UNIVERSITY OF THE WEST of SCOTLAND

UWS

UWS DELIVERING SUSTAINABILITY 2022/23

Executive Summary

At UWS our vision is to become a sustainable, forward-thinking institution, where we strive to make significant and measurable progress towards achieving Scotland's world-leading climate change legislation, targeting net-zero emissions of all greenhouse gases by 2040. We are committed to becoming a global leader in climate change and environmental resilience and continue to align our service delivery and world-leading research with the UNSDGs.

The University's long-standing commitment to sustainability is demonstrated by our status as a signatory to the Sustainable Development Goal Accord. The Accord commits UWS to reporting annually on work towards embedding the UN Sustainable Development Goals through learning and teaching, research, leadership, operations, and engagement activities.

The University recognises the criticality of embedding sustainability into our practices and our responsibility to minimise our impact on the environment whilst fostering social equity and promoting economic viability.

- We will lead sustainability activity through our excellent learning and teaching, our distinctive research and innovation, across our seven areas of sustainability action: carbon management, sustainable energy, biodiversity & environmental adaptation, transport, food, waste and procurement; and to benefit our communities and society.

We will lead activity across our core themes:

Learning & Teaching

We will continue to develop the inclusion of sustainability within our curriculum, working towards achieving a platform for all students and staff to build skills that contribute towards the future sustainability of the planet.

Distinctive Research & Innovation

Our vision is for UWS to be among the global leaders of excellent, relevant, and purposeful research aligned with the UN SDGs, and to become a trailblazer in climate change and resilience through our research and enterprise activity.

Shaping Our Communities and Society

As an anchor institution within our communities, we will be seen as leaders in sustainable practices, acting as a reference point and collaborating with our partners to support our journeys.

UWS's focus on achieving the United Nations Sustainable Development Goals aligns the institution to the Scottish Government's National Performance Framework. The framework aims to create a more successful country; give opportunities to all people living in Scotland; increase the wellbeing of people living in Scotland; create sustainable and inclusive growth; reduce inequalities and give equal importance to economic, environmental and social progress. This report outlines examples across the University of work underway towards helping to achieve the United Nations Sustainable Development Goals and in turn support the outcomes of the framework.

Introduction

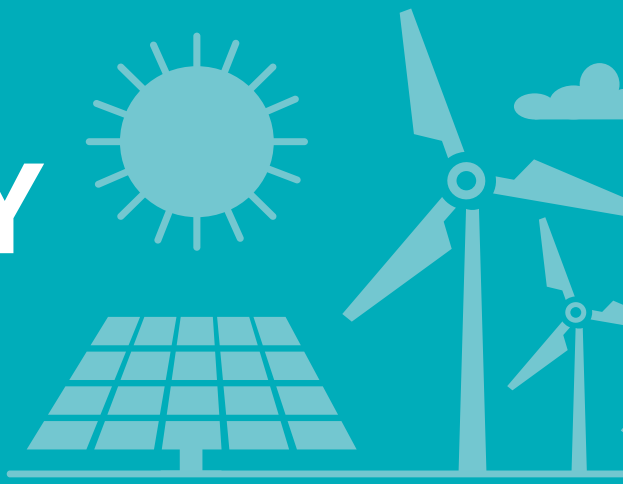
The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are 17 SDGs. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change.

UWS Strategy commits to tackling the UN Sustainable Development Goals as well as becoming a leading university in climate change and resilience through research and enterprise activity. The vision for UWS is to be among the global leaders of excellent, relevant and purposeful research aligned with the UN Sustainable Development Goals.

UWS became a signatory to the UN Sustainable Development Goals Accord in 2021, demonstrating the University's commitment to sustainability and building on existing research and education strengths.

This report sets out work across UWS to align to and work towards the United Nations Sustainable Development Goals.

2022/23 SUSTAINABILITY HIGHLIGHTS

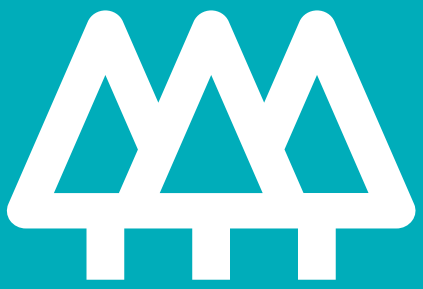


CO_2 CARBON EMISSIONS

58%

DROP FROM OUR 12/13 BASELINE YEAR

CHEMICAL-FREE CLEANING ACROSS CAMPUSES



393 TREES PLANTED THROUGH OUR PARTNERSHIP WITH COFFEE CONSCIENCE

TOP 300 IN THE WORLD

THE IMPACT RANKINGS 2023

UWS UNIVERSITY OF THE WEST of SCOTLAND

2nd IN SCOTLAND

JOINT **25th** GLOBALLY

TOP 3%

OF INSTITUTIONS RANKED GLOBALLY FOR SDG 10: **REDUCING INEQUALITIES**

459

REUSABLE CUPS SOLD ACROSS THE UWS CATERING OUTLETS IN 2022/23

Widening Access

UWS is Scotland's leading widening participation university. At UWS widening access has always been central to our institution. We believe in supporting and enabling students to achieve their potential regardless of their background. Widening access addresses patterns of under-representation in higher education. It is also part of a governmental education policy in Scotland and the UK. Widening access attempts to increase the proportion of people entering higher education, from under-represented groups.
UWS works with prospective students from groups that are currently under-represented, including students from low-income backgrounds and low socioeconomic groups as defined by the Scottish Index of Multiple Deprivation (SIMD). UWS is committed to Widening Access and works on many pre-entry initiatives to encourage applicants from all backgrounds to realise their full potential.

