



# Environmental Review and Report 2021



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**Environmental Review and Report 2021**

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# Introductory Comments

In 2021, the Swedish University of Agricultural Sciences has taken several important steps in its sustainability work and in achieving the goals of the strategy's focus area "SLU's next steps for sustainable development." By identifying a next step, we are challenging ourselves in our ability to generate new knowledge and provide expertise to respond to global challenges related to climate change, food security and societal resilience under pressure from major events such as pandemics or geopolitical change. It also means that we establish tough goals that require us to think innovatively in order to conduct our activities with the least possible environmental impact and use the resources at our disposal as wisely as possible.

For several years now, SLU has been working systematically on environmental issues and we have chosen to certify our activities against ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS). Since 2016, all activities within the university have been certified and in 2021, after intensive efforts, we managed to merge our previous eleven certificates into one common one. We are actively working to identify and measure our environmental aspects, establish environmental targets, follow up and ensure that we are doing what we set out to do.

In 2021, as in previous years, we have implemented a number of improvements, both major and minor. All targets and focus areas are mentioned in the Environmental Review and Report, but some examples that show how much can be achieved when we work together broadly, internally and externally, are as follows:

- Together with our largest landlord, Akademiska, we have made significant progress on our shared goal to reduce energy use in our buildings.
- SLU continues to participate in the Uppsala Climate Protocol, a climate agreement and network between local businesses, governmental institutions, universities and civil society organisations that collaborate and inspire each other and others to accelerate the pace of adaptation to climate change. SLU now also participates in the Uppsala Climate Protocol's joint collaboration group, whose primary task is to steer the development of the network.
- During the year, we have established a motor vehicle group to support our activities in accelerating the transition to a fossil-free vehicle fleet. Our goal is that by 2027, our vehicles, machinery and tools will be powered by non-fossil fuels.

- We saw continued minimisation of air travel. Although 2020–2021 was marked by the coronavirus pandemic with travel being cancelled as a consequence, it has also given us new habits and a technological maturity that will be crucial in moving forward to reach our targets going, thus 2022 will be an interesting year as we see how we make sense of everyday life in the "new normal."

When I look at SLU from the perspective of the environment, I do so with pride in all that we as a university have accomplished over the years. The year 2021 has meant a continued strong local commitment under the common flag of a centralised certificate, something that shows the strength we have when everyone pulls together and works for a common goal. Certainly, there are challenges and some work to be done to become a climate-neutral university by 2027. However, I am very confident that we will get there – with joint efforts and local initiatives and ideas.



*Maria Knutson Wedel  
Vice-Chancellor of  
the Swedish University  
of Agricultural Sciences*



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# About the Swedish University of Agricultural Sciences (SLU)

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**The Swedish University of Agricultural Sciences develops knowledge about how we can sustainably use the biological natural resources on land and in water. In about thirty locations across the country, SLU conducts education, research and environmental monitoring and assessment. The largest campus areas are located in Uppsala, Alnarp and Umeå. In 2021, the number of employees at SLU was 3,193 (FTE) and the number of students was 4,437 (full-time equivalents).**

SLU has four Faculties, under which there are a total of 34 Departments:

- Faculty of Landscape Architecture, Horticulture and Crop Production Sciences (LTV)
- Faculty of Natural Resources and Agricultural Sciences (NJ)
- Faculty of Forest Sciences (S)
- Faculty of Veterinary Medicine and Animal Science (VH)

In addition, SLU has a University Administration with 14 departments, whose main task is to be a support for research and education.

## Core Values and Mission

SLU conducts educational and research activities, along with environmental monitoring and assessment, in collaboration with the community at large. Via our focus on the interaction between humans, animals and ecosystems, and the responsible use of natural resources, we contribute to sustainable social development and good living conditions on our planet.

## Environmental Policy

“SLU shall contribute to ecologically, socially and financially sustainable development.

Environmental thinking and environmental aspects must be integrated into all decision-making and be a part of all activities within all of SLU’s organisation.

The environmental work at SLU is a long-term process which builds on continual improvement and is based on the environmental legislation and regulations in effect.”

## Environmental Management System

SLU works according to the environmental management standards ISO 14001:2015 and the EU Eco-Management and Audit Scheme (EMAS). This means that the University works in a structured way with environmental issues and that the environmental performance of its activities is monitored and followed up. The Vice-Chancellor has the ultimate responsibility for environmental work and it is SLU’s senior management that decides on what improvements to make.

The decision that the entire SLU would be certified according to ISO 14001 was taken by the Vice-Chancellor in 2009 and the various activities within SLU were gradually certified during the period 2004 to 2016. In 2019, the decision was made that the previous eleven certificates would be merged into a common certificate for the entire university, which became a reality in the first half of 2021. The change has meant new local constellations, not only new ways of working, and some educational programme initiatives during the year, but also a more efficient way of working according to common routines and guidelines.

At the University, everyone is involved in environmental work. Each Faculty and the University administration has its own environmental coordinators,

environmental representatives, and environmental management. The University's Environmental Unit coordinates and reports on environmental work at a university-wide level. For example, the Environmental Unit proposes for overall environmental goals, coordinates SLU's environmental aspects list and Environmental Handbook, and coordinates internal environmental audits and environmental days. SLU's university management and the Vice-Chancellor decide on the overall environmental goals and the university-wide guidelines and procedures.





# Environmental Year 2021 (performance)

Several new environmental projects have been started in 2021 and new environmental goals in a number of areas have entered into effect. It has also been a year with a lot of commitment from researchers, other employees and students at the Swedish University of Agricultural Sciences, as well as stakeholders. In this year's Environmental Review and Report, each main heading is linked to the relevant sustainability goals within the 2030 Agenda for Sustainable Development, a work that will be intensified in the coming period.

## Uppsala County Administrative Board's sustainability promises in biodiversity

The County Administrative Board in Uppsala continues its programmes for a sustainable county and in 2021 the Swedish University of Agricultural Sciences has continued to work with a large number of promises regarding biodiversity and ecosystems as well as reduced climate impact. For example, SLU will become better at having flowering edge zones and to continue research on its own land on the relationship between farming methods (including crop rotations), soil health and productivity.

## Uppsala Climate Protocol and Umeå Climate Roadmap

SLU continues to participate in the Uppsala Climate Protocol, which is a climate agreement and network between local businesses, governmental institutions, universities and civil society organisations that collaborate and inspire each other and others to accelerate the pace of adaptation to climate change. In 2021,

the network entered a new programming period and SLU adopted new climate challenges. The Swedish University of Agricultural Sciences now also participates in the Uppsala Climate Protocol's joint collaboration group, whose primary task is to steer the development of the network.

Since 2021, SLU has also been part of the Umeå Climate Roadmap, which points out Umeå's major climate challenges. The roadmap is designed as a form of contract, which companies and other organisations can sign to show their participation.

