Global Reading, Global Goals
The University of Reading and the SDGs
Update Report 2021
This report highlights our diverse contributions across all our research, teaching, engagement and operations to advance progress on all 17 United Nations Sustainable Development Goals. As a thriving academic community, we are committed to driving positive change.

At all levels, the University of Reading is committed to advancing the SDGs through our world-class research, teaching, operations and public engagement.

With 23,000 students across campuses in three continents, and 16 academic schools, we pride ourselves on responding to global challenges. Our research excels with themes for environment, agriculture food and health, heritage and creativity, and prosperity and resilience. Our internationally renowned experts help to shape policy worldwide.

Underpinning our strategy are the principles of community, excellence, sustainability, and engagement. We collaborate across sectors to maximise our impact: on people, prosperity, planet, peace and partnerships. Our academics rapidly respond to government requests on global issues, accelerating progress on urgent SDG challenges such as poverty, inequality and environmental degradation.

Our response to the coronavirus pandemic over the past year has been a case in point: while our whole community and work has itself been affected by the pandemic, the University of Reading has mobilised its significant resources, expertise and connections to help fill the gaps that have emerged in science, society and policy, at all levels.

As a leading UK and regional university, we are transforming lives through academic and personal excellence. We are listening to our communities, working with experts and people with lived experience to bring societal and educational improvements.

**Professor Parveen Yaqoob**  
Deputy Vice-Chancellor, University of Reading  
March 2021
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SDG 1: End Poverty In All Its Forms Everywhere

Students received financial support from the university to attend courses in 2020

Research

Supporting better livelihoods
At the University of Reading, our academics are working at local, national and international levels to alleviate poverty. Our Institute of Education’s ‘Marvellous Mums’ initiative, supports local women to build confidence and acquire tools to understand their own skill set, allowing them to meet their potential through new business ventures and returning to the workplace.

Through the Zero-Budget Natural Farming initiative, our academics are working with government and local partners in Andhra Pradesh, India, to enhance livelihood resilience of smallholder farmers to climate and land-use change, while increasing their income and improving food security, and soil fertility.

Outreach

Community participation
We have longstanding relationships with Reading Borough Council and provide research support and guidance to their social exclusion and health and well-being policy groups via the Whitley Researchers and Whitley4Real initiatives, to improve local participation in decision-making and work on social exclusion.

Socially responsible innovation
Through our Aspect Angels initiative at Henley Business School, we support more socially responsible innovation by facilitating investment in ventures that are driven by the highest-quality research into human behaviour and our relationship with the environment.
TEACHING AND LEARNING

Real jobs
Typography students at Reading support local social enterprises to raise profile and reputation in their final year design project and via Real Jobs. Examples include developing a new logo for a local community kitchen and rebranding for Reading Welfare Rights charity.

MBAid
Henley Business School Africa’s MBAid initiative has provided tens of thousands of hours of free consulting time over the last decade to non-profit organisations via thousands of Henley Business School Africa students. It also includes a Henley Alumni Pay-It-Forward Fund which assists African students who have completed their course work or dissertations but cannot afford to pay their final fees to graduate.

STEWARDSHIP/OPERATIONS

Access and Participation
As a University we are committed to social mobility and have developed an Access and Participation plan to support students from low-income families to attend the University. We have set targets for student attainment and to monitor student progression, which are published by the Office for Students and are proud to say in 2020, we met our targets for students starting at Reading who live in areas with traditionally the lowest level of HE participation.
SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

RESEARCH

Changing farming practices
Improving crop yields and producing healthier food, while reducing environmental impacts underpins agricultural research at the University of Reading. Biodiversity researchers from the University are worked closely with a Research Foundation and 64 smallholder farmers in Tamil Nadu, India to co-design and test solutions to show that planting insect-friendly flowers in orchards increases pollination and pest regulation in crops, thereby improving yields and reducing agrochemical use. Forty additional farmers are already following suit.

Reading research has also shown that by changing the diets of dairy cows to include more rape seed and less saturated fat, animals emit 18 to 20% less methane and produce milk with up to 36% lower saturated fat content, leading to changes in UK and EU farming practices.

OUTREACH

Farm Business Survey
Academics at the University are helping to shape agricultural policy as part of a consortium of university research centres, led by University of Nottingham that carries out the Farm Business Survey across England, collecting rural business research data that can be used by government, policymakers and farmers to help with decision-making.

Diverse forages
Our Centre for Dairy Research is a LEAF Innovation centre and works with farmers, the food industry, scientists and consumers, to inspire and enable sustainable farming through research, innovation, knowledge exchange and education programmes.

The Diverse Forages project, in collaboration with Cotswold Seeds, demonstrated that diverse, multi-species pastures without fertiliser (herbal leys) performed as well and sometimes better than nitrogen fertilized ryegrass and cattle grazing on the herbal leys grew at the same rate as when fed on nitrogen fertilized sward. The herbal leys also gave resilience to extreme weather and protected biodiversity.
TEACHING AND LEARNING

Access to food security knowledge
The University is a partner in the multi-million pound AgriFood Training Partnership which offers courses and workshops in all areas of agricultural production, environmental protection, food manufacture, scientific research and development and associated business and transferable skills.

