



WAGENINGEN UR
For quality of life

Environmental Management

Wageningen UR 2013 Annual environmental report

Environmental results for Wageningen UR operational management

Facilities and Services

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Wageningen UR (Wageningen University and various research institutes) is specialised in the domain of healthy food and living environments.

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1 Introduction

Each year, Wageningen University & Research centre (Wageningen UR) issues an annual environmental report. In this way, Wageningen UR provides a picture of its activities relating to the environment and complies with the regulations set out in the various environmental permits.

Wageningen UR has buildings at various locations in the Netherlands. Environmental permits are required for the activities conducted by Wageningen UR at these locations. The permits are clustered by location/complex as far as possible. The large (and complex) environmental permits include regulations pertaining to Wageningen UR's annual environmental report. These have been formulated as follows for the Wageningen Campus complex permit:

The permit holder must issue an environmental report annually (by 1 May at the latest) for the cognisance of the competent authority. The environmental report must cover the following subjects at a minimum: energy consumption and improvements to energy efficiency, waste products (disposal and extent of reuse), waste water, air, water consumption, soil protection, transport, sustainability and noise.

When addressing the subjects referred to above, supporting data must also be included on:

- *The environmental impact caused by the institution over the previous calendar year.*
- *The environmental measures, studies and activities performed in the previous calendar year aimed at further reducing the environmental impact caused by the institution (including implementation of the WUR-profit project), as well as any changes with respect to the measures, studies and activities originally planned (possible changes with respect to the annual environmental plan).*
- *Any newly formulated or other environmental policy intentions not falling under one of those plans in the year under review and in the following year under review.*
- *Incidents, significant disruptions and/or other unusual occurrences and complaints and how they have been dealt with in the year under review.*

The annual environmental report discusses the points formulated in the Wageningen UR multi-year environmental plan 2013-2015 in more detail. This plan sets out which environment-related subjects Wageningen UR will be focusing on over the coming years. In addition to information applying to corporate Wageningen UR as a whole, the environmental report also includes relevant supplementary information per organisational component (see appendix 5). This supplementary information is also included in the various health & safety and environmental reports by the Wageningen UR organisational components.

Structure of this document

Chapter 2 sets out Wageningen UR's policy and the concomitant goals for 2013. Chapters 3, 4 and 5 discuss the results achieved in 2013 in the environmental policy areas, the permit regulations and the permit changes, respectively. Chapter 6 sets out the results in the context of the sustainability objectives of Wageningen UR.

Chapter 7 describes the organisation within Wageningen UR's Quality, Industrial Health & Safety and Environment (KAM) column and Chapter 9 describes the complaints and incidents.

2 Environmental policy and environmental objectives of Wageningen UR

The environmental policy of Wageningen UR is focused on:

1. Complying with or exceeding the current legislation and regulations.
2. The formulated sustainability ambition. In addition to the statutory framework, Wageningen UR has formulated a sustainability ambition. For example, it has chosen to be a 'pioneer' in terms of operational management. This means that Wageningen UR takes an integrated approach to sustainability in its operational management and communicates it to the outside world in an integrated manner; and that sustainability is an integral part of decision-making. This ambition fits in with Wageningen UR's mission of education, research and operational management. Logically, the environment is an important aspect of this ambition.

The following environmental objectives for Wageningen UR follow on from the policy:

1. Complying with the regulations for the environmental permits.
2. Implementing 'Show it! Interpretation of sustainability for Wageningen UR 2013 and 2014'.

1. Complying with the regulations for the environmental permits

The environmental permits for Wageningen UR are issued by the competent authorities (municipalities) per complex. The following environmental permits (permits relating to the Dutch Environmental Management Act) have been issued for Wageningen UR:

- Wageningen Campus
- De Dreijen Wageningen
- WURcomplex Lelystad
- CVI Houtribweg Lelystad

The remaining environmental permits are clustered under:

- Other Wageningen
- Other locations

Wageningen UR consists of various sciences groups and components (see figure 1).

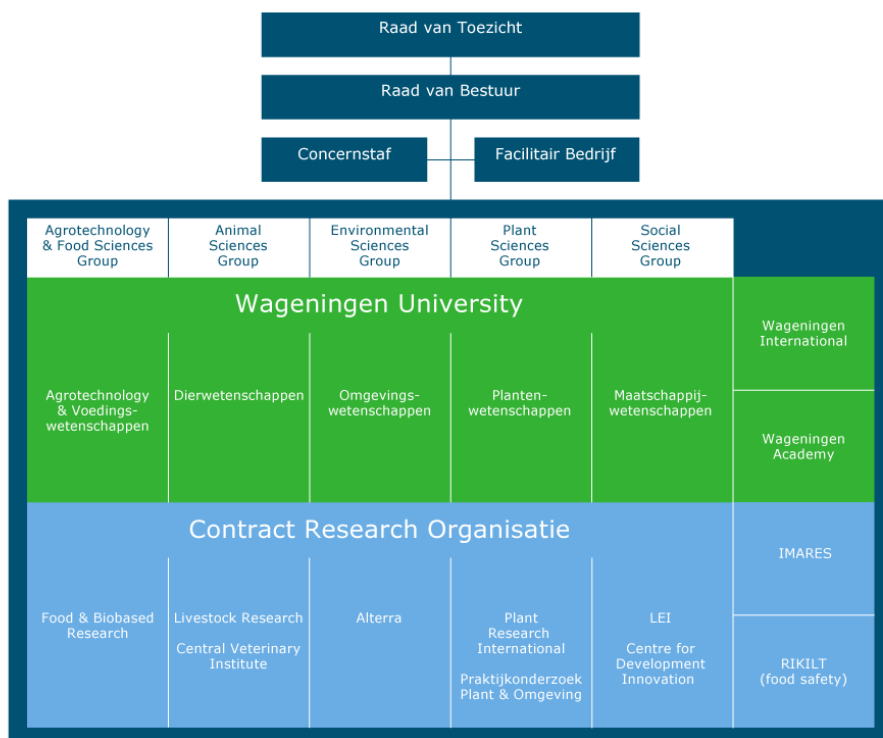


Figure 1. Wageningen UR organisation chart

Supplementary to the organisation chart, it should be noted that from 2013, Energy & Exploitation Lelystad (E&EL) is a separate organisational component within Wageningen UR (grey column).

The various organisational components are distributed across 28 different locations, and clustered in complexes for which environmental permits have been issued (see Table 1).

Table 1. Overview of the organisational components falling under the various (and complex) environmental permits as of 1 January 2013

Organisational component	Wageningen Campus	De Dreijen Wageningen	Kortenoord Wageningen ¹⁰	WURcomplex Lelystad	CVI Houtribweg Lelystad	Other Wageningen	Other locations
Agrotechnology & Food Sciences Group (AFSG)	X	X					
Animal Sciences Group (ASG)	X			X	X		X ¹
Environmental Sciences Group (ESG)	X						X ⁹
Energy & Exploitation Lelystad (E&EL)				X			
Plant Sciences Group (PSG)	X			X			X ¹
Social Sciences Group (SSG)						X ²	X ³
Institute for Marine Resources and Ecosystem Studies (IMARES)							X ⁵
RIKILT	X						
Facilities and Services (FB)	X	X		X		X ⁶	X ⁷
Corporate Staff+ (CS+) ¹¹	X	X				X ⁴ and ⁸	X ^{8, 10}

1. Test facilities
2. Leeuwenborch
3. LEI The Hague and other locations
4. Lawickse Allee 11
5. IJmuiden, Yerseke, Den Helder, Texel
6. De Bongerd Sports Centre, Belmonte Botanical Garden, Industrieweg 34 (BSW)
7. Schoutenhoef (TIB) in Bennekom
8. Main Auditorium, Achter de Aula, student accommodation in Wageningen (Haarweg and Stadsbrink), Ede (former barracks) and Bennekom (Beringhem)
9. Sinderhoeve in Renkum
10. The Kortenoord complex has been vacated by Wageningen UR and transferred to Bouwfonds. An exception is the location Haarweg 10, where student accommodation has been built.
11. The Corporate Staff (CS), Wageningen International (WI) and Wageningen Academy (WA) together make up CS+.

2. Implementing 'Show it! Interpretation of sustainability for Wageningen UR 2013 and 2014'

2013 saw the start of implementation of the objective 'Demonstrate what we are doing' and the continued integration of sustainable education, research and operational management within the 'Show it!' action plan. See <http://www.wageningenur.nl/en/About-Wageningen-UR/Sustainability/Themes/Operational-management.htm>.

In relation to sustainability, in 2013 the focus was on:

- refining the 'pioneering' ambition
- linking education, research and operational management
- raising awareness

3 Environmental policy areas

In 2013 we carried out regular work activities in relation to biological safety, external safety, environmentally hazardous substances, soil, energy, waste, water and waste water, noise, air, transport, purchasing and sustainable construction. In addition, we achieved certain results set out in the 2013-2015 environmental plan. These results are described in the paragraphs below.

3.1 Biological Safety

The Biological Safety Coordinator performed audits relating to genetically modified organisms (GMOs) and/or biological agents at the following organisational components:

- AFSG-FBR on 21 May 2013
- ASG-CVI on 4 September 2013
- AFSG-ATV on 24 April 2013
- RIKILT on 17 April 2013
- ASG-DDW on 30 May 2013
- PSG-Radix on 2 May 2013

It was agreed with the Biological Safety Officers that mutations in the GMO room numbers and/or containment levels are to be entered in a central registry on the Safety and Environment team site. The appointment documents for the Biological Safety Officer and the responsible employee are also to be placed on this team site.

The GMO waste procedure was made stricter on the basis of the audits. For instance, the outsides of the GMO waste barrels are now disinfected before transport. In relation to the practical rooms, it was seen that not all lecturers are sufficiently aware of the relevant GMO regulations. In cooperation with the relevant Biological Safety Officers, the responsible lecturers will receive additional instruction. In addition, plans have been made to develop educational tools (e-tools) to inform employees and students about GMO activities.

In connection with the animal products regulations, a number of animal by-product authorisations have been requested from the Netherlands Food and Consumer Product Safety Authority for locations where activities using animal by-products are carried out. These authorisations have been granted for certain locations. For Wageningen Campus locations, a generic authorisation has been requested for the locations VITAE (RIKILT), Gaia/Lumen/Atlas (Alterra), Zodiac, Axis and Radix. In addition, authorisations have been requested for four IMARES locations.

Dutch Nuclear Energy Act

Wageningen UR has requested a complex permit under the Dutch Nuclear Energy Act (*Kernenergiewet*, Kew) for those organisational components that use sources of radioactivity. The general radiation expert submits an annual report on the implementation of the radiation hygiene policy to the Wageningen UR Executive Board and to those Dutch government bodies that are responsible for overseeing radiation safety. The Wageningen UR Radiation Hygiene annual report contains an overview of all those issues relating to handling sources of radioactivity within Wageningen UR for which the complex permit is relevant. Under the Nuclear Energy Act complex permit, inspections were carried out at all locations. This involved checking whether radiation limits were being exceeded and whether other permit regulations were being met.

3.2 Environmental audits

During the year under review, internal audits were carried out by the Safety and Environment sub-department, and external audits were carried out by the competent authorities. The various audits are listed below.

Internal audits

The responsible KAM officials at the organisational components are responsible for compliance with the permit regulations and the associated internal audits.

External audits for Environmental Management Act permits

Enforcement inspections were carried out by the competent authorities at the various Wageningen UR locations in 2013 in relation to the Environmental Management Act permit (see Table 2).

The enforcement tasks which were previously the responsibility of the *Omgevingsdienst Flevoland en Gooi- & Vechtstreek* ('Flevoland and Gooi & Vecht Regional Environmental Service') have been

taken over by *Milieu Samenwerking Flevoland* ('Flevoland Environmental Cooperation') as of 1 January 2013. *Omgevingsdienst Flevoland en Gooi- & Vechtstreek* carried out no environmental inspections in Lelystad in 2013.

Table 2. Overview of external audits in 2013

Complex/site	Location	Date	Nature of audit
Wageningen Campus	Whole campus	21 November 2013	Completion of environmental logbook
Wageningen Campus	Sections of Campus grounds	21 November 2013	Walk-around/visual inspection
Wageningen De Drijen	Microbiology	03/10/2013	GMO and Hazardous Substance Series 15

In 2013, the competent authorities carried out seventeen inspections into whether buildings were being used in a fire-safe way. Three of these inspections pertained to new occupancy notifications, while fourteen enforcement inspections were carried out.

3.3 Flora and Fauna

The following activities relating to flora and fauna were carried out and completed in 2013:

- The Wageningen Campus flora and fauna policy was drawn up. See <http://www.wageningenur.nl/en/About-Wageningen-UR/Sustainability/Themes/Operational-management/Show/Construction.htm>. In summary, the Wageningen Campus flora and fauna policy focuses on:
 - Complying with or exceeding current relevant legislation and regulations.
 - Fulfilling the requirements and wishes of Wageningen UR, including:
 - Ensuring that education and research are the priority activities and that operational management facilitates and is secondary to these functions.
 - Ensuring that the biodiversity on Wageningen Campus strengthens education and research where possible (see www.wageningenur.nl).
 - Maintaining biodiversity by means of a well-considered maintenance approach.
- The Integrated Pest Management plan was implemented on Wageningen Campus.
- In connection with the proposed demolition of various buildings in the 2013–2016 period, a flora and fauna quick scan was carried out. A habitat suitability evaluation was also carried out in the local environment. Because this demolition work may cause negative effects and contraventions of the Dutch Flora and Fauna Act, further study was carried out on a number of buildings. On the basis of this study, it was decided whether an exemption procedure and/or mitigating measures needed to be initiated. This was the case for one building.
- A flora and fauna test was carried out on the Drijen complex in connection with major landscaping maintenance. The recommendations given on the basis of this test have been followed.

3.4 Soil

The following soil and tank clean-up activities were carried out and completed in 2013:

- Asbestos in the southern construction area: supplementary research and clean-up
- De Bongerd: supplementary research and clean-up of oil contamination
- Clean-up of the oil tank near Nexus

In addition, the following soil research and archaeological research activities were carried out at the following locations in 2013:

- Edelhertweg 1 in Lelystad, for purposes of a new car park: archaeological research
- Hyperion, for purposes of new construction: historic research
- Nexus, at the location of the demolished buildings: exploratory soil research
- 'Building with the clock' and Herbarium: exploratory soil research
- Tropical greenhouse: exploratory soil research
- Arboretum: exploratory soil research
- Achter de Aula: exploratory soil research
- Hotel de Wereld: exploratory soil research
- Cranendonck Soerendonk: exploratory soil research
- Yerseke, for purposes of new construction: exploratory soil research

3.5 Energy

Wageningen UR has complied with the requirements of the Multi-Year Agreement 3 (MJA-3) in terms of energy efficiency (see <http://www.rvo.nl/subsidies-regelingen/meerjarenafspraken-energie-efficiency> - in Dutch only).

The most important obligation arising from this Agreement is to improve energy efficiency by 30% in the period 2005-2020. This improvement of 2% per year can be achieved by reducing energy use, generating sustainable energy and/or purchasing sustainable energy generated elsewhere. We must also draw up an energy efficiency plan every four years listing all the planned and existing measures for achieving the set goals. Each year, we must send an electronic environmental report (e-MJV) describing the current situation to the Netherlands Enterprise Agency (*Rijksdienst voor Ondernemend Nederland, RVO*)

The immediate energy use in 2013 for Wageningen UR's buildings and installations is listed in Table 3, below, and in appendix 3.

Table 3. Wageningen UR energy use in 2005-2013

Wageningen UR energy use	Electricity (kWh)	Natural gas (Nm ³)	Energy (GJ)	Tonnes of CO ₂
Reference year 2005	59,581,768	11,031,812	886,033	53,598
2008	63,685,301	9,923,959	888,039	53,965
2010	59,522,471	9,720,625	844,550	53,447
2011	58,986,867	8,103,014	788,522	15,400
2012	59,785,905	8,324,624	801,547	15,809
2013	59,167,202	7,864,487	781,416	14,976
2013 corrected	58,573,091	7,529,037	765,452	14,366
compared to 2012 (uncorrected)	-1.0%	-5.5%	-2.5%	-5.3%
compared to 2012 (corrected)	-2.0%	-9.6%	-4.5%	-9.1%

Index of energy use compared to 2005	Electricity (kWh)	Natural gas (Nm ³)	Energy (GJ)	Tonnes of CO ₂
Reference year 2005	100%	100%	100%	100%
2008	107%	90%	100%	101%
2010	100%	88%	95%	100%
2011	99%	73%	89%	29%
2012	100%	75%	90%	29%
2013	97%	70%	86%	28%

In 2013 we drew up our Energy Vision for 2030. The starting point is reliable, affordable energy provision in which sustainability takes a central role. Increased sustainability is to be achieved through the following methods, listed in order of priority:

- 1) reducing energy use
- 2) generating sustainable energy
- 3) compensating CO₂ emissions

1. Reducing energy use

We reduced energy use by 4.5% in 2013 as compared to 2012. This includes the correction for the influence of climate on cooling and heating. Without correction, energy use was reduced by 2.5%. This is more than the 2% annual reduction in energy use called for by the Multi-Year Agreement 3. We achieved this reduction in spite of the 12% increase in student numbers and the delivery of the Orion teaching building.