## New environmental goals in official university business travel, educational programmes and environmental monitoring and assessment

During the year, new environmental goals in official university travel, education for sustainable development, and environmental analysis, entered into effect as they previously expired at the end of the year.



### *Bold goals in official university travel*

At the beginning of 2021, the new environmental goals in official university travel together with new guidelines for official university travel and meetings became effective. The new environmental goals in official university travel are in line with the Paris Agreement and significantly reinforce SLU's ambition to significantly reduce emissions from air travel. The purpose of the Guidelines is to guide the employees and students at SLU to choose the right form of meeting and encourage the greater use of digital solutions and to primarily use train travel when travelling domestically.

### *Education for future decision-makers*

In 2017, an overall goal was established that all students who participate in any of SLU's programmes should have a good base from which to handle all perspectives (economically, socially, and environmentally) on sustainability in their future professional practice. To achieve this, several sub-goals were established that are monitored and followed up in the usual environmental management work. The overall environmental goal remains, but the sub-goals have been updated, with a focus on, among other things, that education for sustainable development should be integrated into all programmes and on receiving high marks from students and alumni on how well SLU has succeeded in doing so.

### *Environmental monitoring and assessment*

The new environmental goals in environmental monitoring and assessment extend the current goals, while at the same time improving the degree of fulfilment.

### *Environmentally-friendly disposal of computers at SLU*

For almost two years, SLU has been working to take back obsolete IT equipment. During the year 2021, SLU sent 341 devices (laptops, desktop computers, servers and mobile phones, tablets, etc.) via the procured take-back and disposal service, and of these, 75 could be reused, the rest are recycled.

### *Ranking of the environmental work at SLU*

In the Swedish Environmental Protection Agency's follow-up of the public authorities' environmental management work, no ranking was conducted in 2021. This is due to the fact that the regulations concerning environmental management in central government agencies are being reviewed and there is a need to adjust the system. For the second year, the climate programme students conducted their own ranking of Swedish universities and other higher education institutions' climate work. It is based on the same data that is reported to the Swedish Environmental Protection Agency and the result was a fourth place among 25 responding universities and other higher education institutions.

## Biochar

The Swedish University of Agricultural Sciences' vision is to be climate neutral by 2027 at the latest with the help of six focus areas, one of which is through climate compensation. In 2021, a feasibility study was conducted to investigate what SLU can do in practical terms to sequester carbon dioxide. The focus of the study was to investigate the possibility of producing and using of our own biochar in order to climate compensate. The feasibility study addressed i.a. the placement of a biochar boiler, certification related to biochar, management of the heating, the added value of own biochar production and alternatives to own biochar production. Three locations have been identified as best suited for the placement of a biochar boiler: Lövsta (Bläckhornet, Uppsala), Ultuna and Alnarp. In the case of Ultuna, among other opportunities the possibility of using manure from the University Animal Hospital/Universitetsdjursjukhuset has been reviewed and considered. The project team will now have further discussions about whether we should move forward.

## Environmental audits at SLU

SLU is audited annually both externally, by the RISE certification body, and internally, by SLU's internal environmental auditors. In connection with the recertification conducted in March 2021, RISE found close to 100 non-conformities and opportunities for improvement, the majority of which were remedied during the year. This may be perceived as

a high number, but given SLU's complex and diversified activities, in many different locations throughout the country, it is an expected number.

In the summer of 2019, the R/V Svea research vessel was transferred to SLU. The Environmental Unit has been involved as a requirement for the ship to be designed and in the procurement of shipbuilding services. The work to include R/V Svea in the environmental management system was delayed due to the coronavirus pandemic, but since 2021 the vessel is part of SLU's environmental certificate.

In 2021, SLU had fifteen trained and approved internal environmental auditors.

## Social responsibility activities

Together with the SLU library and the climate programme students, the Environmental Unit organised a book circle during the spring. Where in a social and undemanding context, together with interested students and employees of SLU we read and discussed literature about global warming and climate change and the environment in general. In the same vein, a well-attended digital seminar was arranged with Maria Wolrath Söderberg from Södertörn University. The seminar concerned the questions surrounding "what is it that prevents people from changing?" What can set them in motion? Why is it that we do things that we know are harmful to the climate? And what is it that makes some people actually change behaviour for the sake of the climate even though there is a cost?

## Environmental non-conformities and improvement proposals

In 2021, 236 environmental cases (non-conformities and proposals for improvement) were submitted to SLU's case management system, IA. Of these, 70 were resolved during the year. A total of 496 environmental cases have been received since the system went live in the autumn of 2019. Many of the cases that come in are suggestions for improvement from SLU staff and students from around the country. The proposals are diverse in nature, both major and minor. Some areas that generated a majority of cases during the year are deficiencies in chemical management, measures for a fossil-free vehicle fleet and the fact that (due to the coronavirus pandemic) fire safety training has not been offered to a sufficient extent in several places. Several of the cases received have resulted in concrete improvement measures being taken. For example, environmental issues received in chemical management led to the first network meeting for SLU's chemical coordinator being organised during the autumn.

## Environmental considerations in procurement

The central Purchasing Unit at SLU carries out all procurements in excess of the amount limit for direct procurement. The Environmental Unit performs an environmental risk analysis on all procurements and where it is deemed relevant, environmental requirements are established. During the year 2021, environmental requirements were established in the procurement of i.a. printing ser-

VICES, tractors, work clothes, plant protection products. Examples of environmental requirements that were established in the tractor procurement are that the engine must be adapted for and be able to run on fuel HVO. For example, the plant protection product procurement had environmental requirements for plant nutrients manufactured according to a method with low climate impact. In the procurement, which dealt with printing services, demands were made on eco-labelled printing in favour of sustainable production with a low environmental impact.

## Vehicle group at SLU

During the year, a vehicle group was established at SLU with the aim of helping SLU's various activities to choose the right vehicle for future purchases. The Vice-Chancellor has decided that vehicles, machinery and tools will be powered by non-fossil fuels by 2027, and the vehicles purchased today will live up to the requirements that apply for future vehicles. The number of environmental cases received in the area has shown a need for support in the organisation. The vehicle group consists of representatives from the Environmental Unit and the Purchasing Unit, and is tasked i.a. with being responsible for agreements regarding the purchase of vehicles and vehicle rental, being a driving force and collaborating with the activities with vehicle coordination in accordance with the Environmental Policy and goals of a fossil-free vehicle fleet, as well as building up and maintaining a complete vehicle list.

