UNIVERSITY OF THE WEST of SCOTLAND

UWS

OUR CONTRIBUTION TO ACHIEVING THE SDGs 2025

University of the West of Scotland

UN Sustainable Development Goals Reporting 2025

Our Value Model



ALL ALIGNED TO UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS

Executive Summary

The University of the West of Scotland (UWS) has a long-standing commitment to sustainability, reflected in our status as a signatory to the Sustainable Development Goals (SDG) Accord. Through this commitment, UWS reports annually on its progress in embedding the United Nations Sustainable Development Goals (UN SDGs) across learning and teaching, research, leadership, operations, and community engagement.

As an internationally focused higher education institution, we recognise our responsibility to act sustainably and to serve the needs of our global communities. Sustainability is integrated throughout our practice, policies, and operations, informing our approach to learning and teaching, research and innovation, and institutional decision-making. We are committed to equipping our graduates with the knowledge, skills, and values needed to thrive in future careers and make a positive impact on society.

Our work is aligned with both the UN SDGs and the Scottish Government's National Performance Framework, which seeks to create a more successful country by improving wellbeing, reducing inequalities, creating sustainable and inclusive economic growth, and giving equal importance to economic, environmental, and social progress.

We recognise that achieving the UN SDGs requires both building on the significant progress already made across our campuses and identifying new opportunities for innovation and improvement. With only a few years remaining until the UN's 2030 target date, we remain ambitious, innovative, and steadfast in our commitment to delivering meaningful and lasting change.



Professor James A. Miller FRSE
PRINCIPAL AND VICE-CHANCELLOR
University of the West of Scotland

Introduction

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared global blueprint for peace, prosperity, and environmental sustainability. Central to this agenda are the 17 Sustainable Development Goals, which recognise that ending poverty and addressing inequality must go hand in hand with improving health and education, promoting economic prosperity, and tackling climate change.

UWS is fully committed to advancing the UN SDGs and to being a global leader in delivering excellent, relevant, and purposeful research that contributes to sustainable development. As an institution dedicated to creating positive impact, UWS has been recognised among the world's top 300 universities for its contribution to achieving the UN Sustainable Development Goals.

This report highlights the wide range of initiatives being delivered across the University to support and accelerate progress towards the UN SDGs. It demonstrates how UWS is embedding sustainability throughout its activities and working collaboratively with students, staff, partners, and communities to create a more sustainable future for all.



KEY ACHIEVEMENTS

CARBON EMISSIONS

55%

TOTAL EMISSIONS REDUCTION SINCE BASELINE YEAR

45%

REDUCTION IN THE EMISSIONS FROM UNIVERSITY ASSOCIATED TRAVEL VERSUS THE PREVIOUS YEAR

£20,412,932*

VALUE OF RESEARCH FUNDING ALIGNED WITH SDGs

32%

PERCENTAGE OF FIRST-GENERATION FULL-TIME STUDENTS DOMICILED IN SCOTLAND FROM SCOTTISH INDEX OF MULTIPLE DEPRIVATION (SIMD) 20 AREAS

£28,000

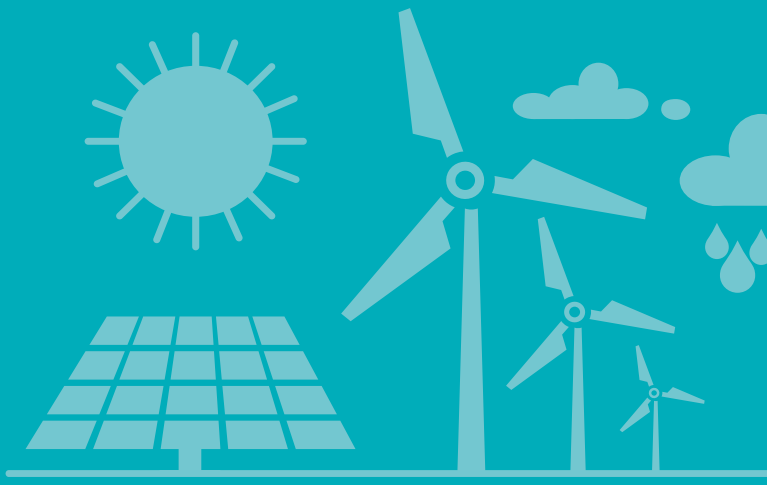
IN FUNDING THROUGH SUSTAINABLE TRAVEL PARTNERSHIPS, SUPPORTING STUDENTS AND STAFF TO TRAVEL ACTIVELY. THIS IS DOUBLE THE FIGURE ACHIEVED IN 2024.

TOP 300 IN THE WORLD

Times Higher Education
Impact Rankings 2025

RANKED 26th GLOBALLY

FOR SDG 10: REDUCING INEQUALITIES



*this figure shows research, consultancy and KTP funding for projects active between 2024/5 and includes UWS's share of funding for partnership projects.

Students as Partners in Delivering the SDGs

Statement from UWS Students' Union

At UWS Students' Union, we believe sustainability is about more than protecting the environment. It is about fairness, wellbeing, and the kind of future we are building together.

We represent a diverse student community, many of whom are already navigating inequality, financial pressure, and uncertainty about the future. For us, sustainability means tackling those challenges alongside the climate crisis. It means making choices that support people as well as the planet.

Our work is also about making University life more affordable and accessible, supporting students to make more sustainable choices, and ensuring they have a say in decisions that affect them.

We are guided by the **United Nations Sustainable Development Goals**, using them as a framework to shape our priorities and hold ourselves accountable. In particular, we focus on:

- Reducing inequalities and widening access to opportunity
- Promoting good health and wellbeing
- Supporting responsible consumption and sustainable campus life
- Taking action on climate change in ways that are practical and inclusive

YOUR Union UWS

Embedding Education for Sustainable Development in Student Representatives Training

The Students' Union engages Course Representatives in Education for Sustainable Development (ESD) through training, ongoing support, and integration within wider student voice and partnership processes. This approach supports students to understand how sustainability relates to their learning, their future professions, and their role in shaping the curriculum.

As part of Student Representative Training, the Union utilises the Student Partnerships in Quality Scotland (SPARQS) Student Learning Experience Model, which includes Sustainable Development as a key lens shaping the overall student experience.

Within training:

- all 17 UN Sustainable Development Goals (SDGs) are introduced
- Course Representatives are supported to explore how sustainability relates to:
  - their discipline
  - their future profession
- specific focus is given to:
  - Quality Education (SDG 4)
  - Decent Work and Economic Growth (SDG 8)
  - Industry, Innovation and Infrastructure (SDG 9)

Student Representatives are encouraged to critically reflect on:

- curriculum content (e.g. diversity of reading lists and perspectives)
- skills development and employability
- how their course prepares them to contribute to sustainable development in their chosen field

At UWS we create meaningful impact locally, nationally and globally – all aligned with the UNSDGs.



The following section contains examples of our pioneering research and innovative partnerships, highlighting the goals that they align with, and the impact and outputs achieved.



Routes to Work KTP

This project, a Knowledge Transfer Partnership (KTP) between the University of the West of Scotland, Innovate UK and Routes to Work, has developed an evaluation framework to quantify and measure the impact of Routes to Work's ground-breaking employability interventions. Routes To Work is a third sector employability organisation based in North Lanarkshire which supports people to achieve their aims and contribute to the economy, to reduce poverty and ensure everyone has a good quality of life. The project supports clients through different areas: support for any health concerns; access to in-house training; 1-to-1 support; courses to boost confidence and motivation; access to wellbeing services; and financial advice and support.

The project has enabled Routes to Work to measure the outcomes of its clients' journeys towards, into and during employment, taking into account the social value of the service, both for users and the wider community. This pioneering approach to social value has been supported through a Management KTP, led by the School of Business and Creative Industries, in collaboration with the School of Health and Life Sciences at the University. The work draws on expertise from a number of academic areas, including: management, economics, health and digital marketing. This is the UK's first charity-based management KTP, involving nine members of staff from across two Schools at UWS, working in partnership with Routes to Work to deliver both societal and economic impact. The project is an exemplar of how the KTP model can be applied within the third sector.

Impacts and outputs

The KTP has transformed how Routes to Work evaluates, evidences and communicates its impact, embedding an evidence-based approach to decision-making and service delivery. The introduction of the Routes to Impact framework has enabled the organisation to consistently measure outcomes, quantify social value and provide robust evidence to support commissioning, funding applications and future strategic planning.

The project has delivered significant social impact by strengthening support for individuals facing multiple disadvantages, including young people, LGBTQ+ individuals, parents and lone parents, carers and care-experienced individuals, people with experience of the justice system, those experiencing homelessness or housing insecurity, individuals with long-term health conditions, and people experiencing long-term unemployment. Improved measurement of client outcomes has enabled the organisation to better demonstrate changes in confidence, motivation, wellbeing, skills and employment prospects, helping to reduce poverty and improve quality of life.

The KTP has also generated substantial economic impact. During the project period, Routes to Work expanded into three additional local authority areas and secured places on commissioning frameworks in a further three regions. Organisational turnover increased by 47%, and approximately 20 new jobs were created, including roles directly resulting from the KTP. The organisation's strengthened evidence base has enhanced its ability to attract funding and secure future growth opportunities.

In addition to service and organisational growth, the project delivered important policy and practice changes by embedding social value measurement within the organisation's operations. This has enabled more informed resource allocation, improved service design and a stronger focus on outcomes for beneficiaries.

The project also resulted in positive behavioural and wellbeing outcomes for staff and service users. A new organisational wellbeing strategy was developed, including the introduction of an innovative virtual reality wellbeing ecosystem for staff, which contributed to a reduction in sickness absence. Furthermore, a transformed digital presence, including a new website, enhanced social media activity and the appointment of a dedicated Marketing Officer, increased engagement with beneficiaries, stakeholders and potential partners.

Collectively, these outcomes demonstrate how the KTP has increased organisational capacity, extended beneficiary reach, strengthened social and economic outcomes, and created a sustainable framework for measuring and maximising impact across the third sector.