Impact

UWS has more students from SIMD20 and SIMD40 areas than any other university in Scotland. In 2023, 30.7% of our full-time first-degree Scottish undergraduates came from SIMD20 areas, compared to the Scottish sector with 16.5% of Scottish undergraduates from a SIMD20 area. UWS has always exceeded the 2030 targets set by the Commission on Widening Access and has routinely delivered more than 25% of the entire widening access student population for Scotland each year.

Times/Sunday Times Social Inclusion Rankings 2023:

In the 2023 Sunday Times Good University Guide UWS was:

- **1st in Scotland for social inclusion**
- **1st in Scotland for the number of students from state schools**
- **1st in Scotland for the percentage of students from low participation areas**
- **2nd in Scotland for the proportion of mature students**
- **2nd in Scotland for proportion of first-generation students**

Foundation Academy

UWS is proud to deliver the UWS Foundation Academy, for senior school pupils across the west of Scotland. This exciting initiative gives school pupils the opportunity to experience studying at university level, develop academic skills in a specific subject area, and improve the quality of their university application. The Foundation Academy is now offered to target schools across the west of Scotland. The programme aims to raise both aspirations and awareness of Higher Education opportunities available to pupils within their local community, with the opportunity to gain a qualification certificate worth 20 credits at SCQF level 7.

UWS Foundation Academy is also a great way for senior pupils to:

- access university pathways in a range of subjects
- develop academic skills at university level
- improve the quality of their university application
- become familiar with the university environment and build skills and confidence before moving on from High School
- access a range of UWS benefits

The UWS Foundation Academy programme takes an on-campus and in-school blended approach. Pupils are invited to get involved during their S5 year, with the aim of completing the programme by December of their S6 year.

Impact

The pilot year (2022-23) saw 441 participants successfully complete the programme and were awarded the equivalent of a B at Higher. The programme enabled 134 pupils to apply to UWS for an undergraduate programme. Of those applicants, 30 are utilising their Foundation Academy award in order to gain entry.

2 ZERO HUNGER

Breakfast Club

In 2022, UWS launched its Breakfast Club, an initiative that offers free breakfast for students in recognition of the cost of living crisis and the impact on students. This aims to help students as many continue to struggle with rising food and energy prices. Through the scheme, the University supports student wellbeing through tens of thousands of pounds of free continental breakfasts at Ayr, Lanarkshire, Dumfries and Paisley campuses offered every day, between 8.30am and 10:00am.

Impact

This initiative aims to support students during their studies by ensuring students are fuelled up for the day ahead. Eating breakfast is known to positively impact learning and general health. Research shows the impact skipping breakfast can have on learning and this initiative shows UWS' commitment to the mental and physical wellbeing of our students.

Invisible Coffee

In early 2023, UWS launched, on Random Act of Kindness Day, the 'invisible coffee' initiative. This scheme aims to give back to local communities and provides UWS and its customers with the opportunity to cover the cost of a hot beverage for someone who needs it most. Customers of UWS's catering facilities simply purchase a drink at half-price under the initiative. They are then given a voucher to place on the free coffee board, leaving a handwritten message for someone to collect.

Impact

From February 2023 to June 2023, 368 'random acts of kindness' by buying a hot drink for a stranger were seen across all participating campuses.

Monitoring the Changes in Vegetation

Anthropogenic activities and natural climate changes are the central driving forces of global ecosystems and agriculture changes. Climate changes, such as rainfall and temperature changes, have had the greatest impact on different types of plant production around the world. Academics from several institutions including UWS, investigated the spatiotemporal variation of major crops (cotton, rice, wheat, and sugarcane) in the District Vehari, Pakistan, from 1984 to 2020 using remote sensing (RS) technology. The crop identification was pre-processed in ArcGIS software based on Landsat images. After pre-processing, supervised classification was used to identify the vegetation changes. Results showed that in the study region, areas cultivated with wheat and cotton decreased by almost 5.4% and 9.1% from 1984 to 2020, respectively. During the Rabi season (which typically falls from November to April), the temperature was increased from 19.93 °C to 21.17 °C. The average temperature was calculated at 34.28 °C to 35.54 °C during the Kharif season (which typically falls from June to October) in the District Vehari.

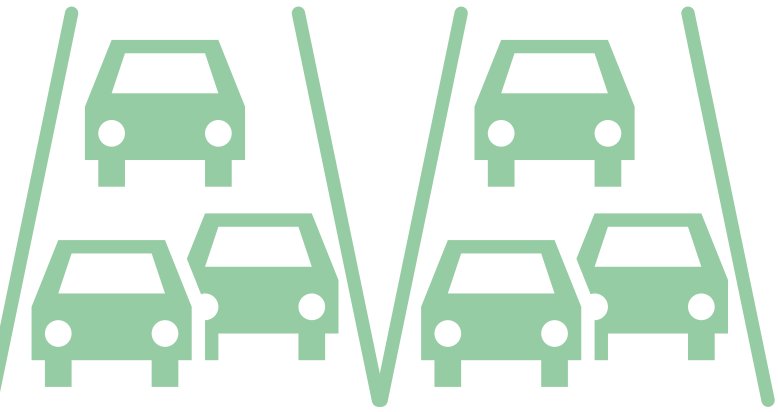
Impact

Results showed that temperature negatively affects sugarcane, rice, and cotton crops during the Rabi season, and precipitation positively affects sugarcane, rice, and cotton crops during the Kharif season in the study area. Accurate and timely assessment of crop estimation and relation to climate change can give very useful information for decision-makers, governments, and planners in formulating policies regarding crop management and improving agriculture yields.