# Scientific publications by global goal

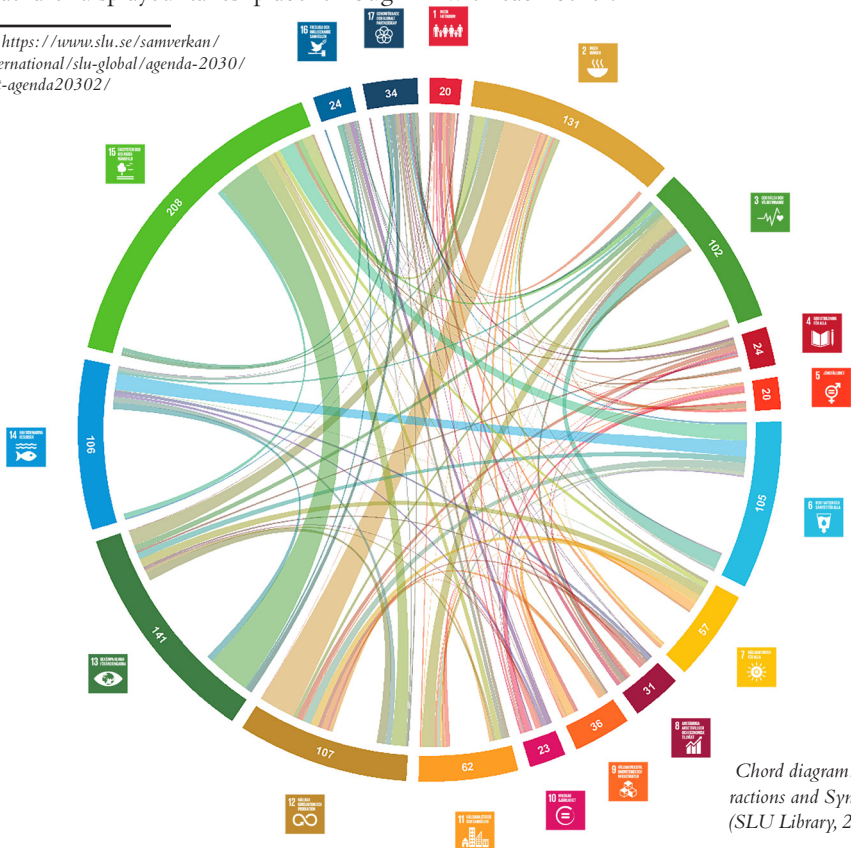


SLU contributes to the sustainable development goals in Agenda 2030 via conducting research, development of knowledge and dissemination of knowledge.

In 2021, Scientific publications per global goal have been published on SLU's website, and now covers all the Sustainable Development Goals.<sup>1</sup> The goal of the position is to highlight and make available research that may be important for achieving the sustainable development goals and this is continuously updated. The selection of publications that are displayed takes place through

continuous searches in bibliographic databases such as Scopus and the Web of Science Core Collection, combined with manual selection and self-notification from academic researchers/authors. The picture gives an overview of how SLU (if one looks at the number of related publications) contributes to the different goals, and how these interact with each other.

1. <https://www.slu.se/samverkan/international/slu-global/agenda-2030/test-agenda20302/>



# Climate Change Fund



Since 2015, the Swedish University of Agricultural Sciences has had a “climate change fund” as part of the work for the environmental goals around official university business travel. All air travel at SLU generates a fee that is added to the fund. Employees can then apply from the Climate Change Fund for funding for climate-promoting projects within SLU. Funding from the Fund is granted once a year in the autumn term.

The Climate Change Fund had a test period of three years and, after evaluation in 2018, was extended for another three years. After these three years, the Fund will be re-evaluated.

Each one-way flight is charged a fee, the size of which is different depending on the type of trip:

- Domestic SEK 100
- European destinations SEK 200
- Intercontinental destinations SEK 300.

In 2021, no new projects were granted funding from the Climate Change Fund. Due to the current coronavirus pandemic, SLU’s employees travelled much less and therefore revenues to the Climate Change Fund decreased so much that dividends were not considered reasonable in relation to work effort and distributable funds.



# PRME Certification



**The Principles for Responsible Management Education (PRME) is an initiative within the UN to create a platform for the education of future business leaders who take responsibility for ensuring sustainability and who can work to promote sustainable development.**

Sustainability-oriented Master's programmes in business administration are offered by the Faculty of Natural Resources and Agricultural Sciences. The certification applies to the entire university, all campuses and various educational programmes, although the prerequisite for the PRME certification is linked to the main field of study business adminis-

tration. In 2021, the Swedish University of Agricultural Sciences was once again certified. With support from the UN and the Global Compact, PRME has quickly gained ground, and the certification makes SLU more attractive to students, future employees and partners who are looking for a sustainability- and future-oriented university.

## **PRME** Principles for Responsible Management Education



# Production of fossil-free electrical energy



**SLU produces its own electrical energy and heating. Within our educational and research activities we have a biogas facility, solar cell installations, and biofuel boilers.**

In 2021, SLU generated a total of 1,248 MWh of electrical energy and 9,935 MWh of heating. SLU's total consumption in rented and self-managed premises amounted to 26,002 MWh of electrical energy and 27,760 MWh of heating. Self-sufficiency rates of self-managed premises were thus 23% for electrical energy and 79% for heating. Production in 2021 was as follows:

- biogas plant, electrical energy: 1,194 MWh
- photovoltaics, electrical energy: 54 MWh
- biogas plant, heating: 1,150 MWh
- biofuel boilers, heating: 8,785 MWh.



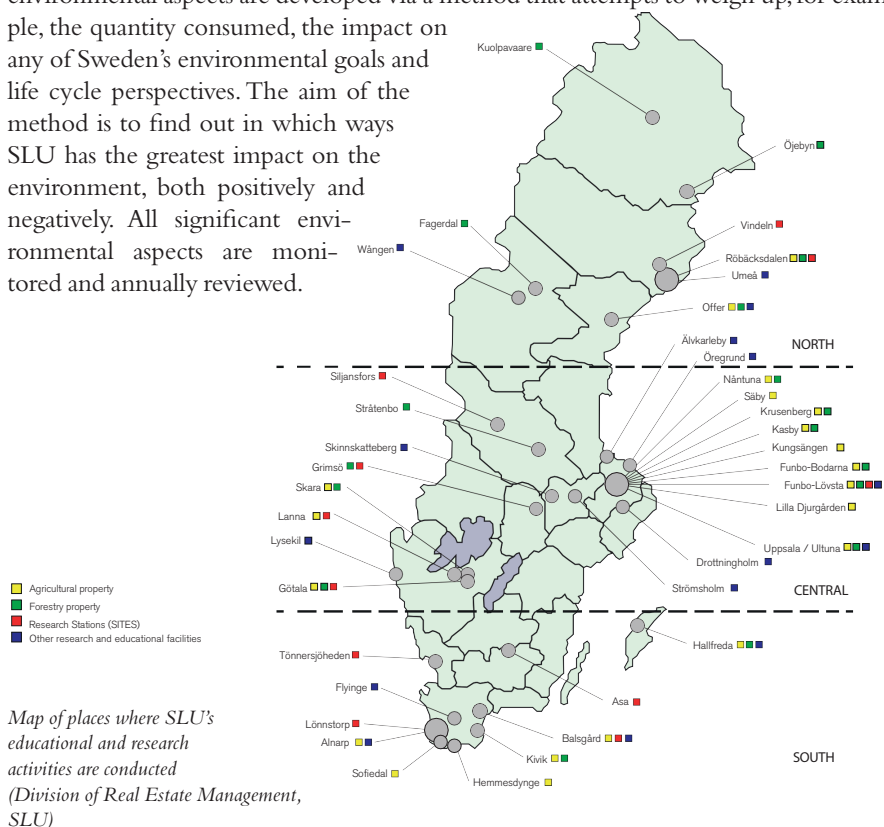
*Swedish Livestock Research Centre  
(SLU Lövsta Lantbruksforskning).  
Photo credit: Pereric Öberg, Aerobilder.*



