, which proposes substantial investment in Dutch quantum research and innovation potential. NWO Institute DIFFER participated as a partner in the Green Power of the Dutch Economy proposal, a project focused on innovation of production and application of "green" hydrogen. Both proposals were awarded in 2021 with partial conditional approval.

3.3.4 Expansion of Nikhef partnership

The Nikhef partnership was expanded in 2020 to include Maastricht University. This strategic collaboration gives national research on gravitational waves an additional boost. After all, Maastricht is where the so-called ET Pathfinder is being built (see the Einstein Telescope). To further strengthen the Dutch position on this subject, Nikhef became a full member of the European Gravitational Observatory (EGO) in 2020, after years of being affiliated as an observer. Together with the Italian and French partners, this consortium focuses on advancing research into gravitational waves.

3.3.5 NIOZ further pursues national collaborations

NWO institute NIOZ released a new scientific strategy in the fall of 2020 that builds on the previous one, in which the institute and scientific program were thoroughly transformed. The new strategy puts even more emphasis on strengthening national cooperation. An important element is the establishment and coordination of national research programs and the exploration of additional strategic partnerships with Dutch universities. Furthermore, the agreement with Utrecht University was revised and extended for five years in 2020. The parties cooperate scientifically within a joint research program.

3.3.6 National program for police research

The Police, Ministry of Justice and Security and NWO institute NSCR entered into a cooperation agreement in mid-2020 for a five-year research program entitled *What works in policing: toward evidence-based policing in the Netherlands*. The program focuses on providing scientific substance and underpinning for evidence-based policing practice and analyzing (emerging) issues for the police (function). The research is being developed and conducted by NSCR in cooperation with the police, the Police Academy, universities in the Netherlands and abroad, universities of applied sciences and other knowledge institutes. NSCR is taking the first step to flesh out the new strategy via this national program.

Compliance, crowding and social distancing during the mask mandate

People wear a face mask when it is mandatory and they wear it correctly. The mask mandate does not lead to less crowding or to more or fewer violations of the 1.5-meter rule, according to research conducted by NSCR on behalf of the Amsterdam-Amstelland and Rotterdam-Rijnmond safety regions (August 2020). By analyzing images from surveillance cameras in the mask zones from before and during the mask mandate, and comparing these to areas where no mask mandate applied, the researchers were able to accurately map people's behavior. NSCR looked at the wearing of masks, crowding and changes in crowding, and compliance with the 1.5-meter rule after the introduction of the mask mandate. Street observations by outreach workers, street interviews and focus groups surveyed public opinion on the mask mandate and how people working in the mask zones perceived the mandate.



3.3.7 Strategic cooperation between TU Delft, Leiden University and SRON

The NWO Executive Board decided in 2018 to move the NWO institute SRON to a new building at the Leiden Bio Science Park, next to the current Huygens Laboratory. This location allows the further intensification of close scientific and technological cooperation with Leiden University, TU Delft and other partners. This strategic collaboration took shape through the appointment of shared scientific positions in 2020.

3.4 Scientific practice and policy

3.4.1 Scientific integrity

Integrity and the ethical aspects of scientific research are of great value to NWO-I: researchers must be able to work in an open, safe and inclusive research culture in which they discuss the standards of good research practice and hold each other accountable for complying with those standards. It is important to NWO-I that researchers at NWO institutes adhere to the standards. This is why NWO-I employees actively promote and discuss good practices among themselves. NWO-I also places great importance on addressing violations of scientific integrity. Ensuring trust in the ethics of scientific research is of utmost significance for science itself.

The Dutch code of conduct for scientific integrity, which has been in force since the end of 2018, includes guidelines for how to deal with suspected violations of scientific integrity. The code formulates duties of care for the institution. In 2020, NWO-I adapted the complaints procedure to the new situation and set up a complaints committee. Furthermore, an awareness campaign was launched for the institutes' staff.

Two new arrays complete detector for GUSTO mission

Space dust floats among the stars. GUSTO is a NASA balloon telescope that will simultaneously map three molecules (ionized nitrogen (NII), carbon (CII) and oxygen (OI) in this space dust. SRON and TU Delft developed 1.4 and 1.9 terahertz detector arrays for GUSTO. They had previously supplied a 4.7 terahertz array. The launch from Antarctica is scheduled for December 2021. NASA's GUSTO will float in Earth's atmosphere, at the edge of space at an altitude of 36 km, for more than 75 days. The observatory consists of a one-meter diameter telescope and three observation instruments carried by an Ultra-Long Duration Balloon (ULDB). Research using GUSTO helps scientists determine the life cycle of interstellar gas in our milky way galaxy, witness the formation and destruction of star-forming clouds, and understand the dynamics and gas flows near the center of our galaxy.

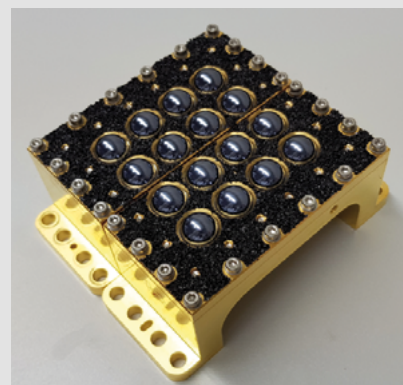


Image: backside of the array (credits SRON)

3.4.2 Open science - open access policy

Thanks in part to NWO, the Netherlands is one of the global frontrunners in the transition to making publications and research data from publicly funded research freely available to all. By joining an international group of research funders called cOAlition S in 2018 and endorsing Plan S, NWO committed to implementing far-reaching measures to accelerate the transition to Open Access. The core of Plan S is that all publications arising from financing from these research funders must be published in open access journals and platforms as of January 1, 2021. For NWO-I, this means that all articles published by the NWO institutes must be immediately accessible to the wider public free of charge. To make this possible, NWO-I has committed to two pathways. In December 2020, NWO-I established a policy framework that allows for publications to be made directly available via the so-called "green route", this is based on self-archiving: after publication, a researcher places an article directly into a publicly accessible *repository*, making the publication freely accessible. NWO-I also joined negotiations conducted by other institutions, including the VSNU, with a number of large publishers: the so-called transformative deals. A gradual transition to full Open Access is underway via these deals, in line with Plan S.

3.4.3 Recognizing and valuing differently

VSNU, NFU, KNAW, NWO and ZonMw published the *position paper* "Room for everyone's talent; towards a new balance in recognizing and valuing scientists" in November 2019. In it, they outline how they plan to recognize and value the work of scientific staff in a broader context. Less emphasis on numbers of publications and citation counts and more emphasis on the other areas in which scientists work, such as teaching and social impact. This broader form of recognition and appreciation aligns better with the current core tasks of knowledge and educational institutions, as well as with the expectations of society. This requires drastic changes. First and foremost, in the behavior of employees who need to embrace it. Secondly, this way of thinking must become woven into human resources policies. Which includes recruiting new people, conducting performance assessments and offering opportunities for personal development. Finally, it is important for the scientific system to change as a whole: unilateral introduction is not an option since it could harm the career prospects of employees. NWO is committed to advancing these efforts both nationally and internationally.

In 2020, NWO-I established a committee with representation from all organizational units and disciplines. This committee is to formulate a common vision on this issue and apply the recommendations in the *position paper* to NWO-I specifically. This will be further concretized during 2021 and reflected in joint strategic human resources policies of NWO-I. An awareness campaign is also planned in 2021 to promote a culture shift.

3.4.4 Diversity and inclusion

NWO-I strives to create an inclusive organization where everyone feels welcomed, can be their authentic selves, and can maximize their potential alongside their teams. That is why NWO-I strives to be a diverse organization with an inclusive culture where everyone is needed, regardless of cultural, ethnic or religious background, gender, sexual orientation, health or age. To arrive at that point, a new course must be set, and patterns, structures and processes need to be broken out of. Together with NWO, NWO-I also focuses on employer policy and encouraging diversity and inclusion via targeted programs.

One spearhead is increasing the number of women in scientific positions at NWO institutes. The institutes have prepared Gender Equality Plans (GEP) with measures to improve the gender balance. The WISE program was established in 2016 specifically for the institutes and transformed into an employer fund in the fall of 2019 to be more in tune with the institutes' needs. The program provides funding to an institute that attracts a female candidate for a permanent scientific position. Steps were taken in 2020 to set up a similar program to increase the number of women working in technical support positions.

3.4.5 Knowledge security and cybersecurity

The research at the NWO institutes is of a very high quality, thanks in part to international cooperation and the ability to attract scientific talent from all around the world. An open science system with important academic values such as openness, scientific integrity and academic freedom. Meanwhile, there has been a global resurgence in political power struggles between states, where obtaining high-quality knowledge is an important objective for economic and military reasons. This could have implications for Dutch security policy and may affect our innovativeness and competitiveness as well.

Our researchers are increasingly aware of the risks and dilemmas of international cooperation. At the end of 2020, the Dutch government toured all the knowledge institutions in the Netherlands, including the NWO institutes, to make them aware of the risks and find out how they are dealing with them. Several questions came up in the process. How do you prevent risks such as unwanted transfer of knowledge and technology to other countries, unwanted (covert) influence from abroad, cyber espionage and cyber sabotage that denies access to one's files? How do you deal with ethical issues, such as cooperating with countries where fundamental rights are not respected? How do you find the right balance between protecting research results and making them freely available to a wider public, such as through open access?

In 2021, NWO-I is joining the national working group that will sharpen policy on this topic and also focus on developing practical guidelines and manuals to help research institutions make the right considerations.

Partly in response to the hack that occurred at NWO after the balance sheet date, NWO-I will take measures in 2021 to further professionalize cybersecurity across the organization. A need for central expertise has been expressed in this regard. Institutions already engage in regular knowledge-sharing and exchange of *best practices* through the network of IT managers. In addition, central expertise will be hired in 2021 to review the organization's cyber security and make recommendations on how to improve it.

3.5 Scientific output

Research at the NWO institutes leads to concrete results in many forms. The table below lists the key measurable results.

Table 3.1. Scientific output of the NWO institutes

Output	Number	Explanation
Academic publications	1779	Publications intended for scientists
of which in "referenced" journals	1534	Articles in journals that use a peer-review system independent of the editors
Of which in other journals	245	For example, conference proceedings, but not posters or lectures
Contributions to books	16	Contributions to books that target an audience of scientists and researchers
Monographs	2	Books for scientists and researchers describing results of research
Doctoral theses	77	Dissertations
Professional publications and products	97	Products of scientific research aimed at disseminating knowledge to a wider professional audience (contributions to books, reports, software, CD-ROMs, etc.)
Patents	6	Officially registered patents or patent applications
Other	815	All other publications, this includes algorithms, software, data collections, etc.

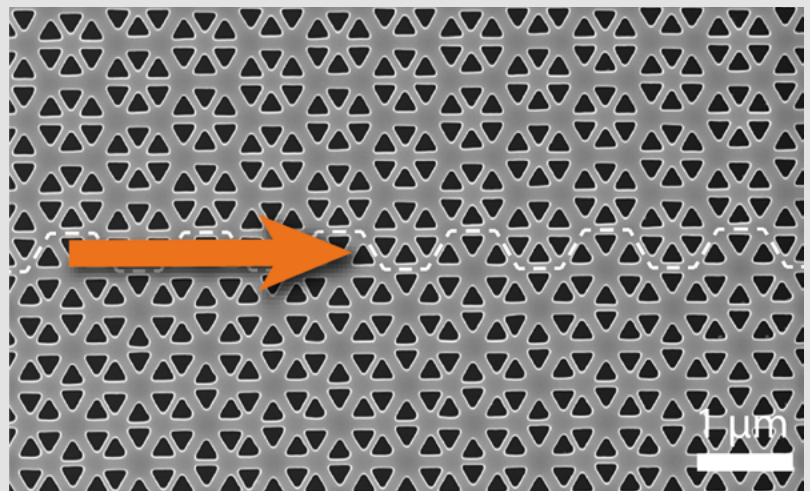
The output indicators listed above reflect concrete contributions made by the NWO institutes. At the same time, these provide little insight into the - in many respects much more important - contributions that the institutes make to the knowledge field and the Dutch knowledge economy via the national roles they play. Such as establishing new research directions, the development and maintenance of major research facilities, the facilitation of the use of this infrastructure by others, the coordination of large national research programs, attracting top international talent to the Netherlands, participation on behalf of the Netherlands in international organizations and - also - the provision of education.

Light bends around corners unimpeded

Researchers at AMOLF and TU Delft have seen light propagate in a photonic crystal without suffering from reflections. This light is "topologically protected": it can propagate only along the interface of the two parts of the crystal and does not bounce back in the case of imperfections, not even when it makes sharp corners. This is the first time that such topological protection of light conduction has been seen at the technologically relevant scale of nanophotonic chips.

The research was inspired by a new type of materials in electronics, so-called topological insulators. The researchers used a silicon chip and light with the same wavelength as in telecommunications. This makes photonic crystals promising for applications, such as making photonic chips, but topologically protected light can also be useful for efficiently circulating packets of quantum information.

Image: Electron microscopy image of topological photonic crystals in a perforated slice of silicon. Above and below, the crystal structures are slightly different; light can be conducted along the interface of the two (dotted line). The different mathematical description ("topology") of the light fields in the two crystals dictates that their interface must conduct light: that conduction is thus "topologically protected". Credit: AMOLF



4 Finances

The organization's financial figures are healthy at the end of 2020. In addition to their fixed state funding, the institutes managed to secure some 40% of the total income in competition or from public and private partners. Nevertheless, there is limited financial leeway for the future and a budgetary challenge awaits in the near future for the cost-coverage of the national research fleet and the deficit in operations.

The result for 2020 is €8,605k positive. The budgeted result was negative €14,045k. The improvement is due to incidental factors, including the contribution for the coronavirus Fund in 2020 of €6,000k, the expenses of which will follow in the years ahead, a different way of accounting for the costs of SRON's new building, and delays in the conduct of research because of COVID-19. The organization's equity at the end of 2020 was €94,633k and the balance sheet total was €292,380k. Solvency was 32%. The working capital amounted to €32,857k.

4.1 Financial developments in 2020

4.1.1 Developments in the financial position

The balance sheet total at the end of 2020 was €292,380k, a net decrease of €1,068k compared to the position at the end of 2019 (€293,448k). This increase is explained on the one hand by an increase in Fixed assets (€27,448k) and a decrease in Current assets (€28,516k). The corresponding changes on the liabilities side involve an increase in Equity of €8,593k and a decrease in Long-term liabilities (€1,716k) and Current liabilities (€7,589k) (see Table 4.1.1).

Table 4.1.1 Balance sheet total 2020 (x €1,000)

	12-31-2020 x €1,000	2020 Budgeted x €1,000	12-31-2019 x €1,000
Assets			
Fixed assets			
Intangible fixed assets	2,268	3,400	36
Tangible fixed assets	151,089	182,478	125,823
Financial fixed assets	2,238	1,610	2,288
	155,595	187,488	128,147
Current assets			
Receivables	30,269	34,722	35,330
Liquid assets	106,516	59,287	129,971
	136,785	94,009	165,301
Total assets	292,380	281,497	293,448
Liabilities			
Equity	94,633	68,146	86,040
Provisions	11,309	8,091	11,665
Long-term liabilities	82,510	70,000	84,226
Current liabilities	103,928	135,260	111,517
Total liabilities	292,380	281,497	293,448

Table 4.1.2 Financial key figures NWO-I

RATIOS	2020	2019
- Solvency	32%	29%
- Balance sheet total	292,380	293,448
- Working capital	32,857	53,784
- Current ratio	1.32	1.48

At 32% at the end of 2020, solvency increased slightly compared to the end of 2019.

This is explained by a decrease in debt (€186,438k at the end of 2020, €195,743k at the end of 2019) and an increase in equity (€8,593k).

The working capital is the difference between current assets and current liabilities. NWO-I's working capital decreased by €20,927k in 2020 (from €53,784k to €32,857k) and is sufficient to meet all current liabilities.

The current ratio reflects the extent to which current liabilities can be paid from the totality of inventories, short-term receivables and liquid assets. The current ratio at the end of 2020 was 1.32, which was lower than at the end of 2019. This is a safe value considering the reliability of the main debtor NWO.

Table 4.1.3 Liquid assets according to cash flows

Liquid assets according to funding flows	2020	2019
	x €1,000	x €1,000
- Cash flow from operating activities	7,695	-1,476
- Cash flow from investing activities	-31,150	-6,931
- Cash flow from financing activities	-	-
- Other balance sheet movements	-	-
Movement in liquid assets	-23,455	-8,407

The liquid assets decreased in 2020 by €23,455k from €129,971k to €106,516. This decrease arose largely from investing activities (€31,150k).

On balance, cash flow from operating activities resulted in an increase of €7,695k mainly due to the net income and expenditure adjusted for depreciation and provisions (€11,043k), Receivables (€20,793k) and a decrease in Liabilities (€32,759k).

The cash flow from investing activities arises from the investments paid in the tangible fixed assets (€32,549k), Investment in intangible fixed assets (€1,986k) and from the receipt of the item of €3,000k presented under Investment grant received in advance for the new SRON building.

4.1.2 Treasury

The rules for investing and borrowing money on NWO-I resources are laid down in treasury rules. The treasury rules were drafted based on the relevant legal framework (the 2001 / 2016 Government Accounts Act). The mandatory liquidity prognosis for at least 5 years is prepared quarterly. This obligation is yet to be included in the treasury rules. The legal framework is also constituted by the Regulations on investing, borrowing and derivatives OCW 2016 and the Treasury Banking regulations for local governments. The treasury rules were updated at the beginning of 2018. The starting point of the treasury function is that NWO-I monies may not be

invested or used to borrow money on. All liquid assets are held at the Ministry of Finance, via Treasuring banking, with the exception of a specific bank account for the benefit of SRON (balance at end of 2020 €450k).

There were no long-term loans in 2020.

4.1.3 Developments in income

NWO-I receives most of its grants from NWO. This State contribution is 60 percent of total income. NWO-I reports on this on the basis of the accounting manual prepared in accordance with DAS 660. NWO-I also receives target and project grants from NWO. This accounts for about 17% of the total income. These grants are subject to the NWO grant scheme.

In addition to NWO grants, NWO-I receives about 19% in grants from the European Union, the Ministry of Economic Affairs and Climate (EZK), the Ministry of Education, Culture and Science (OCW), universities and companies. These items are generally subject to specific grant and contract conditions that may vary by allocation.

Other income is about 5% of total income.

How did the income develop in 2020?

The realized income in 2020 exceeded the budget by €5,297k (see Table 4.1.4).

The state contribution was €7,083k higher than budgeted, which was due to a contribution for the coronavirus Fund (€6,000k). Income from Government contributions and grants was €4,656k lower than budgeted, of which €5,450k relates to the investment for the new SRON building, which was included in the budget as income but is accounted for in the realization as Investment grant received in advance. In contrast, Income from work for third parties was €4,093k higher than budgeted.

The income in 2020 was €2,968k higher than the income in 2019, on the one hand due to a higher State contribution €11,965k (of which €6,000k coronavirus Fund contribution and €2,790k wage and price compensation) and on the other hand due to lower income for Government contributions and grants (€255k) and Income from work for third parties (€9,381k). The latter is mainly related to the expiration at the BUW, where a decrease of €7,906k was recorded

Table 4.1.4 Budgeted and realized income and expenditure 2020 (x €1,000)

	2020 x €1,000	2020 Budgeted x €1,000	2019 x €1,000
Income			
State contributions	125,613	118,530	113,648
Other government contributions and grants	1,864	6,520	1,609
Income from work for third parties	74,927	70,834	84,308
Other income	6,094	7,317	5,965
Total income	208,498	203,201	205,530
Expenses			
Personnel expenses	137,070	135,320	142,706
Depreciation/amortization	5,424	8,805	6,687
Housing expenses	8,784	16,758	8,160
Other expenses	48,587	56,363	55,302
Total expenses	199,865	217,246	212,855
Balance of income and expenditure	8,633	-14,045	-7,325

	2020 x €1,000	2020 Budgeted x €1,000	2019 x €1,000
Financial income and expenditure	-15	-	-22
Result	8,618	-14,045	-7,347
Taxes	-	-	-
Result from participating interests	-13	-	-4
Result after taxes	8,605	-14,045	-7,351
Third-party share in result	-	-	-
Total net result	8,605	-14,045	-7,351

4.1.4 Developments in expenditure

The total expenditure in 2020 was €17,381k lower than budgeted, of which:

- Personnel expenses €1,750k higher mainly due to an adjustment under the CLA as of January 1, 2020, whereby wages increased by 2.6%.
- Depreciation expenses €3,381k lower, of which €3,102k at Nikhef because the renovation started later than expected.
- Housing expenses €7,974k lower, of which €8,259k in spending at SRON was budgeted as expenses, whereas this is ultimately capitalized and depreciated.
- Other expenses €7,776k lower, of which €6,581k within the BUW, due to the expiration of the research projects, resulting in lower costs for Administration and office expenses and for Inventory and equipment.

4.1.5 Developments in the result

The result is €8,605k positive, whereas the budget had assumed a negative result of €14,045k. The difference was caused by, among other things: the establishment of the coronavirus Fund for €6,000k, the new SRON building for €5,450k (lower expenses due to multi-year depreciation instead of one-off expenses), lower expenses than budgeted in the BUW for €6,581k and effects as a result of the coronavirus, including approximately €3,000k less in travel expenses than last year.

4.1.6 Description of the key risks and uncertainties

The global outbreak of coronavirus (COVID-19) in early 2020 has had consequences. In March, the Dutch government took steps to reduce the number of COVID-19 infections. These measures greatly affect the ability to work on site. As of mid-March 2020, where necessary, some institutions were open only very restrictively to allow critical processes and experiments to continue. As of the end of June, after the government relaxed measures, work could proceed at various sites with up to 30-40% staffing, with adherence to government and RIVM guidelines.

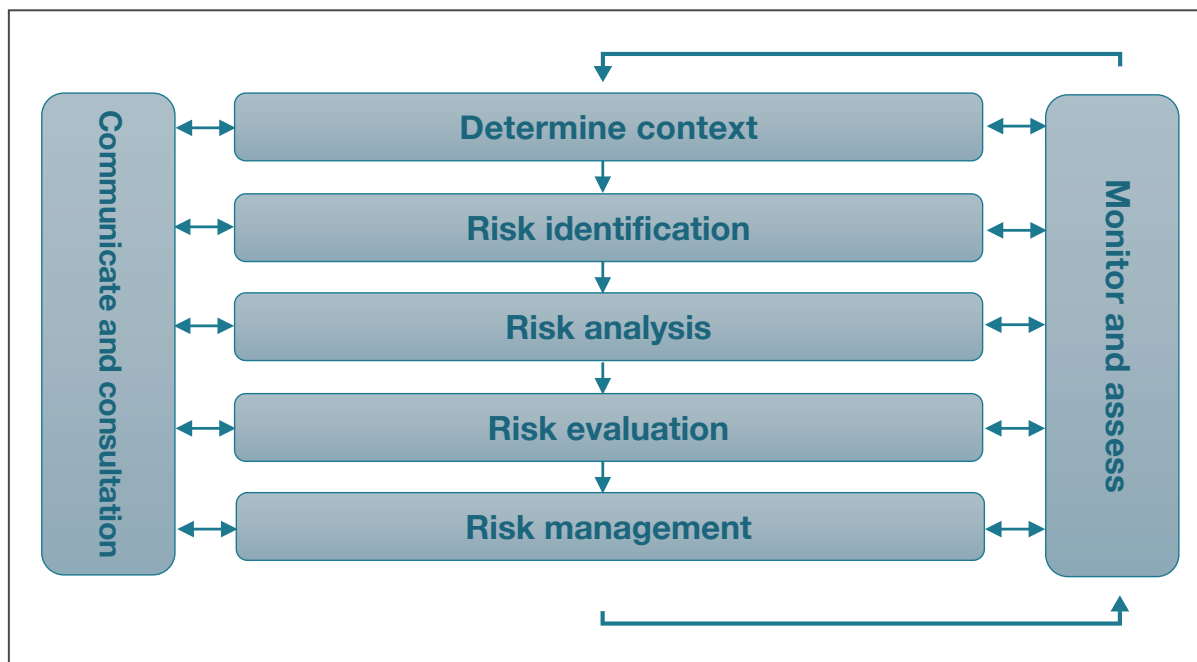
The following is an explanation of NWO risk management, what happened to the risks identified for 2020 and the risks anticipated for 2021.

How does NWO-I handle risk management?