2 ZERO HUNGER

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

African agricultural Knowledge Transfer Partnership

The University of the West of Scotland (UWS), the funding support of the United Kingdom Research and Innovation (UKRI) under the African Agricultural Knowledge Transfer Partnership (AAKTP) initiative, has been partnering with the Federal University of Agriculture, Abeokuta, Nigeria (FUNAAB) and Ajogbe Agro-allied Industry Limited (Ajogbe) to implement the UWS-FUNAAB-Ajogbe AAKTP project. The project seeks to technically empower and support Ajogbe in a vision to develop Nigeria's first commercially available concentrated feeds for ruminant animals based on a waste-to-wealth business model of converting agricultural wastes (agrowastes) including crop residues and agro-industrial byproducts to cost-effective nutritive feeds for cattle, sheep, and goats as well as pigs in Nigeria. This is intended to contribute to key sustainable development goals (SDGs) such as SDG 2 by improving livestock productivity and availability of affordable animal protein, and to effectively respond to growing demand for meats and other livestock products. This Knowledge Transfer Partnership has established a continuous research collaboration between the Federal University of Agriculture, Abeokuta (FUNAAB), and Ajogbe Agro-Allied Industry. The Ajogbe Agro-allied industry will serve as a field experiment site for both undergraduate and postgraduate students enrolled in related animal science programmes. Additionally, this knowledge transfer partnership has established an agreement between FUNAAB and UWS to jointly run degree programmes and other short leadership and staff capacity development courses.



Impacts and outputs

The project has delivered significant economic, social and environmental impacts, while strengthening research, innovation and skills development within the agricultural sector. A major achievement was the successful evaluation of agricultural waste materials as alternative feed sources. Through research and testing, maize stover, rice straw and cassava peels were identified as commercially viable feed ingredients, demonstrating the potential to reduce livestock feeding costs while creating value from agricultural waste. This provides a sustainable and scalable solution for livestock producers and supports the development of a circular agricultural economy.

The project has generated important environmental benefits by promoting the productive use of agricultural residues and agro-industrial by-products that might otherwise be discarded or underutilised. By transforming waste materials into livestock feed, the initiative contributes to reducing agricultural waste, improving resource efficiency and supporting more sustainable agricultural production systems.

The partnership has also delivered notable economic impact by building the technical capability of Ajogbe to develop innovative feed products that can strengthen domestic feed production, improve livestock productivity and support the availability of affordable animal protein in Nigeria.

From a research and policy perspective, the KTP established a sustained collaboration between UWS, FUNAAB and Ajogbe, embedding knowledge and research expertise within the company and creating a platform for continued innovation. The successful transfer of knowledge resulted in an extended FUNAAB-Ajogbe partnership to further develop and commercialise research findings.

The project also delivered significant capacity-building and behavioural impacts. The AAKTP provided a valuable networking and professional development platform for participants across all partner organisations, enhancing technical expertise, fostering international collaboration and strengthening institutional research capabilities. The knowledge transfer activities supported skills development among academic staff, industry practitioners and students, helping to build long-term capacity within the agricultural sector.

Collectively, the project demonstrates how international knowledge transfer partnerships can drive sustainable agricultural innovation, support economic development, create environmental benefits through resource efficiency, strengthen research collaboration and build long-term capacity within higher education and industry.

3 GOOD HEALTH AND WELL-BEING

Health monitoring systems

New research from UWS has found a way to monitor people's health without touching them, by using data gathered from sensors in a room. Researchers, PhD student Cezar Anicai and Professor Muhammad Zeeshan Shakir, believe this technology could be used to develop non-invasive, health monitoring systems that function without the need to fit sensors or wearable devices to patients. Six hundred minutes of data under varied indoor conditions from the study's 14 participants was compiled, with variables such as temperature, humidity, light, sound, pressure, air quality, and physiological responses measured to assess the wellbeing of participants.

Researchers believe this innovative technology could be adopted in settings such as care homes for the elderly, where residents are largely indoors and generally require close monitoring. This technology would allow staff to monitor the health of their residents less intrusively which would be less distressing for residents.

Impacts and outputs

The research has demonstrated the potential for a new generation of non-invasive health monitoring systems, providing an innovative alternative to traditional wearable technologies. By successfully using environmental data to estimate physiological responses, the project has established a proof-of-concept for monitoring health and wellbeing without direct contact, creating opportunities for wider adoption across health and care settings.

The project has delivered important societal and healthcare impacts by developing technology that could improve the quality of care for individuals requiring regular monitoring, particularly older adults and vulnerable populations. In care home environments, the approach could enable staff to monitor residents' wellbeing more discreetly, reducing distress and improving comfort while maintaining oversight of health status. This represents a significant behavioural shift from reactive monitoring towards more continuous and preventative approaches to care.

The research also has the potential to influence future practice and policy in health and social care by demonstrating how ambient sensing technologies can support person-centred, privacy-conscious monitoring. The findings contribute to the growing evidence base for digital health innovations that reduce the burden on patients while supporting earlier identification of potential health concerns.

A key impact of the project is its contribution to technological innovation and digital health research. The machine learning models developed demonstrated strong performance in estimating cardiac and electrodermal activity from environmental signals, advancing knowledge in the fields of artificial intelligence, health monitoring and smart environments. The research lays the foundation for future developments in predictive health monitoring, occupational health management and lifestyle interventions.

Looking ahead, the research team is expanding the scope of the project by increasing the number of participants, incorporating a broader range of indoor environments and collecting additional environmental and physiological data. The development of more adaptive machine learning models will further enhance the technology's applicability, enabling faster onboarding of new users and supporting future deployment at scale.

Collectively, the research demonstrates the potential of ambient sensing and artificial intelligence to transform health monitoring, delivering benefits for patients, care providers and healthcare systems through improved wellbeing, enhanced privacy, and more effective preventative care.



Funded PhD studentships available at University of the West of Scotland

Eight studentships, which aim to find research-led solutions to major global problems were launched at UWS. The funded Vice-Chancellor Studentships are prestigious scholarships awarded to exceptional students who are pursuing postgraduate research degrees. 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.

These highly selective studentships span the University's four academic schools and are aligned with the United Nations' Sustainable Development Goals.

The scholarships include studies looking at subjects such as:

- **Enabling British Sign Language (BSL) in Virtual Reality using Machine Learning**

  This project aims to leverage Virtual Reality and Machine Learning to enable British Sign Language communication within immersive virtual environments, tackling social isolation and enhancing communication accessibility for deaf people.

- **Empowering Future Industries: Enhancing Mission-Critical Communications with Next-Generation Networks**

  The project will explore how Next-Generation Networks, like Beyond-5G and 6G, can support secure, high-performance communication, especially in sectors like manufacturing, where speed and reliability are critical.

- **The impact of Premenstrual Dysphoric Disorder (PMDD) on mothers and their children**

  Premenstrual Dysphoric Disorder is a severe mood disorder characterised by debilitating psychological symptoms. For mothers with PMDD, this disorder has a complex impact on parenting. The successful candidate will explore this important issue in the context of emerging Scottish policy pertaining to women's health, early years and health inequalities.

Impacts and outputs

The UWS Vice-Chancellor's studentships were established in 2021, as part of the University's activities to reach the goals of its ambitious Strategy 2025. They provide students with the opportunity to work alongside experienced researchers on cutting-edge research projects. Utilising state-of-the-art facilities, students benefit by gaining valuable experience and develop skills that will be invaluable throughout their careers. Studentships also provide monetary support that can help to alleviate some of the financial burden associated with pursuing a postgraduate research degree.

Furthermore, the studentships create long-term impact through new evidence, methodologies and insights that can inform future policy, professional practice and technological innovation. As projects progress and findings are translated into real-world applications, the benefits have the potential to extend well beyond academia, supporting communities, industry and public services both nationally and internationally.



4 QUALITY EDUCATION

UWS launches evening short courses with Skills Scholarships for 2025

To improve access to professional development and lifelong learning opportunities, the University of the West of Scotland (UWS) launched a new programme of evening short courses at its Paisley campus. Delivered through the UWS Centre for Continuing Professional Development, the courses were designed to meet growing demand for flexible, career-focused learning in areas such as digital branding, leadership and project management.

The initiative was developed to support professionals, career changers and lifelong learners seeking to enhance their skills, gain new knowledge and improve their career prospects while balancing work and personal commitments. By offering evening delivery, the programme provides a more accessible route into higher-level learning for individuals who may be unable to participate in traditional daytime study.

To further reduce barriers to participation, UWS introduced flexible and affordable learning options, alongside Skills Scholarships that provide fully funded places for eligible participants. This approach aims to widen access to professional development opportunities and ensure that individuals from a range of backgrounds can benefit from continued learning and skills enhancement.

Impacts and outputs

The evening short course programme has expanded access to lifelong learning and professional development, enabling a broader range of learners to develop in-demand skills and qualifications. By offering flexible delivery and financial support, the initiative has reduced barriers to participation and created new opportunities for individuals who may otherwise be unable to engage in further education.

The programme has delivered significant skills and employability benefits by helping participants build expertise in areas valued by employers, including leadership, project management and digital capabilities. These enhanced skills support career progression, improve job prospects and increase individuals' confidence in pursuing new professional opportunities. The initiative contributes to workforce development by helping individuals upskill and reskill in response to changing labour market demands. By supporting the development of a more highly skilled workforce, the programme contributes to productivity, organisational performance and sustainable economic growth across Scotland.

The initiative encourages a culture of continuous professional development and lifelong learning. Participants are empowered to take ownership of their personal and professional growth, developing new skills and knowledge that can be applied directly within their workplaces and communities.

Collectively, the programme demonstrates UWS's commitment to supporting individuals, employers and communities through accessible, flexible learning opportunities that enhance employability, promote social mobility and contribute to long-term economic prosperity.





First detection system for academic AI misuse receives funding

Cyberhare Solutions, a spin-out venture from the University of the West of Scotland (UWS), has developed IntegraGuard, an innovative academic integrity platform designed to address the growing challenge of academic misconduct in the age of artificial intelligence (AI). Developed in response to increasing concerns about the misuse of generative AI in assessment, the platform provides universities with a transparent, evidence-based approach to detecting and managing potential breaches of academic integrity.

Unlike traditional plagiarism detection tools, IntegraGuard goes beyond simply identifying suspicious text. The platform provides detailed evidence and insights, including the identification of fabricated references, indicators of AI-assisted content generation, and comprehensive case management functionality that supports the entire academic misconduct referral process. Importantly, the system has been designed to support rather than replace academic judgement, enabling teaching staff to review evidence, make informed decisions and overrule system recommendations where appropriate.

Following successful development and trials at UWS and other UK universities, Cyberhare Solutions secured £250,000 in funding from UK Research and Innovation (UKRI) to support final product development, expand pilot activity and prepare the platform for commercial deployment. The company also plans to extend the technology beyond higher education into sectors such as human resources, compliance, healthcare and financial services, where transparency, accountability and integrity are increasingly important.