# Environmental indicators

The environmental indicators provide management with a basis for assessing the University's environmental performance and identifying areas of environmental work that need to be improved.

SLU has identified the activities that affect the environment in a positive and/or negative way, the so-called significant environmental aspects. These activities have become focus areas for the University's environmental work and how the activities work with continuous improvements in the environmental area. The efforts involve i.a. taking environmental considerations into account with purchasing and procurement, considering possible ways of meeting that reduce the University's greenhouse gas emissions, and disseminating knowledge in environmental and sustainability issues. The significant environmental aspects are developed via a method that attempts to weigh up, for example, the quantity consumed, the impact on any of Sweden's environmental goals and life cycle perspectives. The aim of the method is to find out in which ways SLU has the greatest impact on the environment, both positively and negatively. All significant environmental aspects are monitored and annually reviewed.





## Significant environmental aspects

Significant environmental aspects exist within each Faculty and within the University Administration.

- Faculty of Landscape Architecture, Horticulture and Crop Production Science (LTV)
- Faculty of Natural Resources and Agricultural Sciences (NJ)
- Faculty of Forest Sciences (S)
- Faculty of Veterinary Medicine and Animal Science (VH)
- University Administration (Uadm) and the SLU Library

Significant environmental aspect	LTV	NJ	S	VH+ UDS	Uadm
<b>Undergraduate and graduate research education:</b> by educating on issues of sustainability, food production, energy, etc., it is our hope that the next generation of decision-makers have been provide with the right tools to make good decisions.	X	X	X	X	
<b>Research:</b> in e.g. the Swedish University of Agricultural Sciences' four interdisciplinary Future Platforms covering forest, food, health and urban landscapes (SLU Animals in the Future, SLU Future One Health, SLU Future Food, SLU Future Forests, and Urban Futures), researchers collaborate across subject boundaries and with various stakeholders in the community. Some research findings have had a particularly strong impact in society, and gender-related research is being conducted in several places.	X	X	X	X	
<b>Interaction</b> with society, information activities and advice.	X	X	X	X	X

Significant environmental aspect	LTV	NJ	S	VH+UDS	Uadm
<b>Environmental analysis (monitoring and assessment)</b> , incl. reporting, data collection and monitoring: SLU is an international university that has a societal mission that is unique among Sweden's universities and other higher education institutions. In addition to education and research, SLU has the mandate from the Swedish Government to conduct environmental monitoring and assessment at research stations and experimental parks. By conducting environmental analysis, we provide decision-makers with factual data on the state of the environment, especially in Sweden.	X	X	X	X	X
<b>Land holdings:</b> 6,303 ha of which 2,878 ha is agricultural land, 2,636 ha of forest and 789 ha other land. Of the rest of the land, 253 ha, is natural pasture.					X
<b>Forest holdings:</b> 2,636 ha of which 2,171 ha is productive forest land.					X
<b>Area affected by</b> , experiments, incl. forage production for laboratory animals: Approximately 40% of the total arable area is subject to damage and other impacts from experimental activities.	X	X	X	X	X
<b>Livestock units (DE/LU):</b> cattle, pigs, poultry, sheep and fish: SLU owns about 1,000 livestock units, which affects the environment both positively and negatively, e.g. the cattle release methane, but at the same time keep the land open and benefits biodiversity. Above all, SLU's animals contribute to research and education in sustainable animal production.		X		X	
<b>Commercial fertilisers:</b> Within SLU's farming and agriculture activities and research and experimental activities, commercial fertilizers are used for increased growth. The production process involves high levels of energy consumption.	X	X	X	X	X

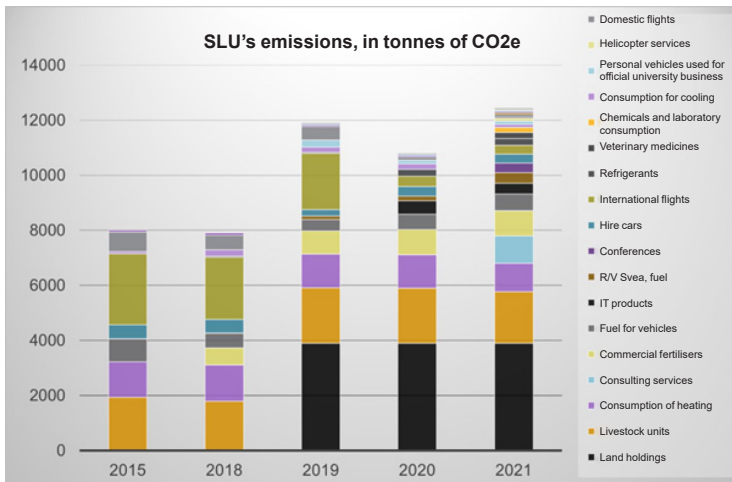
Significant environmental aspect	LTV	NJ	S	VH+UDS	Uadm
<b>Plant protection product:</b> Within SLU's farming and agriculture activities and research and experimental activities and plant protection products are used to achieve increased growth. The production process and use involves emissions.	X	X	X	X	X
<b>Chemicals:</b> All of SLU's laboratories, farming and agriculture activities and other activities use a wide range of different chemicals. There are emission risks to air, water and the soil.	X	X	X	X	X
<b>Travel:</b> in our educational and research activities we need to travel and these trips generate, among other things, emissions of CO <sub>2</sub> .	X	X	X	X	X
<b>Consumption of heating, excluding self-generated heating:</b> through our activities we consume energy in the form of heating. In many cases, it produces emissions of CO <sub>2</sub> and other environmentally hazardous substances.	X	X	X	X	X
<b>Vehicles, incl. machinery:</b> SLU owns many different types of vehicles, which are powered by different types of fuel. The use of transport fuels generates CO <sub>2</sub> emissions and other environmentally hazardous substances.	X	X	X	X	X
<b>Purchase:</b> SLU procures and purchases goods and services for many million Swedish kronor each year. It is important to ensure that the procurement is as good as feasible and environment-friendly from an environmental perspective. The purchases can generate emissions in other parts of the world, e.g. when purchasing IT products, and a life cycle perspective is therefore important. Purchases of plastics (packaging and products) is another example of where SLU can make a difference by choosing wisely.	X	X	X	X	X

