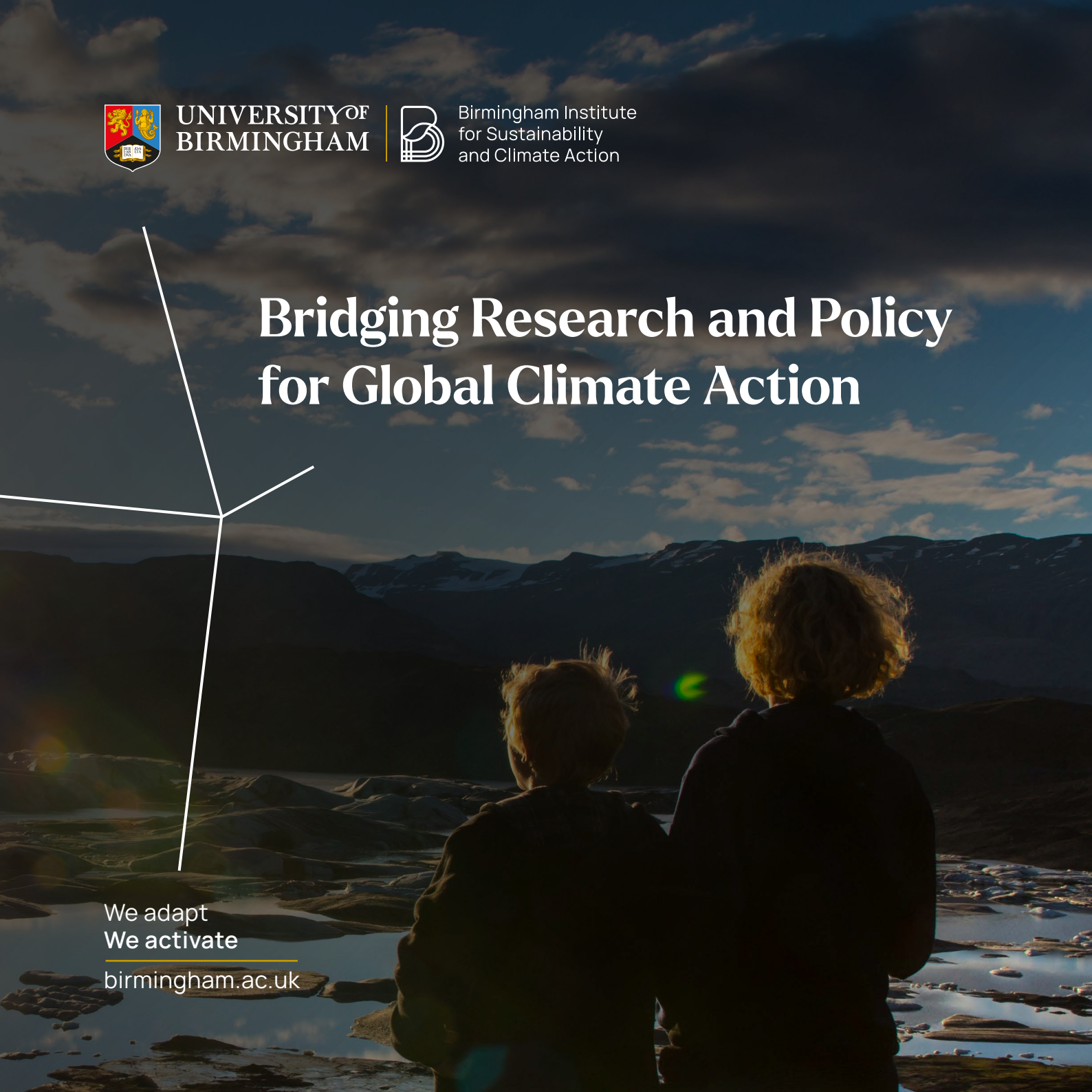
UNIVERSITY OF BIRMINGHAM
Birmingham Institute for Sustainability and Climate Action
Bridging Research and Policy for Global Climate Action
We adapt
We activate
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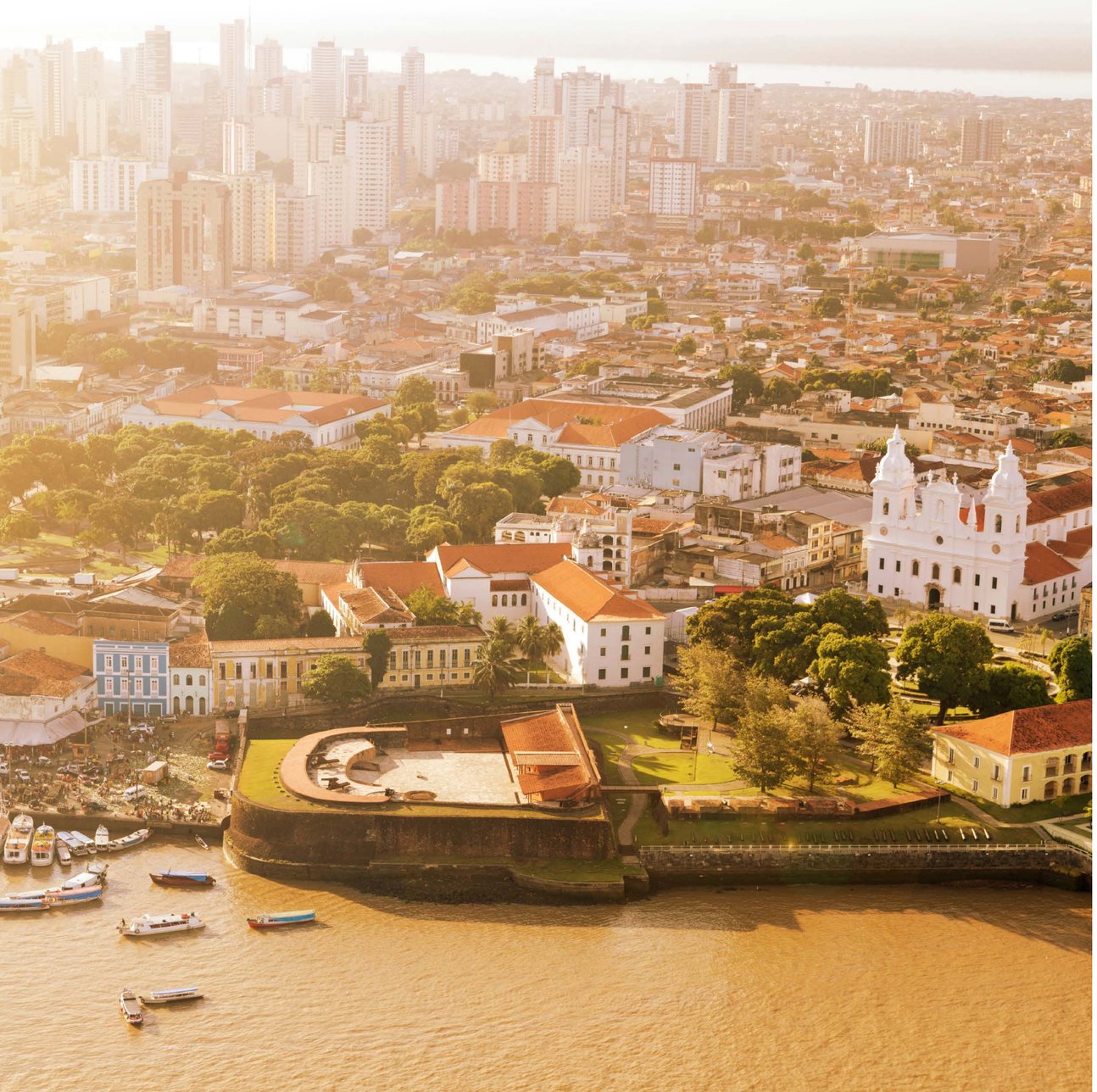
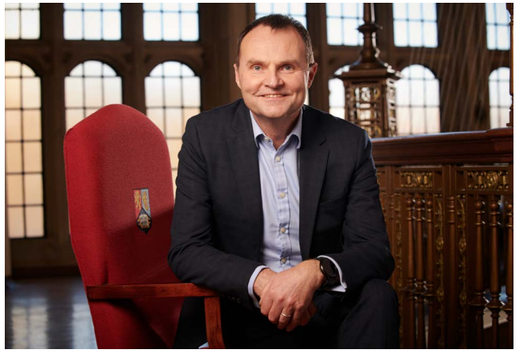


