Sustainability report 2020

Results of the corporate social responsibility (CSR) and environmental policy of Wageningen University & Research

WAGENINGEN
UNIVERSITY & RESEARCH

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Summary

This report provides a picture of the activities of Wageningen University & Research (WUR) relating to sustainability, the environment and corporate social responsibility (CSR) in 2020. The sustainability ambition of WUR is outlined in broad terms in the Strategic Plan 2019-2022. This ambition has been elaborated in a CSR agenda, which lists the CSR themes that WUR stakeholders consider important. The core of the CSR strategy is to strike a balance between scientific, social and economic interests. Sustainability – in the broadest sense of the word – is integrated into all activities as much as possible, including in education, research, value creation and operational management. We make comprehensive considerations in everything we do, wherein our responsibility extends beyond WUR's own activities.

Here we report on the progress in the CSR agenda and the objectives for sustainability and the environment.

CSR Agenda
This document describes the themes of the CSR agenda and reports on the progress based on key performance indicators (KPIs). Wherever possible we have aligned the KPIs relating to CSR with the overall objectives and Change Performance Indicators (CPIs) of the Strategic Plan. Additional KPIs have been established for the CSR themes that have little or no overlap with the Strategic Plan. By working on the themes of the CSR agenda, WUR contributes to the Sustainable Development Goals.

Environment
For each environmental policy theme, the progress, results and details during 2020 are explained. The activities carried out for the various environmental policy fields (including energy, waste, water, soil, noise, biodiversity, asbestos and mobility) are related to the environmental permits issued for the 26 WUR locations.

To ensure all activities proceed smoothly, the responsibility for the environment, sustainability and CSR is established at a number of levels within the organisation. The CSR group guides Wageningen University & Research's CSR strategy and directly advises the Executive Board at the corporate level. At the implementation level, the sub-department of Safety and Environment (Facilities and Services) is responsible for keeping the statutory frameworks up-to-date, while the Health & Safety and Environment sections of the individual organisational components contribute to the environmental and sustainability policy.

1 Introduction

Corporate Social Responsibility (CSR) is deeply rooted in the domain of Wageningen University & Research (WUR). We set very high standards of social responsibility and sustainability in everything we do. The social impact of a decision is always taken into account in the decision-making process.

From annual environmental report to sustainability report

Until 2018, WUR published an annual environmental report. From 2019 the annual environmental report is integrated in a comprehensive sustainability report. The sustainability report presents the activities and results arising from the CSR agenda and the Multi-Year Environmental Plan. The report can be viewed on the website of WUR.

Annual reporting and GRI

The Annual report Wageningen University & Research has been prepared in accordance with the guidelines from the Global Reporting Initiative (GRI). The annual report provides a broad outline of CSR and sustainability. The sustainability report provides more specific information on the progress of CSR and sustainability policy at WUR. The GRI table, with the GRI indicators relevant to WUR and references to specific passages in the reporting, is also available on the WUR website.

The content of the sustainability report is coordinated with the members of the CSR group. The CSR group invites stakeholders to direct questions and comments about CSR and sustainability to sustainability@wur.nl.

Corporate Social Responsibility

"The deliberate structuring of business activities for value creation in the longer term in the three dimensions of people, planet and profit, combined with the willingness to enter into a dialogue with society. CSR forms part of the company's core business."
Definition of the Social and Economic Council (SER)

Organisation

WUR consists of a number of organisational components, as shown in the organigram, each of which is housed in one or more of 26 locations. The operational management at Wageningen University (WU) and Wageningen Research (WR) are intertwined with one another. Therefore, this report discusses the operational management for WUR as a whole. The various organisational components within WUR also prepare their own health and safety and environmental reports, the main points of which are included in the present report.

2 Strategy and policy

Sustainability is an important aspect of research, education and value creation. The mission expresses this as follows: '*To explore the potential of nature to improve the quality of life*'. The emphasis is mainly on global challenges, such as the depletion of natural habitats and natural resources, the world food problem and the changing climate. WUR is also a pioneer in sustainable management. WUR would like to maintain and expand this position.

CSR in the WUR Strategic Plan for 2019-2022

WUR gives priority to promoting the vitality of employees and students, to a healthier and more sustainably produced food assortment in canteens and to reducing food waste. In making our organisation more sustainable, we apply a Living Lab concept: an approach that creates opportunities for research and educational experiments. In our purchasing policy we put pressure on chains to operate transparently, sustainably, circularly and without modern forms of slavery.

2.1 Integrated approach

Sustainability is an integral part of the business operations. This means that sustainability is an integral part of decision-making. WUR strives for a clear and recognisable CSR strategy that is in line with all our activities. The core of this strategy is making decisions in such a way that scientific, social and economic interests balance each other out. We make comprehensive considerations in everything we do, wherein our responsibility extends beyond WUR's own activities.

Figure 2-1 shows how the CSR strategy is related to the mission, strategy and value chain of WUR. The themes on the CSR agenda are linked wherever possible to the Change Performance Indicators (CPIs) from the Strategic Plan 2019-2022.

2.2 The WUR value chain

The value chain can be understood as the entirety of activities related to education, research and value creation. The main inputs into the WUR value chain (see Figure 2-1) are financial resources, HR management and the research infrastructure. The main outputs are education and research programmes and communication with stakeholders. These outputs provide added value for our stakeholders, but also for society as a whole and the surrounding environment. In this way we contribute to the major global challenges related to food, biodiversity and climate.

Our knowledge is applied in practice by the partners with whom we cooperate. WUR publishes its research in scientific journals, but we also want to share our acquired knowledge with society in other ways. For example, our students and scientists publish blogs about their research. Moreover, in-depth stories have been collected in the WUR Impact Portfolio, in which we tell more about our research and its impact.

Our employees are committed and impact-oriented. For example the biennial employee satisfaction survey shows that a large proportion of WUR employees are enthusiastic and/or committed (only 5.6% are neither). On average, employees give the KPIs for enthusiasm and engagement a score of 8 (out of 10). This is relatively high, also compared to other universities. We consider the engagement and development of our employees to be of great importance. Due to training and development, the knowledge level of our organisation and the capabilities of our employees are increasing in the short term. Within our cooperative endeavours, we encourage initiatives and have a connecting role in public-private partnerships. By entering into a dialogue with our stakeholders, we enhance the societal support for our education and research in the short term.

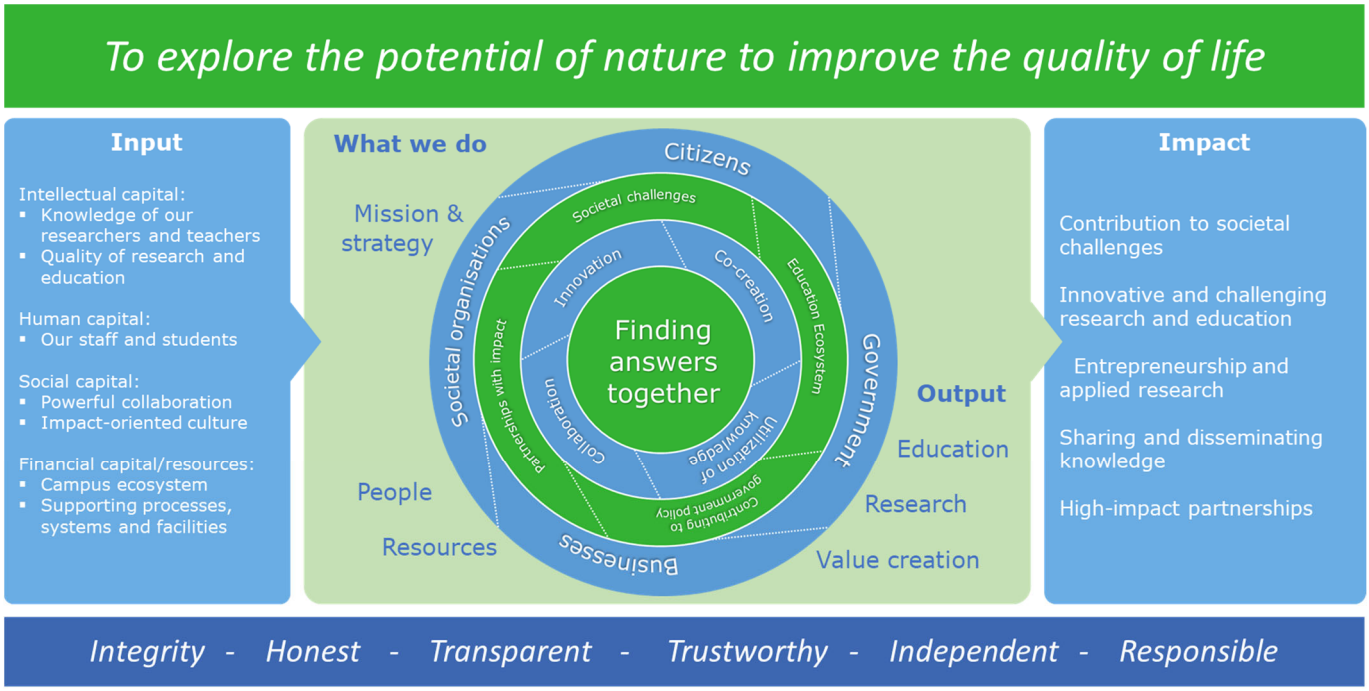


Figure 2-1 – CSR strategy and the WUR value chain

Negative impact

We are also aware that our activities can have a negative impact. Below we refer to several examples of activities that have a negative impact on our human and natural capital and the measures we are taking to reduce these negative aspects.

Human capital: Similar to other universities and research institutes, WUR is concerned about the workload of our employees. The problems with workload were exacerbated by the coronavirus pandemic in 2020, which demanded even more from employees. All kinds of adjustments were necessary, such as organising online education. WUR attaches great value to its employees being able to work under good conditions with enthusiasm, motivation and inspiration. That is why everything was done – based on a personalised approach – to help employees get through this difficult time. In addition, WUR has continued to invest in the Vital@Work programme that helps employees to become and remain physically and mentally healthy.

Natural capital: Our activities cause various types of emissions. As shown in this report, the waste separation rate has improved, but the total amount of waste has increased during the past year. Based on our vision of circularity, WUR focuses on the circular use of raw materials, which will significantly reduce the amount of waste between now and 2030. Due to our global involvement, we often travel by air, which is another source of emissions. Our mobility vision specifies how we want to minimise these and other emissions from transport. By committing to annual reductions of emissions, we aim to comply with the Paris Climate Agreement.

2.3 CSR Agenda

With the CSR agenda, WUR highlights the social themes that will receive extra attention in the coming years: 17 social themes were identified which are important inside and outside our organisation. These themes are shown in **Error! Reference source not found.**. The CSR agenda is explained in more detail in Appendix 1.

Besides environmental sustainability, our CSR policy also covers social and economic sustainability. Three pillars are essential to this approach: do what you say and show what you do, create awareness within and outside the organisation, and search for connections between research, education and operational management. With the CSR agenda, WUR wants to contribute to the realisation of the social goals from the Strategic Plan 2019-2022: Finding answers together. The CSR agenda is, as much as possible, linked to the priority areas and the Change Performance Indicators (CPIs) from the Strategic Plan.

2.4 Sustainable Development Goals

With the CSR agenda WUR contributes to the Sustainable Development Goals (SDGs) of the United Nations.

Table 2-1 indicates which SDGs are involved in each theme. The link with the SDGs (including the sub-goals) is explained in more detail in the GRI table.

Table 2-1 The CSR agenda and the Sustainable Development Goals

The Sustainable Development Goals to which WUR contributes		
 Wageningen University & Research contributes to 13 of the 17 UN Sustainable Development Goals (SDGs) through its research, education, value creation and business operations		
Theme CSR Agenda[1]	**Vision/plan WUR**	**Link with SDG**
In our research and education activities		
Research and education designed to make a contribution to societal challenges (1)	Strategic Plan: Finding answers together.	SDG 2 - SDG 3 - SDG 6 - SDG 11 - SDG 12 - SDG 13 - SDG 14 - SDG 15 - SDG 17
Innovative and challenging research and education (3)	Strategic Plan: Finding answers together.	SDG 4 - SDG 8
How we do it (process)		
Sharing and disseminating knowledge (2)	Strategic Plan: Finding answers together.	SDG 4
Ethically responsible research (5)	Integrity	
Entrepreneurship and Applied Research (7)	Strategic Plan: Finding answers together.	SDG 8
High-impact partnerships (10)	Strategic Plan: Finding answers together.	SDG 17
Flexible learning paths (17)	Vision for education	SDG 4
Governance		
Responsible collaboration (9)	Strategic Plan: Finding answers together. Sustainable procurement/Socially Responsible Procurement	SDG 17
Responsible economic policy (11)	Strategic Plan: Finding answers together.	SDG 8
Chain responsibility (13)	Sustainable procurement/Socially Responsible Procurement	SDG 12
Employees and students		
Vitality (4)		SDG 3
Development and training (14)	Personal development	SDG 8
Diversity in staff and students (15)	Diversity & Inclusion	SDG 5
Environment		
Climate-adaptive environment (6)		SDG 13 – SDG 14 - SDG 15
Waste and circularity (8)	Vision of the circular economy	SDG 12
Sustainable energy (12)	Energy vision 2030	SDG 7 - SDG 13
Sustainable mobility (16)	Mobility Vision 2030	SDG 12 – SDG 13

[1]The number in brackets indicates the sequence of prioritisation of each CSR theme; see also the explanation of the CSR agenda and the materiality analysis in Appendix 1.

3 Involvement in sustainability

Responsibility for CSR and sustainability is shared by the whole organisation. All organisation divisions of WUR have an important role to play in working towards the CSR and sustainability goals.

3.1 Stakeholders

WUR deals with various stakeholders. Our clients include companies and organisations in agriculture, horticulture, industry, government agencies, other public bodies and non-profit organisations. Current students, prospective students and alumni are important stakeholders to the university. For the CSR policy, our stakeholders have been identified according to the impact WUR has on them and the influence they have on WUR. The various stakeholder groups and associated stakeholder dialogues are summarised in Table 3-1.

Stakeholder dialogues start with the primary process. Research programmes have a steering committee in which stakeholders from various societal backgrounds also consider the design and implementation of the research. For education, the most important stakeholders are organisations that represent students, such as the Student Council, study associations and student associations. In addition, every study programme has a programme committee, with student representatives, and a professional committee for permanent reflection on the programme content. At the administrative level, discussions are held almost daily with representatives of nature conservation organisations, directors of food companies, representatives of political parties and regional and local authorities. We also work internationally on maintaining close ties with important stakeholders, such as the CGIAR institutes, the United Nations, the World Bank and various NGOs.

In 2020, the highest governing body, the Executive Board, participated in dialogue with employees, students, government agencies and public bodies, and political and international organisations. Progress on the Strategic Plan was discussed with employees and their representative body. As a member of the Executive Board, the Rector consulted with the Student Council and with societal (student) organisations about climate, discrimination and other topics.

3.2 CSR group

A CSR group assesses the approach and any progress made in social responsibility and sustainability. The CSR agenda is in the hands of the CSR group. The chairperson of the CSR group is accountable to the Executive Board/Board of Directors. The members of the CSR group are:

- Director of Facilities and Services (FB), chair;
- Director of Corporate Human Resources (CHR);
- Director of Corporate Communications & Marketing (CC&M);
- General Director (ESG);
- Manager of Corporate Value Creation, representing the departments of Corporate Strategy & Accounts (CSA), Corporate Value Creation (CVC) and Education & Student Affairs (ESA);
- a representative of the Student Council;
- a representative from research;
- CSR policy officer;
- CSR coordinator, secretary.

A staff department has been designated as the process owner for each subject of the CSR agenda. The process owner is responsible for continuing to 'roll out' each subject. Virtually all of the subjects involve the primary process. Staff departments work together on some of the topics. Process ownership and responsibilities within the components of the WUR organisation are explained in Appendix 1.

The present report has a direct link with the annual reporting of WUR. Its content is coordinated with the members of the CSR group. The CSR group invites stakeholders to direct their questions and comments about CSR and sustainability to sustainability@wur.nl.

Table 3-1 Overview of stakeholders and stakeholder dialogues

Stakeholder group	Importance for WUR	Most important contact points
Staff members	Offering an inspiring work environment with possibilities for development.	Participation bodies, Finding Answers Together (FAT) sessions on the Strategic Plan, working visits by the Executive Board to organisational components, talent development programme, confidential advisers.
Students	Offering an inspiring learning environment and high-quality education that provides the answers to societal needs and offers good career perspectives.	Education, participation bodies (Student Council), programme committees and the Board of Education, study associations and student associations, activities in various committees such as the AID (Annual Introduction Days) and Green Office.
Clients	Providing knowledge for innovation in their business processes and products.	Contact points with account management, researchers and administrators at WUR. Participation in debates. Wageningen World, magazine for clients/contacts and alumni.
Authorities	Providing knowledge to strengthen the policy foundation and initiate new policy; identifying social issues; contributing to legal tasks.	Contact with researchers and account managers at the research project level. Contact points at the administrative level regarding broader policy themes and collaboration with WUR.
Politics	Supplying knowledge to support decision-making regarding fields in our domain.	Contacts at the board and management level. Visits to our organisation.
Social organisations	Providing knowledge to help improve issues that are important to society such as climate problems, animal welfare and the environment.	Involvement in research projects, such as through sounding board groups or as commissioning parties for research projects. Active dialogue (face-to-face and online) on the topic of current social issues.
EU	Strengthening the economic climate in the EU by contributing to the innovative capacity, to the policy foundation and to the development of new policy.	Contact points with researchers and account managers at the research project level; contributions to Horizon 2020 and Horizon Europe.
International organisations	Working on a common research agenda to better contribute to solutions for the UN Sustainable Development Goals.	Contacts at the administrative and management level and with research projects. Researchers and administrators of CGIAR institutes, such as CYMMIT and IRRI; WUR regional account managers for Brussels/Europe, Africa, Asia, Latin America and China.
Alumni	Maintaining the good reputation of their alma mater; providing a network of alumni worldwide.	Organisation of alumni meetings worldwide on the topic of themes in our domains. Newsletters and the Wageningen World magazine for alumni and partners.
Secondary school students	Offering inspiring degree programmes with interesting career prospects in line with the interests of secondary school students.	Organising open days and participation days for secondary school students interested in Wageningen University degree programmes. Contributing to secondary education through activities such as offering input for school research projects, participating in the Green Knowledge Cooperative, and membership in the Food Valley school network.
Local residents	Contributing to a good living environment in the surroundings of our locations.	Organising or participating in meetings with local residents on future developments in or around our locations. Talks with resident associations from the surrounding neighbourhoods.

3.3 Quality, Health & Safety and Environment column (QHSE)

Within WUR, the QHSE column is tasked with promoting a safe, healthy and environmentally friendly work and study environment and contributing to compliance with health and safety and environmental regulations.

The QHSE column consists of a Safety and Environment sub-department positioned within Facility and Services and various decentralised QHSE sub-departments of the organisational components. The QHSE sub-departments and the Safety and Environment sub-department work in close collaboration. They work at a number of levels according to the Deming cycle: 'PLAN', 'DO', 'CHECK' and 'ACT'. Chapter 6 reports on the activities of the organisational components in general terms. The activities and measures in the area of Health and Safety are described in the Annual Report on Working Conditions 2019. Appendix 2 describes how the QHSE organisation is embedded within WUR.

One of the #greenwur posts on Instagram from Green office Wageningen and the Social Media Team 'Spread the WURd'

3.4 Green Office Wageningen

Green Office Wageningen plays a central role in connecting and supporting students and employees in realising sustainable projects. The Green Office organises activities and meetings and communicates on these topics through the Green Office website and social media (Instagram, Facebook and Linkedin). Also see the Green Office action plan.

The main tasks of the Green Office are the following:

- create a platform for – and maintain a network with – organisations and individuals interested in sustainability, where information is exchanged and where collaboration can take place;
- initiate, catalyse and realise innovative projects to make WUR more sustainable on various themes and in collaboration with various parties;
- contribute to strong communication about sustainability at WUR, both through its own channels and through collaborative projects;
- strengthening WUR's sustainability strategy.

Green Office Wageningen is part of the Green Active Network (GAN), a platform in which more than 15 (student) organisations with green goals work together. Various joint activities were organised in 2020, including the Regreening weekends in February and August to introduce (primarily) first-year students to sustainability at WUR and in Wageningen.

Projects from 2020 in the spotlight

In 2020, Green Office focused primarily on integrating existing projects within the organisation. At the same time, this created space to work on new innovative ideas. Examples include setting up the Sustainable Campus Tour, developing the MOOC 'Becoming an Agent of Sustainable Change', introducing the Billie Cup on campus and collaborating with 'Spread the Wurd' for the #greenwur posts on the Instagram account of the University.

The Sustainable Campus Tour has been redeveloped and has become part of Wageningen Campus Tours. As a result, the tours are now led by professional campus tour guides. Green Office is responsible for the content of the tour, but Wageningen Campus Tours is responsible for bookings and training the tour guides. The Sustainable Campus Tour was developed during a period when group tours were not permitted due to the coronavirus pandemic. We expect the tour to be heavily booked in the future.

The MOOC 'Becoming an Agent of Sustainable Change' was very successful. Since then, there have been several editions of this online course. We expect that this MOOC will be offered by WUR for a long time to come and that it will also inspire lecturers and students from outside WUR to structurally integrate sustainability into education.

Following the survey on plastic use on campus, the Billie Cup was introduced on Wageningen Campus in the autumn of 2020. WUR was thus the first educational institution in the Netherlands at which the Billie Cup could be used. The Billie Cup is a reusable cup with a deposit to avoid the use of disposable cups. At the student café the Spot in Orion and the restaurant in Impulse, you can get coffee or tea in a Billie Cup.

The #greenwur project was a means for reaching more people to inform them about WUR's sustainability story. This project was not so much about making WUR more sustainable, but more about communicating what WUR is already doing and inspiring the WUR community to participate. Dozens of

Instagram posts have been developed in collaboration with employees and students. The posts can be found on the Instagram account of @uniwageningen.

Annual activities

- During the week surrounding Sustainability Day (10 October), Green Office organised the Seriously Sustainable Week. Working together with the GAN student organisations, Green Office put on a varied range of activities. This took place in collaboration with Thuis Wageningen, and activities primarily took place online. Despite the limitations due to the coronavirus pandemic, we managed to reach many people from WUR and the region. The complete programme can be found on sesu2020.nl.
- The Warm Sweater Week was held in February. The Orion and Forum educational buildings recorded a 1.5-degree drop in temperature. This led to a lower energy consumption in the buildings. During this week, various activities were organised, such as a 'Sweater Swap', a sustainable campus tour and an open office with vegan hot chocolate.
- Green Office facilitates the Student Cooking Corner in collaboration with the caterer in the Forum building. Organised every Wednesday, students are given the opportunity to sell homemade vegetarian or vegan meals in the canteen. Due to the corona measures, this activity could not be continued from March 2020.
- Green Office provided the communication for the Shut The Hood. This project encourages students and employees who work in laboratories to close fume hoods when not in use. This not only ensures a large reduction in energy consumption, but also contributes to safety.
- During the AID (Annual Introduction Days), a second-hand bicycle sale for students was held in collaboration with Restore Kringloop. The concept of Collect, Fix and Share is central to this approach, and we cooperate with people who are distanced from the labour market.
- With Green Match, Green Office makes a link between education and sustainable business operations at WUR. Green Office acts as an intermediary between students and clients on possible topics for assignments as part of courses, internships, or theses.
- Green Office also contributed to sustainable 'Deep Dives' in the Ideation Programme of StartHub Wageningen, a series of workshops and lectures in which students acquire the tools to start their own company.