3 GOOD HEALTH AND WELL-BEING

Health Impacts of Environmental Quality Research

Researchers at UWS have identified a link between noisy road traffic with air pollutants and an increased chance of hypertension – a top risk factor for heart attack and stroke. The study looked at the relationship between environmental quality and direct health impacts, monitoring traffic noise at different frequencies and registered hypertension cases in a number of locations in urban Glasgow. A significant correlation between noise, air pollution and hypertension was observed within high-traffic-flow residential areas.



Impact

This research provides an important case study for an increasing international evidence base to support future environment policy and support public health measures, such as setting stricter noise guidelines and improving technology on quieter vehicles and urban design. The findings could support local authorities in planning and managing the built environment, as well as affording opportunities for tools to be developed to improve public heath decision-making. Following this project, UWS was invited to join SHAPE, a network of individuals with a wide range of backgrounds and affiliations, including research organisations, universities and charities conducting research on air pollution and its health effects.

First-of-its-kind Research Into Severe Hormonal Mood Disorder

A first-of-its-kind women's health research initiative has been launched by academics at University of the West of Scotland – examining an under-researched but severe hormone-based mood disorder. The condition – premenstrual dysphoric disorder (PMDD) – is an acute form of premenstrual syndrome (PMS), which affects one in 20 women. Of those with PMDD (approximately 824,000 in the UK), 72 percent will experience suicidal ideation, 50 percent will self-harm, and 33 percent will attempt suicide. On average, it takes 12 years for people to receive a correct diagnosis. The comprehensive research agenda developed by Dr Lynsay Matthews, women's health expert and academic in the School of Health and Life Sciences at UWS and her research partner, Julie Riddell, from the University of Glasgow, followed a UK-wide consultation, working with vital stakeholders in this area to identify research priorities. The five key research priorities are: the diagnosis and management of PMDD; the best approaches for psychological support; suicide and self-harm prevention; the impact of PMDD on life; and support for hormonal 'trigger' events.

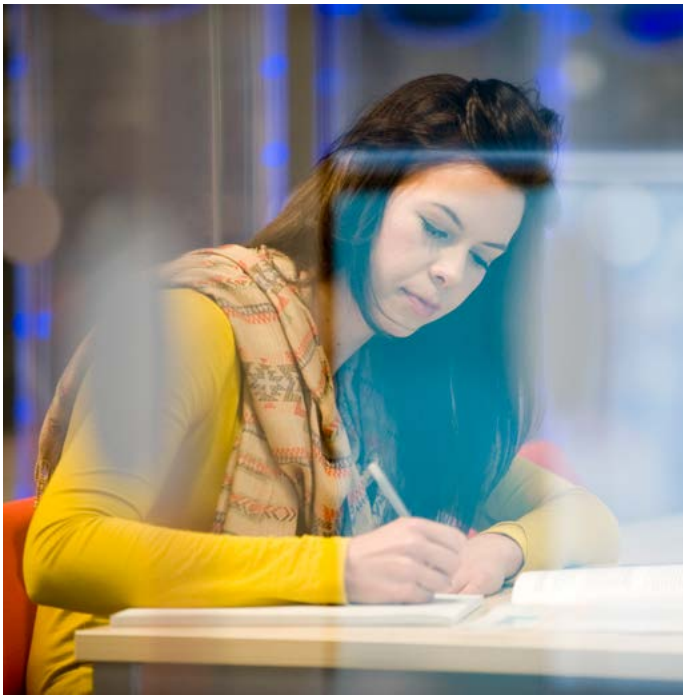
Impact

The research agenda will be used to enable researchers in this area to focus their funding bids, give lecturers and researchers the ability to identify topics for student teaching and research, enable policy decision-makers to identify and implement policy initiatives in their local areas, and provide not-for-profit groups with the ability to use it to develop grassroots initiatives.

4 QUALITY EDUCATION

Funded PhD Studentships

UWS Vice-Chancellor's studentships were established in 2021, following the launch of the University's Strategy 2025. The studentships aim to find research-led solutions to major global problems and are awarded to exceptional students who are pursuing postgraduate research degrees, spanning across the four academic schools and aligning to the United Nations Sustainable Development Goals. These studentships are designed to provide individuals with the financial support they need to undertake research projects that have the potential to make a significant impact in their field. Students are provided with the opportunity to work alongside experienced researchers on cutting-edge research projects and utilise state-of-the-art facilities.



Impact

In 2022/23, 6 Vice-Chancellor studentships were offered at UWS. Each studentship is an investment of approximately £72k. The studentships provide students with the opportunity to work on cutting-edge research projects, and by working alongside experienced researchers and utilising state-of-the-art facilities, they are able to gain valuable experience and develop skills that will be invaluable throughout their careers. They also provide students with financial support that can help to alleviate some of the financial burden associated with pursuing a postgraduate research degree.