334 STUDENTS GRADUATED IN AGRICULTURE, WHICH HAS A STRONG SUSTAINABILITY FOCUS

STEWARDSHIP/OPERATIONS

Menus of Change
As part of the University’s sustainable foods framework, we are a member of the Menus of Change academic-food operator framework, developed by the Harvard TH Chan School of Public Health and the Culinary Institute of America. We carry out operational and academic research to inform and advance the Menus of Change Principles, transforming how our food is produced and how our catering services operate.
SDG 3: Ensure healthy lives and promote well-being for all at all ages

839 STUDENTS (9%) GRADUATED FROM COURSES THAT WILL TAKE THEM INTO THE HEALTH PROFESSIONS

RESEARCH

Better health for all
Our health-related research ranges from BHF-funded work into blood clotting that is helping the development of personalised stroke and heart disease medicines, to creating a new family of biomaterials for use in medical devices through a Knowledge Exchange Partnership between the University and BioInteractions Ltd. Our academics also work internationally, including Dr Sakthi Vaiyapuri who is helping people in India and beyond, through an awareness-raising campaign – Rapid Action Saves Lives – to avoid venomous snake bites which cause 150,000 deaths each year.

OUTREACH

Supporting patient health through specialist clinics
The University maintains strong links with the Royal Berkshire Hospital NHS Trust and also runs its own well-established clinics across mental health, speech and language therapy, neuroscience, psychology and autism. These directly benefit patients and raise the profile of our high-quality health-related research across Berkshire.

Our award-winning Charlie Waller Institute is the NHS provider of choice for training for mental health professionals in evidence-based psychological treatments.

TEACHING AND LEARNING

Supporting GPs during the pandemic
Through a partnership with a University of Reading spin-out company, Red Whale, we supported hundreds of GPs during the pandemic with free online continuing professional development and education to provide critical clinical updates and resources on COVID.
HealthReach
HealthReach is a mobile learning programme launched by the University in 2018 to support access to health and life science careers and courses. Staff and students from the University team run sessions, online, in schools and on campus using interactive and experimental healthcare simulations and education sessions to inspire young people to consider healthcare careers. More than 8000 children and young people participated across almost 280 sessions prior to lockdown in March 2020.

STEWARDSHIP/OPERATIONS

Staff health and wellbeing
The University of Reading is committed to employee health and wellbeing. We aim to provide a workplace that embraces inclusivity and flexibility and provides everyone with the opportunity to manage their time and commitments in the best way that they can. Staff also have access to mental health support and counselling through our free, independent Employee Assistance Programme (EAP).

Stay Active
For over-55s in the local community, our SportsPark provides Stay Active classes, including Zumba, badminton and fitness. In addition, the Reading University Students Union works with the local Sports in Mind charity to run active walking groups on campus.
SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

RESEARCH

Teaching literacy: As easy as ABC?
By helping teachers to understand how different children learn to read, researchers at the University of Reading are equipping them to better meet the needs of their pupils – including those whose home language is not English. Using a combination of long-term studies and novel research methods such as eye-tracking to reveal more about how children learn to read and spell, they have highlighted the importance of tailoring classroom activities to the needs of different learners.

Improving equity and inclusion through education
Reading’s education specialists are also helping to improve equity and inclusion through education by exploring areas such as education and social mobility, outdoor learning, SEN inclusion and social justice and ethnicity and gender in educational engagement.

OUTREACH

“Through our engagement with teaching practitioners in the UK and beyond, we are filling gaps in education policy and practice that will significantly improve the life-chances of thousands of children”

Life-long learning
In partnership with the FutureLearn platform, the University supports life-long learning by providing a range of free online short courses, from exploring ancient Rome through virtual 3D models, to understanding depression, microbes or the weather. This enables us to reach learners from diverse backgrounds and all ages around the world and share the important work we are doing to help tackle some of the major issues we face today.

For younger learners, we offer a range of activities for under-16s that support widening participation in higher education and are delivered through school visits and on campus, including school conferences and assemblies.
TEACHING AND LEARNING

Teaching the next generation of educators
The University's Institute of Education provides training for a new generation of teachers, offering PGCE, QTS and EYTS qualifications in early years, primary and secondary teaching. Each year, 180 students graduate from our teaching courses which partner with over 400 schools in Berkshire and surrounding area.

Our teaching specialists have also teamed up with the Royal Berkshire Hospital (RBH) to create a unique Healthcare Education programme for all staff who teach doctors, nurses, allied health professionals and pharmacists. By strengthening teamwork and mutual understanding as well as improving teaching skills at the hospital, the collaboration is driving improvements in patient care and patient safety.