3.5 Green Impact

WUR Facilities & Services and Green Office organised the Green Impact programma, in which various teams within WUR work together to promote sustainability in the workplace. In this programme, teams of employees and students make concrete plans to realise sustainable initiatives in the workplace. Teams use an online toolkit that registers the activities. Various workshops were held in 2020; topics included the circular economy and biodiversity on campus. With WURlympics, colleagues were encouraged to participate online in the daily exercise sessions of PauseXpress. During the Seriously Sustainable week, the results of the 2020 edition were announced online.

4 Activities and results in 2020

4.1 Progress on the CSR agenda themes

Under the heading CSR Next level, the additional work is described that was done in 2020 on the action plans linked to the CSR agenda.

The biodiversity project, which aims to compile information about biodiversity on campus in an accessible manner and invites staff and students to help map out biodiversity on campus, continued in 2020. The theme of the climate-adaptive environment has also been worked out in more detail. The aim is a risk analysis (stress test) carried out by researchers and students to map out the possible effects of climate change on the WUR buildings and environment. Finally, a project is ongoing to strengthen the CSR vibe on campus. The underlying idea is that WUR performs well in terms of CSR and sustainability, but that employees, students and visitors to the campus do not always experience this performance. In 2020, an overarching concept was developed that gives shape to the established communication challenge with images, language, and other visual means. This concept is fully compatible with WUR's CSR agenda and the established sustainability goals, ambitions and results. These three action plans were postponed due to the coronavirus pandemic and will be continued in 2021.

CSR in research and education

Value creation through research and education is an intrinsic part of WUR's activities. With the highest level of knowledge, education, and research, WUR aims to address global challenges and to shape and accelerate transitions.

The further improvement of research excellence is paramount. Additional investments will be made in 2020 in the three WUR-wide research investment themes: Connected circularity, the protein transition and digital twins. Research programmes are aligned with the UN Sustainable Development Goals.

CSR in processes

CSR is also an important factor in how we structure and conduct our research and education.

CSR agenda – Content of research and education

- Research and education designed to make a contribution to societal challenges (1)
- Innovative and challenging research and education (3)

CPI Strategic Plan
1: Continuous improvement for research excellence
2: Significant scientific and societal impact on the three investment themes
4: Further integration and innovation of the Education Ecosystem
6: Improved entrepreneurial culture and practice in education, research and value creation

SDGs: In addition to the 9 SDGs to which WUR contributes in education and research, these are SDG 4 Quality education and 8 Decent work and Economic growth

CSR Agenda: Processes in research and education

- Sharing and disseminating knowledge (2)
- Ethically responsible research (5)
- Entrepreneurship and Applied Research (7)
- High-impact partnerships (10)
- Flexible learning paths (17)

Linked to the CPI Strategic Plan:
5: Increased flexibility in learning paths and in learning spaces
6: Improved entrepreneurial culture and practice in education, research and value creation
7: Expansion of our campus ecosystem and sharing of research facilities
10: Expanded connection with society and partners
11: Enhanced culture of trust and calculated risk taking
12: Increased volume and more margin from clients and contracts in our applied research

SDGs: 4 Quality education; 8 Decent work and Economic growth;
17 Partnerships for the goals

Governance

Corporate governance creates the conditions under which an organisation takes responsibility for the impact of its activities and decisions and ensures the integration of the CSR policy in the organisation. In other words, without corporate governance there can be no CSR.

CSR Agenda: governance

- Responsible collaboration (9)
- Responsible economic policy (11)
- Chain responsibility (13)

Linked to the CPI Strategic Plan:
10: Expanded connection with society and partners
12: Increased volume and more margin from clients and contracts in our applied research

SDGs: 8 Decent work and Economic growth; 12 Responsible consumption & production; 17 Partnerships for the goals

Employees and students

In the HR domain, we interpret CSR as inclusiveness. This means that we consciously employ people from various target groups and address aspects such as talent, mobility, equal opportunities and reflecting society.
In 2020, the Vital@wur programme was aimed at promoting the vitality of employees. Various projects aimed at vitality and prevention of stress were also available for students. Activities were adapted as much as possible to the situation after the outbreak of the coronavirus pandemic. In addition to the theme 'a vital career and happy work life', work was also done on the themes of recruitment, introduction of new employees and inclusivity, leadership and talent development.

CSR Agenda: employees and students

- Vitality (4)
- Development and training (13)
- Diversity in staff and students (15)

Linked to the CPI Strategic Plan:
2: Significant scientific and societal impact on the three investment themes
6: Improved entrepreneurial culture and practice in education, research and value creation
8: Increased mobility, diversity and rejuvenation of WUR staff
9: Increased harmonisation of the organisation and satisfaction with internal systems and processes

SDGs: 3 Good health & wellbeing; 5 Gender equality; 8 Decent work and Economic growth

Environment

KPIs have been chosen from existing policy for the four themes specifically related to the environment. The WUR-wide annual report summarises the results of the four environmental themes from the CSR agenda. These and other policy fields are addressed in Section 4.3 of this sustainability report.

CSR Agenda: environment

- Climate-adaptive environment (6)
- Waste and circularity (8)
- Sustainable energy (12)
- Sustainable mobility (16)

Environment in the Strategic Plan: CSR ambition

SDGs: 7 Affordable and Clean Energy; 12 Responsible Consumption and Production; Climate Action; 14 Life below Water; 15 Life on Land

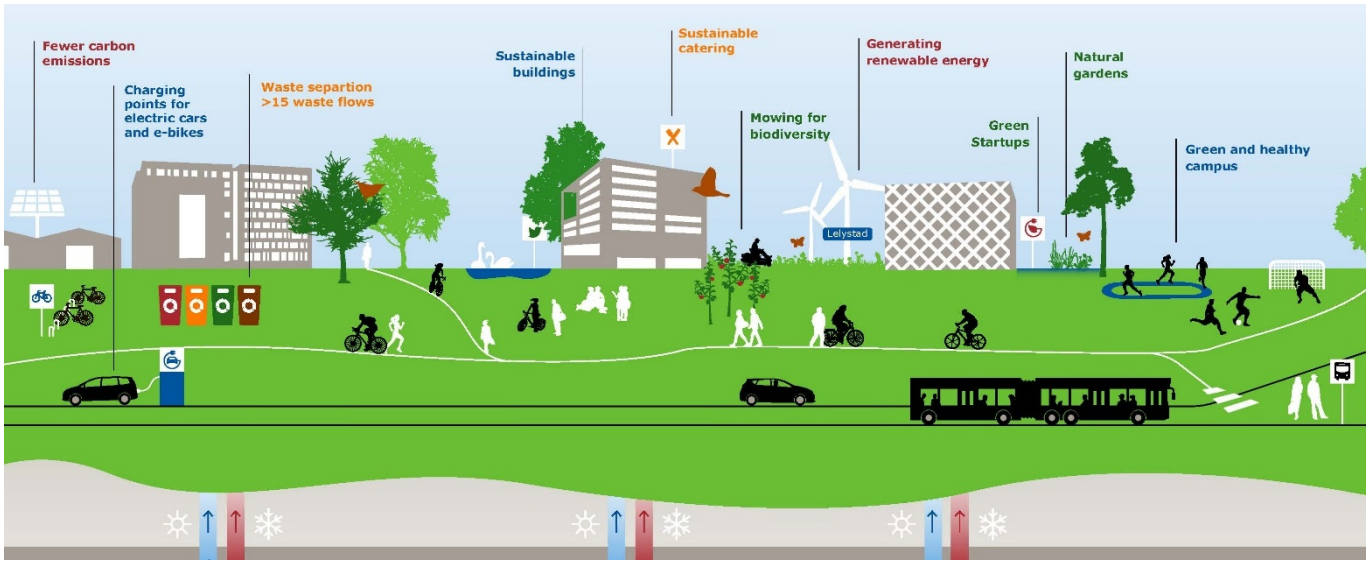
Indicators

The themes on the CSR agenda are linked wherever possible to the Change Performance Indicators (CPIs) from the Strategic Plan 2019-2022. Appropriate KPIs have been established for the CSR themes that have no direct link with the CPIs from the Strategic Plan. For the CSR themes that can be directly linked to the CPIs, the table below explains the progress per theme in key words, with reference to the 2020 Annual Report or this sustainability report. We use these key words to illustrate the progress on CSR themes for which KPIs are already available. The linking of CPIs to CSR themes is not one-to-one. Different CPIs can often be linked to a CSR theme, and vice versa. To avoid repetition, table 4-1 explains each CPI only once, and the location of this explanation is indicated in italics. In the table, the abbreviation AR is used for the WUR Annual Report 2020.

Table 4-1 CSR agenda themes and CPIs

Theme	CPI	Result and activities in 2020
In our research and education activities		
1: Research and education designed to make a contribution to societal challenges	**CPI Strategic Plan** 2: Significant scientific and societal impact on the three investment themes 6: Improved entrepreneurial culture and practice in education, research and value creation	CPI 2: Additional investments will be made in the three WUR-wide research themes (Connected Circularity, the Protein Transition, Digital Twins). See AR, 2.5.8, Outlook p. 48 CPI 6: AR, 2.6 Value creation p. 49-60:; AR, Appendix 2 (valorisation indicators), p. 131-136
3: Innovative and challenging research and education	**CPI Strategic Plan** 1: Continuous improvement for research excellence 4: Further integration and innovation of the Education Ecosystem 5: *Increased flexibility in learning paths and in learning spaces*	CPI 1: The further improvement of research excellence is paramount. Each research programme has appointed a programme leader who is responsible for establishing the vision and strategy, substantive programming, external and internal positioning, profiling and management of the implementation. Additional investments have been made in the three WUR-wide investment themes. See AR, 2.5.8, Outlook p. 48-49 CPI 4: AR, 2.4.9 Outlook p. 40; 2.6.4 Wageningen Campus, Ecosystem & Facilities, p. 57-59 *(CPI 5: see 17. Flexible learning paths)*
How we do it (process)		
2. Sharing and disseminating knowledge	**CPI Strategic Plan** *6: Improved entrepreneurial culture and practice in education, research and value creation* 7: Expansion of our campus ecosystem and sharing of research facilities *10: Expanded connection with society and partners* 12: Increased volume and more margin from clients and contracts in our applied research	CPI 7: Campus ecosystem, see AR 2.6.4 Wageningen Campus, Ecosystem & Facilities, p. 57-59 CPI 12: Turnover in bilateral research with industry has decreased for WU and WR. See AR, 2.6.1.2 Knowledge transfer and innovative capacity, p. 51; AR Appendix 2, table B2.14, p. 135) *(CPI 6: see 7. Entrepreneurship and Applied Research, CPI 10: see 10. High-impact partnerships)*
5: Ethically responsible research	**CPI Strategic Plan** 11: Enhanced culture of trust and calculated risk taking	In 2020, attention was paid to the cultural aspects of entrepreneurship, teamwork and trust. See AR, 2.7.4 Theme Organisation Development, p. 63. Governance and scientific integrity are laid down in codes, regulations and agreements. See AR, 2.7.6.4, Integrity, p. 66; 2.9.1 Governance, p. 77-78 For responsible risk taking, see AR, 2.9.3.1 Risk profile and risk appetite, p. 79
7: Entrepreneurship and Applied Research:	**CPI Strategic Plan** 6: Improved entrepreneurial culture and practice in education, research and value creation *10: Expanded connection with society and partners*	CPI 6: Entrepreneurship education, Starthub, Startlife and spin-offs, see AR, 2.6.2 Entrepreneurial use of knowledge p. 51; 2.4.7.4 Student Facilities, p. 37 *(CPI 10: see 10. High-impact partnerships)*
10. High-impact partnerships	**CPI Strategic Plan** *7: Expanding our campus ecosystem and sharing research facilities* 10: Expanded connection with society and partners	CPI 10: Collaboration with partners in education and research. For education: see AR, 2.4.1 Profile and policy, p. 21-22; for research: see AR, 2.5.2 Policy and organisation, p. 41-42; For value creation: see AR, 2.6.1 Collaboration, tech transfer and co-creation with partners (value creation), p. 49-51 *(CPI 7: see 2. Sharing and disseminating knowledge)*

Theme	CPI	Result and activities in 2020
17. Flexible learning paths	**CPI Strategic Plan** 5: Increased flexibility in learning paths and in learning spaces	Flexible and personalised learning paths are one of the three pillars for the development of education in the context of the implementation of the Vision for Education. See AR, 2.4.1 Profile and policy, p. 22
Governance		
9. Responsible collaboration	**CPI Strategic Plan** *10: Expanded connection with society and partners*	*See 10. High-impact partnerships.*
11. Responsible economic policy	**CPI Strategic Plan** 12: Increased volume and more margin from clients and contracts in our applied research	*See 2. Sharing and disseminating knowledge.*
13. Chain responsibility	**CPI Strategic Plan** *10: Expanded connection with society and partners*	Specifically for procurement policy, chain responsibility is an important theme within Socially Responsible Procurement. See AR, 2.8.5 Procurement policy and chain responsibility, p. 76-77 *(CPI 10: see 10. High-impact partnerships)*
Employees and students		
4: Vitality	**CPI Strategic Plan** 8: Increased mobility, diversity and rejuvenation of WUR staff 9: Increased harmonisation of the organisation and satisfaction with internal systems and processes	**For staff members:** Direct Your Own Career & Happy Work Life theme, including Vital@work (with chair massages, fruit@work, sports activities, PauseXPress, also aimed at healthy working from home due to corona measures), Vitality Pact (based on the collective labour agreements), healthy and safe work environment, dealing with work pressure. See AR, 2.7.5, p. 63-64 **For students:** Study counselling and student counselling: e.g. the Surf Your Stress campaign, see AR, 2.4.6.2 Progress, point b. More and better study counselling, p. 28-29); extracurricular activities and sports and Bottoms up, see AR, 2.4.7.4 Student facilities, p. 37
14. Development and training	**CPI Strategic Plan** 2: Significant scientific and societal impact on the three investment themes 6: Improved entrepreneurial culture and practice in education, research and value creation 8: Increased mobility, diversity and rejuvenation of WUR staff	Recruitment, Onboarding & Inclusion theme, see AR, 2.7.2, p. 61-62 2.7.3 Leadership & Talent Development theme, see AR, 2.7.3, p. 62-63 Theme Managing your vital career & happy work life: sustainable employability, see AR, 2.7.5, p. 63-64
15. Diversity of staff and students	**CPI Strategic Plan** 8: Increased mobility, diversity and rejuvenation of WUR staff	Theme Recruitment, Onboarding & Inclusion: recruitment team, Expat Spouse Initiative, Job Participation Support under the Participation Act) and Gender Balance, racism and discrimination dialogue and other activities. See AR, 2.7.2, p. 61-62 Age structure: growth in employees <35 years. See AR, Appendix 3 CSR annual report, p. 139 Men-women ratio, including growth in the proportion of women in managerial positions. 20.9% female professors in 2020 (target agreed with the minister is 25%). See AR, Appendix 3 CSR annual report, p. 138-141 Internationalisation: recruiting international employees. See AR, Appendix 3 CSR annual report, p. 141
Environment		
6. Climate-adaptive environment	Key indicators from the GreenMetric ranking: ▪ Area of forest or forest-like vegetation ▪ Area of landscaped vegetation ▪ Area suited for water absorption	For the time being, KPIs from the GreenMetric ranking are used: a total of 69% of the surface area of Wageningen Campus is suitable for water absorption. See AR, 2.8.4.2, Environment, p. 72, and this report p. 27
8: Waste and circularity	▪ Total in kg recycled waste and residual waste, target: 50% reduction in 2030 compared to 2014 ▪ material use: target: 50% reduction in 2030 compared to 2014. ▪ Circularity (KPI to be determined)	These are the goals from WUR's vision on circularity. In 2020, the amount of waste (in kg) increased by 9% relative to 2019. The separation rate has improved, from 65% in 2019 to 73% in 2020. See AR, 2.8.4.2, Environment, p. 73-74, and this report p. 17-18
12. Sustainable energy (12)	▪ Annual decrease in percent, targeted annual decrease of 2%, reduction in gas consumption ▪ Production of sustainable energy ▪ CO_2 footprint, annual reduction of at least 2%.	Energy consumption has fallen annually; in 2020 6.5% less energy was used than in the previous year (with correction for climate). As a result, the target of 2% was achieved. See AR, 2.8.4.2 Environment, *Energy* p. 74-75, and this report p. 24-26 Compared to 2019, total CO_2 emissions have fallen by 26% in 2020. See AR, 2.8.4.2 Environment, *CO_2 footprint* p. 74-75, and this report p. 23
16. Sustainable mobility (16)	▪ CO_2 related to mobility ▪ 2% reduction per year	In 2020, transport emissions in CO_2eq totalled 9.4 kton. This is 27% of the total calculated CO_2 emission. CO_2 emissions for mobility were 57% lower than in 2019. This sharp decrease was primarily the result of corona measures. See AR, 2.8.4.2 Environment, *CO_2 footprint* p. 75-76, and this report p. 28-30



4.2 WUR-wide results on sustainability and environment

For sustainability and the environment, objectives have been formulated in the WUR Multi-Year Environmental Plan. The objectives and results for 2020 are summarised in tabel 4-2.

Table 4-2 Sustainability objectives and realisation

Theme	Goal for 2020	Achieved in 2020
Climate-adaptive environment	Making our buildings and environment climate-adaptive: percentage of surface area suitable for water absorption	Wageningen Campus: 69%
Waste and circularity	Reduction of produced waste compared to 2019 Reduction of produced waste compared to 2014 Percentage of waste separation	+9% +45% 73%
Energy	Compared to the reference year 2005: - 2.0% reduction per year - Purchasing of sustainable energy - Production of sustainable energy	 compared to 2019: -6.5% (including climate correction) 100% wind energy (Certiq) 709,327 GJ of which 642,007 GJ= 71.2 million kWh of wind energy
Mobility	2.0% reduction of CO_2 emissions from transport per year Share of transport in CO_2 footprint	-57% 27%
CO_2 footprint	Compared to the reference year 2010: - reduction of the CO_2 footprint - growth of the CO_2 compensation footprint	 -63% +75%
Procurement	Socially responsible purchasing (SRP)	SRP criteria are used in tenders
Water	Reduction of water consumption compared to 2019	-13%

Benchmarks and rankings

WUR is a leader in the sustainability rankings. In December 2020, Wageningen University was again named the most sustainable university in the world in the UI GreenMetric ranking. In the biennial Transparency benchmark of the Ministry of Economic Affairs and Climate (EZK), WUR ranked 46th in 2019, making it the most transparent of Dutch universities in terms of CSR reporting. In 2020, Wageningen University placed third in SustainaBul, the annual student ranking of Dutch educational institutions.

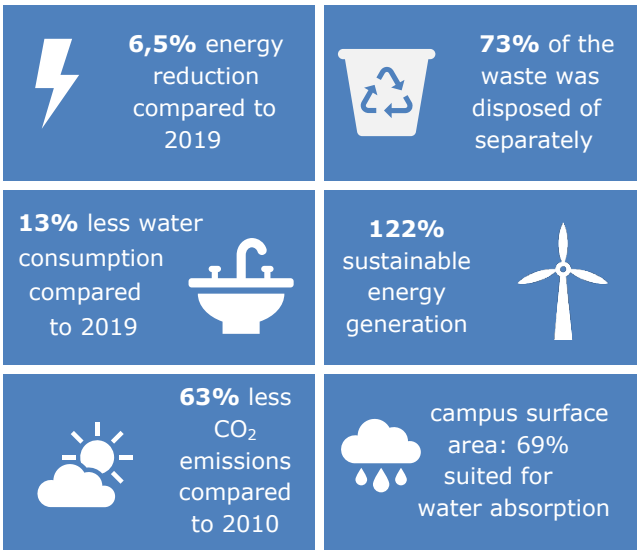


Figure 4-1 Key figures for sustainability in 2020

4.3 Sustainability and environmental themes (A to Z)

Air

Regular activities are carried out in relation to air emissions.

Asbestos

The use of asbestos in buildings has been banned since 1994. WUR still has some older buildings in use that may contain asbestos. This situation has been mapped out in recent years. In many of the buildings, the asbestos has now been removed, and management plans have been drawn up to minimise health risks in other buildings.

An asbestos policy was adopted in 2019 in which the approach is described:

- *Buildings with asbestos roofs:* Although the law prohibiting asbestos-containing roofs was rejected in the Senate on 4 June 2019, WUR is continuing the remediation of asbestos-containing roofs. This process is expected to be completed in 2021.
- *Buildings with asbestos (not roofs) that are still in use:* Management plans have been drawn up for these buildings and there are currently no plans or intentions to rebuild, renovate or demolish them on a large scale. Management plans are monitored once every three years and modified if necessary.
- *Buildings with asbestos that are surplus and/or are awaiting demolition:* During the buildings' demolition process, additional destructive testing is carried out.

An inventory has identified which WUR buildings have asbestos-containing roofs. A plan was made to remediate and replace these asbestos-containing roofs in the coming years. An asbestos survey (stipulated in the Nature Conservation Act) is part of the remediation process for each location. About a third of the roofs containing asbestos have now been removed and replaced. With regard to the demolition of surplus buildings known to contain asbestos, the activities in 2020 were:

- Demolition of the Mathematics Building on De Dreijen in Wageningen.
- Preparations for the demolition of the Transitorium at De Dreijen in Wageningen (execution in 2021).
- Demolition of the buildings at Edelhertweg 13-21 in Lelystad began in 2020 (completion in 2021).

Biodiversity

In the green management plan for Wageningen Campus, the emphasis is on enhancing landscape and natural values. Every year, experts, including from the ESG Garden Committee, look at how the plant mixtures in the flower meadows on campus have responded to their location. Based on this, they determine the best mowing date and method to support the development of species-rich meadows. Measures have also been taken at the experimental farms at various locations in the country to increase biodiversity.

Green vision

In 2019 the Green Vision for Wageningen Campus was adopted. WUR wants to make Wageningen Campus a showcase for resilient, climate-proof, liveable and healthy public space. The green component of the campus ecosystem is representative of WUR's expertise. Based on a living lab approach, the development and management of the green space is established in consultation with 'residents' and other stakeholders of the campus ecosystem and with input from WUR experts from education, research and operational management.