The 6 studentships covered projects titled:

- Investigation of new advanced materials and structures for development of self-charging hybrid energy systems
- Justice in the Digital Age: Accessing Justice in the Immigration Tribunal
- Children's voice in times of Covid-19: a critical investigation of participatory research methods with 3-5 year olds
- A study of everyday solutions deployed by family carers when balancing risk and safety of relatives living in the family home with advanced dementia.
- Improving Student Mental Health and Academic Success through On-Campus Nature and Animal Interventions
- Autonomous Fall-Back Communication for Critical Wireless Smart Grid Networks

4 QUALITY EDUCATION

Graduate Outcomes

The Graduate Outcomes (GO) Survey, which replaced the Destinations of Leavers from Higher Education (DLHE) Survey, published their third year of data capturing the outcomes of students from higher education institutions across the UK.

This year's publication shows:

- 90.3% of UWS graduates were in employment or further study
- 84.3% of UWS graduate respondents confirm that their current activities were meaningful
- 74.4% of UWS graduate respondents agreed their current activity fits with their future plans
- 70.7% of UWS graduate respondents confirmed that they were utilising the skills developed in their degree in their current activity

Impact

The Graduate Outcomes Survey is important as it shows the employability of UWS graduates and highlights graduates' own perspectives and reflections, 15 months after they finish their course. Domestic league tables, Prospects and The Complete University Guide use Graduate Outcomes data to help students make decisions about their future.

5 GENDER EQUALITY

Scottish Women in Sport Conference

On 23 August 2023, UWS played host as a partner to the Scottish Women in Sport Conference at our Lanarkshire Campus. UWS Sports Science academics were amongst the engaging programme of speakers. Attending delegates also took the opportunity to tour the sector-leading Sports Science labs in our School of Health and Life Sciences. The conference included various organisations who are working to ensure safety in all aspects for women and girls in sport and identified areas of improvement whilst discussing many of the issues still facing women's participation in sport. The event explored issues such as how we ensure cultural requirements for women and girls participating in sport are easily met, how we ensure strong mental health in this digital age and fostering a safe environment for all athletes.

Impact

The conference is run by Scottish Women in Sport and was hosted at UWS Lanarkshire Campus in 2022 and 2023. Speakers included UWS academics with discounted tickets available for UWS students.

Gender Advancement for Transforming Institutions (GATI)

UWS is part of an international project to encourage more women into senior roles in higher education. Funded by the British Council, UWS is part of the Gender Advancement for Transforming Institutions (GATI) project, which sees the University work with higher education institutions in India to address the gender gap and encourage diversity and inclusion. The GATI model draws inspiration from the Athena SWAN Gender Equality Charter and accreditation framework, which was developed and operated by Advance HE.

Impact

The partnership has seen UWS deliver eight workshops to institutions in India to guide and support them through their Equality Charters, as well as involving them in existing UWS initiatives and women-focused programmes. These workshops have included the importance of mentoring in gender advancement and leadership in a gender balanced culture. The GATI model draws inspiration from the Athena SWAN Gender Equality Charter and accreditation framework, which was developed and operated by Advance HE.

6 CLEAN WATER AND SANITATION

FIDO Tech

Around 30% of the world's drinking water is lost from pipelines before it ever reaches taps.

UWS is part of a pioneering artificial intelligence project which is helping to save billions of litres of water being lost from pipeline networks globally. Working collaboratively, UWS and FIDO Tech, a leading software firm specialising in AI technology, have created FIDO AI – a leak detection solution for water utilities which accurately pinpoints the source of escapes.
The technology employs rapid machine-learning to 'listen' and interpret the unique data trail left by leaks. Using small sensors which attach magnetically to pipes and record simultaneous acoustic samples, the exact location of water leaks can be identified and repaired.

Impact

One example includes helping secure the water supply on Murray Island, Australia. With minimal summer rainfall and limited water storage capacity, the 450-strong population of Murray in the Torres Strait, north of Queensland, lived with severe water restrictions for more than 20 years. As well as having a challenging geography and small economy, the island's water network is largely unmapped and was known to be losing between six and seven litres per second. Even with expensive desalination costing up to $1,700 every day, daily household water supplies were reduced to just six hours. Meanwhile, lack of knowledge on the exact location, configuration and condition of buried water infrastructure made it more difficult to identify, pinpoint and rectify leaks. As one part of an integrated strategy that incorporated multiple technologies, FIDO AI helped reduce water leaks to around 0.6 litres per second, a reduction of more than 90%. From 2022, demand was made sustainable and water restrictions have been entirely lifted for the first time in over 20 years.

7 AFFORDABLE AND CLEAN ENERGY

Carbon Champions

The South Ayrshire pilot of the fully-funded Carbon Champions Programme was launched to a second cohort of South Ayrshire businesses at UWS Ayr Campus, as attending business representatives – led by Luna Guo of UWS – academic colleagues and industry experts explored how this scheme can support businesses in reaching their sustainability goals.
The cohort of business representatives have since been engaging in a regular series of workshops on campus and can also utilise the University's Net-Zero Zone, a dedicated area for participating organisations to connect and collaborate. The project is funded by the National Community Renewal Fund and is delivered by UWS in partnership with South Ayrshire Council and with the support of Ayrshire Chamber of Commerce, Ayrshire College and Entrepreneurial Scotland.