Foreword



The 30th United Nations Climate Change Conference (COP30), taking place in Belém, Brazil, arrives at a critical moment. As global temperatures continue to rise and the impacts of climate change intensify, the need for decisive action has never been greater.

This year also marks the tenth anniversary of the Paris Agreement, the landmark treaty that committed nations to limiting global warming to 1.5°C above pre-industrial levels. A decade on, that goal is slipping increasingly out of reach and the urgency of the climate crisis continues to deepen. This anniversary presents not only an opportunity to reflect on the ambition of the Paris Agreement, but is also a stark reminder of how far we still have to go.

The need for action has never been more pressing. At the University of Birmingham, we are advancing critical research in climate adaptation, public health, sustainable finance, climate technology, and biodiversity as well as educating the next generation of global citizens.

We are committed to conserving and restoring degraded ecosystems, developing plans for equitable climate finance, and embedding sustainability into education. Our work does not stop there—we want to ensure that this research informs real-world policy.

These policy briefs aim to bring our insights to the forefront of decision-making to show how evidence-based policies can address the most urgent challenges of climate change. Whether the challenge is building a fairer financial system, improving public health, or transitioning to clean energy, our recommendations call for bold, coordinated action.

With the right policies, governments can significantly enhance climate resilience and contribute meaningfully to sustainable development. By continuing to work with policymakers, industry leaders and the international community, we can help build a more sustainable and equitable future.

Professor Adam Tickell
Vice-Chancellor and Principal
University of Birmingham

Introduction

Scientists around the world have worked tirelessly to bring the realities of human-caused climate change to global attention. Alongside them, social, political, and economic researchers have explored how societies must transform to confront the challenges we face today and how to build sustainable, equitable, and resilient futures for all their people. As the climate crisis accelerates, the need for urgent action becomes undeniable. From mitigation to adaptation to long-term resilience, the role of evidence-based policymaking is critical. This is where institutions like the University of Birmingham step in, as knowledge creators, conveners, communicators, and catalysts for change.

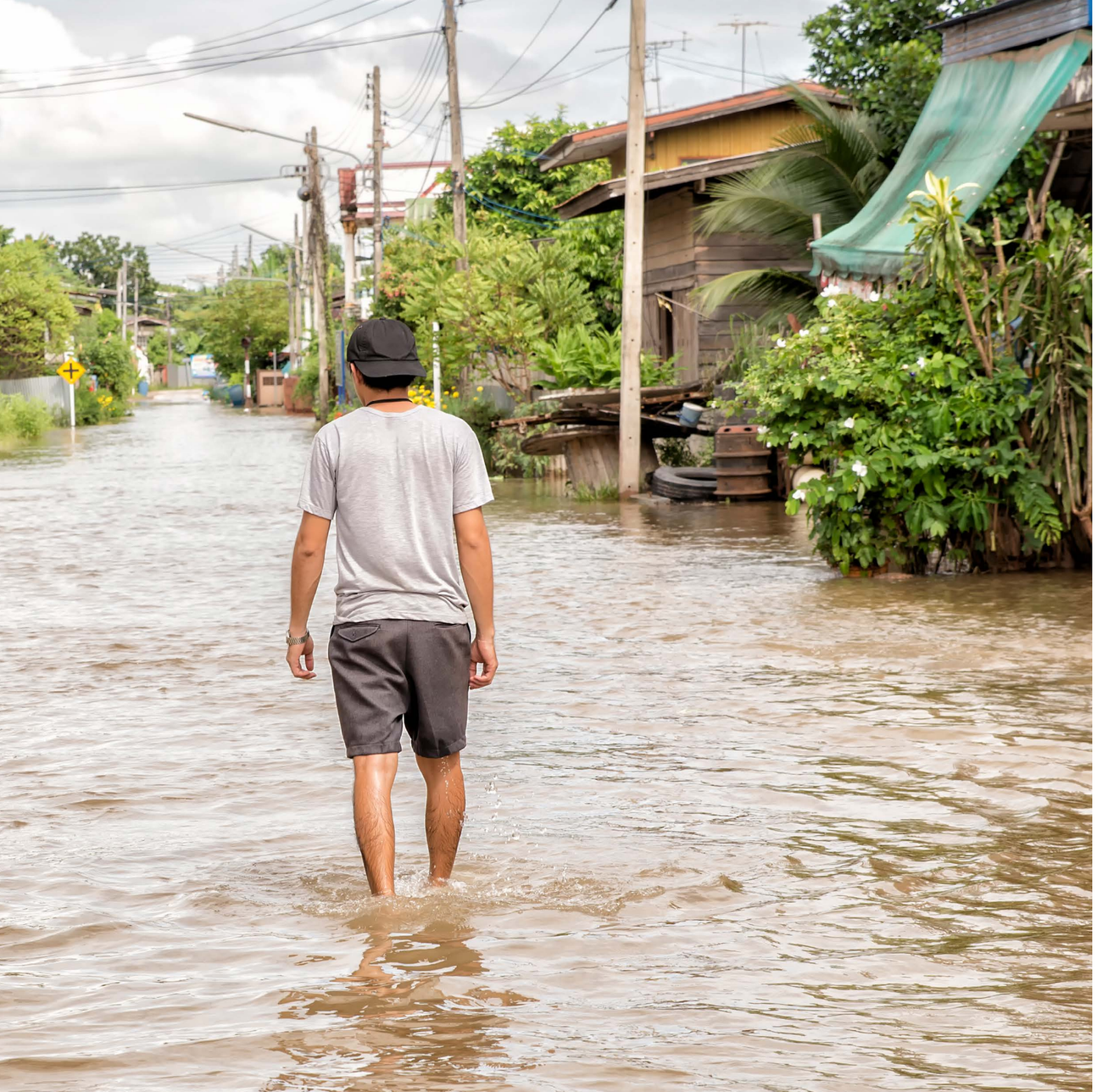
In our Keeping 1.5°C Alive report, launched ahead of COP26 in 2021, we demonstrated how the University's research can support the journey to net zero. Since then, however, the outlook has become increasingly uncertain. The World Meteorological Organisation State of the Climate reports for 2023 and 2024 confirmed these as the hottest years on record, while the UN's most recent Global Stocktake warned that the 1.5°C target is out of reach. These hard truths are not cause for retreat; they demand renewed resolve. We must learn from the shortcomings of the past decade, understand the barriers to action, and amplify the voice of research in public discourse. Sustainability research is at its core interdisciplinary, requiring work from experts across various fields to develop innovative solutions to questions that cut across all aspects of society while protecting ecosystems. Meaningful progress will depend on open, collaborative dialogue between researchers, policymakers, industries, and communities.