STEWARDSHIP/OPERATIONS

Supporting equal access to higher education
The University is striving to ensure the widest possible access to its high-quality courses. Its access and participation plan ensures targets for recruitment, continuation, outcomes and progression for students from different ethnic and socio-economic groups are monitored. In 2020, there was no significant difference in the number of students from different demographic groups progressing to highly skilled jobs and further study.

180
STUDENTS GRADUATED WITH A QUALIFICATION TO TEACH IN PRIMARY SCHOOLS
SDG 5: Achieve gender equality and empower all women and girls

RESEARCH

Gender equality in peacekeeping and policing
Academics at Reading are exploring how to support equality in peacekeeping forces and policing. Dr Georgina Holmes, a Leverhulme Early Career Researcher in the Department of Politics and International Relations, has been exploring how diversity and equality initiatives are implemented by Ghana Armed Forces, Rwanda Defence Force and the British Army.

Another project led by Professor of Psychology Netta Weinstein, has gathered data from police forces to discover what motivates officers to change their views on diversity and inclusion. Professor Weinstein worked with Hampshire and Isle of Wight Constabulary to develop the first evidence-based police training programme on inclusion and her evidence informed the first UK policing national wellbeing report.

OUTREACH

Staff networks
The University is committed to gender equality, providing support for all colleagues, such as job share arrangements, mentoring and development schemes for students and staff, and a nursery on campus. It supports a several staff networks including women@reading and a women’s Springboard network that to support female colleagues.

TEACHING AND LEARNING

Exploring the educational experiences of LGBTQ+ students
Academics at Reading worked with six secondary schools in the south of England to understand the lived experiences of LGBTQ+ students aged 11 to 18. They found this group of students are more likely to suffer victimisation from their peers, are at significantly greater risk of mental health problems and are more likely to achieve low academic outcomes from their education.

Women in leadership scholarship
To support women in leadership, our Henley Business School runs a scholarship competition each year to offer practical support for the development of strong female talent. The competition is open to people of all genders and the winner receives a fully-funded place on Henley Business School’s part-time Executive MBA programme.
Equal opportunities
The University has had a Dean of Diversity and Inclusion since 2015, supported by a dedicated staff team. We have a Gender Equality plan in place and, in 2020, our most senior committees, including senior Council and Senate had 50:50 representation. We have increased job-sharing at all levels, reduced the Grade-9 gender pay gap, and seen an increase in the number of female professors.

Athena SWAN
In 2020 we achieved an institutional Silver Athena SWAN Award in recognition of our work on gender equality. Our Schools of Mathematical, Physical and Computational Sciences (SMPCS), Archaeology, Geography and Environmental Science (SAGES), Built Environment (SBE), and Chemistry, Food and Pharmacy (SCFP) all hold Silver departmental awards and our Schools of Biological Sciences (SBS), Agriculture, Policy and Development (SAPD), and Psychology and Clinical Language Sciences (SPCLS) hold Bronze Awards.
SDG 6: Ensure availability and sustainable management of water and sanitation for all

RESEARCH

Flood risk reduction
Research at Reading has informed UK policy to reduce flood risk and supported humanitarian efforts in response to flooding worldwide. It is also helping to find ways to simultaneously reduce flood risk and deliver benefits such as improved biodiversity using nature-based solutions such as targeted tree planting, soil and land management and hedgerow retention.

In the Loddon river catchment, Reading researchers are working with South East Water and Hampshire and Isle of Wight Wildlife Trust to measure the impacts of groundwater abstraction and land management on the hydrology, geochemistry and biodiversity, using sensors to record river flow, rain and groundwater levels in the chalk and improve conservation.

A team from the Walker Institute is also collaborating to integrate hydro-climate science into policy decisions for climate-resilient Infrastructure and livelihoods in East Africa (Hy-CRISTAL) as part of the Future Climate for Africa (FCFA) programme.

OUTREACH

Doing UoRBit
The University is encouraging staff and students to reduce water usage through its Doing UoRBit initiative. Doing UoRBit is an online platform rewarding staff and students with points and prizes for taking steps that boost sustainability and well-being. The initiative was established in 2020 as part of the Sustainability Team’s communication plan.

273,618m³
WATER USED
5th lowest per head of any research-intensive university (HESA data)
TEACHING AND LEARNING

Student volunteering to support WaterAid
Many students at Reading undertake volunteer projects while studying for a degree. Jack Abrey, a first-year Geography student travelled to Madagascar with international charity WaterAid and the Scouts to help improve access to clean water and safe toilets across the country.

STEWARDSHIP/OPERATIONS

Water Management Plan
The University has a water management plan which it updates regularly. It promotes free drinking water for all staff, students and visitors, and has more than 30 drinking stations across its Whiteknights campus.
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

RESEARCH

Smarter energy supply and demand
Researchers in Reading’s Technologies for Sustainable Built Environments Centre (TSBE) are helping the UK move towards net zero carbon by designing ways to improve the affordability and accessibility for consumers of electricity from renewable sources. They have designed a flexible tariff on the ‘demand side’ (REDPEAK), to reward consumers for changing how and when they use electricity.