Impacts and outputs

The project is delivering significant educational, economic and organisational impacts by helping institutions respond effectively to emerging challenges associated with AI-enabled academic misconduct.

A key outcome has been the development of a robust, evidence-based system that supports fair and transparent decision-making. By providing lecturers with detailed information rather than automated judgements, IntegraGuard promotes a more balanced and accountable approach to academic integrity investigations. This helps maintain trust in assessment processes while ensuring academic staff retain control over final decisions.

The project has the potential to influence institutional policy and governance surrounding academic integrity. As universities adapt to the rapid growth of AI technologies, IntegraGuard provides a practical framework for managing misconduct cases while balancing innovation, fairness and student rights. Its development contributes to wider sector discussions on the responsible use of AI in education and the evolution of assessment practices.

The technology is also generating substantial economic benefits. Cases of AI-related academic misconduct are placing increasing demands on university resources, with investigations often requiring significant staff time and administrative effort. During trials at UWS, IntegraGuard reduced staff time spent on misconduct cases by up to 90%, enabling academic and professional services staff to focus on teaching, student support and other strategic priorities. This reduction in workload creates the potential for significant cost savings across the higher education sector and strengthens institutional efficiency.

Supported by UKRI funding, Cyberhare Solutions has progressed from a university-developed concept to a scalable commercial product with national and international market potential. The platform's planned expansion demonstrates its broader applicability and creates opportunities for future business growth, job creation and knowledge exchange.

Collectively, the project demonstrates how university-led innovation can address a pressing societal challenge, transforming the way organisations respond to AI-enabled misconduct while delivering operational efficiencies, supporting fair decision-making and creating significant commercial opportunities for future growth.



UWS launches research network to address underrepresentation of women's health in research

The underrepresentation of women's health in research is being addressed in a new initiative by UWS. Women's health issues have historically been underrepresented in scientific research, leading to gaps in knowledge and disparities in healthcare outcomes. The Women's Health Research Network (WHRN) at UWS is poised to fill this critical gap by prioritising research that specifically focuses on women's health across various stages of life. Serving as a hub for innovative research, fostering collaboration between experts dedicated to advancing women's health, the Network will ensure that the unique health needs of women are thoroughly investigated and understood. By bringing together a diverse group of researchers, healthcare professionals, and advocates from across the University's four schools, the network aims to create a comprehensive understanding of women's health issues and drive significant advancements in the field.

The network will address a wide range of women's health issues, extending beyond traditional areas such as fertility, menopause, and gynaecology. The network is dedicated to addressing a wide array of determinants of health and health concerns that disproportionately impact women from violence against women and girls, mental health issues and motherhood to the menstrual cycle. By maintaining a broad focus and fostering interdisciplinary collaboration, the Women's Health Research Network aims to generate new insights and innovative solutions that can be translated into effective healthcare practices and policies.

Impacts and outputs >>



UWS launches research network to address underrepresentation of women's health in research

Impacts and outputs

The Women's Health Research Network has developed into a significant interdisciplinary research community, generating impact through research, policy engagement, education, collaboration and public engagement. By creating a dedicated platform for women's health research, the Network has strengthened institutional capacity in an area that has historically received insufficient research attention and has fostered collaboration across disciplines, career stages and academic schools.

A key area of impact has been the Network's growing policy influence. Research undertaken by Network members has informed national policy discussions on women's health and social security. Notably, research from the UWS programme on Premenstrual Dysphoric Disorder (PMDD) directly contributed to discussions regarding the treatment of fluctuating health conditions within Scotland's social security system. The report *Premenstrual Dysphoric Disorder and the Welfare State: Recommendations for Reform* was explicitly cited within the Independent Review of Adult Disability Payment, demonstrating a clear pathway from academic research into public policy development and evidence-informed decision-making.

The Network has also produced significant capacity-building and organisational impacts by supporting the development of new interdisciplinary collaborations, research partnerships and funding applications at both institutional and national levels. Members have actively pursued competitive research funding opportunities, increasing the sustainability and reach of women's health research activity while creating new opportunities for future innovation and impact.

Through conferences, seminars, workshops and public engagement activities, the Network has expanded the visibility and dissemination of women's health research. Members have shared findings at national and international events, contributing to wider knowledge exchange and raising awareness of women's health issues among academic, professional and public audiences. Topics presented have included PMDD, menopause, reproductive health, gender and the healthcare workforce, physical activity, migration, motherhood and health inequalities.

The Network has also generated educational impacts through its contribution to the development of women's health education within UWS. By embedding emerging research and contemporary evidence into learning environments, the Network is helping to improve awareness and understanding of women's health among future professionals and researchers.

In addition, the Network has strengthened the University's international research profile through the hosting of visiting researchers and the development of national and international partnerships. Emerging collaborative research initiatives, including projects exploring walking football, physical activity and women's health, demonstrate the Network's ongoing role in facilitating innovation and translating research into practical interventions that support health and wellbeing.

Collectively, the Women's Health Research Network has increased research capacity, influenced policy, supported evidence-based practice, strengthened interdisciplinary collaboration and elevated the profile of women's health within academia and society. Its work is contributing to improved understanding of women's health inequalities and creating the evidence base needed to inform more effective healthcare services, policies and outcomes for women.

5 GENDER EQUALITY

Gender-based violence research

Researchers at the University of the West of Scotland (UWS), Dr Chloe Maclean and Dr Rebecca Gordon, secured funding through the Royal Society of Edinburgh (RSE) Research Awards Programme to investigate the relationship between participation in martial arts and recovery from gender-based violence (GBV).

The project, How does women's participation in martial arts influence their recovery journeys from gender-based violence?, was developed to explore an under-researched area at the intersection of gender-based violence, physical activity and wellbeing. The study brings together Dr Gordon's expertise in gender-based violence and Dr Maclean's research on gender, embodiment and martial arts to examine the ways in which martial arts participation may contribute to women's recovery experiences.

Against the backdrop of the significant prevalence of violence against women and girls, the research seeks to address gaps in academic understanding of how structured physical activity can support recovery, empowerment and wellbeing among survivors. The findings are intended to inform the practice and provision of martial arts organisations, governing bodies and women's support services across Scotland, contributing to more evidence-informed approaches to supporting survivors of gender-based violence.



Impacts and outputs

The project has generated important social and research impacts by creating a platform for survivors of gender-based violence to share their lived experiences and contribute directly to the development of new knowledge in an area with limited existing evidence. Through in-depth interviews with women in Scotland who are both martial artists and survivors of gender-based violence, the study has captured valuable insights into the role that physical activity may play in recovery, confidence-building, resilience and personal empowerment.

A key impact of the research has been its contribution to addressing an important evidence gap within both gender-based violence research and sport and physical activity studies. By exploring the connection between martial arts participation and recovery from trauma, the project is helping to build a stronger evidence base that can inform future interventions, research programmes and support services for survivors.

The project contributes to wider discussions around innovative pathways to recovery and wellbeing for survivors of gender-based violence and may inform future service design, partnership working and advocacy efforts.

An important aspect of the project's impact is its commitment to public engagement and knowledge exchange. The experiences and perspectives shared by participants are being used to co-create a public exhibition at the Royal Society of Edinburgh during the UN's 16 Days of Activism Against Gender-Based Violence campaign. This provides a powerful mechanism for amplifying survivors' voices, raising awareness of gender-based violence, and encouraging public dialogue around recovery, resilience and the role of physical activity in supporting wellbeing.

The project has also strengthened interdisciplinary collaboration by bringing together expertise from gender studies, sociology, sport and physical activity research. This collaborative approach has enhanced capacity within the University to address complex social issues and develop innovative research that bridges academic disciplines.

Collectively, the research demonstrates the potential for physical activity and martial arts participation to support recovery journeys following gender-based violence, while contributing to public awareness, informing practice, amplifying survivor experiences and advancing understanding of effective approaches to supporting women affected by violence and abuse.





Scale of antimicrobial resistance risk seen from bacteria in 'Trojan horse' amoebae

Researchers from the University of the West of Scotland (UWS) collaborated with colleagues from the University of Strathclyde, Glasgow Caledonian University, and the Indian Institute of Technology Bombay to investigate the role of free-living amoebae in the spread and persistence of antimicrobial resistance (AMR) within aquatic environments.

The study focused on Vashi Creek, a tidal estuary in Mumbai, India, examining whether amoebae could act as reservoirs for antimicrobial-resistant bacteria. Researchers analysed bacteria found within amoebae and compared them with bacteria present in surrounding sediment samples. The findings revealed significantly higher levels of antimicrobial resistance among bacteria living inside amoebae, suggesting that these microorganisms can provide a protective environment in which resistant bacteria can survive and persist.

The research sought to improve understanding of environmental factors contributing to the global challenge of antimicrobial resistance and to explore new approaches for identifying and monitoring emerging resistance threats. By investigating the links between pollution, environmental microbiology and public health, the project contributes to the growing international effort to address AMR through a One Health approach that recognises the interdependence of human, animal and environmental health.

Impacts and outputs

The project has generated important public health, environmental and scientific impacts by revealing previously overlooked reservoirs of antimicrobial resistance within natural ecosystems. The discovery that free-living amoebae can harbour bacteria with substantially higher levels of resistance than those found in surrounding sediments highlights a potential mechanism through which antimicrobial resistance can persist and spread in the environment.

A key research finding was that almost half of the bacteria identified within amoebae were resistant to four or more antibiotics, with a significant proportion resistant to six or more. These findings demonstrate that amoebae may act as a protective "Trojan horse" for antimicrobial-resistant bacteria, creating hidden hotspots of resistance that would not be detected through conventional environmental sampling methods.

The project has advanced understanding of environmental drivers of antimicrobial resistance, providing evidence of the relationship between environmental pollution and the development and persistence of resistant bacteria. This contributes to a growing body of knowledge supporting the need to consider environmental factors alongside clinical and agricultural sources when tackling the global AMR challenge.

The research has important policy and practice implications by identifying a potential new method for antimicrobial resistance surveillance. The findings suggest that free-living amoebae could serve as sentinel indicators of emerging resistance threats, providing an early warning system that could strengthen environmental monitoring and inform public health interventions. This approach aligns closely with international efforts to implement the World Health Organization's One Health framework, which promotes integrated approaches to protecting human, animal and environmental health.