To help build the spaces for this dialogue, we established the Birmingham Institute for Sustainability & Climate Action (BISCA), a collaborative platform of dynamic research networks building partnerships across diverse communities. BISCA brings together world-leading multidisciplinary research in sustainability, connecting knowledge for real-world action. Another crucial collaborative hub is the University of Birmingham Brazil Institute (UBBI). Brazil, home to some of the planet's most vital and vulnerable ecosystems as well as the host country of COP30 in November 2025, is a strategic region of importance for climate action, and has been a focal point of the University's global engagement for the past decade. We recently launched Engage Amazonia 2025, a interdisciplinary programme working to build long-term collaborations between our experts and researchers in the Amazonian region.

The research and partnerships upheld by the University's global engagement initiatives exemplify the global reach and relevance of our mission. The areas highlighted by our research—including water security, plastic pollution, and environmental justice—reflect our commitment to tackling environmental issues with both scientific rigour and social responsibility. Our interdisciplinary work through hubs like the Centre for Environmental Research and Justice, the Birmingham Institute for Forest Research, and the Birmingham Energy Institute ensures we are connecting the dots across sectors to drive meaningful outcomes.

These five Policy Briefs tackle key aspects of the cross-cutting challenges we face: adaptation and resilience; sustainability education; decarbonisation and an equitable transition; equity, justice, and health; and climate finance. Each challenge is potentially existential in its own right, but none exists in isolation. Just as natural ecosystems are interconnected, so are the challenges and solutions in the climate space. Addressing one area requires understanding and engagement with others. Universities have a crucial role to play in this process, fostering partnerships and dialogue. These interactions must be grounded in reality but motivated by hope and commitment to a better world. Now more than ever, we must harness the full potential of our University and the global expertise of BISCA and UBBI and our partners. We believe that if we act together with purpose, we can make the best, evidence-based decisions to impact the world for generations to come.

Professor David M. Hannah
Deputy Pro-Vice-Chancellor (Sustainability)
Director of Birmingham Institute for Sustainability & Climate Action University of Birmingham



Adaptation and resilience: withstanding the impact of climate change

Climate change, driven by human activity, poses an urgent global threat. The shared objective outlined in the Paris Agreement is to enhance adaptive capacity and strengthen resilience against climate change, aiming to keep global warming under 2°C while pursuing efforts to stay within 1.5°C. Achieving this requires national assessments that prioritise vulnerable people, places, and ecosystems—particularly in developing countries. Effective monitoring and evaluation are essential to track progress and learn from adaptation efforts. At the same time, economic diversification and sustainable resource management are key to building resilience in socio-economic and ecological systems. Developed nations should provide financial assistance to help developing countries adapt to the growing impacts of climate change.

The University of Birmingham's research focuses on understanding, predicting, and mitigating climate impacts through a nuanced analysis of regional and sectoral impacts in four key areas: health, adaptation, food security, and governance. Collaborative efforts are crucial to addressing the climate crisis—ensuring the protection of life, the resilience of critical infrastructure and the security of our food systems.

Findings from the Global Stocktake show that we are not on track to meet the goals of the Paris Agreement. While many countries have developed National Adaptation Plans (NAPs), implementation varies, causing a disconnect between national strategies and local action. Tools like the UK's Climate Change Risk Assessment help identify vulnerable groups, but many countries lack the resources and technical capacity to carry out similar assessments. International frameworks like the Green Climate Fund provide support, but funding is often inadequate and hard to access.

Policy Recommendations
UK national

Biodiversity

- Conserve and restore biodiversity by expanding and connecting protected areas.
- Restore degraded ecosystems to enhance carbon capture and flood management.
- Strengthen pollution control with stricter regulations on persistent pollutants.
- Invest in research/commercial ventures using trees to remove atmospheric methane.

Water

- Enhance predictive modelling of climate-related hazards like floods and droughts.

Infrastructure

- Develop and integrate sensing technologies within infrastructure to ensure smart and resilient systems.
- Work with regulators to deploy emerging technologies like tunnelling and robotics.

Food

- Shift consumption patterns towards healthy diets—reducing meat consumption and moving away from carbon-intensive foods.
- Improve access to healthy and affordable food for the vulnerable and food insecure.

Policy Recommendations
International

Biodiversity

- Accelerate tree planting to restore ecosystems and improve community lives, whilst absorbing methane and boosting reforestation efforts
- Integrating biodiversity gains into climate action plans to maximise the effectiveness of climate mitigation and adaptation efforts

Water

- Engage local communities in managing water networks and developing early warning systems for floods and drought

Infrastructure

- Develop master plans for sustainable use of subsurface space, which is often congested and poorly managed

Food

- Strengthen and diversify food markets and supply chains.
- Increase public funding for sustainable farming practices.
- Support vulnerable countries and small enterprises with accessible financing and insurance.
- Promote inclusive food systems governance—creating equitable access to policymakers.

Over

1.5 million

people in the UK live in areas at significant risk of flooding, with that number expected to double by 2050 due to climate change.

Source: UK Environment Agency

Around

9.3 million

adults in the UK experienced food insecurity in 2022, highlighting the urgent need for resilient and equitable food systems.

Source: Food Foundation, 2023

Developing countries will need up to

$340 billion

per year by 2030 for climate adaptation, yet current international public finance for adaptation is less than one-third of that amount.

Source: UN Environment Programme's (UNEP) Adaptation Gap Report,2022

Only about 17% of land and 8% of marine areas are currently under protection globally, falling short of the global target to conserve at least

30% of land and sea by 2030

Source: Priorities for protected area expansion so nations can meet their Kunming-Montreal Global Biodiversity Framework commitments, 2023