When making decisions, it is important to understand the (potential) risks involved. This enables NWO-I to make a carefully considered decision. A system of risk management contributes to understanding the risks NWO-I faces. Risk management is also mandatory on grounds of "good governance" and legislation.

Risk management is a continuous process in which we identify and analyze the risks that threaten the attainment of the organization's objectives. These risks are subsequently managed. Clear delineation of responsibilities and process setup is essential for good risk management. NWO-I follows NWO's risk management. NWO is risk averse in its approach because it primarily works with public funds. NWO uses a general framework for identifying, analyzing, controlling and monitoring risks (based on elements from COSO and ISO 3100). NWO-I's risk management takes place according to the cycle shown in Figure 4.1.5.

Figure 4.1.5 Risk management cycle at NWO-I



Maintaining and updating the risk register is part of the ongoing processes of the operations and the planning and control cycle at NWO-I:

- Risk management at the institute level:
 - o the institutes ensure with an internal risk management process that the institute registry remains current and that the risk management process is ongoing;
 - o discuss the risk register in mid-year meetings with Foundation Board;
- Risk management at the level of NWO-I:
 - o consolidation is done annually at the NWO-I level for the benefit of the Foundation Board;
 - o the risks of the financial processes are being identified and mitigated as part of the NWO-I new finance system project.

How have the risks identified for 2020 evolved?

The NWO-I 2019 financial annual report had mentioned a number of financial risks for 2020. The status of these risks is as follows:

- Several options are being explored to fully cover the future operating costs of NIOZ's newly acquired fleet. This currently has a negative effect on NIOZ's future results. This process is still ongoing and decisions will be made in 2021.
- Impact of SRON's relocation. The main risk consists of potential construction cost budget overruns. This risk diminishes significantly as the end of construction approaches. The situation is currently under control, the project is running on time and within budget. There is also a risk in terms of friction costs due to the relocation, staff retention and project execution in relation to planning the relocation.

- The Safari project at SRON was committed to ESA, but its funding for SRON was not yet in place. It has since become clear that the project is not going ahead, this risk is thereby eliminated.
- The NWO-I Office budget was not fully covered from 2021. The financial deficit for the office budget for 2021 and subsequent years is approximately €2,500k. In the 2021 budget, the deficit was covered by funding granted by the Foundation Board.
- NWO-I was yet to receive commitment from NWO/OCW in early 2020 for 2020 salary compensation to accommodate the 2.6% increase in salary costs due to the 2020 CLA (collective labor agreement) concluded in early 2020. In September 2020, the Executive Board granted €2,790k in salary compensation to NWO-I and this was distributed to the institutes based on the item Wages, salaries, social and pension costs in the 2019 financial annual report.

What are the strategic risks?

The generic and strategic risks for NWO-I were identified by the Foundation Board at the beginning of 2019. These risks still apply (see Table 4.1.6). For each risk, mitigation measures have been determined and updated where necessary. These strategic risks have not been quantified because a classification into three categories - high, medium and low - has been chosen. This classification forms the basis for reporting and managing the risks.

Each institute reports the risks to the Foundation Board periodically. The rating of a risk (as High, Medium, Low) is partly determined by the likelihood of an event occurring, taking into account the expected effect (effectiveness) of a control measure. The rating is also based on the quantitative (consequential damage) impact. This is recorded in the detailed risk register. In addition to the project portfolio, these risks are discussed with the management of each institute and the board every six months, along with the financial figures, budget and forecast. Of course, this includes scientific developments that are also reviewed against the strategic plan and personnel developments and an eye for talent. The strategic risks are addressed in these discussions.

What are the financial risks for 2021 and beyond?

The financial risks for NWO-I are included in the 2021 budget adopted by the Foundation Board. The main financial risks are:

- Several options are being explored to fully cover the future operating costs of NIOZ's newly acquired fleet. This currently has a negative impact on the future results of NIOZ and NWO-I as a whole. Decision making in this regard will take place in 2021.
- Impact of SRON's relocation. The main risk consists of potential construction cost budget overruns. This risk diminishes significantly as the end of construction approaches. The situation is currently under control, the project is running on time and within budget. There is also a risk in terms of friction costs due to the relocation, staff retention and project execution in relation to planning the relocation.
- The NWO-I Office budget is not fully covered from 2022. The financial deficit for the office budget for 2022 and subsequent years is approximately €2,500k. Decision-making is expected to take place in 2021 based on the new service delivery model.

Table 4.1.6 - Strategic risks NWO-I

Risk	consequence	cause	existing control measures	positioning of risk
Undesired commitments with third parties and potential risks of financial setbacks arising from these commitments.	NWO and its institutes enter into long-term commitments (uncontrolled) that can lead to financial setbacks.	Misjudgment of undesirable business and/or scientific consequences of a long-term commitment. Tension between scientific and valorization objectives.	Directive on legal entities and the policy framework for holdings of institutes. Approval must be granted in advance to participate in (long-term) commitments.	Medium
Data breaches	Reputational damage, potential damage to data subjects. Damage claims, and no longer being supplied with sensitive data for research	Due to improperly secured IT, PCs, systems and servers. By employees or persons associated with NWO-I (un)knowingly providing information that should not have been provided.	Strengthening access security.	High
Digital intrusion at NWO-I	Reputational damage.	Unwanted access to the network may occur due to a failure to provide appropriate and updated security.	Firewalls, anti-virus software and spam filters. In addition, there is a process of logic-based access control. Off-the-Grid storage.	Medium
Unlawful and ineffective procurement	Noncompliance with applicable laws and regulations.	Procurement knowledge within NWO is limited, so employees are not aware of the obligations under the Procurement Act.	Procurement policies and procedures.	Low
failure to fulfill (delivery) obligations	Penalties/reputational damage.	project delays or cancellations	Make proper arrangements in advance and assess risks	Low
Fire/intrusion	Digital and/or physical data and goods/stock are lost as a result of fire/intrusion.	Fire can be caused by an internal or external event.	NWO-I has several insurance policies, including fire insurance. Encrypted storage of the sensitive data at a site >25km from the institute's location	Low
Hazardous substances	Accidents, reputational damage and financial consequences.	careless handling of hazardous substances	Procedures on the ordering, management and disposal of said substances.	Medium
Legitimacy	Not using resources for their intended purpose.	Lacking adequate and timely substantive and financial (steering) information.	Through substantive scientific and financial evaluations (e.g., by grantors, SEP cycle, portfolio evaluation), it is tested whether the research funds have been spent lawfully.	Medium
Integrity breaches	NWO-I must answer to its users and its stakeholders for breaches of integrity. There may also be material or non-material damage to parties or persons involved.	Codes of integrity are not adhered to and/or no longer align with current cultural values.	NWO-I safeguards this risk via various codes of conduct for internal employees and for external individuals involved in work at NWO-I.	Medium
Insufficient resources to replace/update (major) infrastructure	Major impact on the scientific program.	Insufficient support or funding available (either from NWO-I or external funding).	Timely selection decision by NWO-I Foundation Board, including financial preconditions and political sensitivities.	Medium
No innovative NWO-I	Institutes cannot respond to new scientific developments or new opportunities.	Mismatch between institute's resources and resources for innovative operations (strategic, financial, human resources)	Institutes describe their vision for innovative research for a six-year time frame with a further look into the future in their Strategic Plan.	Medium
Discrepancy between ambition and the knowledge and capacity it demands	The required competencies are not present in qualitative and quantitative terms. Can result in dissatisfaction, staff turnover and high workload and stress among employees. Can result in NWO not achieving its strategic objectives.	NWO is unable to recruit and retain the right employees ("war for talent").	Apply strategic personnel planning, the right incentives to retain employees, good training policy, and good fringe benefits.	Medium
NWO-I does not have a real estate budget/policy	No provisions for major real estate investments.	No policy.	In recent years, renovations and new construction have been financed on a project-by-project basis. The policy is evolving, so provisions may be made in due course.	Medium
Grant requirements are not met.	The grant awarded may be reduced, requiring the repayment of (part of) the grant.	Insufficient awareness of conditions and/or insufficient taking into account of conditions throughout the project.	Project controllers have been appointed by the institutes to monitor such matters.	Low

Uncertainty surrounding the coronavirus crisis

The financial impact of the COVID-19 measures manifests itself mainly in additional costs for the extension of the temporary employment contracts of PhDs and postdocs, but also in a reduction of commuting costs and significantly lower travel costs for business trips abroad, since international conferences could not be attended in person. Rather than applying to 2020, the bulk of renewals will manifest later as projects/employment contracts expire.

On July 8, 2020, the Board of the NWO-I Foundation decided to establish a coronavirus Fund with a total size of €6,000k from an allocation from the NWO Executive Board (resolution date June 10, 2020).

The coronavirus Fund is specifically intended for situations where the need resulting from the coronavirus crisis exceeds the ability of an NWO Institute to accommodate this itself with existing resources. If the institute is unable to bear or resolve certain consequences on its own, it may, under certain conditions, seek assistance from the coronavirus fund.

The coronavirus fund provides a centralized joint solution for all institutes, which each institute can access if needed. Through mutual solidarity, the most pressing needs can be collectively addressed, allowing for the continued realization of as much of the total research portfolio as possible. Not every institute will make an equal demand on the fund. The coronavirus Fund is multi-year in nature because the effects almost always show up at the end of projects.

4.2 Multi-year budget

On October 7, 2020, the Foundation Board adopted NWO-I's 2021-2025 consolidated multi-year budget. This budget was approved by NWO on December 10, 2020. This budget contains the income, expenses and net result. The appropriation of the net result is indicated as well. The budget was based on NWO's multi-year outlook for NWO-I as known at the time and on the applicable principles.

4.2.1 Financial outlook

The institutes' basic grant is funded by NWO and includes fixed-term components in addition to structural components. The basic grant is expected to maintain its stable character in the coming years. In addition to the basic grant, the institutes successfully acquire project funds from NWO, the European Union, the Dutch government and from collaborations with universities and the business sector. The institutes are expected to maintain their project portfolio in the coming years.

The income for 2021 is budgeted at €199,564k. In the 2021 budget (approved in October 2020), NWO-I assumes grants and contracts already acquired. Additionally, estimates were made of the benefits NWO-I will acquire for new programs and projects. In general, this reduces the income in the longer term because some caution is applied in the process. The income also decreases in the multi-year outlook due to the planned expiration of projects awarded under the former granting function of FOM (BUW), which is additionally funded by NWO.

The multi-year budget includes new funds for the 2020 wage compensation, the renovation of the boiler house WCW and a deficit clearance at the NWO-I office. In November 2020, the Executive Board also decided to fund additional resources related to the operation and VAT costs for new ships for NIOZ to the amount of €1,200k per year starting in 2022. Within the budget for SRON, part of the contribution in connection with the relocation to Leiden will be brought forward in time.

4.2.2 Budgeted income and expenditure

Below is an overview of the expected development of income and expenses over the next five years, without taking into account the effects of the coronavirus crisis (Table 4.2.1).

Table 4.2.1. Statement of income and expenditure

(amounts x €1,000)	Approved budget 2020	Realization 2020	Approved budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
Income							
State contributions	118,530	125,613	121,946	121,877	119,283	118,335	115,999
Other government contributions and grants	6,520	1,864	1,378	878	761	796	796
Income from work for third parties	70,834	74,927	67,819	63,347	59,790	60,642	59,444
Other income	7,317	6,094	8,422	8,335	7,668	7,977	8,342
Total income	203,201	208,498	199,564	194,436	187,502	187,750	184,581
Expenses							
Personnel expenses	135,320	137,070	136,063	129,812	127,018	124,154	123,613
Depreciation/amortization	8,805	5,424	8,998	10,399	9,042	12,010	11,086
Housing expenses	16,758	8,784	21,802	11,728	11,525	12,725	12,186
Other expenses	56,363	48,587	51,789	50,530	47,825	46,559	43,338
Total expenses	217,246	199,865	218,653	202,469	195,411	195,447	190,223
Balance of income and expenditure	-14,045	8,633	-19,089	-8,032	-7,909	-7,697	-5,642
Financial income and expenditure	-	-15	0	0	0	0	0
Taxes	-	-	0	0	0	0	0
Result from participating interests	-	-13	-25	0	0	50	50
Third party share in result	-	-	0	0	0	0	0
Net result	-14,045	8,605	-19,114	-8,032	-7,909	-7,647	-5,592

The most notable developments in this budget are:

- The main reasons for decreasing income in the period 2021-2025 (-€14,983k) in the coming years are incidental components in the basic grant (-€5,892k), the expiration of granting obligations via the BUW (-€6,000k), the conservative estimate of income to be secured through acquisition (-€4,000k). This is also reflected in lower expenditures.
- The item Income from work for third parties includes:
 - o specific project grants such as NWO major and the Innovation Impulse (NWO-groot en de Vernieuwingsimpuls) (Venis Vidis Vicis) implemented by the institutes;
 - o income on account of projects funded by the European Union projects from the framework programs and by the European Research Council (ERC);
 - o income from companies from PPP projects and contract research at the institutes.
- The expenses decreased due to the expiration of programs and projects in the BUW and the expiration of third-party funded projects at the institutes.
- The negative result is caused by the earmarked reserves catching up with the expiring granting obligations and the deficit at the Office. From 2023, the depreciation related to the fleet replacement at NIOZ is still not covered, which also leads to a negative result.

All the NWO institutes secure funding in addition to the basic grant allocated by NWO from the State contribution. The motivation and approach depend on the mission and context of the institute and therefore vary from institute to institute. This also applies to the volume of grants and contracts that are yet to be acquired, recorded for each institute.

Granting activities after merger settled no later than 2022

On January 1, 2017, the foundation for Fundamental Research on Matter (FOM) was transformed into NWO-I. In the process, the granting activities of the former FOM were transferred to NWO's Exact and Natural Sciences (ENW) domain. NWO-I will still settle the awards made by FOM before January 1, 2017. This allows the institutes and the BUW to conclude ongoing programs and projects. The last program is expected to be administratively

concluded in 2023. In 2020, the total amount of granting commitments decreased from €20,932k to €9,722k at the end of 2020. Table 4.2.2 shows how these granting liabilities will be settled over the next two years. Positive or negative balances of closed programs and projects are deducted from the item General in the following year. For 2020, this was negative €77k, increasing the budgeted amount of €46k in 2020 to €123k.

Table 4.2.2 Size of granting commitments in multi-year perspective

Granting obligation NWO-I (amounts x €1,000)	12-31-2019	Movement 2020	12-31-2020
Of which to be financed at the expense of future NWO budgets	20,932	-11,210	9,722
Total granting obligation NWO-I	20,932	-11,210	9,722
Organizational units (amounts x €1,000)	12-31-2019	Movement 2020	12-31-2020
AMOLF	330	-330	0
DIFFER	784	-353	431
NIKHEF	4,184	-2,012	2,172
BUW	15,402	-8,638	6,764
GENERAL	232	123	355
Total NWO-I	20,932	-11,210	9,722

Organizational units (amounts x €1,000)	2021	2022	Total
DIFFER	431	-	431
NIKHEF	1,736	436	2,172
BUW	3,708	3,056	6,764
GENERAL	355	-	355
Total NWO-I	6,230	3,492	9,722

4.2.3 Investment plans and circumstances affecting the budget

4.2.3.1 Fleet renewal at NIOZ

The decision to replace the ships Navicula and Pelagia was made, the plans for the NIOZ fleet replacement were further developed in 2020. The Executive Board indicated that the financing of the fleet must be accommodated within the total NWOI grant through a reallocation of funds of up to €2,800k.

4.2.3.2 New SRON building

The progress of SRON's relocation from Utrecht to Leiden is on schedule and in line with the budget agreement. The budget amounts to €55,800k, excluding the building land value. Over €51,200k is expected to be capitalized as investment and €4,600k will be recognized as direct construction costs. At the end of 2020, €41,674k is included as material fixed corporate assets under construction with respect to the new construction.

4.2.3.3 Nikhef renovation

For the renovation of Nikhef, the NWO Executive Board made an allocation of €26,000k in 2018. Nikhef receives this as a basic grant of €1,300k per year in the period 2019 through 2038. Nikhef will supplement this themselves with funds from the basic funding (€6,000k, in the period 2017 - 2026) and from data center operations (€7,000k, in the period 2019 - 2028) to achieve the total required amount of €39,000k.

4.2.3.4 Expiration of the BUW

Research activities within the BUW were granted under the former granting function of FOM. The size of the BUW is decreasing as a result of its phasing out. The workforce decreased from an average of 271 FTE in 2019 to an average of 179 FTE in 2020. The BUW projects are expected to end by mid-2023.

4.2.3.5 Effects of the coronavirus crisis

The effects of the coronavirus crisis are described in Chapter 4.1.6 Description of key risks and uncertainties: uncertainty surrounding the coronavirus crisis.

NWO provided a budget of €6,000k to deal with the impact of the COVID-19 pandemic. The Foundation Board decided to put this into a coronavirus Fund which is intended to provide financial support to the institutes in situations where research costs exceed income, due to the COVID19 outbreak.

4.2.4 Continuity section

The multi-year outlook regarding NWO's basic grant to NWO-I is outlined annually in NWO's Framework Letter. NWO-I's budget is drawn up based on the figures in the framework letter and on the project awards and contracts that have already been secured. The budget also includes an estimate of grants and contracts yet to be secured. The multi-year budget of income and expenditure can be found in section 4.2.2.

NWO-I's 2021 budget includes an overview of the movement in NWO-I's equity. Equity will decrease in the coming years as a result of the expiration of projects honored prior to 2017 in the context of FOM's granting function and as a result of the utilization of allocated reserves at the institutes. In addition, various major investment projects, such as the replacement of the NIOZ fleet, the construction of the new SRON building, and the renovation of Nikhef, will significantly impact the development of the foundation's assets. Consequences are also expected for the carrying out of projects that were delayed due to the coronavirus crisis for 2021 and beyond. The latter effects were not taken into account in the Equity and liquidity tables below.

Equity (amounts x €1,000)	End of 2019	End of 2020	2021 Budgeted	2022 Budgeted	2023 Budgeted	2024 Budgeted	2025 Budgeted
Equity	86,040	94,633	66,123	58,091	50,182	42,535	36,943

The budgeted decrease in equity also has implications for the projected position of the liquid assets. Liquid assets are decreasing due to large capital expenditures in 2021 and beyond. Liquidity is expected to be negative from 2022. In 2021, when the multi-year budget 2022-2026 is prepared, the development in liquidity will be further monitored, also taking into account the effects of the coronavirus crisis.

In its multi-year budget, NWO has taken into account a loan to NWO-I to finance these large capital expenditures totaling €120,000k, which will cover the budgeted deficit.

Liquidity

(amounts x €1,000)	Realization 2019	Realization 2020	Budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
Starting balance		129,971	95,831	12,966	-46,077	-88,896	-86,012
Revenues		240,690	195,162	149,983	150,782	195,419	188,820
Expenditure		264,145	278,028	209,026	193,601	192,534	185,239
Final balance according to balance sheet	129,971	106,516	12,966	-46,077	-88,896	-86,012	-82,431

The balance sheet budget provides insight into the expected positions of the different balance sheet items in a multi-year perspective. The budgeted balance sheet total will decrease by €26,229k in the coming years compared to the end of 2020, mainly due to the decreasing liquidity position influenced by large capital expenditures. The fixed assets increase substantially as a result of investments made. Capitalized parts of new construction and renovation projects are depreciated using the component method. Equity is decreasing as planned, in part because arrears in research are being cleared and the BUW's earmarked reserve is decreasing. Because of a lack of sufficient insight into the future, income from work for third parties has been budgeted conservatively, which results in a declining trend.

Section 4.2.2. shows the projected development of income and expenditure through 2025. The budgeted expenses are higher than the income, which yields negative results. This occurs, for instance, when income and/or expenses are not budgeted in the same year, as is the case for income for capital expenditure and the related depreciation expenses. Negative results covered by reserves do not pose a problem.

The main uncovered results concern the depreciation costs of NIOZ's fleet replacement and deficits in the Office budget. No income has yet been provided for these costs. The lack of income and lack of cover will mean that decisions will have to be made and the budget adjusted for these non-covered items.

Beyond this, the biggest uncertainty for the coming years is the financial impact of the coronavirus crisis. NWO has made funds available for absorbing these impacts.

Balance sheet	Realization 2019	Realization 2020	Budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
Intangible fixed assets	36	2,268	3,787	5,549	6,689	6,716	6,732
Tangible fixed assets	125,823	151,089	197,190	231,224	260,291	247,370	235,385
Financial fixed assets	2,288	2,238	2,112	2,103	2,094	2,115	2,156
Fixed assets	128,147	155,595	203,088	238,875	269,073	256,200	244,272
Receivables	35,330	30,269	35,142	79,600	116,311	108,594	104,310
Liquid assets	129,971	106,516	12,966	-46,076	-88,897	-86,012	-82,431
Current assets	165,301	136,785	48,108	33,524	27,414	22,582	21,879
Assets	293,448	292,380	251,196	272,399	296,487	278,782	266,151
Equity	86,040	94,633	66,123	58,091	50,182	42,535	36,943
Provisions	11,665	11,309	10,789	10,671	10,424	10,330	10,287
Long-term liabilities	84,226	82,510	77,233	71,447	66,638	61,832	57,040
Current liabilities	111,517	103,928	97,051	132,191	169,244	164,087	161,882
Liabilities	293,448	292,380	251,196	272,399	296,488	278,782	266,151

The foundation's workforce will decrease in the coming years as a result of the expiration of the granting function. The future project portfolio has been conservatively estimated. The ratio of permanent appointments to temporary appointments will shift in the coming years towards more permanent appointments, again primarily due to the expiration of the granting function where traditionally more temporary appointments would occur.

Personnel (Average number of employees FTE)	Realization 2019	Budget 2020	Budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
Permanent appointments	865	885	899	890	879	871	864
Temporary appointment	900	852	658	552	525	505	500
Total	1,765	1,737	1,558	1,442	1,405	1,377	1,363

Personnel (Average number of employees FTE)	Realization 2019	Budget 2020	Budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
Executive Board/Management	18	20	20	20	20	20	20
Personnel in primary process/ scientific positions	1,061	1,008	874	780	748	721	714
Support staff/other employees	686	709	664	642	637	636	630
Total	1,765	1,737	1,558	1,442	1,405	1,377	1,363

The prescribed breakdown of personnel from the Dutch Accounting Standards published by the Dutch Accounting Standards Board is into Executive Board/Management of NWO-I, being the directors and institute managers (on average 2 FTE per institute); the personnel for the primary process (all scientific functions) and the support and other staff (such as technicians, ICT, facilities and the like, personnel and finance employees).

Continuity

NWO-I has already taken various measures to ensure the continuity of activities, but will continue to closely monitor developments in the coronavirus outbreak and take additional measures where necessary.

In addition to the coronavirus fund already formed in the amount of €6,000k, it was published in the Government Gazette of November 11, 2020 that financial compensation was granted for research delayed in 2020 due to the COVID-19 outbreak. The compensation amount was set at €815k.

Other aspects related to continuity are addressed elsewhere in the report: see, for instance, the description of risks and uncertainties above and internal control and supervision in Chapter 7.

5 Personnel

This chapter describes the most important personnel developments in 2020.

5.1 Personnel employed

NWO-I is the employer of the employees of the institutes, the NWO-I Office and all the employees in the University Working Groups Administrative Unit (BUW).

The table below shows how many FTEs NWO-I employed for different categories of employees. The male/female ratios were included as well. NWO-I has set a goal of increasing the percentage of women in scientific positions in particular and is actively working towards this objective (as outlined in Chapter 3, Diversity and Inclusion). There has been a slight increase in the percentage of women over the past year.

Personnel category	Type of personnel	12-31-2019				12-31-2020			
		FTE	People	%M	%F	FTE	People	%M	%F
Scientific	PhD students	497	503	70%	30%	431	435	66%	34%
	Researchers, temporary	302	323	71%	29%	297	318	67%	33%
	Researchers, permanent	267	288	85%	15%	266	290	84%	16%
Non-scientific	In temporary employment	106	130	65%	35%	111	128	69%	31%
	In permanent employment	595	654	72%	28%	598	653	72%	28%
Total staffing		1,768	1,898	73%	27%	1,703	1,824	71%	29%

As of December 31, 2020, the scientific payroll counted a (rounded) total of 995 FTEs (728 of which were temporary and 266 permanent) and other personnel accounted for a (rounded) total of 709 FTEs, including technicians, IT workers, facilities workers and financial staff (111 temporary and 598 permanent).

The decrease in the number of PhD students is largely due to the phasing out of the BUW.