Quick scan of flora and fauna

To comply with legislation and regulations regarding natural habitats, a quick scan of flora and fauna is carried out when demolition of buildings or major renovations are proposed. A habitat suitability assessment is carried out in the immediate vicinity. If necessary, an exemption procedure will follow on this basis in combination with mitigating measures. A tree survey (year-round) is also carried out in advance of intended felling of trees to prevent disturbance of the protected nests of birds, bats and squirrels. Regarding solitary trees, WUR determines whether there are suitable cavities for protected animal or bird species. If this is the case, the necessary measures will follow.

Activities in 2020 included the following:

- For Runderweg 4-6, an exemption procedure from the Nature Conservation Act was started in 2020 due to the presence of house sparrows under roofs that are to be replaced. A sparrow tower has been placed on the site for this purpose.
- For the same reason, a sparrow tower was also placed on the Carus site because some sparrow nests had been found under roofs that are to be replaced.

Felling permits
A lot has changed on the WUR grounds as a result of renovation, demolition, new developments and infrastructure modifications. Due to these changes it is sometimes necessary to fell trees. Various diseased trees and/or trees posing a risk to their environment (for example in case of a storm) have also been felled. The felling permits applied for in 2020 are included in the overview of permit processes (Table B4-3 in Appendix 4).

In 2020, a total of 60 trees were felled on Wageningen Campus. Dead and diseased trees are felled on the basis of tree health surveys on campus and at the Leeuwenborch. On the campus 29 trees were felled: 2 pedunculate oaks (*Quercus robur*), 7 silver birches (*Betula pendula*), 3 lime trees (*Tilia*), 1 elm (*Ulmus*), 12 common ash (*Fraxinus excelsior*), 1 sweet cherry (*Prunus avium*) and 3 black alder (*Alnus glutinosa*). At the Leeuwenborch, 24 trees were felled: 5 sweet cherries (*Prunus avium*), 7 white willows (*Salix alba*), 2 silver birches (*Betula pendula*), 2 maples (*Acer pseudoplatanus*), 1 sooty poplar (*Populus canescens*), 1 bird cherry (*Prunus padus*) and 6 common alder (*Fraxinus excelsior*). Finally, adjacent to Unifarm, 7 trees were felled at the end of the wooded bank: 6 pedunculate oaks (*Quercus robur*) and 1 field maple (*Acer campestre*).

Replanting of trees
In the past years, many new tree plantings have failed, despite watering during dry periods. Replanting a felled tree in the same location often fails, while a few meters away the same tree species grows well. As an alternative, WUR follows two tracks:

- We are looking for species that can better withstand the fluctuating growing conditions. Sometimes this is at the location where a species keeps failing, sometimes at a different location to test whether that place is better suited for trees.
- We are focusing more on varied shrub plantings that better suit the growing conditions on campus. A shrub planting with a single tree in it can provide a buffer to temper extremes of the weather, thus contributing to biodiversity, the capture of CO_2 and the capture of particulate matter. We will implement this approach in steps.

Dead oak trees (Quercus robur) are no longer being replaced by new oak trees due to the increasing nuisance of the oak processionary caterpillar. We do not plant the native white willow and poplar, but we do give seedlings a chance to grow at locations where they will not pose a risk to safety (especially traffic safety), such as in the vicinity of the Dassenbos.

A 'hotel' for bats

All species of bats are protected in the Netherlands. They previously used the abandoned buildings at Edelhertweg 15 as roosting sites. After the buildings were demolished, a bat hotel was built as a replacement. The bat hotel offers bats an alternative roosting site where they can also safely give birth to their young.

The building stands on an old rain water cellar. Because the 'hotel' and the cellar are connected, the bats have both a summer and a winter home. There is often water in the cellar; the pump that is needed to remove this water works on solar energy.

State of affairs 2020
In 2020 there was hardly any net loss. Less than 5 trees, which had been doing badly for a number of years, finally died during the hot summer of last year. In 2020, the following locations were planted with more varied greenery:

- At the entrance to Mansholtlaan, a border has been laid out with perennials, shrubs and 2 *Sorbus aria* (mealberry), which suit this rather dry location with slightly alkaline, loamy sand soil. The *Sorbus aria* has not yet been planted elsewhere on campus; we are testing whether it will grow at drier locations.
- Along the Thymospad a green strip has been laid out with flower meadows and wadi, mixed hedges and flowering shrubs, including many with edible fruit. The bog oaks that stood here have been moved and replanted.
- On the east side of the dike behind the Unifarm greenhouses, part of the dike has been planted as a wooded bank in a flower meadow. This is an experiment, as the slope of the dike is very steep and there was no room to make it less steep.

- Due to the construction at Bronland (Unilever, Upfield, ATES), the oaks, which were planted as avenue trees on the south side, have either been damaged or have become very cramped by the paving. In addition, most of them were/are in bad condition. That is why it was decided to replace them with an avenue of *Corylus colurna* (tree hazel). The tree hazel needs less space and seems to do well on campus.
- Several other minor elements have been made more diverse in the aftermath of infrastructure work:
  - Grass with a field maple hedge was replaced with a strip of flowering shrubs along the path to the new bicycle shed behind Radix.
  - A mixed hedge around the charging plaza for shared electric cars in front of Impulse.
  - Extension of the mixed shrub strip along the bus lane, where the exit above the bus lane at Impulse has been closed.
  - Expansion of ornamental grass borders and additional flowering shrubs next to the new driveway to Helix. *A Sophora japonica* (honey tree) was planted on the lawn (which was moved) in front of the entrance.

Catering

The Strategic Plan 2019-2022 (p. 43) explicitly mentions making the canteens more sustainable: 'In this Strategic Plan period we give priority to promoting the vitality of staff and students, to offer healthier and more sustainably produced food in our canteens, and to reduce our food waste.' A living lab approach is central to this process: we are deploying our (scientific) knowledge about sustainable and healthy food and the engagement of students.

Vision on food and beverage

Since September 2019, a team of employees from Facilities & Services has been working with students on a new vision on food and beverages for Wageningen Campus. A new vision is needed because the contracts with the current caterers is expiring and the number of canteens and catering points will be expanded from 2021 after the construction of two new buildings on the campus: the Aurora education building and the Dialogue Centre. The vision process formally started in February 2021 with the appointment of a sounding board group. The guiding principles of the 'The future of Food & Beverage @WUR' project are:

- Promote the vitality of our employees and students.
- A healthier and more sustainably produced assortment of food.
- Reducing food waste and other waste within WUR.
- With Food & Beverage, projecting an image of what WUR stands for: green, sustainable and healthy.
- An assortment that is tailored to the wishes of employees and students.

In line with the Strategic Plan and CSR agenda of WUR, chain responsibility is an important theme in this respect. This means promoting sustainability in the chain by maximising local purchasing and establishing social and environmental requirements for suppliers. In WUR's vision on circularity, catering is a separate product group, which means that the use of raw materials and the reduction of food waste and other waste will be explicitly addressed.

Hackathon The future of Food & Beverage

After the start of the vision process, various activities were planned to collect ideas and wishes, for example with escalator surveys, polls on social media and a hackathon. Due to the corona measures, however, many of these activities were postponed. The Food & Beverage hackathon was ultimately held 'remotely' in the autumn. Teams of employees and students could register for the event. Assisted by team coaches and experts, they were given two weeks to develop their ideas. On 6 November, the teams presented their ideas, and a jury prize and an public prize were awarded (see box).

Guiding principles of current contracts

In the contracts with the caterers, 'sustainable and healthy' is the basic principle for products that are sold in canteens. All the caterers in WUR buildings take sustainability very seriously. This is evident from their sustainability policy, the annual health and safety and environmental audits and the customer satisfaction surveys. The caterers ensure that sustainable and fair trade products are used and this is also visible in their assortment. They use local suppliers, and many products have a sustainability label. At least 40% of the products they purchase are from guaranteed non-GMO organic farms that do not use chemical crop protection agents or artificial fertilisers and respect animal welfare. The environmental impact of

packaging material is limited as much as possible, and caterers must separate waste at the source.

Hackathon: The future of Food & Beverage

Twelve teams consisting of students and employees participated in the online hackathon.

The Jops Canteen team pitched the idea to start a 'canteen/restaurant' where people who are distanced to the labour market can work and where sustainable catering concepts are used. This proposal has the motto 'social meets sustainable', i.e. a catering concept without social waste or food waste. Jops Canteen was awarded the jury prize.

The public award went to the Fuel the Future team with its refill station concept. At a refill station you can use any kind of reusable cup to tap a hot or cold drink. Waste, such as coffee grounds, is also collected for reuse at the station.

These and other ideas will be included in the further development of the new Food & Beverage vision. In this video you can see a summary of the results of the hackathon.

The corona measures had far-reaching consequences for the caterers. The restaurants closed in March 2020. Sometime in June, the cafés opened cautiously for takeaway coffee and pre-packaged lunches. Because everything had to be pre-packaged, more plastic was used. Within the limits of the corona measures, the caterers did as much as possible to offer a range with healthy and sustainable products.

Meatless Mondays

Since 2015, the caterers have been working together on Meatless Mondays, an initiative of Green Office Wageningen. On Mondays, warm snacks and soups are vegetarian and a wide variety of vegetarian snacks are available. Work is also being done to enlarge the vegetarian and vegan assortment and to prevent food waste. In 2020, WUR took part in the Week without meat.

Single use plastic

Single-use plastic in the canteens is a recurring theme. As an alternative, reusable cups are promoted in collaboration with the student initiative Reuse Revolution. At several locations you can get a discount on coffee and tea at the canteen or the coffee dispensing machine if you bring your own cup. In 2020, the Billie Cup was introduced on Wageningen Campus. A pilot started at the Spot at Orion and at the takeaway point at Impulse.

Circularity and waste

At the beginning of 2020, a new vision on raw materials and waste management was presented: the vision on circularity[2]. This vision marks the transition from a waste policy to a circular economy policy. In line with the circular economy policy of the Dutch government, WUR wants to cut the use of (abiotic) raw materials with 50% by 2030 compared to 2014.

By no longer using some products, by using other products more intelligently, and by using (or re-using) products for longer within WUR and elsewhere, WUR's use of raw materials will decrease and the total amount of waste will be reduced as well. To track progress, the use of raw materials will also be monitored in addition to the existing waste monitoring.

Various strategies to achieve circularity are:

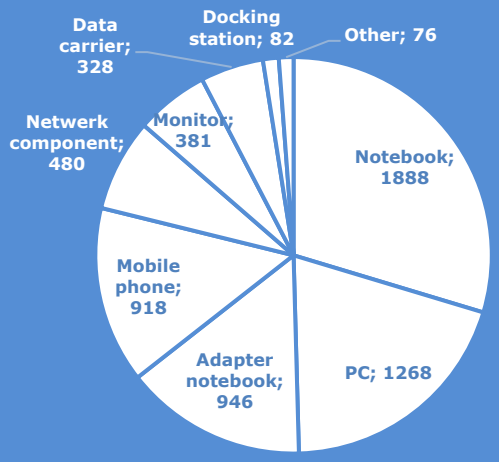
- Longer use and reuse of products that are already present within WUR.
- Closing the circle for new products to be purchased: the amount of material incorporated into the product should be equal to the amount of material that can be recovered for new uses after discarding.
- Exploring other circular possibilities, such as sharing cars, using multifunctional products, or abandoning the use of certain products entirely.

These circularity strategies serve as the basis for new contracts with suppliers of various product groups. The current waste contracts (for collection and disposal of the various waste flows) will be replaced by 'raw material contracts'. In 2020, the tender for these contracts was prepared.

[2] Approved in January 2020.

Disposal of used IT materials

The IT department of Facilities & Services has a contract with Solid Circles for the disposal of discarded IT materials. In 2020, 6,367 items were disposed of, such as laptops, desktops, mobile phones, monitors and data carriers. 21% of this was made suitable for reuse as a device. Desktops and laptops in particular are being made suitable for resale; this was the case for 42% of the 3,156 computers that were disposed of. Items that can no longer be reused are recycled in an environmentally responsible manner. Components are also reused as much as possible.



Waste streams

WUR recognises the following three waste flows: industrial waste, paper waste and hazardous waste. In its waste policy, WUR follows the Lansink Ladder for waste processing. This means that priority is given to the most environmentally friendly processing methods for the management and processing of waste.

Table 4-3 and appendix B3. Waste provides insight into the waste flows disposed of in 2020. In 2020, 98% of the waste was processed according to a method that qualifies as 'useful application' (in Dutch: 'nuttige toepassing'): 59% recycling, 33% energy recovery and 6% other useful applications (see Table B3-2c in Appendix 3).

As a result of the corona measures 'working from home' and 'online education', the amount of waste decreased drastically at most WUR locations, by about 20% to 50%. However, in the past year the total amount of waste increased by 239 tonnes (an increase of 9%). This increase has two clear causes: agricultural research resulted in 542 tonnes of additional green waste (Lelystad: +498, Bleiswijk: +21, Wageningen Campus: +20). This mainly concerns agricultural crops (or crop residues) that are not suitable for human or animal consumption. Furthermore, due to the merger in 2019 of part of the Netherlands Food and Consumer Product Safety Authority with the former RIKILT institute (to establish the new WFSR institute), approximately 131 tonnes of additional industrial waste has been shifted from 'third parties' to 'WUR'.

Due to the corona measures, the amount of paper waste has fallen sharply compared to 2019 (-114 tonnes, a reduction of 38%). The quantity of hazardous waste also slightly decreased (-42 tonnes, -8%).

All shifts have led to an improvement in the percentage of waste that is presented as separated waste streams. In 2020, the waste separation rate was 73% compared to 65% in the previous year.

Table 4-3 Amount of waste at WUR, 2014 to 2020 (in kg; excluding third parties)

	2020	2019[3]	2018	2017	2016	2015	2014
Industrial waste	2,248,879	1,874,524	1,393,294	1,538,927	1,548,002	1,291,922	1,361,400
Paper waste	184,986	298,000	300,983	289,117	296,788	295,184	329,447
Hazardous waste	464,293	486,333	492,186	362,670	352,125	309,964	305,932
Total at WUR (excl. third parties)	**2,898,158**	**2,659,657**	**2,186,463**	**2,190,716**	**2,196,915**	**1,897,070**	**1,996,779**
Waste produced per employee	422	416	426	448	447	383	394
Waste produced per student	218	207	182	183	195	183	209
Waste produced per employee and student	144	138	128	130	136	123	136

[3]Based on more complete data, the figures for 2019 have been corrected for a number of waste flows. As a result, the figures in this table differ from the those in the Sustainability Report 2019.

New construction of Aurora

Climate-adaptive environment

The topic of Climate-adaptive Environment has made it onto the CSR agenda: students in particular consider this a very important topic. In 2020, a plan was made in collaboration with various scientists from WUR for performing a stress test on Wageningen Campus in 2021. Students will also be involved in this by means of an ACT project (Academic Consultancy Training).

Construction

In 2020 the following actions were taken and results achieved:

- The construction of a campus-wide aquifer thermal energy storage (ATES) ring and the expansion of the corresponding thermal sources was put out to tender in 2020. The engineering plans have been worked out in preparation for tendering and implementation in 2020.
- Collaboration has continued with parties including Liander, Parenco, the Province of Gelderland and the Municipalities of Wageningen, Renkum and Ede on research into an ultra-deep geothermal heat source and use of residual heat of the paper factory in Renkum.
- Construction of the first phase of the new greenhouse complex on Wageningen Campus has started. The greenhouses will use heat and cold from the thermal storage system. In 2020, two buffer tanks were built for this purpose.
- Sustainability measures are also being taken, such as the use of double glazing and limiting light emission. In particular, this will lead to a significant reduction in the amount of light emitted by the greenhouse complex. The construction of a climate building and a greenhouse for a phenotyping facility has also started. The same sustainability ambitions are being followed, including connection to the thermal energy storage.
- In 2020, the construction of the Aurora education building on Wageningen Campus was in full swing. The building will be connected to the ATES ring. It has also achieved a high sustainability score and meets the (new) BENG requirements for Nearly Energy Neutral Buildings.
- The construction of the new Dialogue Centre on Wageningen Campus started in 2020. The building will be connected to the new ATES ring and provided with a completely green roof. With a view to stimulating biodiversity, the sedum roof is being further developed in collaboration with WUR researchers.
- Preparations for new construction for knowledge intensive companies at Born-Oost (the extension of Wageningen Campus on the east side of the Mansholtlaan) have been continued. Expertise of WUR researchers and a consultancy in ecology and green space will be included in the plans. Collaboration with interest groups is also taking place.

CO_2 footprint

The annually calculated CO_2 footprint of WUR shows the direct and indirect carbon emissions from energy consumption, transport, livestock, leakage of refrigerants and waste disposal. It also provides insight into what WUR is doing to compensate for its CO_2 emissions. Reporting is done at corporate level of WUR, and there is also insight into the CO_2 emissions of the organisational components. In this way, the organisational components – coordinated by the QSHE sub-departments – can identify policy priorities and take measures to keep CO_2 emissions under control as much as possible and to reduce them where possible.

In total, the CO_2 footprint comes to 30.6 ktonnes of CO_2 in 2020. Compared to the reference year 2010, the carbon footprint was reduced in 2020 (-63%) and its CO_2 compensation footprint was 75% higher. Compared to 2019, CO_2 emissions decreased by 26%. The decrease is largely attributable to fewer transport movements as a result of the coronavirus crisis. In 2020 the CO_2 compensation footprint was greater than the CO_2 emissions. The CO_2 footprint and CO_2 compensation footprint in the period 2016-2020 and in the reference year 2010 are shown in Table 4-4.

The sources that contribute most to greenhouse gas emissions are buildings (mainly natural gas for heating) and motor vehicle traffic (fuel for commuting and business travel), which are responsible for 36% and 21% of total WUR emissions, respectively. Agricultural land and livestock also make significant contributions (18% and 10%, respectively). The relatively low share of emissions from air travel in 2020 is striking. In 2020 this share was 6% compared to 23% in 2019, when it was still the second largest emission source. Due to the coronavirus pandemic, very little international air travel was possible in 2020. A 'corona effect' can also be seen in the distribution for other sources. Figure 4-2 shows the difference between the distribution of CO_2 emission sources in 2019 and 2020.

The biggest factors in changes in CO_2 emissions compared to last year were the following: decreases in air travel (-80%), business use of public transport (-56%) and commuting (-43%). Emissions from business travel by car (-14%) and livestock (-11%) also decreased. Emissions from waste disposal and processing increased (+10%) due to more waste in total (see Waste). Due to an expansion of acreage, the emissions from agricultural land also increased (+10%). Although the downward trend in absolute energy consumption has continued (see Energy), natural gas consumption increased slightly in 2020 (+1%).

WUR compensates its CO_2 emissions with the following measures: generating wind energy (more than 71 million kWh in 2020), using thermal energy storage for heating and cooling various buildings on Wageningen Campus (5.6 million kWh in 2020), generating solar energy (1.8 million kWh in 2020) and separating various waste flows as much as possible. The total CO_2 compensation footprint was 45.1 ktonnes CO_2 in 2020. This is a 75% increase in compensation compared to the figures for the reference year 2010.

Table 4-4 WUR's CO_2 footprint and CO_2 compensation footprint in the 2016-2020 period and the 2010 reference year

Year	2010	2016	2017	2018	2019	2020
CO_2 emissions in ktonnes	82.9	43.9	40.7	42.8	41.4	30.6
CO_2 compensation	26	35.2	45.6	48.3	42.7	45.1
Reduction of CO_2 emissions compared to reference year (%)		47%	51%	48%	50%	63%
Increase in compensation compared to reference year (%)		37%	77%	87%	66%	75%

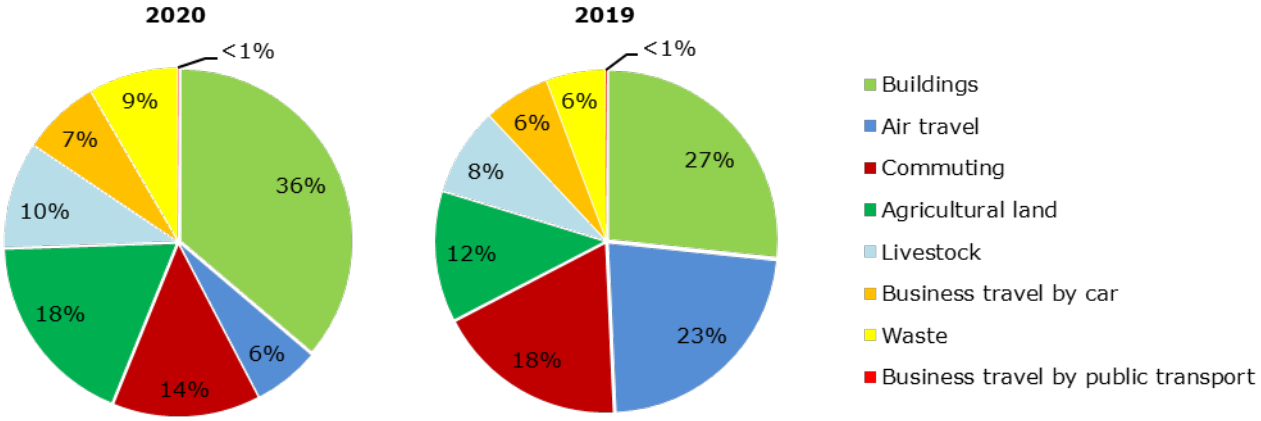


Figure 4-2 Distribution of CO_2 emissions in 2020 compared to 2019

Energy

Last year was the final year of the Multi-Year Agreement for Energy (MJA-3) to which WUR was committed. The aim of the MJA-3 was to achieve an energy efficiency improvement of 30% during the period 2005-2020. This amounted to an average of 2% per year. With a reduction of 34% during this period, WUR succeeded in achieving this aim. This goal has been achieved by saving energy, generating sustainable energy ourselves and/or purchasing sustainably generated energy elsewhere. This sequence is also maintained in the Energy Vision 2030 based on a reliable, affordable energy supply that centres on sustainability.

Energy efficiency

Measures that have contributed to energy efficiency in recent years include the following:

- Energy management, secured in the operational practice.
- Energy efficiency planning. The construction of a aquifer thermal energy storage (ATES) loop on Wageningen Campus was a result of the plan for 2017-2020.
- The energy incentive: WUR organisational components are responsible for their energy budget, which provides more insight into their own energy consumption and stimulates energy savings.
- In addition to the statutory requirements, the ambitions for energy and sustainability are laid down in the General Technical Programme of Requirements (ATPvE) for new construction and renovation projects. The aim is to include improved energy performance in all construction projects.
- Purchase of 100% green wind energy (Certiq registered).

Energy transition

An important element in the energy transition at WUR is the distribution loop (construction started in 2020) as an extension of the existing ATES network on Wageningen Campus. In the coming years it will become clear how much natural gas WUR has saved with the construction of the loop.

WUR collaborates with the Energy Alliance, a network of WUR employees who work on the theme of energy. The aim is comprehensive collaboration with each other and with local stakeholders.

In the context of the VSNU and in cooperation with the municipality of Wageningen (see Wageningen Climate Neutral), WUR is joining national and regional climate agreements (RES Foodvalley), such as phasing out the use of natural gas, reducing CO_2 emissions and increasing the generation of sustainable energy on our sites.