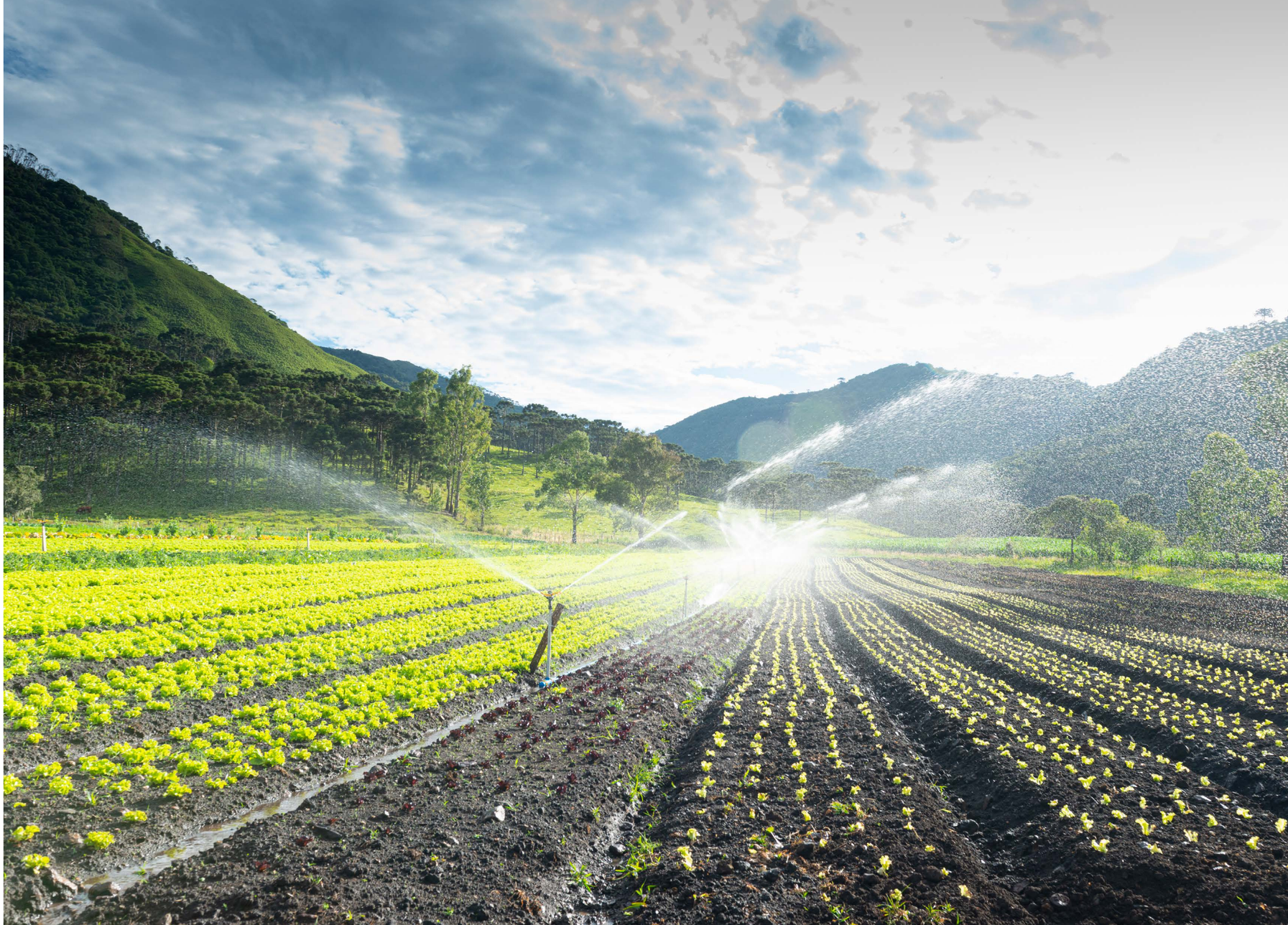
Conserving and restoring biodiversity, enhancing water management, integrating advanced technologies into infrastructure, ensuring sustainable food systems, and accelerating tree planting are crucial steps towards a resilient and sustainable future.

By investing in these areas and promoting inclusive governance, we can address climate change, protect vulnerable communities, and improve global health and well-being. The University of Birmingham's policy recommendations provide a comprehensive framework for national and international efforts to achieve these goals, emphasising the importance of collaboration, innovation, and equitable resource management.

These recommendations are based on research led by experts at the University of Birmingham including:

- Vincent Gauci (Forests)
- Liza Jabbour
- Nicole Metje (Infrastructure)
- Luisa Orsini (Biodiversity)
- Merisa Thompson (Food)
- Xilin Xia (Water)

If you would like to find out more about the University's work in this and other research areas, please contact our Public Affairs team – **publicaffairs@contacts.bham.ac.uk.**



Sustainability education: Teaching the world a greener way

UNESCO's 'Education for Sustainable Development: Towards achieving the SDGs (ESD for 2030)' programme focuses on five priority areas including: policy; learning environments; educators; youth; and local communities. Nearly all countries now incorporate climate change education in some form — whether through formal education systems or public engagement. However, many still emphasise 'environmental education' rather than addressing all three pillars of sustainability — environmental, social and economic — or adopting a cross-disciplinary approach. In recent years, more frameworks and toolkits have been developed to support the integration of sustainability education into formal settings, but monitoring progress is challenging.

One of the greatest challenges is changing the culture to view sustainability as integral to education at all levels and across all subject areas. Mandatory requirements are needed to drive sustainability education forward, creating a clear pipeline from school through to Higher Education (HE) and into employment, to ensure future generations are climate-literate citizens.

Sustainability education is essential for equipping young people to engage with the complex, interconnected challenges our planet faces. The University of Birmingham's policy recommendations provide a comprehensive framework to help achieve this goal.

Policy Recommendations
UK national

- Support the alignment of curriculum development with the three pillars of sustainability, and consider beyond UN SDGs and 2030 to encompass all major academic discipline areas in primary, secondary, and HE. Progress should be reported on an annual basis and needs to be monitored through a requirement for an annual report or plan and part of the Ofsted school inspection process for schools.
- Require a consistent and connected approach from school, through to HE and employers in the sustainability and 'Green Skills' space. A single standardised language, methodology and competencies framework that broadens understanding of sustainability, underpinned by a common assessment framework.
- Invest in mandatory professional development, training programmes and resources for all educators on cross-disciplinary sustainability education and competencies.
- Embed sustainability education directly into the recently reformed standardised initial teacher education curricula developed by the Department for Education in England.
- Facilitate collaboration and co-creation between key stakeholders—including special interest groups, national forums, learned societies, students, academics and teachers to deliver the above recommendations and support schools to develop their Climate Action Plans.