Rapid shifts in electricity supply are a major issue for distribution network operators (DNOs) world-wide. A team at Reading is working with industry partners using smart IoT sensors with existing infrastructure, to improve monitoring, analytics and optimisation of electricity supply.

TEACHING AND LEARNING

Sustainable technologies teaching and learning
The University has a range of undergraduate and postgraduate modules that focus on sustainable environments and energy use. For example its MSc Renewable Energy: Technology and Sustainability in the School of Construction Management includes a module on sustainable heat and power that gives students the opportunity to learn from academics and industry experts about the challenges of designing sustainable technologies.

“I particularly enjoyed the Sustainable Heat and Power module. It gave a solid grounding in the technical and engineering aspects of renewables (solar, wind, hydro and bioenergy). We were assessed as if we were energy consultants pitching ideas to developers.”

OUTREACH

Changing behaviours
To encourage students, staff and the wider public to think about how they might change their behaviour to live more sustainably, the University launched a campaign called ‘Partnering for the planet’ in 2020, which included suggestions from Reading academics on what people might do to reduce their carbon footprint and a free online course for 16 to 18 year olds.
Thames Valley Live Lab
The Thames Valley Live Lab was established in 2019 and is a collaboration between the University of Reading (School of the Built Environment), energy software specialists Smarter Grid Solutions, technology giants O2 and Siemens, engineering consultancy Stantec, and the six local authorities across Berkshire. It is helping towns across Berkshire reduce carbon dioxide (CO$_2$) emissions and improve air quality through a mix of energy management and traffic management initiatives.

STEWARDSHIP/OPERATIONS

Sustainable investments
The University of Reading fully divested from fossil fuel companies in 2020 after appointing a new fund manager for its £100 million investment portfolio. It has an ambitious carbon management plan and continues to expand its solar PV generation capacity to generate 1MW of electricity, significantly reducing its reliance on the Grid.
TEACHING AND LEARNING

Campus jobs
Campus Jobs was established in 2017 and is the University of Reading’s dedicated service that provides part-time work opportunities for students across the Reading campuses, helping hundreds of students to supplement their income during their studies.

Apprenticeships
Henley Business School is one of the top providers in the UK for Senior Leader Apprenticeships and is supporting more than 200 businesses to drive growth and develop future leaders through its apprenticeship schemes.

OUTREACH

Reading 2050
Since 2013, academics from the University have worked in partnership with local employers and town planners to develop a vision for a sustainable future for Reading. To engage local communities with the process of developing the vision, a series of public lectures was held. The Reading 2050 vision underpins work by the Government Office for Science’s Future of Cities Foresight Programme and directly supports Reading Borough Council’s statutory Local Plan and Corporate Plan.

STEWARDSHIP/OPERATIONS

Fair work for fair pay
The University sets out clear policies on inclusion and diversity in the workplace, fair pay and equal rights to ensure all staff have fair and equitable working conditions. The University reports annually on its Gender Pay gap. And in its 2020 Gender Pay Gap Report, presents data on progress to eliminate gender inequality in pay over 5 years.
SDG 9: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

RESEARCH

Decarbonising commercial transport
Decarbonising the transport sector, including road, rail and shipping, has a key role to play in achieving net zero greenhouse gas emissions. Currently there is no single economically viable solution for heavy duty trucks. Researchers at Reading are modelling how electrolyser derived hydrogen, electric charging and localised energy might help tackle the issues.

Heating on demand
In the UK, heating and hot water for buildings make up 40% of energy use and 20% of greenhouse gas emissions. In partnership with the University of Nottingham and others, a Reading team is looking at ways to reduce energy consumption using an innovative phase change material (PCM) called the Versatile PCM energy storage system.

TEACHING AND LEARNING

Urban energy rhythms
The University’s School of the Built Environment is internationally renowned for its research and education in the design, construction and operation of buildings and places. A postgraduate student is exploring statistical models and simulations to understand patterns of energy user requirements (urban energy rhythms) and how they can help to assess opportunities for smarter infrastructure design for energy delivery.

Better forecasting for energy use
The risks posed by climate variability and change for power system operations are an increasing concern for many industries. Through its SCENARIO postgraduate training partnership, funded by the NERC, postgraduate students at the University of Reading are pioneering the use of decadal forecasting for energy system applications and finding ways for it to be applied in industrial settings.

OUTREACH

Designing acceptable clean air policies
A collaborative outreach project including University of Reading, Imperial College, London and other universities, is surveying people living in polluted areas to find out how they might react to new clean air policies. The team is also designing a tool to monitor how much air pollution people are exposed to as they move around cities. Data collected using the tool – A-PEx – will inform the implementation of the UK Government’s Clean Air Strategy.
Understanding the cultural value of local assets
Researchers from the University involved in the Mapping Eco Social Assets project, spoke to people in the Orts Road and Newtown areas of Reading, asking them what they valued most locally. The project aimed to gather and record social and environmental values in an accessible way, to inform the future development of the area.