Impact

The programme provides participating organisations with fully funded consultancy and training to support plans for decarbonisation and improved sustainability. The participating businesses received a support package with a minimum value worth £15,000 including:

Service from expert environmental consultants

- A baseline audit to determine the organisations' carbon footprint
- A one-to-one consultancy service
- A bespoke net-zero plan including implementation support
- Training courses from UWS and education partners

A ten-week programme comprising:

- Climate change and sustainability, theory and principles
- International and national drivers to climate change
- Measuring carbon footprint, factors, mechanisms, and data gathering
- Standards and protocols
- Implementation, stage, process, and practice
- Managing performance and improvements
- Policy and people
- Innovation and entrepreneurship
- Case studies

Networking and support:

- Access to wider industry network support and resources
- Becoming part of the national benchmark for green working practices
- Receiving a plaque to certify Carbon Champion Status
- Ongoing business support from UWS Business Innovation Team

8 DECENT WORK AND ECONOMIC GROWTH

Social Care in Scotland and Beyond

UWS academics have been focusing on researching fair and decent work in social care, a major workforce with widely acknowledged fair and decent work gaps. One project focuses on questioning 'Where is care in international and national performance frameworks?' and how fair and decent work in care might be advanced if social care was more distinctly and prominently featured in government performance frameworks. A UWS-led team created a blueprint for a new National Outcome in 'Care' by the Scottish Government (SG) seeking to include this in a revised National Performance Framework (NPF). This has had major impact, as a new National Outcome in care, including fair and decent work, is currently being developed for implementation by the Scottish Government. This advances and locks in fair work as integral to social care and the whole Scottish Government NPF. This involved a coalition of stakeholders around the research, from scoping the new outcome to fieldwork on its validity and then dissemination to influence policy as part of the 'A Scotland that Cares' campaign.

Impact

The UWS lead on this project, Professor Stephen Gibb, is engaged in further research (grant-funded) for the Scottish Government on Culture and Leadership for H&SC Integration in the proposed National Care Service (NCS), including fair and decent work. Professor Gibb is now co-chair of the Scottish Government NCS Workforce Charter Stakeholder Group, an initiative to ensure that better valuing the workforce is at the heart of change.

Kick Start

Kick Start, a 3-minute pitch competition, challenges students and recent graduates (those who have graduated within the past 2 years) to present a short but compelling spoken presentation on their business idea and its desirability, feasibility and viability. Those students who then go on to take their business idea forward can be supported by the UWS Kick Start and Enterprise team and our partners, Converge. Kick Start is a student innovation programme designed by UWS which goes beyond classroom-based learning, focusing on providing students with the knowledge and skillset to recognise that innovation and entrepreneurship is a powerful way to implement change within their chosen sectors.

Impact

In the academic year 2022-23, 422 students registered across all activities (workshops, events and programmes), and 76 students participated in activities and programmes such as Demola, Business Idea Competition and the 3-Minute Pitching Competition.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Advanced Sensors for Use in Robotic Systems

A research project – led by University of the West of Scotland, Integrated Graphene Ltd, and supported by the Scottish Research Partnership in Engineering (SRPe) and National Manufacturing Institute for Scotland (NMIS) Industry Doctorate Programme in Advanced Manufacturing – aims to develop sensors which provide enhanced capabilities to robots, helping improve their dexterity and motor skills, through the use of accurate pressure sensors which provide haptic feedback and distributed touch. Made from 3D graphene foam, which offers unique capabilities when put under mechanical stress, the sensors use a piezoresistive approach, meaning when the material is put under pressure it dynamically changes its electric resistance, easily detecting and adapting to the range of pressure required, from light to heavy. The next stage of the project – funded by UWS, Integrated Graphene Ltd, SRPe and NMIS – will look to further increase sensitivity of the sensors, before development for wider use in robotic systems.

Impact

This pioneering project could transform prosthetics and robotic limbs. Due to a lack of sensory capabilities, robotic systems often fail to execute certain tasks easily. For robots to reach their full potential, accurate pressure sensors, capable of providing greater tactile ability, are required. UWS' collaboration with Integrated Graphene Ltd, has led to the development of advanced pressure sensor technology. An advanced material like 3D graphene foam offers excellent potential for use in such applications, due to its outstanding electrical, mechanical and chemical properties.

10 REDUCED INEQUALITIES

Working to Reduce Poverty

UWS research has demonstrated a long-term commitment to building policy and parliamentary capacity within Scotland to tackle multi-factorial, multi-generational child poverty issues. Through co-creation of new knowledge exchange and development of new planning tools commencing with the innovative *"Whose Economy?"* seminar series, the UWS-Oxfam Partnership brings together researchers, representative organisations, policy-makers and people with experience of poverty, giving rise to the joint publication of over seventeen research papers to date. The UWS-Oxfam Partnership Policy Forum event (June 2017) engaged a wide range of stakeholders in discussion around the shape and remit of the Poverty and Inequality Commission. Scottish Government officials again utilised this Partnership in 2018-19 during recruitment of members for the statutory Commission established under the Child Poverty (Scotland) Act 2017.

Strategies and systems to increase fair work, enable employment and support unpaid carers all reduce child poverty. Many of those needing care are either currently limited in support to be active in the labour market, or have their needs met by unpaid carers, mainly women and including 30,000 children aged 4-17 in Scotland.

Additionally, UWS cross-school inter-disciplinary research has focused on the integrated care sector, where research on adult social care strategies, systems and workforces (co-designed and co-produced with key stakeholders) has delivered a world-first national outcome blueprint. Following the 'A Scotland that cares' campaign (backed by over 70 organisations including leading Scottish charities, think tanks and trade unions) the Scottish Government proposed a new, dedicated National Outcome on Care in its National Performance Framework. The new draft National Outcome on Care states *'We are cared for as we need throughout our lives and value all those providing care'* has been lodged at the Scottish Parliament for scrutiny and ratification by MSPs.