Energy savings

The consequences of the coronavirus pandemic in 2020 made it difficult to compare energy savings with other years. During the first lockdown in March, electricity consumption in particular fell spectacularly at some organisational components. This picture changed when the ventilation at all locations was switched to full power as a precaution in the summer. This effect can be seen in Figure 4-3. Despite the lower staffing levels as a result of the corona measures, the buildings were still heated and cooled regularly.

For buildings that fall under the MJA3, 5.6% less energy was used in 2020 compared to 2019. This includes the correction for the influence of climate on cooling and heating. When adjusted for climate

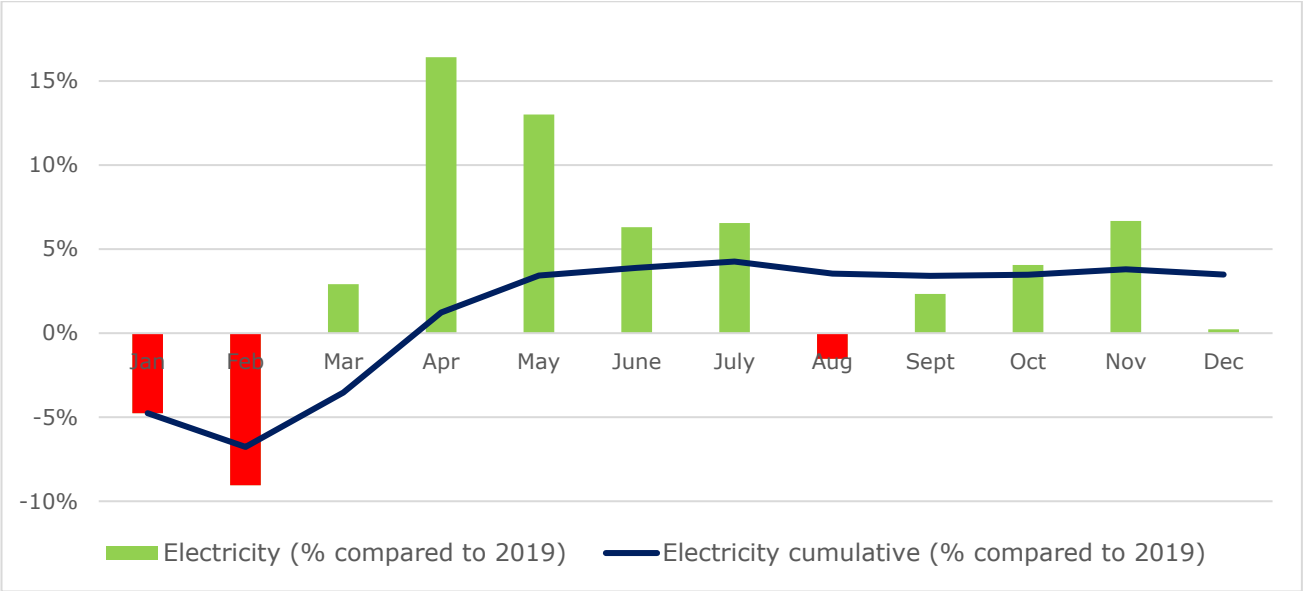


Figure 4-3 Difference in monthly and cumulative electricity consumption 2020 compared to 2019. Negative values indicate increased consumption compared to 2019

influence, the reduction was 6.5%. This meets the annual MJA-3 target of 2% reduction. In total, buildings used 2.1% less energy than in 2019. Energy consumption is shown in table 4-5. A more extensive overview is given in Appendix B3.4.

Production of sustainable energy

In 2020, 122% of WUR's total energy consumption was generated sustainably (see Table 4-6). The wind turbines in Lelystad generated more than 70 million kWh in 2020. This was higher than in previous years due to favourable wind conditions. The number of solar panels, including those on roofs at Wageningen Campus, grew strongly again in 2020. Because not all panels have been connected to energy meters, the yield shown in Table 4-6 is an underestimate.

Energy monitoring

The consumption figures for electricity, natural gas and thermal energy are measured for all WUR buildings and installations and registered in the central monitoring system Erbis. For the connections of electricity natural gas and water, the certified monitoring companies deliver validated measurement data every day. For keeping track internally of consumption by individual buildings and even individual users, private interim meters are used. Data from many meters is read into Erbis via the building management systems on a daily basis. The readings of the remaining meters are manually recorded every month. If it is not possible to install a meter, energy consumption is attributed on the basis of the distribution of square metres from the location account. The consumption figures are shown on the Erbis dashboard.

ICT energy consumption

The energy consumption of information and communication technology (ICT) facilities is monitored separately. In 2020 the data centres used almost 2 million kWh. In 2019 this number was 1.83 million kWh. The increase is mainly due to a substantial growth in the number of servers for our own use and for collaboration processes with external partners. An estimated 3.75 million kWh is used in the buildings for ICT purposes. In total, approximately 5.7 million kWh of energy was used for ICT. The ICT energy consumption at WUR is approximately 11% of the total electricity consumption (see table B3-1 in appendix B3.1).

*Table 4-5 WUR energy consumption and energy performance for the reference year 2005 and for 2017-20209**

Year	2020	2019	2018	2017	2005
Electricity (kWh)	46,990,737	50,401,138	50,385,528	51,558,971	59,581,768
Natural gas (Nm3)	5,020,796	5,141,970	5,362,499	5,477,413	11,031,812
Primary energy (GJ)	581,825	616,354	623,193	637,391	886,033
CO_2 (tonnes)	8,994	9,211	9,606	9,812	53,598
Energy performance		**% 2020 compared to 2019**		**% 2020 compared to 2005**	
Electricity (kWh)		-6.8%		-17%	
Natural gas (Nm3)		-2.4%		-53%	
Primary energy (GJ)		-5.6%		-31%	
CO_2 (tonnes)		-2.4%		-83%	

* Excluding use by third parties and student housing. In order to make a better comparison between different years, we correct the calculations for climate influences. The figures released annually by the Netherlands Enterprise Agency (RVO.nl) are used to make the corrections for cooling and heating.

Table 4-6 Sustainable energy generation by WUR in 2019-2020 (in Primary GJ).

Source	2020	2019	2018	Unit
Lelystad wind turbines*	642,007	598,371	563,100	GJ
Wageningen Campus thermal energy storage	50,344	55,538	79,798	GJ
Solar panels	16,967	12,017	4,736	GJ
Bio-Heat/Combined heat and power generation			29,419	GJ
Total	**709,327**	**665,926**	**677,052**	**GJ**
Energy consumption	581,825	616,354	623,193	GJ
Sustainable generation as a percentage of total energy consumption	**122%**	**108%**	**106%**	

* Refers to the three wind farms in Lelystad owned by WUR. The test site for windmills, also located in Lelystad on WUR-owned land, was not included in the calculations.

Mobility

In the Mobility Vision 2030 the emphasis is on encouraging sustainable transport options such as cycling and public transport and discouraging travel by car or plane. WUR also wants to make all transport options as sustainable as possible. The goals of the mobility vision have been specified in an implementation agenda with concrete measures, including encouraging the use of public transport for business travel within the Netherlands and to nearby destinations in Europe, facilitating and promoting the use of video conferencing options, encouraging the use of bicycles for commuting and the use of electric vehicles.

The policy priority projects in 2020 were a more restrictive policy for business travel within Europe and the introduction of Mobility as a Service (MaaS).

Business travel: the WUR travel check

In its policy for business travel within Europe, WUR goes a step further than advising employees to travel by public transport as much as possible. Short flights are actively discouraged and booking train travel has become easier. Train travel should become the standard for destinations within Europe with travel time of less than 6 to 8 hours. This is described in the document 'Business travel: train and air travel policy'. To explain this policy to employees, in March 2020 the WUR Travel Check was launched, which provides advice on sustainable travel options. However, the introduction of the more restrictive travel policy and the WUR Travel Check coincided with the start of the corona crisis, making it impossible to determine the effect of this policy in the past year.

Mobility as a Service

In 2020, WUR signed an agreement with a supplier of Mobility as a Service (MaaS) solutions. This was the start of the introduction of MaaS at WUR, which aims to repl ace company cars and the contracts for rental cars. Moreover, by using a platform (or app), MaaS will make it easier to travel by various means of transport such as public transport and shared bicycles. For example, employees can reserve a shared electric car via the platform. In 2020, the first hub with 20 charging points for shared electric cars was realised. With a step-by-step plan, the Mobility as a Service concept will be expanded in the coming years with shared bicycles, access to public transport and the participation of nearby businesses and organisations.

Sustainable Business Travel Award

In 2020, the Sustainable Business Travel Award was presented by the Dutch Association for Travel Management (NATM) to Rolf Heling, travel contract manager and location manager. WUR was nominated by other organisations because of its changes in its travel policy in the area of sustainability, especially the promotion of business trips by train instead of by air.

Ultimately, private use of the shared cars and bicycles will also be possible.

Working online and remotely

We want to discourage business travel by car and air and encourage travel by public transport. In addition, we ask the question: Is travel really necessary? This is therefore the first question on the WUR Travel Check: 'Are there options other than being physically present?' WUR offers various online options, such as video conferencing, webinars and working with Skype for Business. Experiments with e-conferences are ongoing. For example, various e-conferences have been organised for the Sustainable Development Solutions Network. Due to the corona measures, the implementation of Microsoft Teams was accelerated in 2020 and work was done on a remote working policy (implementation in 2021).

Public transport

The corona measures had major consequences for travel by public transport. Because employees were mostly working from home, they hardly used public transport for commuting and business travel. Moreover, because education was mostly online, students also travelled considerably less by public transport.

In 2020 fewer public transport buses were scheduled on Wageningen Campus and fewer seats were available per bus. WUR urged the carrier and the province to maintain bus connections on campus. At the end of 2020, the bus schedule was essentially back to normal. The accessibility of the campus by public transport will remain a priority of mobility policy in the coming years. It is expected that (as soon as this is possible) more direct bus connections will be realised, including the direct bus connection from the ICE station at Arnhem Central to Wageningen Campus (known as the Rijnlijn).

Cycling

- The quality improvement for bicycle parking on Wageningen Campus was completed in 2020. Outdated bicycle racks have been replaced in the bicycle parking and more space has been created for special bicycles (cargo bikes, electric bikes, etc.). Additional charging points for e-bikes were also installed.
- The E-bike2WUR pilot was continued in 2020: employees can now try using an e-bike or speed pedelec for two weeks for commuting. About 150 employees took part in this pilot since it started.
- In 2020, the term of the Optare bicycle scheme (WUR's bicycle plan from the BKR scheme) was extended from three to five years, which means that the amount that can be spent is higher (now a maximum of 2,500 euros).
- WUR was involved in developing an express cycle route on the heavily-travelled route from Ede, Station Ede-Wageningen and Bennekom to Wageningen Campus.
- On 5 November 2020, WUR agreed to join the Higher Education Cycling Mission of the Ministry of Infrastructure and Water Management. The aim of this mission is to increase the proportion of employees who cycle to WUR by 10%.

Electric transport

Some full electric delivery vans are now serving Wageningen Campus at the IT and TIB departments of Facilities and Services. The supplier of the landscape services also uses various electric vehicles. Due to the new contract for the MaaS mobility services, preparations were made for the realisation of a charging plaza for the shared electric cars. The desirability of expanding the number of charging points for electric cars was also explored.
In total 24 charging points for electric cars are available on Wageningen Campus (locations are indicated on the campus map). Due to the coronavirus pandemic, less use was made of the charging facilities in 2020 compared to previous years. Electric car owners used the charging points 2,392 times (in 2019: 4,817 times), and a total of 29,362 kWh was used for charging (in 2019 this was 51,206 kWh). There are also charging stations for e-bikes and scooters at bicycle-parking facilities in various buildings.

Mobility in the CO_2 footprint

The ambition from the mobility vision is to reduce the CO_2 emissions of all WUR transport by at least 2% annually. To measure this, commuting and business travel by public transport, car and plane are monitored as much as possible. The emission is calculated in the annual CO_2 footprint. Compared to the reference year

2010, transport movements are responsible for an increasing share of the footprint, see Figure 4-4. This mainly concerns the CO_2 emissions from air travel and commuting by car. The coronavirus pandemic had a major effect on the share of mobility in the CO_2 footprint for 2020. Due to much less air travel and fewer transport movements by car, mobility accounted for only 27% of the footprint in 2020 compared to 47% in 2019. Emissions from mobility were 57% lower than in 2019. See also the section 'CO_2 footprint'.

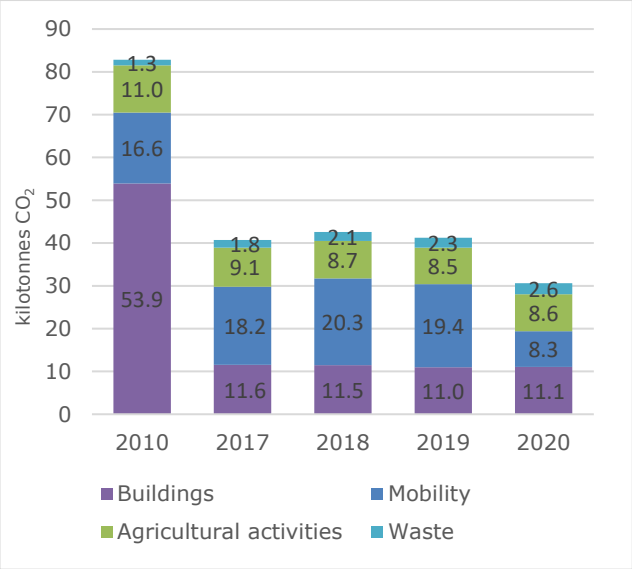


Figure 4-4 Share of CO_2 emissions from mobility in the CO_2 footprint, 2017-2020 and reference year 2010

Mobility survey

To gain more insight into the travel behaviour of employees and students, a mobility survey was carried out in the autumn of 2019. In addition to questions about commuting, the survey also asked questions about how satisfied people are with transport options, parking options, accessibility and business travel alternatives. The report followed in 2020. Results of this second measurement (for WUR as a whole): 49.5% of employees choose the bicycle as their main mode of transport for commuting, 40% commute by car (36% drive themselves, 3% have a carpool and 1% drive electrically), and 6% commute by train and/or bus. For students, 59% cycle to their study location, 27.2% use public transport and 7.7% use a car.

About half of the employees (50.7%) indicated that they do not travel for business. Of the employees who do travel for business, the largest group (18.5%) travels 2-4 times per month, and 15.4% indicated that they travel for business once a year. Public transport was used for 49.1% of business trips. In 47.5% of business trips a car was used. 28.8% of employees indicated that they made one or more business trips by plane. On average, they travel by air 2.7 times per year.

Nitrogen deposition

Since the Nitrogen Action Programme (Programma Aanpak Stikstof or PAS in Dutch) rulings of the Council of State on 29 May 2019, the nitrogen problem has also become more prominent in WUR's operational management. Nitrogen deposition calculations were carried out in 2020 as part of extending the temporary zoning exemptions for student housing at De Dreijen and at Haarweg 10. These projects could proceed because the depositions remained below the limit of 0.005 mol/ha.

During the revision of environmental permits, AERIUS calculations also mapped out the nitrogen deposition of existing locations such as Wageningen Bioveterinary Research (WBVR) in Lelystad. In 2021, more clarity will have to be provided about how to deal with existing situations where nitrogen deposition exceeds the limit of 0.005 mol/ha.

Noise

In 2014, the Municipality of Wageningen drew up a noise vision and the zoning plan 'Geluidruimteverdeling Wageningen Campus e.o.' (noise allowance distribution for Wageningen Campus and environs). This offers local residents the security that noise pollution will not increase above current levels, while also creating flexibility and clarity as regards the distribution of noise allowance for businesses within this area, including Wageningen University & Research. Both documents are used as a framework for the development of the Business Strip at the southern edge of Wageningen Campus between Bornsesteeg and Mansholtlaan.

WUR systematically tests the acoustic consequences of current and future changes to operational management (including buildings and activities) on Wageningen Campus and De Dreijen. The acoustics for the following projects were calculated in 2020:

- Replacing the refrigeration unit on the roof of Radix-MidOost (Campus, lot 20);

- Updating and minor renovation Impulse (Campus, lot 12).

Since May 2014, in addition to being evaluated in terms of the permit regulations for noise, projects have been evaluated in terms of the plot value listed in the zoning plan 'Geluidruimteverdeling Wageningen Campus e.o.'.

completion check is carried out during which the realised sources are measured. For example, it is tested whether the actual situation meets the specifications before the start of construction.

Procurement

In relation to tendering, WUR carries out its purchasing activities according to the applicable legislation and regulations, as well as the principles of proportionality, objectivity, non-discrimination and transparency. In addition to the applicable legislation and regulations, WUR observes its own purchasing policy. The sustainability criteria of the national government, as published on mvicriteria.nl, are applied whenever possible.
If possible, additional criteria are used for each tender, such as international standards of social responsibility. WUR buyers draw the attention of internal clients to

The noise reports that were completed in 2020 indicate that Wageningen Campus can comply with the relevant noise regulations if it takes certain supplementary measures such as noise screens or measures to address sources of noise. Taking measures is part of the construction project and/or the activity. Upon completion of a new building, a

the various options that can be used during the procurement process and during the contract period. The sustainability panel, consisting of approximately 60 employees and students, can also be consulted. In 2020, SRP received an extra impulse by assigning the task of 'acquiring knowledge and developing SRP' as a specialism to one of the purchasers.

If a supplier does not comply with the agreements on sustainability and CSR, the contract manager must issue a warning to them. WUR works completely digitally in its purchasing and ordering process. Suppliers are encouraged to send their invoices digitally. Because Wageningen deals with large numbers of orders and invoices, the use of paper, toner cartridges and postal services has been drastically reduced.

Research in accordance with legislation

Biosafety

The Besluit en Regeling ggo (Decree and regulations on genetically modified organisms) came into effect on 1 March 2015. The permit requirement for 'contained use' on levels I and II-k has been replaced by notification obligations. Users carry out a risk assessment themselves and determine which additional regulations apply when they are working with genetically modified organisms (GMOs). Permits for the other levels of contained use are granted starting from risk level IIIv. Activities classified at level III are all covered by permits (or extended permits) included in the GMO database (GRiMaS).

About 20 expansions of level I activities with GMOs were provided with a risk assessment in the GRiMaS by the Biological Safety Officer (BSO). A large number of Responsible Employees and Research Leaders were involved in the internal audits for working with GMOs and in updating the notifications. In 2019 and 2020, the level II members of all PSG licenses (GMO Regulations 2003) have been gradually classified into groups of equal risk. To this end, all PSG-wide

applications for level II notifications have been submitted to the GMO Office. Which activities should be included in 'reference point' applications has been carefully coordinated with the Research Leaders and Responsible Employees. These (informative) interviews are also GMO audits to check whether all activities and intended activities have been reported to the Biological Safety Officer.

GRiMaS, the web-based database for the GMO risk management system, entered the test phase in 2020 and will gradually replace the MS Access 'stand alone' GMO database. The GMO Office (Bureau GGO) and the Human Environment and Transport Inspectorate have approved the built-in risk assessment as a replacement for standard forms from the GMO Office. As a result, the administrative activities have been simplified, reduced in number and partly automated. The frame of the tables and the many links were tested this year by the ICT department of UMCG (Groningen) together with WUR FB-IT. The user licenses were prepared by the legal office in 2020 and will be signed upon delivery of GRiMaS.

Animal Testing
WUR acknowledges that animal testing is scientifically and societally relevant in specific cases. We endorse the Code for Transparency in Animal Testing of the Association of Universities in the Netherlands (VSNU). In doing so, WUR has obligated itself to being transparent about its animal testing and to a dialogue about animal experiments. WUR reports annually on animal testing.

Genetic resources (Nagoya protocol)
Legislation and regulations apply to working with genetic material and users must have the required documentation. The Nagoya Protocol is about accessing genetic resources and sharing the benefits that result from the use of these resources. The Netherlands Food and Consumer Product Safety Authority (NVWA) has been designated as the competent authority in the Netherlands for monitoring compliance with the Nagoya Protocol.

In 2019 and 2020, the NVWA conducted a digital inspection of the implementation of the protocol within WUR at both Wageningen University and Wageningen Research. Information afternoons were held at the various sciences groups and an inventory of available material was carried out for each chair group (WU) and business unit (WR). An inventory has been made of the systems currently available within WUR for a uniform registration system to be developed. PSG has drawn up a 4-year timeline (approved in 2020) for implementation within WUR of the Nagoya Protocol, and a policy plan was prepared.

Quarantine materials
In 2019, the NVWA granted R&D Phytosanitary permits to the Sciences Groups ESG and PSG (Wageningen and Bleiswijk locations), which allows them to work with quarantine-classified materials. In 2020, several applications for extensions of actions and activities with quarantine materials were submitted. The expansion of the permit for the delivery of the new Unifarm greenhouse complex 'Greenhouse Red Section' with BPG-II and BPG-III containment level greenhouse compartments was also assessed by the NVWA, approved and included in the permit in the summer of 2020.

The requirements from these permits have been coordinated with the Quarantine Responsible Employees, Biological Safety Officers (BSOs) and Managers of Unifarm, such as:

- Procedures in accordance with the NVWA Phytosanitary Requirements Table version 4.1 and higher are available.
- All staff appointments and trial plans are up-to-date.
- Employees who work with quarantine materials have been informed about the requirements.
- Periodic inspections of Q laboratories and greenhouse compartments are carried out by managers and head of Unifarm and the BSOs.

Good communication relating to this complex set of regulations is key to guaranteeing that we work in an (environmentally) safe way with regard to the import and export of GMOs and quarantine materials. For this reason, a renewed attempt was made to write a script for the e-learning module 'Working safely with biological agents' as one of the basic safety modules of the information provision and education & testing programme of WUR. In 2020 the BSO performs even stricter internal supervision. Compliance with the safety regulations by researchers and students has been part of the management assessment by the PSG managing board since 2018 by means of a 'dashboard'. At ESG, this assessment is carried out in accordance with ISO 9001 quality management and ISO 14001 environmental management standards. With these tools, the PSG and ESG management boards can quickly see whether environmental and biosafety regulations are being followed closely.

Radiation hygiene
WUR has requested a complex permit under the Dutch Nuclear Energy Act (Kernenergiewet, 'Kew') for organisational components that work with radioactive substances and equipment. The general, coordinating radiation expert submits an annual report on the implementation of the radiation hygiene policy to the WUR Executive Board and to the Dutch government bodies responsible for supervising radiation protection. Under the Kew complex permit, inspections were carried out at all sites to verify compliance with the limits for discharges into the environment (water and air).

Soil

Two soil surveys were carried out in 2020:

- A soil survey for explosives was carried out on the Wageningen Campus as part of the construction of the aquifer thermal energy storage (ATES) ring. This resulted in a number of locations where extra vigilance was required during the work with regard to explosives from the Second World War. The work did not cause any problems.
- Exploratory soil survey for the new Dialogue Centre. This survey revealed nothing unusual.