Important contributions to the reductions in energy use include:

- The energy savings measures implemented as laid out in the 2013-2016 energy efficiency plan.
- The continued implementation of the energy incentive.
- The systematic energy care, including further improvements to the building management system regulations and the set-up of energy balances and EPC calculations for the buildings. Attention was paid to cooperation among the OHS&E column, the location manager and the technical building manager per organisational component and for the safeguards within the line.
- Improved monitoring, one result of which is that the energy use by third parties has become clearer.
- The development of an energy incentive to stimulate departments to reduce their energy use. After the chosen reference year and the implementation of the energy incentive, the departments bear budget responsibility themselves. The reference year for PSG was 2011, meaning that the incentive was in effect for PSG in 2012 and 2013. The other organisational components will follow in the coming years once a stable accommodation situation has been achieved. PSG's results include the completion of a -80 Freezer

Island (see <http://www.wageningenur.nl/en/newsarticle/Wageningen-UR-innovates-in-the-ultralow-temperature-freezing-of-research-material.htm>) and the development of the sustainable energy provision project for Campus-Noord.

2. Generating sustainable energy

In 2013 Wageningen UR generated sustainable energy on a large scale. The wind turbines in Lelystad, the combined heat and power generator using biofuel (bio CHP) and the Wageningen Campus thermal storage system generated the most sustainable energy (see Table 4).

Table 4. Sustainable energy generated by Wageningen UR in 2013

Component	2013	2012	2011	Type of energy
Lelystad wind turbines	69,472,260	65,406,465	72,518,983	kWh
Wageningen Campus thermal storage	5,457,000	3,263,010	2,559,675	kWh (thermal)
Goutum CHP	841,765	1,796,948		net kWh production
Sterksel CHP	4,731,428		594,657	net kWh production
	8387			GJ of useful heat
Lelystad CHP	811,953			net kWh production
	1231			GJ of useful heat
De Marke	56670			kWh from biogas and solar panels

3. Compensating CO₂ emissions

The reduction in energy and the purchase of 100% green wind energy (with Guarantee of Origin) reduced CO₂ emissions by 72% in comparison with the baseline year 2005.

Determining energy figures

Usage of electricity, natural gas, heat, cooling and water is measured at all relevant buildings and installations and registered in Erbis, the central energy registration, management and information system. Erbis is a professional system in use at most Dutch universities. For the connections belonging to major users (approximately 95% of total use) of electricity, natural gas and water, the certified monitoring companies deliver validated measurement data on a monthly basis. For the smaller connections, the meter readings are taken by hand on a regular basis, usually monthly. For keeping track internally of use by individual buildings and even individual users, private interim meters are used. In a number of extraordinary cases where it is not possible to install a meter, an attribution is made on the basis of the distribution from the location account.

Use by third parties and student housing has been deducted from the total use.

In order to make a better comparison between different years, we correct the calculations for climate influences. To make the corrections for cooling and heating, we use the official figures which are released annually by the Netherlands Enterprise Agency.

More information about the starting points and activities relating to energy for the 2013 calendar year is available in the 2013 annual report of Wageningen UR energy use.

3.6 Waste

Wageningen UR has three main waste flows: industrial waste, paper waste and hazardous waste. The policy for these three flows was set out in 2013 (see <http://www.wageningenur.nl/en/About-Wageningen-UR/Sustainability/Themes/Operational-management/Show/Waste.htm>).

This Wageningen UR environmental report includes the waste figures of the locations, buildings and activities, including from third parties, which have been granted permits. A summary of the data for only the waste collected from Wageningen UR can be found in the 2013 Wageningen UR annual report (see <http://www.wageningenur.nl/en/About-Wageningen-UR.htm>).

The amount of waste disposed of per complex or location is shown in appendix 2A. The total amount of waste disposed of per organisational component is shown in Table 5.

Table 5. Total amount of waste per organisational component (in kg) in 2013 and 2012

Organisational component	2013					2012			
	Hazardous waste	Industrial waste	Paper	Total	% of residual waste	Hazardous waste	Industrial waste	Paper	Total
AFSG	42,794	201,175	64,269	308,238	59%	49,039	181,946	45,036	276,021
RIKILT + NVWA	28,348	25,241	14,328	67,917	31%	24,882	30,250	15,660	70,792
ASG - Wageningen	25,721	42,224	10,393	78,338	51%	8,249	97,834	11,815	117,898
ASG - Lelystad	98,567	181,680	28,345	308,592	56%	65,372	202,050	26,740	294,162
ASG - other	1	32,068	3,706	35,775	79%	1,121	10,520	1,239	12,880
IMARES	25,659	31,289	2,076	59,024	50%	18,900	21,282	6,945	47,127
ESG	7,437	44,178	24,096	75,711	57%	12,972	98,450	40,934	152,356
PSG - Wageningen	7,085	269,266	54,956	331,307	74%	17,318	302,241	35,840	355,399
PSG - PPO	3,321	218,130	21,627	243,078	42%	18,280	300,903	15,467	334,650
SSG - Wageningen	0	39,375	20,452	59,827	65%		29,348	19,618	48,966
SSG - other	75	8,560	29,806	38,441	20%			240	240
FB/CS+				0		5,878	220,027	64,388	290,293
FB	2,091	143,734	67,069	212,894	50%				
CS+	4	24,555	28,654	53,213	45%				
Third parties on Wageningen UR site	49,729	102,400	5,982	158,111	39%	26,865	82,940	1,856	111,661
Total	290,832	1,363,875	375,759	2,030,466	54%	248,876	1,577,791	285,778	2,112,445
Difference compared to 2012	41,956	-213,916	89,981	-81,979					

Note 1: A blank field means no figures are available.

Note 2: Amount of waste from PPO at the Wageningen, Randwijk, Bleiswijk, Lisse, Valthermond, Westmaas and Vredepeel locations.

Note 3: Amount of waste from ASG experimental farms at the Lelystad, Sterksel, Hengelo (Gelderland) and Leeuwarden (Goutum) locations.

Note 4: The household waste produced by the Netherlands Food and Consumer Product Safety Authority (NVWA) is removed through RIKILT. Hazardous waste and specific industrial waste flows are disposed of independently (listed under 'Third parties on Wageningen UR site').

Note 5: 2013 was the first year in which cadaver waste from ASG was included in hazardous waste.

Note 6: Building 104 Atlas, which fell under the ESG Sciences Group in 2012, is part of the CS+ organisational component as of 2013.

Note 7: Each year, PSG composts 600 tonnes of green waste from the greenhouses and garden waste on Wageningen Campus. Because this creates a closed waste cycle, it is not counted as waste.

In recent years, Wageningen UR has focused on improving insights into the amount of waste removed. As a result, more valid information is available from nearly all field sites.

Some of the estimates have been replaced by calculations on the basis of the volume of waste removed or even by weight. In addition, the amount of slaughter and cadaver waste removed (not counting fish) has also been included. Due to the possible biological risks associated with this flow, it has been decided to categorise this waste flow as hazardous waste.

Despite the additional information (and resulting additional kg), the amount of waste decreased by 82 tonnes (4%) in 2013 as compared to 2012.

An analysis of all waste data reveals the following important changes:

- The amount of paper and cardboard collected has increased by 90 tonnes, in part as a result of improved data collection (an additional 26 tonnes) and relocations at AFSG, PSG, CS+ and FB (an additional 52 tonnes).
- Industrial waste has increased by 2013 tonnes (14%), in part because the amount of rubble and construction and demolition waste removed in 2013 decreased by 191 tonnes as compared to 2012.

- The amount of hazardous waste has increased by 42 tonnes. The amounts of hazardous waste disposed of in recent years for each organisational component are shown in appendix 2D. Appendix 2E shows the composition of the hazardous waste, broken down by EWC code. The following conclusions and explanations follow from appendices 2D and 2E:
 - Data was collected for the first time on an additional waste flow, animal waste: an additional 84 tonnes.
 - More locations, improved data collection: an additional 2 tonnes.
 - More fish waste: an additional 6 tonnes.
 - The overall decrease of 49 tonnes in Hazardous Office Waste and Specific Hospital waste (Wageningen UR: decrease of 72 tonnes, NVWA: increase of 23 tonnes) is within the limits of natural variation inherent in this waste flow.

Wageningen UR is continually increasing the proportion of waste it separates. At present, 54% of waste is removed unseparated. Table 6 lists the primary flows which are separated.

Table 6. Composition of waste from Wageningen UR (in kg) in 2013

Waste flow	Amount (kg)	% of total
Residual & bulky waste	1,100,672	54%
Old paper & cardboard	375,759	19%
Hazardous waste	182,463	9%
Animal waste	108,369	5%
Kitchen & garden waste (biodegradable)	162,910	1%
Glass	26,953	8%
Plastic	23,750	1%
Rubble/construction & demolition waste	16,880	1%
Other	32,710	2%
Total	2,030,466	

Sustainability agreements/other agreements with suppliers

Wageningen UR has reached agreements with its suppliers regarding collecting and processing waste. The agreements relating to waste collection, removal and processing are based on:

- fulfilling the current laws and regulations (Netherlands National Waste Management Plan and Dutch Environmental Management Act)
- separated waste collection by an accredited waste collector
- leading role in sustainable operational management

In addition, Wageningen UR operates from the following starting points:

- Collected waste is not dumped unless there is no other option (such as asbestos). The goal for non-hazardous waste is to dump 0%.
- Wageningen UR's garden waste and green waste is processed internally as much as possible by using the composting and anaerobic digestion installations in Wageningen and Lelystad.
- The local (municipal) climate goals are followed where this is reasonably possible.
- Proven technology is utilised.
- Electronic waste, white goods and brown goods are recycled/processed in conformity with the EU's Waste Electrical and Electronic Equipment (WEEE) Directive.
- Old paper and cardboard are collected, removed and processed as 'confidential'.
- Tendering is carried out in conformity with the Netherlands Enterprise Agency's sustainable procurement criteria.

Specific hazardous waste

By hazardous waste, we mean all waste that is hazardous to humans, animals and the environment, as defined in article 1.1, paragraph 1 of the Dutch Environmental Management Act. The hazardous waste must not find its way into the environment but must be handled in an appropriate, sustainable manner. The hazardous waste flow is varied, so there are many different types of end processors. Examples are the recovery of metals (from fixatives, batteries, lamps, electronics, etc.), recycling of glass, reuse of oil, and decontamination-neutralisation-removal of water from liquids containing acids or bases.

The most important hazardous waste flows within Wageningen UR are laboratory waste, Specific Hospital Waste, Hazardous Office Waste and animal waste material. Due to the health risks, the Specific Hospital Waste and animal waste material, approximately 72% of the total, must be processed by the specialist

companies Zavin (burning with energy recovery) and Rendac (destruction, production of biofuel). Approximately 12% of the hazardous waste produced by Wageningen UR is toxic and must be burned in a rotary drum furnace (with energy recovery). As a result of the high temperature in the furnace and the scrubbing of the flue gases, nothing is left of the toxic substances. The nearest rotary drum furnace is just across the border in Germany.

Waste contracts

Monitoring of industrial waste in 2013 was based on the parameters cost price/tonne, residual waste weight/m³, reduction in waste costs, number of transport movements and separation percentage.

In 2013 various tendering procedures were carried out, resulting in a number of new waste contracts for the period 2014-2020. The schedule of requirements and wishes devoted a great deal of attention to sustainability. In addition to sustainability requirements having been set for suppliers, agreements have also been reached regarding increasing the sustainability of waste management at Wageningen UR:

- All waste flows are weighed.
- More locations are participating, which means there is more insight into the actual amounts of waste removed.
- Waste separation during relocations has been improved.

Internal waste collection

In 2013, the European tender process was initiated for internal waste collection in the Forum and Orion buildings. In the coming years, an external party, EcoSmart, will be responsible for collecting, weighing and registering the sixteen waste flows within the two buildings and turning them over to the waste collection. EcoSmart will also offer advice on improving waste separation in the teaching buildings. The contract contains the option to expand the service provision to other buildings on Wageningen Campus.

In late 2012, the 'Waste Board' was set up, a working group consisting of the waste contract manager; local Quality, Health & Safety and Environment officials from Wageningen UR; and representatives of the waste collection company. The Waste Board collaborates to develop initiatives which are designed to reduce waste and improve waste collection and waste separation. One of the results achieved in 2013 was an increase in the number of locations where plastic is separated before collection. In just a few months, this resulted in 2.6 tonnes of mixed plastics being collected.

3.7 Water and waste water

Water use increased in 2013 as compared to 2012. This increase can be explained by the addition of the water use figures for CVI, located at Houtribweg 39 in Lelystad. In total, there was an additional 24,255 m³ of water used in 2013. Without this figure, water use decreased by more than 4% compared to 2012.

Table 7. Wageningen UR water use in 2008-2013

Water/waste water use	Mains water (m ³)	Well water (m ³)
2008	223,091	140,806
2009	248,477	103,720
2010	222,863	50,595
2011	211,265	66,524
2012	199,622	57,587
2013	215,055	59,402

Water/waste water use compared to 2005	Mains water (m ³)	Well water (m ³)
2008	95%	101%
2009	106%	74%
2010	95%	36%
2011	90%	48%
2012	85%	41%
2013	92%	43%

In December 2012 the permit for the partial revision of waste water on Wageningen Campus, under the Dutch Environmental Permitting (General Provisions) Act, was granted by the competent authorities. The new permit regulations were implemented in 2013.

3.8 Noise

Wageningen UR is working on systematically testing the acoustic consequences of current and future changes to operational management (including buildings and activities) on Wageningen Campus. The acoustics for the following projects were calculated in 2013:

- new construction of Hyperion
- replacement of the Radix condenser
- new construction of the Vitae mill
- new construction of Helix (based on the builder's estimate)
- delivery of Orion
- changes to Carus

The completed noise reports 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 noise sources. The noise measures will be a part of construction projects or activities.

3.9 Air

Regular activities are carried out in relation to the Dutch Emission Guidelines for Air (*Nederlandse emissierichtlijn Lucht*, NeR).

3.10 Transport

On the basis of the baseline measurement taken in 2012 and the results of the various Transport pilot projects in 2012 and 2013, Wageningen UR formulated policies in 2013 relating to electric transport (electric bicycles, scooters and cars) and carpooling. In addition, Wageningen UR installed twelve charging stations for electric cars on Wageningen Campus and charging stations for electric bicycles and scooters at each organisational component.

3.11 Purchasing

In its purchasing procedures, Wageningen UR follows the Netherlands Enterprise Agency's sustainable procurement criteria, its own purchasing policy, the NEVI (Dutch association for purchasing management) code of conduct, the Netherlands' General Government Terms and Conditions for Public Service Contracts (ARVODI) and the Netherlands' General Government Purchasing Conditions (ARIV) (see <http://www.wageningenur.nl/en/Expertise-Services/Facilities/Facilities-and-services/Purchasing-department.htm>). In addition, Wageningen UR makes purchases in accordance with its Statement of Intent on Corporate Social Responsibility (see http://www.wageningenur.nl/upload_mm/6/4/6/b76b59de-beb0-41f9-af25-0ece7c1414ea_20121211_Statement_of_Intent_CSR_WageningenUR.pdf).

A total of 26 purchasing procedures were completed in 2013. Fifteen purchasing procedures were subject to the Netherlands Enterprise Agency's sustainable procurement criteria. In every case, the relevant criteria were applied. From this, we can draw the conclusion that according to the criteria listed above, Wageningen UR's purchasing procedures in 2013 were 100% sustainable. More information about purchasing, suppliers and chain responsibility can be found in the Wageningen UR 2013 annual report (see <http://www.wageningenur.nl/en/About-Wageningen-UR.htm>).

3.12 Sustainable construction

In 2013 we undertook the following actions related to accommodation and achieved the following results:

- Various studies and measures relating to sustainable construction and energy efficiency.
- Systematic condition-based maintenance, taking account of the status of and future plans for the buildings (retention, sale or demolition).
- A GreenCalc score of 480 for the new Orion teaching building. The new building Helix has a GreenCalc score of 520. This is well above the target score of 215.
- A concentration of buildings on Wageningen Campus, given the massive increase in student numbers and the desire to accommodate education and research in proximity to one another. The completion of the planned educational facilities and the associated efficiency measures will enable Wageningen University to increase the number of students to 10,000.