More recent work through the UWS-Oxfam Partnership highlights the need for this new National Outcome to transparently track progress achievements in all forms of care – both paid and unpaid – through improvements to childcare provision and increased financial support for our young carers.

UWS has supported this work through its Vice-Chancellor's Studentships, providing fully funded postgraduate studentships including Childcare ecosystem: Rethinking and redesigning childcare in Scotland.

OXFAM

Impact

UWS research on social care strategies, systems and workforces has helped inform the new Scottish Government National Outcome on Care. Work through our UWS-Oxfam Partnership has helped highlight the need to monitor achievements in care facilitated by recommended improvements in childcare provision and improved financial support for young carers which are being considered by the Scottish Government.

11 SUSTAINABLE CITIES AND COMMUNITIES

Ukraine Partnership

UWS has partnered with the Ukrainian State University of Railway Transport (USURT) to provide a range of support for students and staff.

It comes as part of a national twinning scheme led by Universities UK / Universities Scotland and supported by Cormack Consultancy Group and Research England, to help Ukrainian universities and researchers. The scheme supports UK and Ukrainian universities to share resources in a gesture of solidarity, for the benefit of Ukrainian institutions, colleagues and students. Support includes the distribution of new power banks and USB lighting to ensure they can continue with their studies and teaching during any outages. As well as physical aid, UWS is exploring three research collaborations with USURT, and developing English language support for staff and students through UWS's School of Education and Social Sciences. It is hoped the twinning scheme will enable UK universities to build long-term strategic partnerships with their institutions in Ukraine that support research and innovation priorities, and support Ukraine's university based research and innovation ecosystem beyond the current crisis.

There is a dedicated campaign by Universities UK, #TwinForHope, which has been communicating the impact of the twinning initiatives and partnerships. The campaign aims to engage more universities from the UK and beyond to join the scheme and attract more investment for the initiative, to continue to deliver impact.

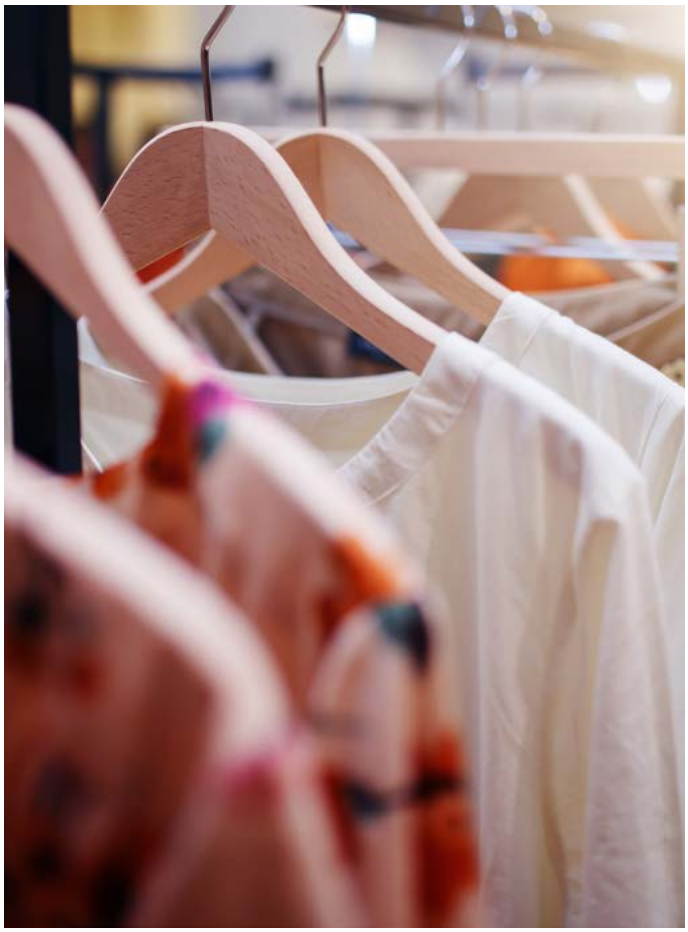
Impact

UWS has been part of a scheme led by Universities UK and Universities Scotland to support Ukrainian universities and researchers. This has included the distribution of power banks and lighting to enable universities to continue to teach and students to continue to study during power outages. We are also involved in twinning initiatives via the UUK #Twin for Hope scheme aimed at building long-term partnerships which will support Ukrainian research and innovation beyond the current crisis in the country.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Global Fashion Industry

UWS is a partner of Advanced Clothing Solutions (ACS) a sustainable fashion B-corporation. Working together we have created an eco-friendly technology that effectively sanitises used clothing, accessories and PPE, helping to protect the environment by dramatically slashing waste. The patented technology – created by ACS – was initially developed to disrupt 'fast fashion', by giving retailers and brands an alternative. The project has supported the development of a state-of the-art 'sanitisation chamber' installed at ACS's automated fashion fulfilment facility on the outskirts of Glasgow. After rigorous trials the system has been shown to effectively kill a vast range of germs and viruses, such as E. coli, S. aureus and Coronavirus, which can remain on clothing and fashion accessories. The eco-friendly solution uses ozone gas to decontaminate fabrics, which subsequently helps to reduce the use of water and avoid negative environmental impacts from detergent use. ACS prolongs the life of used or damaged garments for some of the country's biggest brands, through their sustainable textile repair, refurbishment, and cleaning service. Through extending the lifetime of a garment by three months, its carbon footprint is reduced by 10 per cent and a pre-owned purchase, or a rented garment, saves 1kg in waste, 3,040 litres of water, and 22kg CO_2.



