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Sustainable Development Goals at Leicester

Welcome

University of Leicester: Our contribution to the UN SDGs 2019/20

The Sustainable Development Goals (SDGs), also known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The University of Leicester has been strongly and formally committed to measuring and developing our contribution to the UN SDGs since they were introduced in 2015. We were one of the first UK higher education institutions to sign the <u>SDG Accord</u>, the University and College Sector's Collective Response to the SDGs.

A key element of the University's identity is that we are #Citizens of Change – this means using our expertise in partnership with others to affect positive and lasting change in our community and our world. The UN SDGs will not be achieved by any one organisation so we are developing a rigorous methodology to enable us, and other institutions, to measure and develop their own contributions (which could be considered as a contribution to Goal 17). With 17 goals and 169 targets, monitoring is very complicated so we are developing AI technology to do it in minutes and have already delivered research analyses for other prominent universities. We have also established pathways for organisations to access our expertise in all areas and are working hard to communicate to students where SDG teaching is available in their courses – this is even included in our prospectus so all prospective students know that we can help them become socially responsible, global Citizens of Change.



Cover picture: Tapestry lawn outside Astley Clarke

Sustainable Development Goals at Leicester

At the heart of the UK, Leicester is a leading university committed to international excellence, world-changing research and high quality, inspirational teaching. Celebrating diversity among our staff and students; widening participation in higher education; engaging with local, national and international communities – all of these are part of what we do and who we are.

The University was founded 100 years ago as a living memorial to those that gave their lives in WW1. Today that ethos of thinking global, acting local is more pertinent than ever. It is only natural then, that the University of Leicester has committed to contributing to the UN Sustainable Development Goals through their inclusion in the Social Impact Strategy and as one of the first UK HE signatories of the SDG Accord in September 2017.

This report outlines our current academic contribution to the SDGs and highlights our operational and engagement activities aimed at further integrating the SDGs into every day University life.

Students and the SDGs

- **92%** of University of Leicester students agree their place of study should actively incorporate and promote sustainable development (NUS, 2020)
- The desire to learn more about the SDGs increased from 61% in Jan 2018 to **70%** in Feb 2019
- **Climate action** is seen as the most important goal and climate change is reported as being the most important issue facing the world today
- **Inequality** (income and discrimination) is considered the most important issue facing the UK today by students

Leicester and the SDGs

Leicester's contribution to the SDGs has been mapped using a varied methodology (see appendix). The findings presented below give a strong indication of our academic strengths and the focus of each work area.

Our overall contribution centres on two key areas: firstly, we contribute to all 17 SDGs but our individual achievements over the past 12 months are particularly notable for Goals 1, 15 and 10 – all of which have benefitted from a cross-institutional approach to combining academic expertise with operational development. The University is ranked 19th out of 1,115 universities in the world in the Times Higher Education (THE) Impact Ranking 2021, placing us in the top 2%. We were also fourth in the world for goal 15, Life on Land, due to our academic excellence and commitment to conserving and developing the biodiversity of our Estate.





University of Leicester

Key facts



221 acres of land across 10 sites, including residential & hospital sites



Urban site with 20% green space, including over 8,000 trees





98% of 2019-20 entry undergraduate students have access to SDGrelated modules



18.2k total students*

11,603	5,357
home	international

*Snapshot of 2019/20 student numbers taken on 1st December 2019



1,252 EU students *



2,699 distance learners*

Our Research contribution



Citations by SDG





* = have the opportunity to learn about the SDG in their curriculum

** = publications between 2015-19 on Scopus



End poverty in all its forms everywhere

Teaching



11 modules with direct ILOs

720 students who could choose modules

Research



94 publications in Scopus 2015-19



1,159 "cited by" in Scopus



Picture: Toys on the Table Appeal 2019

Institution example

The University has a <u>Hardship Fund</u> which aims to provide financial assistance to help students experiencing financial hardship. The awards are intended to help with day-to-day expenses and course related costs. This has been especially important during the coronavirus pandemic, for example to help with accommodation costs and accessing essential IT equipment.