More information about sustainable construction and accommodation can be found in the Wageningen UR 2013 annual report (see <http://www.wageningenur.nl/en/About-Wageningen-UR.htm>).

4 Permit regulations

The regulations set out in the environmental permits apply to the different activities carried out by the organisational components. The regulations which apply to the different organisational components are shown in Table 8. The results achieved in 2013 are described per regulation in the text following this table.

Table 8. Regulations which apply to the different organisational components

	Systems ¹	Environmental logbook ²	Chemical registration ³	Energy and water registration ⁴	Emergency plan ⁵	Maintenance, inspections, checks ⁶
AFSG		X	X	X	X	X
ASG	ISO 9001 ISO 17025	X	X	X	X	X
ESG	ISO 14001 ISO 9001 ISO 17025 ISO 26000	X	X	X	X	X
E&EL		X	X	X	X	X
PSG	ISO 9001	X	X	X	X	X
SSG	ISO 9001			X	X	X
IMARES	ISO 9001 ISO 17025		X	X	X	X
RIKILT	ISO 17025 ISO 17043	X	X	X	X	X
FB		X	X	X	X	X
CS+		X		X	X	X

1. The organisational components are free to decide the extent of any quality system or environmental quality system to be set up. However, organisational components without an established or certified quality system do work in accordance with the statutory guidelines. The specific culture, wishes or expectations of the organisational component's staff, local residents or clients may be decisive in choosing whether to introduce a certified quality system.
2. The environmental logbook 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 GROS (*Gevaarlijke stoffen Registratie- en Opsporingssysteem*, 'hazardous substances registration and investigation system'), Erbis and Planon.
3. The maintenance module of the Planon software package was partially implemented in 2013. The registration information for the environmentally relevant installations and facilities listed above is gradually being incorporated into this software package. This will make it possible to guarantee both the registration and the maintenance cycles.
4. Chemicals must be registered at all locations where work involving hazardous substances is performed. At most of those locations, the GROS software package is used for this purpose. In 2013 we drew up a multi-year plan to adapt GROS to the relevant regulations, some of which has already been altered. The legal framework with which chemical registration must comply has also been established.
5. Water, gas/heat and electricity use is registered in ERBIS.
6. Each year, the emergency plans of the buildings are assessed and adapted to the current situation where required. The emergency management team is involved in the exercises on location.
7. Periodic checks and tests of the systems are carried out in order to determine environmental emissions and guarantee safe operation. Examples include waste water checks, checks for odour emissions, fume cupboard checks, manure storage checks, Dutch Emission Guidelines for Air (NeR) checks and checks of building-related systems. Inspection reports are recorded in the environmental logbook.

5 Changes to permits

In the past year a number of permit procedures have been carried out (see Table 9).

Table 9. Overview of Wageningen UR permit procedures in 2013:

Location	Project	Permits ¹
Staff residence Haarweg 331	Demolition	Demolition under Wabo
Staff residence Haarweg 331	Demolition	Conversion
Helix grounds	Felling trees	Tree-felling under Wabo
Belmonte coach house	Asbestos remediation	Demolition under Wabo
Various locations	Interaction between ticks and hosts	Flora and fauna dispensation
Carus	New construction	under Dutch Nature Conservation Act
LA 13 (Zuivelhuis)	Demolition	Demolition under Wabo
Achter de Aula	Felling Catalpa	Tree-felling under Wabo
RIKILT	Felling eight trees	Tree-felling under Wabo
Sports Centre de Bongerd	Clean-up of oil contamination	notification under Dutch Uniform Remediation Standards Decree
Hyperion	Felling trees	Tree-felling under Wabo
Wageningen Campus	Felling a number of trees	Tree-felling under Wabo
Staff residence Dreijenlaan 9	Change use to rental	Vacancy permit
Staff residence Dreijenlaan 11	Change use to rental	Vacancy permit
Southern construction strip	Soil remediation	Province's agreement with Dutch Uniform Remediation Standards Decree evaluation
Yerseke, IMARES	New construction of company hall	under Dutch Nature Conservation Act
Nexus	Asbestos remediation	Demolition under Wabo
Mathematics building	Demolition	Demolition under Wabo
Tropical greenhouse	Demolition	Demolition under Wabo
Staff residence Dreijenlaan 9 and 11	Asbestos remediation	Demolition under Wabo
Bornsesteeg gas reduction station	Asbestos remediation	Demolition under Wabo
Duivendaal Administration Centre	Change of use to student housing	Vacancy permit
Sinderhoeve Renkum	Asbestos remediation	Demolition under Wabo
Sports Centre de Bongerd	Felling plane tree	Tree-felling under Wabo
Grounds behind Radix	Demolition of two greenhouses	Demolition under Wabo
Southern construction strip	Soil remediation	Final approval of Dutch Uniform Remediation Standards Decree evaluation
Lelystad, Edelhertweg 1	Car park	Construction under Wabo
Lelystad, Edelhertweg 1	Storage shed	Construction under Wabo
Lelystad, Edelhertweg 1	Moving water basin	Environmentally neutral under Wabo
Goutum (mun. of Leeuwarden), Dairy Campus	Manure refinery project (2013-2017)	Environmental and construction under Wabo
Den Helder, IMARES	Ballast water tanks	Environmental and construction under Wabo and Dutch Water Act
Yerseke, IMARES	New construction of research hall	Environmental and construction under Wabo and Dutch Water Act and Dutch Nature Conservation Act
Bleiswijk PPO	Addition of GMO to permit under Dutch Environmental Management Act	Environment under Wabo
Bleiswijk PPO	AquaReuse	Transfer of permit to Higher Water Board
Wageningen Campus Helix	New construction	Environmental and construction under Wabo
Wageningen Campus	Modifying drainage canals	Dutch Water Act
Wageningen Campus Helix	Modifying new construction	Modifying construction under Wabo
Wageningen Campus	Modifying permit holder	All relevant permits
Wageningen Campus Axis	Plastic study	Environment under Wabo
Wageningen Campus Hyperon	New construction of data centre	Construction under Wabo
Wageningen Campus	Partial withdrawal	Environment under Wabo
Wageningen Campus	Partial revision of noise	Environment under Wabo
DLO	Use of chemicals	Activity permit under Dutch Abuse of Chemical Substances (Prevention) Act
Wageningen University	Use of chemicals	Activity permit under Dutch Abuse of Chemical Substances (Prevention) Act
Wageningen University	Activity permit under Dutch Abuse of Chemical Substances (Prevention) Act	Dutch Abuse of Chemical Substances (Prevention) Act
Wageningen Campus Events site	Event	General municipal by-laws
Nexus	Fire-safe use of building	Occupancy notification
InBetween	Fire-safe use of building	Occupancy notification
Orion	Fire-safe use of building	Occupancy notification
Wageningen Campus Events site	2013 Dutch General Inspection Service	Event permit

¹ All procedures are complete with the exception of the Mathematics building, the tropical greenhouse and the partial revision of sound for Wageningen Campus.

Note 1: Wabo: Dutch Environmental Permitting (General Provisions) Act

In addition, the following activities were carried out at the complex level:

Lelystad WURcomplex

- Exploring revision of environmental permit for WURcomplex Lelystad, including discharge permit.

Other Lelystad

- Revision to the environmental Wabo permit for CVI Houtribweg 39.

Other Netherlands

- Request for permit for new construction at Dairy Campus in Goutum.
- Request for exemption from Dutch Livestock Farming and Housing (Ammonia Emissions) Decree for multiple ASG locations.

6 Sustainability

6.1 'Show It! Interpretation of sustainability for Wageningen UR 2013 and 2014'

The year 2013 was the first year of implementation of the 'Show It! Interpretation of sustainability for Wageningen UR 2013 and 2014' action plan. The following results were achieved:

- Further development and refining of the 'pioneering' ambition for operational management formulated within the areas 'construction and energy,' 'purchasing,' 'mobility,' 'catering,' 'waste,' 'education and research' and 'sustainable employee' (see <http://www.wageningenur.nl/en/About-Wageningen-UR/Sustainability/Themes/Operational-management.htm> and Table 10).

Table 10. Summary of results achieved in 2013 related to the sustainability activities formulated in relation to sustainable operational management with the ambition of taking a leading role

Activity domain	Activities formulated in the period 2010-2012	Status 2013*	Newly formulated activities in 2010-2012	Status 2013*
Catering	Achieving sustainable catering		Investigating local catering	
	Introducing compostable drinking cups		Reducing food waste	
	Food waste		Optimising transport	
	Reducing energy in catering		Implementing use of biodegradable cups	
	Increasing knowledge level of catering staff		Investigating sustainable products for vending machines	
	Achieving knowledge transfer within catering			
Waste	Setting up management information system for waste production by suppliers			
	Optimising collection			
	Investigating products for compost and biogas from organic waste			
Education and research	AISHE tool			
	Facilitating pioneers			
Sustainable employee	Facilitating the 'new form of working'		Stimulating sustainable behaviour in employees	
	Encouraging bicycle use		Stimulating sustainable deployment with My Balance	
	Recording sustainable behaviour in performance and development interview interviews		Including social paragraph in CSR	
	Pointing out model behaviour by management		Implementing digital payslip	
Construction and energy	Setting up 2013-2016 Energy Efficiency Plan		Investigating energy conservation on Campus-Noord	
	Implementing energy management		Participating in Zonnestroom solar energy project	
	Investigating LED lighting		Setting up a thermal storage system framework plan	
	Investigating electricity from plants		Setting up maintenance and renovation checklist	
	Investigating sustainability of Campus to 2020		Setting up sustainable annual and multi-year maintenance planning	
	Investigating Organic Village		Refining 'pioneering' in terms of accommodation	
Purchasing	Establishing sustainability table		Setting up panel	
	Taking baseline measurement and monitoring		Purchasing locally	
	Investigating sustainability of purchasing department		Refining the Netherlands Enterprise Agency's sustainable procurement criteria	
	Safeguarding sustainable procurement policy			
Mobility	Participating in Mobility covenant		Stimulating use of electric bicycles and scooters	
	Promoting use of rail transport		Stimulating green behaviour in guests: transport to and from Schiphol	
	Carpooling for journeys to work		Promoting travel by public transport and bicycle	
	Stimulating videoconferencing		Completing a high-quality public transport line and bicycle dispensers on Wageningen Campus	
			Investigating sustainable air travel	

* a black box means that the activity is complete or guaranteed within the organisation; a grey box means that the activity is in progress/under observation

- The combination of education, research and operational management by:
 - Green Office Wageningen (see <http://greenofficewageningen.nl/>)
 - setting up the integrated 2013 annual report, based on the internationally recognised Global Reporting Initiative (GRI) guidelines (see <http://www.wageningenur.nl/en/About-Wageningen-UR.htm>)
 - expanding sustainability to CSR
- The creation of awareness of sustainability by:
 - presenting the superhero 'the Green Man'. The Green Man has investigated how sustainable the General Introduction Days were, how sustainable Wageningen UR's operational management is and how sustainable incoming students are; and he has also reported on Wageningen UR's Sustainability Day. Films and photos are available at <http://www.wageningenur.nl/en/show/The-Green-Man-1.htm>.
 - having the Wageningen UR's CO₂ footprint and CO₂ compensation footprint drawn up by an independent party (see below in this chapter).
 - participating in benchmarking processes. Wageningen UR won first place in the 'SustainaBul' benchmark, a nationwide sustainability ranking list for research universities and universities of applied sciences, carried out by students. We also received first place among universities and research institutes in the Transparency Benchmark, a nationwide list of 500 major organisations, ranked in the order of their transparency regarding their own CSR, put together by the Dutch Ministry of Economic Affairs (see <http://transparantiebenchmark.nl/en>).
 - continuing to investigate the Statement of Intent on Corporate Social Responsibility (see <http://www.wageningenur.nl/en/About-Wageningen-UR/Corporate-governance.htm>).

6.2 CO₂ footprint and CO₂ compensation footprint

The CO₂ footprint and the CO₂ compensation footprint give Wageningen UR insight into a number of factors, including the direct and indirect emissions of hazardous gases, coolant leakages, livestock, land use and the environmental consequences of transport. These footprints have alerted Wageningen UR to the size of its CO₂ emissions and what it can do to reduce and compensate for them.

The CO₂ footprint and CO₂ compensation footprint have been established by the independent agency Royal Haskoning DHV. The evaluation was carried out in conformity with ISO 14064-1:2006 (E), 'Quantification and reporting of greenhouse gas emissions and removals' and the Greenhouse Gas Protocol. The analyses were conducted in accordance with the CO₂ performance ladder, version 2.1.

The following components were used:

Scope 1

- Fuel consumption of lease vehicles (diesel, petrol, LPG).
- Fuel consumption of Wageningen UR's own vehicle fleet (diesel, petrol, LPG).
- Fuel consumption of rental cars.
- Fuel consumption from the heating of offices, greenhouses and laboratories (natural gas).
- Emissions from agricultural land owned by Wageningen UR (nitrous oxide emissions).
- Emissions from livestock (methane).
- Emissions caused by the leakage of coolants (F gases).

Scope 2

- Indirect emissions from electricity purchased for offices, greenhouses and laboratories.
- Fuel use of electric lease vehicles.
- Emissions from kilometres driven on business using private vehicles.
- Emissions from kilometres flown on business.

Scope 3

- Emissions caused by processing of hazardous and animal waste.
- Emissions caused by processing of paper waste.
- Emissions from journeys to work by bus, train and metro.
- Indirect emissions from business travel using public transport (within the Netherlands and internationally).

The data collected for 2013 is more extensive than in previous years. For instance, in 2013 nearly all energy and waste data from all 28 locations in the Netherlands has been included. In addition, unlike in previous years, the data for 'Fuel consumption of rental cars' and 'Emissions caused by processing of hazardous and animal waste' have been included. Furthermore, residual waste is defined as follows: the total amount of

waste less animal and hazardous waste and less paper and cardboard waste. Emissions from the processing of old paper and cardboard waste are allocated to the purchaser of recycled paper and cardboard and therefore Wageningen UR has a score of zero for these emissions.

Wageningen UR rents locations and buildings to third parties. These third parties carry out their own activities and therefore have their own CO₂ footprints. For this reason, they have not been included in the Wageningen UR CO₂ footprint and CO₂ compensation footprint.

The year 2010 was the reference year for the CO₂ footprint. The results of the CO₂ footprint are shown in the table below.

Table 11. The Wageningen UR CO₂ footprint in 2010-2013

Year	CO ₂ emissions in kilotonnes
Reference year 2010	73.2
2011	41.6
2012	41.7
2013	47.1

The CO₂ emissions in 2013 have increased by 36% in comparison to the reference year of 2010. In addition, the CO₂ footprint has increased by 15% as compared to the CO₂ footprints in 2011 and 2012.

In order to explain these differences, the CO₂ emissions per scope in the years 2010-2013 have been detailed in Figure 2.

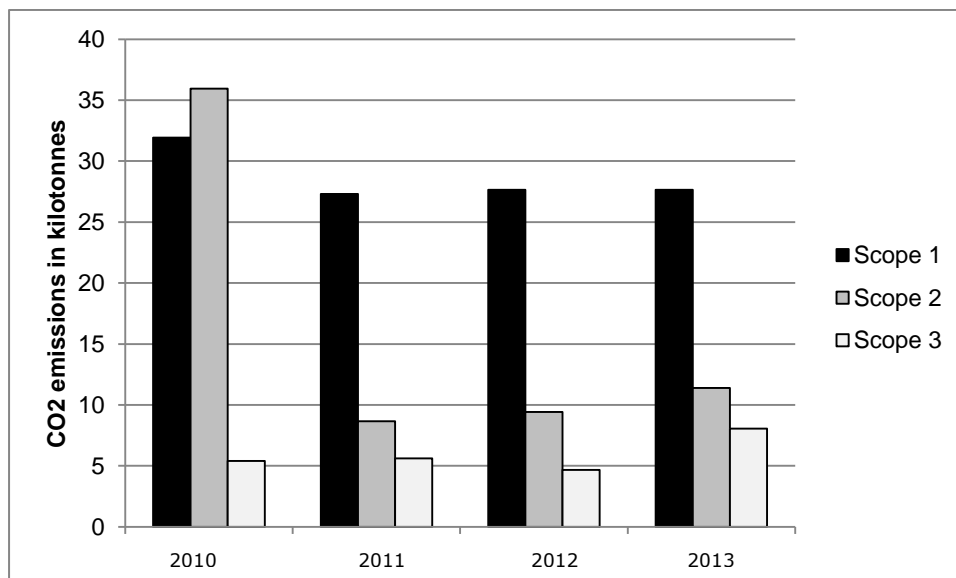


Figure 2. CO₂ emissions in tonnes per scope in 2010-2013

Figure 2 shows that the CO₂ emissions for scope 1 have decreased by four kilotonnes in comparison to 2010. This decrease is the result of decreased heating in offices, greenhouses and laboratories. The use of natural gas also significantly decreased in 2013 (see also the paragraph on energy in this annual environmental report). However, because of the addition of fuel use by rental cars and the other conversion factors used for livestock, the CO₂ emissions in 2013 have not decreased compared to 2011 and 2012.