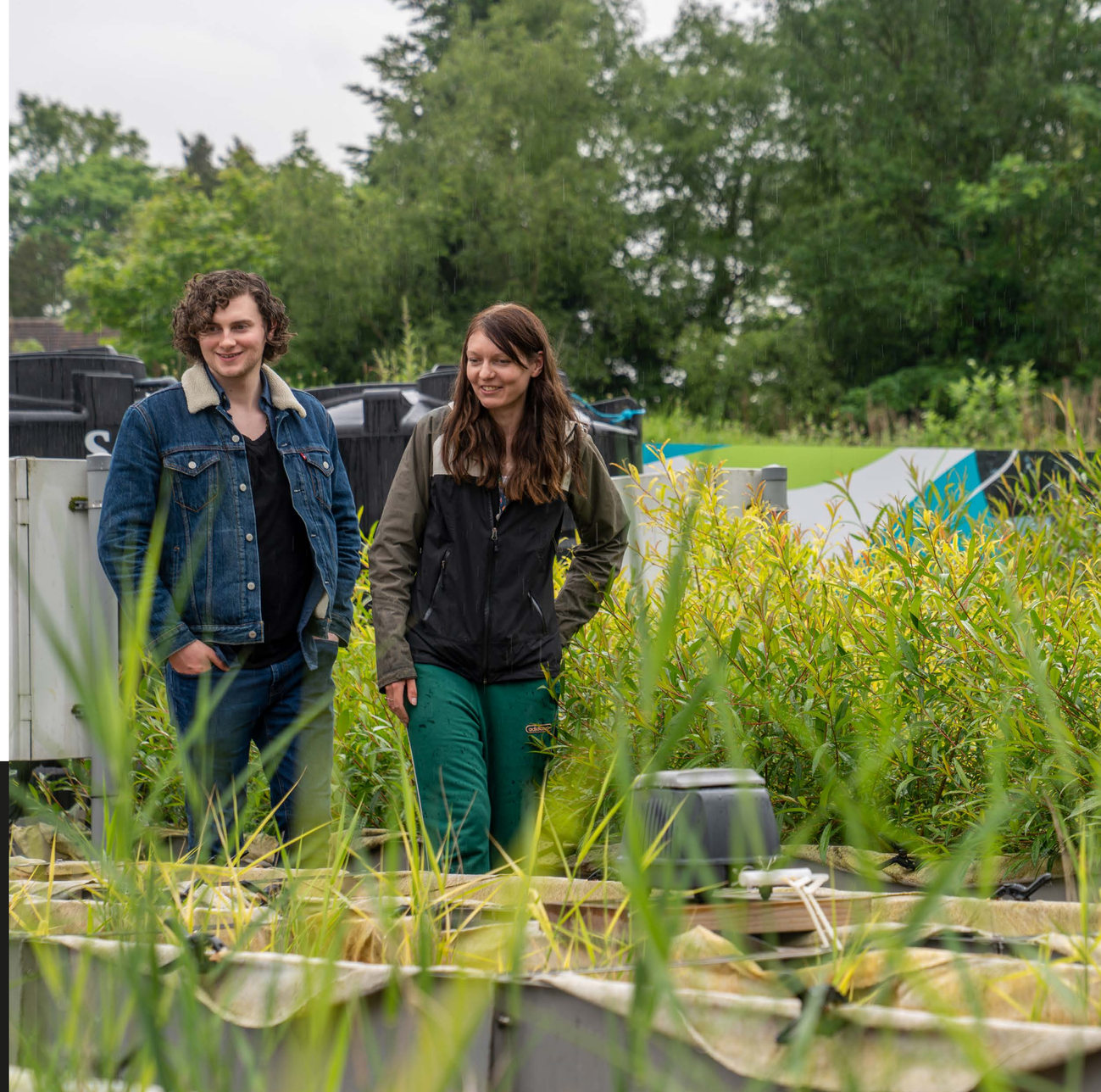
Only 55%

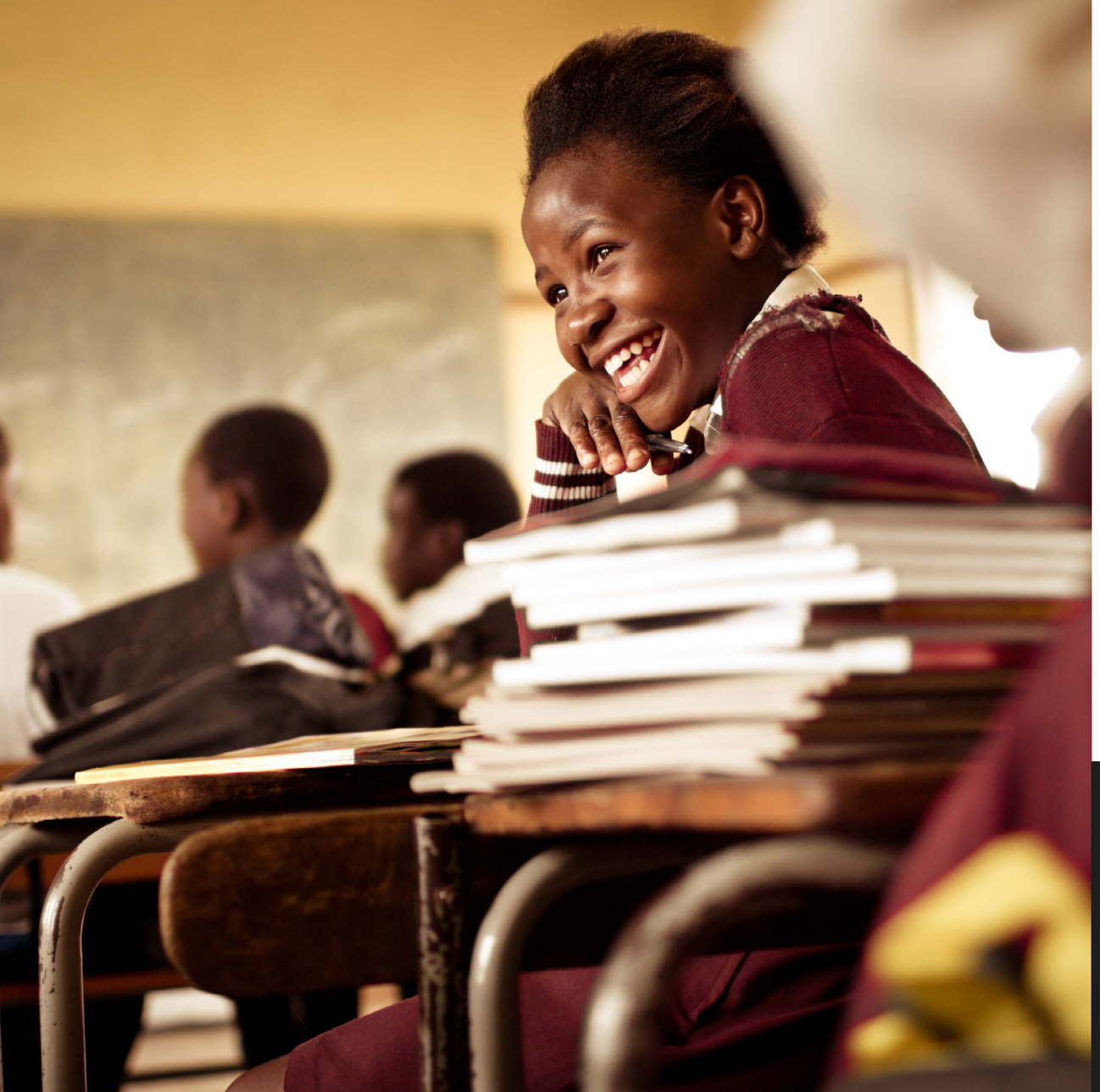
of school leavers in the UK recall recent climate change education

Source: 2018 UNESCO Survey

82%

of primary school teachers in the UK say they would find resources to support sustainability education useful





Policy Recommendations
International

- Work together as an international community to support a cohesive approach and learn from one another to bridge the gaps and ensure a common language is used from early years through to HE.
- Support education at a global scale by developing resources appropriate for a local context and present country-specific case studies in local languages.
- Provide frameworks that incorporate cultural and language needs that are informed and developed by Indigenous Peoples, to ensure a collaborative approach is taken.
- Encourage global cooperation between HE institutes to ensure students can operate in an international context, using mechanisms such as Collaborative Online International Learning (COIL) and virtual initiatives across the world.
- Align education activities with UNESCO's comprehensive agenda to address the urgent call for investment in women's and girls' education specifically in Africa.

70%

of university students across the globe feel that sustainable development should be included in all disciplines