Institution example

The University has committed to paying the **Living Wage Foundation Rate** since 2015.



Engagement example

For the past two years, staff member Richard Gamble has led an appeal at the University on behalf of local charity Toys on the Table to arrange presents for children who wouldn't otherwise get any to open on Christmas morning. With support of staff and students, over 800 gifts were donated in the 2019 Toys on the Table appeal. Because of COVID-19, in 2020 Richard invited people to donate money which would be used to buy gifts. Staff and students donated £2,650 and the University added £2,000 which would usually be used for on-campus Christmas celebrations.



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

132 publications in

7,474 "cited by" in

Scopus 2015-19

Research

Teaching



11 modules with direct ILOs



554 students who could choose modules



Engagement example

In September 2019, the University of Leicester hosted the UK's first **Copernicus Hackathon** where cross-disciplinary teams came together to address the evercritical challenge of Food Security and Resilience, a challenge at the core of the UN Sustainable Development Goals. The winning team is now incorporated as Lenke Space and Water Solutions.

Scopus

This start-up is developing a technological solution based on publicly available Copernicus datasets, Sentinel satellite data and numerical models to inform farmers worldwide on the optimal harvest date, with the objective of maximising productivity while reducing farm gate food loss. Lenke is now completing the Copernicus Accelerator programme and is supported by ERDF funded programmes through the Leicester Innovation Hub.





Picture: Brookfield Allotment

Example

A large research group in the School of Biological Sciences focusses on <u>genomics and genetics</u> for crop improvement, food security, biodiversity and genome evolution research in order to deliver sustainability and food security from agriculture. Their work includes research, teaching and public engagement.



Ensure healthy lives and promote well-being for all at all ages

Teaching



41 modules with direct ILOs

5,438 students who could choose modules

Research



569 publications in Scopus 2015-19



28,073 "cited by" in Scopus



Picture: <u>Health Matters</u> Programme



Example

Researchers have been looking at the longer impacts of contracting COVID-19. The <u>UK-wide study</u>, which is led by the National Institute for Health Research (NIHR) Leicester Biomedical Research Centre – a partnership between Leicester's Hospitals, the University of Leicester and Loughborough University - and jointly funded by the NIHR and UK Research and Innovation, analysed patients who were discharged from hospital following an episode of COVID-19.

They found that the majority of survivors who left hospital following COVID-19 did not fully recover five months after discharge and continued to experience negative impacts on their physical and mental health, as well as ability to work.

Institution example

The **Staff Health & Wellbeing Strategy** provides support and advice including: active/healthy life; emotional wellbeing; health promotion; social events/clubs; benefits and rewards; and positive environment.



Engagement example

As the coronavirus pandemic set in on March 2020, the University banded together to show community support beyond the University. Staff and students supported the NHS by donating PPE, supported the local community by helping elderly and vulnerable people around Leicester and student teachers supported schools in the region during lockdown.



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Teaching



direct ILOs

19 modules with

th **2,012** students who could choose modules

Research



27 publications in Scopus 2015-19



86 "cited by" in Scopus

Picture: University of Sanctuary logo



Engagement example

Over 13,000 people worldwide have registered for the <u>Concepts in Sustainable Development MOOC</u> since 2018, a multi-disciplinary look at sustainable development and touches on topics such as complexity, entropy and inequalities. This 6 week course is free to the public through FutureLearn.



Institution example

In officially becoming a <u>University of Sanctuary</u> in 2018, the University provides opportunities to involve staff and students in supporting asylum seekers and refugees as well as actively involving refugees and asylum seekers in University life. Our Sanctuary Seekers' Unit helps refugees and asylum seekers with language skills and we also offer Sanctuary Scholarships.