The CO₂ emissions for scope 2 were significantly reduced in 2011 as compared to 2010 by changing to green energy with a quality mark from Stichting Milieukeur, the Dutch Eco-label Foundation. The small increase in scope 2 in 2013 as compared to 2012 can be explained by the fact that business travel by aeroplane increased by 3 kilotonnes. Despite the reduction in waste (see Chapter 3), the CO₂ emissions in scope 3 increased by 3 kilotonnes in 2013 because of the conversion factors used for the processing of hazardous and animal waste.

The sources contributing the most to greenhouse gas emissions are the buildings (natural gas), the kilometres flown (jet fuel), commuter traffic (petrol) and agricultural land (nitrous oxide).

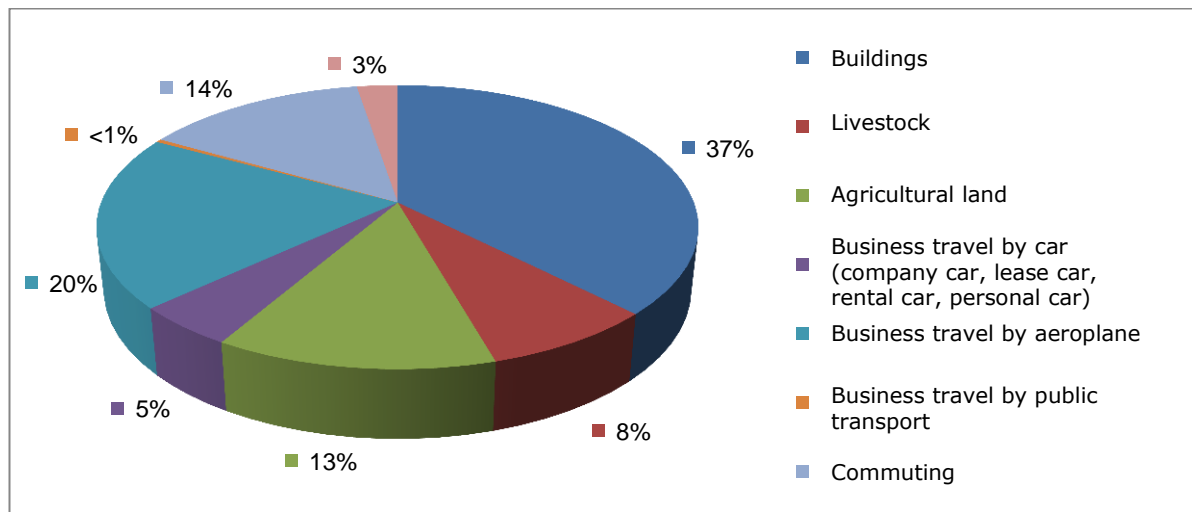


Figure 3. Distribution of CO₂ emissions in operational management, 2013

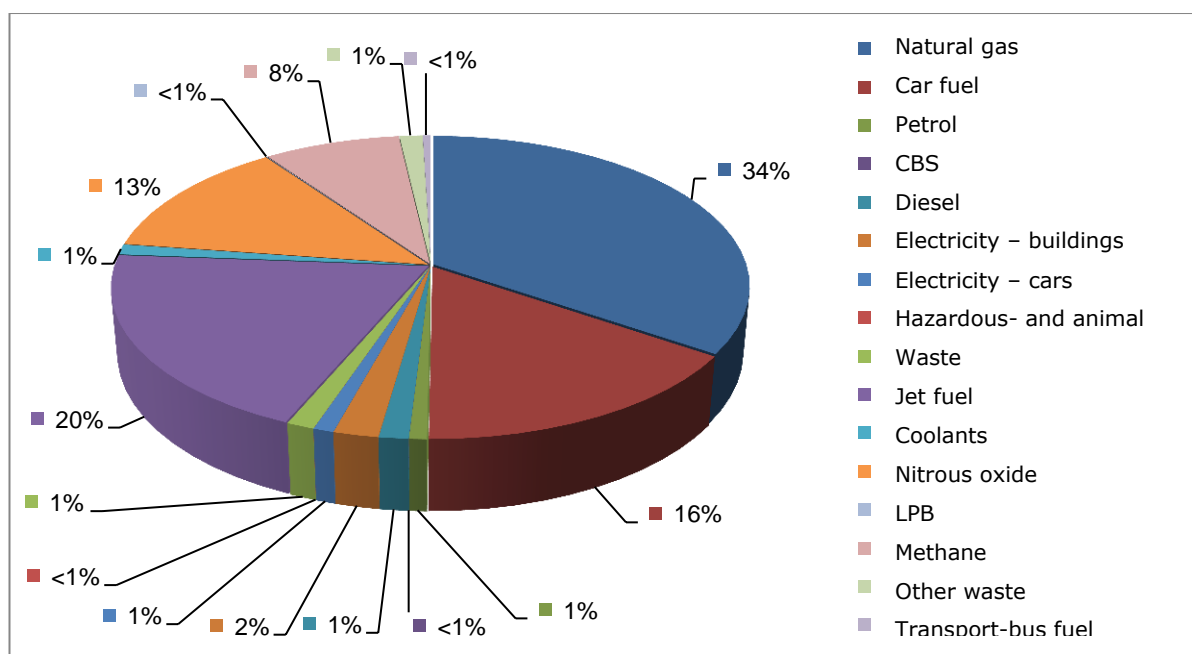


Figure 4. Distribution of CO₂ emissions across the various emissions sources, 2013

As well as these results at the Corporate Wageningen UR level, separate CO₂ footprints have been evaluated for the individual organisational components. The Quality, Health & Safety and Environment sub-department of each organisational component is to define areas of focus and take measures, in cooperation with the staff of that organisational component, in order to further reduce CO₂ emissions.

Wageningen UR compensates its energy use in the following ways:

- By generating wind energy (more than 69 million kWh and two thermal storage systems on the grounds [in the Forum, Orion and Technotron buildings]).
- With the biomass CHP system 'Accres' in Lelystad.
- With the biomass CHP system 'Goutum'.
- With the biomass CHP system 'Techum'.
- With the biomass CHP system 'VIC Sterkel'.
- By compensating CO₂ emissions from business travel by aeroplane through the Climate Neutral Group.

The total CO₂ compensation footprint in 2013 was 36.6 kilotonnes of CO₂ (see Figure 5). This is a 41% increase in compensation as compared to the figures for the reference year 2010. This difference can be explained by improved insight into the data for CHP, thermal storage and the compensation of business travel by aeroplane, as well as by the use of a different conversion factor and the compensation of the greater number of kilometres flown on business travel.

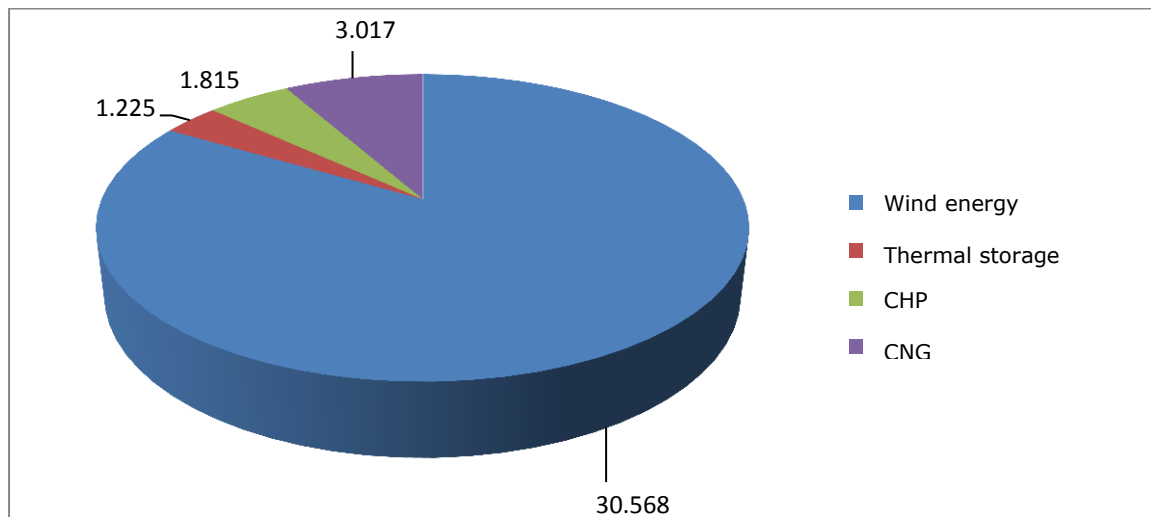


Figure 5. Results of Wageningen UR's compensation measures in kilotonnes, 2013

The difference between the CO₂ footprint and the CO₂ compensation footprint is illustrated in Figure 6 below.

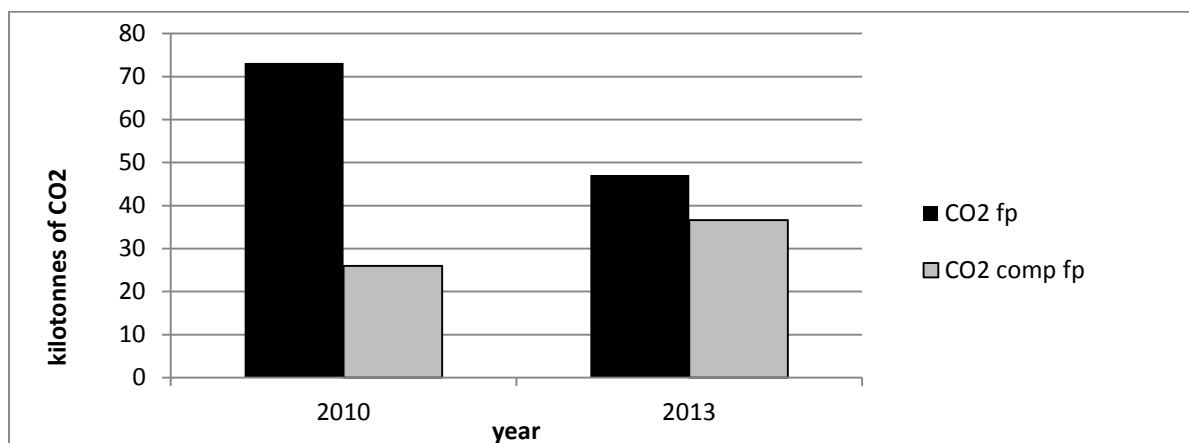


Figure 6. CO₂ footprint and CO₂ compensation footprint in the 2010 reference year and in 2013

In 2013, CO₂ emissions were reduced and CO₂ compensation was increased in comparison to the reference year. In 2010, 36% of the CO₂ emissions were compensated, while in 2013, 78% of the CO₂ emissions were compensated. What this means is that in 2013, Wageningen UR was 78% climate neutral.

6.3 Overview of Wageningen UR overall sustainability figures

An overview of the quantitative sustainability figures is presented in Table 12.

Table 12. Overview of Wageningen UR overall sustainability figures

Component/topic	Target	Achieved in 2013
CO ₂ footprint	Reduction compared to reference year 2010	47.1 kilotonnes (reduction of 36%)
CO ₂ compensation footprint	Increase compared to reference year 2010	36.6 kilotonnes (increase of 41%)
Energy	2% reduction per year Purchase of sustainable energy Production of sustainable energy	4.5% reduction, including climate correction 100% purchasing of wind energy with Stichting Milieukeur quality mark 69 million kWh
Water	Reduction in water use compared to 2012	7% increase
Waste	Reduction in waste produced compared to 2012	6.4% reduction
Construction	GreenCalc standard 215	New teaching building Orion 480 Construction of new research building Helix 520
Purchasing	50% sustainable purchasing	100% sustainable purchasing

The operational management at Wageningen University (WU) and the DLO Foundation (DLO) are intertwined with one another. This means that it is difficult to make a difference between the operational management at WU and the operational management at DLO regarding the products and services. Therefore, the operational management for Wageningen UR as a whole is reported. In order to compare the sustainability figures of Wageningen UR with those of other universities, the quantitative data has been divided into data per student, per employee and per square metre (see Table 13).

Table 13 shows that in 2013, Wageningen UR had 3% less floor space but 12% more students. This resulted in a more intense use of buildings in 2013. The differences between 2013 and previous years are explained in Chapter 3.

Wageningen UR also specifically monitors its energy use for IT. In 2013 the data centres Theia and Computechtion used a total of 97431 kWh. In addition, the buildings' energy balances and monitoring data reveal that the buildings used 3.75 million kWh for IT. Wageningen UR used a total of 5.8 million kWh of electricity for IT. This works out to 403 kWh per student or employee and 12 kWh per square metre. Wageningen UR's energy use for ICT is nearly 10% of its total energy use. This is below the 15% average within the higher education sector.

Finally, the CO₂ footprint per student and employee is 0.1 tonne of CO₂ and the CO₂ footprint per square metres is 3.3 tonnes of CO₂.

Table 13. Overview of overall sustainability figures per m² and per student and employee

Benchmarks	2013*	2012	2011
m ² of floor surface	481,484 (-3%)	495,857	474,020
Number of students	9248 (+12%)	8248	7839
FTE employees	5143 (-2%)	5248	5278
Total number of students and FTE employees	14,391 (+7%)	13,496	13117
Quantitative energy data	2013	2012	2011
Energy (GJ)	781,416 (-3%)	801,547	788,522
Electricity (kWh)	59,167,202 (-1%)	59,785,905	58,986,867
Natural gas (Nm ³)	7,864,487 (-6%)	8,324,624	8,103,014
Energy (GJ/m ²)	1.6 (0%)	1.6	1.7
Electricity (kWh/m ²)	122.9 (+2%)	120.6	124.4
Natural gas (Nm ³ /m ²)	16.3 (-3%)	16.8	17.1
Energy (GJ/FTE)	54.3 (-9%)	59.4	60.1
Electricity (kWh)	4111.4 (-7%)	4429.9	4497.0
Natural gas (Nm ³ /FTE)	546.5 (-11%)	616.8	617.7

Quantitative waste data	2013	2012	2011
Total waste (kg)	1,872,355 (-6%)	2,000,784	2,016,659
Hazardous waste (kg)	241,103 (+9%)	222,011	186,948
Industrial waste (kg)	1,261,475 (-16%)	1,494,851	1,375,298
Paper (kg)	369,777 (+30%)	283,922	454,413
Waste (kg/m ²)	3.9 (-4%)	4.0	4.3
Hazardous waste (kg/m ²)	0.5 (+12%)	0.4	0.4
Industrial waste (kg/m ²)	2.6 (-13%)	3.0	2.9
Paper (kg/m ²)	0.8 (+34%)	0.6	1.0
Waste (kg/FTE)	130.1 (-12%)	148.3	153.7
Hazardous waste (kg/FTE)	16.8 (+2%)	16.5	14.3
Industrial waste (kg/FTE)	87.7 (-21%)	110.8	104.8
Paper (kg/FTE)	25.7 (+22%)	21.0	34.6
Quantitative water data	2013	2012	2011
Total water (m ³)	274,457 (+7%)	257,209	277,789
Mains water (m ³)	215,055 (+8%)	199,622	211,265
Well water (m ³)	59,402 (+3%)	57,587	66,524
Total water (m ³ /m ²)	0.6 (+10%)	0.5	0.6
Mains water (m ³ /m ²)	0.4 (+11%)	0.4	0.4
Well water (m ³ /m ²)	0.1 (+6%)	0.1	0.1
Total water (m ³ /FTE)	19.1 (0%)	19.1	21.2
Mains water (m ³ /FTE)	14.9 (+1%)	14.8	16.1
Well water (m ³ /FTE)	4.1 (-3%)	4.3	5.1

* Difference between 2013 and 2012 is given in brackets

7 Organisation

Wageningen UR aims to comply with or exceed the current legislation and regulations. In addition, in 2013 Wageningen UR took further steps relating to compliance with legislation and regulations.