Source: NUS-UK - education for sustainable development 2018

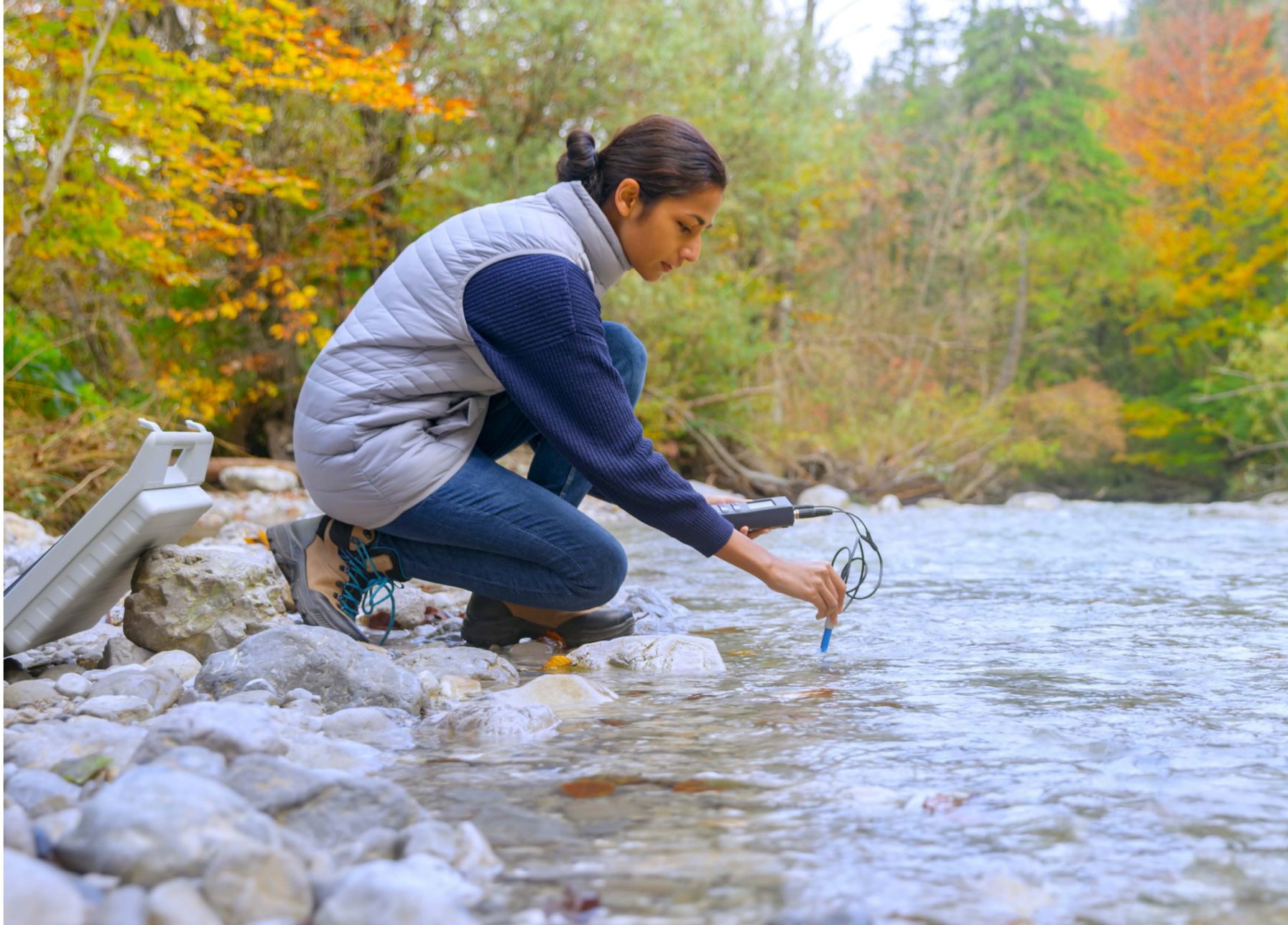
84%

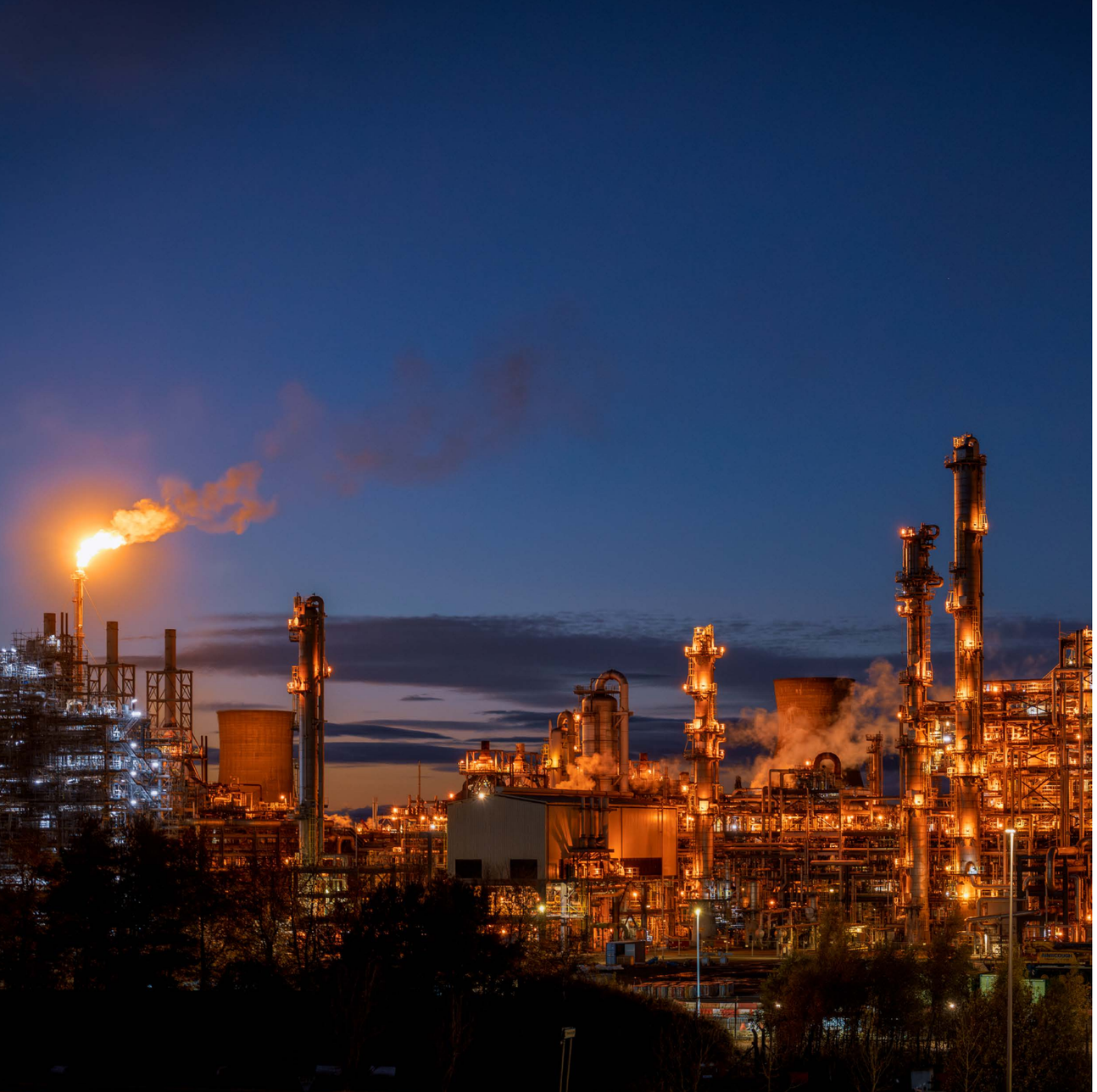
of young people (aged 16-25) are worried or extremely worried about climate change (survey of 10,000 young people across the globe)

Source: Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey

These recommendations are based on research led by experts at the University of Birmingham including:

- Justyna Bandola-Gill
- Daniel Cottle
- Samantha Dobbie
- Rebecca Keogh
- Julia Myatt
- Jeremy Pritchard
- Max Williams (Guild of Students)





Energy transition: A comprehensive approach to decarbonisation and equitable transition

The energy sector accounts for 85% of global greenhouse gas emissions through the burning of coal, oil and natural gas. Transport and buildings alone are responsible for about 60% of energy-related emissions. While low-carbon sources are contributing record levels of energy, rapidly transforming the energy system is critical to tackling climate change. Technological solutions, market mechanisms and behavioural change are all needed, and should be considered at a systems level to effectively reduce emissions across sectors.

Reducing energy demand, or shifting when we use it, will reduce overall energy costs while delivering multiple co-benefits to health and well-being. Price signals that reflect the true cost of emissions, alongside technologies such as energy storage or smart energy systems, have a key role to play, provided they are deployed equitably.