Water

Total water consumption decreased in 2020 (12%) compared to 2019. This applies to all locations, with the exception of the locations of WBVR and Wageningen Livestock Research, where more water was used for the animal accommodations due to the warm summer of last year. The decrease is mainly apparent in education buildings and office buildings. This is because most education and office work has taken place from home since March 2020. The water consumption in 2020 for WUR's buildings and installations is listed in Table 4-7 and in appendix B3.5

Waste water

Waste-water samples are regularly taken for analysis from various locations in Wageningen and Lelystad. Due to the corona measures, the waste water discharge situation was different in 2020 than usual. The sampling frequency has therefore been reduced for a number of buildings. Three random samples exceeded the discharge standard. All excesses were investigated, and measures were taken to prevent recurrences. A report on this has been submitted to the relevant environmental agencies and water authorities.

Table 4-1 WUR water consumption and water performance in the reference year 2005 and in 2018-2020

Year	2020	2019	2018	2005
Mains water (m^3)	134,820	156,084	167,062	234,503
Well water (m^3)	17,584	19,666	27,711	139,518
Performance	**% 2020 compared to 2005**	**% 2019 compared to 2005**	**% 2018 compared to 2005**	
Mains water (%)	-43%	-33%	-29%	
Well (%)	-87%	-86%	-80%	

5 Compliance

5.1 Environmental permits

The various organisational components are distributed across 26 different locations, and clustered in complexes for which environmental permits have been issued. The various permits for the WUR complexes and locations are explained in Appendix 4.

In 2020, the following aspects played a role at the building complex level:

- *Lelystad, WUR complex:* The Edelhertweg 1 location was demolished in 2020. Due to the expected entry into force of the Environment and Planning Act in 2022, the Umbrella Permit will not be revised in 2021.
- *Lelystad, other:* After the realisation and commissioning of the new building of WBVR (Houtribweg 39), the revision of the Wabo environmental permit was prepared in 2020. The application for the new permit has been delayed due to the new nitrogen policy and will be submitted in 2021.
- *Bleiswijk Greenhouse horticulture:* Due to the lack of relevant information, the application submitted for a new permit was suspended at the end of 2019 by the Rijnmond Environmental Agency. A revised application will be submitted in 2021.
- *Wageningen Campus:* The 2013 GMO Decree (Besluit genetisch gemodificeerde organismen) imposes new requirements on environmental permits for institutions working with GMOs. A partial revision was started in compliance with the obligation to update, as laid down in the decree.

5.2 Quality systems

All organisational components work according to the statutory guidelines. Tasks which are part of environment-related processes can be established and safeguarded by a certified quality system. The organisational components are nevertheless free to determine whether and to what extent they work with such a system. The specific culture of the organisational component and the wishes or expectations of employees or customers can determine the choice for a quality assurance system (certified or not). Table 5-1 provides an overview of the systems that are in use at various parts of WUR.

5.3 Safeguarding measures

To ensure continued compliance with legislation and regulations, it is important to keep abreast of changes in legislation and regulations. Changes relevant to WUR are published monthly in Pharius, an online app from Borger & Burghouts. In 2020, the Compliance working group developed a method to assess these changes in legislation and regulations and to implement them in the organisation if necessary. As a result, WUR is demonstrably compliant with regard to updating the register of requirements on the basis of legislation and regulations in the field of health and safety and the environment.

In 2020, the safeguarding of laws and regulations for ionising radiation will be specified in Pharius in collaboration with the radiation protection unit. A start has also been made on establishing safeguarding measures for substances of very high concern (Zeer Zorgwekkende Stoffen or ZZS in Dutch). Employees of the QHSE column have taken Pharius training courses.

5.4 Internal and external reporting

Organising and conducting internal and external audits provides insight into compliance with legislation and regulations for each organisational component and for WUR as a whole. In 2020, internal audits were conducted by the Safety & Environment sub-department of Facilities and Services or the organisational components themselves. This concerns internal or external controls for permits and certifications, but also themes such as energy management, biological safety and radiation. Enforcement audits were also carried out by the competent authority and external audits of the quality systems of the organisational components (see Table 5-1) by certification bodies. In addition, reports are made to the competent authority in the sustainability report, the e-MJV for the MJA-3 covenant, the reporting in the context of the European Energy Efficiency Directive (EED) and the annual radiation hygiene report.

Due to the restrictions resulting from the corona measures, the competent authority did not carry out any enforcement checks during 2020.

In 2020 no significant fines or sanctions were imposed as a result of environmental contraventions. The National Contact Point did not report that WU or WR violated the OECD guidelines.

5.5 Complaints and incidents

Complaints and incidents are registered centrally, including a problem analysis, follow-up and measures to reduce and prevent direct consequences. If necessary, complaints and/or incidents are reported to the competent authority.

WUR reports incidents via an incident monitoring system. In 2020, five environmental incidents were reported, one of which concerned an environmental incident involving genetically modified organisms. In addition, one formal complaint was received. The environmental incidents and complaint are explained in Appendix 5.

Table 5-1 The quality systems used by the organisational components

Organisation Component	Systems	Explanation
AFSG	ISO 17025	In progress (accreditation tests) for WFBR testing services to be established
ASG	ISO 9001	For WMR, WBVR and WLR; Statutory research tasks (WOTs) Centre for Genetic Resources (CGN) and Centre for Fisheries Research (CVO)
	ISO 17025	For WBVR accreditation testing; for the WMR accredited laboratory (scope L097)
	ISO 17043	For WBVR, mutual quality assurance exercises.
	AAALAC	For WBVR Animal Welfare (DB)
	GMP	For WBVR Batch Control
ESG	ISO 9001	For Wageningen Environmental Research (WENR) and the Statutory research tasks Nature & Environment (WOT N&M)
	ISO 14001	ESG-wide
	ISO 26000	ESG-wide (CSR)
	ISO 31000	ESG-wide
	ISO 17043	Wageningen Evaluating Programs for Analytical Laboratories (WEPAL) (WU), accreditation mutual quality assurance exercises
PSG	ISO 9001	For experimental farms Unifarm and Bleiswijk and WOT CGN Plant Genetic Resources (PGR).
	HACCP	For Lelystad experimental farm
	GLOBAL-GAP	For experimental farms Unprotected Cultivation
	SKAL	For Unifarm; organic section
	VVAK	For Unifarm; Starch Potatoes, Sugar Beets, and Grains, Seeds, and Legumes
SSG	ISO 9001	For WECR component, Wageningen Centre for Development Innovation (WCDI) and WOT Centre for Economic Information (CEI)
WFSR	ISO 17025	Accreditation testing
	ISO 17043	Accreditation mutual quality assurance exercises

6 Results WUR organisational components

6.1 Agrotechnology & Food Sciences Group (AFSG)

Energy
AFSG has drawn up annual energy plans for 2019 and 2020. These plans include concrete measures to achieve a 2% absolute energy reduction every year. Due to the growth of AFSG, this means that approximately 4% less energy needs to be consumed on an annual basis. In 2020:

- It became known that the funding application submitted in 2019 for the installation of 970 solar panels was rejected.
- The lighting plan was continued with the installation of LED lighting in various offices and laboratories. In plant cultivation rooms, fluorescent lighting was replaced by LED lighting. This provides additional energy savings because significantly less cooling is required.
- An inventory has been made of which refrigerators and freezers older than 10 years (or age unknown) can be replaced.
- A study was carried out into the installation of a heat pump in AXIS Z. The heat pump will be installed as soon as the aquifer thermal energy storage distribution loop on campus is ready.
- A cost-benefit analysis was performed on the option of separating the air treatment in Axis Z between offices and laboratories. The analysis showed that this is not cost-effective due to the disproportionately high investment costs and the long payback period.

Waste and circularity
AFSG strives to reduce food waste and improve the separation of waste streams. The target for 2022 is a waste separation percentage of 75%. All AFSG buildings work with Ecosmart for waste collection. In 2020, waste separation was improved.

Mobility
Encourage travel by train instead of by car and plane. NS travel cards are actively offered for this purpose when travelling in the Netherlands and in neighbouring countries. AFSG is aiming for 5% more train journeys and 5% less air travel by 2020. There was hardly any business travel in 2020 due to the coronavirus pandemic.

Water
Wastewater is periodically sampled. No exceedances were found in 2020. However, as usual, the values for copper and zinc in Helix are high (but within the margins). The cause is probably the copper water pipe in combination with soft water and low water consumption (resulting in leaching).

Vitality

- More emphasis on psychosocial workload in the Risk Inventory and Evaluations (RI&E) that we carry out per group. For this, all employees receive a digital questionnaire that is assessed by an independent occupational hygienist.
- Every 6 weeks meetings are held with social-medical teams where managers can discuss reintegration processes and prevention and receive advice from occupational health physicians, occupational social workers and HRM. To support the managers in prevention, additional meetings – once or twice per year – with the social-medical team (SMT) are offered. In 2020 there was extra attention due to the corona situation with a monthly 'SMT light' meeting.
- Extra attention to work pressure. Employees were offered work pressure consultations with the occupational health physician and/or corporate social work (CSW). In addition, the personnel capacity was expanded, especially for education, and workshops were held via Vital@work about job stress and staying in balance. Workshops have also been held at chair-group level by CSW and HRM on request. Additional support was provided for PhD students for remote working and social interaction. Workshops and intervision groups were organised under the supervision of CSW.
- AFSG joined the Vital@work menu, and the AFSG team participated in the 'Ommetjes' app.

Ethically responsible research
The scientific integrity workshop was held with all groups.

Development and training
All employees and students are obliged to attend the safety lecture provided by the Occupational Health and Safety & Environment department. Due to the corona measures, a digital version of the safety lecture has been made. This online course contains a number of simple questions per topic that can be used to test whether the participant has understood the training.

6.2 Animal Sciences Group (ASG)

Energy
The sustainable energy policy of ASG is aimed at installing solar panels, realising centralized cold and frozen storage facilities and energy-efficient use of ventilation (including fume hoods). In 2020, the implementation of the lighting plan began for Zodiac: changing to LED lighting where possible. At the end of 2020, the WUR-wide EED audit was carried out based on the legally required and internal measures for each building to reduce energy consumption.

Research
After the digital inspection by the NVWA in 2019 regarding compliance with the Nagoya protocol, the protocols within ASG were specified in more detail. In 2020, this will be discussed in all departments in collaboration with Legal Affairs.

Wageningen Bioveterinary Research (WBVR)
In 2018, WBVR established a Strategic Energy Master Plan to work towards a reduction of 50% by 2030 and to become CO_2 neutral by 2050. The scenarios were further developed into a concrete tactical work plan for the short term and long term. This plan contains measures for:

- Direct energy savings, such as heat recovery from our own processes.
- Energy savings measures implemented during planned renovation (e.g. adiabatic humidification).
- Own power generation (such as a solar field or solar boilers).

In the inventory of gas and electricity use, it is notable that the climate control installations (heating, cooling, humidification and ventilation) are responsible for two-thirds of annual gas and electricity consumption. Furthermore, sterilisation and disinfection processes consume large amounts of energy. Due to the steam processes, it is challenging to make this more sustainable in a responsible and affordable way. Sustainability has been included as a starting point in the renovation plans. This has led to the installation of energy-efficient humidification (adiabatic) and more heat recovery.

Wageningen Marine Research (WMR)
A student conducted research at WMR into possible sustainability improvements. This has been reported to the management team. Sustainability and energy saving are also themes in the preparations for possible future housing in IJmuiden.

An overview of the permits was drawn up in 2020. The action plans based on the general Risk Inventory and Evaluation (RI&E) and the in-depth RI&Es 'Laboratories' and 'Dealing with hazardous substances' were implemented.

Wageningen Livestock Research (WLR)
The training programmes on hazardous substances were completed. The e-learning course for hazardous substances was also assessed on the basis of what had been learned during the course. The results of this have been fed back to the internal developer of the e-learning course to optimise this programme.

The environmental permit for the Dairy Campus has been submitted to the Omgevingsdienst Friesland (Friesland Enviroment Agency). The environment agency completed an environmental inspection in 2020. The points for attention that emerged from this inspection have since been addressed or completed. The Environmental Impact Report required for inspection did not show any adverse effects as a result of business operations.

6.3 Environmental Sciences Group (ESG)

Green Impact
In 2020, ESG employees of the Green Impact team GREEN-ESG and ESG management worked hard on making sustainable changes and environmental improvements in the workplace. All environmental and sustainability themes were addressed. Many ideas were submitted to the team from the entire ESG.

Actions included:

- Further improvement of waste separation (second paper stream).
- VITAL@ESG, highly valued by employees, has been continued.
- Initiating 'ESG at Home' with tips on how to save energy when working at home (due to corona) and to make the garden greener.

Energy
In the ESG buildings, 10% less electricity was consumed per employee and use of heating energy was 20% lower. The aim is to purchase energy-efficient equipment and implement a 100% LED lighting plan. It should be noted that the coronavirus pandemic also had an impact on energy figures.

Waste
In 2020, further efforts were made to improve the separation of our waste streams. The GREEN-ESG team monitored the effects of the smoking ban on Wageningen Campus and drew attention to points for improvement. The waste separation rate has improved (from 38% to 52%) due to the separate collection of plastic waste. Striking is the 50% reduction in paper waste due to more work being done digitally. The influence of the corona crisis is also apparent here.

Mobility
The greatest environmental impact is caused by business air travel. Partly due to actions taken by the GREEN-ESG team to make employees more aware of their travel behaviour, a downward trend was seen in air travel in 2019. Due to the corona measures, hardly any air travel took place in 2020, so the effect of the awareness campaign was unclear.

Commuting is another environmentally burdening factor that has remained unchanged for many years. However, use of bicycles and public transport has increased. The use of private cars for business travel decreased due to reduced mobility as a result corona measures. The environmental impact of transport is expected to decrease in the future as a result of the WUR-wide mobility plan in combination with the new remote working policy.

Incidents
There were no environmental incidents at ESG in 2020.

CO_2 footprint
The most important factor in the decrease in environmental burden in recent years has been the increasingly efficient climate control in the buildings. ESG calculates the annual CO_2 footprint with the Envirometer of the Stimular foundation. This provides insight into aspects such as energy consumption, waste production and mobility.

6.4 Plant Sciences Group (PSG)

Energy
On Campus Noord in Wageningen, construction began on the aquifer thermal energy storage facility and associated energy centre. The new demonstration greenhouse KAS2030 is now fully operational in Bleiswijk. After the installation of additional solar panels at Unifarm, the Plant Ecophenotyping Centre (NPEC) and the Field Crops farms at Lelystad and Randwijk, the total capacity of solar panels was expanded to 1.5 MW in 2020. The energy savings plan of Field Crops Randwijk has been drawn up and submitted to the competent authority. The new greenhouse building Serre Red (in use in 2021) will be fully equipped with energy-efficient LED lighting.

Waste
The paper towels in Radix are now largely collected separately. As a result, there is up to a quarter less residual waste.

Water and waste water
In the KAS2030 demonstration greenhouse in Bleiswijk, all the drain-water and condensation water is recirculated. As a result, no nutrients are lost and no residues of crop protection agents enter the sewage system.

Flora and fauna/Biodiversity
The various measures on experimental farms to support biodiversity, insects and birds were continued.

Research
Regarding biological safety, there is stricter enforcement of the rules for working with and importing/exporting quarantine pests.

Sustainable construction
On Wageningen Campus, the construction of Radix Nova, Serre Red and the Plant Eco-phenotyping Centre has started according to the BENG principles. The new building will be connected to the thermal energy storage system.

Contributions to the CSR agenda

Education and research: PSG creates knowledge and generates impact. The research focuses on sustainable plant resources for a healthy world through knowledge and innovation in agriculture, healthy food and living environment. The quality of our education is highly valued. The BSc programme Plant Sciences was rated by the Keuzegids Universiteiten 2020 for the fourth

time as the number one BSc programme and has been in among the top four BSc programmes in the Netherlands since 2013.

Sharing and disseminating knowledge: Our aim is to have an impact by actively contributing to the needs and demands of society and creating value by collaborating with industry and other stakeholders. PSG has a wide range of research facilities, both in Wageningen and at the various business unit locations throughout the Netherlands. The greenhouse and test farms receive many visitors from the Netherlands and abroad throughout the year. These locations therefore operate not only as research facilities, but also as knowledge transfer and valorisation centres.

Innovative and challenging research and education: Innovation is needed to find solutions and to make system transitions. To create knowledge about sustainable plant resources for a healthy world, our research and education is aimed at innovating and integrating knowledge in agrosystems and the 'smart' plant. A systems approach is central to our research, whether this is at the genetic or cellular level, or at the farm and global food system level. Our approach is strongly focused on linking understanding of the basic processes with how this understanding is applied in a real-world setting.

Vitality: PSG has worked to promote vitality in four areas:

a. The Move@wur programme with the motto 'sit less, feel better' to get employees to be more physically active. Activities at Wageningen, Bleiswijk, Randwijk and Lelystad included chair yoga, breathing and yoga, smoveys, PauzeXpress, stability and core. The use of standing desks, desk bicycles and swoppers (dynamic sitting) was promoted to encourage variation in work posture. At Radix West, signs with the text to take the stairs more often have been posted.
b. Job stress was tackled with workshops such as High vitaliTEA for managers and employees, Grip on your work and Grip on your email. There are also job stress consultation hours with Occupational Social Work.
c. A meeting was held for employees who are also informal carers about the possibilities at WUR for maintaining a good work/life balance.
d. Development: encouraging the use of health courses such as mindfulness at SCB or taking sports lessons. During 8 to 10 weeks, employees were given the opportunity to exercise for free during working hours, with the aim of lowering the threshold for exercising.

Ethically responsible research: PSG is on track to fully comply with the international rules for Access and Benefit Sharing of Genetic Resources (Nagoya protocol).

Entrepreneurship and Applied Research: Collaboration between companies and universities and (independent) research institutes is necessary to achieve goals and increase impact. In addition, the financial margin achieved with the business partnerships is used for investments in basic and applied research, which in turn benefits science, society and business.

High-impact partnerships: PSG has a strong network and several partners within and outside WUR. To remain visible and strengthen our position as a preferred expertise provider, we need to share and streamline our networks with both current and new partners. Each researcher should act as a point of contact for all of WUR, and partners should be referred to the group with the required expertise.

Sustainable energy: The solar panels on the roofs of PSG buildings generated approximately 1.5 MWh of electricity in 2020. The wind turbines in Lelystad generate approximately 65 MWh of electricity annually.

6.5 Social Sciences Group (SSG)

SSG wants to contribute as much as possible to energy savings and the promotion of sustainability when investing in its own business operations in terms of the buildings, equipment and resources. However, the investment must be economically viable. SSG also wants to promote the sustainability behaviour of employees through various campaigns aimed at aspects such as mobility and use of water, heating, light and paper, as well as actions that contribute to better health.

The WU Department of Social Sciences is located in the Leeuwenborch in Wageningen. Employees of Wageningen Economic Research (WEcR) work on two floors of the WTC in The Hague and at the Atlas building in Wageningen. The concept of Open and Transparent Working (OTW) has been applied at these two WEcR locations. In addition, WEcR leases seven small offices in multi-company buildings spread across the Netherlands. Another two departments are located in Radix and Forum.

Energy
In 2020, the SSG energy management team held six video meetings for consultation. The team consists of the location manager, the technical building manager and the occupational health and safety & environmental coordinator. The director of operations participates in the final meeting of the year to discuss policy items and priorities.

Because SSG is still waiting for definitive plans for new construction or renovation, only minor changes to save energy can be made, such as replacing the door to the bicycle cellar, installing LED lighting and installing sensors. An EED audit was carried out in 2020. The indications from this EED audit are included in the 2021 annual plan.

Significant savings have been made at the Leeuwenborch, partly due to the lower occupancy rate resulting from the coronavirus pandemic. Compared to 2019, electricity consumption has decreased by 18% and gas consumption by 13.8%.

Waste
The waste in the Leeuwenborch is separated and collected internally by Ecosmart. The small amount of contamination in waste flows is remedied by Ecosmart. This could include a plastic cup that was accidentally included in the organic waste. The data from Ecosmart is monitored.

Mobility
In recent years, the sustainable Leeuwenborch working group has focused mainly on the theme of mobility, with the aim of reducing mobility-related CO_2 emissions from business travel abroad and commuting. Charging points have been installed on the Leeuwenborch site (as well as in the indoor bicycle parking), we promote the use of e-bikes for commuting and employees can use an electric car for business travel. Due to the coronavirus pandemic, however, there was very little travel in 2020. Air travel declined by 75%!

Construction
After a feasibility study for a new SSG building, the Executive Board decided to cancel the plans for the new building at the end of 2019. In addition, the coronavirus pandemic broke out in March 2020. The experience we all acquired with working from home will influence the layout of a building and its use when the choice is made about new construction or renovation.

Green Impact
Green Impact is a programme to involve employees and students who are interested in sustainability. In 2020, the team worked on actions from the Green Impact toolkit. Several team members attended the WUR-wide Green Impact workshops. The team, consisting of three members, mainly focused on finding new members.

6.6 Wageningen Food & Safety Research (WFSR)

RIKILT Wageningen University & Research and the Laboratory for Food and Feed Safety of the Netherlands Food and Consumer Product Safety Authority (NVWA) opened a new institute on 1 June 2019. Wageningen Food Safety Research (WFSR). During the year under review, WFSR worked on the following themes to make its business operations more sustainable:

Waste
WFSR is constantly looking at whether the separation of waste can be optimised. One aspect that was examined in 2020 was the slurry waste. Large initial samples are used when grinding nuts, and this results in a large amount of waste in the slurry reservoir. It will be investigated whether this waste can be reused, and whether less rinse water can be used so that less waste is created. Improved separation of hospital waste was also examined. Animal sample material could be disposed of as animal by-products (cat.1). Fruit and vegetable samples can be disposed of as biological waste. In 2021 we will determine if these changes can be implemented.

Water and waste water
Some laboratory devices in Vitae are water-cooled. The reuse of cooling water has improved in recent years. This has resulted in water consumption being reduced by about half. When purchasing new equipment, the possibilities for using or reusing cooling water are taken into account.

All toilet flush levers have stickers to make employees aware of water use during flushing. This is expected to reduce water use.

Waste water is periodically sampled. In 2020, contamination of the waste water by chloroform was ascertained. An investigation was conducted into whether there had been any changes in the procedure or whether incidents had occurred. The cause of the exceedance has not yet been determined. It is still being examined whether a reaction between substances can take place in the disposal wells.

Energy-saving measures
Energy-saving measures are discussed at meetings of the Energy Team (E-team). This team consists of the location manager, the technical building manager, the occupational health and safety & environmental coordinators and the head of QHSE. Due to the corona crisis, the priorities changed and the E-team only met twice in 2020. The construction of an energy-efficient central building for cold and frozen storage (including -80° C storage) was completed. It has now been put into use and the separate freezer containers could be decommissioned. Fine-tuning of the indoor climate of the Vitae building continued.