Various internal and external audits were carried out in 2013 for purposes of ISO certification as well as for energy management, biological safety and radiation. In this way, Wageningen UR is making the CHECK phase of the Deming cycle increasingly concrete, and Wageningen UR gains more insight into compliance with legislation and regulation for the individual organisational components and for Wageningen UR as a whole.

The Deming cycle deals with process management. The aim is to achieve the optimum result by managing the process. W. Edwards Deming posited that every process must undergo a process management cycle. The Deming cycle is based on his collaboration with Walter A. Shewhart, who is seen as one of the founders of Total Quality Management. W. Edwards Deming (1900-1993) is known for the Plan-Do-Check-Act cycle, known as the PDCA cycle or Deming cycle.

- **Plan** The planning phase. Consider which products or services will be delivered, and how. The objectives for the process are defined in SMART terms. It must be clear what the intended results of the process will be. In addition, the limiting conditions (availability of resources) and the interests of those involved are considered.
- **Do** Carry out what has been devised in the Plan (working together carefully) and measure the results.
- **Check** Regularly ascertain whether what has been devised under 'Plan' has actually taken place under 'Do'. If this is not the case, investigate why this is so (for instance, the goals are too ambitious, there is not enough staff or the wrong kind of staff, there are more clients and at different times than expected, the clients' wishes have changed, etc.). The results achieved are compared with the objectives.
- **Act** Do something with the observations from 'Check'. It is not useful to only note that things have not gone as expected unless you also establish how that can be prevented in the future. This means that changes need to be made to 'Plan' (or to the organisation). Actions are implemented in order to improve the results.

Legal entities

The objectives and activities of the separate legal entities in the Wageningen UR alliance (Wageningen University and the DLO Foundation) are coordinated substantively at strategic and tactical levels. Organisational components work together on operational management.

The Safety & Environment sub-department head is designated to act as the authorised permit holder on behalf of Wageningen University and the DLO Foundation and to perform legal and other acts with regard to those institutions' responsibility for:

- the Dutch Environmental Permitting (General Provisions) Act
- the Dutch Water Act
- the Netherlands' Chemical Weapons Convention (Implementation) Act
- the Dutch Nuclear Energy Act
- the Dutch Excise Duty Act
- the Dutch Opium Act
- the Dutch Abuse of Chemical Substances (Prevention) Act
- the Dutch Genetically Modified Organisms Decree

Permits Centre

Since October 2010, the Permits Centre has provided a point of contact for all employees and students of Wageningen UR with regard to legislation and regulations as well as serving as a point of contact for various competent authorities. Setting up the Permits Centre has provided clarity regarding all the permits which Wageningen UR holds. As a result, Wageningen UR now has insight into the risks and permit regulations at a corporate level.

Quality, Health & Safety and Environment column (KAM)

The objective of the Quality, Health & Safety and Environment column is:

'To promote a safe and environmentally-friendly work/study environment and contribute to compliance with the health & safety and environmental regulations, to the quality of work and organisation and hence to a safe, environmentally safe and healthy working environment within the institution.'

The responsibilities within the Quality, Health & Safety and Environment column are assigned according to the mandates of Wageningen UR. This means that at a corporate level, Safety and Environment is responsible for policy and the Quality, Health & Safety and Environment sub-departments of the organisational components are responsible for implementation. In terms of the Deming cycle, this means that the Quality, Health & Safety and Environment sub-departments are responsible for the 'DO' activity and Safety and Environment for the 'PLAN,' 'CHECK,' and 'ACT' activities. The Quality, Health & Safety and Environment sub-departments and Safety and Environment work together closely.

With regard to environmental and other permits, in concrete terms this means that Safety and Environment is responsible for the proper functioning of the Permits Centre, including updating the statutory frameworks. The Quality, Health & Safety and Environment sub-departments are responsible for keeping the permits up to date and complying with the permit regulations. In this, the organisational components are dependent on each other and need to be able to trust in one another because environmental permits are issued not per organisational component but at the complex level.

Communication

A Safety and Environment team site has been set up in SharePoint for the experts within Wageningen UR (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 WURcomplex 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 Wageningen UR are informed about environmental matters by means of intranet, the Permits Centre and the Sustainability pathway.

Training programmes

Within the Quality, Health & Safety and Environment column, the employees have participated in the following training programmes:

- Energy adviser register training programme
- Practical laser safety (Laser Safety Officer) training programme
- Pest orientation training course
- Storage of hazardous substances training course
- Noise pollution training course
- Head of in-house emergency and first aid service training course
- Biological Safety Officer training course
- ISO 26000 self-assessment and communication master class
- Personal protective equipment policy master class

8 Complaints and incidents

Complaints and incidents are registered centrally, including the problem analysis, follow-up and reduction/avoidance of direct consequences. This enables Wageningen UR to:

- formulate actions to prevent recurrence.
- carry out internal and external reporting.
- gain insight at the level of organisational components and at a corporate level.
- ensure archival accuracy.
- report to and gain information from the competent authority.

In the year 2013, 77 incidents were registered by means of the incident reporting form, three of which were classified as environmental incidents (see Table 14). In addition, one unsafe situation and one 'near accident' were reported as incidents affecting the environment.

Table 14. Reports submitted using the incident reporting form in 2013

What the report relates to	AFSG	AID	ASG	CS	ESG	FB	IMARES	Education	PSG	RIKILT-NVWA	SSG	Grounds	Total
Accident involving minor injury	1		3	2	2	3		2	4	1		4	22
Accident involving some injury (doctor required)	2	1	3	1		2	1	4	6	2			22
Other		1	3		2			3	1	1			11
Unsafe situation or deficiency			5						2				7
Incident involving biological agents			4										4
Fire or fire alarm					2					1			3
Environmental incident								1	1	1			3
Near accident	1					1	1						3
Accident involving no injury	1		1										2
Bomb alert													0
Accident involving serious injury													0
Fatal accident													0
Incident involving radioactivity													0
Letters containing possible biological pathogens													0
Loss and theft													0
Environmental incident involving GMOs													0
Subtotal													77

A total of five incidents (including one unsafe situation and one near accident) having an effect on the environment were registered. These incidents are described in more detail below.

Incident 1	Leakage of sodium hydroxide solution from a storage drum at CVI Lelystad (reported as 'unsafe situation or deficiency').
<i>Nature of incident</i>	The coupling of the hose between the pump and the storage drum sprung open, resulting in a significant amount of sodium hydroxide solution leaking into the closed room.
<i>Action taken</i>	Rapid action was taken, allowing the valve to be closed and the leakage to be stopped.
<i>Environmental damage</i>	None.
<i>Follow-up</i>	The sodium hydroxide solution was highly diluted with water and rinsed away.
<i>Prevention</i>	The couplings of these drums will be checked more often in future
<i>Status</i>	Completed.

Incident 2	Leakage of peracetic acid at IMARES Den Helder (reported as 'near accident').
<i>Nature of incident</i>	Leakage of a bottle of approximately 100 ml peracetic acid ca. 35 wt% dissolved in acetic acid for unknown reasons.
<i>Action taken</i>	Windows were opened, granular absorbent was placed on the liquid and the laboratory was kept off limits until clean-up was complete.
<i>Environmental damage</i>	None.
<i>Follow-up</i>	The remains were cleaned by a specialist company.
<i>Prevention</i>	None.
<i>Status</i>	Completed.

Incident 3	Bottle of methyl <i>tert</i> -butyl ether in the fume cupboard knocked over and broken at RIKILT Wageningen.
<i>Nature of incident</i>	During work activities, a bottle of methyl <i>tert</i> -butyl ether was knocked over and broke, and approximately 400 ml went down the drain.
<i>Action taken</i>	Because this is a volatile and flammable substance, it was decided in the interests of employee safety to rinse this substance away by using large amounts of water.
<i>Environmental damage</i>	None: The liquid concerned is <u>not</u> hazardous to the environment and is not water-soluble.
<i>Follow-up</i>	After approximately ten minutes, the remainder of the liquid had evaporated.
<i>Prevention</i>	Work more slowly and more carefully.
<i>Status</i>	Completed.
Incident 4	Undesired discharge of dyes, Kjeldahl remainders and lipid extractor remainders at Forum Wageningen.
<i>Nature of incident</i>	During clean-up activities, the substances mentioned were inadvertently poured down the drain.
<i>Action taken</i>	No action was taken because the undesired discharge was not discovered until much later.
<i>Environmental damage</i>	Probably very little, but this can no longer be determined at this late date.
<i>Follow-up</i>	Internal investigations had not yet determined the reason. Because of this, the water board has not been informed.
<i>Prevention</i>	The authorities have taken steps to prevent this in future.
<i>Status</i>	The facts are still under investigation.
Incident 5	Undesired discharge of glycol at Radix Wageningen
<i>Nature of incident</i>	During work activities, a service mechanic inadvertently poured five litres of glycol down the drain.
<i>Action taken</i>	Large amounts of water were poured down the drain to dilute the glycol.
<i>Environmental damage</i>	Very little.
<i>Follow-up</i>	The Vallei en Veluwe water board has been notified.
<i>Prevention</i>	Better instructions for external maintenance personnel (good housekeeping).
<i>Status</i>	Completed.

In addition, three complaints about noise nuisance were registered in 2013 and one complaint about an illegal house party was registered.

Complaint 1	Noise nuisance in the Roghorst residential district (Wageningen).
<i>Nature of complaint</i>	A resident of the neighbouring district of Roghorst was bothered by a continuous background hum, particularly during the evening. She experienced the noise as coming from the direction of RIKILT.
<i>Environmental damage</i>	Noise nuisance, particularly in the evening and at night.
<i>Follow-up</i>	An investigation established that the noise nuisance was caused by insufficiently muffled and/or insufficiently adjusted installations. After adapting and readjusting the installations, the number of complaints decreased, but there were still some complaints. It should be pointed out that the resident heard the noise with her windows open. Noise measurements are always carried out on closed façades, so any windows are also closed. However, Wageningen UR is in conformity with the permit under the Dutch Environmental Management Act and meets the sound regulations. The resident was informed of this and accepted this explanation.
<i>Status</i>	Completed.

Complaint 2	Noise nuisance in the Noord-West residential district and the residential district in Bennekom, neighbouring Wageningen.
<i>Nature of incident</i>	Several residents in both districts complained about loud noise from the opening party for the new Orion teaching building on 2 September 2013.
<i>Environmental damage</i>	Noise nuisance in the hours between 8:00 PM and midnight.
<i>Follow-up</i>	Wageningen UR had a permit for this event. The maximum noise level was set using previously calibrated equipment. As such, the noise regulations were met. In addition, prior to the festivities, the residents surrounding the Campus (although not the residents in Bennekom) received letters informing them of the upcoming festivities.
<i>Status</i>	Complainants have received a personal letter informing them of the investigations into the cause of the noise. In addition, in future the communication about this type of evening festivities will be improved.

Complaint 3	Illegal house party in 'Fire House' at Haarweg 10a.
<i>Nature of incident</i>	Some students from the Haarweg complex expressed their concerns about a recently held house party and another upcoming house party which had been announced. A number of foreign students had held a house party on their own initiative and without prior permission.
<i>Environmental damage</i>	Noise nuisance in the form of loud music and loudly yelling, drunken students outside the location and on the public street.
<i>Follow-up</i>	Because this location is rented to students (primarily foreign students) by the staff department of Education, Research and Innovation (ER&I), this department is responsible for enforcement. The department has spoken to the organisers of the house party and informed them that this type of activity is not permitted.
<i>Status</i>	Completed, but ER&I will continue to monitor the situation.

Four incidents involving biological agents were reported at ASG Lelystad. Two of these incidents were accidents with needles in which employees were infected with pathogens. There were also two incidents in which employees were bitten by guinea pigs and were at risk of infection. In all cases the relevant protocol was followed and the in-house medical officer or infectious disease specialist was contacted. As far as is known, these incidents did not result in any permanent damage to the health of the employees involved. Measures to improve the situations were implemented on the basis of each of the incidents. For instance, the use of sharps containers was stimulated and supervisors kept track more carefully of whether instructions had been followed.

Appendix 1. Glossary of terms*Organisation*

AFIG	Agrotechnology & Food Sciences Group
ASG	Animal Sciences Group
ATV	AgroTechnology and Food Sciences
BVF	Biological Safety Officer
CDI	Centre for Development Innovation
CS	Corporate Staff
CS+	Corporate Staff including Wageningen Academy and Centre for Development Innovation
CVI	Central Veterinary Institute
DDW	Department of Animal Sciences
ESG	Environmental Sciences Group
E&EL	Energy & Exploitation Lelystad
ER&I	Education, Research and Innovation
FB	Facilities and Services
FBR	Food & Biobased Research
IMARES	Institute for Marine Resources and Ecosystem Studies
KAM	Quality, Health & Safety and Environment
PPO	Applied Plant Research
PSG	Plant Sciences Group
RIKILT	RIKILT-Institute for Food Safety
SSG	Social Sciences Group
V&M	Safety and Environment, Real Estate and Housing department, Facilities and Services
Wageningen UR	Wageningen University & Research centre
WA	Wageningen Academy

Terms

CNG	Climate Neutral Group
DBP	Animal by-products
Erbis	Energy registration, management and information system
GMO	Genetically Modified Organisms
GROS	<i>Gevaarlijke stoffen Registratie- en Opsporingssysteem</i> ('hazardous substances registration and investigation system')
Kew	Dutch Nuclear Energy Act
MJA3	Multi-Year Agreement for Energy 3
MJP	Environmental plan (<i>Milieujaarplan</i>)
MJV	Annual environmental report (<i>Milieujaarverslag</i>)
CSR	Corporate Social Responsibility
NeR	Dutch Emission Guidelines for Air
NVWA	Netherlands Food and Consumer Product Safety Authority
OFGV	<i>Omgevingsdienst Flevoland en Gooi- & Vechtstreek</i> ('Flevoland and Gooi & Vecht Regional Environmental Service')
RvO	Netherlands Enterprise Agency
Wabo	Dutch Environmental Permitting (General Provisions) Act
CHP	Combined heat and power installation
WKO	Thermal storage system
Wm	Dutch Environmental Management Act

Appendix 2. 2013 Wageningen UR waste figures

Total quantity of waste (kg) per complex or municipality 2013

Location - complex	Hazardous waste	Industrial waste	Paper	Total
Wageningen - Wageningen Campus	139,370	709,098	197,282	1,045,750
Wageningen - De Dreijen complex	23,835	95,831	49,331	168,997
Wageningen - other locations	4	74,477	39,325	113,806
Ede (including Bennekom)		2,440	1,248	3,688
Renkum		1,304		1,304
Lelystad - umbrella permit	82,199	182,668	29,832	294,699
Lelystad - other locations	16,368	65,320	10,280	91,968
Assen ²			154	154
Bleiswijk	2,284	93,240	3,120	98,644
The Hague ¹	75	8,560	29,195	37,830
Den Helder ¹	7,396	4,600	916	12,912
Den Hoorn (TXL) ²	375			375
Elst ²				0
Haaksbergen			334	334
Hengelo (GLD) ¹	1	2,768	346	3,115
Huissen ²				0
IJmuiden ¹	15,379	23,024	510	38,913
Leeuwarden		6,500	1,083	7,583
Lisse		47,816	4,190	52,006
Marwijksoord		1,320	150	1,470
Meijel ²				0
Nagele		100		100
Randwijk	410	7,268	4,813	12,491
Sterksel ¹		22,800	2,400	25,200
Valthermond		3,640	600	4,240
Vredepeel ¹	627	2,860		3,487
Westmaas ¹		4,576		4,576
Yerseke ¹	2,509	3,665	650	6,824
Total	290,832	1,363,875	375,759	2,030,466

¹ An empty cell means no figures are available.

² The industrial waste from the locations outside Wageningen and Lelystad is generally not weighed. The figures have been calculated on the basis of volumes removed and standard weight for that type.

³ The waste figures for PPO come from Wageningen, Randwijk, Bleiswijk, Lisse, Valthermond, Westmaas and Vredepeel.

⁴ The waste figures for the ASG experimental farms come from Lelystad, Sterksel, Hengelo (Gld) and Leeuwarden (Goutum).

⁵ The household waste produced by the Netherlands Food and Consumer Product Safety Authority (NVWA) is disposed of by RIKILT. Hazardous waste and specific industrial waste flows are disposed of independently.

⁶ 2013 was the first year in which cadaver waste from ASG was included in hazardous waste.

⁷ This is the first year that waste figures for LEI, located in The Hague, have been included.