Learning from past energy transitions—such as the UK's shift away from coal, the liberalisation of electricity markets, or the global phase-out of leaded gasoline—show that effective governance depends on adaptive and just policymaking.

While international summits such as COP set the stage for cooperation, real decisions are made at the local level, by individuals, businesses, and communities. Broader public engagement is essential to empower people to make informed choices. For the clean energy transition to succeed, it must be deeply embedded in institutional mechanisms, governance systems, and regulatory frameworks—structures that ultimately shape its pace, effectiveness, and inclusivity.

Achieving deep decarbonisation of the energy sector requires a joined-up, long-term approach centred on how people use energy. From a global perspective, understanding how policy, politics, and regulation influence the energy transition is key to bridging the gap between higher-income and lower-income regions ensuring the transition is just, inclusive and leaves no one behind.

Policy Recommendations
UK national

- Embed evidence-based policymaking across governance scales, to draw upon rigorous scientific and historical research that captures an understanding of energy within the wider economy.
- Engage communities and empower local decision-making to make the just transition a reality.
- Give stronger signals to consumers, providing incentives for choices; reflect full costs through prices, but protect the most vulnerable.
- Prioritise reducing energy demand by rewarding the installation of energy efficiency measures in buildings, and making alternatives to private road transport more affordable and accessible.
- Invest proactively in infrastructure, coordinating across sectors to account for interdependencies.
- Support energy innovation by investing in research and development of new solutions and improving existing technologies. Demonstrate their technical viability at scale. Explore emerging opportunities in big data and AI, while carefully managing associated privacy and security risks.

Policy Recommendations
International

- Ensure compliance with, and verification of, ambitious climate targets through regulatory bodies equipped with sufficient political power.
- Establish a global carbon price at a level that influences investment decisions, and enable international and cross-sector carbon trading.
- Support international research efforts on energy sector decarbonisation by expanding multilateral programmes and reducing barriers on researcher mobility across borders.
- Encourage pre-commercial industrial collaboration to help companies co-develop new products and services, supported by business models that reward innovation across multiple markets.
- Share learning on technological and non-technical approaches to energy sector decarbonisation, facilitating exchange between higher and lower-income regions.
- Integrate climate action into the implementation of Sustainable Development Goals (SDGs) and assess decarbonisation pathways in relation to their impact on SDG outcomes.

Low carbon generation in the UK was a record

65%

of the total in 2024, with renewables (wind and solar) generating more than half of all electricity for the first time.

Source: gov.uk Energy Trends: March 2025

Over

40%

of all energy use in the UK is for transport, 25% is used in the home and 15% is used by industry (a record low level); the remainder is mostly used in the services sector.

Source: gov.uk Energy Trends: March 2025

Electricity networks across the world will need

80 million

kilometres of new or upgraded grid by 2040.

Source: International Energy Agency: World Energy Outlook 2024

The energy sector is responsible for

85%

of global greenhouse gas emissions through the burning of coal, oil and natural gas.

Source: International Energy Agency: World Energy Outlook 2024

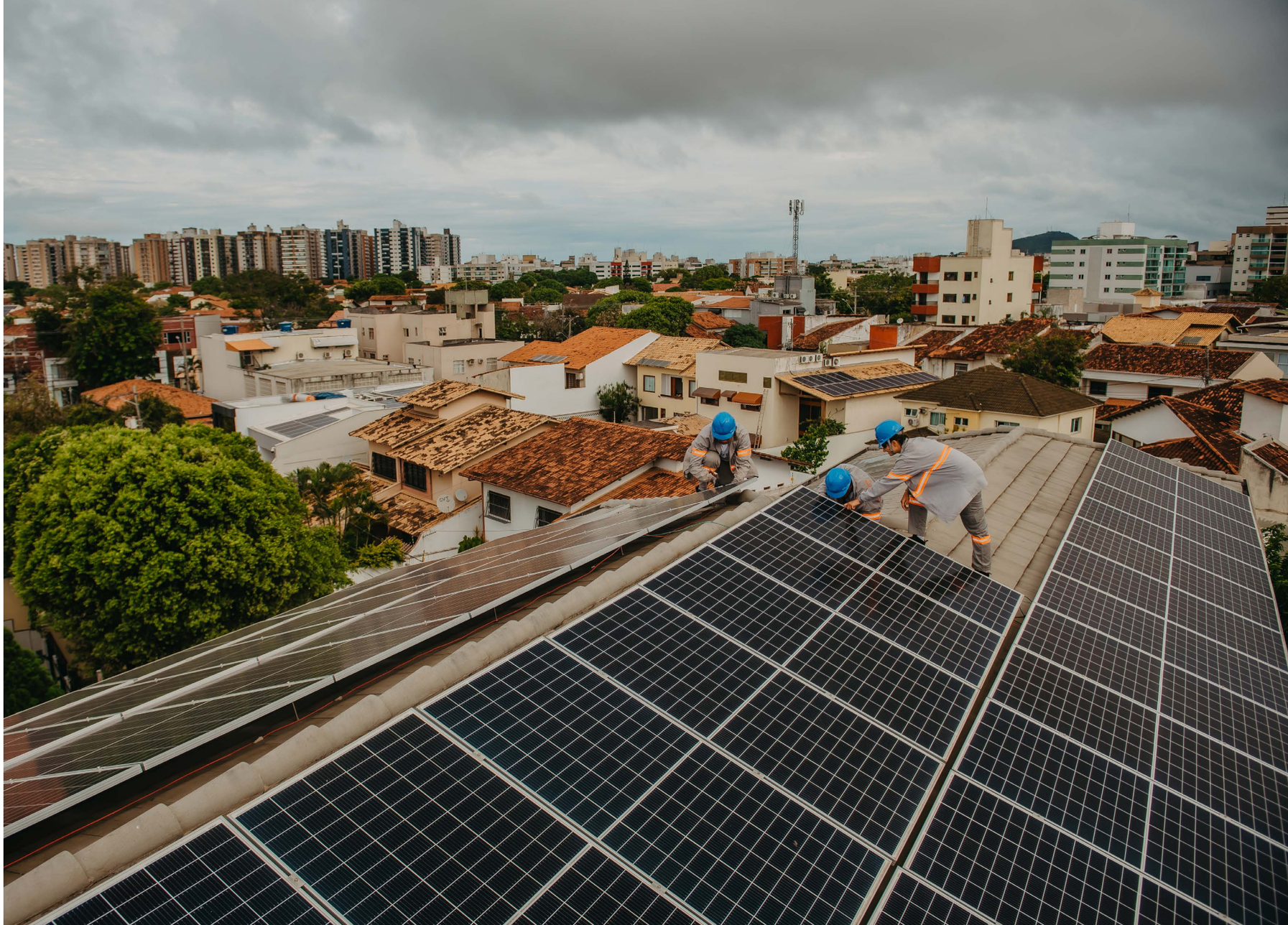
The University of Birmingham's policy recommendations underscore the critical need for a comprehensive and collaborative approach to energy transition and climate action. By embedding evidence-based policymaking, engaging communities, and prioritising energy efficiency, the UK can lead the way in creating a sustainable and equitable energy future.