## SLU's CO<sub>2</sub>e emissions

SLU's emissions of CO<sub>2</sub>e according to the Greenhouse Gas Protocol (GHG) have been followed up for five years so far and will continue to be monitored and followed up annually. The graph shows the five years of CO<sub>2</sub>e emissions per environmental aspect. During these years, more and more environmental aspects have been possible to measure in kg CO<sub>2</sub>e, resulting in a higher bar for 2019, when a major environmental investigation was conducted and even higher for 2021, when supplementation was made with purchases of both goods and services, via a spend analysis (CO<sub>2</sub>e/SEK). In 2020 and 2021, emissions from air travel were significantly lower due to the coronavirus pandemic.

Unique to SLU, especially in comparison with other universities and other higher education institutions, are livestock

units, commercial fertilizers, land holdings and forest holdings. The environmental impact of this type of activity is complex and difficult to measure and illustrate in a fair way. The emissions from the livestock units' in the chart refer only to the methane gas ruminants belch out. Feed production, manure and other parameters linked to animal husbandry are not included. Of course animal husbandry also has a positive environmental impact. The emissions included in the graph for commercial fertilisers come from the production process, but the increased yield and impact in general have not been included. Land ownership and forest holdings not only involve emissions in different ways, but also carbon capture. Calculations have been made regarding carbon capture in the forest and other land SLU owns, which show a carbon capture of approximately 12,200 tonnes of CO<sub>2</sub>e.



*SLU's emissions of tonnes CO<sub>2</sub>e, broken down by emission source, during the years 2015-2021.*

# Environmental targets and results 2021



The UN's climate goals are clear: net zero means cutting greenhouse gas emissions to as close to zero. Global greenhouse gas emissions need to be reduced by 45% by 2030 and reach net zero by 2050. SLU is an environmentally conscience university that desires to practice what we preach and we also see the importance of managing the University's climate emissions as a governmental agency.

Of the significant environmental aspects, SLU has chosen to set environmental goals in education and environmental analysis, as well as energy use, purchasing and official university business travel. In addition, the Vice-Chancellor has made the decision to set the goal to be a cli-

mate-neutral university when SLU turns 50 (2027); within this vision additional environmental goals are established. With the vision, SLU will contribute to achieving the goals of the Paris Agreement and Sweden's national goal of climate neutrality by 2050.

## 1. Educational activities<sup>2</sup>

**All students who participate in any of SLU's programmes must, for their future professional practice, have a good base on which to handle all sustainability perspectives (economically, socially and environmentally).**

### 1.1. Sustainable development within educational programmes<sup>3</sup>

Mainstream sustainable development into all programmes (100%) by 2025.

*Results:* At the end of 2021, SLU had 48 first-cycle and second-cycle educational programmes (excluding the foundation year programmes). All programmes at SLU have sustainability aspects as part of the programme's profile, but in some programmes additional aspects need to be made more concrete, and in some cases this can be further clarified in the programme syllabus/study program.

At the end of 2021, just over 90% (409) of SLU's course coordinators had also participated in a course for sustainable development (UHU), also SLU's basic course in higher education pedagogy contains a module on UHU.



2. SLU's internal environmental goal 4.4  
3. SLU's internal environmental objective 4.4.1

## 1.2. Course evaluations<sup>4</sup>

In course evaluations by 2025, receive at least 3.5 (out of 5.0 possible) in terms of the extent to which sustainability has been integrated into the educational programmes.

*Results:* The average for the course evaluation question in 2021 was 4.1 out of 5 possible.



## 1.3. Alumni: sustainable development in professional practice<sup>5</sup>

At least 70% of alumni surveyed should feel that their education (in programmes) should have given them the tools to work with all three dimensions of sustainable development in their current professional practice, as well as whether they consider themselves to be using the tools and contributing to a more sustainable world

*Results:* The average for the 2021 alumni survey was 7 on a scale of 1–10. One of the questions answered was: to what extent do you think that in your education you have been provided with good tools to work with sustainability issues?



# 2. Environmental monitoring and assessment

**In order to contribute even more to society's environmental work, the Swedish University of Agricultural Sciences has as its overall environmental goal, established that the use of data generated by SLU's continuous environmental monitoring and assessment will be greater among the country's decision-makers, public authorities, academic and other researchers, and the general public.**

## 2.1. Environmental data management: quality guide<sup>6</sup>

At least 90% of all activities\* that participate in SLU's quality work will provide open data on the web by the end of 2025 according to the current quality guide for environmental data management<sup>7</sup>.

*Results:* Of the activities participating in the quality work, at the turn of the year 2020/21, just under 10% met the requirements. The target was not achieved in 2020. The target will be extended until 2025, while the target level will be enhanced to 90%.



4. SLU's internal environmental objective 4.4.2

5. SLU's internal environmental objective 4.4.5

6. SLU's internal environmental objective 5.4

7. <https://internt.slu.se/stod-service/fortlopande-miljoanalys/verksamhetsstod/ingangssida/kvalitetsguide/>



### 3. Consumption of energy

**Consumption of different types of energy means impact on the environment in many different ways. SLU has several different activities that consume a relatively large amount of energy and therefore we have chosen to set goals in this area.**

#### 3.1. Electrical energy<sup>8</sup> and district heating/cooling<sup>9</sup>

All electrical energy and district heating/cooling purchased or consumed by SLU must be of fossil-free origin.

*Results:* In 2021, SLU only purchased and consumed fossil-free electrical energy. Of the district heating/cooling purchased or consumed by SLU in 2021, 68% were of fossil-free origin.



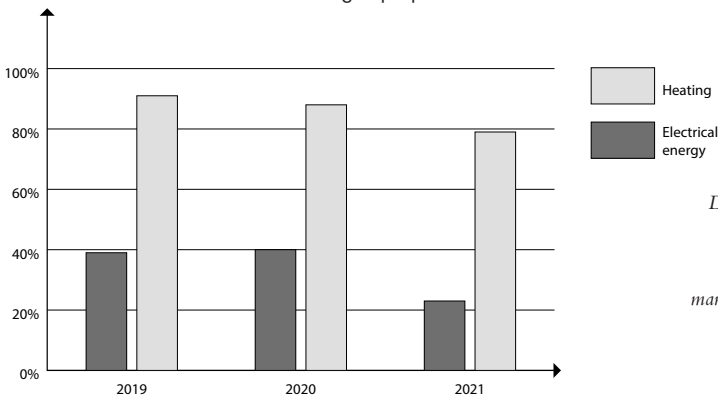
#### 3.2. Degree of self-sufficiency<sup>10</sup>

By 2027, calculated on the entire managed property portfolio, SLU will produce fossil-free electrical energy, primarily solar energy, corresponding to at least 50% of consumption, and heating corresponding to at least 95% of consumption.