Appendix 2a. Industrial waste (kg) 2005-2013, broken down by waste flow and complex (Wageningen locations and environs)

Waste flow	Year	Wageningen					Ede (including Bennekom)	Renkum	Rhenen	Total	Number of transport movements
		Campus	De Dreijen	Kortenoord	Duivendaal	Other					
Hazardous waste	2013	138,163	23,004	-	-	4	0	0	-	161,171	
	2012	109,527	29,733	1,489	0	30	4,424	0	-	145,203	
	2010	65,594	26,405	8,130	90	0	486	0	-	100,705	
	2005	71,882	37,518	8,547	470					118,417	
Residual waste	2013	593,651	79,388	-	-	71,916	2,440	1,304	-	748,699	2,838
	2012	618,275	93,580	63,386	11,504	63,434	6,230	2,011	-	858,420	2,951
	2011	553,862	98,358	50,214	24,924	50,163	2,456	1,424	-	781,401	1,545
	2010	490,347	91,684	42,590	20,036	45,406	1,774	726	-	692,563	2,527
Paper & cardboard	2013	268,036	136,188	193,760	28,617	56,373	11,562	490	13,092	708,118	2,554
	2012	197,282	49,331	-	-	39,325	1,248		-	287,186	1,451
	2010	153,495	41,157	4,060	8,471	24,233	3,731		-	235,147	1,586
	2005	178,022	47,948	16,225	31,097	27,857	963		-	302,112	1,665
Garden waste/green waste/swill	2013	115,370	60,242	38,305	38,042	43,616	843		-	290,538	2,117
	2012	56,800							-	56,800	375
	2010	7,549							-	7,549	139
	2005	7,975	7,680			2,220			-	15,655	3
Untreated wood	2013	37,360		94,340					-	131,700	53
	2012	780							-	780	1
	2010	2,500							-	2,500	3
	2005	680							-	680	1
Painted, varnished or glued wood	2013	6,460							-	6,460	4
	2012	5,440		8,000					-	13,440	8
	2010	12,520	1,820	3,620					-	17,960	10
	2005	4,780	2,700			2,680			4,740	14,900	12
Chemically preserved wood	2005								3,000	3,000	1
Car tyres/other tyres	2005								5	5	1
Bedding	2005		8,080							8,080	4
Construction & demolition waste	2013		12,140			1,700			-	13,840	7
	2012		20,380	680		11,700	14,320		-	47,080	32
	2010	4,620		5,440				440	-	10,500	10
	2005	48,780		1,920		1,860			-	52,560	6
Foil	2013	60							-	60	
	2012	113							-	113	
Glass	2013	18,194	4,050	-	-	372			-	22,616	134
	2012	10,362	4,100		915	413			-	15,790	112
	2010	18,979	1,608	1,719	1,242	703			-	24,251	104
	2005	2,455		475					-	2,930	30
Bulky waste	2013	1,780							-	1,780	4
	2012	2,520		8,380	20,740	1,400			-	33,040	16
	2010	2,100							-	2,100	1
	2005	920	2,120	16,600					-	19,640	9
Data storage systems	2013	121	253						-	374	
	2012	86							-	86	

Appendix 2b. Industrial waste (kg) 2005-2013, broken down by waste flow and complex (Wageningen locations and environs) - continued

Waste flow	Year	Wageningen					Ede (including Bennekom)	Renkum	Rhenen	Total	Number of transport movements
		Campus	De Dreijen	Kortenoord	Duivendaal	Other					
Plastic	2013	22,286	0	-	-	489			-	22,775	260
	2012	18,410							-	18,410	178
	2010	5,120							-	5,120	38
Metal	2013	5,500		-	-				-	5,500	5
	2012	2,440		1,420	2,600				-	6,460	6
	2010	4,320							-	4,320	2
	2005	7,350							-	7,350	5
Oil/fat	2005		336						-	336	1
Rubble	2013	0	0	-	-	0	0	0	-	0	0
	2012	12,220	2,980				4,880		-	20,080	4
	2010	7,120				4,440			-	11,560	2
Polystyrene	2013	46		-	-				-	46	1
	2012	98							-	98	
	2005		2,400						-	2,400	5
Flat glass	2013	3,420		-	-				-	3,420	3
	2012	3,660		2,620					-	6,280	2
	2010	9,180							-	9,180	2
White & brown goods	2013	1,207	831	-	-				-	2,038	7
	2012	7,480	4,130						-	11,610	
	2010	1,207	4,297	1,057					-	6,561	13
	2005	221	6,788	1,641					-	8,650	23
Total	2013	1,045,750	168,997	-	-	113,806	3,688	1,304	-	1,333,545	5,090
	2012	954,175	196,060	90,035	44,230	101,210	33,585	2,011	-	1,421,306	5,037
	2010	741,510	155,037	70,651	52,375	80,626	2,737	1,166	-	1,101,882	4,377
	2005	485,952	218,854	350,021	66,659	104,529	12,405	490	20,832	1,253,862	4,822

Note 1: Since 2008, Nergena has been considered part of Wageningen Campus rather than part of Ede.

Note 2: The Ede locations HoraPark and student accommodation (construction activities) were new in 2011. HoraPark was vacated in 2012.

Note 3: 2011 was the first year in which waste figures were supplied by the Netherlands Food and Consumer Product Safety Authority (NVWA).

Note 4: 2013 was the first year in which cadaver waste from ASG was included in hazardous waste.

Appendix 2c. Waste separation percentages for Wageningen and surroundings 2005-2013

Waste flow	Year	Wageningen					Ede	Renkum	Rhenen	Total
		Campus	De Dreijen	Kortenoord	Duivendaal	Other				
Residual waste plus bulky waste as % of total waste	2013	57%	47%	-	-	63%	66%	100%	-	56%
	2012	65%	48%	80%	73%	64%	19%	100%	-	63%
	2010	66%	59%	60%	38%	56%	65%	62%	-	63%
	2005	55%	62%	55%	43%	54%	93%	100%	63%	56%
Paper as % of total waste	2013	19%	29%	-	-	35%	34%	-	-	22%
	2012	16%	21%	5%	19%	24%	11%	-	-	17%
	2010	24%	31%	23%	59%	35%	35%	-	-	27%
	2005	24%	28%	11%	57%	42%	7%	-	-	23%
Construction waste, demolition waste and rubble as % of total waste	2013	-	7%	-	-	1%	-	-	-	1%
	2012	1%	12%	1%	-	12%	57%	-	-	5%
	2010	2%	-	8%	-	6%	-	38%	-	2%
	2005	0%	1%	0%	0%	0%	0%	0%	0%	0%
Hazardous waste (excluding electronic waste) as % of total waste	2013	13%	14%	-	-	-	-	-	-	12%
	2012	11%	15%	2%	-	-	13%	-	-	10%
	2010	9%	17%	12%	-	-	18%	-	-	9%
	2005	15%	17%	2%	1%	-	-	-	-	9%
Garden waste/green waste/swill as % of total waste	2013	5%	-	-	-	-	-	-	-	4%
	2012	1%	-	-	-	-	-	-	-	1%
	2010	1%	5%	-	-	-	-	-	-	1%
	2005	8%	-	27%	-	-	-	-	-	11%
Plastics as % of total waste	2013	2%	-	-	-	-	-	-	-	2%
	2012	2%	-	-	-	-	-	-	-	1%
	2010	1%	-	-	-	-	-	-	-	0%

Appendix 2d. Hazardous waste (in kg) in 2002-2013, broken down by organisational component

Organisational component	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Agrotechnology & Food Sciences Group (AFSG)	33,181	54,878	40,302	35,521	37,964	31,782	33,982	35,540	34,060	39,547	49,039	42,794
RIKILT & NVWA	23,729	20,478	18,851	28,897	22,382	22,401	23,400	23,651	21,881	24,627	24,882	28,348
Animal Sciences Group (ASG)	3,914	3,800	7,547	5,398	4,162	5,017	6,846	4,017	7,428	14,533	8,249	25,721
Lelystad - ASG	99,812	86,987	75,429	61,858	77,328	68,513	60,915	50,977	56,688	59,894	65,372	98,567
Central Veterinary Institute (CVI) - Lelystad	-	2,888	2,541	5,476	10,866	837	14,981	15,885	16,502	-	-	-
Experimental farms outside Lelystad - ASG	-	-	-	-	-	-	-	-	-	11	1,121	1
IMARES	2,012	1,275	2,388	2,660	1,255	16,580	2,289	1,592	2,217	2,844	18,900	25,659
ESG	16,216	16,475	14,389	18,328	17,342	20,785	16,230	11,985	15,634	14,914	12,972	7,437
Plant Sciences Group (PSG)	17,658	12,896	10,424	23,439	17,039	11,381	29,489	33,079	20,171	12,228	17,318	7,085
Applied Plant Research (PPO) - PSG	33,210	1,300	20,952	10,232	14,837	21,341	19,032	14,238	11,851	16,053	18,280	3,321
Social Sciences Group - LEI	-	-	-	-	-	-	-	-	-	-	-	75
Facilities and Services/Administration Centre/Wageningen International	2,114	1,348	971	403	109	1,836	704	3,853	1,531	2,297	5,878	2,095
Occupational Health, Safety and Environmental Service	4,694	3,944	1,954	6,431	798	-	-	-	-	-	-	-
Van Hall Larenstein	-	-	-	-	-	-	-	-	3,417	4,964	-	-
Third parties on Wageningen UR grounds	-	-	-	-	1,455	3,337	204	-	-	31,681	26,865	49,729
Total	236,540	206,269	195,748	198,643	205,537	203,810	208,072	194,817	191,380	223,593	248,876	290,832

Note 1: This concerns radioactive waste which, following storage (including long-term storage) in the waste building, has degraded to non-radioactive hazardous waste and been disposed of as such. In 2006, Wageningen UR halted central storage of radioactive waste.

Note 2: Starting in 2003, the waste flows from CVI - Lelystad and Lelystad - ASG were counted separately. In 2011, this distinction was ended.

Note 3: Starting in 2006, the waste at an additional location (Horst - America) was included in this summary. Starting in 2007, the location AGV - Lelystad was added. Starting in 2011, the waste from the locations Bleiswijk, Westmaas and Vredepeel has also been included.

Note 4: Starting in 2011, the waste from the locations Sterksel, De Marke (Hengelo [Gld]) and Nij Bosma Zathe (Goutum) has also been included.

Note 5: Starting in 2011, the waste from NVWA (Wageningen Campus) has also been included.

Note 6: Because VHL is no longer part of Wageningen UR, starting in 2012 its waste has no longer been included.

Note 7: Fish waste has been included since 2012 and animal cadaver waste has been included since 2013.

Appendix 2e. Hazardous waste (in kg) in 2006-2013 (Wageningen UR) broken down by EWC code

EWC code	Description	2006	2007	2008	2009	2010	2011	2012	2013
020103	Mutated potatoes	-	-	13,540	-	-	-	-	-
020108	Pesticides (in waste water)	25,146	20,011	20,061	18,309	21,397	31,471	1,563	-
050108	Bitumen, tectyl, tar, grease	-	-	-	-	12	-	-	-
060101	Sulphuric acid/phenol/inorganic acids	48	-	-	-	-	58	369	5,628
060105	Nitric acid	7,372	6,820	7,503	9,023	7,081	2,380	4,806	186
060106	Various inorganic acids	3,149	4,317	5,915	5,415	6,319	3,978	5,980	631
060203	Ammonium	15	56	11	-	384	76	28	100
060204	Sodium hydroxide solution	32	-	25	-	-	-	50	-
060205	Organic lyes	3,772	2,317	1,275	1,452	1,634	4,540	8,488	10,016
060311	Lab chemicals containing cyanide	3	24	5	65	-	103	14	-
060313	Inorganic salts	20	-	-	-	-	57	62	62
060314	Silica gel, inorganic salts	87	79	32	41	48	41	238	-
060399	Sodasorb	-	11	-	-	6	-	-	-
060601	COD waste	-	-	-	-	-	-	-	46
061302	Active carbon	11	132	139	94	12	43	8	-
070104	Low-halogen solutions	-	-	-	-	-	-	208	-
070403	1,3-dichloropropene	-	167	-	-	-	-	-	-
070704	Organic lyes	-	-	-	-	-	-	110	-
080111	Hazardous Office Waste, paint	806	434	144	177	208	133	139	-
080317	Active carbon	-	-	-	-	-	-	44	-
080409	Glues, resins and putties	-	-	-	-	-	-	8	70
090101	Developer, film	709	310	621	655	323	483	10	148
090104	Fixative	676	1,442	4,553	546	390	216	296	143
090113	Photo chemicals, mixed	-	-	-	-	-	-	120	30
110113	Alkaline degreaser	-	-	-	114	-	-	-	-
110105	Various inorganic acids	-	-	-	-	-	5,694	-	-
110106	Organic acids	-	-	-	-	-	-	458	316
120109	Drilling oil, cutter fluid, abrasive oil, rolling oil	-	332	240	205	-	165	-	-
120112	Lubricants/greases	-	-	-	-	-	14	-	22
130113	Waste oil	1,580	3,609	1,141	2,075	760	386	510	32
130204	Category III waste oil	-	-	-	-	-	36	-	-
130205	Category II waste oil	490	295	135	293	160	460	2,146	1,082
130208	Category I waste oil	-	-	-	-	-	-	6	-
130502	Oil/water/silt mixtures	-	-	6,420	-	-	-	-	-
130703	Diesel oil with water	-	1,000	-	-	-	-	-	-
130899	Waste containing oil (dry)	215	49	262	389	131	433	-	-
140602	Solvents with high halogen content	3,358	2,637	2,663	2,298	2,575	3,707	4,054	4,329
140603	Toxic substances, highly calorific solvent, etc.	34,759	34,985	27,329	39,910	29,917	25,061	12,528	9,277
150110	Lab glass, thermal glass, empty packaging (unrinsed)	3,251	2,992	2,263	3,938	2,858	3,411	5,189	4,350
150111	Spray cans	13	9	6	42	32	37	-	-
150202	Filters with chemical residues	916	60	37	107	-	64	1,663	746
160107	Oil filters	36	7	-	-	44	24	15	-
160113	Brake fluid	-	-	-	-	-	-	144	-
160114	Coolant	-	-	-	-	-	98	4,436	1,896
160212	Material containing asbestos	26	21	46	148	62	116	-	-
160214	Electronics	1,390	1,549	3,380	9,644	4,557	5,230	-	-
160303	Potassium ferrocyanide	-	-	-	-	120	-	-	-
160305	Small quantities of material contaminated with dioxins	-	5	-	-	-	-	156	331

EWC code	Description	2006	2007	2008	2009	2010	2011	2012	2013
160306	Organic powders with low halogen content	-	-	-	-	-	-	186	5
160504	Fire extinguishers/gas bottles	-	70	17	-	100	-	30	-
160506	Lab chemicals, various	2,989	2,849	2,714	6,604	1,293	3,263	1,887	3,905
160507	Sodium hydroxide, solid	-	38	39	-	8	-	-	-
160508	Tracer fluid, vials, liquids, pesticides	1,214	2,013	619	1,456	3,785	1,072	1,275	6
160601	Lead batteries	314	1,273	496	676	1,145	628	407	362
160602	NiCad batteries	-	-	123	-	-	-	-	-
160903	Hydrogen peroxide with peracetic acid, benzoyl peroxide	42	233	413	182	-	20	29	-
160904	Potassium permanganate, oxidising fluids	108	7	98	188	22	18	-	-
161001	Waste water, fluids with low calorific value	141	1,697	1,361	1,077	6,162	1,817	15,143	5,920
161002	Mixtures with low calorific value	-	-	-	-	-	-	14,660	-
170204	Glass waste with residues	898	519	499	540	373	-	-	-
170503	Soil contaminated with oil, PAHs, pesticides	4,422	8,450	1,262	1,086	1,409	228	1,456	2,076
170605	Material containing asbestos	-	-	-	-	-	-	180	-
180103	Biological materials/human hospital waste	15,653	18,087	20,096	20,795	19,738	23,710	18,419	29,727
180106	Biologically contaminated lab chemicals	495	1,098	409	144	2,140	670	-	-
180202	Animal hospital waste	78,964	70,900	67,885	56,515	61,602	69,660	94,272	71,174
190203	Specific Hospital Waste	-	-	-	-	-	16,565	260	-
191211	Household chemicals, soaps/cleaners, soil with styrene	1,454	23	6	139	-	0	-	-
200113	Solvents low in halogens (high calorific value)	-	-	-	-	-	3,322	55	32
200114	COD fluids	97	385	288	94	173	154	3	-
200115	Kjeldahl fluid	4,632	5,463	7,610	7,242	8,080	5,237	344	-
200117	Fixative/developer mixture	-	52	27	100	-	-	-	-
200119	Pesticides	-	-	-	-	-	-	27,059	24,829
200121	Various lamps, objects containing mercury	2,453	1,563	1,489	2,791	1,527	1,021	1,077	1,723
200123	Refrigerators, white and brown goods	2,324	3,600	4,233	4,922	3,283	3,743	-	2,038
200125	Animal/plant oils and fats	-	-	70	-	-	80	-	-
200126	Lubricating greases	516	62	41	22	120	-	68	-
200127	Glues, resins and putties/Hazardous Office Waste	432	288	132	124	166	294	352	193
200129	Cleaners	-	-	-	-	-	-	18	-
200131	Medicinal waste	36	-	-	79	231	209	5	1
200133	Batteries	171	241	282	127	530	193	307	323
200135	Office waste	27	105	61	290	264	214	-	75
200136	Computer tape/electronic waste	-	343	56	87	199	65	-	6
200139	PVC	275	781	-	-	-	-	-	-
200306	Silt from sewer and pumping stations	-	-	-	-	-	2,895	-	620
unknown	Animal waste	-	-	-	-	-	-	15,538	108,369
various	Unspecified chemical waste	-	-	-	-	-	-	2,000	7
	Total	205,262	203,029	208,072	200,220	191,380	223,593	248,876	290,832

Note 1: The waste from Van Hall Larenstein University of Applied Sciences in Leeuwarden was included in the summary for the period 2009-2011.