STEWARDSHIP/OPERATIONS

In 2016, The University set a bold new target to reduce its carbon footprint to 45% by July 2021, based on its baseline 2008/09 emissions. Thanks to new and existing initiatives, such as extending our district heating system and expanding use of solar panels, by the end of January 2020, our carbon footprint dropped to 44% below baseline, bringing us close to our new target much earlier than expected.

“The University has established a reputation for delivering on its ambitious sustainability targets, and we are close to meeting our 5-year target 18 months early. We recognise the urgency for more radical carbon emission cuts and are now setting our minds to how we can achieve net zero carbon emissions by 2030.”
SDG 10: Reduce inequality within and among countries

RESEARCH

Participatory research initiatives
The University’s Participation Lab focuses on the co-production of knowledge with local partners. Its members share learnings about participatory and community-led research methods, action-oriented research approaches and public engagement to enable people’s voices to be heard and to achieve change. Its long-standing partnership with the Whitley Community Development Association, is giving disadvantaged people in Reading a voice in devising solutions to local issues. The Whitley Researchers conduct trusted research and generate knowledge that feeds into council decision-making and policy developments.

“The work carried out by the Whitley Researchers and the Young Whitley Researchers has resulted in one of the most detailed studies of the south Reading community ever produced ... I believe this impressive body of work will provide a firm foundation on which to build and enable the aspirations of young people, parents and the community of Whitley to become reality.”

TEACHING AND LEARNING

Undergraduate research opportunities
Students undertaking paid internships through the University’s Undergraduate Research Opportunities Programme (UROP) have been working with local community researchers to support participatory research projects while developing interpersonal and research skills.

OUTREACH

Reading Scholars
To encourage wider participation in higher education, the University’s Reading Scholars programme gives Year 12 students a real taste of life as an undergraduate, and provides practical support as participants begin their higher education application process. The programme is targeted at students who may find it difficult to access higher education (e.g. young people from low-income areas or care-leavers. It is delivered by academics and undergraduate mentors to help students develop study skills, self-confidence and a better understanding of university life and its opportunities.
27% OF STUDENTS STARTING AT READING ARE THE FIRST GENERATION OF THEIR FAMILY TO ATTEND UNIVERSITY

**University of Sanctury**
In 2020, the University established a working group to develop its bid to become a University of Sanctury. It is working closely in partnership with staff, Reading University Student Union (RUSU) and Student Action on Refugees (STaR) to achieve this aim.

**Business training for local women in Jordan**
An archaeologist from Reading is working with partners in Jordan to develop a new business that is owned and managed by local Bedouin women to generate income for their community. The business in Faynan, southern Jordan, will make and sell handicraft products based on archaeological finds, helping to alleviate poverty, locally.

**STEWARDSHIP/OPERATIONS**

**Report and support**
The University has equality, diversity and inclusion and anti-harassment policies in place to ensure staff and students are treated fairly and without prejudice, at all times. It has developed an online tool – Report and Support – where staff, students and visitors can report issues and receive timely and effective support when required.
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

RESEARCH

Town planning
Reading research in Real Estate and Planning has led to important changes in planning policy and practice, preventing housing developers from ‘gaming the system’ to increase their own profits at the expense of local communities. In other work, a team has collaborated with local people to influence neighbourhood planning policy and informing best practice.

Cleaner air and electricity for rural communities in India
A team of chemists from Reading is investigating how cookers commonly used in rural India, called chulhas, can be made safer and more efficient using thermoelectric devices to convert excess heat into electricity. The electricity generated is used to power external fans, making the stoves cleaner, safer and more efficient.

TEACHING AND LEARNING

Community Story Telling
Architecture students working with residents of Reading’s Oxford Road, are exploring people’s stories of local life, to amplify local heritage and highlight its rich multicultural history. Individuals’ stories have been exhibited in shop windows and expressed through performance art events, promoting a sense of place and identity, mutual respect, understanding and cohesion in the area.

Folk and customs
A collaborative project exploring images from the University’s Museum of English Rural Life collections, offers online visitors an opportunity to find out more about the history of English customs and traditions.

OUTREACH

From yoghurt pots to Pandora’s box
The University’s Museums and Collections website brings together digitised collections from across the University’s diverse archives, including objects from the Ure Museum of Greek Archaeology to the Cole Museum of Zoology, making the collections of fascinating objects and stories of our past available to everyone.
Music at Reading
The University has a vibrant community of staff, students and alumni who come together to share their joy of music and who practise and perform a range of musical events throughout the academic year.

STEWARDSHIP/OPERATIONS

Construction and refurbishment
In all its construction and refurbishment projects, the University of Reading is committed to making decisions which enhance energy performance and building sustainability. We have set targets for meeting our Environmental Objectives including achieving at least a 'very good' BREEAM environmental assessment rating across projects relating to our London Road, Whiteknights and Greenlands campuses.