Noise
In recent years much has been done to minimise the noise from the building to the residential area. Silencers have been installed on the air handling unit. Decommissioning the separate freezer containers mentioned above also resulted in less noise. There were no complaints about noise nuisance in 2020.

CSR working group
A CSR working group is active within WFSR that consists of employees from various business units, the building manager, the head of QHSE and an Safety & Environment coordinator. One of the activities of this working group is to raise awareness of energy and chemical consumption within the organisation. Every year a clean-up campaign is held to tidy up the freezers and refrigerators, among other tasks. This ensures that the cold and frozen storage capacity for sample materials can be reduced, which has a positive effect on energy consumption.

In 2020, the CSR working group launched a competition. The aim was to make employees aware that miniaturisation of methods, among other measures, can lead to a major reduction in the use of chemicals. Research proposals have been submitted to miniaturise existing methods or reduce their use. The winning research proposal was awarded a grant to study the reduction of the amount of foetal calf serum in culture medium in cells that are used in bioassays.

Vitality
- An extensive Risk Inventory and Evaluation Psychosocial workload assessment (PSA) was carried out per team.
- Social-medical teams meet every 6 weeks. During these meetings, managers discuss reintegration processes and prevention options, and they can receive advice from the occupational health physician, Corporate Social Work and HRM.
- Extra attention was paid to work pressure. In the past, all employees were offered training courses on recognising and dealing with stress due to work pressure. This aspect has also been included in the introduction for new employees.
- All employees received information about complaints involving the arm, neck and/or shoulder

via the intranet. This is also part of the introduction for new employees.

Ethically responsible research
WFSR is on track to fully comply with the international rules for Access and Benefit Sharing of Genetic Resources (Nagoya protocol).

6.7 Facilities and Services (FB)

Integrating CSR into all processes and making the services more sustainable is one of the objectives of the Facilities and Services Business Plan 2019-2022. Facilities and Services will continue to work on making the operational management more sustainable regarding the themes of inclusivity, sustainable employability and vitality, safety, energy, sustainable mobility, catering, waste management (including food waste) and procurement. The aim is to strengthen the connection with research and education: WUR expertise can be used more effectively to make CSR more visible and tangible on campus.

Facilities and Services facilitates many aspects related to WUR's operational management, and thus contributes to all environmental themes and sustainability ambitions included in the Multi-Year Plan 2020-2022. It goes without saying that this takes place in consultation with the organisational components. Together with students and staff, we are looking for creative solutions that will enable everyone who comes to the campus to experience that we are working in a sustainable and socially responsible manner.

Activities in 2020 included the following:

- Work took place on a new vision on healthy and sustainable food and beverages in restaurant facilities and catering. Students and staff provided input during the Invention Summer Camp 'The future of Food & Beverage @ WUR'.
- Continuing the development of the WUR-wide vision for the energy transition. Continuing projects on sustainable energy and energy savings. Among other activities, construction began on the aquifer thermal energy storage (ATES) distribution loop on Wageningen Campus. This is an extension of the existing ATES facility.
- Based on the Mobility Vision 2030, the concept of Mobility as a Service was implemented. The quality improvement of bicycle parking facilities was completed with the installation of additional charging points for e-bikes.
- Contributions to the programmes to promote the vitality, health and safety of employees and students, including Vital@work and the e-learning series Safety@WUR.
- Projects of the Real Estate sub-department were assessed regarding environmental and sustainability aspects as part of the approval process.

In 2020, Facilities and Services supported Green Office Wageningen with its initiatives and sustainability projects. The Green Impact programme was also facilitated. In 2020, Facilities and Services participated with its own team.

Appendix 1: CSR Agenda

A. The themes of WUR's CSR Agenda

Table B1-1: Themes and goals of the CSR Agenda

Nr.	MVO thema	Ambitie
1.	**Research and education designed to make a contribution to societal challenges**	To make a contribution to global social challenges (e.g. themes such as food security, safety, health and liveable cities).
2.	**Sharing and disseminating knowledge**	To increase the social impact of research by transferring acquired knowledge internally and externally, for example by engaging in public debate.
3.	**Innovative and challenging research and education**	To stimulate research projects and education by tapping into new themes with a view to creating a positive social and/or environmental impact. By investigating new themes, we create additional impact.
4.	**Vitality**	To guarantee optimal working conditions. The mental and physical health of employees and students is protected and we as much as possible promote the wellbeing of our employees and students.
5.	**Ethically responsible research**	To communicate transparently and with integrity about research processes and findings. Responsible use of research resources (such as test animals, pesticides and GMOs).
6.	**Climate-adaptive environment**	To make our own buildings and environment climate-adaptive, for example by rolling out our own innovations (such as sound buildings, green roofs, rainwater buffers, biodiversity retention).
7.	**Entrepreneurship and applied Research**	To convert knowledge into innovations and to quickly translate scientific breakthroughs into actual practice and education. Stimulate students to display entrepreneurship and, for example, translate in-house and other research into actual practice (for instance through means of spinoffs).
8.	**Waste and circularity**	To minimise the use of new raw materials and reduce residual waste. By optimising reuse and opting for recyclable products, the separated collection of waste flows and countering food waste.
9.	**Responsible collaboration**	To collaborate with national and international partners in achieving our goals (research for and towards society). To pursue a cohesive policy relating to the political establishment (local, national and EU), society, the business community and NGOs.
10.	**High-impact partnerships**	Partnerships with, for example, the business community and government bodies to increase the positive impact of research and education.
11.	**Responsible economic policy**	To make responsible use of public funds and to communicate transparently about this. Sustainable income from research and education to be able to achieve (new) strategic goals.
12.	**Sustainable energy**	To contribute to the energy transition through the in-house generation of energy and by making energy more sustainable, and by reducing energy consumption in our buildings and on our grounds.
13.	**Chain responsibility**	To stimulate sustainability in the chain by maximising local procurement and requiring suppliers to comply with social and environmental criteria (in terms of their business operations, as well as in their products and services).
14.	**Development and training**	To invest in the development of employees by actively offering professional training and study programmes. To facilitate an enjoyable work environment in which everyone's talents are optimally used and developed.
15.	**Diversity in staff and students**	To realise an inclusive work environment with equal opportunities for every employee and student. Focus on talent and a proper reflection of society.
16.	**Sustainable mobility**	To make the mobility options for employees and students sustainable as a means of reducing the emission of $CO2_{eq}$.
17.	**Flexible learning paths**	To give students the flexibility of creating their own study programme, for instance, by providing sufficient room for optional courses, experience abroad and innovative study materials.

B. Explanation of value chain model

Wageningen University & Research wants to ensure that the knowledge and results from education and research benefit society. Besides research and education, value creation is the third pillar in the WUR value chain.

Research is conducted at the graduate schools of Wageningen University and as part of the research programmes of the Wageningen Research Foundation. By means of publications in scientific journals, policy memorandums and patent applications, the knowledge gained in our research is disseminated to government agencies and public bodies, industry, citizens and societal organisations. In this way, the research value chain is intertwined with government, industry and society.

The value chain of education starts with the education of Dutch and international students at Wageningen University. The students take the knowledge they acquire during their bachelor's or master's degree programme with them to their future work environment in the Netherlands and the rest of the world. WUR maintains active contact with its alumni. Some alumni find work at WUR, for example as PhD students, researchers or members of staff.

WUR works actively to involve partners in CSR and sustainability. This explicitly concerns the total value chain, in addition to human capital and suppliers, as well as partners in research and education. This means that sustainability requirements are integrated into contracts with suppliers. WUR's chain partners are mainly active in the Netherlands, where WUR is also located.

WUR pays clear attention to CSR within its processes. This takes into account international guidelines, such as the UN Guiding Principles and the OECD Guidelines, and WUR of course does not do business with companies whose activities/business operations are not socially responsible, unethical or illegal.

C. Materiality analysis

Priorities in WUR's CSR policy are based on materiality. Material topics are topics that are important for our internal and external stakeholders and on which our organisation can have a real impact. Where possible, the material topics were determined in consultation with our stakeholders.

In 2015, the CSR agenda was adopted by the Executive Board. Because it is important to regularly monitor whether the material topics are still the right ones, a new materiality analysis was performed in the first half of 2019. This analysis was based on a *long list* of possible CSR themes from the Strategic Plan 2019-2022 and supplemented with topics from other relevant policy documents. A list was then drawn up of topics that are most frequently referred to, not only in the assessed documents, but also on the internet, intranet, media and social media. Key personnel were asked to rate the subjects for relevance and their impact on our stakeholders. In addition to this internal analysis, we considered the importance of the themes for external stakeholders. The result of this assessment was the materiality matrix (see Figure B1-1), which led to the current selection of 17 themes. The numbers in the figure refer to the number of the CSR theme (see Table B1-1). Like the original CSR agenda of 2015, the updated CSR agenda, based on the materiality analysis and matrix, was adopted by the Executive Board (in 2019).

A CSR agenda is not complete without KPIs to monitor progress. After all, CSR is about continuous improvement. The CPIs of the Strategic Plan are the starting points for this process. KPIs have been proposed for the priority themes that match the CPIs from the Strategic Plan. Because the CPIs from the Strategic Plan do not overlap 100% with the CSR themes there are some gaps. For these gaps additional KPIs have been defined.

With regard to the accountability about the societal impact of WUR, the delineation and scope of the sustainability report was based on the materiality analysis. The report covers the material topics of the CSR agenda for the 2020 financial year. Because the majority of the activities of Wageningen University and the Wageningen Research Foundation take place in the Netherlands, the sustainability reporting focuses on activities in the Netherlands.

#	Material themes	Averge score
1	Research and education designed to make a contribution to societal challenges	9.0
2	Sharing and disseminating knowledge	8.6
3	Innovative and challenging research and education	8.5
4	Vitality	8.4
5	Ethically responsible research	8.4
6	Climate-adaptive environment	8.3
7	Entrepreneurship and applied Research	8.3
8	Waste and circularity	8.2
9	Responsible collaboration	8.2
10	High-impact partnerships	8.2
11	Responsible economic policy	8.1
12	Sustainable energy	8.1
13	Chain responsibility	8.0
14	Development and training	7.9
15	Diversity in staff and students	7.8
16	Sustainable mobility	7.6
17	Flexible learning paths	7.5

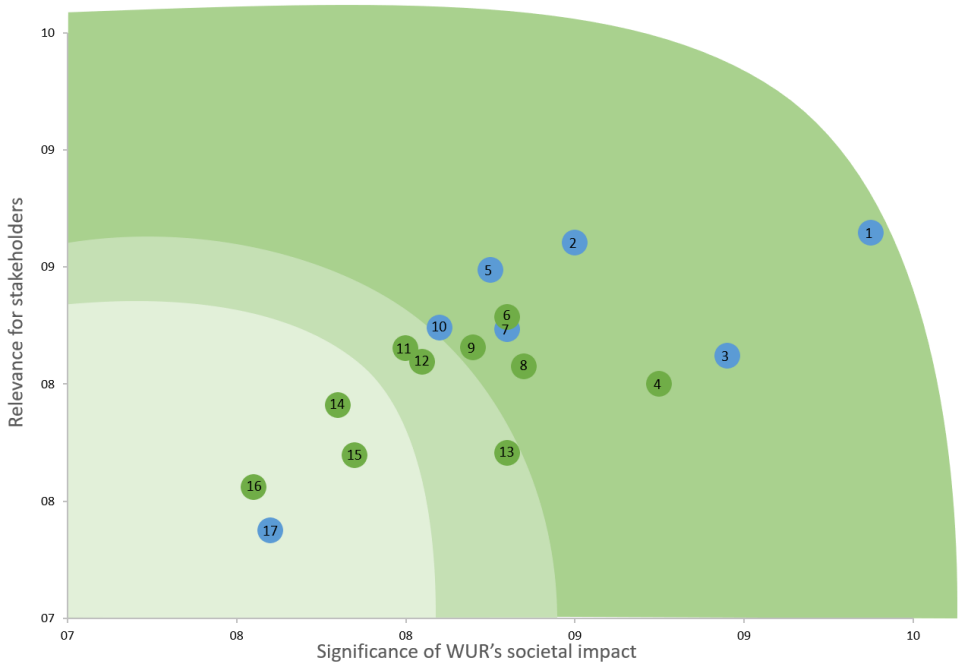


Figure B1-1 Materiality analysis (the figures refer to the number of the CSR theme, see Table B1-1)

C. Process owners

A staff department has been designated as the process owner for each subject. The process owner will be responsible for continuing to 'roll out' each subject. Virtually all of the subjects involve the primary process. Staff departments work together on some of the subjects. See table B1-2 for an overview of the process owners and the involvement of the various WUR components.

Table B1-2 Process owners and primary process involvement

CSR theme		Staff department responsible								Involvement primary process				
X = dept. responsible/process owner x = involved/in partnership with abbreviations: CC&M: Corporate Communications & Marketing CF&C: Corporate Finance & Control CHR: Corporate Human Resource CSA: Corporate Strategy & Accounts CVC: Corporate Value Creation ESA: Education & Student Affairs FB: Facilities and Services		CC&M	CF&C	CHR	CSA	CVC	ESA	Facilities and Services		Chair groups	Research groups	Line management	Divisional management	QHSE sections
1	Research and education designed to make a contribution to societal challenges				**X**		**X**			x	x			
2	Sharing and disseminating knowledge				x	**X**	x			x	x			
3	Innovative and challenging research and education				**X**		**X**			x	x			
4	Vitality			**X**								x	x	x
5	Ethically responsible research				**X**					x	x	x		
6	Climate-adaptive environment							**X**		x	x		x	x
7	Entrepreneurship and applied research				x	**X**				x	x			
8	Waste and circularity							**X**				x	x	x
9	Responsible collaboration	**X**								x	x			
10	High-impact partnerships	**X**								x	x			
11	Responsible economic policy		**X**							x	x		x	
12	Sustainable energy							**X**				x	x	x
13	Chain responsibility				**X**			**X**				x	x	
14	Development and training			**X**								x	x	x
15	Diversity in staff and students			**X**								x	x	
16	Sustainable mobility							**X**				x	x	x
17	Flexible learning paths						**X**			x				

Appendix 2: Organisation

B2.1 Organisational components WUR

WUR consists of a number of organisational components, as shown in the organigram, each of which is housed in one or more of 26 locations. Specific permits and regulations apply to each location.

Abbreviations

AFSG	Agrotechnology & Food Sciences Group
ASG	Animal Sciences Group
CS	Corporate Staff
CS+	Corporate Staff, including Wageningen International and Wageningen Academy
ESG	Environmental Sciences Group
E&EL	Energy & Exploitation Lelystad
FB	Facilities and Services
PSG	Plant Sciences Group
SSG	Social Sciences Group
WBVR	Wageningen Bioveterinary Research (formerly Central Veterinary Institute, CVI)
WEcR	Wageningen Economic Research (formerly LEI)
WEnR	Wageningen Environmental Research (formerly Alterra)
WFSR	Wageningen Food Safety Research (formerly RIKILT)
WMR	Wageningen Marine Research (formerly IMARES)
WR	Wageningen Research
WU	Wageningen University
WUR	Wageningen University & Research

B2.2 Organisation QHSE column

The QHSE column consists of a Safety and Environment sub-department positioned within Facility and Services and various decentralised QHSE sub-departments of the organisational components. The responsibilities in the QHSE column are assigned according to the mandates of WUR. The objectives and activities of the separate legal entities in the WUR alliance (Wageningen University and Wageningen Research) are coordinated at strategic and tactical levels. Organisational components work together on operational management.

The head of the Safety & Environment sub-department head is designated to act as the authorised permit holder on behalf of Wageningen University and Wageningen Research and to perform legal and other acts with regard to: Environmental Law (General Provisions) Act (Wabo), Water Act; Chemical Weapons Implementation Act, Nuclear Energy Act, Excise Duty Act, Opium Act, Prevention of Abuse Chemicals Act and GMO Decree.

B2.3 Permits Centre

The Safety & Environment sub-department is responsible for maintaining the legislative framework and making sure that the Permits Centre functions well. The Permits Centre provides a point of contact for all employees and students of WUR with regard to legislation and regulations as well as serving as a point of contact for various competent authorities (municipality, province). The Permits Centre keeps an overview of permits held by WUR, and therefore has insight into the risks and the permit requirements. The QHSE sub-departments are responsible for keeping the permits up to date and complying with the permit regulations.

B2.4 Communication

A Safety & Environment team site has been set up in SharePoint for the experts within Wageningen University & Research (Quality, Health & Safety and Environment column and other involved parties). The most important function of this team site is to provide digital access to all the relevant documents and to inform experts in the relevant fields. The regulation matrix for the Dutch Environmental Management Act permit for Wageningen Campus and WUR complex Lelystad is also on the team site. This matrix describes which level within the organisation is responsible for

compliance with each regulation. Employees and students of WUR are informed via the intranet about the CSR agenda and sustainability and environmental issues.

B2.5 Training

Maintaining the level of expertise is a constant point of attention within the QHSE column. In 2020 employees participated in the following training programmes, courses and symposia:

- Prevention officer;
- In-house emergency and first aid service team leader training session and refreshment training.
- In-house emergency and first-aid service training sessions, including basic and refreshment training for emergency and first-aid services, supplementary respiratory protection, and fire-extinguishing drills.
- Radiation hygiene courses.

Appendix 3: Sustainability figures

B3.1 Overall overview

Table B3-1 Overview of overall sustainability figures per square metre and per student and employee

Benchmarks	2020	+/-*	2019	2018	2017	2016
m^2 of floor surface	448,590	-1,6%	455,862	458,097	457,043	479,332
Number of students (st)	13,275	+3%	12,847	12,439	12,000	11,278
Number of employees (em)	6,860	+10%	6,385	5,809	5,545	5,481
FTE employees	6,072	+12%	5,624	5,040	4,887	4,912
Total number of students and employees (st + em)	20,135	+5%	19,232	18,248	17,545	16,759
Total number of students and employees (st + FTE)	19,347	+5%	18,471	17,479	16,887	16,190
Energy consumption	**2020**	**+/-***	**2019**	**2018**	**2017**	**2016**
Energy (GJ)	581,825	-5,6%	608,731	623,193	637,391	693,845
Electricity (kWh)	46,990,737	-5,1%	49,491,138	50,385,528	51,558,971	54,930,781
Natural gas (Nm^3)	5,020,796	-2,7%	5,159,885	5,362,499	5,477,413	6,302,302
Energy (GJ/m^2)	1.30	-4,1%	1.34	1.36	1.39	1.45
Electricity (kWh/m^2)	104.8	-3,5%	108.6	110.0	112.8	114.6
Natural gas (Nm^3/m^2)	11.2	-1,1%	11.3	11.7	12.0	13.1
Energy (GJ/st + FTE)	30.1	-9,9%	33.0	35.7	37.7	42.9
Electricity (kWh/st + FTE)	2.428.8	-9,4%	2,679.4	2,882.6	3,053.2	3,392.9
Natural gas (Nm^3/st + FTE)	259.5	-7%	279.4	306.8	324.4	389.3
ICT energy consumption	**2020**	**+/-***	**2019**	**2018**	**2017**	**2016**
Electricity (kWh)	5,750,000	+3%	5,580,000	5,420,000	5,270,000	5,320,000
Electricity (kWh/m^2)	12.8	+3%	12.2	11.8	11.5	11.1
Electricity (kWh/st + FTE)	297.2	-3%	302.1	310.1	312.1	328.6
Sustainable energy	**2020**	**+/-***	**2019**	**2018**	**2017**	**2016**
Energy generation (GJ)	709,327	-2%	665,926	677,052	663,850	603,556
Energy generation (GJ/m^2)	1.58	-1%	1.46	1.48	1.45	1.26
Energy generation (GJ/st + FTE)	36.7	-7%	36.1	38.7	39.3	37.3
Waste	**2019**	**+/-***		**2018**	**2017**	**2016**
Total waste (kg)	2,898,158	+9%	2,555,657	2,186,463	2,190,716	2,196,915
Industrial waste (kg)	2,248,879	+20%	1,874,524	1,393,294	1,538,927	1,548,002
of which residual waste	*792,590*	*-10.4%*	*884,876*	*897,256*	*1,013,504*	*1,096,954*
Paper waste (kg)	184,986	-38%	302,518	300,983	289,117	296,788
Hazardous waste (kg)	464,293	-4.5%	479,030	492,186	362,670	352,125
Total waste (kg/st + em)	143.9	+4.1%	138.4	125.1	129.7	135.7
Industrial waste (kg/st + em)	111.7	+14.6%	95.9	28.2	21.5	21.7
of which residual waste	*39.4*	*-14.4%*	*46.0*	*49.2*	*57.8*	*65.5*
Paper waste (kg/st + em)	9.2	-40.7%	16.2	79.7	91.1	95.6
Hazardous waste (kg/st + em)	23.1	-8.8%	25.9	17.2	17.1	18.3
Water	**2019**	**+/-***	**2019**	**2018**	**2017**	**2016**
Total water (m^3)	152,404	-13,3%	175,750	194,773	217,010	236,970
Mains water (m^3)	134,820	-13,6%	156,084	167,062	186,372	209,058
Well water (m^3)	17,584	-10,6%	19,666	27,711	30,638	27,912
Total water (m^3/m^2)	0.34	-11,9%	0.39	0.43	0.47	0.49
Mains water (m^3/m^2)	0.30	-12,2%	0.34	0.36	0.41	0.44
Well water (m^3/m^2)	0.04	-9,1%	0.04	0.06	0.07	0.06
Total water (m^3/st + FTE)	7.9	-17,2%	9.5	11.1	12.9	14.6
Mains water (m^3/st + FTE)	7.0	-11,6%	8.5	9.6	11.0	12.9
Well water (m^3/st + FTE)	0.9	-32,8%	1.1	1.6	1.8	1.7
Carbon footprint	**2020**	**+/-***	**2019**	**2018**	**2017**	**2016**
CO_2 emissions (kg CO_2 equivalents)	30,608	-26%	41,363	42,777	40,706	43,945
CO_2 compensation (kg CO_2 eq)	45,116	+5,7%	42,698	48,254	45,646	35,156
CO_2 emissions (kg CO_2 eq/m^2)	0.07	-24,8%	0.09	0.09	0.09	0.09
CO_2 compensation (kg CO_2 eq/m^2)	0.10	+7,4%	0.09	0.11	0.10	0.07
CO_2 emissions (kg CO_2 eq/st + FTE)	1.58	-29,4%	2.24	2.45	2.41	2.7
CO_2 compensation (kg CO_2 eq/st + FTE)	2.33	+0,9%	2.31	2.76	2.70	2.2

* Difference in 2020 compared with previous year.