Institution example

We were the first university in the UK to introduce a **menopause policy**, bringing together professional services and academic staff who published '<u>Menopause transition</u>: <u>effects on women's economic participation</u>' to support the development of the policy putting this research into practice. The policy demystifies menopause by encouraging staff to talk about it candidly and informally, as well as encouraging men to talk about menopause too.

Example

Dr Eugenia Caracciolo di Torella from Leicester Law School has jointly authored a report to the European Commission on the potential impact of the collaborative economy on gender equality.

The study argues that the collaborative economy has the potential to affect the principle of gender equality in many respects, and as it continues to develop, these will become more apparent. It is clearly time to acknowledge and regulate the potential impact that the collaborative economy may have on gender equality.



Ensure availability and sustainable management of water and sanitation for all

Teaching



10 modules with direct ILOs



158 students who could choose modules





95 publications in Scopus 2015-19



12,358 "cited by" in Scopus



Picture: Satellite (Sentinel-2) image of Rutland Water that contains modified Copernicus Sentinel data (2018)



Example

Research in the School of Geography, Geology & the Environment contributes to <u>monitoring UK wetlands</u>, such as Rutland Water. Funded by the Natural Environmental Research Council, the project was led by Dr Sarah Johnson, Research Fellow.

Wetland areas provide key habitats for many unique and protected species of plants, birds, animals and insects. They also provide essential services to human beings, such as water supplies, flood regulation, climate regulation and recreational opportunities. By using Earth observation and ground-based surveys, this work contributes to better understanding of habitat conditions, assessing the functioning of river flood plains and monitoring factors that influence water quality in lakes and rivers.



Teaching



11 modules with direct ILOs

1.233 students who could choose modules





67 publications in Scopus 2015-19

The University has been awarded the triple gold Carbon Saver Standard in carbon, waste and water reductions.



Scopus



Picture: Solar panels on George Davies Centre



Example

Dr Audrius Bagdanavicius from the School of Engineering specialises in energy efficiency, including Thermomechanical energy storage systems, District Energy Networks and Energy, exergy and exergoeconomic analysis of energy conversion systems.



Institution example

The University is committed to reducing our carbon emissions. So far we have achieved a reduction of 52% (absolute) and 76% (relative to our turnover) from the 2004/5 baseline.



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Teaching



35 modules with direct ILOs



2,970 students who could choose modules



Research



128 publications in Scopus 2015-19



1,304 "cited by" in Scopus



Picture: Leicester Graduates

Institution example

The 'Leicester: Graduate City' scheme was set up in collaboration with Leicester City Council and De Montfort University. This internship scheme aims to support small business to offer workplace opportunities to students. As well as offering students workplace training, the internships highlight the range and quality of job opportunities available locally for graduates.

Engagement example

<u>Leicester Employability Promise</u> aims to enhance and optimise the offer students present to prospective employers – both during and after their time at Leicester. Within this promise, students have opportunities for personal development (for example through the <u>Leicester Award</u>), take part in work experience, receive personalised guidance and continued support after graduation.



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Teaching



45 modules with direct ILOs



2,898 students who could choose modules

Research



78 publications in Scopus 2015-19



1,345 "cited by" in Scopus



business as part of the Innovation for Good programme

Institution example

Leicester Innovation Hub is a £5.1m programme invested in by the University of Leicester and the European Regional Development Fund (ERDF). LIH supports new business start-ups and also provides a dedicated incubation and innovation space, making it easier for companies to utilise innovation support, expertise and facilities.



Engagement example

The <u>Innovation for Good programme</u> offers free sustainability audits, conducted by trained student auditors, to encourage environmental sustainability within SMEs. The auditing tool is designed broadly for all types of businesses, providing businesses with a report as a first step towards further accreditation and stronger environmental management processes.