As of December 31, 2020, the management of NWO-I, being the directors and institute managers, consisted of 20 FTEs: 9 institute directors, including 2 *ad interim*, 9 institute managers, the NWO-I director of operations and the NWO-I director.

5.2 New implementation regulations 2020-2023

On December 10, 2019, the director and the Central Works Council reached agreement on part of the implementing regulations (UVR). UVR 1 (Commuting Expenses) and UVR 4 (Study Facilities) were further negotiated and agreed upon in 2020. The start date for the commuting expense scheme was July 1, 2020. As a result of the coronavirus measures and the sharply reduced travel movements from that point on, it was decided, together with the employee representatives, to largely postpone the introduction of the commuting expense scheme until January 1, 2021. The old scheme remained in place, with only the 100% reimbursement of commuting expenses incurred by public transport from the new scheme being introduced.

In December 2020, agreement was reached with the Central Works Council on continued suspension of the new commuting expense scheme and agreements were made on reimbursing expenses incurred when working from home for the period that the government measures related to the coronavirus pandemic force us to work from home.

All employees employed on or after December 1, 2020 were reimbursed in December 2020 for the cost of working from home during the coronavirus crisis in 2020. The reimbursement paid was €262 net based on full-time employment. For employees working part-time or hired after July 1, 2020, this amount was recalculated in proportion to the number of hours and/or length of employment.

The reimbursement was based on calculations by the National Institute for Budget Information. According to those calculations, working from home costs an average of €2 per day. NWO adopts this amount based on 131 workable days in 2020.

It was also agreed in December that from January 1, 2021, employees will only be eligible for the working from home allowance based on reimbursement through declaration. The same applies for commuting expenses for employees who work at their work location. During the coronavirus crisis, this travel allowance for use of own transport was 19 cents per kilometer, over a maximum of 30 kilometers one way, up to a maximum of €170 per month. Travel by public transportation is fully reimbursed. Employees who depend on public transportation can apply for an NS Business card in the name of the employer. The costs are charged directly to NWO-I and therefore no longer need to be claimed for reimbursement.

The reimbursement for expenses of working from home will end once employees are no longer required to work from home as much as possible based on the guidelines from the RIVM and the cabinet.

5.3 Junior researchers

5.3.1 PhD students

PhD students are employees who conduct scientific research via a learning trajectory that culminates in a doctoral thesis and a doctoral degree, the recognition as an independent scientific researcher. The primary and principal requirement for conducting scientific research is substantive knowledge in the PhD student's own research field.

The substantive development of the PhD student requires much more than substantive scientific knowledge. Being a fully-fledged Doctor of Science with good job prospects requires "soft skills" in addition to subject area knowledge and research skills.

Organizational units (institutes and the BUW) determine exactly which training courses (in terms of content and provider) they will organize for their PhD students in addition to internal training and "hard skills" training. Joint procurement and organization of training and courses that are offered frequently and to many NWO-I PhD students has added value.

In connection with the expiring contracts with relevant training agencies, a procurement procedure was organized in 2019 in line with the 2012 Procurement Act in order to award the trainings through a tendering procedure from 2020. A multiple private tender procedure for training for PhD students culminated in a "PhD training program" from 2020, which includes the joint procurement and organization of four training courses: Taking charge of your PhD project, The art of presenting science, The art of scientific writing and Career orientation. The trainings are conducted by three different agencies.

NWO-I Career orientation provides third and fourth-year PhD students with the opportunity to visit companies. NWO-I organizes this for those considering careers outside academia. Due to coronavirus measures, an online variant took place in 2020 in cooperation with Demcon Delft. In addition to an introduction by the board of directors, two NWO-I (former FOM) alumni shared their stories and experiences in transitioning to the business sector, in this case Demcon Delft. The interactive Webinar had 44 participants and the survey indicated that the majority found participation valuable. The meeting was recorded and made available to all employees via the NWO-I website. When it becomes possible again, NWO-I will resume the company orientations in the form of physical visits to the companies.

5.3.2 Implemented work-to-work policy

Most of the influx into benefits arises from the expiration of the employment contracts of PhD students. We pursue an active policy to help young researchers move from work to work after their temporary employment ends. To assist PhD students in their job search immediately after NWO-I, we offer the opportunity to enroll in

individual basic training courses on career planning. During their employment, the PhD students are invited to undertake skills training in order to increase their chances of finding subsequent employment after the end of their employment at NWO-I.

NWO-I has also concluded an agreement with service provider Qare, who carries out the reintegration obligations on behalf of NWO-I, which we bear as self-insurer, in cases where the candidate is expected to encounter difficulty in finding a new job. They monitor whether the former employee is complying with the obligations under the Unemployment Insurance Act and also advise on the use of reintegration resources (e.g., training, trial placement and the like).

NWO-I is self-insured for the Unemployment Insurance Act, which means that the costs must be borne by NWO-I. The implementation of the Unemployment Insurance Act is performed by the UWV. The UWV sends monthly invoices to NWO-I which must be paid on the basis of the statutory obligation. The costs are charged to the division where the former employee was employed during their time with NWO-I.

This contributes to compliance with laws and regulations in the event of dismissal.

6 Housing, sustainability and occupational health and safety

This chapter sheds light on the key developments in real estate and housing, sustainability and occupational health and safety.

6.1 Real estate and housing

6.1.1 New SRON building

In March 2018, NWO's Executive Board decided to provide funds for the construction of a new building for the NWO institute SRON on the Leiden University campus. The relocation was accompanied by a collaboration between Leiden University, TU Delft, several other knowledge partners and SRON, focused on SRON's main research programs: astrophysics, exoplanet research, Earth-centered research and technology development.

The new building was designed by Ector Hoogstad Architects and is being built by the MedizomZes/Kuijpers construction consortium. Because SRON develops new detection technologies for satellites and builds satellite instruments with great precision, the *clean room* will have a low-vibration floor. Five thousand cubic meters of concrete, eight hundred tons of reinforcement and three hundred bored piles provide enough mass and stability to keep out virtually any vibration. In addition to the aforementioned *clean room*, the building features laboratories, technical areas with crane tracks, a characteristic atrium, grandstand stairs and an eye-catching facade. The building was designed to meet the standard of the BREEAM Excellent sustainability label. It will be put into operation in mid-2021. NWO-I and SRON are in talks with Utrecht University about alienating the ground lease on the site of SRON's old building on the Utrecht campus.

On Friday, September 25, the new SRON building in Zuid-Holland, located on the Leiden Bioscience campus, reached its highest point. Due to the coronavirus pandemic, this special milestone had to be celebrated on a small scale in the presence of Frank van Rijn (SRON), Marco Jungbeker (Kuijpers), Gerwin van der Panne (Aronsohn), Annemieke Beers (SRON), Albert Bok (MedicomZes), Jan van der Boon (NWO-I) and Michael Wise (SRON).



Celebration of highest point on September 25, 2020 (Photo: Remco Zwinkels)



Screenshot from webcam on 26-11-2020

(source: <https://www.sron.nl/sron-leiden-delft-webcam-nieuwbouw-leiden>)

6.1.2 Renovation of Nikhef building

The NWO Executive Board decided in 2018 to renovate Nikhef's building at the Amsterdam Science Park. The renovation consists of structural and technical modifications to prepare the building for Nikhef's operations. The look and feel will be more modern and the building will be made more sustainable. There will be more space for collaboration and informal meetings in a central location, preserving the peace and quiet of the other workspaces. The design and planning for the renovation continued to take shape throughout 2020. According to the current schedule, construction work will begin in spring 2021. Different parts of the building will be tackled in a series of phases, and the building will remain in use during the renovation. Ultimately, a beautiful and future-proof building will be created that students, technicians and scientists will enjoy for at least 20 years to come.



Impressions of new Nikhef building

(bron: <https://www.nikhef.nl/news/nikhef-vernieuwt-gebouw-in-amsterdam/>)

The Nikhef building is part of a complex, which also includes NWO institute CWI and others. The basic design for the changes to the facade throughout the complex was created by BDG Architects. The design team for the Nikhef section was comprised of JHK Architecten, Deerns and Aronsohn Constructuities.

6.1.3 WCW boiler house

In 2020, the Foundation Board decided to sustainably renovate the so-called WCW boiler house in conjunction with the Nikhef renovation as well. WCW stands for “Wetenschappelijk Centrum Watergraafsmeer” [Watergraafsmeer Scientific Center]. The proposed solution is a thermal storage ring system involving heat and cold being stored and extracted from wells in the ground. Because of the great demand for cooling, cooling towers are needed as well. The Boiler House Renovation project will take eighteen months and will ideally align with the moment when Nikhef needs cold from the new boiler house.

NWO institutes CWI and Nikhef both use the WCW boiler house and will receive a sum of €2.78 million including VAT from NWO-I for its sustainable renovation. The Foundation Board agreed on July 8, 2020 to award this amount as a grant contribution to CWI and Nikhef, in the form of an amount in the NWO-I multi-year budget of €132 k per year from 2021 to 2042. The investment is thus incorporated into NWO-I's multi-year budget.

The Foundation Board also agreed to provide liquid advances to both institutes to allow for the investment in the WCW. This advance payment fits within the state banking frameworks that exist for this purpose and the applicable tax rules. The contribution covers the bulk of the funds needed. In addition, an investment contribution from the University of Amsterdam (UvA) is required. The other WCW partners finance the remaining investment through the WCW budget, utilizing their contributions to the shared facilities. Finally, landowner NWO is contributing financially to make sure connections are established for future occupants to the new lots.

6.1.4 Development of strategic real estate plan

NWO-I owns a large real estate portfolio spread throughout the country and also leases a number of properties. NWO owns a substantial site at the Amsterdam Science Park and occupies office space in two leased buildings. Major investment decisions such as the recent new SRON building and the renovation of Nikhef are made and financed on an ad-hoc basis.

It is essential to understand future housing needs and the related costs of maintenance and investment in the short and long term. Managing this at the level of the group requires a real estate policy, laid down in a Strategic Real Estate Plan (SVP). In this regard, NWO's Executive Board has already adopted a number of strategic principles at the end of 2018.

Important steps were taken at the end of 2020 to arrive at the first version of the SVP in 2021. This will include NWO-I's strategic goals for housing, including the financial framework (multi-year investment plan) so that a structural link is made to the financial resources.

The development of an SVP involves many stakeholders and other parties with a substantive interest. Final responsibility for the development of the SVP rests with the NWO-I director of operations. The substantive fleshing out of the SVP is being led by NWO-I's Real Estate department. The decision-making authority rests with the NWO-I board of directors and the NWO Executive Board.

6.1.5 Coronavirus pandemic and housing

The outbreak of the coronavirus pandemic prompted the creation of an NWO-wide Corona Task Force in early March 2020 to shape an overarching policy for the whole of NWO. At the same time, a similar task force was established within NWO-I via the institute managers' meeting. In coordination with the NWO-I board of directors, the institutes made their own considerations regarding opening up offices and laboratories. Within the possibilities provided for by the national measures, they analyzed how the continuity of the scientific (laboratory) research could be safeguarded as much as possible. For many of our institutes and the NWO-I Office, this resulted in either no access or very limited access to the offices and laboratories.

6.2 Sustainability

Sustainability, the environment and climate are high priorities at NWO. NWO is committed to working paperless, using as little plastic as possible, making its buildings as climate neutral as possible and having its employees travel by public transportation.

External agency Arcadis was commissioned in 2019 to determine NWO-I's climate impact via a so-called baseline measurement in an effort to work towards a climate-neutral organization. This assignment was carried out in 2020 and the results were used in further developing sustainability policies. To this end, every institute was screened in detail and the most important sources of environmental impact were identified. Over the course of 2021, we will look at what measures could be taken at each institute on this basis, in order to reduce the impact on the environment or achieve carbon offsetting.

6.3 Occupational health and safety

NWO-I will issue a separate occupational health and safety annual report for 2020. We limit ourselves in this report to the occupational health and safety policy of NWO-I, which pursues the following goals:

- To optimize the safety and protection of the health of all employees, guests, interns and visitors;
- To ensure optimal health and safety when handling installations, equipment, machinery and goods;
- To prevent psychosocial work stress caused by excessive workload, bullying, sexual harassment, aggression and violence.

A new central health and safety coordinator was appointed in 2020.

6.3.1 Working from home during the coronavirus pandemic

NWO-I has provided resources and support to facilitate effective remote work since the onset of the pandemic. the IT infrastructure has been adjusted, for example, and employees at most locations have the option to borrow necessary equipment, such as an office chair, additional monitor, and keyboard, to set up their home offices. Managers were asked to be extra caring for their team members.

An employee survey was conducted during the year under review to understand the effects of working from home in the context of the coronavirus crisis. The response rate ranged from 50 to 90 percent, and varied by organizational section.

The survey provided good insight into the perceived advantages and disadvantages of working from home. It was found that 12% of employees dislike working from home, but the vast majority are fairly positive (30%) or even very positive (57%) when it comes to working from home. A large proportion of employees (74%) want to continue working partially from home in the future. These percentages vary by job category.

The results of the survey helped shape a hybrid work policy. A key focus in this regard is also on facilitating the setting up of home workplaces.

6.3.2 Sickness absence

The sickness absence rate (excluding pregnancy) at NWO-I was lower in the 2020 calendar year than in the previous two years. The average duration of sickness absence cases that ended in the year under review increased, however.

Location	Sickness absence rate				Average duration (days)	
	2018	2019	2020	average	2019	2020
AMOLF	4.00%	3.94%	2.32%	3.42%	8.8	9.2
ARCNL	1.80%	1.54%	1.31%	1.55%	2.5	6.5
Astron	4.60%	4.40%	4.10%	4.37%	12.3	22
NWO-I Office	6.00%	3.40%	7.04%	5.48%	7.7	16.2
BUW**	1.00%	1.21%	1.36%	1.19%	12.6	26.2
CWI	1.90%	1.98%	1.09%	1.66%	16.4	15.1
DIFFER	2.60%	5.19%	3.75%	3.85%	14.3	20.9
Dubble	2.70%	0.00%	0.68%	1.13%	-	5
Jive	1.30%	3.76%	2.08%	2.38%	15.9	17.3
Nikhef	1.70%	2.20%	1.90%	1.93%	11.7	22.2
NIOZ*	2.00%	3.50%	2.60%	2.70%	6.6	9.4
NSCR	1.90%	1.72%	2.45%	2.02%	10	9.5
SRON	4.50%	3.15%	2.66%	3.44%	17.3	18.8
Total NWO-I*	2.20%	2.88%	2.01%	2.36%	11.7	16.5

* NIOZ's data was provided by the institute itself. It cannot be ruled out that the data is based on a different definition and thus a somewhat different method of calculation. For this reason, the total counts do not include these figures.

** Regarding sickness absence within BUW, it is worth noting that there are indications that not every instance of short-term absence among NWO-I employees is consistently reported.

7 Organization and governance

The Foundation for Dutch Scientific Research Institutes (NWO-I) was founded on April 15, 1946 under the name Foundation for Fundamental Research on Matter (FOM). As of January 1, 2017, FOM was transformed into NWO-I. On January 1, 2018, NWO-I merged with the foundations that maintained the institutes ASTRON, CWI, NIOZ, NSCR and SRON. NWO-I is part of the Dutch Research Council (NWO). The changes above were implemented in order to make a clear distinction in the NWO organization between the awarding of grants for research and the conduct of research. NWO concentrates on the awarding of grants, NWO-I concentrates on the conduct of research. This research is conducted at the institutes of NWO-I.

In the first quarter of 2019, an evaluation was conducted on the operation of NWO-I's then relatively new governance model. This revealed that the model was deficient in a number of respects. To increase the effectiveness and decisiveness of the organization, it was decided to appoint one director with final responsibility for the foundation as a whole in addition to an NWO-I director of operations.

The decision to adjust the governance structure was submitted to the central participation council immediately after the summer of 2019. In early December 2019, they gave their green light subject to certain conditions. Formalization of the changes to the articles and regulations was approved by the Foundation Board on September 23, 2020. This amendment of NWO-I's articles took effect on October 1, 2020.

Below, this chapter discusses in more detail the objectives and strategy of NWO-I, the organizational structure and method of decision making, the composition of the Executive Board and board of directors, the role of the institute advisory councils, the code of conduct and how NWO-I deals with complaints. The last part of this chapter describes the internal audit function and the assurance of good governance.

7.1 Objective of the NWO-I foundation

The NWO-I foundation's purpose is:

- To promote excellence in science and the quality of scientific research in general;
- To conduct high-quality scientific research in specific areas;
- To initiate and encourage new developments in scientific research;
- To disseminate the knowledge derived from scientific research, initiated, conducted, and supported by NWO-I, for the betterment of society.
- To manage the institutes.

To this end, the NWO-I foundation focuses on, among other things, setting up and maintaining (institutional) (public-private) national and international collaborations, facilitating and conducting research, facilitating and participating in national and international organizations and partnerships, developing policy, developing, managing and operating scientific infrastructure, establishing substantive and business links between the NWO-I foundation and NWO, and training researchers.

7.2 Organizational structure

7.2.1 Governance

The link between NWO and NWO-I is laid down in NWO's management regulations and in NWO-I's articles. NWO is an independent administrative body under the responsibility of the Ministry of Education, Culture and Science. NWO's mission and tasks are laid down by law. Since the entry into force of the new NWO Act in 2017, the NWO structure includes an Executive Board with four domains underneath and a separate NWO institutes

organization (NWO-I). The Executive Board is ultimately responsible for the domain organization and the Foundation Board for the institute organization.

The Foundation Board of NWO-I forms a personal union with the NWO Executive Board: the boards consist of the same individuals. The NWO Executive Board is responsible for defining the mission and scientific strategy of each institute.

The Foundation Board is responsible for the maintenance and day-to-day management of the foundation and for carrying out the missions of the institutes.

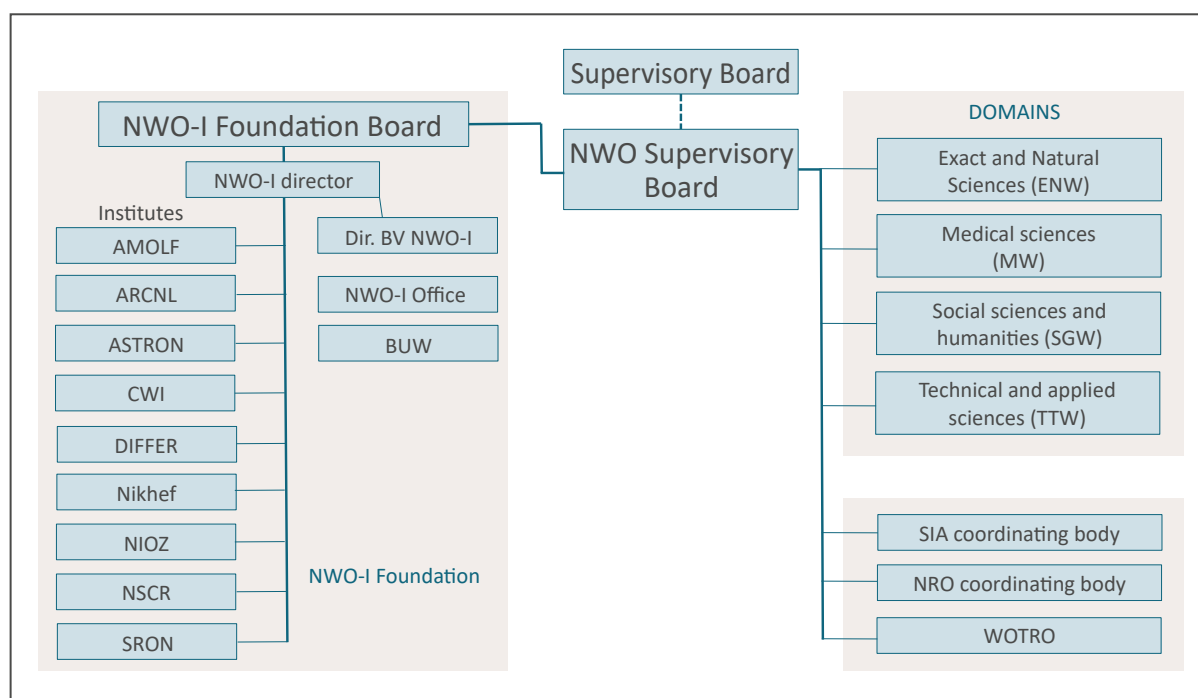
The NWO-I Foundation Board adheres to the Good Governance Code for Public Service Providers.

7.2.2 Supervisory Board

NWO has a Supervisory Board in addition to the Executive Board. The Supervisory Board assists the Executive Board and provides advice on NWO policy when requested or on its own initiative. Advice from the Supervisory Board can also relate to the NWO-I foundation. The Supervisory Board was established by the Minister of Education, Culture and Science as of March 1, 2017. It consists of three female and three male members since January 1, 2019. The term of office is five years. This annual report includes a section (7.8) containing a report from the Supervisory Board, which pertains to the NWO-I Foundation. The members are listed here as well. NWO's supervisory board has an audit committee. In 2019, this committee consisted of two members of the Supervisory Board. Among other things, the audit committee monitors the quality of operations, the financial reporting process, the statutory audit of the financial statements and the effectiveness of the internal risk and control system. In connection with NWO's designation as a Public Interest Entity (PIE), the Supervisory Board appointed a third external member at the end of 2019. The activities of the audit committee are included in the Supervisory Board's report.

7.2.3 Organizational units and governance

The figure below shows how the various components are arranged within the organization. It also shows how NWO and NWO-I relate to each other.



NWO-I director

The NWO-I director is responsible for day-to-day management of the NWO-I foundation and for ensuring that the institutes' missions are carried out. The NWO-I director manages the institute directors, the NWO-I Office and the NWO-I director of operations.

Institutes

Each institute is managed by an institute director. The directors of the institutes are integrally responsible for the day-to-day management of the institute. They also bear responsibility for the scientific fleshing out of the institute's mission and the accompanying strategy. They receive support in this regard from an institute manager or equivalent officer who is operationally responsible for the management of the institute.

The following nine institutes comprise NWO-I:

- AMOLF | Physics of functional complex matter
AMOLF conducts fundamental research into complex material systems;
- the collaboration ARCNL | Advanced Research Center for Nanolithography
ARCNL conducts high-quality fundamental research in the field of nanolithography, providing knowledge that contributes to the production of ever smarter and smaller electronics;
- ASTRON | Netherlands Institute for Radio Astronomy
ASTRON makes discoveries in radio astronomy possible;
- CWI | Centrum Wiskunde & Informatica
CWI conducts fundamental and groundbreaking scientific research in mathematics and computer science and is committed to the successful transfer of its research results to society;
- DIFFER | Dutch Institute for Fundamental Energy Research
DIFFER conducts leading fundamental research in the fields of nuclear fusion and solar fuels by bringing together different disciplines in close collaboration with universities and industry;
- Nikhef | National Institute for subatomic physics
Nikhef is the national institute for subatomic physics, pushing the boundaries of our knowledge about the elementary building blocks and interactions in the universe;
- NIOZ | Royal Netherlands Institute for Sea Research
NIOZ focuses on groundbreaking fundamental and frontier-applied scientific marine and oceanic research; the latter primarily focuses on "Blue Growth": future economic activities at sea with a keen eye for sustainability;
- NSCR | Netherlands Institute for the Study of Crime and Law Enforcement
NSCR develops empirically substantiated knowledge of crime and criminals in a social context, as well as prevention and (judicial) approaches to crime;
- SRON | Netherlands Institute for Space Research
SRON is the national expert institute for scientific research from space, and home to the Dutch membership of the European Space Agency (ESA);

The institutes are *national* institutes: they each have one or more national roles based on which they add value to the Dutch knowledge system. They drive or coordinate specific research areas and/or develop, manage and operate national or international scientific infrastructure or facilitate the Dutch scientific contribution to large international treaty organizations. Via the institutes, NWO-I participates in a large number of collaborations. For example, our institutes work closely with all the Dutch universities, but also with universities of applied sciences, TO2 institutes, companies, and other public and private parties.

NWO-I Office

The NWO-I Office focuses on the preparation and implementation of board resolutions, the facilitation of the institutes and the facilitation of the (organization of the) operational management of the foundation. The NWO-I Office provides the institutes with services that benefit from being offered on a collective basis, such as scale benefits, quality enhancement, vulnerability reduction and cost reduction. This includes, for example, support in the areas of strategy, financial management, procurement, real estate, human resources, communications and legal affairs.