Impact

UWS researchers have worked with Advanced Clothing Solutions to develop technology which will reduce waste in the clothing industry. The creation of a "sanitisation chamber" which decontaminates fabrics from used or damaged clothing using ozone gas, has helped reduce the volume of water needed in the cleaning and repair process. The new technology extends the lifetime of a garment by three months which helps reduce its carbon footprint by 10%. Additionally, for a pre-owned or rented garment, 1kg in waste is saved, 3,040 litres of water and 22kg of CO_2.

13 CLIMATE ACTION

£21m Digital Dairy Chain Opens

The Digital Dairy Chain is a £21 million digital dairy project which aims to decarbonise the dairy industry and create 600 new jobs. Led by Scotland's Rural College (SRUC), UWS and a range of partners across South-West Scotland and Cumbria, it focuses on developing a fully integrated and traceable dairy supply chain.

This landmark project not only aims to reduce carbon produced by the dairy industry, but also develops and retains a skilled and innovative workforce in the region. Aligning with Scotland's Strategy for Economic Transformation, it is planned that the Digital Dairy Chain will eventually lead to the creation of more than 600 jobs and generate £60m a year of additional value.

The Digital Dairy Chain was highlighted in the National Innovation Strategy as a prime example of an Innovation Cluster.

Impact

UWS has worked collaboratively with Scotland's Rural College (SRUC) and a range of partners to improve tracking within the dairy supply chain. The project will reduce the amount of carbon produced by the dairy industry as well as increase innovation in the sector leading to the creation of more than 600 jobs regionally and generating £60m a year of added value.

UWS Partnership with International Space School Education Trust (ISSET)

Three University of the West of Scotland students' projects involving plant growth in microgravity, worms in space and nanoparticles in microgravity were launched as part of the University's space research partnership with the International Space School Education Trust (ISSET).

Astronauts were given instructions regarding the necessary interactions and asked to initiate the reactions in the so called MixStix tubes. The MixStix are NASA approved mixing tubes made of polymer material with 1-3 clamps attached to separate the tube space into different closed compartments accommodating various chemical reagents.

The payload successfully returned from ISS on 11 January 2023 and he experiments were sent to UWS for further analysis of the formed nanomaterials and their properties.

Our partnership with ISSET is undoubtedly bringing many benefits to our academics, our PhD students, and their research, and will go a long way in building our knowledge of what's achievable, both in space and on Earth.

Impact

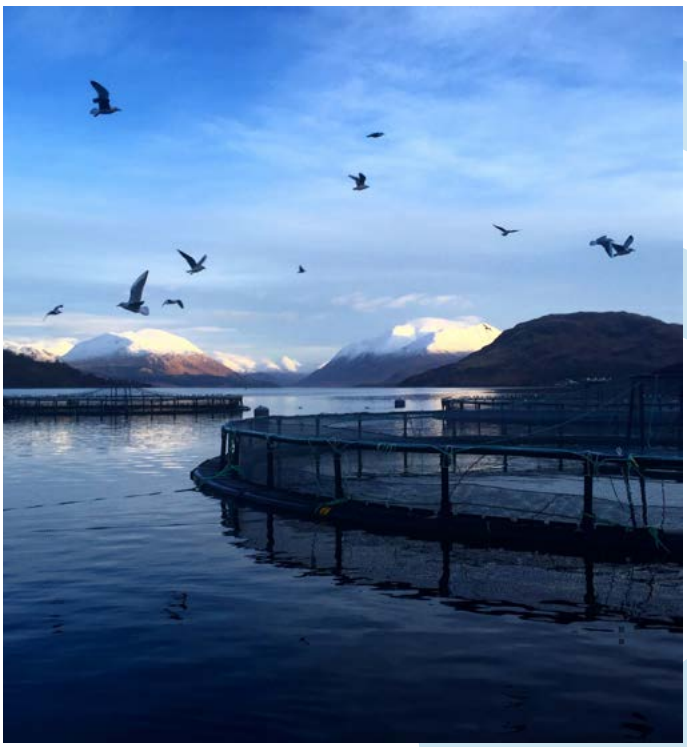
As part of the University's research partnership with the International Space School Education Trust (ISSET), three student projects were launched involving plant growth in microgravity; worms in space; and nanoparticles. During their mission, astronauts were instructed on how to use the equipment to enable it to be tested in the correct environment. The results are currently being analysed by UWS research staff.

14 LIFE BELOW WATER

Fish Health – Under the Sea

Launched in 2021, WellFish Diagnostics is a spin-out company created by UWS to help transform diagnostic practices in the aquaculture industry – a key sector in the Scottish economy. Scientists at Wellfish, working with the salmon fishing industry, have developed the first non-lethal method for assessing fish health. This innovative new method will enable fish farmers to continually monitor the health of their fish population via blood sampling, allowing them to adopt early interventions to protect stocks.

In April 2023, Wellfish secured a £247,868 CEFAS grant for the project 'Development of salmon specific, immunology assays for automated analysis'. The project is a collaboration between UWS spin-out WellFish Diagnostics, and the University of Aberdeen, Vertebrate Antibodies Ltd, Bakkafrost Scotland, Life Diagnostics Ltd and Fleet Bioprocessing Ltd.