Note 2: Starting in 2011, the waste from PPO (Bleiswijk, Westmaas, Vredepeel) has also been included.

Note 3: Starting in 2011, the waste from the ASG Working Farms (Sterksel, De Marke [Hengelo Gld], Nij Bosma Zathe (Goutum)) has also been included.

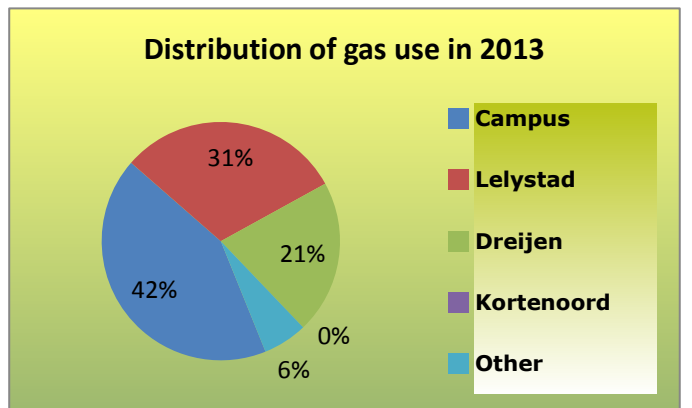
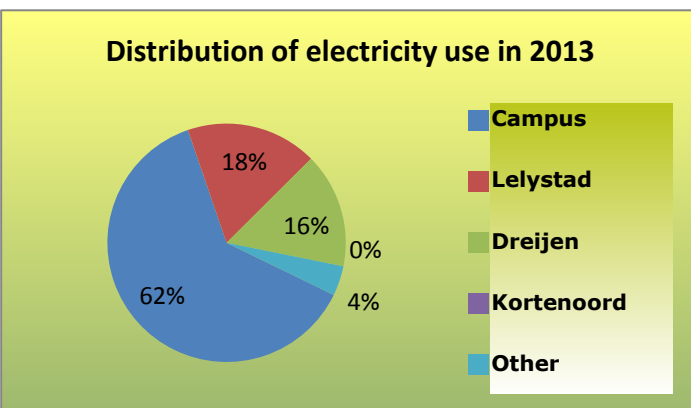
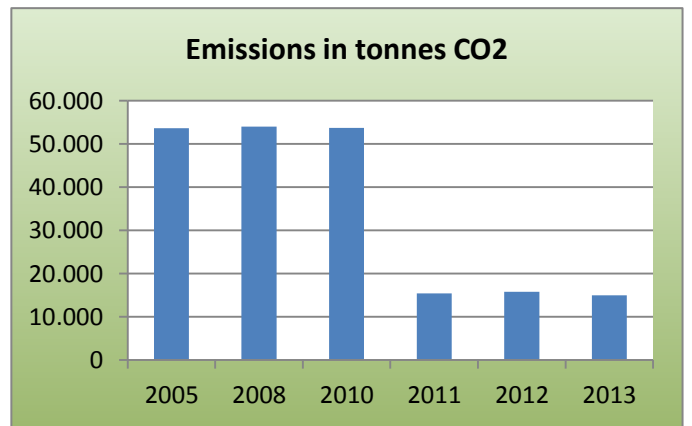
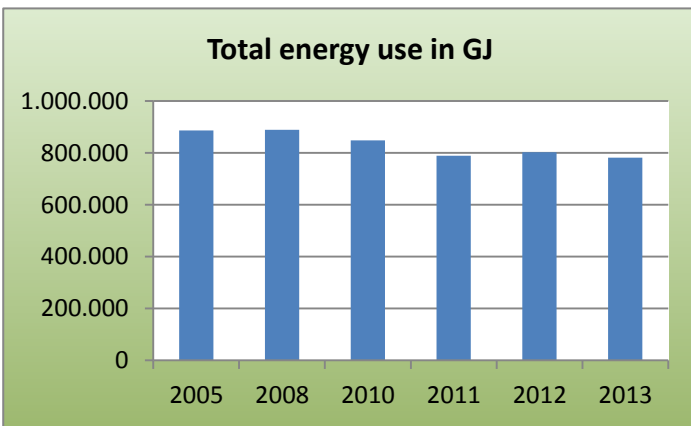
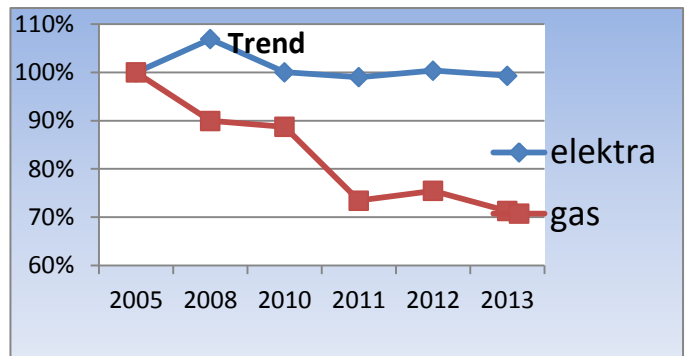
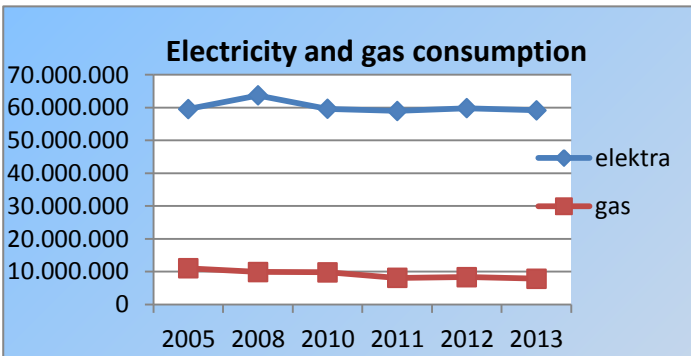
Note 4: Starting in 2011, the waste from NVWA (Wageningen Campus) has also been included.

Note 5: Fish waste has been included since 2012 and animal cadaver waste has been included since 2013.

Appendix 3. Energy consumption in 2013 for Wageningen UR

Energy consumption	Electricity (kWh)	Gas (m ³)	Energy (GJ)	Tonnes of CO ₂
2008	63,685,301	9,923,959	888,039	53,965
2011	58,986,867	8,103,014	788,522	15,400
2012	59,559,676	8,324,624	799,511	15,806
2013	59,167,202	7,864,487	781,416	14,976
Energy consumption compared to 2005	Electricity (kWh)	Gas	Energy (GJ)	Tonnes of CO ₂
2008	107%	90%	100%	101%
2011	99%	73%	89%	29%
2012	100%	75%	90%	29%
2013	99%	71%	88%	28%
Energy consumption Complexes, 2011	Electricity (kWh)	Gas	Energy (GJ)	Tonnes of CO ₂
Dreijen	9,913,209	1,525,294	137,693	8,680
Wageningen Campus	31,353,235	2,886,962	374,179	22,880
Kortenoord	3,348,357	550,992	47,641	3,016
Lelystad	11,631,362	2,613,532	187,633	12,130
Other	2,740,704	526,234	41,376	4,392
Total	58,986,867	8,103,014	788,522	49,353
Energy consumption Complexes, 2012	Electricity (kWh)	Gas	Energy (GJ)	Tonnes of CO ₂
Dreijen	9,822,130	1,663,292	141,042	3,127
Wageningen Campus	34,621,563	3,258,627	414,730	6,357
Kortenoord	909,285	221,929	15,208	411
Lelystad	11,608,562	2,575,613	185,995	4,788
Other	2,598,136	605,163	42,537	1,123
Total	59,559,676	8,324,624	799,511	15,806
Energy consumption Complexes, 2013	Electricity (kWh)	Gas	Energy (GJ)	Tonnes of CO ₂
Dreijen	9,244,528	1,641,790	135,163	3,080
Wageningen Campus	36,988,874	3,345,677	438,791	6,548
Kortenoord	0	0	0	0
Lelystad	10,537,553	2,403,540	170,910	4,464
Other	2,396,247	473,480	36,552	884
Total	59,167,202	7,864,487	781,416	14,976
Third parties	5,211,393	1,115,506	82,208	2,076
Gross floor area in m ²	2013	2012	2011	2008
De Dreijen	84,460		95,182	
Wageningen Campus	247,940		172,115	
Kortenoord	0		32,599	
Lelystad	112,684		123,126	
Other	36,334		50,998	
Total	481,448	495,857	474,020	605,618
Specific consumption	2013	2012	2011	2010
Natural gas (GJ/m ²)	0.517	0.531	0.541	0.654
Electricity (GJ/m ²)	1.106	1.074	1.120	1.132
Total	1.623	1.605	1.661	1.785

Appendix 3. Energy consumption in 2013 for Wageningen UR (continued)



70.000.000	70,000,000
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1.000.000	1,000,000
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60.000	60,000
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Appendix 4. Water/waste water consumption in 2013 for Wageningen UR

Water/waste water use	Mains water (m ³)	Well water (m ³)	CO ₂ mains water (kg)	CO ₂ well water (kg)
2008	223,091	140,806	66,927	42,242
2009	248,477	103,720	74,543	31,116
2010	222,863	50,595	66,859	15,179
2011	211,265	66,524	63,380	19,957
2012	199,622	57,587	59,887	17,276
2013	215,055*	59,402	64,517	17,821

Water/waste water use compared to 2005	Mains	Well water (m ³)	CO ₂ mains water	CO ₂ well water
2008	95%	101%	95%	101%
2009	106%	74%	106%	74%
2010	95%	36%	95%	36%
2011	90%	48%	90%	48%
2012	85%	41%	85%	41%
2013	92%	43%	92%	43%

Water/waste water consumption by complex 2011	Mains water (m ³)	Well water (m ³)	CO ₂ mains water (kg)	CO ₂ well water (kg)
Dreijen	44,796	27,337	13,439	8,201
Wageningen Campus	70,947		21,284	0
Kortenoord	30,422	37,798	9,127	11,339
Lelystad	54,857		16,457	0
Other	10,243	1,389	3,073	417
Total	211,265	66,524	63,380	19,957

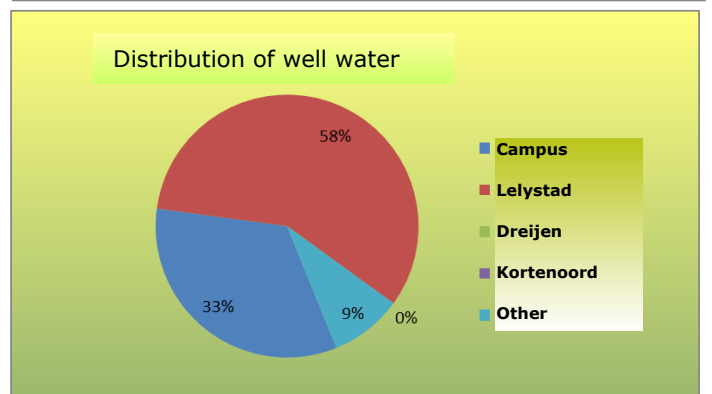
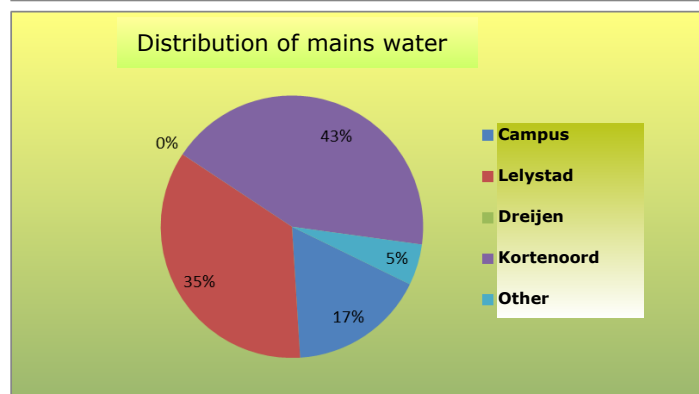
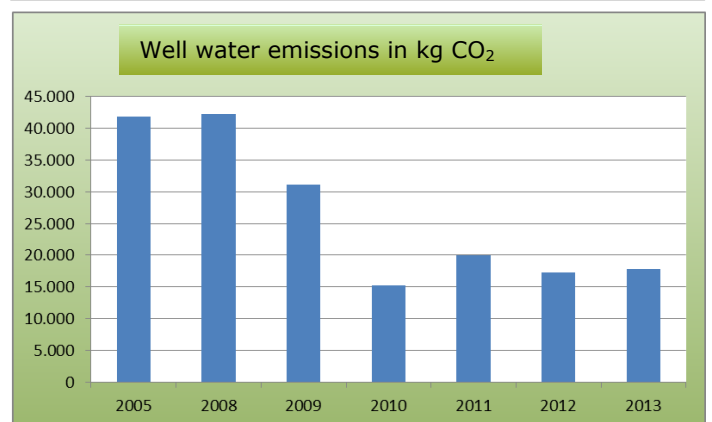
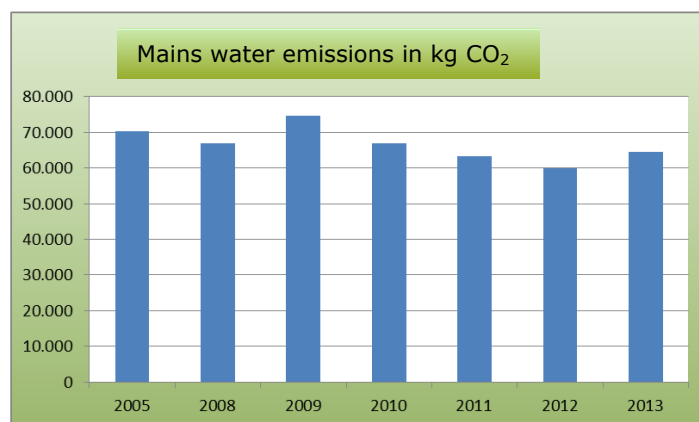
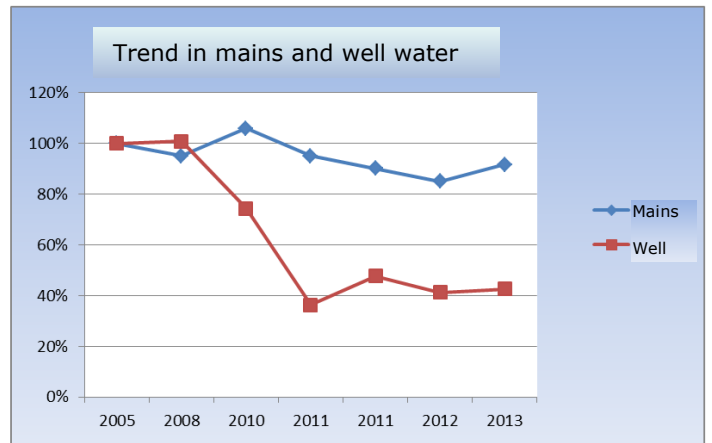
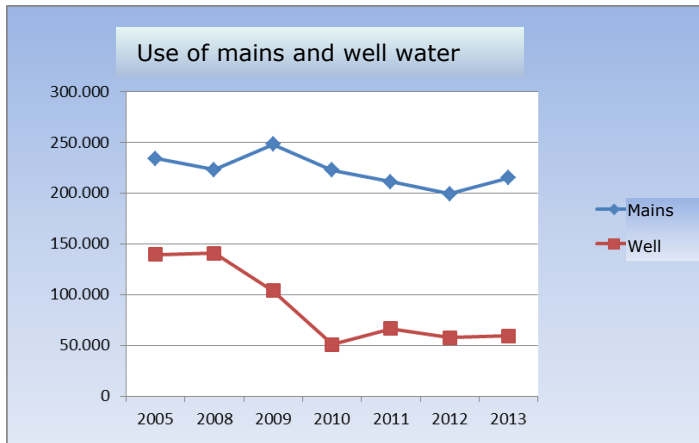
Water/waste water consumption by complex 2012	Mains water (m ³)	Well water (m ³)	CO ₂ mains water (kg)	CO ₂ well water (kg)
Dreijen	41,645	14,380	12,494	4,314
Wageningen Campus	68,719	19,478	20,616	5,843
Kortenoord	3,525	22,582	1,058	6,775
Lelystad	50,529		20,642	
Other	16,926	1,147	5,078	344
Total	181,344	57,587	59,887	17,276

Water/waste water consumption by complex in 2013	Mains water (m ³)	Well water (m ³)	CO ₂ mains water (kg)	CO ₂ well water (kg)
Dreijen	36,091	19,745	10,827	5,924
Wageningen Campus	75,905	34,372	22,772	10,312
Kortenoord	0			
Lelystad	92,189*		27,657	
Other	10,870	5,285	3,261	1,586
Total	215,055	59,402	64,517	17,821

Third parties	65,452		19,636	
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*Including Houtribweg (2013: 24,255 m³); prior to this figures were unavailable

Appendix 4. Water/waste water consumption in 2013 for Wageningen UR (continued)



300.000	300,000
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1.000.000	1,000,000
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60.000	60,000
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Appendix 5. Supplementary results achieved by the organisational components

In addition to the corporate level, supplementary results were achieved for the organisational components; see appendix table 5A. and 5.1 and 5.2.