*Results:* Calculated on the entire managed property portfolio, fossil-free electrical energy was produced in 2021 corresponding to 23% of consumption, and heating corresponding to 79% of consumption.



DEGREE OF SELF-SUFFICIENCY IN ELECTRICAL ENERGY AND HEAT in SLU's own managed properties



*Degree of self-sufficiency in electrical energy and heating in SLU's own managed properties, during the years 2019-2021.*

8. SLU's internal focus area 6.1

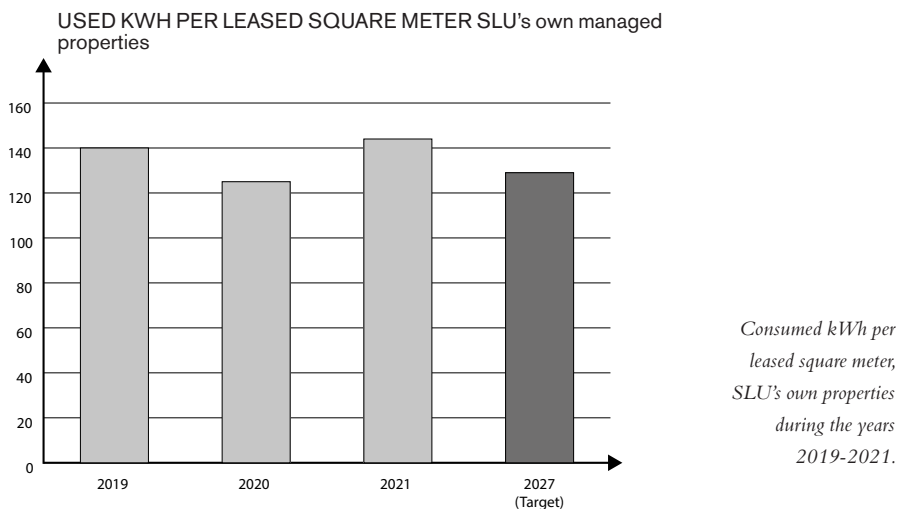
9. SLU's internal focus area 6.2

10. SLU's internal environmental objective 1.4

### 3.3. Energy efficiency<sup>11</sup>

By 2027, SLU will improve energy efficiency (electricity, heating and cooling) by at least 8% per leased m<sup>2</sup>, which corresponds to an energy efficiency improvement of at least 1% per leased m<sup>2</sup> and year, in its own managed building stock, using 2019 as the base year. This without educational and research activities and tenants being negatively affected.

**Results:** In the own managed property portfolio, energy consumption increased during 2021 by 3% per leased m<sup>2</sup>, with 2019 as the base year.



### 3.4. Energy conservation<sup>12</sup>

By 2027, as a common goal together with the landlord Akademiska Hus and with 2019 as the base year, SLU will save energy by at least 15% in the properties SLU rents. The target includes electricity, heating and cooling, and is measured in kWh/rented m<sup>2</sup>. This without educational and research activities and tenants being negatively affected.

**Results:** Energy consumption for 2021 was 186 kWh per m<sup>2</sup>, a decrease of 7% since 2019. The decrease is mainly due to energy efficiency measures and is not an effect of reduced attendance during the coronavirus pandemic.

11. SLU's internal environmental objective 1.5

12. SLU's internal focus area 1.6



## 4.SLU's own vehicles<sup>13</sup>

**The Swedish University of Agricultural Sciences owns numerous vehicles of various types, such as passenger cars, machinery for agriculture and forestry, scooters, ships, quadricycles, wheel loaders and more. In many cases, fuel consumption for these vehicles is a burden on the environment.**

All of SLU's own motorised vehicles, machinery, and tools will be powered by non-fossil fuel by 2027.

*Results:* Of the 217 vehicles SLU owns, the distribution between fuel types is: diesel 77%, petrol 17%, electricity 6% and methane gas 1%. More and more of SLU's diesel vehicles run partly or entirely on HVO.

Of the amount of fuel consumed in 2021, 37% was fossil-free, which converted to CO<sub>2</sub>e corresponds to 14% of emissions from fuel consumption. If R/V Svea is also included, the corresponding figures are 64% and 39% respectively.



## 5.Purchases

### 5.1.Procurement<sup>14</sup>

Procurement of goods and services must be done with a clear climate change awareness.

*Results:* Broadly satisfactory goal achievement. When procuring goods, services and buildings, energy consumption is taken into account as much as possible, where it is considered relevant. The number of procurements with environmental requirements is affected by the types of procurements involved. The Swedish University of Agricultural Sciences' activities and operations are very broad, and it is not uncommon for very specific products to be procured. In most cases, there is then only one supplier, which affects the ability to impose environmental requirements.



13. SLU's internal focus area 6.3

14. SLU's internal focus area 6.4

## 5.2. Follow-up of procurements<sup>15</sup>

Annually, follow-up of at least three procurements must have been conducted to determine whether, and to what extent, a reduced environmental impact has been achieved.

**Results:** In 2021, three follow-ups were conducted: window cleaning in Uppsala, medical supplies and animal species-specific medical device consumables for veterinary care, and the call-off from the framework agreement for fuel for the research vessel Svea.

The suppliers have submitted evidence that the requirements have been satisfied, such as requirements for eco-labelled cleaning agents for the window cleaners and the correct packaging materials for the consumables. Regarding the call-off of fuel to Svea, a number of fuel invoices have been verified.

In the follow-up of medical device consumables, there is no evidence that their environmental work has been audited and reviewed by an independent party.



## 5.3. Environmental requirements with procurements<sup>16</sup>

Environmental requirements must be established in all procurements, where relevant based on environmental risk analysis.

**Results:** In the procurements that resulted in a signed agreement in 2021, an environmental risk analysis has been conducted in all cases.

In twelve of these procurements (plant protection products, plant nutrients and seeds, third-party certification, tractor to Lanna, technical consultant support agriculture and lab, workwear, printing services, agricultural and service consumables, server, storage and networks, sea sampling by helicopter, profile products for SLU, interim agreements for grassland harvesting and abstract systems in IT), the environmental risk analysis has resulted in environmental requirements in each procurement and that green leaves are used in Proceedo where this is possible.