The project aims to provide local SMEs with a free sustainability audit which summarising their current activity and awarding them with a graded certificate and outline suggestions for improvement. Students are trained to deliver this audit, providing a practical way for them to increase their awareness of sustainability, gain employability skills and have a strong impact in the local business community.



Reduce inequality within and among countries



Picture: Standing Together video thumbnail

Teaching



57 modules with direct ILOs



4,626 students who could choose modules

Research



226 publications in Scopus 2015-19





Institution example

Standing Together is a University-wide programme improving wellbeing through tackling unacceptable behaviours and supporting students, and the wider University community, who are directly and indirectly affected.

Standing Together engages all areas of the University including academics, the Accommodation Team, the Students' Union, the Security Team, the Sports Team and, importantly, students.

Institution example

We are proud to be recognised as a top 100 employer in **Stonewall**'s Workplace Equality Index, which showcases the most inclusive UK workplaces for lesbian, gay, bi and trans staff.

We have been a Stonewall Diversity Champion since 2013

Engagement example

The **Unit for DICE** promotes diversity, inclusion and community engagement within the University of Leicester and on a local and national level.

DICE, in the School of Media, Communication and Sociology, is at the very heart of debates about promoting inclusion and making positive benefits out of diversity.

This prioritises promoting an audible public voice by acting as a hub for intelligent debate, routinely connecting community members, practitioners and policy makers to leading academics on campus and local and national media outlets.



Make cities and human settlements inclusive, safe, resilient and sustainable

Teaching



26 modules with direct ILOs



1,741 students who could choose modules



Example

The <u>Air Quality Group</u> provide creative solutions to tomorrow's air quality challenges, informing and enabling intelligent decisions grounded in world class research. Through Air Quality Innovations, they deliver products and services for a range of clients: local authorities, policy makers, government agencies, research institutes and industry that are tailored to client needs.





227 publications in Scopus 2015-19



11,901 "cited by" in Scopus



Picture: Attenborough Arts Centre



Engagement example

Attenborough Arts Centre is the University of Leicester's public arts programme. Over 100,000 people of all ages and abilities engage annually with the cultural programme – enriching the lives of Leicester and Leicestershire communities, including the University's staff and students. They run courses, workshops, art exhibitions, performances and activities for children and families.



Ensure sustainable consumption and production patterns

Research

119 publications in

2,499 "cited by" in

Scopus

Scopus 2015-19

Teaching



20 modules with direct ILOs



1,406 students who could choose modules



Example

The **Materials Centre** at the University of Leicester is one of several UK Universities and industrial partners collaborating on <u>research into facilitating a circular economy</u> <u>in lithium ion batteries</u>.

The Faraday Institution funded project (ReLiB) aims to establish an infrastructure in which 100% of the materials found in lithium ion batteries used in the automotive sector can be recycled. This will result in a significant impact on issues such as the safety, economics and efficiency of battery recycling, while also reducing the environmental impact incurred by these processes.



Picture: Student volunteers handed out BHF Pack for Good donation bags

Engagement example

For the second year, the University of Leicester has <u>supported the British Heart Foundation (BHF)</u> <u>Pack for Good Scheme</u> which collects clothes, books, kitchen equipment, electronics and other unwanted items rather than see them thrown out when students leave rented accommodation for the summer. The scheme saved an incredible 39 tonnes of items from being thrown away in Leicester.



Take urgent action to combat climate change and its impacts*

Teaching



25 modules with direct ILOs

4,081 students who could choose modules

Research



162 publications in Scopus 2015-19



8,552 "cited by" in Scopus



Picture: Cover of the Climate Change Strategy

(D)

Example

The Centre for Landscape & Climate Research is pursuing research excellence through discovery science and applied research with industrial partners. Our research develops Earth Observation methods addressing environmental problems of the land and vegetation.