The project also delivers significant societal impact by supporting efforts to address one of the world's most pressing public health challenges. Improved understanding of where and how antimicrobial resistance develops and persists can inform more effective prevention strategies, helping to reduce future risks to communities, healthcare systems and ecosystems.

The research has identified previously hidden areas of antimicrobial resistance activity, enabling more targeted environmental monitoring and pollution-management strategies. By improving the detection and understanding of resistance hotspots, the findings support efforts to protect water quality, ecosystem health and biodiversity.

The collaboration has further strengthened international research partnerships between institutions in the UK and India, enhancing research capacity and supporting knowledge exchange across disciplines including microbiology, environmental science and public health.

Collectively, the project has expanded scientific understanding of antimicrobial resistance in the environment, identified innovative opportunities for surveillance and early detection, and provided evidence that can support future policy, environmental management and public health action to combat the growing global threat of antimicrobial resistance.

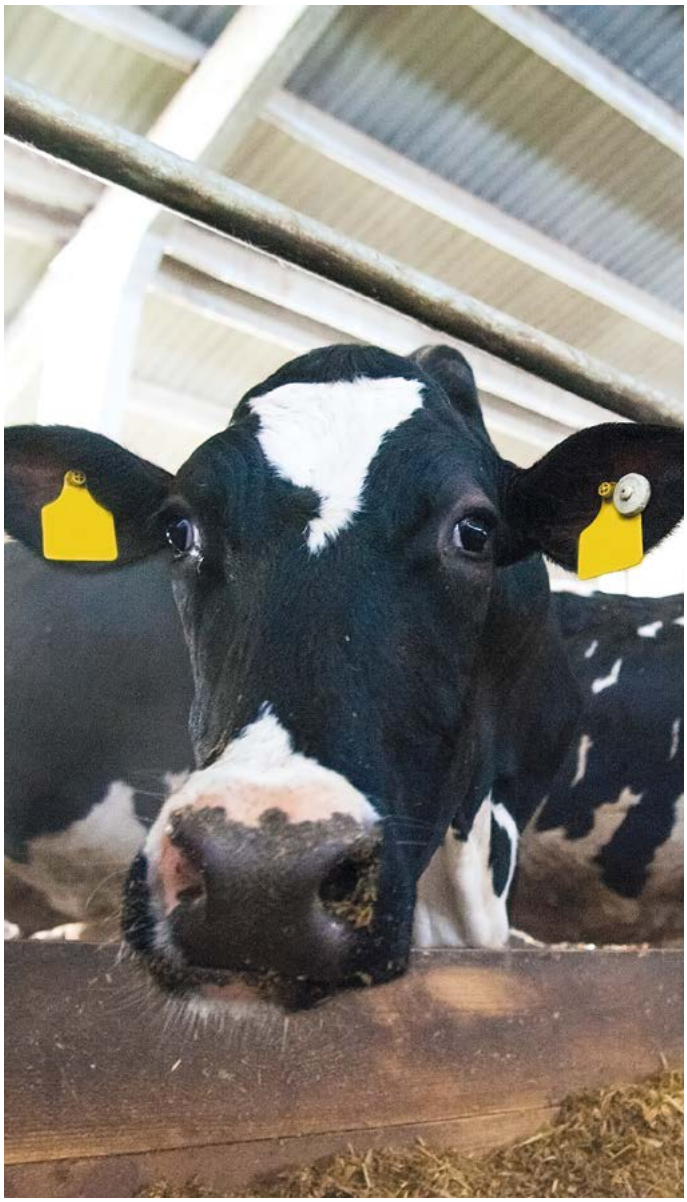


Digital Dairy Chain

The Digital Dairy Chain is a five-year, UK Research & Innovation (UKRI) funded programme bringing together ten partners, including the University of the West of Scotland (UWS), to drive innovation, sustainability and economic growth across the dairy sector in Cumbria and South and West Scotland. With a total investment of £21 million, the programme aims to transform the regional dairy industry by supporting businesses to adopt new technologies, undertake collaborative research and development, improve productivity, and develop sustainable solutions that strengthen the rural economy.

The initiative provides a comprehensive package of support for businesses and individuals operating across the dairy supply chain. This includes access to collaborative R&D funding, innovation vouchers, the Milk Round Technology Accelerator, and specialist New Product Development (NPD) facilities through the Maker Space programme. Through these mechanisms, the project enables businesses of all sizes, to test new ideas, develop innovative products, and improve processes.

A central element of the programme is the Transformational Dairy Research Project, which focuses on advancing on-farm technologies and downstream milk-processing innovations to maximise the value of milk production while reducing energy consumption, waste and environmental impact. Alongside research and innovation activities, the Digital Dairy Chain supports workforce development through STEM engagement and skills programmes designed to address labour shortages and promote careers within modern dairy farming and food production.



Impacts and outputs >>

Digital Dairy Chain

Impacts and outputs

The Digital Dairy Chain has delivered significant economic, environmental, innovation and skills impacts across one of the UK's most important dairy-producing regions. The initiative has supported farms and dairy businesses to adopt new technologies and more efficient practices, leading to improvements in productivity, resource management and business competitiveness. Through collaborative innovation projects and direct business support, participating organisations have been able to accelerate product development, test emerging technologies, and bring new solutions closer to commercialisation.

A key area of impact has been the delivery of environmental benefits through projects focused on energy efficiency, waste reduction, and the development of circular economy solutions. Several farms supported through the programme have introduced innovations to optimise energy consumption and reduce operational costs while lowering their environmental footprint.

The programme has also stimulated commercial innovation and business growth. One example is Grouse Fibre, which developed innovative methods for converting casein, the primary protein found in milk, into technical fibres and advanced materials. By creating new applications for dairy by-products, the project demonstrated the commercial value of transforming waste streams into high-value products, supporting the transition towards a more circular and sustainable economy. Access to specialist facilities and expertise enabled the company to progress from laboratory-scale testing to kilogram-scale production, demonstrating the feasibility and market potential of the technology. The success of the project has attracted further support from organisations including Scottish Enterprise and the Biotechnology and Biological Sciences Research Council (BBSRC), enabling continued development and commercialisation.

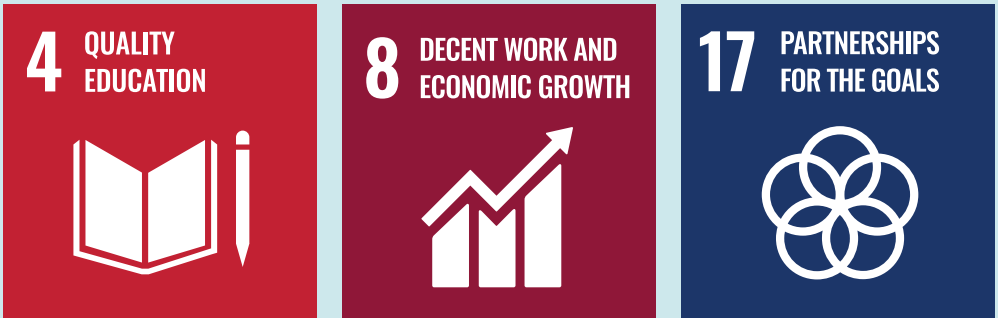
The programme has also generated measurable economic and environmental impacts through renewable energy innovation. Through the Milk Round Technology Accelerator, Soltropy developed a smart monitoring system for its solar thermal water-heating technology. The solution addresses a significant challenge for dairy farms, where large quantities of hot water are required for cleaning and sanitisation. By harnessing solar energy, the technology has the potential to reduce reliance on conventional energy sources and generate substantial savings for farmers, with estimated reductions in energy costs of up to £6,000 per year. In addition to improving farm profitability, the innovation contributes to reducing carbon emissions and supporting the industry's transition towards more sustainable production systems.

The programme has delivered wider sectoral and societal benefits by strengthening collaboration between industry, academia and innovation agencies. Through funding opportunities, business support programmes and research partnerships, the initiative has increased the capacity of dairy businesses to innovate, adopt new technologies, and respond to emerging industry challenges.

The Digital Dairy Chain has also made a significant contribution to skills development and workforce growth. Through its STEM engagement activities and Workforce for the Future programme, it has helped raise awareness of careers within the dairy industry, supported talent development and addressed skills shortages across the sector. These activities are helping to build a pipeline of future employees equipped with the knowledge and skills required to support a modern, technology-enabled dairy industry.

The success and impact of the initiative were recognised nationally when the Digital Dairy Chain received the Place-Based Impact Award at the 2025 Scottish Knowledge Exchange Awards. This recognition highlights the programme's contribution to regional economic development, business innovation, sustainability, and collaborative knowledge exchange.

Overall, the Digital Dairy Chain demonstrates how strategic partnerships between universities, industry and public funders can accelerate innovation, improve productivity, create environmental benefits, support business growth and strengthen the long-term resilience and competitiveness of a key regional industry.



Skills partnership with Ayrshire College

UWS and Ayrshire College have signed a strategic partnership agreement to address local skills and training needs. The partnership commits both institutions to work collaboratively to address current and future economic opportunities across Ayrshire. Both partners will work together to develop a vision for regional skills: one that will have wide ranging benefits for staff, students and the wider community. A key component of this is a focus on delivering a comprehensive skills portfolio in areas of strategic importance within the Ayrshire Growth Deal and Regional Economic Strategy, including digital, aerospace, healthcare and nursing, creative industries and enterprise.

The agreement underscores the mutual intent of Ayrshire College and UWS to work closely together to cultivate a vibrant and sustainable tertiary education provision for Ayrshire to meet current needs as well as the innovation required to grow the regional economy. This will include developing the workforce across organisations and working together on facility and service development to deliver an efficient and joined-up presence across Ayrshire.