## 5.4. Order placements taking environmental considerations into account<sup>17</sup>

Increase the number of order placements with environmental considerations taken into account in timed-limited focus areas. For 2020–2022, the focus area is the purchase of domestic hotel nights.

**Results:** Of SLU's 20 most booked hotels in 2021, 32% of hotel nights were in an environmentally certified hotel. This is a decrease compared to 2020 when almost half of the hotel nights were booked in eco-labelled hotels.



15. SLU's internal environmental targets 3.6

16. SLU's internal environmental target 3.7

17. SLU's internal environmental target 3.8

## 6. Official university business travel<sup>18</sup>

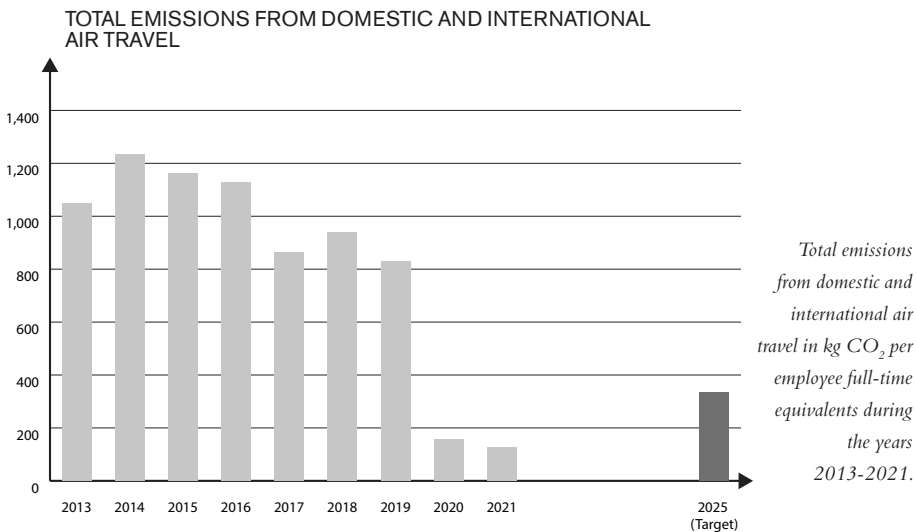
**The Swedish University of Agricultural Sciences' activities and operations are spread out throughout the country and we have many international contacts, forms of collaborative efforts and research projects, which means that many university business-related trips are conducted.**

SLU's personal travel will be reduced according to the agreed goal formulation and action plan.

### 6.1. Total airplane flights<sup>19</sup>

By 2025, SLU will reduce fossil emissions from air travel by a total of 60% compared to 2019 per employee full-time equivalents. This could be matched by a reduction of 90% for domestic flights and 50% for international flights.

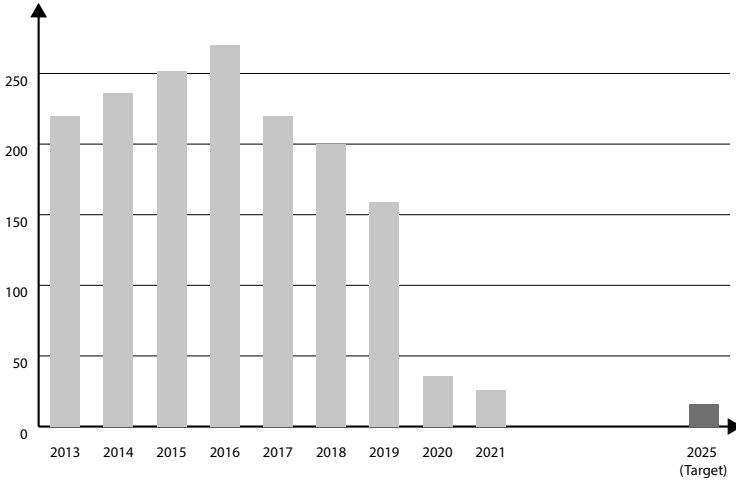
**Results:** SLU has reduced fossil emissions from air travel by 85% per employee (full-time equivalents), compared to 2019. Fossil emissions from domestic travel have decreased by 84% and emissions from international travel by 85%, measured per employee (full-time equivalents). The large decrease is due to travel restrictions due to the coronavirus pandemic.



18. SLU's internal focus area 6.5

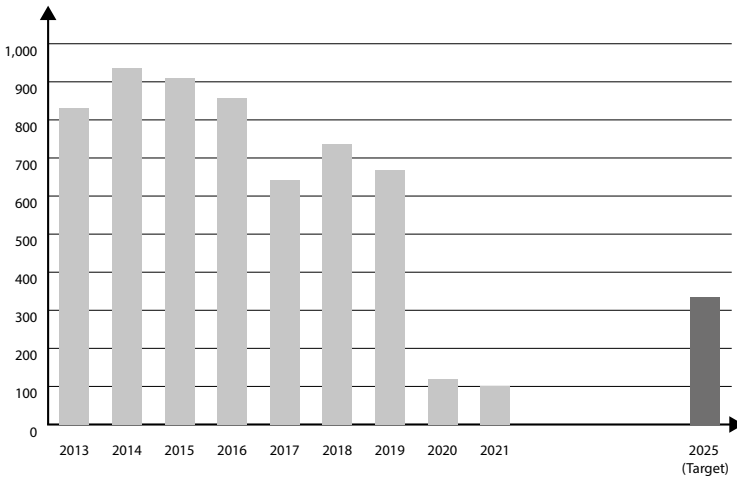
19. SLU's internal environmental target 2.6

TOTAL EMISSIONS DOMESTIC AIR TRAVEL, FULL YEAR 2021



*Total emissions from domestic air travel in kg CO<sub>2</sub> per employee (full-time equivalents) during the years 2013-2021.*

TOTAL EMISSIONS INTERNATIONAL AIR TRAVEL, 2021



*Total emissions from international air travel in kg CO<sub>2</sub> per employee (full-time equivalents) during the years 2013-2021.*

## 7. Carbon offsetting<sup>20</sup>

SLU cannot completely refrain from emitting climate-affecting gases through our activities, partly because some air travel will remain necessary and our ruminants are crucial to our educational and research activities. Therefore, SLU intends to compensate for these emissions.

*Results:* A project is underway to investigate what SLU can do in practical terms to sequester carbon dioxide, for example by the production and disposal of biochar.