B3.2 Waste

Table B3-2a Quantity and composition of waste 2020 (in kg) for each organisational component

Waste flow	AFSG	ASG	CS+	ESG	FB	PSG	SSG	WFSR	Total WUR	Third parties	Total	Processing (GRI)
Residual waste	69,018	257,124	7,726	23,573	68,191	322,715	8,363	35,880	792,590	22,111	814,701	Energy recovery
Organic waste / green waste / swill	19,886	3,956	5,013	6,442	24,120	813,230	6,303	225,207	1,104,155		1.104,155	Recycling
Construction / demolition / rubble		6,880			22,170	142,100			171,150		171,150	Recycling
Foil / plastics	6,211	4,143	861	1,299	7,180	19,940	1,007	1,683	42,324	216	42,540	Recycling
Glass	425	1,763	220	1,055	902	225	200	6,615	11,405	414	11,819	Recycling
Soil		0				2.,60			2,760		2,760	Recycling
Wood	4,535	9,240			3,050	47,760		1,500	66,085		66,085	Recycling
Manure		27,500							27,500		27,500	Recycling
Metals	3,200	10,430						7,500	21,130		21,130	Recycling
Scrap		5,080							5,080		5,080	Recycling
Rock wool						4,700			4,700		4,700	Recycling
Data					16				16		16	Recycling
Paper / cardboard	24,940	28,871	6,384	10,685	50,000	40,580	13,115	10,395	184,970	1.964	186,934	Recycling
Hazardous waste	47,560	249,275	8,240	5,731	13,239	54,442	154	85,652	464,293	142	464,435	See table B3-2b
Total	**175,775**	**604,262**	**28,444**	**48,785**	**188,868**	**1,448,452**	**29,142**	**374,432**	**2,898,158**	**24,847**	**2,923,005**	
Separation %	**61%**	**57%**	**73%**	**52%**	**64%**	**78%**	**71%**	**90%**	**73%**	**11%**	**72%**	

Table B3-2b Hazardous waste (in kg) in 2020 (WUR, including third parties), broken down by EWC code

EWC code	EWC name	Kg WUR	Kg third parties	Kg Total	Processing method (in accordance with GRI)
060105*	Dilute nitric acid	8,530		8,530	Other: ONO*
060106*	Inorganic acids	7,342		7,342	Other: ONO
060203*	Ammonia	272		272	Other: ONO
060204*/05*/200115*	Various inorganic alkalis / Kjeldahl waste	6,573		6,573	Other: ONO
060314*	Inorganic salts	128		128	Other: ONO
070104*/140603*/200113*	Low halogenated solvents	10,729		10,729	Energy recovery
080111*	Paint	34		34	Energy recovery
080409*	Glues, resins and putties	5		5	Energy recovery
090101*	Photographic developer	291		291	Recycling
090104*	Fixative	228		228	Recycling
110106*	Organic acids	6		6	Other: ONO
130204*/05*/08*/200126*	Cat II en III waste oil	4,859		4,859	Recycling
130508*/190809*	Oil \ water \ silt mixtures	39,980		39,980	Recycling
130899*	Waste containing oil	295		295	Energy recovery
140602*	Fluids with high halogenated content	4,115		4,115	Incineration
150110*	Lab glass, empty packaging (unrinsed)	7,630		7,630	Incineration
150202*	Lab waste (filters, pipettes) with chemical residues	1,819		1,819	Energy recovery
160107*	Oil filters	12		12	Recycling
160114*	Coolant	431		431	Distillation
160303*/05*	Packaged waste (rotary kiln)	15,213		15,213	Incineration
160306*	Organic powders with low halogenated content	24		24	Incineration
160504*	Spray cans	144		144	Incineration
160506*/07*	Lab chemicals (packed)	958		958	Incineration
160601*	Lead batteries	1,029		1,029	Recycling
161001*	Aqueous liquids	3,155		3,155	Incineration
170503*	Contaminated soil	805		805	Energy recovery
170605*	Waste containing asbestos	190		190	Disposal (long term storage)
180103*/180202*	Specific hospital waste / infectious waste / biological waste	154,213	50	154,263	Energy recovery
200119*	Pesticides	20,280		20,280	Incineration
200121*	Fluorescent lamps	853		853	Recycling
200123*	Fridges / freezers	181		181	Recycling
200125	Edible oils and fats	10		10	Recycling
200127*/200199	Hazardous office waste	752		752	Energy recovery
200132*	Medicines and cosmetics	44		44	Energy recovery
200133*	Batteries	668		668	Recycling
200135*	Electronics products / computers	4,744		4,744	Recycling
200136	Electronic waste	8,806	92	8,898	Recycling
200301	Industrial waste	48		48	Energy recovery
200306*	Sludge (sewage / gully / pumping station)	1,875		1,875	Wet soil remediation
Unknown	Animal waste	157,021		157,021	Other: sterilisation, then processing into meat-and-bone meal for the production of biogas/biodiesel
Unknown	Radioactive waste	1		1	Disposal (long term storage)
Totaal		**464,293**	**142**	**464,435**	

* ONO stands for detoxification, neutralisation, and draining/dewatering ('ontgiften, neutraliseren en ontwateren')

Table B3-2c Quantity of waste 2020 (in kg) per step of the Lansink Ladder (including third parties)

Waste flow	Step of the Lansink Ladder							Total
	Recycling	Energy recovery	Other: sterilisation, then processing into meat-and-bone meal for the production of biofuel	Other: detoxification, neutralisation, and draining/dewatering (ONO)	Other: Destillation / wet soil remediation	Incineration	Disposal (long term storage)	
Industrial waste	1,456,935	814,701						2.271,636
Paper waste	186,934							186,934
Hazardous waste	61,753	168,794	157,021	22,851	2,306	51,519	191	464,435
Total	**1,705,622**	**983,495**	**157,021**	**22,851**	**2,306**	**51,519**	**191**	**2,923,005**
Third parties	2,686	22,161						24,847
Totaal WUR	**1,702,936**	**961,334**	**157,021**	**22,851**	**2,306**	**51,519**	**191**	**2,898,158**
Fraction	**59%**	**33%**	**5%**	**1%**	**0%**	**2%**	**0%**	

Table B3-2d Total quantity of waste (kg) per municipality 2020[1, 2]

Location - complex	Industrial waste	Hazardous waste	Paper waste	Total
Wageningen	867,268	238,645	151,822	1,257,735
Lelystad	1,045,443	18,238	20,065	1,252,746
Bleiswijk	151,040	460	3,560	155,060
Den Helder	6,789	326	354	7,469
Drachten			175	175
Ede	56,395		2,120	58,515
Goes			200	200
Hengelo	7,012		390	7,402
IJmuiden	8,801	11,706	803	21,310
Leeuwarden	42,683	77	1,520	44,280
Lisse	5,889			5,889
Makkum		15,238		15,238
Marwijksoord	900		250	1,150
Meijel			195	195
Nagele	21,180			21,180
Oisterwijk			70	70
Randwijk	15,263		1,300	16,563
Renkum	878			878
Sterksel	8,050		2,400	10,450
Valthermond	6,178			6,178
Vredepeel	10,434	3,014	1,250	14,698
Westmaas	13,770			13,770
Yerseke	3,663	7,731	460	11,854
Total	**2,271,636**	**464,435**	**186,934**	**2,923,005**

[1] An empty cell indicates that no figures are available.

[2] The industrial waste from The Hague, Hengelo, Leeuwarden, Lisse, Marwijksoord, Sterksel, Valthermond, Vredepeel, and Westmaas locations is often not weighted. The figures have been calculated on the basis of volumes that have been disposed of and standard weights for that type.

Table B3-2d Quantity and composition of waste in 2019-2020 (in kg) for each complex under Dutch Environmental Management Act (Wet milieubeheer)

	Lelystad Complex		Wageningen Campus		Wageningen De Dreijen	
	2020	2019	2020	2019	2020	2019
Industrial waste						
Residual waste / bulky waste	144,307	124,713	408.795	528,709	12,254	9,052
Organic waste / green waste / swill	691,610	195,740	299.970	351,888	510	1,202
Construction / demolition / rubble	70,160		41.190	101,540		5,420
Foil/plastics	216		32.806	60,536	164	
Glass			10.461	13,050		
Soil		12,060				
Wood	13,280	3,260	39.515	33,590		
Manure	27,500	67,380				
Metals			10,700	3,600		
Other			16			
Paper waste						
Cup2Paper*		700		12,203		
Paper / cardboard	5,010	18,223	119,232	235,922	18,610	14,505
Hazardous waste						
Hazardous waste	5,195	28,827	205,450	192,031	95	6
Animal waste (Rendac)	6,446	128,273	26,132	24,785		
White and brown goods			6,814	6,717		
Total	**963,724**	**579,176**	**1,201,081**	**1,564,571**	**31,633**	**30,185**
Separation %	**85%**	**78%**	**66%**	**66%**	**61%**	**70%**

* As of 2019, the Cup2Paper coffee cup has been replaced by another paper coffee cup. These cups are disposed of together with the paper waste and not weighed separately.

Table B3-2f Quantity and composition of waste in 2020 (in kg) for each Wageningen Campus location

Waste flow	Actio/ Nexus	Atlas	Axis	Carus	De Bongerd	De Valk	Droeven-daal	Forum	Gaia	Helix	Hoge Born	Innova-tron
Residual waste	7,402	4,572	53,388	31,680	6,820		6,460	17,175	18,199	15,630	10,713	
Paper / cardboard	7,290	6,165	12,185	1,064		5,675		15,894		12,020	1,964	735
Organic / green / swill	2,043	4,508	12,191		2,022			10,189		7,695		
Foil / plastics	872	811	3,771	557	698			3,483	1,299	2,440		
Archive	16											
Construction / demolition / rubble				2,960	3,190			5,080				
Wood			4,160	1,100						375		
Glass		75	0	0	175			397	325	425	414	
Hazardous waste	236	9,220	31,474	126				3,072	5,320	16,086		
Animal waste (Rendac)				24,082				1,960				
Metals										3,200		
White / brown goods								1,784	411			
Total	**17,859**	**25,351**	**117,169**	**61,569**	**12,905**	**5.675**	**6,460**	**59,034**	**25,554**	**57,871**	**13,091**	**735**
Separation %	59%	82%	54%	49%	37%	100%	0%	71%	29%	73%	18%	100%

Waste flow	Leeuwen-borch	Lumen	Nergena	Orion	Radix	Radix Serre	Schouten-hoef	Theia	Vitae	Zodiac
Residual waste	8,363	4,496	19,280	7,705	48,747	115,528	14,277	940	35,880	11,000
Paper / cardboard	12,475	5,010	900	3,690	20,855	8,265	1,220	300	10,395	6,825
Organic / green / swill	6,303	6,442		8,180		20,120			225,207	3,396
Foil / plastics	1,007			1,248		15,020			1,683	1,622
Archive										
Construction / demolition / rubble						33,150	13,900			
Wood						11,700	3,050		1,500	
Glass	200	730		415	225				6,615	840
Hazardous waste	154			5,112	6,422	34,874			85,562	7,946
Animal waste (Rendac)									90	
Metals									7,500	
White / brown goods					4,619					
Total	**28,502**	**16,678**	**20,180**	**26,350**	**80,868**	**259,337**	**32,447**	**1,240**	**374,432**	**31,629**
Separation %	71%	73%	4%	71%	40%	55%	56%	24%	90%	65%

Table B3-2g Quantity and composition of waste in 2020 (in kg) for each Lelystad location

Waste flow	Edelhertweg 1	Houtribweg 39	Runderweg 2	Runderweg 4	Runderweg 6
Residual waste	57,996	79,020	4,433	70,093	11,785
Paper / cardboard	4,200	15,055			810
Organic / green / swill	691,610	560			
Foil / plastics		960			216
Construction / demolition / rubble	70,160	1,920			
Soil					
Glass					
Wood	13,280				
Manure				27,500	
Metals		10,430			
Scrap					
Rock wool					
Animal waste (Rendac)		94,045		6,446	
Hazardous waste	5,053	81,552	50		92
Total	**842,299**	**289,022**	**4,483**	**104,039**	**12,903**
Separation %	93%	73%	1%	33%	9%

Table B3-2h Quantity and composition of waste in 2020 (in kg) for other locations

Waste flow	ASG (WLR)	ASG (WMR)	ESG	FB	PSG	SSG (WECR)
Residual waste	47,061	18,270	878	17,719	69,884	
Paper / cardboard	4,310	1,617		1,220	6,360	640
Organic / green / swill				1,681	101,500	
Foil / plastics	944	60		765	4,920	
Construction / demolition / rubble	2,000			13,900	38,790	
Soil					2,760	
Glass		923				
Wood	2,660			3,050	2,100	
Manure						
Metals						
Scrap	5,080					
Rock wool					4,700	
Animal waste (Rendac)		24,998				
Hazardous waste	77	10,003			3,474	
Total	**62,132**	**55,871**	**878**	**38,335**	**234,488**	**640**
Separation %	24%	67%	0%	54%	70%	100%

Table B3-2i Quantity of waste (in kg) in 2019 and 2018, broken down according to organisational component[1, 2]

2020	Industrial waste	Paper waste	Hazardous Waste	Total	Separation %
AFSG	103,275	24,940	47,560	175,775	61%
ASG	326,116	28,871	249,275	604,262	57%
CS+	13,820	6,384	8,240	28,444	73%
ESG	32,369	10,685	5,731	48,785	52%
FB	125,629	50,000	13,239	188,868	64%
PSG	1.353,430	40,580	54,442	1,448,452	78%
SSG	15,873	13,115	154	29,142	71%
WFSR	278,385	10,395	85,652	374,432	90%
Subtotal for WUR	**2,248,879**	**184.986**	**464,293**	**2,898,158**	**73%**
Third parties	22,741	1,964	142	24,847	11%
Total	**2,271,620**	**186,950**	**464,435**	**2,923,005**	**72%**

2019	Industrial waste	Paper waste	Hazardous Waste	Total	Separation %
AFSG	168,844	52,185	51,761	272,790	60%
ASG	400,842	33,571	285,518	719,931	60%
CS+	28,251	14,142	8,920	51,313	67%
ESG	45,111	21,661	5,541	72,313	49%
FB	226,799	76,789	15,578	319,166	70%
PSG	796,637	52,834	47,276	896,747	67%
SSG	36,959	33,273	40	70,272	75%
WFSR	171,081	14,345	71,699	257,125	88%
Subtotal for WUR	**1,874,524**	**298,800**	**486.333**	**2,659,657**	**67%**
Third parties	145,468	1,834	20,428	167,730	73%
Total	**2,019,992**	**300,634**	**506,761**	**2,827,387**	**67%**

[1] In the case of multi-tenant buildings, the waste is assigned to the main tenant.
[2] Each year, PSG composts 600 tonnes of green waste from the greenhouses and garden waste on Wageningen Campus. Every year, Applied Plant Research in Lelystad co-ferments approximately 80 tonnes of green waste in its own co-fermenter. Because this creates a closed waste cycle, it is not counted as waste.

Table B3-2j Hazardous waste (in kg) in 2014-2020, broken down according to organisational component

Organisational component	2014	2015	2016	2017	2018	2019	2020
AFSG	44.610	45.222	51.820	60.504	48.674	49.937	47.560
ASG	158.932	154.690	201.792	203.189	299.770	285.323	249.275
CS+						8.920	8.240
FB	7.985	11.280	10.901	16.000	12.024	5.433	5.731
ESG	18.412	13.876	15.425	17.083	18.011	14.655	13.239
PSG	38.986	49.132	31.184	16.093	64.649	46.844	54.442
WFSR*	36.890	35.706	40.817	49.672	49.014	67.878	85.652
SSG	117	58	186	89	44	40	154
Subtotal for WUR	**305.932**	**309.964**	**352.125**	**362.630**	**492.186**	**479.030**	**464.293**
Third parties	52.503	47.390	50.622	59.525	65.559	20.428	142
Totaal	**358.435**	**357.354**	**402.747**	**422.155**	**557.745**	**499.458**	**464.435**

* Before the formation of WFSR hazardous waste of the Netherlands Food and Consumer Product Safety Authority (NVWA) was disposed of independently and listed under 'Third parties on WUR site'. As of 2019 hazardous waste of the NVWA and RIKILT is listed under WFSR.

B3.3 Explanatory notes to the CO_2 footprint

CO_2 inventory in 2020

The inventories of the CO_2 footprint and CO_2 compensation were carried out in conformity with ISO 14064-1:2006 (E), which was based on the Greenhouse Gas Protocol. The CO_2 performance ladder, version 3.1, was used as a starting point. The completeness of the data used for the CO_2 footprint and CO_2 compensation footprint is checked annually by the independent agency Royal HaskoningDHV.

The following aspects have been included in the calculation of the carbon footprint:

Scope 1: (direct emissions)	▪ Fuel consumption from heating offices, greenhouses and laboratories (natural gas); ▪ Emissions resulting from the leakage of refrigerants (F-gases); ▪ Fuel consumption of lease vehicles (diesel, petrol, LPG); ▪ Fuel consumption of WUR's own vehicle fleet (diesel, petrol, LPG); ▪ Fuel consumption of agricultural vehicles (diesel); ▪ Fuel consumption of rental cars and rented coaches (petrol); ▪ Emissions from agricultural parcels owned by WUR (nitrous oxide); ▪ Emissions from livestock (methane).
Scope 2: (indirect emissions)	▪ Emissions from electricity purchased for offices, greenhouses and laboratories; ▪ Electricity use of electric lease vehicles; ▪ Emissions from business mileage, private vehicles; ▪ Emissions from business mileage, air travel; ▪ Emissions from business travel using public transport (domestic and internationally).
Scope 3: (other indirect emissions)	▪ Emissions caused by processing of hazardous and animal waste; ▪ Emissions caused by processing of residual waste; ▪ Emissions from commuting by bus, train and public transport; ▪ Emissions from air travel by students and course participants.

The data collected over 2020 is comparable with the data collected from previous years. Nearly all energy, transport and waste data from all 26 locations in the Netherlands have been included. Supplementary notes:

- 2010 was taken as a reference year for our CO_2 footprint. This has been recalculated for revision in 2016 according to the the CO_2 performance ladder system.
- From 2015 onwards, calculations are performed with the CO_2 emission factors that were actualised in 2014 (see www.co2emissiefactoren.nl).
- Residual waste is defined as 'the total amount of waste minus animal and hazardous waste and minus paper and cardboard waste'. Emissions from the processing of old paper and cardboard waste are allocated to the purchaser of recycled paper and cardboard, which means that WUR has a score of zero for these emissions.
- WUR rents locations and buildings to third parties. This means that third parties are engaged in their individual activities and have their individual carbon footprints. For this reason, they have not been included in the WUR CO_2 footprint and CO_2 compensation footprint.

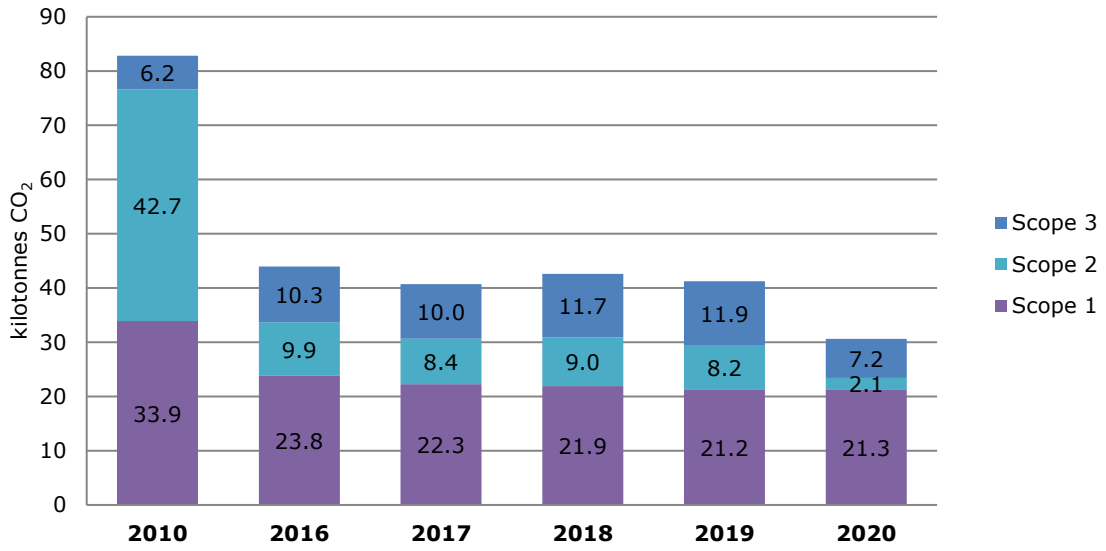


Figure B3-3a CO_2 emissions (in kilotonnes) per scope in the 2016-2020 period and reference year 2010

Table B3-3a Breakdown of greenhouse gas emissions by scope (in tonnes of CO_2) in 2016-2020 and reference year 2010

Scope	Component	Emission in CO_2-eq (in tonnes)					
		2010	2016	2017	2018	2019	2020
Scope 1	Buildings - natural gas	20,325	13,105	11,430	11,250	10,912	10,970
	Buildings - coolant	527	403	132	207	89	104
	Organisation's vehicle fleet	513	61	130	113	165	187
	Leased vehicles	511	373	320	302	323	35
	Rented cars	84	80	64	45	47	13
	Rented coaches	114	136	150	153	161	36
	Agricultural vehicles	817	929	926	1,115	982	1,337
	Agricultural land	6,355	5,285	5,735	5,100	5,100	5,602
	Livestock	4,649	3,423	3,369	3,635	3,421	3,042
	Total of scope 1	**33,894**	**23,795**	**22,256**	**21,921**	**21,198**	**21,326**
Scope 2	Buildings - electricity	33,058	0	0	0	0	0
	Vehecles - electricity	0	2	3	10	7	2
	Business travel in private cars	1,354	963	898	946	891	595
	Business air travel	8,156	8,887	7,473	7,977	7,218	1,470
	Business travel by public transport	147	47	32	32	39	17
	Total of scope 2	**42,714**	**9,899**	**8,405**	**8,966**	**8,156**	**2,084**
Scope 3	Waste processing	1,317	1,767	1,790	2,109	2,323	2,558
	Air travel students	1,269	2,021	1,597	2,037	2,102	415
	Commuting	3,623	6,463	6,658	7,555	7,466	4,226
	Total of scope 3	**6,209**	**10,251**	**10,045**	**11,700**	**11,891**	**7,199**
Total		**82,818**	**43,945**	**40,706**	**42,587**	**41,245**	**30,609**

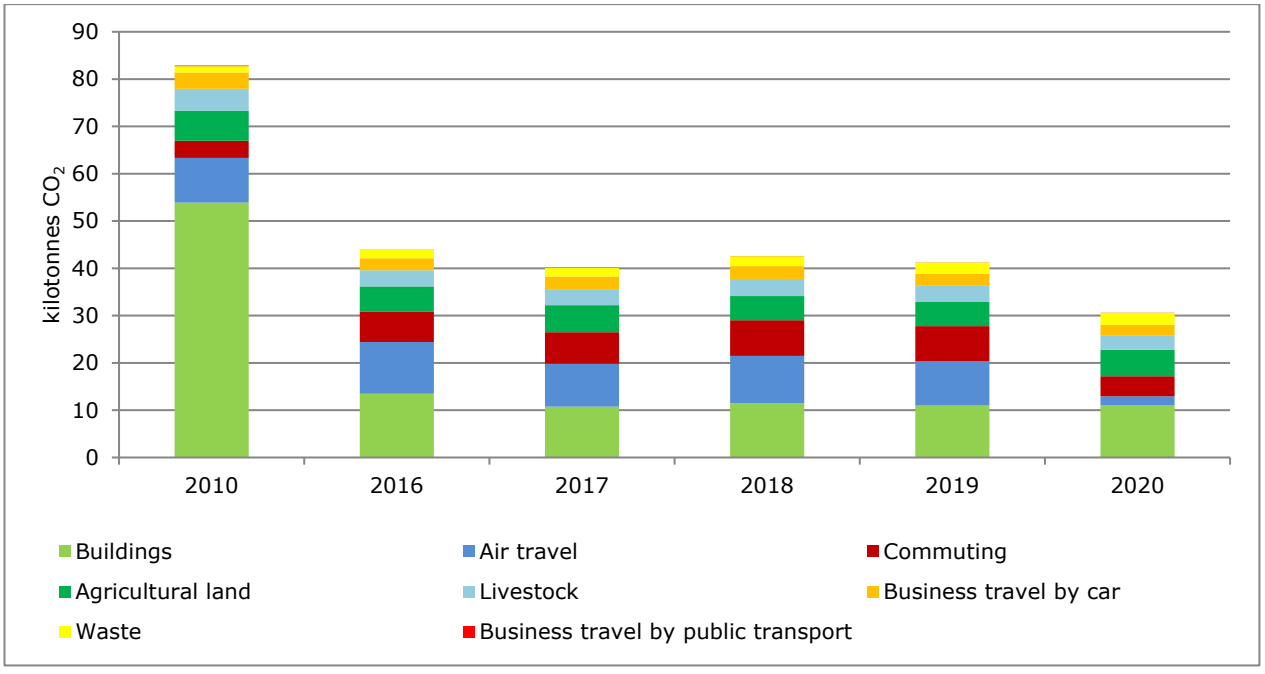


Figure B3-3b WUR's CO_2 footprint in the 2014-2020 period and reference year 2010

CO_2 compensation

WUR compensates its energy use in the following ways:

- By generating its own wind energy (over 72.3 million kWh in 2020).
- Thermal storage systems on WUR's own sites, to heat and cool various buildings on Wageningen Campus (5,7 million kWh in 2020).
- The operation of the biomass-fired combined heat and power plants 'Acrres' in Lelystad, Swine Innovation Centre (VIC) Sterksel and 'De Marke' in Hengelo.
- By generating its own solar energy (1.9 million kWh in 2020);
- The separation of the various types of waste to the maximum possible extent.