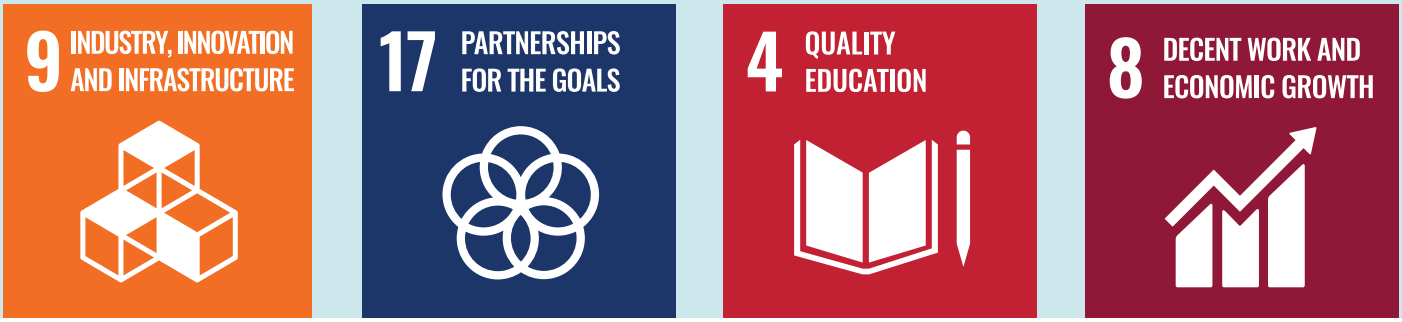
Impacts and outputs

The strategic partnership between UWS and Ayrshire College has established a framework for long-term collaboration that strengthens regional skills provision and supports economic development across Ayrshire. By aligning educational provision with regional priorities, the partnership is helping to ensure that skills development is responsive to both current workforce demands and future economic opportunities.

A key impact of the initiative is the development of a more joined-up and integrated regional skills system. Through coordinated planning, both institutions are better positioned to provide clear learner pathways, reduce duplication, improve access to education and training, and deliver a more coherent tertiary education offering for individuals across the region. This creates enhanced opportunities for learners to progress between further and higher education and into employment.

The partnership generates important social impact by improving access to education, training and career opportunities for local communities. By ensuring that skills provision reflects local needs and emerging labour market trends, the initiative helps individuals develop the qualifications and capabilities required to secure employment, progress in their careers and contribute to regional prosperity. In addition, the collaboration supports organisational and workforce development within both institutions through shared expertise, joint planning and collaborative service development. This strengthens institutional resilience and enhances the capacity of both organisations to respond to changing educational, economic and workforce demands.

Collectively, the partnership is creating a more coordinated, efficient and future-focused skills ecosystem for Ayrshire, delivering benefits for learners, employers and communities while supporting sustainable economic growth and regional prosperity.



Partnership to advance digital skills in education

Innovation for the digital age is at the heart of a new partnership between UWS, Ayrshire College and Phoenix Software, with advancements in artificial intelligence, cyber security and technological innovation set to transform the institutions' education programmes. UWS and Ayrshire College have signed a Strategic Partnership Agreement with the IT services firm, demonstrating a shared commitment to advancing digital and technological skills, delivering educational excellence and addressing real-life industry skills needs.

Through the collaboration, students and staff will have access to cutting-edge software and emerging technologies, with the aim of enhancing the overall learning experience, bolstering students' employability and improving operational efficiency at both the college and university. The new alliance with Phoenix Software builds on an existing strategic partnership between UWS and Ayrshire College, which was signed earlier this year, committing both institutions to collaborate to support innovation and address current and future economic opportunities in Ayrshire.

Among the strategic partnership with Phoenix Software's key components will be AI strategy, cybersecurity and IT governance - with joint initiatives to help UWS and Ayrshire College roadmap, implement and scale AI responsibly, developing best practices and shared learning across both institutions.

Impacts and outputs

Students and staff will benefit from digital workshops, training sessions and information events, with emphasis on latest tools from Microsoft and other leading technology platforms. In particular, the partnership will create new opportunities for students to engage with emerging technologies, strengthening their digital skills and enabling them to gain valuable experience that will increase their employability and prepare them for the workplace. The partnership will support students to move smoothly from their studies into the job market, with experience in technologies that are shaping the digital world. For international students who want to study in Scotland, this is a strong example of how the country is investing in future-focused education and creating opportunities for students to learn skills that are in high demand.

UNIVERSITY OF THE WEST of SCOTLAND
UWS

Ayrshire College

PHOENIX





UWS wins University of the Year for Socal Inclusion in 2025

UWS was named The Times and The Sunday Times Good University Guide Scottish University of the Year for Social Inclusion. Based on key measures to reflect the diversity of their intake and subsequent success when attending university, the award recognises universities and their impact on social inclusion. UWS was also ranked first in the Higher Education Policy Institute's Scottish Social Mobility Index. As part of their Good University Guide, The Times and The Sunday Times Scottish University of the Year for Social Inclusion award considers factors such as state school admissions, ethnic minority students, black awarding gap, white working class, low participation areas/deprived areas, first-generation students, disabled students and mature students alongside data sourced from HESA, UCAS and the Scottish Index of Multiple Deprivation.

The University's impact is evidenced by the scale and reach of its beneficiaries, with **48.8% of students being the first in their family to attend university** and **32% coming from areas of multiple deprivation**. By providing access to higher education for individuals who have traditionally been underrepresented, the University is enabling behavioural change through increased educational aspiration, participation and attainment among groups that may otherwise face significant barriers to university study.

Professor James Miller FRSE, Principal and Vice-Chancellor of UWS, said:

"We are incredibly proud to be named as the leading university in Scotland for social inclusion through the Times and Sunday Times Good University Guide. This accolade recognises our deep commitment to supporting our diverse student population and the impact our graduates make in the communities they serve".





Impacts and outputs

The economic impact of this work extends beyond individual graduates. By supporting students from disadvantaged and underrepresented backgrounds to achieve higher-level qualifications, the University contributes to the development of a more skilled and diverse workforce, helping to address skills needs, increase earning potential and strengthen local and regional economies. Collectively, these outputs and outcomes demonstrate the University's leadership in social inclusion, delivering tangible benefits for thousands of learners while generating lasting social and economic value through improved access, achievement and progression opportunities.







Growth of UWS Foundation Academy

During 2025 UWS achieved record numbers of participants in its Foundation Academy with 1,115 pupils from 30 schools across the west of Scotland participating in the programme. This was the highest number achieved since its inception in 2022. The continued growth of the initiative demonstrates increasing demand for accessible higher education opportunities and highlights the programme's contribution to widening access, raising aspirations, and supporting informed progression into further and higher education.

The UWS Foundation Academy is an innovative programme designed for senior school pupils, providing an early experience of university-level learning while developing the academic skills, confidence and knowledge required for successful progression to higher education. Open to all schools across the region, the programme aims to increase awareness of university pathways and ensure that young people from all backgrounds can access opportunities to realise their potential. Participants work towards a qualification worth 20 SCQF credits at Level 7, strengthening both their academic profile and future progression opportunities.

Through the programme, pupils explore a broad range of subject areas offered across UWS's four academic schools, including Forensic Science, Sports Science, Engineering, Biomedical Sciences, Psychology, Nursing, Politics, Acting and Performance, Filmmaking and Radio. Alongside subject-specific learning, participants develop university-level study skills, gain insight into potential career and education pathways, and receive guidance and support to inform future decisions about their education and careers. The Foundation Academy combines on-campus and in-school delivery, creating a flexible and accessible model that removes many of the barriers often associated with higher education engagement. Pupils participate in a ten-week university-level module delivered within their school by UWS lecturers and attend a campus visit where they experience university facilities and learning environments firsthand. The programme is provided free of charge to both pupils and schools, with UWS covering transport costs to ensure participation is not limited by financial circumstances.



Impacts and outputs

The Foundation Academy directly supports UWS's widening access agenda by creating structured pathways into higher education for learners who may not traditionally consider university as a viable option. By working collaboratively with participating schools, the programme contributes to regional and national objectives focused on educational equity, fair access and social mobility. Its continued expansion demonstrates a scalable model of partnership working between schools and higher education institutions that helps address inequalities in access to further and higher education opportunities. The programme also supports positive behavioural change by increasing participants' awareness of higher education pathways, enhancing confidence in their ability to succeed in a university environment, and encouraging informed decision-making about future study options. Through direct engagement with university lecturers, exposure to university-level learning and campus experiences, pupils become more familiar with higher education settings and expectations, helping to reduce uncertainty and increase aspirations for progression to university.

The programme also contributes to the development of a skilled future workforce by encouraging participation in a diverse range of disciplines linked to regional and national skills priorities, including health, engineering, science and creative industries. The removal of financial barriers through free participation and funded transport also supports equitable access to opportunities that can positively influence long-term economic outcomes for participants.



UWS research into the link between PMDD and the benefits system

The welfare benefits system is failing many people living with Premenstrual Dysphoric Disorder (PMDD), according to research conducted by academics at UWS. The study examined the experiences of individuals applying for social security support, particularly through the Adult Disability Payment and Personal Independence Payment schemes, and found significant challenges in accessing appropriate support for a condition characterised by severe and fluctuating symptoms.

Within the UK, approximately 22 million people are of reproductive age, including around 1.2 million people in Scotland. PMDD is a severe hormone-based mood disorder affecting around one in twenty women. The condition is associated with significant mental health impacts, including self-harm, suicidal ideation and suicide attempts, and causes debilitating symptoms during the latter half of the menstrual cycle that can affect all aspects of daily life. For many, these symptoms create substantial barriers to employment, education, social participation and independent living.

The research highlighted a significant mismatch between the nature of PMDD and existing welfare assessment processes. Current eligibility criteria often require claimants to demonstrate that their condition affects them for more than 50% of the time. Participants reported that this approach does not adequately recognise the cyclical and fluctuating nature of PMDD, leading to negative experiences during the assessment process and reducing access to financial support for those whose daily functioning is severely affected.

The research has generated evidence to support improvements in social security policy and practice, particularly in relation to how fluctuating health conditions are assessed within the welfare system. The study produced a series of recommendations for policymakers, including:

- Reform of assessment criteria to better reflect fluctuating and cyclical conditions such as PMDD.
- Mandatory training for benefits assessors to improve understanding of PMDD and similar conditions.
- Adoption of trauma-informed approaches across benefits systems, processes and organisational practices.

These recommendations provide an evidence base to inform ongoing developments within Scotland's devolved social security system and support more equitable decision-making for people experiencing PMDD.

Impacts and outputs

The research encourages behavioural change among policymakers, assessors and service providers by increasing awareness and understanding of PMDD and its impact on daily living. By highlighting lived experiences within the benefits system, the study promotes more informed, empathetic and trauma-informed assessment practices, supporting a shift towards decision-making that better reflects the realities of fluctuating health conditions. The findings have the potential to contribute to improved allocation of financial support by helping ensure that people with PMDD can access benefits appropriate to their needs. More effective assessment processes may reduce barriers to accessing support, helping individuals better manage their condition and mitigating the wider economic consequences associated with reduced participation in employment, education and other aspects of daily life.