Sustainable Travel
The University promotes sustainable travel and provides incentives to staff and students to use more sustainable modes of transport, including free cycle maintenance and help to purchase bicycles through a salary sacrifice scheme. Every two years we survey staff and students views on their travel arrangements, and in response to feedback have made improvements to secure bike storage facilities and shared pedestrian/cycle paths across our campuses.
SDG 12: Ensure sustainable consumption and production patterns

RESEARCH

Reducing the carbon footprint of milk
Research at the University’s Centre for Dairy Research (CEDAR) addresses key issues for the sustainability of animal production systems, such as environmental impacts, milk and meat composition and consumer health, antimicrobial resistance, and animal behaviour and welfare. By changing the diet of dairy cows, the team has shown that cattle emit less methane and the saturated fat content of milk is reduced. This farm-to-fridge approach enabled UK retailer Marks & Spencer to reduce saturated fat and palm oils across its milk supply chain, with 1.5 million customers benefiting from its healthier, ‘greener’ milk since 2014.

Sustainable sweet potato production
In sub-Saharan Africa where around 224 million people are under-nourished, sweet potato, a drought-resistant crop, is a staple food and an important source of Vitamin A. Researchers in Reading’s Walker Institute are using mathematical modelling to predict potential impacts of climate change on sweet potato production, for example waterlogging from floods or exposure to pests, and what can be done to make the crop more resilient to these risks.

TEACHING AND LEARNING

Top ranked courses addressing sustainability
The University of Reading is ranked 12 globally for undergraduate courses in Agriculture & Forestry, and top in the UK in the QS World University Rankings, 2021. The classification includes study across agriculture, food science, ecology, and soil sciences. The University also ranks highly in the UK for Environmental Sciences (9th) and Earth and Marine Sciences (7th).

Living laboratory
By using the University’s facilities and surroundings as a ‘Living Lab’, we provide opportunities for students to gain practical skills and direct experience in applying research, to help shape how we improve our environmental performance, use our resources efficiently, and work towards a thriving, sustainable university.

OUTREACH

Recycling
In 2020, the University of Reading recycled 68% of its waste. As part of its commitment to waste reduction and management, it promotes recycling to all its staff, students and visitors.
To encourage the use of reusable cups, the University’s Campus Commerce ran a campaign in January 2020 offering 10 free cups of coffee or hot chocolate to everyone who purchased a compatible cup.

**STEWARDSHIP/OPERATIONS**

**Waste and Resource Use Strategy**
Our Environmental and Energy Policy commits the University to maintaining and actively progressing a Waste and Resource Use Strategy, including a focus on reducing single-use plastics in line with UK Government Plans. We maintain a waste management strategy which sets out how we will minimise all waste, including plastic. We also encourage increased re-use of plastic and other materials such as our Warp-It platform and UniGreenScheme which donates unwanted equipment to third-party organisations.

68% OF WASTE ON CAMPUS IS RECYCLED

**Giving food more thought**
The University’s Catering Team is committed to continually improving its sustainability profile, in a financially sustainable way. Our regular suppliers are helping us to achieve our goals by adopting and embracing our sustainability framework. We welcome micro-, small and medium-sized local and regional suppliers to join our supply chain, either directly or via one of our appointed wholesalers.
**SDG 13: Take urgent action to tackle climate change and its impacts**

**RESEARCH**

*Climate stripes*

The University of Reading is host to world-leading research into climate change and its effects on the planet. Our world-renowned [Department of Meteorology](https://www.reading.ac.uk/meteorology) carries out a wide range of studies that are helping understand how wildfires can be better managed, and the impacts of sea level rise. Reading climate scientist Professor Hawkins, developed the [Climate Stripes](https://www.climatestripes.com) visual to help start conversations about how world temperatures have increased dramatically during the past 50 years. The stripes are now widely recognised and used by media organisations and others around the world. His research to explore how temperatures are changing has been boosted by a citizen science project to [digitise thousands of temperature records from the Victorian era](https://www.reading.ac.uk/climate-records).

**Pollinator decline**

Years of research, led by Professor Simon Potts at the University of Reading, has revealed the extent of the negative effects of [insecticides on crop pollination](https://www.reading.ac.uk/research/pollinator-decline), and the important part played by different insect species in crop pollination at the scale of continents.

> “Our academics and graduates are tackling some of the biggest issues of the 21st century aligned to the 2030 Agenda for Sustainable Development, including sustainable food production, biodiversity conservation, animal welfare, food security, poverty alleviation, international development, climate change adaption and mitigation, ethical food systems, consumer behaviour, diet and health.”

**TEACHING AND LEARNING**

*Agricultural, policy and development*

Each year, 800 students from more than 80 countries are taught by world-leading academics on courses at Reading relating to [agriculture, policy and development](https://www.reading.ac.uk/subject-agriculture-policy-development), supporting a new cadre of highly skilled professionals who go on to help address the most significant challenges facing us today.

**Farm Management Unit**

The University’s [Farm Management Unit](https://www.reading.ac.uk/farm-management-unit) develops high-quality farm management teaching in the School of Agricultural, Policy and Development. The curriculum is grounded within the changing needs of employers, and students undertake professional development opportunities during their studies, including work placements. Complemented by excellent research and strong partnerships, its courses
produce high quality, policy relevant research and employable graduates.