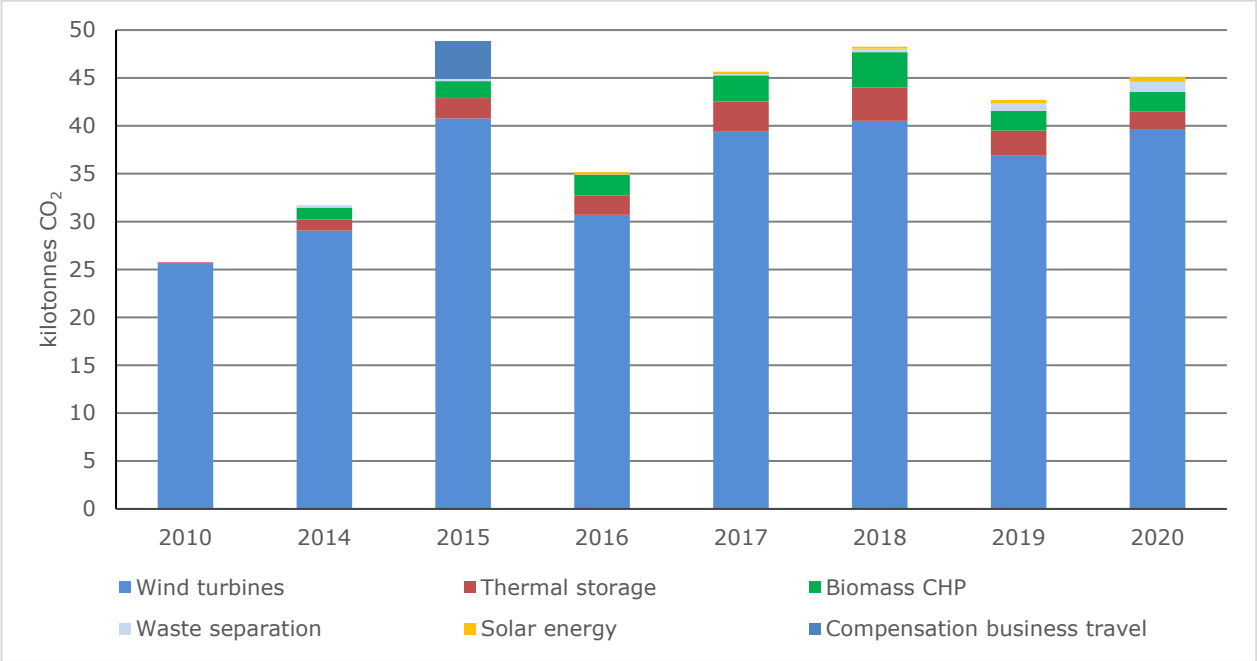
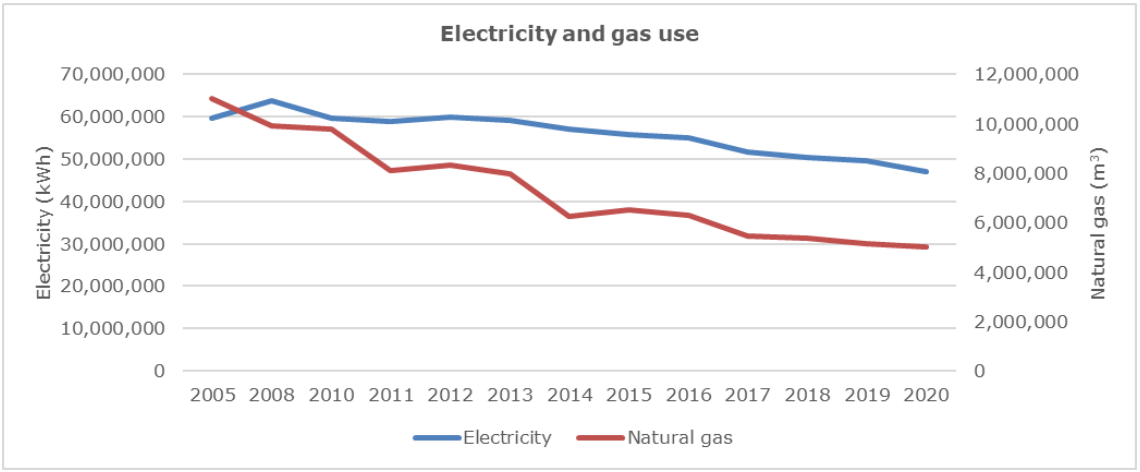
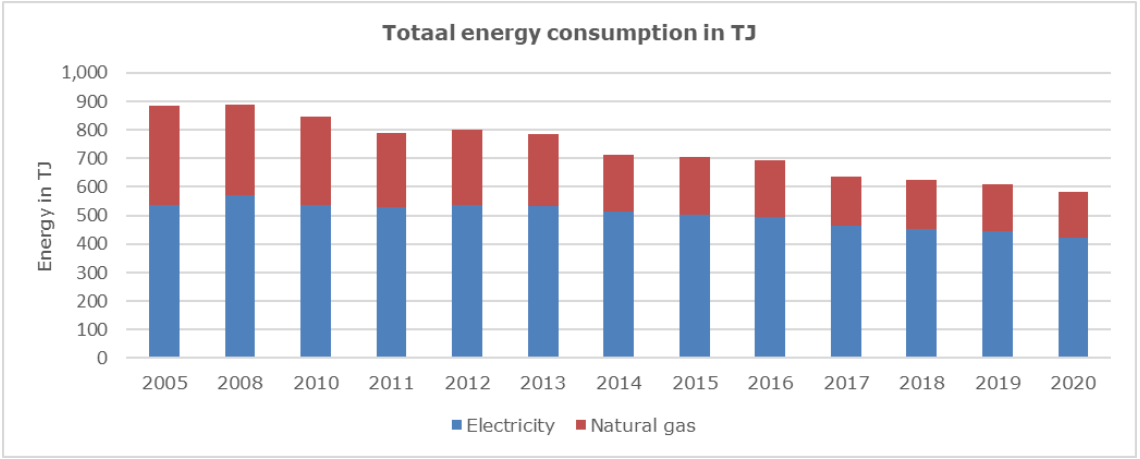


Figure B3-3c WUR's CO_2 compensation measures in the 2014-2020 period and reference year 2010

B3.4 Energy consumption

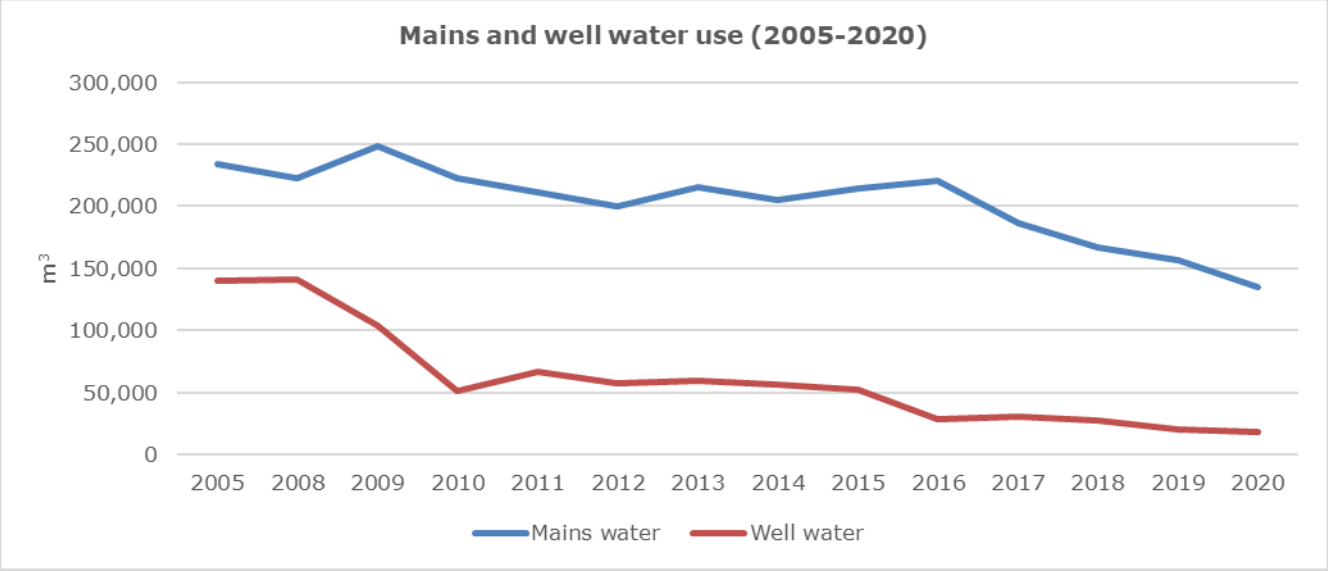
Energy consumption	Electricity (kWh)	Natural gas (Nm^3)	Energy (GJ)	Tonnes of CO_2:
2020	46,990,737	5,020,796	581,825	8,994
2019	49,491,138	5,159,885	616,354	9,211
2018	50,385,528	5,362,499	623,193	9,606
2017	51,558,971	5,477,413	637,391	9,812
2016	54,930,781	6,302,302	693,845	11,290
2015	55,660,591	6,503,170	706,771	11,650
2014	57,129,458	6,273,363	712,717	12,095
2013	59,167,202	7,864,487	781,416	14,976
2012	59,559,676	8,324,624	799,511	15,806
2011	58,986,867	8,103,014	788,522	15,400
2010	59,522,471	9,720,625	844,550	53,447
2009	62,844,056	9,133,439	855.927	53,762
2005	59,581,768	11,031,812	886,033	53,598
Energy consumption compared with 2005	**Electricity (kWh)**	**Natural gas (Nm^3)**	**Energy (GJ)**	**Tonnes of CO_2:**
2020	79%	46%	66%	17%
2019	83%	47%	69%	17%
2018	85%	49%	70%	18%
2017	87%	50%	72%	18%
2016	92%	57%	78%	21%
2015	93%	59%	80%	22%
2014	96%	57%	80%	23%
2013	99%	71%	88%	28%
2012	100%	75%	90%	29%
2011	99%	73%	89%	29%
2010	100%	88%	95%	100%
2009	105%	83%	97%	100%
2005	100%	100%	100%	100%





B3.5 Water consumption

Water use	Mains water (m^3)	Well water (m^3)	CO_2 mains water (kg)	CO_2 well water (kg)
2020	134,820	17,584	40,446	5,275
2019	156,084	19,666	46,825	5,900
2018	167,062	27,711	50,119	8,313
2017	186,372	30,638	55,539	9,130
2016	220,374	27,912	62,299	8,318
2015	213,986	52,434	63,936	15,625
2014	205,258	56,177	61,578	18,474
2013	215,055	59,402	64,517	17,821
2012	199,622	57,587	59,887	17,276
2011	211,265	66,524	63,380	19,957
2010	222,863	50,595	66,859	15,179
2009	248,477	103,720	74,543	31,116
2008	223,091	140,806	66,927	42,242
2005	234,503	139,518	70,351	41,855
Water/waste water use compared with 2005	**Mains**	**Well water (m^3)**		
2020	57%	13%		
2019	67%	14%		
2018	71%	20%		
2017	79%	22%		
2016	94%	20%		
2015	91%	38%		
2014	88%	40%		
2013	92%	43%		
2012	85%	41%		
2011	90%	48%		
2010	95%	36%		
2009	106%	74%		
2008	95%	101%		



Appendix 4: Permits

B4.1 Environmental permits

WUR consists of various organisational components at 26 locations. These components are clustered in building complexes for which environmental permits have been issued. Environmental permits have been issued for:

- Wageningen Campus and De Dreijen
- WUR complex Lelystad
- WBVR Lelystad
- Wageningen other and other locations.

The environmental permits for WUR are issued per complex by the competent authorities (including provinces and municipalities). See table B4-1. Table B4-2 gives an overview of the environmental permit regulations for the activities of the organisational components

Table B4-1 Overview environmental permits

Organisational component	Wageningen Campus	De Dreijen Wageningen	WUR complex Lelystad	WBVR Houtribweg Lelystad	Other Wageningen	Other locations
Agrotechnology & Food Sciences Group (AFSG)	X					
Animal Sciences Group (ASG)	X		X	X		X[1,2]
Environmental Sciences Group (ESG)	X					X[3]
Plant Sciences Group (PSG)	X		X			X[4]
Social Sciences Group (SSG)					X[5]	X[6]
Wageningen Food Safety Research (WFSR)	X[7]					
Facilities and Services (FB)	X	X	X		X[8]	X[9]
Corporate staff+ (CS+)[10]	X				X[11]	

1. Dairy Campus (Goutum), De Marke, VIC Sterksel
2. Wageningen Marine Research: IJmuiden, Yerseke, Den Helder (2 locations)
3. Sinderhoeve (Renkum)
4. Wageningen Plant Research Field crops (several locations)
5. De Leeuwenborch
6. Wageningen Economic Research: Den Haag and other locations
7. Since 1 June 2019, RIKILT-WUR and the Food Safety Laboratory of the NVWA have formed a new institute: Wageningen Food Safety Research (WFSR)
8. Sports Centre De Bongerd
9. Schoutenhoef (Bennekom)
10. The Corporate Staff (CS), Wageningen International (WI) and Wageningen Academy (WA) together make up CS+
11. Auditorium (De Aula and Achter de Aula), student accommodation in Wageningen (Haarweg and Stadsbrink)

Table B4-2 Environmental regulations per organisational component

Organisational component	Environmental logbook[1]	Registration of chemicals[2]	Registration of energy and water[3]	Emergency plan[4]	Maintenance, inspections, checks[5]
AFSG	X	X	X	X	X
ASG	X	X	X	X	X
ESG	X	X	X	X	X
PSG	X	X	X	X	X
SSG			X	X	X
WFSR	X	X	X	X	X
FB	X	X	X	X	X
CS+	X		X	X	X

The environmental logbook (1) contains information about maintenance, measurements, tests, inspections and environmental studies. In recording this information, the existing information sources are used as much as possible, such as the (2) Hazardous substances registration and investigation system (GROS = Gevaarlijke stoffen Registratie- en Opsporingssysteem, the (3) Energy, registration, control and information system (Erbis = Energie, registratie, beheer en informatiesysteem). Each year, the emergency plans (4) of the buildings are assessed and adapted to the current situation where required. Periodic checks and tests of the systems (5), such as fume hoods, are carried out in order to guarantee safe operation and to limit environmental emissions. Examples include waste water checks, checks for odour emissions, air emissions checks (formerly: Dutch Emission Guidelines for Air [NeR]). Inspection reports are recorded in the environmental logbook.

B4.2 Permit procedures in 2020

In the past year, the Permits Centre supervised 33 permit procedures, see Table B4-3.

Table B4-3 Overview of WUR permit procedures in 2020

Location	Project	Permits[1]
Bleiswijk Greenhouse horticulture	Realisation mezzanine floor	Construction under Wabo
Bleiswijk Greenhouse horticulture	Renovation	Construction under Wabo
Lelystad Edelhertweg 1	2 mini wind mills	Construction under Wabo
Lelystad Edelhertweg 1	6 mini wind mills	Construction under Wabo
Lelystad Edelhertweg 1	Realisation closed geothermal energy system	Notification AB
Lelystad Edelhertweg 1	Placing canopy roof	Construction under Wabo
Lelystad Edelhertweg 1	Realisation hydrogen filling installation	Environmental permit under Wabo (extension)
Lelystad Edelhertweg 1	Realisation electrolyzer	Environmental permit under Wabo (extension)
Lelystad Edelhertweg 1	Wind energy storage	Notification AB
Lelystad Edelhertweg 13	Demolition of buildings	Demolition under Wabo
Lelystad Elandweg 84	Demolition of service house	Demolition under Wabo
Lelystad Runderweg 10	Placing energy storage (external)	Notification AB
Lelystad Runderweg 6	Demolition fermenter	Demolition under Wabo
Valthermond Field crops	Extension of a shed	Construction under Wabo
Wagengingen Dreijen	Felling of trees	Felling under Wabo
Wageningen Campus Dialogue Centre	Bouw Dialogue Centre	Notification AB
Wageningen Campus Dialogue Centre	Bouw Dialogue Centre	Construction under Wabo
Wageningen Campus Leeuwenborch	Felling of trees	Felling under Wabo
Wageningen Campus site	Felling of trees	3 permits: felling under Wabo
Wageningen Campus site	General Introduction Days (AID): activities + temporary camping	APV
Wageningen Campus site	Demolition insect greenhouse	Demolition under Wabo
Wageningen University / Wageningen Research	Working with chemicals	9 permits / exemptions / notifications / registrations

[1] Wabo = Environmental Permitting (General Provisions) Act / RO = Spatial Planning Decree / APV = General Mu`nicipal by-law / AB = Activities Decree

Appendix 5: Compliance

B5.1 Incidents and complaints in 2020

WUR uses an incident monitoring system to report incidents. A total of 5 environmentally related reports were made in 2020. The incident reports are specified in the Annual Report on Working Conditions 2020 (Arbojaarverslag). The environment-related reports are explained below. In addition to these five environmental incidents, two incidents involving biological agents were reported during which no contamination of the environment occurred. These two reports are not explained here. One complaint was also reported in connection with the construction of the thermal energy storage ring on the Wageningen Campus.

Incidents

Incident 1

Location:	Zodiac car park at Vijfde Polder, Wageningen
Cause:	Leakage of hydraulic oil due to worn oil seal.
Result:	A small amount of hydraulic oil leaked onto the clinker pavement.
Action:	Cleaned up leaked oil, installed leakage tray.
Follow-up action:	Checked for contamination of the soil between the clinkers. No contamination was found.
Environmental damage:	None
Status:	Completed

Incident 2

Location:	Houtribweg 39, Lelystad
Cause:	Glycol leakage from solar water heater as a result of a ruptured pipe.
Result:	About 300 litres of glycol leaked onto the site.
Action:	Leakage stopped, contaminated site has been remediated. Analyses showed no increased concentrations of glycol in soil or water after remediation.
Follow-up action:	Incident was reported to the competent authority.
Prevention:	Pressure control of the solar water heater system.
Environmental damage:	None
Status:	Completed

Incident 3

Location:	Dairy Campus, Leeuwarden
Cause:	Excessive foaming due to added soy in biogas reactor.
Result:	Foam escaped from 2 of the 4 silos, some of which ended up in the ditch.
Action:	Silos are now partly emptied so that any foam is contained within the silos. The ditch has been dammed.
Follow-up action:	Incident was reported to the competent authority. Biogas Leeuwarden (owner of the installation) cleaned the site and the ditch.
Prevention:	Fluid level sensor in the silos
Environmental damage:	None
Status:	Completed

Incident 4

Location:	Houtribweg 39, Lelystad
Cause:	Diesel fuel contamination of the site was ascertained during excavation work. This contamination probably originated from an incident before 1990.
Result:	It was determined that about 290m^3 of soil in a layer between 0.5 and 1.2m deep was contaminated with diesel fuel.
Action:	Soil was excavated and removed by the remediator. The top layer of soil has been replaced.
Prevention:	None, incident occurred before 1990
Environmental damage:	Unknown
Status:	Completed

Incident 5

Location:	Houtribweg 39, Lelystad
Cause:	Incomplete deactivation of recombinant yeast cultures with sodium azide.
Result:	Discharge of incompletely deactivated yeast cultures (100-1000cfu/ml) during the period 31/10/2018 to 30/1/2020.
Analysis:	Concerns baker's yeast, *Saccharomyces cerevisiae*, with GRAS (generally recognized as safe) status. The official containment level of this GMO is ML-I. As a result, the environmental risk is extremely limited.
Prevention:	Procedure has been adapted and validated.
Environmental damage:	None
Status:	Completed

Complaints

Complaint 1	Turbid water in ditches as a result of the construction of the aquifer thermal energy storage (ATES) distribution loop.
Nature of complaint:	During the construction of the distribution loop on the Campus, several wells are being drilled. Flushing water generated during the drilling is, in accordance with the permit, discharged to surface water. This water contains very fine sand, silt and minerals. The quality of this flushing water is monitored as required by the permit.
Follow-up action:	The ditch water has been sampled, the ditch has been assessed by an ecologist. No abnormalities were found in the water samples and the ditch appeared healthy. Residents have been informed by letter.
Nature of complaint:	One month after the complaint about turbid water, dead fish were also reported.
Follow-up action:	The water board has been informed and has tested the water. In consultation with the water board, additional water samples were taken of the ditch water and the flushing water and analysed. No abnormalities were found in the water samples. Residents have been informed by letter.
Environmental damage:	None
Follow-up actions:	None
Prevention:	None

Colophon

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