University Working Groups Administrative Unit

The University Working Groups Administrative Unit (BUW) includes approximately 140 university working groups at twelve university locations. At the head of each working group is a working group leader, usually a professor employed by the university involved. This working group leader is budget holder and manages the NWO-I employees, which include PhD students, postdocs and technicians. The NWO-I Office is responsible for managing research projects. The BUW is a remnant from the past, when NWO-I, in its former capacity as the FOM foundation, also awarded projects to universities. The final projects are expected to be concluded over the course of 2023, which will mark the moment of dissolution of this organizational unit.

Decision making

The NWO-I Foundation Board grants the NWO-I director power of attorney and power of representation to conduct day-to-day management of the (organization of) the foundation. With the authority granted, the NWO-I director is responsible for making day-to-day management decisions for the foundation with the support of the NWO-I director of operations. Decisions that impact the scientific strategy and/or missions of the institutes are always made by the NWO Executive Board.

Under the leadership of the NWO-I director, the institute directors form the meeting of directors together with the director of operations. This meeting discusses developments at the level of the institute organization. They also share experiences and set up joint policy frameworks that apply to the entire institutes organization. In addition to the meeting of directors, there is also a meeting of institute managers and various functional meetings at NWO-I, including for communications, ICT, finance and personnel & organization.

7.3 Composition of the NWO-I Foundation Board

The NWO-I Foundation Board is the highest governing body at NWO-I. The Foundation Board forms a personal union with the NWO Executive Board. The chair and vice chair were appointed as directors effective October 1, 2016. The term of office is five years. The other members were appointed in 2020 for three years. As of December 31, 2020, the NWO-I Foundation Board formally consisted of three female and three male board members.

Members of the NWO Executive Board and NWO-I Foundation Board

- Professor Stan Gielen (chair, portfolio holder for ARCNL)
- Caroline Visser (vice president, portfolio holder Operations and Finance)
- Professor Jan van de Boer (chair ENW domain) *effective September 1, 2020*
before that Professor Niek Lopes Cardozo (chair ENW domain) *January 1 - August 31, 2020*
- Professor Dr. Anita Hardon (chair SGW domain) *effective June 1, 2020*
prior to that Professor Hans de Bruijn (chair a.i. SGW domain) *January 1 - May 30, 2020*
- Professor Margot Weijnen (chair TTW domain) *effective March 1, 2020*
prior to that Professor Jaap Schouten (chair TTW domain) *January 1 - February 29, 2020*
- Professor Jeroen Geurts (chair ZonMw domain).

7.3.1 Composition of NWO-I board of directors

The Foundation Board is supported by the NWO-I Office. The NWO-I director is also secretary of the Foundation Board. Effective October 1, 2020, the Foundation Board appointed Miriam Luizink as the new NWO-I director, who took office with the passing of the amended articles. Luizink has integral leadership of the NWO-I foundation. The Foundation Board appointed Mr. Jan van der Boon as NWO-I director of operations effective September 1, 2020. Van der Boon is responsible for the operational management of the foundation as a whole.

In 2020, the position of NWO-I director was filled as follows:

- | | |
|--|---------------------------------------|
| - Miriam Luizink (NWO-I director) | <i>as of October 1, 2020</i> |
| <i>This position had been vacant in the preceding period</i> | <i>January 1 - September 30, 2020</i> |

In 2020, tposition of NWO-I director of operations was filled as follows:

- | | |
|---|------------------------------------|
| - Mr. Jan van der Boon (NWO-I director of operations) | <i>as of September 1, 2020</i> |
| <i>In the preceding period, this position did not exist in its current form</i> | <i>January 1 - August 31, 2020</i> |

Day-to-day management of the NWO-I Office in 2020 was staffed as follows:

- | | |
|--|----------------------------------|
| - Mr. Jan van der Boon (NWO-I director of operations) | <i>as of September 1, 2020</i> |
| - Ed van den Berg (NWO-I Office director of operations a.i.) | <i>January 1 - July 31, 2020</i> |

Changes in institute directors for DIFFER and ASTRON

On July 1 2020, Prof. Dr. Marco de Baar was appointed director of DIFFER, succeeding Professor Richard van der Sanden. On December 31, 2020, Carole Jackson stepped down as ASTRON director. Her position has since been held ad interim by Dr. Marco Vos.

7.3.2 Employee representation

Each of the institutes has its own works council or employee representative body. NWO-I Office employees are represented on the NWO domain organization works council; one seat in that body is reserved for the NWO-I Office. Delegates from these works councils together make up NWO's Central Works Council. Employees in the BUW directly elect two representatives to the Central Works Council.

The Central Works Council consists of up to 14 members:

- AMOLF - 1 delegate
- ARCNL - 1 delegate
- ASTRON - 1 delegate
- BUW - 2 directly elected members
- CWI - 1 delegate
- DIFFER - 1 delegate
- Nikhef - 1 delegate
- NIOZ - 1 delegate
- NSCR - 1 delegate
- NWO domain organization - 2 delegates
- NWO-I Office organization - 1 delegate
- SRON - 1 delegate

In 2020, the following requests for advice and consent were handled under Articles 25 and 27 of the Works Councils Act:

- Request for Advice on New Finance System
- Request for Advice on articles and Internal regulations NWO-I
- Consent request Central health and safety coordinator
- Consent request amendment introducing new UVR on commuting
- Request for Advice nomination for appointment of domain chair ENW/member of the Executive Board
- Request for Advice proposed resolution to appoint NWO-I director
- Consent request Complaint Scheme for Scientific Integrity NWO-I
- Consent request for collective closing days (later withdrawn)
- Request for Advice for nomination for appointment of NWO chair

In 2020, we worked with the Central Works Council to explore how the structure of employee participation could align with the new governance of NWO-I as established in 2020. In this new arrangement, the NWO-I Office will be better represented. This new arrangement of employee participation will take effect in 2021.

7.4 Institute Advisory Councils

As stipulated in the NWO-I articles, each institute has an institute advisory council. The institute advisory council has an independent position and provides solicited and unsolicited advice to the institute director and the NWO Executive Board. The institute director is the point of contact for the institute advisory council. In 2018, the Foundation Board adopted the regulations of the institute advisory council. These regulations were updated at the end of 2020 to reflect the new articles, which provide that appointments of the institute advisory council members must be ratified by the NWO Executive Board. Previously, this would be decided by the Foundation Board.

The starting point is that the institute advisory council plays an important role in keeping the institute connected to relevant national stakeholders. The council contributes to the optimal maintenance of strategic relationships with science, the business sector, local or national politics, and other relevant social parties, and acts as a critical interlocutor to the director. The composition of the institute advisory council therefore ties in with representatives from science, society and the business sector who have an affinity with the institute's research. It also includes one or more representative(s) from domain boards relevant to the institute.

In addition to the institute advisory council, virtually all the institutes have a science advisory council. This council advises the director of the institute on the scientific quality of the research conducted by the institute, on providing direction to the institute's research and on the alignment with and/or adherence to the broader international scientific context. In addition, the director may request advice on specific institute matters.

7.5 Codes of conduct and complaints procedure

7.5.1 Code of conduct desired behavior

Employees as well as third parties, such as visitors or employees of hired companies, can be involved in undesirable behavior. The code of conduct therefore requires everyone working for or on behalf of NWO-I to act with integrity, respect and professionalism. These three behavioral traits are the guiding principle for desired behavior at NWO-I and a prerequisite for an optimal work environment.

7.5.2 Complaints procedure

NWO-I observes the individual right of complaint. The employee, intern or seconded person therefore has the opportunity to make their complaint about conduct by or on behalf of the employer towards the employee the subject of discussion. This will be investigated in such a way that it guarantees that the complaint is handled justly and that the individual's interests are reasonably protected. The procedure is laid down in the implementing regulations.

A complaint was filed with the NWO-I complaint committee in 2020. The complaint was still being handled at the end of 2020.

7.5.3 Complaints related to scientific integrity

The Dutch code of conduct for scientific integrity, which has been in force since the end of 2018, includes guidelines for, among other things, how to deal with suspected violations of scientific integrity. The code formulates duties of care for the institution. In 2020, NWO-I adapted the complaints procedure to the new situation and set up a complaints committee. As of December 31, 2020, the complaints committee consisted of the following members:

- Professor Andeweg
- Dr. Kamminga
- Professor Van de Vliert

7.6 Internal Audit

NWO's Internal Audit (IA) department is used for the entire group, including NWO-I. The purpose, duties, responsibilities, powers and functioning of the department are detailed in an *audit charter* and in a quality control system and policy. As such, it forms a framework for IA's service provision to the directors of NWO and NWO-I, the NWO Executive Board, NWO-I's Foundation Board, the audit committee and the NWO Supervisory Board.

The advice relates primarily to risk management within NWO, the redesign of the primary process and the (key) controls included in that process. An audit plan and detailed work program is prepared for each audit and coordinated with the manager or director responsible for the subject (auditee). A draft report is prepared for each audit and discussed with the auditee for their comments. Those comments are incorporated and the report is subsequently finalized. Audit reports are discussed in the NWO management team and Executive Board or the NWO-I meeting of directors and Foundation Board, depending on the topic. A summary on all topics is presented to the audit committee of the supervisory board on an annual basis.

The following internal audits were ongoing in 2020:

- IT security (completed in 2020)
- Expense claim conduct (to be completed in 2021)
- Safety (to be completed in 2021)
- Diversity and gender pay (to be completed in 2021)

7.7 Horizontal accountability

Horizontal accountability involves internal and external actors. In addition to the works council, important actors include the NWO Supervisory Board and the audit committee.

Other actors for whom the financial statements are important are NWO, partly for the purpose of consolidating the NWO-I figures in its financial statements in rendering account to the Ministry of Education, Culture and Science, the European Union and other granting parties, the tax authorities, the bank and the Ministry of Finance for the purposes of Treasury banking, in addition to insurance companies and other creditors.

7.7.1 Internal management and control system

At NWO-I, an administrative organization and internal control system (AO/IC) has been agreed upon and is being observed. Findings arising from the external auditor's management letter are discussed and explained in the Foundation Board and audit committee. The Foundation Board and the audit committee will provide direction to the NWO-I organization on matters related to development and/or improvement.

NWO's Internal Audit department will also conduct investigations that culminate in a report with findings and recommendations that are discussed with stakeholders and revisited by the audit committee. An examination of the process of procurement at two institutes was conducted in 2019 in accordance with the audit plan.

The Foundation Board and audit committee are periodically briefed on the financial position of NWO-I in the form of quarterly reports in addition to the financial statements and multi-year budget. These documents pay due attention to developments in the organization, risks, order book and liquidity in a multi-year perspective in addition to the annual forecast and numerical analysis.

7.8 Supervisory Board

In 2020, the Supervisory Board held six plenary meetings in the presence of members of the NWO Executive Board and members of the NWO-I Foundation Board, on both internal matters and external developments. Because of the coronavirus measures, an additional consultation was squeezed in at the end of March and further meetings were held via videoconference. The status of the impact of the coronavirus measures on the research at the NWO institutes and staff was a recurring topic of discussion thereafter. The meetings were preceded by a closed consultation without the Executive Board members. Given the changes on the Executive Board, performance reviews were held in early June with the sitting members only. Start and exit interviews were held with the other members at various times. The chair of the Supervisory Board attended the general meeting between the director and the Central Works Council in December.

In preparation for the Supervisory Board meetings, the audit committee met five times with the portfolio holder for operations and finance of the Executive Board and the (interim) NWO-I director of operations to discuss internal control and operations. Both the audit committee and the Supervisory Board discussed with the external auditors the observations on the 2019 financial statements, the 2020 management letter and the NWO-I 2021 audit plan. The audit committee also discussed the approach for the implementation of a new finance system at NWO-I and the 2021 budget.

Following the announced resignation of the chair of the Executive Board and a board member who was also the domain chair of NWO's ENW domain, the Supervisory Board proposed Professor Marcel Levi and Professor Jan de Boer, respectively, to the minister for appointment as new board members following an external recruitment procedure. The Supervisory Board was also heard on the amendment of the NWO-I articles and internal regulations.

As part of the introductions to the organization, the Supervisory Board received a brief presentation on developments regarding the ARCNL partnership. Recurring topics in the meetings were the preparation and follow-up steps to the NWO review, the impact of the coronavirus measures and developments around the portfolio of institutes.

The Supervisory Board consisted of the following members in 2020:

Dirk Jan van den Berg, chair
Amandus Lundqvist, vice chair
Dr. Adriana Esmeijer
Prof. Melinda Mills
Willem te Beest
Prof. Simone Buitendijk

7.9 Organizational development

7.9.1 Moving toward a stronger institute organization

Since NWO's institutes were brought together in a single foundation, the institutes and the Office have been working on a common understanding of the organization's identity and strategy, the positioning of the institutes in the Dutch knowledge field, and a method of developing joint policy. Initial steps were also taken to strengthen mutual synergy and organizational effectiveness.

7.9.2 New finance system

An important part of this process is the transition from 12 different administrations in five different financial applications to one uniform administration and workflow in one finance system. A great deal of work went into this project in 2020 and the new system went into operation in spring 2021. The new finance system combines financial management, procurement, project and program management. Although much is possible, this project has had a major impact on the workflow of many employees in the institutes, especially those who were accustomed to a different system and practices.

7.9.3 Joint operations and fit-for-purpose office

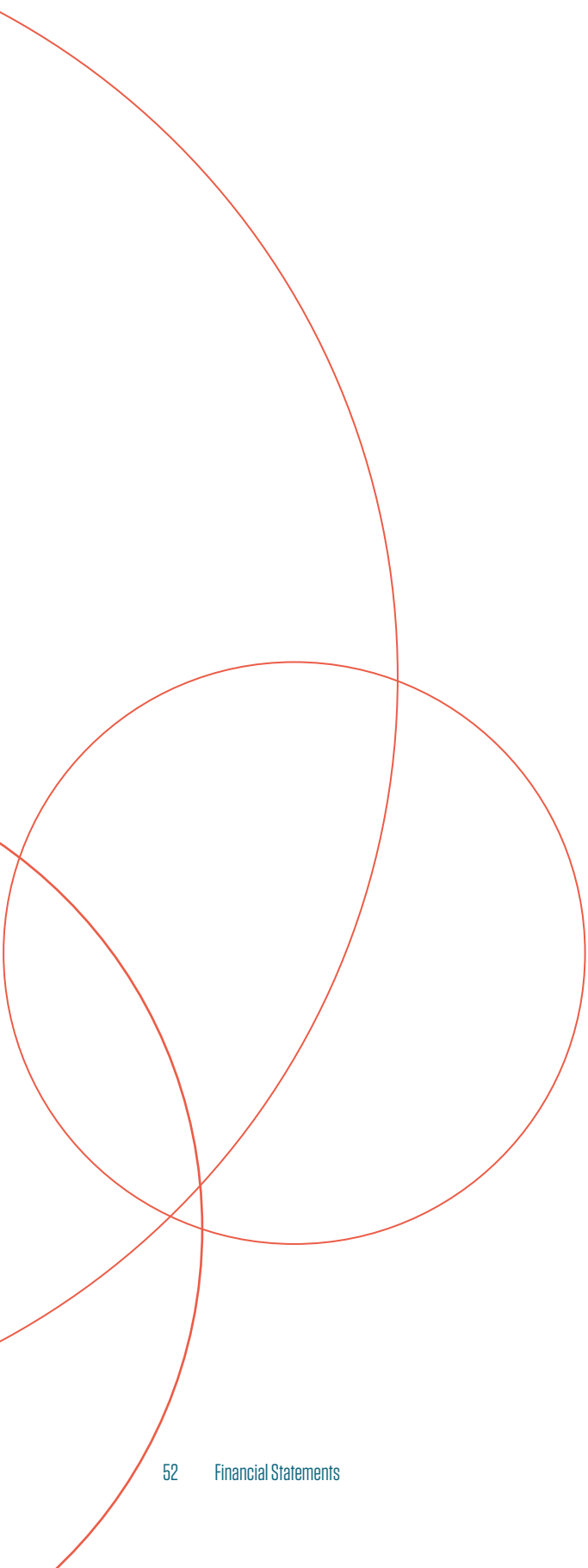
In addition to the transition to a single finance system, a structured and ambitious trajectory for the further development of business operations was initiated at the end of 2020 under the direction of the NWO-I board of directors. The key reasons were:

- The institutes are not yet sufficiently experiencing the added value of the collectivity. Part of the purpose of the merger was to allow the institutes to benefit from *best practices* and from the support and expertise of the foundation's Office. This development is yet to make sufficient progress.
- The quality of operational management is not yet at a level consistent with the position and ambitions of the NWO institutes with their nationally and internationally leading position in the scientific field. Our own analyses and the findings of the auditor show that project administration, fiscal control and cyber security, among other things, need improvement. Compliance is still unsatisfactory in some areas, including GDPR. Last but not least, clear frameworks are still lacking in important areas, for example in the form of strategic HR policy.
- Efficiency gains appear to be achievable in areas such as financial and human resources administration. In other domains, like public affairs, business control, information management, coordination of non-research-related IT, and the legal function, it would be logical to strengthen the capacity. There is ambiguity about the costs of operational management and how to finance this.

The intention is to have an outline plan ready by summer 2021. The Foundation Board will be presented with the result for approval, as part of the 2022 (multi-year) budget and in conjunction with the outcome of the portfolio funding decision. After the summer of 2021, elaboration and implementation can take place. A number of items will require decisions in the short term, for example because certain positions at the NWO-I Office have been temporarily filled and a decision on the structural situation is urgent. Other components will be implemented in a development path starting in 2022, with a focus on clear priorities.

List of abbreviations

ABP	Algemeen Burgerlijk Pensioenfonds [General Pension Fund for Public Employees]
AMOLF	Institute for research into the physics of functional complex matter
AO	Administrative organization
ARCNL	Advanced Research Center for Nanolithography
ASTRON	Netherlands Institute for Radio Astronomy
BUW	University Working Groups Administrative Unit
CLA	Collective Labor Agreement
COR	Central Works Council
CWI	Centrum Wiskunde & Informatica
DIFFER	Dutch Institute for Fundamental Energy Research
DUBBLE	Dutch-Belgian BeamLine
ENW	NWO domain Exact and Natural Sciences
ERC	European Research Council
EU	European Union
EZK	Ministry of Economic Affairs and Climate Policy
ET	Einstein Telescope
FOM	Foundation for Fundamental Research on Matter
FTE	Full time equivalent
IC	Internal control
KNAW	Royal Netherlands Academy of Arts and Sciences
LOFAR	Low Frequency Array
Nikhef	National Institute for subatomic physics
NIOZ	Royal Netherlands Institute for Sea Research
NSCR	Netherlands Institute for the Study of Crime and Law Enforcement
NWO	Dutch Research Council
NWO-I	Foundation for Dutch Scientific Research Institutes
Oio	PhD student
OCW	Ministry of Education, Culture and Science
P2IP	Particle Physics Inside Products BV
PCNI	Permanent Committee on National Institutes
PPP	Public Private Partnership
RU	Radboud Universiteit Nijmegen
RUG	University of Groningen
RvB-NWO	NWO Executive Board
RvT	NWO Supervisory Board
SEP	Standard Evaluation Protocol
SKA	Square Kilometer Array
SRON	Netherlands Institute for Space Research
TO2	knowledge institutes for applied research (united in the TO2 federation)



NWO-I Foundation

2020 Financial statements

Foundation for Dutch Scientific Research Institutes (NWO-I)

This is an English translation of an official Dutch financial statement. This financial statement is an English translation of the financial statement prepared on June 17th 2021. In case of any discrepancies or possible differences in interpretation between the English translation and the financial statement prepared on June 17th 2021, the latter prevail. The original and official Dutch financial statements are available [here](#).

Financial Statements

1 General accounting policies

General

The Foundation for Dutch Scientific Research Institutes (NWO-I) is based in Utrecht. The organization is registered with the Chamber of Commerce under number 41150068. According to its articles, NWO-I's objectives are to:

- a. promote excellent science and the quality of scientific research in general;
 - b. conduct high-quality scientific research in specific fields;
 - c. initiate and stimulate new developments in scientific research;
 - d. transfer knowledge from the scientific research that they have initiated, conducted, and promoted, for the benefit of society;
 - e. manage institutes;
- and do everything that is directly or indirectly related to the above or can be conducive to it.

Standards applied

The financial statements have been prepared in accordance with the Dutch Accounting Standards (DAS 660). These regulations provide that the provisions of Title 9, Book 2 of the Dutch Civil Code and the Guidelines for Annual Reporting apply, subject to the exceptions indicated therein. The financial statements were prepared on June 17, 2021.

Principles for the valuation of assets and liabilities and the determination of the result

General accounting policies

These financial statements have been prepared under the going concern assumption. An asset is recognized in the balance sheet when it is probable that the organization will receive future economic benefits, the value of which can be measured reliably. A liability is recognized in the balance sheet when it is probable that settlement of the liability will be accompanied by an outflow of resources embodying economic benefits, the size of which can be measured reliably.

Income is recognized in the statement of income and expenditure when an increase in economic potential, associated with an increase in an asset or a decrease in a liability, has occurred, the size of which can be measured reliably. Expenses are recognized when a decrease in the economic potential related to a decrease in an asset or increase in a liability has taken place, the size of which can be measured reliably.

If a transaction results in virtually all or all future economic benefits and all or virtually all risks relating to an asset or liability being transferred to a third party, the asset or the liability is no longer reported in the balance sheet. Assets and liabilities are also no longer reported in the balance sheet from the moment at which the conditions of the likelihood of the future economic benefits and/or the reliability of the determination of the value are no longer satisfied.

Income and expenditure are allocated to the period to which they relate. The financial statements are presented in euros, the organization's functional currency. All financial information is indicated in thousands of euros unless otherwise stated. Negative values in the tables are shown in brackets ().

Scope of consolidation

The following legal entities belong to the scope of consolidation (DAS 217.301) of NWO-I:

- Astrotec Holding BV (100%) in Dwingeloo
 - o ILA Microservers BV (100%) at Dwingeloo
- CWI Incubator BV (100%) in Amsterdam
- NIOZ Holding BV (100%) in Den Hoorn
- Particle Physics Inside Products BV (P2IP) in Amsterdam (100%)
- Mathematics and Computer Science Conferences Foundation, Amsterdam (100%)

Based on Article 407(1), Book 2, Title 9 of the Dutch Civil Code, the aforementioned organizations are not consolidated and the exemption for consolidation on the grounds that the effect on NWO-I's solvency and liquidity is negligible is therefore applied. The participating interests are accounted for under financial fixed assets in the financial statements.

Other affiliated parties

The other affiliated parties are parties with which NWO-I is permanently affiliated and which satisfy the definition of an affiliated party:

	Nature of affiliation
- JIV-ERIC	Joint Institute
- Stichting C.A. Muller Radio Station	Director appointment
- Stichting Lofar	Director appointment
- Stichting International LOFAR Telescope	Founding partner
- Stichting Beheer Wetenschappelijk Centrum Watergraafsmeer	Board participation
- Stichting Netherlands eScience Center	Board participation

ARCNL

NWO-I is participant in the Advanced Research Center for Nanolithography (ARCNL) collaboration. NWO-I appoints one of the four members of the ARCNL Governing Board. 25% of ARCNL's value is therefore consolidated in NWO-I's financial statements (proportional consolidation). In the financial statements, the inter-entity debts, receivables and transactions have been eliminated in proportion to the share in ARCNL.

Use of estimates

The preparation of the financial statements requires the management to form opinions and make estimates and assumptions that affect the application of policies and the reported values of assets and liabilities, and income and expenditure. The actual results may deviate from these estimates. The estimates and underlying assumptions are subject to continuous reassessment. Revisions to estimates are recognized in the period in which the estimate is revised and in any future periods affected.

Foreign currency accounting policies

Monetary assets and liabilities in foreign currency are converted into the functional currency as of the balance sheet date at the exchange rate in effect on that date. Non-monetary assets and liabilities in foreign currency, which are recognized at the historical cost price, are converted into euros at the exchange rates in effect on the transaction date. The exchange rate differences arising on conversion are recognized as income or expense in the statement of income and expenditure.

Transactions in foreign currencies during the reporting period are accounted for in the financial statements at the exchange rate on the transaction date. Conversion differences are recognized directly in the result. NWO-I does not constitute a reserve for conversion differences.

Exchange rate differences arising from the conversion of a non-monetary balance sheet item denominated in a foreign currency that has been valued at fair value are recognized directly in equity as part of the revaluation reserve, if the change in value of the non-monetary item is also recognized directly in equity.

Financial instruments

Loans granted and other receivables

Financial instruments include both primary financial instruments, such as receivables, securities and debts, and derivative financial instruments (such as derivatives).

For the accounting policies for the primary financial instruments, please refer to the treatment per balance sheet item.