Research themes:

• *Earth Observation Data Science*, using high-performance computing and cloud computing for the analysis of big satellite datasets;

• *Human/environment interactions*, understanding the drivers and consequences of land use change, fire disturbance, deforestation and forest degradation;

• *Water and carbon cycle interactions,* using Earth Observation to initialise, constrain and validate land surface and hydrological models.

Institution example

In January 2020, the University's <u>Climate Change Strategy</u> was published to show our commitment to tackling climate change. It demonstrates that, both operationally and academically, we will lead on the solution and avoid contributing to the problem.

UNIVERSITY OF

Our approach is to:

- 1. Avoid reducing our environmentally negative impact
- 2. Mitigate increasing our positive impact and offsetting
- 3. Adapt ready our campus for a changing world
- 4. Positive impact teaching and innovating for a better world



Teaching

21 modules with

direct ILOs

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Research

27 publications in

Scopus 2015-19

SST [°C] JUL-SEP



Picture: Sea surface temperatures (SSTs) in the South China Sea between July and September (credit below)



Example

Since 2017, a **research team was built to** <u>investigate various aspects</u> of the cycle of plastics including academics from School of Geography Geology & Environment, School of Media, Communication and Sociology, School of Chemistry, School of Biological Sciences and the School of Business. The team also includes scholars from overseas such as Malawi, China and Spain.

2,926 students who

could choose

modules

One focus is on considering plastic as an anthropogenic component of the geological cycle – exploring transport mechanisms, dispersal, fragmentation, deposition, degradation and burial. Another focus is in working in developing countries on the problem of plastic pollution.

(a)

187 "cited by" in

Scopus

Example

Leicester-led <u>research into coral reefs</u> has revealed the impact of cyclical patterns on the local marine ecosystem around Borneo in Southeast Asia. By analysing core samples, they were able to study sea surface temperature and salinity changes. These coral cores can provide a critical record of local changes in river runoff and rainfall that affect coral reefs.

Picture credit: Krawczyk, H., Zinke, J., Browne, N. et al. <u>Corals reveal ENSO-</u> <u>driven synchrony of climate impacts on both terrestrial and marine</u> <u>ecosystems in northern Borneo</u>. Sci Rep 10, 3678 (2020).



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land

degradation and halt biodiversity loss

Teaching



26 modules with direct ILOs



could choose modules

3,232 students who

187 publications in Scopus 2015-19



Research

Institution example

The Gardens and Grounds Team have planted tapestry lawns (pictured right) outside Astley Clarke and George Davies Centre, Tapestry Lawns are lawns with a mixture of over 60 different plant species that changes throughout the seasons. They attract 25% more invertebrate life than a typical grass lawn, with ten times the visits from twice as many pollinators making them great for biodiversity!

2,714 "cited by" in

Scopus



Picture: Before and after installation of a Tapestry Lawn outside the Astley Clarke building



Example

Raising awareness of and reducing the climate impact of land uses on peat soils. Professor Susan Page, Department of Geography

Professor Page's research includes a particular emphasis on the impacts of land-use change and fire on the carbon cycle of tropical peatlands. By developing engagement opportunities with external organisations and businesses, her expertise has been crucial to science-based approaches to peatland management that, when implemented, support the mitigation and management of peat carbon and greenhouse gas emissions.



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all

levels

Teaching



61 modules with direct ILOs



3,616 students who could choose modules



Engagement example

The <u>Pro Bono Society</u> offers students the opportunity to apply their legal knowledge in a rewarding and charitable environment to a range of projects. They work with a number of local firms and professionals in the community to support staff and students at the University and the local community.

Research

publications in

Scopus 2015-19

13.748 "cited

by" in Scopus

357

University of Leicester RANKED 18th For sdg16: peace, justice and strong institutions





UNIVERSITY OF LEICESTER STUDENT LAW REVIEW

Issue 10 - April 2021



UNIVERSITY OF LEICESTER

Picture: <u>The Leicester Student Law Review</u>, April 2021 edition, created by Law students



Example

Researchers from the School of Criminology are involved in the <u>East</u> <u>Midlands Violence Reduction Information Network</u>. Funded by an Economic and Social Research Council (ESRC) Impact Accelerator Accounts (IAA) strategic fund grant, VRIN aims to develop knowledge and share information concerning the prevention and reduction of public space violence which will have a positive influence on policing operations in the region and beyond.