## 8. Activity-specific environmental objectives and targets

In addition to SLU's university-wide environmental goals and targets, several activities have their own environmental goals and local action plans linked to the overall environmental goals, including:

- By 2025, 100% of silage plastic in VH/UDS activities will be recycled.
- Increase the degree of self-sufficiency in electrical energy within SLU Skara's activities starting 1 October 2020 and ending 31 December 2021.
- By the end of 2025, 100% of the Farming and Agriculture Activities' consumed fuel for vehicles and boilers will be fossil-free. In the autumn of 2021, a decision was made on additional environmental goals and targets within the Farming and Agriculture Activities, which in addition to fuel, include plant protection products, plant nutrients and biodiversity.
- Continued development of methods to measure our collected positive environmental impact within research, FOMA, collaborative efforts and information. SLU Swedish Species Information Centre
- CO<sub>2</sub> equivalent emissions from international flights to be reduced by 10% from 2019 to 2023 (Department of Aquatic Resources)
- Make the cultivation unit's work more visible, with the goal of increasing biodiversity within campus area. (LTV)
- By the end of 2025, LBD will have introduced ten new measures to optimise the use and/or reduce nutrient leaching. (Farming and Agriculture Activities).

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<sup>20</sup>. Focus Area 6.6:

# Legislation and other requirements

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SLU is subject to many statutes, regulations and other requirements when it comes to environmental work. All requirements are listed in a list of legislative and regulatory requirements. To ensure that we live up to the requirements and expectations placed on us, we conduct a legal compliance check every year. In various ways, several different public authorities also monitor or inspect our work via annual reports, supervisory visits and audits.

In addition to statutes and regulations, there are other collaborative activities where SLU has committed itself to contribute in various ways. This applies for example to the Climate Framework for Higher Education Institutions, the Uppsala County Administrative Board's

sustainability aspirations, the Uppsala Climate Protocol, Uppsala Municipality's diploma for a *Bicycle-Friendly Workplace*, and not least the entirety of Agenda 2030's sustainable development goals.



# What happens in the coming period?

As we look to the future, we see major challenges for SLU in the environmental field. Below are a number of points that will be important for SLU in the coming period.

- **SUHF:** The Swedish University of Agricultural Sciences has been commissioned to lead the Association of Swedish Higher Education Institutions' (SUHF) climate change network, a continuation of the efforts related to the work on the climate framework that was developed by Chalmers and KTH a few years ago. The intention idea is to apply for funding in the near future from Vinnova and Formas for the inter-sectoral collaboration.
- **The 2030 Agenda for Sustainable Development:** Since the beginning of year 2022, the Environmental Unit has been responsible for coordinating SLU's Agenda 2030 work and will support the Pro Vice-Chancellor for Collaboration and Environmental Monitoring and Assessment in strategic sustainability issues. In the coming years, the work will i.a. focus on developing sustainability goals and incorporating reasonable parts of the 2030 Agenda for Sustainable Development into SLU's environmental management system.

- **Climate-neutral university:** in the coming year, work will continue on the six focus areas linked to the vision of a climate-neutral university by 2027.
- **Vehicle group:** The vehicle group at SLU will continue the work of being able to help employees choose the right vehicle for future purchases in accordance with SLU's guidelines and vision. The work to climate-adapt the vehicle fleet is intensified.
- **Environmental objectives** In the coming period, work on the environmental goals will continue. Among other things, better measurement methods for the educational goals will be developed. In addition, we continue to work with local environmental goals and action plans.
- **Environmental initiatives in SLU's activities and operations:** The Environmental Unit continues to support the activities' own environmental initiatives, such as initiatives in reducing plastic use and improving chemical handling.



# The Environmental Unit at SLU 2021

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**SLU's Environmental Review and Report has been produced by employees at the University's Environmental Unit.**

More information about SLU's environmental work can be found at the <http://internt.slu.se/miljo>.

If you want to get in contact with the Environmental Unit, you are welcome to e-mail us at [miljo@slu.se](mailto:miljo@slu.se).

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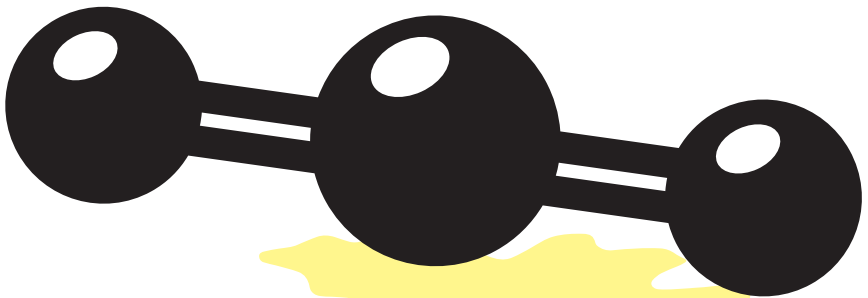
# Appendix 1 Core indicators

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**Organisations shall report on the core indicators in the Environmental Review and Report to the extent that they relate to the organisation's direct environmental aspects and other existing environmental performance indicators relevant as set out below.**

presentation of core environmental performance indicators under EMAS III.  
Each core indicator consists of the following:

- A number A indicating the total annual supply/impact within the given area.
- A number B indicating the total annual production of the organisation. (Since the University does not belong to the production sector but to the management/services sector, the figure for productivity in terms of number of employees (annualised full-time equivalents) is stated, 3,193.)
- A number R indicating the ratio  $A/B$ .



Area	Core indicator	A	R	Comment
Energy efficiency	Total annual energy use, MWh(a).	57,414 MWh	18.0	
	The percentage of "a" that comes from renewable energy sources produced by the organisation (b).	19.5 %		
Material efficiency				Not reported. SLU is a "service company" and thus has no material flows that have any significant environmental impact.
Water	Total annual water consumption. m <sup>3</sup> .	184,780	57.9	
Refuse/waste	Total annual production of refuse, excluding hazardous waste. tonnes.	Mixed paper: 16.2 Coloured glass: 11.5 Uncoloured glass: 10.6 Plastic packaging: 19.5 Metal packaging: 12.2 Paper packaging: 14.9 Corrugated cardboard: 38.0 Recycled paper: 9.6 Combustibles: 290.1 Compostable: 63.1	0.0051 0.0036 0.0033 0.0061 0.0038 0.0047 0.0119 0.003 0.091 0.020	Calculated on flat rates based on information from Akademiska Hus for Ultuna.
	Total annual production of hazardous waste, tonnes.	160.4 tonnes	0.05	Data from Ragn-Sells
Biodiversity	Land use in built-up areas (m <sup>2</sup> ).	2,768,820	867.2	Total campus area
Emission	CO <sub>2</sub> equivalents. Emissions from official university travel and other fuel consumption as well as CO <sub>2</sub> from electricity, heating and cooling and animal husbandry, tonnes CO <sub>2</sub> e.	4,474	1.4	





SCIENCE AND  
EDUCATION **FOR**  
**SUSTAINABLE**  
**LIFE**

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SLU, the Swedish University of Agricultural Sciences conducts its extensive educational and research activities in various locations in Sweden. Principally in Alnarp, Umeå and Uppsala, but also in Skara and other locations.  
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