Loans granted and other receivables are initially recognized at fair value plus any transaction costs and subsequently at amortized cost using the effective interest method. Income and expenses are recognized in the statement of income and expenditure as soon as the loans granted and other receivables are transferred to a third party or become impaired.

Other financial liabilities

Other financial liabilities are measured on initial recognition at fair value less transaction costs and subsequently at amortized cost using the effective interest method.

The repayment obligations $t+1$ of the long-term liabilities are included in current liabilities.

Determination of fair value

The fair value of a financial instrument is the amount for which an asset could be traded or a liability settled between knowledgeable and willing parties in an arm's-length transaction. A number of notes in the financial reporting require the determination of the fair value of financial instruments. The fair value is determined by discounting the expected cash flows at a rate equal to the prevailing risk-free market interest rate for the remaining term plus credit and liquidity surcharges.

Netting

An asset and a liability item are netted in the financial statements only if and to the extent that:

- a sound legal instrument is available to settle the asset and the liability item netted and simultaneously; and
- there is a firm intention to settle the netted amount as such or both items simultaneously.

Price risk

NWO-I undertakes few commercial activities, so there is little price risk.

Credit risk

Accounts receivable include receivables from grantors and receivables from other debtors. The credit risk on these receivables is limited.

Interest rate risk and cash flow risk

There is no interest rate risk as there are no long-term Loans at the end of 2020. The policy is not to use derivative financial instruments to manage (interim) interest rate fluctuations.

Liquidity risk

NWO-I uses treasury rules to manage liquidity risks. The fundamental principle of the treasury rules is that the NWO-I monies may not be invested or used as collateral. All liquid assets are held at the Ministry of Finance, with the exception of a specific bank account for the benefit of SRON.

Mandatory System Change

Due to the amendment of DAS 252 Provisions, off-balance sheet liabilities and off-balance sheet assets, these items, to the extent not yet applicable, are measured at present value as of fiscal year 2020, if the effect of the time value of money is material. This is a change in accounting policy and, as a result, this change should be accounted for retrospectively. The applicable discount rate is the market interest rate as of the balance sheet date of high-quality corporate bonds. In the absence of a liquid market for these bonds, the yield on government bonds applies (DAS 252).

NWO-I is bound to treasury banking with the Ministry of Finance. In other words, the liquid market for corporate bonds is not available for NWO-I. For the discount rate, NWO-I uses the interest rates for government bonds, as listed on the website of the Ministry of Finance, Agency of the General Treasury.

For 2019, interest rates with maturities of up to 10 years were 0%. For terms of 10 years and longer, an interest rate does apply. For the 2020 calendar year, the interest rate for all maturities is 0%.

The term of the provisions at NWO-I is less than 10 years, except for the provision for long-service awards. This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial. This applies both for 2020 and retrospectively.

NWO-I has made a calculation both for the Provisions and for the off-balance sheet liabilities and off-balance sheet assets. Based on this calculation, it was concluded that the effect of the recalculation is not material and as such no adjustment of the positions took place.

2 Balance sheet valuation accounting policies

Intangible fixed assets

An intangible fixed asset is included in the balance sheet if:

- it is probable that future economic benefits associated with an asset will accrue to the group; and
- the expenses of the asset can be reliably measured.

Expenditure on an intangible fixed asset that does not meet the conditions for capitalization is recognized directly in the statement of income and expenditure.

The intangible fixed assets are valued at acquisition or manufacturing price, less accumulated amortization and, if applicable, cumulative impairments. The costs of development are capitalized if the conditions stipulated for technical, commercial and financial feasibility are fulfilled. Another legal reserve is maintained in the amount of the balance sheet value.

Intangible fixed assets are amortized systematically on the basis of their estimated useful life with a maximum of twenty years using the straight-line method. The useful life and amortization method are reassessed at the end of each fiscal year.

Amortization rates:

- costs of research and development: 25% and 15.38%
- other intangible fixed assets: 25%

Tangible fixed assets

Tangible fixed assets in own use are valued at cost (acquisition or manufacturing price) less accumulated depreciation and, if applicable, accumulated impairments and, if applicable, taking into account a residual value. Contributions received from grantors for the purpose of financing tangible fixed assets are accounted for as investment grants received in advance under the long-term or current liabilities, respectively. The investment grants are realized according to the depreciation of the relevant tangible fixed assets. The release of the investment grants is deducted as movement in investment grants from depreciation expense in the statement of income and expenditure.

The depreciation is calculated as a percentage of the acquisition price according to the straight-line method. The rate is based on the expected useful life of the asset. Land and tangible fixed assets under construction and prepayments on tangible fixed assets are not depreciated. Depreciation takes place from the moment the asset is put into use. If the expectation regarding the depreciation method, useful life and/or residual value undergoes changes over time, they are accounted for as a change in estimate.

The following depreciation rates are applied:

- Buildings: 3% - 20% per year
- Land: no depreciation
- Inventory and equipment:
 - o Installations and equipment: 10%, 15% or 20% per year, depending on economic life
 - o Office furniture: 10% per year
 - o Computer equipment: 25% per year
- Other tangible fixed assets:
 - o Vessels: 7.15% per year
 - o Transportation equipment: 20% per year

The depreciation method is used with the application of the component method. For the buildings, the components can be divided into shell, elevators, floors, roofing and other. Depreciation periods are determined based on the estimated time of replacement maintenance.

Major maintenance costs are included in the cost as soon as these expenses are incurred and the capitalization criteria are met. The carrying amount of the components to be replaced is then considered disinvested and charged to the statement of income and expenditure as a lump sum. All other maintenance expenses, insofar as they constitute 'minor' maintenance, are recognized directly in the statement of income and expenditure.

Financial fixed assets

Participating interests where the organization can exercise significant influence on the business and financial policy are measured according to the equity method on the basis of their net asset value. Participating interests with a negative asset value are stated at zero. If NWO-I guarantees the debts of the participating interest in question, a provision is created, provided there is an expected outflow of resources. This provision is formed primarily at the expense of the receivables from this participating interest and, for the remainder, under the provisions, for the amount of the share in the losses suffered by the participating interest, or for the expected payments by the organization for this participating interest.

Participating interests in which no significant influence is exercised are valued at cost or permanently lower value in use.

NWO-I provides interest-bearing monetary loans to startup companies of former employees as part of the valorization of research results. These so-called starter loans are recorded on the balance sheet at amortized cost. For each loan, an estimate is made of the risk that the loan cannot be repaid. In that case, a provision for irrecoverability is made.

Impairments

Fixed assets are reviewed for impairment whenever changes or circumstances arise that suggest that the carrying amount of an asset may not be recoverable.

Disposal of fixed assets

Assets available for sale are measured at the lower of their carrying amount and net realizable value.

Projects in progress

Projects in progress are determined based on the “percentage of completion” method, or PoC method. The balance of projects in progress is valued at the directly attributed cost of labor and materials with a surcharge for indirect costs of personnel expenses. Invoiced installments / advances received are deducted from the balance of projects in progress.

Grant projects and third-party projects

NWO-I is involved in many complex grant projects and third-party projects. Projects with a positive balance are included under receivables. Projects with a balance of amounts received in advance are included in current liabilities.

Other current receivables

Current receivables are initially recognized at fair value and subsequently measured at amortized cost less any necessary provision for irrecoverability.

Liquid assets

Liquid assets means cash, balances in bank accounts, bills of exchange and checks.

Liquid assets are stated at face value. These are at the organization's free disposal unless otherwise noted.

Liquid assets not (expected to be) available to the group for more than twelve months are classified as financial fixed assets.

Equity

The items presented under equity are the general reserve, earmarked reserves, earmarked funds and other legal reserves.

The general reserve consists of the reserves at the free disposal of NWO-I. If a more limited spending possibility has been imposed by the Foundation Board, the part of the equity thus segregated is designated as an earmarked reserve. All reserves of the institutes and Office are earmarked reserves. If the more limited spending possibility has been imposed by third parties, then this portion is designated as an earmarked fund. The statement of changes shows all earmarked funds separately. The other legal reserve was formed pursuant to DAS 240.229. Capitalized costs of self-developed software are included in capitalized development costs for which a legal reserve must be created.

Provisions

Unless otherwise stated, all provisions are measured at the present value of the expenditures expected to be necessary to settle the liabilities and losses.

A provision is recognized in the balance sheet when there is:

- a legally enforceable or constructive obligation resulting from a past event; and
- of which a reliable estimate can be made; and
- it is likely that settlement of that obligation will require an outflow of funds.

If it is probable that any of the expenses expected to be necessarily incurred to settle the provision will be reimbursed by a third party, wholly or in part, the reimbursement is presented as a separate asset. Additions to the provisions are made at the expense of the statement of income and expenditure. Expenditures are made directly from the provision. For each provision it is indicated how it is valued, therefore presentation either at nominal value if the difference between present and nominal value (the effect of time value) can be considered immaterial or at present value with a discount rate of 0%.

Provision for social policy, reorganizations and other legal status

This relates to the expenses of the 2015-2017 Social Plan for the 2015 reorganization at NIOZ. The provision was formed to cover future salary expenses of redundant employees. The calculation is based on the maximum benefit period of the employee in question and the expected transition payments or other charges. This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial.

Provision for long-service awards

This provision was established for liabilities arising from future long-service awards of personnel employed by NWO-I.

The assumptions used for the provision are:

- calculation rule: benefit payable * accrual rate, increased by a surcharge of 2% per year for salary increases and adjusted for the average likelihood of NWO-I employees staying on;
- changes in the workforce are taken into account; a correction factor is applied to the calculated amount in connection with possible departures. This correction factor is based on 5.5% for 2020, resulting in a likelihood of staying on of 94.5%
- To calculate the discount rate, NWO-I uses the interest rates for government bonds, as listed on the website of the Ministry of Finance, Agency of the General Treasury. The discount rate used is 0%.

Unemployment contributions

NWO-I is self-insurer for the Unemployment Insurance Act (WW) and, in addition to the regular WW, has negotiated an Enhanced Scheme (BWOI) with the unions. If an employee of NWO-I becomes unemployed, the benefit is fully at the expense of NWO-I. The provision for unemployment benefits is based on the obligation to former employees known on December 31, 2020. These relate to benefit expenses payable during the maximum term of the benefit period at nominal value. This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial.

Long-term sick

In case of illness, NWO-I is obligated to continue paying employees 100% of their salary during the first year and 70% during the second, or 85% in case of sufficient reintegration. Pursuant to DAS 271, a provision has been created for the future salary costs of employees who are sick on December 31, 2020 and for whom it is fairly certain that they will not return to work or will not return fully to work.

The liability is calculated as the present value of future salary payments and transition payments. The discount rate used is 0%.

Transition payment under the Work and Security Act

NWO-I employees who do not leave voluntarily after temporary employment are entitled to a transition payment in accordance with the Work and Security Act and the supplementary Balanced Labor Market Act.

As a result of amended legislation (Balanced Labor Market Act), as of January 1, 2020, a provision must be created for all temporary employees, regardless of the period of the employment. Until January 1, 2020, a minimum employment period of two years applied.

The starting points used to calculate the size of the provision are:

- calculation rule for each temporary employee: payable benefit * accrual percentage (what percentage of the temporary employment is accrued at the reference date), increased with a surcharge of the legally determined percentage of 7% due to the employer's contribution under the health insurance act and increased with an assumed or actual salary increase;
- the provision is discounted using a discount rate of 0%. NWO-I's liquid assets are managed by the Ministry of Finance in the context of treasury banking. The current interest rate is 0%.
- no correction factor is applied for earlier termination of temporary contracts because this is rare.

Generation Plan scheme

NWO-I employees with an employment contract who are within five years of the state pension age can participate in the Generation Plan scheme. Pursuant to this regulation, this employee shall be granted extraordinary leave with partial retention of pay. The scheme came into effect for the first time with the 2018-2019 CLA for Research Institutions and the scheme was renewed in the new CLA. The provision was created to cover the salary costs of this scheme. This provision for future payments to current participants of the Generation Plan for Research Institutions is based on a calculation of the rights accrued by employees up to the end of the year. This exclusively concerns the rights of employees who are actually using the scheme as of the balance date. This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial.

Provision for remediation of radioactive materials PiMu

The basement of the PiMu building, located on a lot at the Amsterdam Science Park which NWO-I holds in leasehold until the end of 2023, contains materials that have become radioactive due to accelerator activities in the 1980s. NWO-I has an obligation to ensure proper disposal of the radioactive materials prior to termination of the leasehold. The cost of removing these radioactive materials will be equally shared between NWO-I and landowner NWO. For these removal costs, a provision was made in 2016 by NWO-I for the full obligation, a claim on landowner NWO was subsequently recognized separately.

In setting up the provision, NWO-I used both internal and external specialists to estimate these costs. This was based on the following principles:

- empirical figures based on costs previously incurred radioactive material;
- external estimate for installation and removal of required sheet piling;
- estimate of other engineer/supervision hours;
- removal of 76 drums of radioactive material;
- indexation of 2.5%.

The estimate includes a 10% contingency because the range of the cost estimate is about 20%.

This provision is presented at nominal value since the difference between present and nominal value (the effect of time value) can be considered immaterial.

Investment grants received in advance (long-term)

NWO-I received investment grants for the new construction and/or renovations of the following buildings: AMOLF, ASTRON, CWI, DIFFER, NIOZ and SRON.

For these grants, an annual release in proportion to the depreciation is recognized in favor of the statement of income and expenditure. The release is deducted from the item depreciation. The portion that will be released in 2020 is presented under current liabilities, investment grants received in advance (current).

Current liabilities and accrued liabilities

Liabilities with a remaining maturity of up to one year on the balance sheet date are designated as current liabilities. Liabilities are not netted with assets.

Accrued liabilities are amounts received in advance (including earmarked contributions) and amounts yet to be paid regarding expenses allocated to an expired period.

For supplementary grants made available for multiple years, the unspent portion is held on the balance sheet as an accrued liability. Release to the credit of the statement of income and expenditure then takes place annually pro rata to the expenditure. Upon conclusion of the grant, the entire remainder is released and any result is taken. With this method of accounting, amounts received in advance are allocated to successive periods systematically and proportionate to time.

Financial assets and liabilities no longer included in the balance sheet

A financial instrument is no longer recognized in the balance sheet if a transaction results in all or virtually all rights to economic benefits and all or virtually all risks relating to a position being transferred to a third party. In accordance with the requirements of DAS 252, with effect from fiscal year 2020, off-balance sheet liabilities and off-balance sheet assets are also valued at present value.

3 Accounting policies for the statement of income and expenditure

Determination of results

Income and expenditure are allocated to the fiscal year to which they relate. Gains are recognized only insofar as they have been realized on the balance sheet date. Losses and risks originating before the end of the year under review are taken into account if they have become known before the adoption of the financial statements.

Income

Revenue from the provision of services is recognized proportionally to the services provided, based on the services performed before the balance sheet date relative to the total services to be provided.

State contributions from OCW via NWO

State contributions from OCW via NWO are recognized as income in the statement of income and expenditure in the fiscal year to which the allocation relates.

Grant projects

Grants are recognized as income in the statement of income and expenditure in the fiscal year in which the subsidized costs were incurred, in the event of an own contribution to a subsidized project, the own contribution is spread over the term (matching).

Projects in progress

For projects in progress, income is recognized based on the "percentage of completion" method, or PoC method. Under this method, income is recognized based on progress.

Progress is determined based on the actual estimated progress or the expenses. The balance of projects in progress is valued at the directly attributed cost of labor and materials with a surcharge for indirect costs of personnel expenses. Invoiced installments / advances received are deducted from the balance of projects in progress.

Profit recognition of projects financed by third parties is determined in accordance with the PoC method. Expected losses are recognized in the statement of income and expenditure as soon as they are known. A predefined own contribution to a project is not regarded as a loss on a current project, as a result of which no additional loss provision is created.

If the result of a current project cannot be reliably estimated, revenue is recognized in the statement of income and expenditure only up to the amount of the project costs that are likely to be recoverable ("percentage of completion with zero profit" method).

Income in kind

Income in kind is stated at fair value (insofar as this can be reliably determined and is material) and recognized in the statement of income and expenditure.

Expenses

The expenses are determined in accordance with the aforementioned accounting policies and allocated to the fiscal year to which they relate. (Foreseeable) liabilities and possible losses originating before the end of the fiscal year are taken into account if they were known before the preparation of the financial statements and if the conditions for including provisions are satisfied.

Periodic interest charges and similar expenses are charged to the year for which they are owed.

Tenure-track positions

Where grants are involved, the commitment accounting system is applied. That is, when the grant is allocated, the entire grant is recognized directly as an expense (regardless of when this payment takes place). This applies, for example, to personnel grants from NWO-I for a university tenure-track position.

Personnel expenses

Salaries and social charges (including pension contributions) are recognized in the statement of income and expenditure on the basis of the employment conditions, insofar as they are payable to employees.

NWO-I is affiliated with the Stichting Pensioenfonds ABP. ABP is a sectoral pension fund with a defined benefit pension plan (multi-employer defined benefit scheme). Given that the pension plan is a multi-employer plan, the pension plan has been accounted for as a defined contribution plan.

The pension regulations prescribe a policy funding ratio of 126%, a limit that may be flexible depending on the interest rate and asset portfolio. ABP's year-end 2020 policy funding ratio was 93.5%. A decrease of over 2%-point compared to year-end 2019, but still below the policy funding ratio. A recovery plan should ensure that ABP gets the policy funding ratio to at least 126% within a maximum of 10 years from 2020. A recovery plan is purely a calculation to be able to decide whether the pensions must be reduced.

Due to exceptional economic circumstances, Minister Koolmees has set the critical funding ratio for 2020 at 90% for all pension funds in the exemption scheme.

The premise is that the pension expense to be recognized in the reporting period is equal to the pension contributions payable to the pension fund for that period. A liability is recognized for any pension contributions payable that remain unsettled on the balance sheet date. If the pension contributions already paid by the balance sheet date exceed the pension contributions payable, an asset is recognized under prepayments and accrued income if the fund will refund this amount or offset it against future payable pension contributions.

A provision is also recognized at the balance sheet date for existing additional liabilities to the fund and employees if it is probable that an outflow of funds will be required to settle those liabilities and the amount of the liabilities can be reliably estimated. Whether or not additional liabilities exist is assessed on the basis of the administration agreement with the fund, the pension agreement with the employees and other (explicit or implicit) commitments to employees. The provision is measured at the best estimate of the present value of the amounts required to settle the liabilities on the balance sheet date.

NWO-I recognizes a liability if the organization has demonstrably made an unconditional commitment to pay a severance or transition payment. If the dismissal is part of a reorganization, NWO-I recognizes the cost of a severance or transition payment in a provision for reorganization costs.

Financial income and expenditure

Interest income is recognized on a time-proportionate basis in the statement of income and expenditure. This takes into account the effective interest rate of the asset concerned, if the amount is determinable and likely to be received.

Periodic interest charges and similar expenses are charged to the year for which they are owed.

Result from participating interests

The share in the results of investee companies includes the group's share in the results of these investee companies. Gains and losses on transactions that involved the transfer of assets and liabilities between the group and the non-consolidated participating interests, or between its participating interests themselves, are not recognized if they can be deemed unrealized.

The results of participating interests acquired or disposed of during the fiscal year are recognized in the result of NWO-I from the moment of acquisition and until the moment of disposal, respectively.

Cash flow statement

The cash flow statement has been prepared in accordance with the indirect method.

The cash in the cash flow statement consists of liquid assets and short-term securities. The securities can be considered highly liquid investments. Short-term highly liquid investments can be converted into cash without restrictions and without material risk of impairment as a result of the transaction.

Exchange rate differences on cash are shown separately in the cash flow statement.

Income and expenditure arising from interest, dividends received and tax on profits are included in cash flow from operating activities. Dividends paid are included under the cash flow from financing activities.

The acquisition price of acquired group companies and the sale price of sold group companies are included in cash flow from investing activities, to the extent that payment in cash has been made. Cash present in these group companies has been deducted from the purchase price or sale price respectively.

Transactions involving no exchange of cash are not included in the cash flow statement.

4 Balance sheet on December 31, 2020 after result appropriation

	12-31-2020	2020 Budgeted	12-31-2021
	x €1,000	x €1,000	x €1,000
Assets			
Fixed assets			
Intangible fixed assets	2,268	3,400	36
Tangible fixed assets	151,089	182,478	125,823
Financial fixed assets	2,238	1,610	2,288
	155,595	187,488	128,147
Current assets			
Receivables	30,269	34,722	35,330
Liquid assets	106,516	59,287	129,971
	136,785	94,009	165,301
Total assets	292,380	281,497	293,448
Liabilities			
Equity	94,633	68,146	86,040
Provisions	11,309	8,091	11,665
Long-term liabilities	82,510	70,000	84,226
Current liabilities	103,928	135,260	111,517
Total liabilities	292,380	281,497	293,448

5 Statement of income and expenditure after result appropriation

	2020	2020 Budgeted	2019
	x €1,000	x €1,000	x €1,000
Income			
State contributions	125,613	118,530	113,648
Other government contributions and grants	1,864	6,520	1,609
Income from work for third parties	74,927	70,834	84,308
Other income	6,094	7,317	5,965
Total income	208,498	203,201	205,530
Expenses			
Personnel expenses	137,070	135,320	142,706
Depreciation/amortization	5,424	8,805	6,687
Housing expenses	8,784	16,758	8,160
Other expenses	48,587	56,363	55,302
Total expenses	199,865	217,246	212,855
Balance of income and expenditure	8,633	-14,045	-7,325
Financial income and expenditure	-15	-	-22
Result	8,618	-14,045	-7,347
Taxes	-	-	-
Result from participating interests	-13	-	-4
Result after taxes	8,605	-14,045	-7,351
Third-party share in result	-	-	-
Total net result	8,605	-14,045	-7,351

6 Cash flow statement

	12-31-2020		12-31-2019	
	x €1,000	x €1,000	x €1,000	x €1,000
Cash flow from operating activities				
Balance of income and expenditure	8,633		-7,325	
Adjustments for:				
Depreciation/amortization	11,399		14,311	
Changes in provisions	-356		2,231	
Interest expenses associated with interest subsidies	-		-	
Change in working capital				
Receivables (-/-)	20,793		17,576	
Current liabilities	-32,759		-28,247	
Total cash flow from operations	7,710		-1,454	
Interest received	24		23	
Interest paid (-/-)	-39		-45	
	-15		-22	
Total cash flow from operating activities		7,695		-1,476
Cash flow from investing activities				
Investments in tangible fixed assets (-/-)	-32,549		-13,409	
Disinvestments in tangible fixed assets	349		-	
Investments in intangible fixed assets (-/-)	-1,986		-13	
Disinvestments in intangible fixed assets	-		-	
Investments in participating interests and/or joint ventures (-/-)	-		-	
Investment grants received in advance	3,000		6,800	
Movements in loans (-/-)	-		-	
Other investments in FVA (-/-)	36		-309	
Total cash flow from investing activities		-31,150		-6,931
Cash flow from financing activities				
Newly taken loans	-		-	
Repayments on long-term liabilities (-/-)	-		-	
Total cash flow from financing activities		-		-
Movement in liquid assets		-23,455		-8,407
Balance at start of fiscal year	129,971		138,378	
Balance at end of fiscal year	106,516		129,971	
Movement in liquid assets	-23,455		-8,407	

7 Notes to the balance sheet

ASSETS

Intangible fixed assets

For the purpose of providing comparative figures, the statement of changes for the fiscal year of 2019 is presented in addition to the statement of changes in intangible fixed assets for the fiscal year of 2020.