OUTREACH

Policy on pollinators
Professor Simon Potts’ research at Reading forms a large part of the first complete assessment of the world’s pollinators, laying out the importance of insects in crop production and the reasons behind their plummeting numbers.

The assessment report published by the UN’s Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which Professor Potts co-chaired, was endorsed by all 196 signatory governments, and has been adopted into the UN Convention on Biological Diversity, along with recommended actions, such as promoting pollinator-friendly habitats.

STEWARDSHIP/OPERATIONS

#UniforReading
A new campaign, #UniforReading, was launched in 2020 to highlight the University’s work to support and engage with local communities. The campaign recently highlighted the University’s links with a new Citizens UK alliance for the region, which includes Berkshire, Oxfordshire and Buckinghamshire, and which connects community members through citizen assemblies to bring about social change and has climate change as one of its key focuses.
SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

RESEARCH

A team at Reading is exploring the important role that tiny organisms called phytoplankton play in the aquatic food chain. By analysing satellite images, the research team provided the first ever estimate of the nutritional value of phytoplankton across the world’s oceans throughout the year.

In collaboration with researchers at the Center for Advanced Studies in Arid Zones (CEAZA) in Chile a team is analysing a large dataset of globally distributed fish species to study their evolution over the past 150 million years and understand the potential impacts of ocean warming on fish evolution.

“Research at Reading uses large-scale observations coupled with ecosystems models to understand the variability in food resources and food quality at the base of oceanic food chains, and assesses how those variations may impact the production and distribution of marine fish in the future.”

TEACHING AND LEARNING

Both undergraduate and graduate students in Reading’s Geography and Environmental Sciences Department have opportunities to carry out research relating to water quality and management of local rivers and catchments, including projects to monitor ground water sources to explore how metal contamination spreads from soil to the environment.

OUTREACH

The Loddon Observatory
Reading researchers have built and maintained strong links with local organisations, community groups and regulatory bodies, including the Environment Agency, to develop The Loddon Observatory, which researches, monitors and reports on water quality and land management to influence policy making in the Loddon River’s catchment.

STEWARDSHIP/OPERATIONS

Water quality on campus
To protect local ecosystems, wildlife and human health, the University adheres to local water quality standards and guidelines for water discharges, minimising the risk of incidents through monitoring and maintenance of drainage systems and compliance testing of servicing of relevant equipment.
SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

RESEARCH

Soil security
The University hosts a wide range of research that is helping to protect and restore land ecosystems and prevent biodiversity loss. For example, Reading’s Soil and Food Security programme looks closely at what’s going on in soil at the root zone of plants, helping our understanding of nutritious food production.

Protecting plants and animals
The University curates the UK’s National Fruit Collection to protect over 2000 varieties of apple, pears, plums, cherries, and bush fruits as part of an international programme to protect food crops for the future. The University’s work to help prevent biodiversity loss, includes protecting African vultures from elephant poachers and mapping changes in adder populations across the UK.

TEACHING AND LEARNING

Teaching sustainable farming
A free online course developed by academics at Reading, in partnership with the FutureLearn platform is allowing learners to explore and learn about the processes that farmers and food produces use to ensure our food is sustainable.

Climate and the past
An undergraduate module – Tropical Forests, Climate and Lost Civilisations – available to Geography and Environmental Science undergraduates, draws on extensive research and case studies developed from historical research to explore the interrelationships between climate change, human land use and tropical forest ecosystems.

OUTREACH

Landwise
A consortium of Reading academics, local community organisations, regulators and local government is exploring new natural flood management measures in the Reading area that are supporting natural habitats and helping to reduce the impacts of flooding in the area.

Langley Mead Nature Reserve
The University also owns and manages a community nature reserve at Langley Mead, 18 hectares of wildflower meadows adjacent to the River Loddon which support a significant number of rare plant species.
STEWARDSHIP/OPERATIONS

Designated Wildlife Site
*Reading’s Whiteknights Campus is designated as a Local Wildlife Site*, for its mosaic of habitats that support the free movement of several protected and notable species, including the Stag Beetle and Common Toad. Several endangered bird species have also been recorded across the site.

Green Flag Award
For ten consecutive years, the University’s Whiteknights Campus has been named as *one of Britain’s top green spaces in the Green Flag Awards*, run by environmental charity Keep Britain Tidy. The scenic campus is set in 123 hectares of land and includes a lake, woodlands and the popular Harris Garden, which are all available for students, staff and the local community to enjoy.
**SDG 16:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

**RESEARCH**

**War and peace**

The Global Law at Reading (GLAR) research group has particular strengths on topics relating to international peace and security, such as cyber warfare, the role and responsibilities of the UN, peace operations and human rights.

As the regulation of armed conflict becomes increasingly complex, researchers at Reading are helping to clarify both domestic and international regulation within two key areas of military operation – the detention of prisoners and the use of armed drones.