Appendix table 5A. The supplementary results achieved in 2013 per organisational component

	Environmentally-related themes											
	Permit regulations						Environmental policy areas					
	Systems	Environmental logbook	Chemical registration	Energy and water registration	Emergency plan	Maintenance, inspections and checks	Water	Energy	Waste	Transport	Purchasing	Other
ESG	1						2	3	4	5	6	7

5.1 ESG

Appendix table 5B. The supplementary results achieved in 2013 for ESG

n o.	Environmentally-related theme	Objective	Results/actions	Environmental permit
1	Systems	<p>Environmental management and CSR: up-to-date and effective</p> <p>In making policy decisions, the sustainability aspects (People, Planet & Profit) are continually given consideration. The self-assessment of corporate social responsibility (ISO 26000) serves as a guide in this regard.</p> <p>CSR objectives include:</p> <ul style="list-style-type: none"> • Raising awareness of ESG employees with regard to the involvement of stakeholders, ethical conduct, human rights and the role towards government. • When preparing international projects, CSR aspects are taken into account. • Activities for sustainability are included in the annual plans and budgets of ESG (teams, chair groups and supporting departments). • Successful internal and external evaluations of the ISO 9001 and ISO 14001 certified assurance systems. • Evaluation by the ESG Management Council of whether the sustainability policy is having the intended effect, by means of a management review conducted in October 2013. • Action plans are implemented so as to comply with the ISO 26000 standard on corporate social responsibility. 	<p>The self-assessment in the context of the ISO 26000 'Social Responsibility for organisations' standard serves as a guide in formulating the CSR policy of the Environmental Sciences Group (ESG). With its self-assessment, signed in 2012, the ESG Management Council wishes to establish that the impact of its activities on the environment and society is transparent and ethically responsible.</p> <p>The principles and themes set out in the standard are important principles for decision-making within ESG. An evaluation is carried out every year in order to assess whether the standard is being met. The self-assessment (including argumentation) can be found on the NEN publication platform (in Dutch only, www.nen.nl/publicatieplatform).</p> <p>Social responsibility is a prominent theme in ESG's 2013-2017 Strategic plan. Goals have been set for the management team as part of the internal ESG framework letter. Points for action have been included in the ESG-wide sustainability plan.</p> <p>The primary focus in 2013 was working on increasing the involvement of ESG employees and other stakeholders in CSR policy. Themes included ethical conduct, human rights and the role towards government. It became obvious that although ESG employees find CSR to be important in their work, they do not exactly know what the content of ESG's CSR policy is. A master class on 'ISO 26000 self-assessment and communication' was started in November 2013. This course offers tools for increasing employees' enthusiasm for CSR and utilising this enthusiasm when communicating with internal and external stakeholders. This process will be continued in 2014. The specific tasks involved in maintaining the ISO 14001 environmental management system, such as the environmental aspects analysis and updating the register on</p>	Wageningen Campus

			<p>relevant environmental legislation and regulations have been carried out. Points for attention which have come up in internal and external audits have been addressed; environmental reports have been drawn up relating to energy, water, waste and printing behaviour; and a management review has been carried out. An external audit was carried out at Alterra in October-November 2013. The external auditors pointed out some aspects requiring improvement; these will be addressed in 2014.</p> <p>Three key areas have been defined in relation to the environmental policy:</p> <ol style="list-style-type: none"> 1. Critical attitude towards business travel (within the Netherlands and abroad) 2. Economical use of energy 3. Reduction in paper consumption <p>Working on these three key areas will contribute to the goal of climate neutrality for ESG. This is a continuous process, the progress in which has been described under the points 3. Energy, 5. Transport, 6. Purchasing and 7. Other.</p>	
2	Water	<p>Consistent water consumption</p> <ul style="list-style-type: none"> • Water consumption is to remain the same or decrease compared to the average over the past five years (given equivalent conditions). • Monthly monitoring of water consumption so that measures can be taken in case of deviations. 	<p>Although an increase in water consumption was expected as a result of more intense use of the buildings, the figures for consumption in 2013 are disappointing. On top of the significant increase in 2012 (by 41.7% compared to 2011), water consumption increased again in 2013 (by 37.3% compared to 2012).</p> <p>Causes of the high consumption are:</p> <ul style="list-style-type: none"> - The number of employees working in the buildings has increased. The buildings are also more attractive to students and visitors. As a result, the water consumption cannot be compared with water consumption in previous years. - 2013 is the first 'normal' year after the construction activities in 2012. During the construction period, the buildings Lumen and Gaia were empty from January to April, and the employees were accommodated elsewhere. - The site huts for the construction of Orion were connected to the Atlas drinking water supply in 2012 and the first quarter of 2013. - Gaia's rainwater tank (grey water for flushing toilets) had technical problems and did not work in the first half of 2013. The installation filter clogged too quickly. As a result, for much of the year Gaia only used mains water. - Lumen used more water because the grey water circuit for watering the indoor gardens was functioning poorly. Facilities and Services (Real Estate) is looking for a solution to this technical problem. <p>In 2013, waste water analyses were carried out in May and November, in line with the permit regulations. No contraventions were found.</p>	Wageningen Campus

3	Energy	<p>Optimum energy use</p> <ul style="list-style-type: none"> Reduction in electricity and gas consumption (per m²) by 2% compared to the average over the past five years (given equivalent conditions). Monthly monitoring of energy consumption so that measures can be taken in case of deviations. Opportunities for reducing energy use will be studied, including the use of LED lighting. 	<p>In 2013, the energy team assessed the energy consumption of the ESG buildings every quarter. Bottlenecks and deviations were analysed and expectations for each period were discussed. The energy team consists of the energy coordinator of Facilities and Services, the technical building manager (Facilities and Services) and the Quality, Health & Safety and Environment advisers (ESG). The energy coordinator releases validated energy figures monthly by means of the ERBIS monitoring program. Reports are drawn up on the basis of this data.</p> <p>Although the energy consumption of ESG's three main buildings remained within limits, the objective for 2013 was only partially met:</p> <ul style="list-style-type: none"> Electricity use increased by 11.4% as compared to 2012. However, electricity use in 2013 was about the same (-0.2%) as the average use over the past five years (2008-2012). Gas use decreased by 11.3% as compared to 2012. However, it increased by 4.3% compared to gas use over the past five years. If the weather conditions are taken into account by means of correcting for degree days, gas use decreased by 2.2%. <p>The use and occupation of the ESG buildings changed after the construction work of 2011-2012. 2013 is the first year showing 'normal' use. The removal of the laboratories from Gaia to Lumen caused a shift in the use of electricity. Gaia used 34.2% fewer kWh in 2013 compared with the average over the past five years. In Lumen, use increased by 21.6%.</p> <p>Gas consumption showed a similar pattern. Gaia used 24.1% less gas, while gas use in Lumen increased by 27.8%.</p>	Wageningen Campus
4	Waste	<p>Waste prevention and optimum waste separation</p> <p>In 2013, ESG aimed for a reduction in waste of 5% compared to the average over the past five years (given equivalent conditions).</p> <p>Options for reduction are:</p> <ul style="list-style-type: none"> Optimising waste separation of the paper, cardboard, ICT materials, glass, batteries, hazardous waste and plastic cup waste flows. Options will be explored for improving waste separation for organic waste/swill and plastic. Participation in the Wageningen UR-wide Waste Board. 	<p>Compared to the average over the past five years, 12.59% less waste was removed within ESG. Paper and residual waste in particular were significantly reduced. The amount of hazardous waste and glass waste did increase. The amount of hazardous waste is related to the activities in the laboratories. The amount of glass waste fluctuates from year to year. The fact that there is more glass waste may be positive, as it may mean that waste separation has improved and less glass has been removed as residual waste.</p> <p>Compared to 2012, waste was reduced by 9.26%, excluding the incidental waste flows 'construction and demolition waste' and 'other metals' in connection with the construction work in 2012. The table below lists the waste flows which can be attributed to ESG. It shows the amount of waste produced by the buildings Gaia, Lumen and part of Atlas. The waste from Atlas has been calculated as follows: two thirds from ESG and one third from CS+.</p> <p>In 2013 the ESG Quality, Health & Safety and Environment team participated in the Waste Board, the consultative group consisting of representatives of Wageningen UR</p>	Wageningen Campus

			and the waste collector. The goal of the Waste Board is to cooperate with other organisational components to ensure that all waste flows are collected, removed and transported as efficiently as possible. The Waste Board examined the possibilities for separating and collecting organic waste/swill and plastic in an efficient and environmentally conscious manner. It also contributed to the tendering procedure for the waste removal contracts. ESG sees the commencement of the new waste contracts in January 2014 as an impetus for taking steps toward the separation of plastic and organic waste in 2014.																																																							
			<table border="1"> <thead> <tr> <th>Waste flows (kg)</th> <th>2013*</th> <th>2012</th> <th>% +/- (2013 as compared to 2012)</th> <th>Average inflation for 2008-2012</th> <th>% +/- (2013 as compared to the average)</th> </tr> </thead> <tbody> <tr> <td>Paper waste</td> <td>32,045</td> <td>36,676</td> <td>-12.63%</td> <td>44,244</td> <td>-27.57%</td> </tr> <tr> <td>General waste</td> <td>55,365</td> <td>63,649</td> <td>-13.02%</td> <td>60,318</td> <td>-8.21%</td> </tr> <tr> <td>Hazardous waste</td> <td>15,797</td> <td>14,162</td> <td>+11.54%</td> <td>14,105</td> <td>+12.00%</td> </tr> <tr> <td>Glass waste</td> <td>1,240</td> <td>621</td> <td>+99.68%</td> <td>829</td> <td>+49.58%</td> </tr> <tr> <td>Subtotal</td> <td>104,447</td> <td>115,108</td> <td>-9.26%</td> <td>119,496</td> <td>-12.59%</td> </tr> <tr> <td>Construction and demolition waste</td> <td></td> <td>6,700</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Metals (other)</td> <td></td> <td>1,420</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>104,447</td> <td>123,228</td> <td>-15.24%</td> <td></td> <td></td> </tr> </tbody> </table> <p>*In this overview, the Atlas building is subdivided into ESG and CS+.</p>	Waste flows (kg)	2013*	2012	% +/- (2013 as compared to 2012)	Average inflation for 2008-2012	% +/- (2013 as compared to the average)	Paper waste	32,045	36,676	-12.63%	44,244	-27.57%	General waste	55,365	63,649	-13.02%	60,318	-8.21%	Hazardous waste	15,797	14,162	+11.54%	14,105	+12.00%	Glass waste	1,240	621	+99.68%	829	+49.58%	Subtotal	104,447	115,108	-9.26%	119,496	-12.59%	Construction and demolition waste		6,700				Metals (other)		1,420				Total	104,447	123,228	-15.24%			
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5	Transport	<p>Critical attitude towards business travel (within the Netherlands and abroad)</p> <p>The objectives are: Staying the same or improving as compared to last year. Standard CO₂ compensation of air travel.</p> <ul style="list-style-type: none"> Promoting environmental awareness with regard to business travel in the Netherlands and abroad. Automatic CO₂ compensation when booking airline tickets. 	<p>The ESG wants to take an environmentally-conscious approach to business travel in the Netherlands and abroad. Guidelines have been established which primarily emphasise the choices, such as: travelling by aeroplane or not, travelling by public transport or not, using videoconferencing or not. In concrete terms, this means that:</p> <ul style="list-style-type: none"> 'Remote communication' through the use of tools such as video conferencing and Skype is being encouraged. Where possible, trains are used for short distances within Europe (up to approximately 750 km). <p>Because travelling by air remains necessary due to the generally international nature of projects, from 1 January 2011, standard CO₂-offsetting is applied. In 2013 ESG compensated 2,590 tonnes of CO₂ (as compared to 2,551 tones of CO₂ in 2012 and</p>	Wageningen Campus																																																						

			2,618 tonnes of CO ₂ in 2011) by working with the Climate Neutral Group. The total cost was €36,104.20.																					
6	Purchasing	<p>Sustainable purchasing</p> <p>Conscious sustainable purchasing (for operational management and projects) by chair groups, teams and supporting departments. The criteria for sustainable purchasing are to be applied as far as possible.</p>	<p>In order to focus attention on the theme of sustainable purchasing among project managers, sustainable purchasing has been made one of the points for attention on the environmental checklist for projects. In line with the CSR policy, the purchasing policy has been expanded to include CSR aspects. The application of purchasing criteria relating to CSR is an area of attention for ESG, particularly in purchasing for international projects. This procedure is now in full progress.</p> <p>In 2013 the ESG Quality, Health & Safety and Environment team participated in a number of purchasing procedures at the level of Wageningen UR, including the contracts relating to collection of hazardous waste, non-hazardous waste and old paper.</p>	Wageningen Campus																				
7	Other, namely: Paper use	<p>Paper use</p> <p>Reduction in the number of prints per FTE by 5% compared to the previous year.</p> <ul style="list-style-type: none"> Promoting digitisation and paper-conscious printing. Increasing employee awareness of their printing behaviour. 	<p>Promoting digitisation and paper-conscious printing</p> <p>In order to give employees insight into the printing behaviour of their team, chair group or department, a report was drawn up once per quarter of the number of prints per cost centre. This insight into printing behaviour had a positive effect. Compared to the previous year, printing and copying was reduced by 12.6% - from 4.5 million prints in 2012 to 3.9 million prints in 2013. Approximately 80% of prints are double-sided. This means that the printers and copiers have used approximately 682 fewer packages of paper compared to 2012.</p> <p>The number of prints has decreased since 2010 (see table). After correcting for changes to the number of FTEs, 10% less paper was used for printing in 2013 as compared to 2012.</p> <table border="1"> <thead> <tr> <th></th> <th>2013</th> <th>2012</th> <th>2011</th> <th>2010</th> </tr> </thead> <tbody> <tr> <td>Number of prints</td> <td>3,947,496</td> <td>4,515,755</td> <td>4,790,472</td> <td>5,188,048</td> </tr> <tr> <td>Total number of packages of paper</td> <td>4,737</td> <td>5,419</td> <td>5,749</td> <td>6,226</td> </tr> <tr> <td>Packages of paper per FTE</td> <td>5.9</td> <td>6.6</td> <td>7.1</td> <td>7.6</td> </tr> </tbody> </table> <p>Two projects were worked on in 2013 which can contribute to reductions in paper use:</p> <ul style="list-style-type: none"> The project 'Foundation in order,' focusing on better management of digital documents and digital archives. The implementation of digital project files at Alterra. Project managers can use the time tracking system MyProjects to make a team site for project documents. <p>These projects will be continued in 2014.</p>		2013	2012	2011	2010	Number of prints	3,947,496	4,515,755	4,790,472	5,188,048	Total number of packages of paper	4,737	5,419	5,749	6,226	Packages of paper per FTE	5.9	6.6	7.1	7.6	Wageningen Campus
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