	Purchase price	Cumulative depreciation	Carrying amount	Investments	Taking into use	Disinvestments	Depreciation/ amortization	Other decreases in value +/-	Purchase price	Cumulative depreciation + Other downward value adjustment	Carrying amount
	01-01-2019	01-01-2019	01-01-2019	2019	2019	2019	2019	2019	12-31-2019	12-31-2019	12-31-2019
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Intangible fixed assets											
Costs of research and development	846	819	27	13	-	-	21	-	859	840	19
Concessions, licenses and intellectual property rights	-	-	-	-	-	-	-	-	-	-	-
Goodwill	-	-	-	-	-	-	-	-	-	-	-
Prepaid on intangible fixed assets	-	-	-	-	-	-	-	-	-	-	-
Other intangible fixed assets	1,463	1,080	383	-	-	-	366	-	1,463	1,446	17
Intangible fixed assets	2,309	1,899	410	13	-	-	387	-	2,322	2,286	36

	Purchase price	Cumulative depreciation	Carrying amount	Investments	Taking into use	Disinvestments	Depreciation/ amortization	Other decreases in value +/-	Purchase price	Cumulative depreciation + Other downward value adjustment	Carrying amount
	01-01-2020	01-01-2020	01-01-2020	2020	2020	2020	2020	2020	12-31-2020	12-31-2020	12-31-2020
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Intangible fixed assets											
Costs of research and development	859	840	19	2,254	-	-	9	-	3,113	849	2,264
Concessions, licenses and intellectual property rights	-	-	-	-	-	-	-	-	-	-	-
Goodwill	-	-	-	-	-	-	-	-	-	-	-
Prepaid on intangible fixed assets	-	-	-	-	-	-	-	-	-	-	-
Other intangible fixed assets	1,463	1,446	17	-	-	-	13	-	1,463	1,459	4
Intangible fixed assets	2,322	2,286	36	2,254	-	-	22	-	4,576	2,308	2,268

The intangible fixed assets are the capitalized costs of the acquisition of software, website, promotional films and a new finance system.

The investment in intangible fixed assets in 2020 of €2,254k relates to the investment in a new finance system.

Tangible fixed assets

For comparative purposes, the statement of movements for 2019 is presented in addition to the statement of movements in the tangible fixed assets for 2020.

	Purchase price 01-01-2019 x €1,000	Cumulative depreciation 01-01-2019 x €1,000	Carrying amount 01-01-2019 x €1,000	Investments 2019 x €1,000	Taking into use 2019 x €1,000	Disinvestments 2019 x €1,000	Depreciation/ amortization 2019 x €1,000	Other decreases in value +/- 2019 x €1,000	Purchase price 12-31-2019 x €1,000	Cumulative depreciation + Other downward value adjustment 12-31-2019 x €1,000	Carrying amount 12-31-2019 x €1,000
Tangible fixed assets											
Buildings	159,087	69,152	89,935	2,156	3,139	-	7,907	2	164,382	77,061	87,321
Land	3,053	-	3,053	-	-	-	-	-	3,053	-	3,053
Inventory and equipment	92,330	69,622	22,708	3,667	547	-	5,589	2	96,544	75,213	21,331
Other tangible fixed assets	9,285	7,016	2,269	-	-	-	432	-	9,285	7,448	1,837
Tangible fixed operating assets under development and prepayments on tangible fixed assets	5,928	-	5,928	10,038	-3,686	-	-	-	12,280	-	12,280
Tangible fixed assets not in service to operations	-	-	-	-	-	-	-	-	-	-	-
Tangible fixed assets	269,683	145,790	123,893	15,861	-	-	13,928	4	285,544	159,722	125,822

	Purchase price 01-01-2020 x €1,000	Cumulative depreciation 01-01-2020 x €1,000	Carrying amount 01-01-2020 x €1,000	Investments 2020 x €1,000	Taking into use 2020 x €1,000	Disinvestments 2020 x €1,000	Depreciation/ amortization 2020 x €1,000	Other decreases in value +/- 2020 x €1,000	Purchase price 12-31-2020 x €1,000	Cumulative depreciation + Other downward value adjustment 12-31-2020 x €1,000	Carrying amount 12-31-2020 x €1,000
Tangible fixed assets											
Buildings	164,383	77,061	87,322	634	-92	1,073	5,607	-1,073	163,852	81,595	82,257
Land	3,053	-	3,053	-	-	-	-	-	3,053	-	3,053
Inventory and equipment	96,544	75,213	21,331	2,969	282	1,108	5,339	-1,106	98,687	79,446	19,241
Other tangible fixed assets	9,285	7,448	1,837	20	-	-	431	1	9,305	7,880	1,425
Tangible fixed operating assets under development and prepayments on tangible fixed assets	12,280	-	12,280	33,369	-190	-	-	346	45,459	346	45,113
Tangible fixed assets not in service to operations	-	-	-	-	-	-	-	-	-	-	-
Tangible fixed assets	285,545	159,722	125,823	36,992	-	2,181	11,377	-1,832	320,356	169,267	151,089

The investments in tangible fixed assets in 2020 amounted to €36,992k and can be specified as follows:

- Investment in Buildings, €634k, of which €285k relates to renovation of electrical cabinets at the CWI and €311k to investments in NIOZ buildings.
- Investment in Inventory and equipment, €2,969k, of which €1,432k relates to Non-project related equipment (of which €1,018k is at NIOZ) and €1,492k relates to Non-project related computer equipment for regular maintenance;
- Investment in Tangible fixed operating assets under development and prepayments on Tangible fixed assets, €33,369k, of which €31,381k relates to the new SRON building.

The depreciation amounts to €11,377k, (2019: €13,928k), whereby the depreciation on Buildings is €5,607k (2019: €7,907k) and Inventory and equipment €5,339k. The depreciation on Other tangible fixed assets amounts to €431k, which mainly relates to the research fleet at NIOZ.

At year-end 2020, the tangible fixed assets amounted to €151,114k, therefore increasing by €25,292k.

Land

Ownership

NWO-I owns the following lots of land:

- Landsdiep 4 and Zuider Haaks 5 and 7 in Den Hoorn (Texel, section P, number 704)
The main building of NIOZ is located on this lot.
- Korringaweg 7 in Yerseke (Reimerswaal, section Y, number 869 (previously 407))
The branch location of NIOZ is located on this lot.
- Oude Torenstraat 39 in Yerseke, (Yerseke, section G, number 6808)
The guest accommodation of NIOZ is located on this lot.
- Veenschapsweg 10 in Schoonebeek (Schoonebeek, section C, number 5183)
This lot contains LOFAR station RS208.

Leasehold

NWO-I is leaseholder of the following lots:

- Science Park 104 in Amsterdam (Watergraafsmeer, section B, number 5192 (created from 5057))
AMOLF is located on this lot. The leasehold ends on November 30, 2060.
- Science Park 105 and 107 in Amsterdam (Watergraafsmeer, section B, numbers 5054 and 5055)
Nikhef and the UvA are located on this lot. The leasehold ends on November 30, 2060.
- Science Park 108 in Amsterdam (Watergraafsmeer, section B, number 5187 (created from 5106))
This lot contains the PiMu laboratory building that will be used by Nikhef as of June 1, 2019.
The leasehold ends on December 31, 2023.
- Science Park 123 in Amsterdam (Watergraafsmeer, section B, number 4046)
CWI is located on this lot. The leasehold ends on December 31, 2023.
- Science Park in Amsterdam (Watergraafsmeer, section B, number 5188 (created from 5106))
There is no building on this lot. The leasehold ends on December 31, 2023.
- Science Park in Amsterdam (Watergraafsmeer, section B, number 5189 (created from 4876))
There is no building on this lot. The leasehold ends on December 31, 2023.
- Sorbonnelaan 2 in Utrecht (Utrecht, section N, number 1017)
SRON is located on this lot. The leasehold ends on December 31, 2082 but is currently subject to sale.
- Niels Bohrweg 4 in Leiden (Leiden, section X, number 4620)
New construction is being built on this lot for SRON. The leasehold is perpetual.
- Oude Hoogeveensedijk 4 in Dwingeloo (Dwingeloo, section E, numbers 1560 and 1602)
The main building of ASTRON is located on this lot. The leasehold ends on January 31, 2042.
- Schattenberg 1 and 2 in Zwiggelte (Westerbork, section A, numbers 2957 and 3131)
A total of 12 parabolic antennas of ASTRON, the Westerbork Synthesis Radio Telescope (WSRT), 2 of which are mobile, are located on these lots. There is also a service building and some other structures (including a shed, dwelling house and garage boxes). The leasehold ends for both lots on January 31, 2026.
- Halkenbroeken in Aa en Hunze (Rolde, section T, number 1661)
Two more mobile radio telescopes are located at number 1661, about 1.5 kilometers eastward from the 12 antennas in Zwiggelte. The leasehold ends on January 31, 2026.
- De Zaale 20 in Eindhoven (Tongelre, section D, number 1197 (partial))
DIFFER is located on this lot. The leasehold ends on September 11, 2063.

The land of NIOZ Haven is leased from the Municipality of Texel. Consequently, NIOZ Haven is a subsidiary of NIOZ Holding and is not directly incorporated within the NWO-I Foundation.

Easement

The “Watergraafsmeer, section B, number 4045” lot at Science Park in Amsterdam is held in leasehold by Stichting SURF and concerns the WCW building section Z (including Conference rooms, Boiler house and small area with CWI and Nikhef offices). This lot is subject to an easement for use by CWI, Nikhef and Stichting Beheer WCW. The leasehold ends on December 31, 2023.

Rights of superficies and user agreements

ASTRON has concluded 34 rights of superficies, including for the LOFAR antennas, other outdoor stations, cables and pipelines. ASTRON also has 4 land user agreements, for the construction, use and maintenance of infrasound sensors. NWO-I (at the time FOM) concluded a user agreement with NWO on July 22, 2014 for the Science Park, lot B 5107, Watergraafsmeer, for the units at Science Park 110.

Buildings

The buildings owned by NWO-I comprise the following locations:

- Science Park 102 in Amsterdam AMOLF
- Science Park 104 in Amsterdam AMOLF
- Science Park 105 in Amsterdam Nikhef (main building)
- Science Park 107 in Amsterdam Nikhef (used by University of Amsterdam)
- Science Park 108 in Amsterdam Nikhef (laboratory building)
- Science Park 110 in Amsterdam Nikhef (office building; portacabins)
- Oude Hoogeveensedijk 4 in Dwingeloo ASTRON
- Oude Hoogeveensedijk 6 in Dwingeloo ASTRON
- Schattenberg 1 in Zwiggelte ASTRON
- Schattenberg 2 in Zwiggelte ASTRON
- Science Park 123 in Amsterdam CWI
- De Zaale 20 in Eindhoven DIFFER
- Landsdiep 4 in Den Hoorn NIOZ
- Zuider Haaks 17c in Den Hoorn NIOZ
- Zuider Haaks 18 in Den Hoorn NIOZ
- Zuider Haaks 20 in Den Hoorn NIOZ
- Koringaweg 7 in Yerseke NIOZ
- Oude Torenstraat 39 in Yerseke NIOZ
- Sorbonnelaan 2 in Utrecht SRON
- Niels Bohrweg 4 in Leiden SRON

The UvA wing adjoining Nikhef is owned by NWO-I. NWO-I has granted the UvA right of use until the end of the leasehold/superficies of NWO-I with NWO. The UvA is entitled to sublet.

The private sale value of the buildings was appraised in December 2015.

The insured value of all movable and immovable assets, irrespective of whether they are owned, managed, or utilized by NWO-I, as well as the movable and immovable assets for which NWO-I bears responsibility, amounts to €709,981k as of January 1, 2020. Approximately €323,000k of this amount relates to buildings.

The property valuation [WOZ-waarde] of the real estate owned by NWO-I is €97,000k (reference date January 1, 2019).

Financial fixed assets

	Carrying amount 01-01-2020	Investments and loans granted 2020	Disinvestments and loans repaid 2020	Other movements +/- 2020	Result from participating interests +/- 2020	Carrying amount 12-31-2020
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Financial fixed assets						
Other participating interests	1,531	-	-	-	-14	1,517
Other receivables	757	-	39	3	-	721
Financial fixed assets	2,288	-	39	3	-14	2,238

Other participating interests

This concerns the 100% interest in:

- Astrotec Holding BV (ATH) based in Dwingeloo €541k
- CWI Incubator based in Amsterdam €252k
- NIOZ Holding based in Texel, which includes NIOZ Haven BV (100%) and the participating interest in Control Union Water BV (39%) €576k
- Particle Physics Inside Products BV (P2IP), based in Amsterdam €148k
- Stichting Wiskunde en Informatica Conferenties in Amsterdam (100%) €0k

Other receivables

NWO-I provides money loans as part of the valorization of research results.

At the end of the year under review, loans had been made to three parties, namely Particle Physics Inside Products BV (P2IP) with total outstanding balance €388k, and Delft Circuits (total outstanding balance €107k).

A prepaid VAT liability of €268k was also recognized in connection with ARCNL's housing.

3.1 Affiliated parties

Name	Legal form 2020	Domicile	Code activities	Equity 12-31-2020 x €1,000	Result of year 2020 x €1,000	Income 2020	Article 2:403 of the Dutch Civil Code Yes/No	Participation %	Consolidation Yes/No	Equity 12-31-2019 x €1,000	Result of year 2019 x €1,000	Income 2019 x €1,000
Stichting Wetenschappelijk Centrum Watergraafsmeer (WCW)	Foundation [Stichting]	Amsterdam	4				No	0%	No	TBD	TBD	
Werkgeversvereniging Onderzoeksinstellingen (WVOI)	Association [Vereniging]	The Hague	4				No	0%	No	TBD	TBD	
Coöperatieve Vereniging Milieu TU/e Campus	Cooperative Association [Coöperatieve Vereniging]	Eindhoven	4	0			No	0%	No	0	0	
AstroTec Holding BV	Private company [BV]	Dwingeloo	4	541	-68	48	No	100%	No	609	-150	1097
Dysi Analytics	Private company [BV]	Assen	4	0			No	17%	No	0		
Dysi Software Innovations	Private company [BV]	Visvliet	4	0			No	17%	No	0		
Dutch Sigma	Private company [BV]	Dwingeloo	4	0			No	20%	No	0		
Sigma Opto-Mechanics	Private company [BV]	Dwingeloo	4	0			No	20%	No	0		
ILA Microservers	Private company [BV]	Dwingeloo	4	-3			No	100%	No	-3	-1	0
Lofar C.V.	Limited partnership [CV]	Dwingeloo	4	0			No	25%	No	0		
Stichting LOFAR	Foundation [Stichting]	Dwingeloo	4	0			No	0%	No	0		
Stichting JIV-ERIC	ERIC	Dwingeloo	4	0			No	0%	No	0		
Stichting CAMRAS	Foundation [Stichting]	Dwingeloo	4	0			No	0%	No	0		
Stichting ILT	Foundation [Stichting]	Dwingeloo	4	0			No	0%	No	0		
Stichting International LOFAR Telescope	Foundation [Stichting]	Dwingeloo	4	0			No	N/A	No	0		
Coöperatieve Vereniging Milieu TU/e Campus	Cooperative Association [Coöperatieve Vereniging]	Eindhoven	4	78	58	197	No	0%	No	20	20	181
NIOZ Holding	Private company [BV]	Den Hoorn	4	610	33		Yes	100%	No	577	78	0
NIOZ Haven	Private company [BV]	Den Hoorn	4	196	1	297	No	100%	No	195	28	300
Control Union Water	Private company [BV]	Den Hoorn	4	610	140		No	39%	No	470	51	1520
Particle Physics Inside Products (P2IP)	Private company [BV]	Amsterdam	4	153	50		No	100%	No	103	45	0
Amsterdam Scientific Instruments Holding (ASIH)	Private company [BV]	Amsterdam	4	0			No	0%	No	0		
Amsterdam Scientific Instruments	Private company [BV]	Amsterdam	4	0			No	0%	No	0		
Omics2Image	Private company [BV]	Maastricht	4	0			No	0%	No	0		
Sensiflex	Private company [BV]	Amsterdam	4	0			No	0%	No	0		
Wiskunde en Informatica Conferenties	Foundation [Stichting]	Amsterdam	4	34	1	133	No	100%	No	33	8	961
CWI Incubator	Private company [BV]	Amsterdam	4	246	5		No	100%	No	241	-10	
Internationales Begegnung- und Forschungszentrum für Informatik Schloss Dagstuhl GmbH	gGmbH	Wadern, D	4				No	0%	No	TBD	TBD	
MonetDB	Private company [BV]	Almere	4				No	17%	No	TBD	TBD	
MonetDB Solutions	Private company [BV]	Almere	4				No	5%	No	TBD	TBD	
Spinque	Private company [BV]	Utrecht	4				No	22%	No	TBD	TBD	

Name	Legal form 2020	Domicile	Code activities	Equity 12-31-2020 x €1,000	Result of year 2020 x €1,000	Income 2020	Article 2:403 of the Dutch Civil Code Yes/No	Participation %	Consolidation Yes/No	Equity 12-31-2019 x €1,000	Result of year 2019 x €1,000	Income 2019 x €1,000
Photosynthetic	Private company [BV]	Amsterdam	4				No	30%	No	TBD	TBD	
Stokhos	Private company [BV]	Amsterdam	4				No	50%	No	TBD	TBD	
Seita Energy Flexibility	Private company [BV]	Amsterdam	4				No	10%	No	TBD	TBD	
Dataspex	Private company [BV]	Amsterdam	4				No	8%	No	TBD	TBD	
SWAT.holding	Private company [BV]	Amsterdam	4				No	25%	No	TBD	TBD	
Stichting Netherlands eScience Center	Foundation [Stichting]	Amsterdam	4				No	N/A	No	TBD	TBD	
Coöperatie SURF U.A.	Cooperative [Coöperatie]	Utrecht	4				No	N/A	No	TBD	TBD	
Gemeenschappelijke regeling Darwin Centrum voor Biogeologie	Joint Arrangement [Gemeenschappelijke regeling]		4				No	N/A	No	N/A	N/A	
Covenant Netherlands Space Office			4				No	N/A	No	N/A	N/A	
Data Archiving and Networked Services			4				No	N/A	No	N/A	N/A	
ESRF			4				No	N/A	No	N/A	N/A	
European and Developing Countries Clinical Trials Partnership			4				No	N/A	No	N/A	N/A	
European Polar Board			4				No	N/A	No	N/A	N/A	
SKA Organization			4				No	N/A	No	N/A	N/A	
				2,465	220	675				2,245	69	4,059

Legend for Code table: 1. Contract education, 2. Contract research, 3. Real estate, 4. Other

It should be noted that the 2020 annual figures included in this table are draft figures.

The year-end position for 2019 differs by €103k from the stated end position as reported in the 2019 Annual Report. This is because this table incorporates the definitive 2019 results, which were not yet known at the time (beginning of 2020).

CURRENT ASSETS

Short-term receivables

	12-31-2020 x €1,000	12-31-2019 x €1,000
Receivables		
Accounts receivable general	6,160	7,687
Receivables from Municipalities and Joint Arrangements	-	-
Receivables from NWO	5,891	7,788
Receivables from other participating interests	478	513
Receivables from personnel	76	93
Other authorities	-	-
Valuation of Projects in progress	1,288	1,089
Other receivables	12,692	12,978
Taxes and social insurance contributions	497	80
Prepaid costs	4,649	6,524
Advances provided	-	-
Interest receivable	-	-
Other prepayments and accrued income	33	-1
Less: Provision for irrecoverability -/-	-1,495	-1,421
Receivables	30,269	35,330

Receivables amounted to €30,269k, having decreased by €5,061k compared to 2019 (€35,330k).

The largest movements compared to 2019 concern the size of the receivable from NWO, (-€1,897k), and Prepaid expenses (-€1,875k).

Valuation of Projects in progress

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Valuation of Projects in progress		
Realized billable third-party costs	4,023	3,148
Expected losses -/-	-	-
Invoiced installments -/-	-2,735	-2,059
Valuation of Projects in progress	1,288	1,089

The balance of the valuation of projects in progress with a debit position involves research projects for which the research costs at year end exceed their invoiced installments. On balance, a net amount remains to be claimed from the relevant financiers.

A position of Projects in Progress exists particularly at SRON (€1,260k) and at NCSR, though to a lesser degree.

Other receivables

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Other receivables third parties	1,626	2,240
Other receivables affiliated parties	-	-
Advances on grant projects for third parties	11,065	10,738
Other receivables	12,691	12,978

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Taxes and social insurance contributions		
Payroll taxes	-	-
Turnover tax	489	76
Social insurance contributions	-	-
Other taxes	8	4
Taxes and social insurance contributions	497	80

Prepaid expenses amount to €4,649k and are €1,875k lower than at year-end 2019, which includes an increase at ASTRON (€895k) and a decrease at NWO-I General (€2,785k).

Provisions

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Provision for irrecoverability		
Balance as at January 1	-1,421	-1,513
Withdrawal (+/+)	-128	-92
Allocation (-/-)	202	-
Less: provision for irrecoverability	-1,495	-1,421

The provision for irrecoverability amounts to €1,495k, of which €1,005k at ASTRON, which mainly relates to a receivable from LOFAR (€861k). LOFAR is expected to be dissolved in 2022 and financial settlement will take place.

Liquid assets

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Cash	13	22
Bank account balances	654	174
Current account balance Treasury banking	105,849	129,775
Liquid assets	106,516	129,971

Liquid assets decreased by €23,455k, reflecting an increase in operating activities (€7,710k), mainly due to depreciation (€11,399k), receivables (€20,793k) and a decrease in liabilities (€32,759k).

In addition, investing activities caused a decrease in liquid assets (€31,150k), mainly due to investments (-€32,549k) and disinvestments (€349k) in tangible fixed assets, investment in intangible fixed assets (-€1,986k) and Investment grant received in advance for the new SRON building (€3,000k).

- Liquid assets consist of cash and bank balances and are freely available to the institution with the exception of €369k;
- Liquid assets of €369k are not freely withdrawable due to bank guarantees issued to the lessor of the premises at the Van Vollenhovenlaan Utrecht and to the lessor of the premises at the Science park Amsterdam; in addition, a bank guarantee of €122k issued to the Tax and Customs Administration, which is accounted for within Receivables.
- The intraday limit at ABN-AMRO Bank is €10,200k.

LIABILITIES

Equity

	Balance as at 01-01-2019	Result +/- 2019	Other movements +/- 2019	Balance as at 12-31-2019
	x €1,000	x €1,000	x €1,000	x €1,000
General reserve	1,605	-145	-	1,460
Legal reserve	-	-	-	-
Earmarked reserve (public)	87,506	-5,316	-	82,190
Earmarked reserve (private)	-	-	-	-
Earmarked fund (public)	4,265	-1,890	-	2,375
Earmarked fund (private)	15	-	-	15
Revaluation reserve	-	-	-	-
Other legal reserves	-	-	-	-
Reserves under the articles	-	-	-	-
Third-party share	-	-	-	-
Equity	93,391	-7,351	-	86,040

	Balance as at 01-01-2020	Result +/- 2020	Other movements +/- 2020	Balance as at 12-31-2020
	x €1,000	x €1,000	x €1,000	x €1,000
General reserve	1,460	-842	103	721
Legal reserve	-	-	-	-
Earmarked reserve (public)	82,190	9,794	-2,369	89,615
Earmarked reserve (private)	-	-	-	-
Earmarked fund (public)	2,375	-332	-	2,043
Earmarked fund (private)	15	-15	-	-
Revaluation reserve	-	-	-	-
Other legal reserves	-	-	2,254	2,254
Reserves under the articles	-	-	-	-
Third-party share	-	-	-	-
Equity	86,040	8,605	-12	94,633

The movements in Equity are the movements based on the appropriation of the net result in 2020. Equity increased from €86,040k at the end of 2019 to €94,633k at the end of 2020.

The general reserves decreased by €739k to €721k.

The earmarked reserve (public) increased by €7,425k to €89,615k in 2020.

The earmarked reserve is intended for, among other things:

- specific financial risks (to be specified and approved by Foundation Board), such as the coronavirus Fund granted in 2020 (€6,000k),
- depreciation charges of buildings, building-related installations (as long as there is no maintenance plan for the buildings) and infrastructure investments
- the mismatch in time between operating grants for new construction and renovation and the associated expenses (in particular, the new SRON building and renovation of Nikhef)
- buffer capital without specific allocation.

The main decrease occurred within the BUW due to the expiration of the research contracts. The remaining balance of the earmarked reserve within the BUW is €15,672k.

The earmarked public funds decreased by €332k to €2,043k. The remaining balance of earmarked funds consists mainly of the sector plan funds within the BUW (€1,965k).

	Balance as at 01-01-2020	Newly granted 2020	Result +/- 2020	Other movements +/- 2020	Balance as at 12-31-2020
	x €1,000		x €1,000	x €1,000	x €1,000
Earmarked fund (public)	-1,890	-	-332	-	-2,222
Sector plan	3,903				3,903
Einstein telescope	345				345
Investment in clean room	17				17
New ASTRON building	-				-
Interest on loan new DIFFER building	-				-
Mission Strengthening & Society Impulse	-				-
Earmarked fund (public)	2,375	-	-332	-	2,043
Earmarked fund (private)					
Private funds (ANBI)	15	-	-15	-	-
Earmarked fund (private)	15	-	-15	-	-

The Other legal reserves became mandatory in 2020 for research and development costs in relation to the investment in the New Finance System.

Foundation capital

The foundation capital is €45.38.