The study highlights the experiences of a frequently overlooked group whose condition can have profound effects on mental health and wellbeing. By raising awareness of the challenges faced by women with PMDD, the research contributes to wider recognition of the condition and supports efforts to reduce stigma. The recommendations also seek to improve the fairness, accessibility and responsiveness of welfare services, helping to create a more inclusive system for people living with fluctuating conditions.

Overall, the study provides a robust evidence base for policy reform and service improvement, supporting a more responsive and equitable benefits system that better recognises the challenges associated with PMDD and similar fluctuating conditions.



UWS and the Centre for Net Zero High-Density Buildings

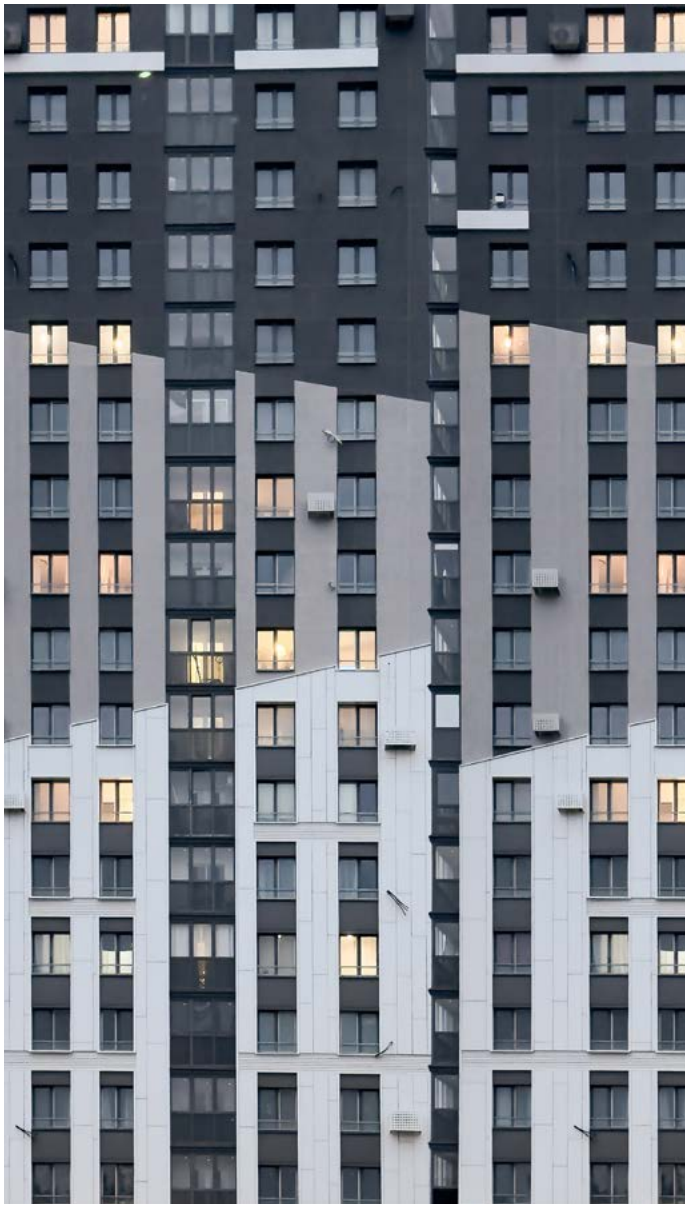
The Centre for Net Zero High-Density Buildings (CeNZ-HighDB) is a UKRI Green Economy Centre supported by £10 million of investment and delivered through a strategic partnership between UWS, the Universities of Edinburgh, Glasgow and Strathclyde, Edinburgh Napier University, and BE-ST, Scotland's construction innovation centre. Through this collaboration, the Centre brings together academic expertise, industry knowledge and public sector engagement to address one of the most significant barriers to achieving net zero targets: the decarbonisation of high-density buildings.

High-density building areas within towns and cities present some of the greatest challenges to the net zero transition. Complex and diverse building types, mixed-use developments, historic properties and planning constraints require innovative and scalable low-carbon solutions. Addressing these challenges has the potential to influence policy and practice across the built environment sector, both nationally and internationally, particularly as urban populations continue to grow and place increasing demands on energy infrastructure and housing systems.

Through the development, testing and evaluation of new green technologies, the Centre is delivering demonstrable outputs that support the transition to a low-carbon economy. These include high-energy-efficiency building fabrics, lower-cost rapid-fit heating technologies and innovative community heating and cooling systems designed for complex urban environments. The evidence generated through these pilots is expected to inform future policy development, technical standards, planning approaches and retrofit strategies for high-density buildings across the UK.

The Centre's work is particularly focused on supporting key workers, low-income households and disadvantaged communities, many of whom live in high-density housing. By enabling more accessible and inclusive retrofit solutions, the programme is expected to drive behavioural change among residents, landlords and housing providers through increased adoption of energy-efficient technologies and low-carbon heating solutions. These changes will contribute to lower household energy consumption, improved energy affordability and greater public engagement with net zero objectives.

UWS leads a major programme of activity focused on the design, piloting and assessment of new heating and energy storage technologies. This work evaluates both technical performance and socio-technical appropriateness, helping to ensure that innovations are practical, acceptable and capable of widespread implementation. The findings will provide valuable evidence to support future decision-making by policymakers, housing providers and industry stakeholders.



Impacts and outputs >>

Impacts and outputs

The Centre has established a broad partnership network involving construction companies, product manufacturers, energy providers, public bodies, housing organisations, communities and colleges. Through more than 50 co-developed projects, the programme is creating a platform for innovation, knowledge exchange and large-scale implementation of net zero solutions. Key economic benefits include:

- Projected creation of more than 2,000 new regional green jobs, supporting growth within Scotland's and the UK's green economy.
- Support for over 600 manufacturing sector jobs, strengthening supply chains for low-carbon technologies and retrofit solutions.
- Increased workforce capacity through collaboration with industry and skills partners, helping businesses respond to growing demand for retrofit and decarbonisation services.

The Centre will also facilitate behavioural change, supporting the upskilling of more than 6,500 British Gas installation engineers, enabling the widespread adoption and delivery of low-carbon heating technologies and encouraging greater uptake of energy-efficient technologies and retrofit measures among housing providers, industry partners and residents.

For residents of high-density housing the Centre's work will contribute to solutions which help reduce household energy costs and improve affordability through the deployment of more efficient heating and energy systems. Environmental benefits will include significant reductions in carbon emissions through the development and deployment of innovative retrofit, heating and energy storage technologies and accelerated delivery of low-carbon solutions for urban buildings, supporting national net zero ambitions and improving environmental sustainability within densely populated areas.

Through its collaborative approach and extensive stakeholder network, the Centre is not only developing innovative technologies but also driving changes in policy, professional practice and public behaviour. Collectively, these outputs position CeNZ-HighDB as a catalyst for economic growth, social inclusion and environmental sustainability while accelerating the transition to net zero across the UK's urban built environment.





UWS and reducing laboratory waste

In 2024, the School of Health & Life Sciences (HLS) became a member of the Laboratory Efficiency Assessment Framework (LEAF), a sustainability initiative led by University College London (UCL). LEAF was established in response to the significant environmental footprint of research laboratories, which are estimated to generate around 2% of global plastic waste, account for 60% of a university's water consumption, and use between three and ten times more energy per square metre than a typical office environment.

By joining LEAF, HLS introduced a structured, evidence-based approach to improving laboratory sustainability. The accredited framework supports laboratories to review and adapt procedures, processes and behaviours through a hierarchy of reduction, reuse and recycling measures. Participation has resulted in measurable changes to operational practice, with laboratories assessing and evidencing improvements that reduce carbon emissions, lower energy consumption and deliver financial savings.

Technical staff within HLS led the application to join the programme, recognising both the environmental and economic benefits that could be realised through more sustainable laboratory management. This leadership resulted in the establishment of a technician-led LEAF Working Group (LWG), bringing together technicians, academic staff from all School divisions and PhD researchers. The group has become an important mechanism for driving behavioural change, sharing best practice and embedding sustainability principles into day-to-day laboratory operations. Through the work of the LWG, HLS also identified and adopted the Unigreen scheme, a university asset reuse and resale platform designed to reduce waste and extend the lifecycle of laboratory equipment. HLS joined the scheme in late 2024, creating new opportunities to divert equipment from disposal, generate value from surplus assets and support a circular economy approach to laboratory management.

The impact of this initiative became evident in 2025 when more than 100 pieces of broken, end-of-life or unwanted laboratory equipment were removed from the University's Paisley campus through the Unigreen scheme. This resulted in multiple environmental and economic benefits, including the diversion of equipment from landfill, reduced reliance on high-cost waste disposal services, the recovery of laboratory space and the generation of rebate income. The initiative has directly supported institutional sustainability objectives while reducing waste management costs.

The Technical Team continues to lead and champion sustainability across HLS. Building on the success of LEAF and Unigreen, the University will co-host the ScotTechNet Sustainability Conference 2027, showcasing innovative approaches to sustainable laboratory practice and highlighting how sustainability is being embedded within teaching through Aspire, the University's academic, professional and personal development framework. The event will bring together technicians and sustainability practitioners from a wide range of organisations, extending the reach and influence of the University's sustainability work beyond the institution itself.



Impacts and outputs >>

UWS and reducing laboratory waste



Impacts and outputs

Participation in LEAF and Unigreen has delivered significant environmental, economic and organisational benefits. The initiatives have driven changes in policy and operational practice by embedding sustainability considerations into laboratory management, equipment procurement and disposal processes. They have also supported behavioural change among staff, researchers and students by increasing awareness of responsible consumption, energy efficiency and equipment reuse. The LEAF Working Group has acted as a catalyst for wider institutional change, facilitating the sharing of good practice across the University and encouraging other academic schools to adopt similar approaches. As a result, the benefits of the programme extend beyond HLS and contribute to the achievement of broader University sustainability objectives.

Environmental benefits have been substantial. Since joining LEAF, HLS has achieved a reduction of more than 30% in energy consumption through a simple but effective change in practice: increasing the operating temperature of ultra-low temperature freezers from -80°C to -70°C. Importantly, this change has not affected sample integrity while significantly reducing energy demand and carbon emissions. The initiative has also delivered measurable economic impact. The freezer optimisation programme generates savings of approximately £500 per freezer per year in running costs, demonstrating how sustainability interventions can simultaneously improve environmental performance and reduce operational expenditure.