Strengthen the means of implementation and revitalize the global partnership for sustainable development



Picture: MICRA-funded SDG mapping project logo

Teaching



27 modules with direct ILOs



vith **1,779** students who could choose modules

Research



78 publications in Scopus 2015-19



3,304 "cited by" in Scopus





Institution example

In collaboration with De Montfort University, we jointly hosted the <u>RCE Europe Conference</u> through RCE East Midlands. The event brought together members of the global network of Regional Centres of Expertise (RCEs) for Education for Sustainable Development, along with others engaged with collaborative approaches to sustainability action and education, with over 230 attendees over 2 days.

The conference theme of "Climate Emergency: Joined-up Action" was the focus on day 1, whilst sessions on day 2 provided an opportunity to share and discuss collaborative local and regional action on sustainability education.

Engagement example

The University of Leicester's commitment to the UN Sustainable Development Goals was given a boost by the Midlands Innovation Commercialisation of Research Accelerator (MICRA) with a <u>£50K grant for the</u> <u>SDG mapping toolkit project</u> through a collaborative partnership between the University of Leicester's Social Impact Team and School of Mathematics and Actuarial Science as well as colleagues from Loughborough University. This grant helped to develop our SDG mapping technology further to enable educational organisations and businesses to effectively measure their contribution to the SDGs.

Methodology

Data was collected at the end of the 2019/20 academic year in four categories; teaching, research, strategy & operations and community & public engagement. Due to data constraints, only teaching and research results have been fully reported here. Work will continue to improve data collection and methodology design to improve our reporting for future years.

Teaching

As part of a wider Curriculum Transformation (CT) project, an audit was carried out to identify existing sustainability-related teaching and opportunities to incorporate more ESD within the curriculum. Intended learning outcomes (ILOs) were specifically used to identify what students should know or be able to do by the end of the module. The ILOs had to engage with any of the United Nations Sustainable Development Goals.

Modules have been identified that contain teaching relating to the UN's 17 SDGs – both core and optional modules. We have only been able to use the ILO's as a reference to see whether the module contains the SDGs and, as they are brief, it is hard to ascertain which specific ones they contain. For example, when the environmental issues are mentioned we assumed that SDGs 13, 14 and 15 are included but this could include elements of renewable energy etc.

Research

To map research publications, we used adapted lists of keywords relating to the 17 different SDGs. Our initial lists were based off the SDG indicators and keywords collated by Monash University and SDSN Australia/Pacific¹ and using mathematical algorithms and cluster analysis, we have developed our improved list of keywords to produce more robust data.

We have used these keywords and created query codes, based off the Aurora Network², which can search publication titles, abstracts and keywords in Scopus from the last 5 years (2015-2019). Scopus is an online research publication abstract and citation database run by Elsevier which collates data from over 36,000 titles from around 11,600 publishers from subject fields such as life sciences, social science, health science and physical sciences. By running these query codes through this database, we can find out the number of publications and citation counts for publications relating to each of the SDGs.

A research methodology article has been published:

Mistry A, Sellers H, Levesley J and Lee S. Mapping a university's research outputs to the UN Sustainable Development Goals. *Emerald Open Res* 2020, 2:61 (https://doi.org/10.35241/emeraldopenres.13881.1)

For more information about the methodology used, please contact the Social Impact Team (<u>socialimpact@le.ac.uk</u>).

¹ Monash University and SDSN Australia/Pacific – Compiled keywords for SDG mapping

² Aurora Network – Initial Query Codes - SDG Analysis: bibliometric of reference



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