Provisions

	Balance as at 01-01-2020	Allocations 2020	Withdraw- als 2020	Release 2020	Interest movement (for present value) 2020	Balance 12-31-2020	Short-term portion < 1 year	Long-term portion > 1 year
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Provisions								
Personnel provisions	8,632	3,215	-2,190	-1,381	-	8,276	2,741	5,534
Provision for loss-making contracts	-	-	-	-	-	-	-	-
Other provisions	3,033	-	-	-	-	3,033	-	3,033
Provisions	11,665	3,215	-2,190	-1,381	-	11,309	2,741	8,567

Breakdown of Personnel-related provisions	Balance as at 01-01-2020	Allocations 2020	Withdraw- als 2020	Release 2020	Interest movement (for present value) 2020	Balance 12-31-2020	Short-term portion < 1 year	Long-term portion > 1 year
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Personnel-related provisions								
Provision for social policy, reorganiza- tions and other legal status	1,299	65	-247	-50	-	1,067	152	915
Leave savings and sabbatical leave	-	-	-	-	-	-	-	-
Own risk WGA	-	-	-	-	-	-	-	-
Provision for long-service awards	1,043	85	-62	-62	-	1,004	50	954
Unemployment contributions	1,446	1,025	-296	-125	-	2,050	633	1,417
Long-term sick	1,456	777	-504	-852	-	877	245	631
Other personnel provisions	3,388	1,263	-1,081	-292	-	3,278	1,661	1,617
Total personnel provisions	8,632	3,215	-2,190	-1,381	-	8,276	2,741	5,534

The provisions decreased by €356k to €11,309k.

Personnel-related provisions

The Provision for social policy, reorganizations and other legal positions amounts to €1,067k and mainly concerns the reorganization provision which was set up to cover future salary costs of redundant employees.

The Long-service provision relates to future obligations to employees in respect of bonuses based on the current CLA.

Unemployment contributions

The provision increased by €604k. The allocation for 2020 amounted to €1,025k, for several employees running through 2029. The withdrawal amounted to €296k and the release amounted to €125k. The balance of unemployment benefits amounted to €2,050k.

Long-term sick

In case of illness, NWO-I is obligated to continue paying employees 100% of their salary during the first year and 70% during the second, or 85% in case of sufficient reintegration. Pursuant to DAS 271, a provision has been created for the future salary costs of employees who are sick on December 31, 2019 and for whom it is fairly certain that they will not return to work or will not return fully to work.

The liability is calculated as the present value of future salary payments and transition payments.

This provision was created starting in 2019 and amounted to €877k at the end of 2020.

The Other personnel provisions (€3,278k) consists of:

- 1 €1,953k from the provision for *Transition payment under the Work and Security Act*
- 2 *Other provisions* of €1,325k,

Further explanation below:

Transition payment under the Work and Security Act

NWO-I employees who do not leave voluntarily after temporary employment are entitled to a transition payment in accordance with the Work and Security Act and the supplementary Balanced Labor Market Act. As a result of amended legislation (Balanced Labor Market Act), as of January 1, 2020, a provision must be created for all temporary employees, regardless of the period of the employment. This provision decreased by €147k on balance in 2020. The provision at year-end 2020 was €1,953k (2019: €2,100k).

Generation Plan scheme

This provision for future payments to current participants of the Generation Plan for Research Institutions is based on a calculation of the rights accrued by employees up to the end of the year. This exclusively concerns the rights of employees who are actually using the scheme as of the balance date. The scheme came into effect for the first time with the 2018-2019 CLA for Research Institutions. The balance at year-end 2020 was €878k.

The other provisions within the personnel provisions concern a contribution to the salary costs for employees who have transferred to other employment as a result of the transition (term of 5 years starting January 1, 2017). On the other hand, it concerns a provision for the Euclid project in which SRON made a commitment in 2012 for a contribution of a total of €700k (running through 2023).

Other provisions

The item Other provisions within Provisions includes the Provision for remediation of radioactive materials PiMu. The basement of the PiMu building, located on a lot at the Amsterdam Science Park which NWO-I holds in leasehold until the end of 2023, contains radioactivity that arose in the 1980s. NWO-I has an obligation to ensure proper disposal of the radioactive materials prior to termination of the leasehold. The cost of removal will be equally shared between NWO-I and landowner NWO. In 2016, the required scope of the total provision was determined and the provision was immediately recognized in its entirety in the 2016 fiscal year. The provision is based on reports from external expert parties. An estimation uncertainty exists in the amount determined, because it will not be known how much radioactivity is still present and what the actual cost will be until the actual removal takes place. In accordance with DAS 252, the NWO contribution has been deducted from the expenses. Short-term receivables include the NWO contribution of €1,536k (€1,269k excl. VAT) as receivable from NWO.

Long-term liabilities

	Balance as at 01-01-2020	Loans taken out	Repayments	Balance as at 12-31-2020	Term > 1 year	Term > 5 years
	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000	x €1,000
Investment grants received in advance (long-term)	84,226	3,000	-4,716	82,510	76,920	63,413
Long-term liabilities	84,226	3,000	-4,716	82,510	76,920	63,413

The balance of long-term liabilities concerns the investment grant received from NWO in advance, being the pre-financing of new construction and renovation projects. In 2020, a sum of €3,000k was received for the new SRON building in Leiden. The redemption relates to the shift from long-term to current liabilities. There is also a Conditional right provided by NWO for the Housing New Construction Leiden. At the end of the year under review, this right still amounted to €38,976k.

Current liabilities

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Amounts owed to NWO	35,856	35,812
Amounts owed to other participating interests	30	155
Amounts owed to credit institutions	-	-
Amounts owed to Ministry of Finance	-	-
Amounts owed to municipalities and Joint Arrangements	-	-
Pre-invoiced installments Projects	776	120
Accounts payable	4,224	6,826
Taxes and social insurance contributions	7,625	7,325
Pensions	1,666	1,708
Liabilities in respect of work for third parties	-	-
Other	9,374	8,000
Investment grants Received in advance (short-term)	5,590	6,579
Amounts received in advance	1,037	1,104
Vacation pay and days	14,032	14,383
Interest payable	-	-
Other accrued liabilities	23,718	29,505
Current liabilities	103,928	111,517

The total of current liabilities is €103,928k and has decreased by €7,589k.

Pre-invoiced installments Projects

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Pre-invoiced installments Projects		
Realized billable costs NWO	-	-
Expected losses -/-	-	-
Invoiced installments -/-	-	-
Valuation pre-invoiced NWO	-	-
Realized billable third-party costs	-1,946	-
Expected losses -/-	-	-
Invoiced installments -/-	2,722	120
Valuation pre-invoiced third parties	776	120
Pre-invoiced installments Projects	776	120

The item Pre-invoiced installments Projects relates to research projects for which the invoiced installments at the end of the year under review exceed the realized research costs.

Compared to 2019, the balance increased by €656k, especially at ASTRON and NSCR.

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Accounts payable	4,224	6,826

The balance of accounts payable is €2,602k lower compared to 2019, due to invoices still to be paid at the end of 2019 for the new SRON building (€826k) and a contribution still to be paid to a third party in the context of a joint project €1,120k.

	12-31-2020	12-31-2019
	x €1,000	x €1,000
Taxes and social insurance contributions		
Payroll taxes	6,989	6,860
Turnover tax	636	465
Social insurance contributions	-	-
Other taxes	-	-
Taxes and social insurance contributions	7,625	7,325

Increase Other €1,374k, due to an increase for the ARCNL position (75%) compared to the position for the previous reporting year, in addition to a decrease in accrued expenses still payable at the end of 2020.

Decrease in Investment grants received in advance (short-term) €989k.

These grants are updated annually for coverage on depreciation costs.

Other accrued liabilities are the items Other accrued liabilities and Third-party grant projects, according to the specification below:

	12-31-2020	12-31-2019
Other accrued liabilities		
Other accrued liabilities	342	2,151
Third-party grant projects	23,376	27,354
Other accrued liabilities	23,718	29,505

In total, this item decreased by €5,787k. The Other accrued liabilities decreased by €1,553k, which mainly relates to an outstanding construction invoice at SRON at year-end 2019 (€1,192k).

Third-party grant projects decreased by €4,234k. The BUW is expiring (€3,005k decrease) and no new projects will be added, therefore this item decreases annually, ultimately to zero. For the other institutes, this item fluctuates annually depending on the projects granted, the installment receipts and expenses incurred in a fiscal year.

Notes on Balance Sheet versus Budget

The balance sheet total is €292,380k, which is €10,883k higher than the adjusted budgeted balance sheet total, which is €281,497k.

In the approved budget, the balance sheet total is €256,653k. This has been increased by €31,735k, being the correction of the negative liquid assets of SRON to the liabilities side and decreased by the correction of ARCNL of €6,891k as ARCNL is consolidated at 25% in the financial statements.

Below is a brief summary of the main points.

Assets

- o Fixed assets, €31,893k less than budgeted,
 - o -€1,132k Intangible fixed assets
 - o -€31,389k Tangible fixed assets
 - -€2,139k ASTRON,
 - -€4,414k Nikhef, Renovation
 - -€18,417k NIOZ Fleet replacement
 - -€6,050k New SRON building
- o Current assets €42,776k more than budgeted, of which
 - -€4,453k Receivables
 - +€47,229k Liquid assets, mainly due to budgeted capital expenditures at NIOZ and SRON that have not yet been fully realized.

Liabilities

- o Equity, €26,487k more than budgeted. The budgeted result was negative €14,045k, while a positive result of €8,605k was realized. A further breakdown of this difference is shown in the Equity table, noting that:
 - o Nikhef: the Renovation started later
 - o SRON: charges included in the budget which will be capitalized in realization
 - o BUW: less project expenses than anticipated in the budget
 - o General: as a result of €6,000k formation coronavirus Fund
- o Provisions €3,218k more than budgeted
 - o +€1,847k NIOZ
 - o +€468k BUW
 - o +€337k DIFFER
- o Long-term liabilities, €12,510k more than budgeted,
 - o +€9,800k SRON Investment grant for new construction received in advance
 - o +€1,090k NIOZ
 - o +€748k DIFFER
- o Current liabilities, €31,332k less than budgeted,
 - o –€12,922k SRON
 - o –€3,893k DIFFER

9. Off-balance sheet rights and liabilities

Off-balance sheet commitments (amounts x €1,000)	12-31-2019	Move- ments	12-31-2020	< 1 year	2 to 5 years, inclusive	From 5 years onward	Total
1. Contingent liabilities and unrecognized liabilities							
a) Claims submitted by third parties	-	-	-	-	-	-	-
b) Guarantees and sureties, etc., issued	16,655	(833)	15,822	1,160	4,536	10,126	15,822
c) Liabilities from orders for tangible fixed assets	37,672	(20,921)	16,752	16,752	-	-	16,752
d) Other off-balance sheet liabilities	7,905	5,207	13,112	9,938	2,858	316	13,112
Future liabilities	-	-	-	-	-	-	-
Fiscal unit for VAT NWO and NWO-I	-	-	-	-	-	-	-
TOTAL contingent liabilities and unrecognized liabilities	62,232	(16,547)	45,685	27,850	7,394	10,442	45,685
2. Long-term financial liabilities							
a) Rights of use and other rights (leasehold, superficies, rental, lease and leasing)	4,276	15	4,291	1,127	1,542	1,622	4,291
b) Obligations under cooperative arrangements and potential risks of financial setbacks arising from these obligations	93	122	214	88	126	-	214
TOTAL Long-term financial liabilities	4,369	137	4,505	1,215	1,668	1,622	4,505
TOTAL Off-balance sheet liabilities	66,601	(16,410)	50,191	29,065	9,062	12,064	50,190

Off-balance sheet rights (amounts x €1,000)	12-31-2019	Move- ments	12-31-2020	< 1 year	2 to 5 years, inclusive	From 5 years onward	Total
1. Contingent rights and unrecognized rights							
a) Claims submitted to third parties	40,368	(577)	39,791	1,392	6,383	32,016	39,791
b) Other	781	3,296	4,077	527	400	3,150	4,077
TOTAL Off-balance sheet rights	41,149	2,719	43,868	1,919	6,783	35,166	43,868

The amounts included in the statement of off-balance sheet rights and liabilities exclude VAT, and VAT generally increases costs for NWO-I. In accordance with DAS 252, positions must be recorded at present value if the effect of the time value of money is material. Taking into account the currently applicable interest rates, the calculation showed that the effect is not material and that the present value is therefore set at the nominal value, both for the prior and current reporting year positions.

Contingent liabilities and unrecognized liabilities

Claims submitted by third parties

There are no claims filed by third parties.

Guarantees and sureties issued, etc.

Compared to 2019, the liability decreased by €833k, which included an expiration of €1,134k ARCNL lease agreement. The lease obligation at ARCNL with the effective date being the date of handover and a term until December 31, 2033 amounts to €14,742k at the end of the reporting year.

A bank guarantee was also issued for ARCNL in the amount of €286k. As part of ARCNL's collaboration with UvA and VU, the financial position of the in-kind contribution was determined at year-end. At year-end 2020, this had increased by €292k.

For NWO-I's office building in Utrecht and for facility support provided by NWO, the associated annual obligation is paid to NWO. In return, NWO-I is entitled to an annual grant from NWO of the same size as the obligation (€900k). Since the obligation and right are identical and involve the same legal entities, they are not included in the overview above.

Liabilities from orders for tangible fixed assets

Compared to 2019, the liability decreased by €20,921k, an expiration of €22,932k, of which €18,245k relates to the New Leiden Building and €4,607k to the Nikhef Renovation.

There are also new liabilities of €2,011k, of which €1,327k relates to a sputtering machine at SRON.

Other off-balance sheet liabilities

Compared to 2019, the liability increased by €5,207k, including an expiration of €3,138k. New liabilities in 2019 amount to €8,345k, being €6,467k in Liabilities for orders with Nikhef and €525k at CWI for Cleaning and Building Maintenance.

Future liabilities

For 2020 and beyond, NWO-I has committed as far as the BUW is concerned by means of awards for projects.. Furthermore, NWO-I holds multiple commitments to provide financial contributions to partnerships.

NWO-I's personnel is its largest asset. NWO-I therefore has liabilities for its personnel as well, both when it comes to permanent and temporary staff. All of these liabilities result from NWO-I's normal business operations and are covered from the grant contributions from NWO and contracts concluded with third parties.

Grants awarded are subject to specific grant conditions. Upon completion of a project, account must be rendered with the inherent risk that the grantor may lower the grant awarded if specific conditions have not been satisfied. The risk cannot be quantified.

Fiscal unit for VAT NWO and NWO-I

On September 28, 2017, the request was submitted to the Tax Authorities for a fiscal unit for VAT between NWO and NWO-I as of January 1, 2017. Although formal confirmation has not yet been received, the financial statements for 2018 and 2019 have assumed that the fiscal unit for VAT is established.

A consequence of a fiscal unit is that NWO-I becomes (jointly and severally) liable for the tax debts of this fiscal unit as a whole.

Long-term financial liabilities Rights of use and other rights

Compared to 2019, rights of use and other rights are €15k higher, of which €165k relates to the Housing DUWO (CWI), while the State Forestry Leasehold at ASTRON has decreased by €63k.

Liabilities under cooperative arrangements and potential risks of financial setbacks arising from these liabilities

As contained in the board report, NWO-I recognizes the risk resulting from undesired obligations to third parties. The risk cannot be quantified.

The known liabilities have increased by €122k compared to 2019, including €150k with VU Amsterdam and SRON.

Off-balance sheet rights

Contingent rights and unrecognized rights

a. Claims submitted to third parties

This concerns the Housing New Construction Leiden: NWO provides SRON/NWO-I with an annual grant (2020: €19,700k), containing therein €1,392k per year as an unearmarked basic grant and this grant must be recognized 100% as income and therefore this item automatically goes via the statement of income and expenditure to the earmarked reserve in equity (Annually until 2048). In addition to the existing coronavirus fund, financial compensation was granted for research delayed in 2020.

The compensation amount was set at €815k.

b. Other

At the end of the reporting year, these increased by €3,296k, of which €3,410k relates to the Municipality of Leiden covering the ground rent costs for the new building in Leiden.

8 Notes to the statement of income and expenditure

INCOME

Income

	2020 x €1,000	2020 Budgeted x €1,000	2019 x €1,000
Income			
State contributions	125,613	118,530	113,648
Other government contributions and grants	1,864	6,520	1,609
Income from work for third parties	74,927	70,834	84,308
Other income	6,094	7,317	5,965
Total income	208,498	203,201	205,530

State contributions

	2020 x €1,000	2019 x €1,000
State contributions		
State contributions from OCW via NWO	125,113	113,148
Other grants from OCW via NWO	500	500
State contributions	125,613	113,648

The total State contributions amount to €125,613k and are €11,965k higher than the position at year-end 2019.

The increase relates mainly to the allocation for the coronavirus Fund (€6,000k) and Wage and price compensation (€2,790k)

Government contributions/grants from other authorities

	2020	2019
	x €1,000	x €1,000
Provincial contributions and grants	-30	282
Other Municipal and Joint Arrangement contributions and grants	-7	91
Other authorities	1,901	1,236
Other government contributions and grants from other authorities	1,864	1,609

The other government contributions and grants from other authorities are, on the one hand, a provincial contribution from the Province of Noord-Brabant and from the Municipality and Region of Eindhoven for DIFFER (-€37k) and, on the other, the contribution from Other authorities, specifically the Ministry of Economic Affairs (€1,548k), Ministry of Justice and Security (€321k) and the Ministry of Transport, Public Works and Water Management (€32k).

Income from work for third parties

	2020	2019
	x €1,000	x €1,000
Contract research	74,111	82,452
License revenue	489	-
Other income from work for third parties	327	1,856
Income from work for third parties	74,927	84,308

The total income from work for third parties amounted to €74,927k and was €9,381k less than at year-end 2019.

	2020	2019
	x €1,000	x €1,000
International organizations	13,637	14,950
National authorities	8,663	7,583
NWO	37,033	41,260
KNAW	-	-
Other nonprofit organizations	7,728	8,011
Businesses	7,050	10,647
Contract research	74,111	82,453

The income Contract research (€74,111k) decreased by €8,342k compared to 2019, which is mainly reflected in:

- the income from International organizations (€13,637k) decreased by €1,313k.
 - A decrease was noted especially at ASTRON (€545k), NIOZ (€531k), SRON (€2,048k) and NWO-I General (€240k).
 - while a decrease was recorded at AMOLF (€1,077k) and DIFFER (€441k).
- the income from National authorities (€8,663k) increased by €1,080k,
 - of which mainly at NIOZ (€875k)
- the income from NWO at year-end 2020 was €37,033k, of which €11,324k relates to the NWO expiration of Granting (2019: €16,412k).
The expiration of Granting is a result of the granting commitments made by the former FOM and guaranteed by NWO.
- the income from Other nonprofit organizations (€7,728k) decreased by €283k,
 - particularly at NIKHEF (€655k), while most of the other institutes recorded an increase.
- the income from Businesses (€7,050k) decreased by €3,597k.
 - The decrease is particularly visible at the BUW (€2,024k), due to the expiration of projects) but also at DIFFER (€519k), NIOZ (€785k) and SRON (€367k).

The BUW's income was partially decreasing because of the expiration of Granting, whereby the annual contribution from NWO to fulfill the granting commitments each year will decrease to zero in 2023. The income for projects from NWO and third-party projects is determined by the annual expenses and changes mainly with grants received in advance from NWO and third parties. In due course, as the projects reach completion, these items will also diminish to nil. After all, there will be no new projects.

For the institutes, the income in these items fluctuates yearly depending on newly awarded projects and on the expenses incurred in a fiscal year, or the income is determined using the PoC method.

Other income

	2020 x €1,000	2019 x €1,000
Rental income	4,210	4,106
Secondment of personnel	232	290
Gifts	-	-
Sponsoring	-	16
Catering revenue	-	-
Other	1,652	1,553
Other income	6,094	5,965

The character of this income, with the exception of rental income, is incidental.

Rental income

Nikhef has agreements for an indefinite period of time with over 160 parties for the use of facilities in the Nikhef data center. This has thus become a structural source of income for Nikhef.

This concerns income in the context of internet exchange housing and the renting out of buildings not used for research.

Notes on Income versus Budget

	2020 x €1,000	2020 Budgeted x €1,000	2019 x €1,000
Income			
State contributions	125,613	118,530	113,648
Other government contributions and grants	1,864	6,520	1,609
Income from work for third parties	74,927	70,834	84,308
Other income	6,094	7,317	5,965
Total income	208,498	203,201	205,530

The total income amounted to €208,498k and was €5,297k higher than budgeted.

- The State contribution is €7,083k more than budgeted, which is due to the 2020 allocation for the Coronavirus Fund (€6,000k)
- The Other government contributions and grants were €4,656k lower than budgeted.
In the budget, the investment grant (€5,450k) for SRON is included as income, while in realization this is accounted for in the balance sheet as Investment grant received in advance.
- Income from work for third parties was €4,093k higher than budgeted, of which:
 - o higher income (€6,829k) at ARCNL, CWI and Nikhef
 - o lower income (€2,366k) at DIFFER and the BUW

EXPENSES

Expenses

	2020	2019
	x €1,000	x €1,000
Expenses		
Personnel expenses	137,070	142,706
Depreciation/amortization	5,424	6,687
Housing expenses	8,784	8,160
Other expenses	48,587	55,302
Total expenses	199,865	212,855

Personnel expenses

	2020	2019
	x €1,000	x €1,000
Personnel expenses		
Wages, salaries, social insurance and pension costs	122,179	124,007
Other personnel expenses	15,199	18,915
Fees received -/-	-308	-216
Personnel expenses	137,070	142,706

Breakdown

Wages and salaries		
Wages and salaries	96,140	95,522
Social insurance costs	11,629	12,105
Pension contributions	14,410	16,380
Wages and salaries	122,179	124,007
Other personnel expenses		
Allocations personnel provisions	-100	2,588
Non-employee personnel expenses	5,133	4,940
Other	10,166	11,387
Other personnel expenses	15,199	18,915
Other benefits that reduce personnel expenses -/-	-308	-216

The personnel expenses amounted to €137,070k and decreased by €5,636k compared to 2019.

- Direct personnel expenses (Wages, Salaries and Pension Expenses) decreased by €1,828k.
 - Wages and Salaries increase €618k
On the one hand Wage and price compensation (€2,790k) and a decrease in headcount at the BUW
 - Pension contributions decrease €1,970k
In 2019, an additional pension expense was included (€1,610k because previously no account had been taken of the pension expense related to the End-of-Year Leave Outstanding)
- Other personnel expenses decreased by €3,716k compared to 2019.
 - Allocation of personnel provisions decrease €2,688k
Compared to 2019, €1,157k less allocation (of which €679k Long-term sick), €806k less Withdrawals (of which €504k Long-term sick) and €625k less release (of which €852k Long-term sick).

- o Other decrease €1,221k
at SRON, a decrease of €456k, of which €292k less own risk under the Sickness Benefits Act at the BUW decrease of €944k, of which €751k less Other salary costs and €200k less Unemployment benefits.

The average number of FTE during the reporting year was 1,737, which is 76 FTE less than the average of the previous year. In particular, the BUW showed a decreasing workforce (average 92 FTE), which is in line with the expiration of the research projects within the BUW.

At the end of 2020, 1,703 employees are employed by NWO-I according to the following classification

Personnel category	Type of personnel	31-12-20
Scientific	PhD students	430.96
	Researchers on temporary contracts (including postdocs)	297.40
	Researchers on permanent contracts	266.44
Non-scientific	In temporary employment	110.73
	In permanent employment	597.64
Total headcount		1,703.17

Mention based on WNT

On January 1, 2013, the Senior Executives in the Public and Semi-Public Sector (Standards for Remuneration) Act (WNT) came into effect. The WNT applies to NWO-I. The maximum remuneration applicable for NWO-I was €201,000.00 (General Maximum Remuneration) in 2020. The senior executives identified within our organization with an employment contract are not employed by any other WNT-liable institution(s) as senior executives (entered into as of January 1, 2018).