Further behavioural change has been achieved through participation in the "Close the Sash" campaign, encouraging laboratory users to close the sash on energy-intensive fume cupboards when not in use. This change in user behaviour has reduced energy consumption costs by approximately 35%, illustrating the value of staff engagement and awareness raising in achieving sustainability outcomes.



Groundbreaking research into early warning weather system

A groundbreaking early warning system for extreme weather events in South Africa is being developed by University of the West of Scotland (UWS) and international partners to strengthen community resilience, protect public health, and reduce the growing social and economic impacts of climate-related flooding. The initiative is expected to deliver significant benefits for vulnerable communities by improving preparedness, supporting more effective health responses, and enabling evidence-informed decision-making in areas most at risk from extreme weather events.

The project, titled Warning system for Extreme weather events, Awareness Technology for Healthcare, Equitable delivery, and Resilience (WEATHER), brings together a multidisciplinary partnership comprising University of the West of Scotland (UWS), University of KwaZulu-Natal (UKZN), Royal College of Surgeons in Ireland (RCSI) Faculty of Nursing and Midwifery, and the University of Portsmouth. Supported by more than £2 million in funding from the National Institute for Health and Care Research (NIHR), the collaboration will develop an innovative warning system designed to mitigate the health, social and economic consequences of flooding in vulnerable regions. The partnership itself represents a model for international knowledge exchange, combining expertise in health, climate science, technology and community engagement to address a shared global challenge.

Commenting on the project, Professor Fiona Henriquez, Associate Dean of Research and Innovation in the School of Health and Life Sciences at UWS, highlighted the growing challenges posed by climate change in the eThekwini region:

"This is an important project which will support areas in eThekwini, South Africa grappling with increasingly unpredictable weather patterns due to climate change, leaving communities exposed to floods, waterborne diseases, and disrupted healthcare services. The WEATHER project has the potential to save lives and significantly improve health outcomes by providing timely and targeted warnings."

By providing timely, targeted and accessible warnings, the project aims to improve health outcomes, reduce risks to communities and support behavioural changes that enable residents to take preventative action before flooding events occur. These changes are expected to contribute directly to safeguarding lives and reducing the burden on healthcare systems during periods of extreme weather. The collaboration was established by joint Principal Investigators Professor Mary Lynch of UWS and RCSI, and Professor Saloshni Naidoo of UKZN, whose shared commitment to tackling the impacts of climate change on health and wellbeing has shaped the project's direction. Through close engagement with communities and stakeholders, the project will generate evidence that can inform future public health planning, climate adaptation strategies and local resilience policies, helping decision-makers better address the challenges associated with extreme weather events.

Impacts and outputs >>



Groundbreaking research into early warning weather system

Focusing on the vulnerable districts of eThekwini and Ugu in KwaZulu-Natal, the project will work collaboratively with local communities and healthcare providers to ensure that the system reflects local needs and circumstances. This co-design approach is expected to increase community trust, improve uptake of warning information and enable individuals, households and healthcare organisations to respond more effectively to flood risks. Beneficiaries will include local residents, healthcare professionals, public health authorities and vulnerable populations who are disproportionately affected by climate-related disasters.

Using advanced geospatial technologies and Artificial Intelligence (AI), the WEATHER project will generate more accurate predictions of flooding and associated health risks. The system will analyse weather, climate and health data to identify emerging patterns and provide real-time risk assessments. Through mobile applications and SMS messaging, warnings and guidance will be disseminated widely, ensuring accessibility even in areas with limited internet connectivity. These outputs will strengthen preparedness, facilitate earlier interventions and reduce the likelihood of disease outbreaks, service disruption and economic losses associated with extreme weather events.

Impacts and outputs

The WEATHER project is expected to deliver wide-ranging impacts across health, society, the economy and the environment. By improving the accuracy and reach of early warning systems, the project will support behavioural changes that enable communities to act earlier and more effectively in response to weather threats. Enhanced preparedness and reduced disruption are anticipated to lessen pressure on healthcare services, minimise recovery costs and protect livelihoods affected by flooding. From a social perspective, the project will help build resilience among vulnerable populations by improving access to timely information and strengthening community capacity to respond to climate-related risks. The initiative will also contribute to more equitable healthcare delivery during emergencies, ensuring that at-risk communities receive critical information and support when it is needed most.

Environmentally, the project supports climate adaptation efforts by helping communities anticipate and respond to increasingly frequent and severe weather events linked to climate change. The evidence, tools and learning generated through the project have the potential to influence future resilience and adaptation policies while creating a scalable model that can be replicated in other regions facing similar climate-related challenges. Through its integration of AI, community engagement and existing mobile infrastructure, the WEATHER project represents a significant advancement in protecting communities, improving public health outcomes and strengthening long-term climate resilience.



Transformation of shrimp farming in Southeast Asia

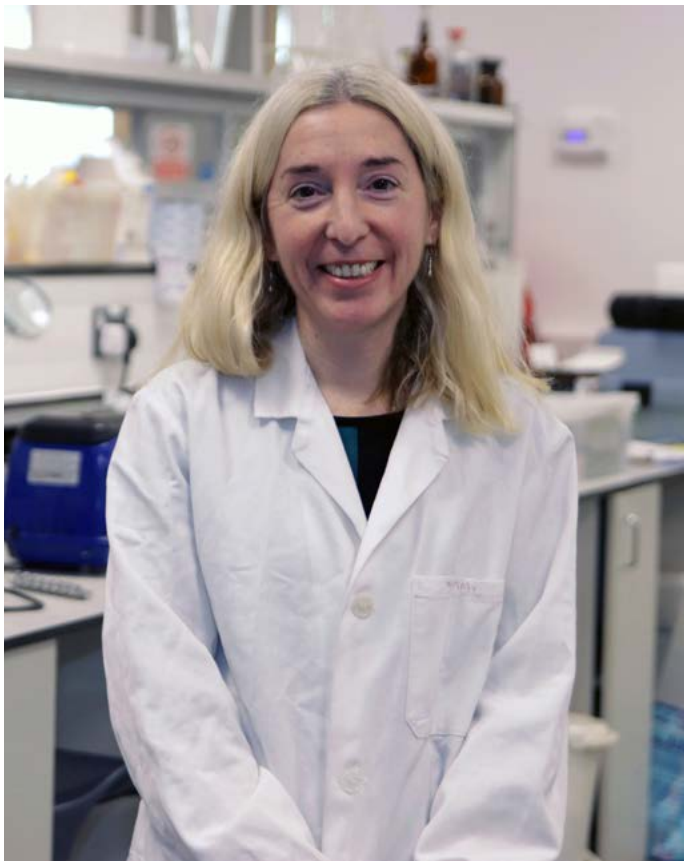
A project led by Professor Kath Sloman at the University of the West of Scotland (UWS) is set to transform shrimp farming across Southeast Asia through the development of low-cost, early-warning monitoring systems designed to improve sustainability, productivity, and resilience within one of the region's most important economic sectors.

Backed by the International Science Partnership Funds (ISPF) and UK Research and Innovation (UKRI), the £3,038,104 programme brings together leading researchers from UWS, Can Tho University in Vietnam, Vidyasirimedhi Institute of Science and Technology in Thailand, the University of Strathclyde, and the James Hutton Institute. The three-year project will equip small-scale shrimp farmers with affordable technologies to monitor water quality, detect pathogens, and identify environmental threats in real time. These outputs will provide farmers with actionable information that supports more informed decision-making, enabling earlier interventions to prevent disease outbreaks and reduce production losses.

Shrimp farming is a major economic driver in Vietnam and Thailand, supporting millions of jobs and contributing significantly to international seafood exports. However, disease outbreaks and environmental pressures continue to cost the sector billions of dollars annually. Existing monitoring technologies are often prohibitively expensive or technically complex for smaller producers. By developing accessible alternatives, the project will directly benefit small-scale farming communities that have historically been excluded from advanced monitoring systems, improving both productivity and long-term economic resilience.

Professor Kath Sloman, Project Lead, highlighted the importance of the initiative:

"The aquaculture sector in Southeast Asia is vital for livelihoods and food security, yet small-scale farmers face huge challenges in managing disease and water quality. Our project will co-develop accessible, low-cost biosensors and climate models to empower farmers with real-time data, allowing them to act before disease strikes. This is about boosting resilience, increasing productivity, and ensuring sustainability."



Impacts and outputs >>

Transformation of shrimp farming in Southeast Asia

The project combines farmers' local knowledge with expertise in biosensing technology, climate modelling, aquatic health and artificial intelligence. Key outputs include a hand-held diagnostic sensor capable of rapidly detecting pathogens and harmful nitrogen levels in pond water, alongside an AI-driven predictive tool that uses climate data to forecast disease risk. Together, these innovations will support wider adoption of evidence-based farm management practices, increasing confidence in technology-enabled decision-making across the aquaculture sector.



Impacts and outputs

The project places farmers at the centre of the innovation process, ensuring that the technologies developed are practical, affordable and accessible. This collaborative approach is expected to increase the uptake of new monitoring technologies and drive change across farming communities through improved awareness of environmental conditions, disease prevention and sustainable production methods. The anticipated economic impacts include reductions in shrimp mortality, increased production yields, lower financial losses from disease outbreaks, and improved profitability for small-scale producers. By strengthening the resilience and competitiveness of shrimp farms, the project has the potential to support local economies and sustain employment across aquaculture-dependent communities.

Significant social benefits are also expected. The project will enhance food security, strengthen the livelihoods of farming households, and support skills development through training and technology adoption. A strong focus on gender inclusion will help ensure that women and men benefit equally from capacity-building activities and access to new technologies, widening participation and supporting more equitable outcomes across the sector.

Environmental benefits will be delivered through improved monitoring of water quality and earlier detection of ecological risks, enabling more sustainable management of farming systems. Better control of disease and water conditions has the potential to reduce waste, improve resource efficiency, and minimise the environmental impacts associated with shrimp production. The integration of climate forecasting tools will further support adaptation to changing environmental conditions and contribute to the long-term sustainability of aquaculture systems. The project may also generate wider policy impacts by providing evidence on the effectiveness of low-cost monitoring technologies and climate-informed aquaculture management. The findings could inform future approaches to sustainable aquaculture development, supporting government agencies, industry bodies and international stakeholders in designing policies and programmes that enhance resilience, sustainability and food security.

While initially focused on shrimp farming in Vietnam and Thailand, the technologies and approaches developed through the project are highly transferable. This creates opportunities for wider adoption across Southeast Asia and other aquaculture-producing regions.





