

2 Economic and Policy Impacts:

The impact of Welsh university research extends to economic transformation which in turn has led to the generation of employment opportunities. Financial impacts were recognised in a third of case studies, producing tangible results in the form of the creation of, for example, more than 2,500 new jobs across the public and private sectors. This demonstrates how research impact is fuelling positive changes and driving economic growth.

An AI approach to cybersecurity:

The collaboration between **Cardiff University** and Airbus has led to a groundbreaking approach in cybersecurity, shifting focus from traditional code signature identification to tracking the behaviour of malicious software. This method has significant implications for protecting society's critical infrastructure from threats like the WannaCry attack, which impacted over 200,000 computers across 150 countries. By employing the latest in artificial intelligence and machine learning, this partnership has not only created a live, automated defence against cyber attacks but also serves as a catalyst for enhanced security, reinforcing societal resilience against potentially devastating digital threats.

Funding from the Welsh Government backed more than a quarter of all case studies submitted to the REF in 2021. Additionally, of the studies that identified a distinct Welsh funding source (regardless of its governmental affiliation), 88% benefited from this support.

3 Local Impact with a Global Reach:

Rooted in Wales, the benefits of research being undertaken at Welsh universities are felt in Wales and worldwide. 'Impact in Wales' is the predominant outcome of Welsh research with 70% of impact, coming from across all disciplines, having an impact in Wales. Over a third of research reported an impact that was relevant to key Welsh Government priorities: climate change and net zero, Cymraeg 2050, children and young people, Welsh national well-being indicators, and productivity.

Wildfires and the impact on global water sources

Researchers from **Swansea University** have tackled the global threat of water contamination from wildfires, a risk affecting 60% of the world's largest cities and 70% of the UK's population. Collaborating with scientists, fire services, and water suppliers, researchers developed methods to quantify and mitigate this risk by focusing on analysing wildfire ash, its behaviour in water and its impact on water quality. The results have informed land management and drinking-water provision in Australia, England, and Spain, improving post-fire diagnostics. This collaborative research is both crucial and especially relevant given the alarming number of wildfires in 2023.

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Over **60%** of research impact extends internationally to countries such as Australia, China, Norway, and Japan, underscoring the global significance and demonstrating the expansive reach of our Welsh universities.