1a. Senior executives with an employment contract and senior executives without an employment contract from the 13th month of job performance.

amounts x €1	M. Luizink NWO-I director	J.E. van der Boon Director of operations	H.J. Bakker Director Amolf	M.C.M. van de Sanden Director DIFFER	M.R. de Baar Director DIFFER
Job details					
Start and end of job performance in 2019	10/01 - 12/31	09/01 - 9/30	01/01 - 9/30	01/01 - 6/30	7/01 - 9/30
Part-time factor in FTE	1	1	1	1	1
(Notional) employment relationship?	yes	yes	yes	yes	yes
Remuneration					
Remuneration plus taxable expense allowances	€ 30,344.31	€ 10,114.77	€ 112,481.82	€ 93,589.00	€ 30,268.31
Remuneration payable over time	€ 5,121.84	€ 1,707.28	€ 15,570.63	€ 10,723.68	€ 5,099.31
Remuneration	€ 35,466.15	€ 11,822.05	€ 128,052.45	€ 104,312.68	€ 35,367.62
Individually applicable remuneration maximum	€ 50,524.59	€ 16,475.41	€ 150,475.41	€ 99,950.82	€ 50,524.59
-/- Undue amount paid					
Total remuneration	€ 35,466.15	€ 11,822.05	€ 128,052.45	€ 104,312.68	€ 35,367.62
The amount of the excess and the reason why the excess is or is not allowed	N/A	N/A	N/A	€ 4,361.86: This involves an optical excess. The excess is caused by the sale of leave hours through participation in the cafeteria model. These hours were accrued in 2019. The value of these hours is therefore attributable to 2019. The remuneration in 2019 and 2020 does not exceed the standard.	N/A
2019 data					
Start and end of job performance in 2019			01/01 - 12/31	01/01 - 12-31	
Part-time factor 2019 in FTE			1	1	
(Notional) employment relationship			yes	yes	
Remuneration plus payable expense allowance			€ 139,600.60	€ 162,734.03	
Remuneration payable over time			€ 20,433.36	€ 20,874.96	
Subtotal			€ 160,033.96	€ 183,608.99	
Individually applicable remuneration maximum			€ 194,000.00	€ 194,000.00	
Total remuneration 2019			€ 160,033.96	€ 183,608.99	

<1> Officer is designated as a senior executive until no later than September 1, 2023, in connection with previous position as Director NSCR.

<2> Officer is designated as a senior executive until no later than 12/31/2022, in connection with previous position as Director SRON.

<3> Officer is designated as senior executive until no later than October 1, 2024, in connection with change in governance as of October 1, 2020.

continued 1a. Senior executives with an employment contract and senior executives without an employment contract from the 13th month of job performance.

amounts x €1 Job details	S.C.M. Bentvelsen Director Nikhef	J.W.M. Frenken Director ARCNL	J.C.M. Baeten Director CWI	H. Brinkhuis Director NIOZ	C.A. Jackson Director ASTRON
Start and end of job performance in 2019	01/01 - 9/30	01/01 - 9/30	01/01 - 9/30	01/01 - 9/30	01/01 - 9/30
Part-time factor in FTE	1	1	0.9	1	1
(Notional) employment relationship?	yes	yes	yes	yes	yes
Remuneration					
Remuneration plus taxable expense allowances	€ 120,721.36	€ 114,696.90	€ 118,681.61	€ 136,637.36	€ 86,152.01
Remuneration payable over time	€ 16,085.52	€ 15,873.30	€ 14,476.86	€ 16,154.10	€ 15,252.39
Remuneration	€ 136,806.88	€ 130,570.20	€ 133,158.47	€ 152,791.46	€ 101,404.40
Individually applicable remuneration maximum	€ 150,475.41	€ 150,475.41	€ 135,427.87	€ 150,475.41	€ 150,475.41
-/- Undue amount paid					
Total remuneration	€ 136,806.88	€ 130,570.20	€ 133,158.47	€ 152,791.46	€ 101,404.40
The amount of the excess and the reason why the excess is or is not allowed	N/A	N/A	N/A	€ 2,316.05: This involves an optical excess. Through participation in the cafeteria model, leave hours were paid out for the entire year in January 2020. Part of this leave entitlement covers the period October through December 2020. After allocation to this period, there is no longer an excess of the 2020 standard.	N/A
2019 data					
Start and end of job performance in 2019	01/01 - 12-31	01/01 - 12-31	01/01 - 12-31	01/01 - 12-31	01/01 - 12-31
Part-time factor 2019 in FTE	1	1	0.9	1	1
(Notional) employment relationship	yes	yes	yes	yes	yes
Remuneration plus payable expense allowance	€ 162,734.03	€ 151,777.38	€ 146,452.89	€ 165,836.43	€ 115,179.22
Remuneration payable over time	€ 20,874.96	€ 20,619.12	€ 18,793.08	€ 20,874.96	€ 20,228.40
Subtotal	€ 183,608.99	€ 172,396.50	€ 165,245.97	€ 186,711.39	€ 135,407.62
Individually applicable remuneration maximum	€ 194,000.00	€ 194,000.00	€ 174,600.00	€ 194,000.00	€ 194,000.00
Total remuneration 2019	€ 183,608.99	€ 172,396.50	€ 165,245.97	€ 186,711.39	€ 135,407.62

<1> Officer is designated as a senior executive until no later than September 1, 2023, in connection with previous position as Director NSCR.

<2> Officer is designated as a senior executive until no later than 12/31/2022, in connection with previous position as Director SRON.

<3> Officer is designated as senior executive until no later than October 1, 2024, in connection with change in governance as of October 1, 2020.

continued 1a. Senior executives with an employment contract and senior executives without an employment contract from the 13th month of job performance.

amounts x €1 Job details	M.W. Wise Director SRON	P.H. van der Laan interim director NSCR	L.B.F.M. Waters Senior Scientist A <2>	C.C.J.H. Bijleveld Senior researcher 1 <1>
Start and end of job performance in 2019	01/01 - 9/30	01/01 - 9/30	01/01 - 8/31	01/01 - 12/31
Part-time factor in FTE	1	1	1	0.9474
(Notional) employment relationship?	yes	yes	yes	yes
Remuneration				
Remuneration plus taxable expense allowances	€ 106,077.12	€ 98,174.49	€ 110,281.97	€ 122,707.81
Remuneration payable over time	€ 15,473.97	€ 15,270.12	€ 13,840.56	€ 19,297.44
Remuneration	€ 121,551.09	€ 113,444.61	€ 124,122.53	€ 142,005.25
Individually applicable remuneration maximum	€ 150,475.41	€ 150,475.41	€ 134,000.00	€ 190,427.40
-/- Undue amount paid				
Total remuneration	€ 121,551.09	€ 113,444.61	€ 124,122.53	€ 142,005.25
The amount of the excess and the reason why the excess is or is not allowed	N/A	N/A	N/A	N/A

2019 data

				Director NSCR	Senior researcher 1 <1>
Start and end of job performance in 2019	01/01 - 12-31	09/01 - 12/31	01/01 - 12-31	01/01 - 08/31	09/01 - 12/31
Part-time factor 2019 in FTE	1	1	1	0.9474	
(Notional) employment relationship	yes	yes	yes	yes	
Remuneration plus payable expense allowance	€ 123,197.32	€ 38,771.08	€ 139,478.88	€ 91,085.50	€ 38,974.17
Remuneration payable over time	€ 19,873.80	€ 6,483.12	€ 20,227.32	€ 12,775.68	€ 6,387.84
Subtotal	€ 143,071.12	€ 45,254.20	€ 159,706.20	€ 103,861.18	€ 45,362.01
Individually applicable remuneration maximum	€ 194,000.00	€ 64,843.84	€ 194,000.00	€ 122,362.55	€ 61,433.05
Total remuneration 2019	€ 143,071.12	€ 45,254.20	€ 159,706.20	€ 103,861.18	€ 45,362.01

<1> Officer is designated as a senior executive until no later than September 1, 2023, in connection with previous position as Director NSCR.

<2> Officer is designated as a senior executive until no later than 12/31/2022, in connection with previous position as Director SRON.

<3> Officer is designated as senior executive until no later than October 1, 2024, in connection with change in governance as of October 1, 2020.

continued 1a. Senior executives with an employment contract and senior executives without an employment contract from the 13th month of job performance.

amounts x €1 Job details	S.C.M. Bentvelsen Director Nikhef <3>	J.W.M. Frenken Director ARCNL <3>	C.A. Jackson Director ASTRON <3>	M.W. Wise Director SRON <3>	P.H. van der Laan interim director NSCR <3>
Start and end of job performance in 2019	10/1 - 12/31	10/1 - 12/31	10/1 - 12/31	10/1 - 12/31	10/1 - 12/31
Part-time factor in FTE	1	1	1	1	1
(Notional) employment relationship?	yes	yes	yes	yes	yes
Remuneration					
Remuneration plus taxable expense allowances	€ 46,231.56	€ 46,093.29	€ 37,367.64	€ 32,304.00	€ 30,061.59
Remuneration payable over time	€ 5,361.84	€ 5,291.10	€ 5,084.13	€ 5,157.99	€ 5,090.04
Remuneration	€ 51,593.40	€ 51,384.39	€ 42,451.77	€ 37,461.99	€ 35,151.63
Individually applicable remuneration maximum	€ 50,524.59	€ 50,524.59	€ 50,524.59	€ 50,524.59	€ 50,524.59
-/- Undue amount paid					
Total remuneration	€ 51,593.40	€ 51,384.39	€ 42,451.77	€ 37,461.99	€ 35,151.63
The amount of the excess and the reason why the excess is or is not allowed	€ 1,068.81: This involves an optical excess. In October 2020, leave hours were paid through participation in the cafeteria model. These hours were accrued in the period January 1 through December 31, so that some are attributable to the period January through September. Total remuneration in 2020 does not exceed the standard.	€ 859.80: This involves an optical excess. In November 2020, leave hours were paid through participation in the cafeteria model. These hours were accrued in the period January 1 through December 31, so that some are attributable to the period January through September. Total remuneration in 2020 does not exceed the standard.	N/A	N/A	N/A

2019 data

Start and end of job performance in 2019
Part-time factor 2019 in FTE
(Notional) employment relationship
Remuneration plus payable expense allowance
Remuneration payable over time
Subtotal
Individually applicable remuneration maximum
Total remuneration 2019

<1> Officer is designated as a senior executive until no later than September 1, 2023, in connection with previous position as Director NSCR.

<2> Officer is designated as a senior executive until no later than 12/31/2022, in connection with previous position as Director SRON.

<3> Officer is designated as senior executive until no later than October 1, 2024, in connection with change in governance as of October 1, 2020.

Table 1b senior executives without employment contract

amounts x €1	E.J.T. van de Berg	
Job details	Director of Operations a.i.	
Calendar year	2020	2019
Start and end of job performance in 2020	1/1 - 7/31	09/02 - 12/31
Number of calendar months of job performance in the calendar year	7	4
Number of hours	958.65	
(Notional) employment relationship?	No	No
Indiv. Applicable remuneration cap		
Maximum hourly rate in the calendar year	€ 193.00	€ 187.00
Maximums based on standard monthly amounts	€ 155,100	€ 103,600
Individual applicable maximum entire period calendar month 1 through 12	€ 258,700.00	
Remuneration (all amounts excluding VAT)		
Actual hourly rate lower than the maximum hourly rate?	Yes	
Remuneration in the relevant period	€ 124,625	€ 60,931
Remuneration entire period calendar month 1 through 12	€ 185,556	
Amount unduly paid and not yet recovered		
Reason why the excess is or is not allowed	N/A	
Explanation of claim for undue payment	N/A	
Total remuneration	€ 185,686	

Table Executive Board

Name of senior executive	Position	
C.C.A.M. Gielen	President	
C.E. Visser	Vice president	
J. de Boer	Board member	from September 1, 2020
J.A. de Bruijn	Board member	01-01 / 06-30
J.J.G. Geurts	Board member	
A.P. Hardon	Board member	from June 1, 2020
N.J. Lopes Cardozo	Board member	01-01 / 08-31
J.C. Schouten	Board member	01-01 / 02-29
M.P.C. Weijnen	Board member	from March 1, 2020

Accountability regarding the income of board members is provided in the NWO Annual Report.

Depreciation/amortization

	2020	2019
	x €1,000	x €1,000
Depreciation/amortization		
Amortization on intangible fixed assets	22	387
Depreciation on tangible fixed assets	5,642	6,417
Depreciation charges passed on	-240	-117
Depreciation/amortization	5,424	6,687
	2020	2019
	x €1,000	x €1,000
Breakdown		
Depreciation on tangible fixed assets	11,377	13,929
Movements in investment grants (-/-)	-5,735	-7,512
Total depreciation on tangible fixed assets	5,642	6,417

The depreciation of tangible fixed assets (€11,377k) is €2,552k less than in 2019, mainly due to lower depreciation charges at

- AMOLF, €940k decrease due to fully depreciated component Buildings in 2019,
 - ASTRON, €239k decrease depreciation on Computer Equipment
 - Nikhef, €1,215k decrease because in 2019 a catch-up depreciation on the buildings took place
- Investment grants (being a contribution from NWO for New Construction) have been deducted from depreciation of tangible fixed assets.

Housing expenses

	2020 x €1,000	2019 x €1,000
Housing expenses		
Rent expenses	869	816
Insurance expenses	403	371
Maintenance expenses (minor maintenance)	2,277	2,020
Energy and water	3,101	2,865
Cleaning costs	958	1,007
Housing taxes and levies	640	485
Other housing expenses	536	596
Housing expenses	8,784	8,160

The increase in Housing expenses amounted to €624k compared to 2019.

- Maintenance costs (minor maintenance), increase €257k
Nikhef, €214k compensation for building part of the UVA and NIOZ €214k
- Energy and Water, increase €236k
Nikhef, €193k more power consumption and increase in energy tax and NIOZ €174k, due to expansion of Lab facilities in 2019, which were taken into use in 2020.
- Taxes and fees, increase €155k
SRON €152k, being the Property Tax for the New Building in Leiden.

Other expenses

	2020 x €1,000	2019 x €1,000
Other expenses		
Administration and management expenses	11,240	15,014
Inventory and equipment	5,339	6,356
Allocation to other provisions	-51	-38
Other	32,059	33,970
Other expenses	48,587	55,302
Administration and management expenses		
ICT costs	1,432	1,214
Outsourced work	3,166	4,540
Auditor's costs	646	938
Interest expenses associated with interest subsidies	-	-
Other administration and management expenses	5,996	8,321
Administration and management expenses	11,240	15,013

	2020 x €1,000	2019 x €1,000
Breakdown Auditor's costs		
Cost of audit of financial statements	497	710
Other audit engagements	129	22
Advice on tax matters	20	6
Other non-audit services	-	200
Auditor's costs	646	938
Other		
Research-related costs	28,890	27,323
Travel and subsistence expenses	1,454	4,734
Other expenses	1,715	1,914
Other costs	32,059	33,971

The Other expenses amount to €48,587k are therefore €6,715k less than 2019.

- Administration and management expenses (€11,240k) decreased by €3,774k, of which
 - o Work outsourced, €1,374k less, mainly at Nikhef
 - o Other management expenses, €2,325k less, mainly at NIOZ €729k, SRON €526k and the Office €504k.
- Inventory and equipment (€5,339k) decreased by €1,017k, of which a decrease at the BUW of €1,902k on account of the expiration of the research portfolio.
- The item Other (€32,059k) decreased by €1,911k, of which
 - o Research-related costs (€28,890k) an increase of €1,567k, in particular at ASTRON, Nikhef and NIOZ, while there is a decrease at the BUW.
 - o Other expenses (€1,715k) a decrease of €199k.
 - o Travel and subsistence expenses (€1,454k), a decrease of €3,280k which is causally related to COVID-19, resulting in fewer travel movements in 2020. This decrease is visible at all institutes, but particularly at Nikhef (€1,014k) and the BUW (€548k)
- For the auditor's costs, the costs of auditing the financial statements for the 2020 audit were fully accounted for to the extent known. The expenses included under this item for 2020 relate to the current auditor Ernst & Young Accountants LLP.
The item other audit engagements of €193k relates to the audit of projects by Ernst & Young Accountants LLP.

2020 amounts x €1,000	Ernst & Young Accountants LLP	Other network	TOTAL network
Audit of the financial statements	493	4	497
Other audit engagements	119	10	129
Tax consultancy	-	20	20
Other non-audit services	-	-	-
Total	612	34	646

2019 amounts x €1,000	Ernst & Young Accountants LLP	Other network	TOTAL network
Audit of the financial statements	710	-	710
Other audit engagements	22	-	22
Tax consultancy	-	6	6
Other non-audit services	200	-	200
Total	932	6	938

The other network items involve a separate audit report for the Governing board of ARCNL and audit engagements at SRON.

Notes on expenses compared to the Budget

	2020 x €1,000	2020 Budgeted x €1,000	2019 x €1,000
Expenses			
Personnel expenses	137,070	135,320	142,706
Depreciation/amortization	5,424	8,805	6,687
Housing expenses	8,784	16,758	8,160
Other expenses	48,587	56,363	55,302
Total expenses	199,865	217,246	212,855
Balance of income and expenditure	8,633	-14,045	-7,325

The total expenses amounted to €199,865k and were €17,381k less than the budget

- Personnel expenses, €1,750k more than budgeted,
 - as a result of the Wage and price compensation granted (€2,790k)
- Depreciation expense, €3,381k less than budgeted,
 - the renovation at Nikhef started later (€3,102k)
- Housing expenses €7,974k less than budgeted,
 - in the budget, expenditures are budgeted for SRON for the New Construction, which are included partially as expenses, although these will ultimately be capitalized and for which depreciation will subsequently be applied (€8,259k)
- Other expenses, €7,776k less than budgeted,
 - of this at the BUW (€6,581k), due to the expiration of the research projects making Administration and Office Costs and Costs for Inventory and Equipment.

	12-31-2020 x €1,000	12-31-2019 x €1,000
Financial income		
Interest receivable and similar income	24	23
Financial income	24	23
Financial expenses		
Interest payable and similar expenses	39	45
Financial expenses	39	45
Financial income and expenditure	-15	-22
Result from participating interests	-13	-4

NET RESULT

The result for the fiscal year of 2020 is positive €8,605k and is distributed within the equity according to the specification below. For further explanation, see the relevant balance sheet items in the Notes to the balance sheet.

	2020	2020 Budgeted	2019
	x €1,000	x €1,000	x €1,000
Distribution of result			
- Movement in general reserve	-842	-823	-145
- Movement in legal reserve	-	-	-
- Movement in earmarked reserves (public)	7,540	-13,039	-5,316
- Movement in earmarked Funds	-347	-183	-1,890
- Movement in other legal reserves	2,254	-	-
- Movement in other components	-	-	-
Total distribution of result	8,605	-14,045	-7,351

9 Notes to cash flow statement

The cash flow statement provides a different understanding of NWO-I's cash flow and shows what caused the decrease in liquidity of €23,455k.

On balance, cash flow from operating activities resulted in an increase of €7,710k mainly due to the depreciation (€11,399k), Receivables (€20,793k) and a decrease in Liabilities (€32,759k).

The cash flow from investing activities results in a decrease in liquid assets of €31,150k, mainly due to investments (-€32,549k) and disinvestments (€349k) in tangible fixed assets, investment in intangible fixed assets (-€1,986k) and Investment grant received in advance for the New SRON Building (€3,000k).

10 Events after the balance sheet date

There are no events after the balance sheet date.

Other information

11 Independent auditor's report

12 Provisions in the articles on result appropriation

The articles contain no stipulations concerning the result appropriation.

The following is an English translation of the independent auditor's report issued 17 June 2021.

Independent auditor's report

To: the board of the Foundation for Dutch Scientific Research Institutes,

Report on the financial statements 2020 included in the annual report

Our opinion

We have audited the financial statements 2020 of the Foundation for Dutch Scientific Research Institutes, based in Utrecht.

In our opinion the financial statements included in this annual report give a true and fair view of the financial position of the Foundation for Dutch Scientific Research Institutes as at 31 December 2020, and of its result for the year 2020 in accordance with the RJ-Richtlijn 660 Onderwijsinstellingen (Dutch Generally Accepted Accounting Principles for Educational Institutions) and in accordance with the provisions contained in Wet Normering Topinkomens (WNT) (Standards for Remuneration Act).

The financial statements comprise:

- The balance sheet as at 31 December 2020;
- The statement of income and expense for the year 2020;
- The notes comprising of a summary of the accounting policies and other explanatory information.

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing and the Auditing Protocol for WNT 2020. Our responsibilities based on these are further described in the 'Our responsibilities for the audit of the financial statements' section of our report.

We are independent of the Foundation for Dutch Scientific Research Institutes in accordance with the "Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten" (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore we have complied with the "Verordening gedrags- en beroepsregels accountants" (VGBA, Dutch Code of Ethics).

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

Compliance with anti-cumulation provision of WNT is unaudited

In accordance with the "Controleprotocol WNT 2020" (WNT Auditing Protocol 2020), we did not audit the compliance with the anti-cumulation provision in Section 1.6a of the WNT and Section 5(1) (n and o) of the "Uitvoeringsregeling WNT" (WNT Implementation Regulation). Therefore, we did not audit whether or not a remuneration maximum was exceeded by a senior management official as a result of possible employment as senior management official at other institutions that are subject to the WNT, nor did we audit whether the required disclosure is accurate and complete in this respect.

Report on other information included in the annual report

In addition to the financial statements and our auditor's report thereon, the annual report contains other information that consists of:

- Board Report
- Other data
- List of abbreviations

Based on the following procedures performed, we conclude that the other information is consistent with the financial statements and does not contain material misstatements.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements. By performing these procedures, we comply with the requirements of the Dutch Standard 720. The scope of the procedures performed is substantially less than the scope of those performed in our audit of the financial statements.

The Board is responsible for the preparation of the other information.

Description of responsibilities for the financial statements

Responsibilities of the Board for the financial statements

The Board is responsible for the preparation and fair presentation of the financial statements in accordance with the RJ-Richtlijn 660 Onderwijsinstellingen and in accordance with the provisions contained in Wet Normering Topinkomens (WNT). In this respect, the Board is also responsible for such internal control as the Board determines is necessary to enable the preparation of the financial statements and compliance with relevant laws and regulations, without material misstatements, whether due to fraud or error.

As part of the preparation of the financial statements, the Board is responsible for assessing the education institution's ability to continue as a going concern. Based on the financial reporting framework mentioned, the Board should prepare the financial statements using the going concern basis of accounting unless the Board either intends to liquidate the education institution or to cease operations, or has no realistic alternative but to do so. The Board should disclose events and circumstances that may cast significant doubt on the institution's ability to continue as a going concern in the financial statements.

Our responsibilities for the audit of the financial statements

Our responsibility is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit.

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. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We have maintained professional skepticism throughout the audit and have exercised professional judgment where relevant, in accordance with Dutch Standards on Auditing, de Regeling Controleprotocol WNT 2020 (Regulation Auditing Protocol WNT), ethical requirements and independence requirements. Our audit included among others:

- Identifying and assessing the risks of
 - material misstatement of the financial statements, whether due to fraud or error,
 - illegitimately generating of income and expenditures as well as movements in the balance sheet that are of material importance
- Designing and performing audit procedures responsive to those risks, and obtaining 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;

- Obtaining 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 internal control of the education institution's internal control;
- Evaluating the appropriateness of accounting policies used, the financial criteria applied for legitimacy and the reasonableness of accounting estimates and related disclosures made by the board;
- Concluding on the appropriateness of the Board'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 education institution's ability of 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 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 an institution to cease to continue as a going concern;
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures;
- Evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation and whether the income and expenditure recognized in the financial statements as well as movements in the balance sheet have in all material respects been legitimately generated.

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

Utrecht, 17 June 2021

Ernst & Young Accountants LLP

D.E. Engwerda RA

List of abbreviations

ABP	Algemeen Burgerlijk Pensioenfonds [General Pension Fund for Public Employees]
AMOLF	Physics of functional complex matter (institute)
AO	administrative organization
ARCNL	Advanced Research Center for Nanolithography
ASTRON	Netherlands Institute for Radio Astronomy
BUW	University Working Groups Administrative Unit
CLA	Collective Labor Agreement
CWI	Centrum Wiskunde & Informatica
DIFFER	Dutch Institute for Fundamental Energy Research
FOM	Foundation for Fundamental Research on Matter
FTE	full time equivalent
IC	Internal control
Nikhef	National Institute for subatomic physics
NIOZ	Royal Netherlands Institute for Sea Research
NSCR	Netherlands Institute for the Study of Crime and Law Enforcement
NWO	Dutch Research Council
NWO-I	Foundation for Dutch Scientific Research Institutes
OCW	Ministry of Education, Culture and Science
P2IP	Particle Physics Inside Products BV
SRON	Netherlands Institute for Space Research
UvA	University of Amsterdam
VU	Vrije Universiteit Amsterdam
WNT	Senior Executives in the Public and Semi-Public Sector (Standards for Remuneration) Act
WW	Unemployment Insurance Act.