Biodiversity initiatives at UWS campuses

Recognising the impact that its operations can have on the natural environment, UWS has developed a Biodiversity Action Plan that sets out a programme of initiatives and actions to better understand, manage and enhance biodiversity across its campuses. A key output of this work has been the launch of the University's iNaturalist site, which provides a publicly accessible platform for documenting, monitoring and sharing information on plant and animal life across the UWS estate. This initiative encourages students, staff, visitors and local residents to record observations, identify species and develop a greater understanding of local ecosystems. Through the platform, users can catalogue flora and fauna, identify the most frequently observed species, and map biodiversity observations across campus locations.

The University's campuses encompass a diverse range of habitats and natural environments, supporting a variety of biodiversity enhancement measures. At the Ayr campus, a Sustainable Urban Drainage System (SuDS) pond provides a natural drainage solution that helps mitigate surface water flooding while creating valuable habitat for wildlife. At the Paisley campus, areas of wild planting adjacent to the outdoor gym have been established to support pollinating species, creating an important ecological resource and enhancing the campus environment for staff, students and visitors.



Impacts and outputs

The Biodiversity Action Plan and associated environmental initiatives have delivered a range of environmental, social and behavioural outcomes. The introduction of the iNaturalist platform has increased opportunities for biodiversity monitoring and data collection, creating an evidence base that supports environmental management and informs future biodiversity enhancement activities across the University and wider community. The information generated through species observations helps identify ecological trends and changes, contributing to more informed environmental decision-making and supporting the implementation of biodiversity-focused actions.

From a behavioural perspective, the project has encouraged greater engagement with nature among students, staff, visitors and local residents, increasing awareness of local biodiversity and promoting more environmentally conscious behaviours. By actively involving participants in recording and identifying species, the initiative has fostered stronger connections with the natural environment and increased understanding of the role individuals can play in biodiversity conservation.

The initiative has also generated significant social benefits by extending participation beyond the University community and creating opportunities for wider public engagement. Beneficiaries include students, staff, campus visitors and local communities who can access, contribute to and learn from the platform, supporting greater community understanding of local wildlife and environmental stewardship.







Vision Schools Scotland

At a special ceremony held at the Scottish Parliament on 6 February 2025, eleven participating schools in the Vision Schools Scotland programme were recognised for excellence in Holocaust education. The event showcased the programme's growing impact in strengthening Holocaust education across Scotland and supporting schools to embed responsible citizenship, inclusion, and anti-discrimination values within learning and teaching.

Since its launch in 2017, the Vision Schools Scotland programme, delivered by the University of the West of Scotland (UWS) in partnership with the Holocaust Educational Trust, has become a nationally recognised model for Holocaust education. Supported through funding from both the Scottish and UK Governments, the programme has strengthened educational practice by equipping teachers with high-quality resources, professional learning opportunities and a framework for sustained Holocaust education. In doing so, it has contributed to Curriculum for Excellence priorities around responsible citizenship, helping schools address issues of prejudice, discrimination and human rights through informed learning and reflection.

The programme delivers impact through a two-stage accreditation framework that enables schools to demonstrate and continually improve their approach to Holocaust education. By embedding responsible citizenship within whole-school practice, Vision Schools Scotland supports both primary and secondary establishments to deliver meaningful and sustained learning experiences. As of February 2025, 15 schools across Scotland, comprising 13 secondary schools and two primary schools, had achieved Vision Schools status, creating a growing national network committed to sharing best practice and promoting inclusive values. This expansion demonstrates increased institutional engagement with Holocaust education and a strengthening culture of collaborative learning across Scotland's education sector.

At the ceremony, Alva Academy, Chryston High School, Mearns Castle High School and West Calder High School successfully renewed their Vision Schools Scotland status for a further three years, demonstrating ongoing commitment to embedding Holocaust education within their curriculum and school culture. Balerno High School, Inverurie Academy and Williamwood High School achieved Level One accreditation until 2027, while St Ninian's High School, East Dunbartonshire and St Ninian's High School, East Renfrewshire secured Level Two accreditation until 2027. Isobel Mair School and Kirkintilloch High School received Recognition of Commitment awards, reflecting growing participation and engagement across diverse educational settings. Together, these achievements demonstrate the programme's continued reach and influence across Scotland's school communities.

The celebratory event was hosted by Jackie Baillie MSP, Deputy Leader of the Scottish Labour Party, and Jackson Carlaw MSP, Leader of the Scottish Conservative Party, illustrating cross-party recognition of the importance of Holocaust education and its contribution to civic understanding and social cohesion.



Impacts and outputs >>

Vision Schools Scotland

Speaking at the event, Jackie Baillie MSP highlighted the programme's role in ensuring that young people understand the consequences of antisemitism and intolerance:

"Vision Schools Scotland continues to deliver vital school-based learning on the horrors of the Holocaust. As levels of antisemitism continue to rise across the UK, Vision Schools is doing key work to ensure generations of young people understand why the past cannot be repeated, and crucially, that they will never forget."

Jackson Carlaw MSP emphasised the continued growth of the initiative and the achievements of participating schools:

The Holocaust Education initiative keeps growing each year and I have been so impressed by the work of Vision Schools Scotland that, last year, I wrote to His Majesty the King to highlight its fantastic success. I am delighted to have co-hosted yet another annual awards ceremony with Jackie and I congratulate the pupils on securing the Vision Status accreditation for their schools."

Guest speakers included the Cabinet Secretary for Education and Skills, Jenny Gilruth MSP, and Lord Mann, the UK Government's Independent Adviser on Antisemitism, further underlining the programme's relevance to national educational priorities and broader efforts to tackle antisemitism and discrimination.

Impacts and outputs

Vision Schools Scotland has established a national network of schools demonstrating excellence in Holocaust education, creating opportunities for educators to share learning, adopt effective practice and strengthen curriculum delivery. Through accreditation, professional development and peer learning, the programme has benefited teachers and pupils across participating schools and has contributed to improved educational outcomes in citizenship, equality and human rights education. Evidence from participating schools highlights significant behavioural and professional change among educators. A recent survey found that 80% of teachers reported substantial improvements in their motivation and confidence when teaching about the Holocaust. Increased teacher confidence enhances the quality and consistency of Holocaust education, enabling more young people to engage with complex historical issues and their contemporary relevance.

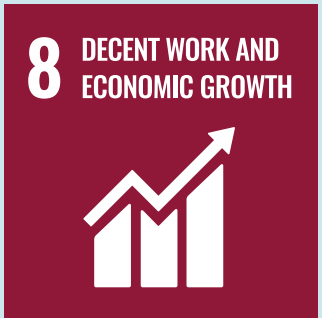
The programme's wider social impact includes fostering greater awareness of antisemitism, encouraging inclusive attitudes, supporting community cohesion and promoting values of respect and tolerance among young people. By equipping educators and learners to challenge prejudice and discrimination, Vision Schools Scotland contributes to the development of more informed, resilient and inclusive communities across Scotland. While the programme's principal outcomes are educational and social, its establishment of a sustainable national network of accredited schools also represents a long-term investment in educational capacity and capability that will continue to benefit future generations.

SUPPORTING HOLOCAUST EDUCATION

VISION SCHOOLS SCOTLAND







Partnership with NHS Education for Scotland

In a significant new partnership, NHS Education for Scotland (NES) and the University of the West of Scotland (UWS) have signed a Strategic Collaboration Agreement that will strengthen workforce development across Scotland's health and social care sector. By combining expertise in education, workforce planning, technology and data, the partnership will design and deliver innovative learning opportunities that support a future-ready workforce and contribute to improved health and social care outcomes.

Working collaboratively, the partners will focus on key areas of career development, including:

- identifying opportunities to enhance and recognise the skills already held by the existing workforce;
- designing and delivering flexible, workplace-based learning that responds to the evolving needs of health and social care learners;
- expanding access to on-the-job learning through micro-credentials, graduate apprenticeships and new models of continuous professional development.

These activities will create clearer and more structured learning and career pathways for NHS and social care staff through increased participation in lifelong learning, skills development and workforce adaptability. The partnership will also encourage greater adoption of digital learning approaches, enabling staff to access training more flexibly while balancing service delivery demands. This shift is expected to improve workforce capability, retention and professional progression across the sector.

Professor James Miller, Principal and Vice-Chancellor of UWS, said of the agreement:

"The University of the West of Scotland is committed to creating and removing barriers to educational opportunities across all the communities we serve. With new technologies and breakthroughs in clinical research, education is vital for healthcare and social care regionally, nationally and globally. Patients and staff rightly expect care and treatment that keeps pace with the technologies of today, not simply repeating the approaches of the past. Healthcare delivery is changing too. This partnership allows us to pool our educational and workforce expertise, to deliver a revolution in health and social care education."

Karen Wilson, Deputy Chief Executive and Executive Director of Nursing at NES, said:

"NES provides education, training, workforce development, data and technology for health and social care in Scotland. We help people who work in this area to get the education and skills they need to provide good quality care for people in Scotland. Our work affects every person in every community in Scotland.

"The world changes quickly. We need to prepare and shape the workforce for the future and the changes in health and social care that we all need to improve people's health."

Impacts and outputs >>

Partnership with NHS Education for Scotland

Impacts and outputs

The Strategic Collaboration Agreement will support policy ambitions to develop a skilled, adaptable and sustainable health and social care workforce capable of responding to emerging service needs. By creating structured pathways for learning and career progression, the partnership will help embed a culture of continuous professional development and workforce innovation across Scotland.

The initiative is expected to benefit NHS and social care staff across Scotland, ultimately impacting patients, families and communities through improved service delivery, enhanced quality of care and increased workforce capacity. Quality assurance of educational programmes and learning products will strengthen confidence in professional knowledge and competencies, supporting consistent standards of practice across the sector. Economically, the collaboration will help maximise the value of workforce investment by enabling staff to develop skills while remaining in employment, reducing barriers to learning and supporting workforce productivity. Socially, it will widen access to education and career progression opportunities, helping individuals from diverse backgrounds to access flexible learning routes and achieve professional advancement.

The increased use of technology-enabled and workplace-based learning models also offers environmental benefits by reducing the need for travel to traditional learning settings, contributing to more sustainable approaches to education and workforce development. Collectively, these outcomes will support a more resilient, skilled and future-focused health and social care workforce capable of delivering better outcomes for people and communities across Scotland.



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