Impact

UWS spin-out company WellFish Diagnostics, the University of Aberdeen and a range of partners in the marine biology industry have worked in partnership to develop the first non-lethal method for assessing the health of fish stocks. This will enable fish farmers to regularly monitor the health of their fish population using blood sampling and instigate early intervention actions to protect their stocks.

15 LIFE ON LAND

Mount Kenya Partnership

In partnership with Farmtrack at Mount Kenya University, UWS is part of Scotland's first African KTP. The collaboration is designed to provide consultancy services in agro production, including training and advice to farmers on all aspects of crop production. A key aspect of our work is a project seeking to develop an innovative and environmentally sustainable female fruit fly protein-baited trap designed to enhance local supply chains. The project will address the challenge of global food production and contribute towards societal and economic impact within the region. It also demonstrates the breadth and far-reaching impacts of the institutions' partnership initiatives. At present there are no commercially available and environmentally friendly approaches to female fruit fly management. The proposed approach will reduce the need for chemical pesticides' current reliance on imported raw materials, safeguarding supplies, human, animal and environmental health.

The project will use the Knowledge Transfer Partnership (KTP) model to deliver positive change with the businesses and communities that will benefit from the partnership.

Impact

UWS has formed its first African KTP with Farmtrack at Mount Kenya University to provide consultancy services, including training and advice on improving crop production. A key part of the project has been work on the development of an environmentally sustainable female fruit fly protein-baited trap design. This innovative approach to female fruit fly management will reduce reliance on the imported raw materials associated with chemical pesticides.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

National Performance Framework

UWS has provided a blueprint for a new National Outcome in Care for the Scottish Government National Performance Framework (NPF) with fair work in social care at the heart of that. To develop this, we worked with a coalition of stakeholders, from scoping the research for the outcome to fieldwork to follow through campaigning in a variety of ways and contexts. We created a new environment where part of the 'golden thread' of care as a major national concern are indicators about progressing fair work for paid care workers and for unpaid carers too. The ultimate impact will be positive change in the indicators associated with the new National Outcome in Care which we designed, enabled and supported to implementation in policy. A member of our research team has been invited to join the National Care Service (NCS) Workforce Charter Stakeholder Advisory Group. This group will advise on the development of workforce policies and practices as the NCS evolves under new leadership and working arrangements for social and integrated care in Scotland.

Impact

UWS's research in the care sector has helped inform the Scottish Government's new National Outcome in Care. UWS worked with a range of stakeholders to conduct and review research and campaign to raise awareness. This work will lead to positive change in the terms of progressing fair work for paid and unpaid carers.

17 PARTNERSHIPS FOR THE GOALS

A Hub for Sustainable Policy Analysis at UWS

In 2023, the UWS Sustainable Policy Analysis Research Centre (SPARC) was established with a mission to enhance impact and drive methodological innovation in policy research. SPARC focuses on delivering real-world policy solutions that are effective in the short, medium, and long term, achieved through active knowledge exchange and public engagement. Central to SPARC's approach is a commitment to sustainable policy analysis that generates public value, particularly for communities, issues, and organisations that are often hard to reach or easily overlooked.

In its first year, SPARC has garnered support from international, national, and local partners to build strong partnerships and address challenges across multiple levels. Notable collaborators include the World Bank, the House of Commons Library, the Scottish Government Data Centre, the Scottish Policy Research Exchange, and the Poverty Alliance.

Impact

UWS has set up the Sustainable Policy Analysis Research Centre (SPARC). SPARC provides policy analysis that focuses on public value and takes into account the multi-dimensional (social, environment, and economic), multi-level (national, local, international) and multi-actor (private, public, third sector, and other stakeholders) perspectives. The centre has already collaborated with a range of notable institutions including the World Bank and the Poverty Alliance.

Participation in Hackathon Event

Nine Special Interest Groups took part in the 'SIGathon' at the CARPE (Consortium on Applied Research and Professional Education) Symposium held at the University in May 2023. The event brought together members from within the CARPE network – a strategic alliance of universities from Scotland, Germany, Finland, Hungary, Spain, Portugal and the Netherlands, all dedicated to applied research, professional education and a focus on students' future world of work.

The challenge-led symposium was designed to continue to build cross-country collaboration and strengthen the impact of research and innovation amongst the countries and institutions involved, with a clear focus on the United Nations Sustainable Development Goals.

Participants in the SiGathon were all given a Horizon Europe Call from the EU Funding & Tenders Portal to solve which focused on areas such as:

- Business & Entrepreneurship
- Creativity & Culture
- Data Science & Artificial Intelligence
- Food
- Health
- Pedagogy, Learning & Innovation
- Societal Challenges
- Smart Sustainable Cities
- Sport & Exercise Science

The 'SIGathon' brought together experts and created a collaborative environment for solving a certain problem or challenge. Besides working on solutions, the participants joined workshops, collaborating to make a presentation regarding the challenge to be solved and creating a SIG roadmap/action plan.

Impact

UWS held a "Sigathon" during the CARPE (Consortium on Applied Research and Professional Education) Symposium it hosted in 2023 which brought together a range of delegates from all over Europe. The Sigathon encouraged delegates to work together to problem solve and create viable roadmaps for action based on real-world challenges they had been given. This opportunity for cross-border collaboration proved extremely popular amongst attendees and the exercise will be repeated at future conferences.

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