Experts in International Relations at Reading have been instrumental in developing a new UK policy framework for building stability in fragile and conflict-affected states in a bid to help them in the long transition to peace and stability.

**TEACHING AND LEARNING**

**Law at Reading**

Masters courses in Law at Reading are taught by leading experts in global governance. Modules cover the contemporary issues that affect the relationship between legal systems and the legal regulation of human rights, armed conflict, refugee movement and the use of force. Undergraduate courses include a module on Conflict and Global Development.

5% OF STUDENTS GRADUATE FROM LAW AND LAW ENFORCEMENT RELATED COURSES (326 STUDENTS)

**OUTREACH**

**Shaping international policies**

Through their appointment to international policy-making committees, academics in law and international relations at Reading are helping to ensure UN Peacekeeping activities do more to protect vulnerable people and are shaping external interventions that support transitions to peace, stability and state building.

**STEWARDSHIP/OPERATIONS**

**Freedom of Speech**

The University adheres to a Freedom of Speech Code of Conduct, developed to ensure freedom of speech is protected, within the law, across all University activities. It is part of a suite of governance policies and procedures that ensure the University remains accountable.
AUTHORS FROM THE UNIVERSITY OF READING CONTRIBUTED TO THE IPCC 6th ASSESSMENT REPORT – THE LARGEST NUMBER FROM ANY UK UNIVERSITY

RESEARCH

Systems thinking to protect nature
The existential challenges the world faces today, require collaborative and interdisciplinary approaches to tackle them. Professor Tom Oliver, an Ecologist, is working with Defra and advising UK government and the European Environment agency to design a System Research Programme to protect natural habitats around the world.

Africa Climate Exchange (AfClix)
The Africa Climate Exchange (AfClix) is a knowledge transfer project involving Reading academics, to facilitate the exchange of climate science and adaptation knowledge to accelerate the translation of the latest advances in climate science into practical solutions for African communities. The programme, including researchers from Reading’s Walker Institute, provides a mechanism and place for effective dialogue to inform policy developments.

Sustainable food chains
To understand what drives consumer behaviour when it comes to food, Reading academics are working with the EU knowledge innovation community, EIT Food, and have developed an evidenced-based model of what drives consumer trust in the food system that now forms part of the EIT Food’s Consumer Observatory programme.

TEACHING AND LEARNING

Sustainability learning
Sustainability is a cornerstone of the University of Reading’s strategy. We aim to embed environmental sustainability across both our curriculum and staff training programmes. All students can access modules or extra-curricular activities relating to sustainable development, such as the Reading Experience and Development (RED) Award, which provides volunteering opportunities with organisations such as Reading Climate Action Network and conservation group Instant Wild.

COP Climate Action Studio
Each year a delegation of doctoral students from Reading compete to attend the UN’s Conference of the Parties (COP) on climate change, either in person or remotely. More than 20 Reading students from a wide range of disciplines including Archaeology, Meteorology, Henley Business School, Geography and Biological Sciences benefit each year, gaining valuable insights and opportunities to interview key stakeholders which are reported in blogs and videos.
OUTREACH

Informing IPCC climate change report
The University of Reading is the most represented institution in the working group of authors that produce the 6th Assessment Report on climate change, by the Intergovernmental Panel on Climate Change (IPCC). The experts, Professor Richard Allan, Professor Nigel Arnell, Dr Nicolas Bellouin, Professor Bill Collins, Professor Ed Hawkins and Dr Andrew Turner are among 232 scientists in Working Group I. They will assess the latest scientific evidence on how climate is changing and could change in the future. In addition, Professor Chukwumerijes Okereke from the Department of Geography and Environmental Science, is coordinating lead author for Working Group III.

Feeding innovation
Academics in the University’s Institute for Food Nutrition and Health (IFNH) are part of EIT Food, a Knowledge and Innovation Community (KIC) of over 50 leading companies, universities, and scientific partners covering the entire food value chain. It is supported by the European Institute for Innovation and Technology (EIT) to transform the way we produce, distribute and consume food throughout Europe.

Working with NGOs
Our flood experts have worked with aid agencies including the Red Cross and Red Crescent to implement early warning systems for flooding in Bangladesh, Mozambique, and Peru and use real-time flood forecasting to help direct humanitarian aid when hurricanes strike.

STEWARDSHIP/OPERATIONS

An engaged university
Our University strategy is built on four principles – Community, Excellence, Sustainability and Engagement. In every aspect of our work, we aim to build thriving partnerships, locally, nationally and internationally to bring about positive societal change.

We are a University for Reading as well as of Reading, with activities ranging from supporting staff to volunteer for good local causes in work time, to opening our superb sporting facilities to local clubs and athletes.

Community involvement
At Reading, our university-level decision-making benefits from partnerships with local people through the University’s Council and Community Forum, and helps us to better coordinate our regional engagement. In addition, our long-standing collaborations and participatory research activities with communities across Reading are supporting local and regional improvements.