

University Research for a Better Ireland

Climate

Driving Climate Action



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University-led research plays a crucial role in understanding, mitigating, and adapting to climate change. It provides the evidence needed to shape public policy commitments, define the approaches and generate the technologies that safeguard the planet for future generations. Researchers also, critically, educate and engage local communities to deliver climate action. At the same time, they foster global collaborations to set and achieve legislative goals aimed at preventing climate catastrophe.



Fighting Floods

Climate change is increasing extreme weather and flooding events in Ireland. Research by **University College Cork** civil engineer, Prof. Ger Kiely, has developed effective flood prediction and management strategies to reduce the impacts of such events. His team analyse rainfall patterns, river flows, and land use, to predict risks to businesses, homes and farms. Utilising satellite imagery, his research team can provide real-time flood information that supports proactive response to threats. Working with local councils and government agencies, this research provides practical flood solutions while empowering communities to develop bespoke flood resilience structures.

Revolutionising the School Runs

Reliance on cars for short school trips significantly increases Dublin's carbon emissions, with nearly 40% of students driven to school, causing peak-hour gridlock. Environmental engineer, Prof. Francesco Pilla from **University College Dublin** has advanced sustainable mobility with the Bike Library, offering families free access to e-bikes, cargo bikes, and folding bikes during school terms. Now operating in 20 schools, the initiative has made school runs almost car-free, avoiding over 200,000 km of car journeys and cutting urban traffic emissions. This project promotes active travel and supports Ireland's climate neutrality goals.

Mobilising Countries to Work Together for Climate Action

Earth is warming rapidly due to human-driven greenhouse gas emissions, threatening ecosystems, weather, and human life. Climatologist, Prof. Peter Thorne of **Maynooth University**, a key member of the Intergovernmental Panel on Climate Change (IPCC), advances climate science to guide global policymakers on mitigation and adaptation. Since 2003, his work with the Global Climate Observing System has set international standards for reliable climate data, crucial for tracking changes and fostering a unified global response to minimize climate impacts.

Building a Climate and Biodiversity Positive Future

The Co-Centre for Climate + Biodiversity + Water is an international research centre dedicated to tackling climate change, biodiversity loss and declining water quality. Head-quartered at **Trinity College Dublin**, it brings together researchers from Ireland, Northern Ireland, and Great Britain to explore solutions and to accelerate the delivery of a climate resilient, biodiversity rich and climate neutral economy. Researchers work with individuals and groups, and also partner with businesses to develop the innovations needed to build a climate and biodiversity positive and resilient economy. They also provide specialist advice to governments on effective, evidence-based policy.