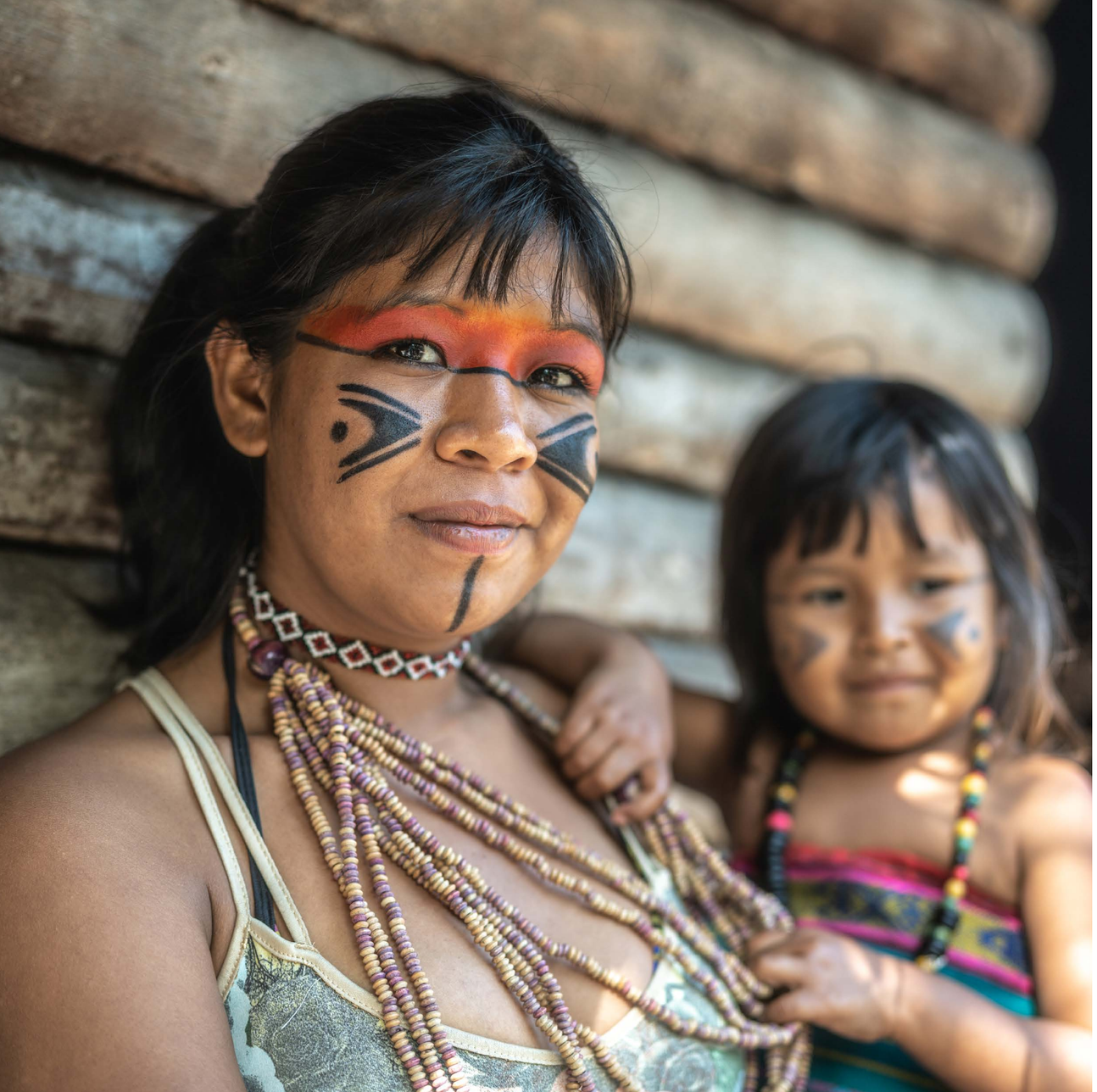
Internationally, setting a global carbon price, complying with climate targets, and facilitating cross-border research and collaboration are essential for achieving global decarbonisation goals. Sharing knowledge and integrating climate action into SDGs will ensure that efforts are inclusive and effective.

These recommendations provide a robust framework for both national and international stakeholders to work together towards a just and sustainable energy transition, benefiting both current and future generations.

These recommendations are based on research led by experts at the University of Birmingham including:

- Ambi Ambituuni
- Hui Ben
- Daniel Donaldson
- Jonathan Radcliffe
- Hiroki Shin
- Liu Yang





Equity, justice and health:
A fairer world by tackling climate change

The ideas of equality and justice are deeply ingrained in the UNFCCC (United Nations Framework Convention on Climate Change) and the Paris Agreement, which emphasise fairness and responsibility in addressing climate change. These agreements further expand upon these principles by recognising the realities of different national circumstances and requiring developed countries to take the lead.

As we move to a greener economy, workers should be supported with good job opportunities and vulnerable groups must be protected. These groups include Indigenous Peoples, local communities, migrants, children, people with disabilities, and those in vulnerable situations. The agreements emphasise the importance of gender equality, women's empowerment, and fairness between generations. There is also a human rights focus. Climate actions should respect and protect people's rights, including the right to health and development.

What still needs to be done?

Climate change hits vulnerable communities hardest, especially in poorer countries, worsening health and social inequalities. To address this, climate policies must focus more on fairness, justice, and health at all levels. As countries transition to clean energy, they still require specific raw materials - primarily minerals - to support renewable technologies like electric mobility.

This transition must consider environmental standards, health benefits, and social inclusion, addressing regional differences and vulnerabilities.

Health policies need updating to tackle climate-related issues:

- Infectious diseases are spreading further as temperatures rise
- Antibiotic resistance is growing
- Better monitoring and plans for emerging infections
- Chronic conditions such as cardiovascular and respiratory diseases are worsened by heat and air pollution
- Climate-related disruptions to food and water supplies increase the risk of malnutrition
- Extreme weather events strain healthcare systems and contribute to mental health challenges

Public involvement and education are crucial for collective responsibility and improved public health in climate action. This can raise awareness of health risks and behaviours, and test local solutions to climate and sustainability challenges. For real progress, climate action should be part of all Sustainable Development Goals (SDGs), not a separate issue. Understanding how the 17 SDGs connect can help countries address climate and development issues together, including justice, fairness, and health.

Policy Recommendations
UK national

- Integrate environmental quality standards and health co-benefits into decarbonisation pathways both in the UK and internationally.
- Include sustainable and circular product stewardship as a vital part of future energy security policies.
- Establish long-term surveillance of potential diseases through wastewater streams to identify emerging epidemics.

The UK's low-carbon and renewable energy economy supported around

247,000

full-time equivalent jobs in 2021.

Source: UK Office for National Statistics ONS, 2023

People living in the most

deprived

areas of England are twice as likely to die from air pollution-related conditions than those in the least deprived areas.

Source: UK Health Security Agencyy, 2022

Policy Recommendations
International

- Align the Paris Agreement goals—and any future frameworks—with the SDGs to promote a holistic approach that ensures both climate and development priorities are addressed simultaneously.
- Strengthen global collaboration to accelerate energy decarbonisation and ensure equitable access to the necessary resources and technologies.
- Coordinate internationally to minimise the risk of disease transmission and promote responsible antibiotics use, ensuring the development of antimicrobial resistance remains minimal through effective monitoring.
- Embed whole-systems approaches into national and regional governance to support inclusive and equitable climate mitigation and adaptation policies.
- Provide on-site, clean energy generation for all healthcare facilities in the Global South.
- Incorporate global citizenship education (GCE) as a core subject in both teacher training and school curricula, equipping educators and students with the knowledge, skills, and values needed to champion economic, environmental, and sociocultural sustainability.

Over

91%

of deaths from climate-related disasters between 1970 and 2019 occurred in low- and middle-income countries.

Source: World Meteorological Organization WMO, 2021

Almost

1 in 2

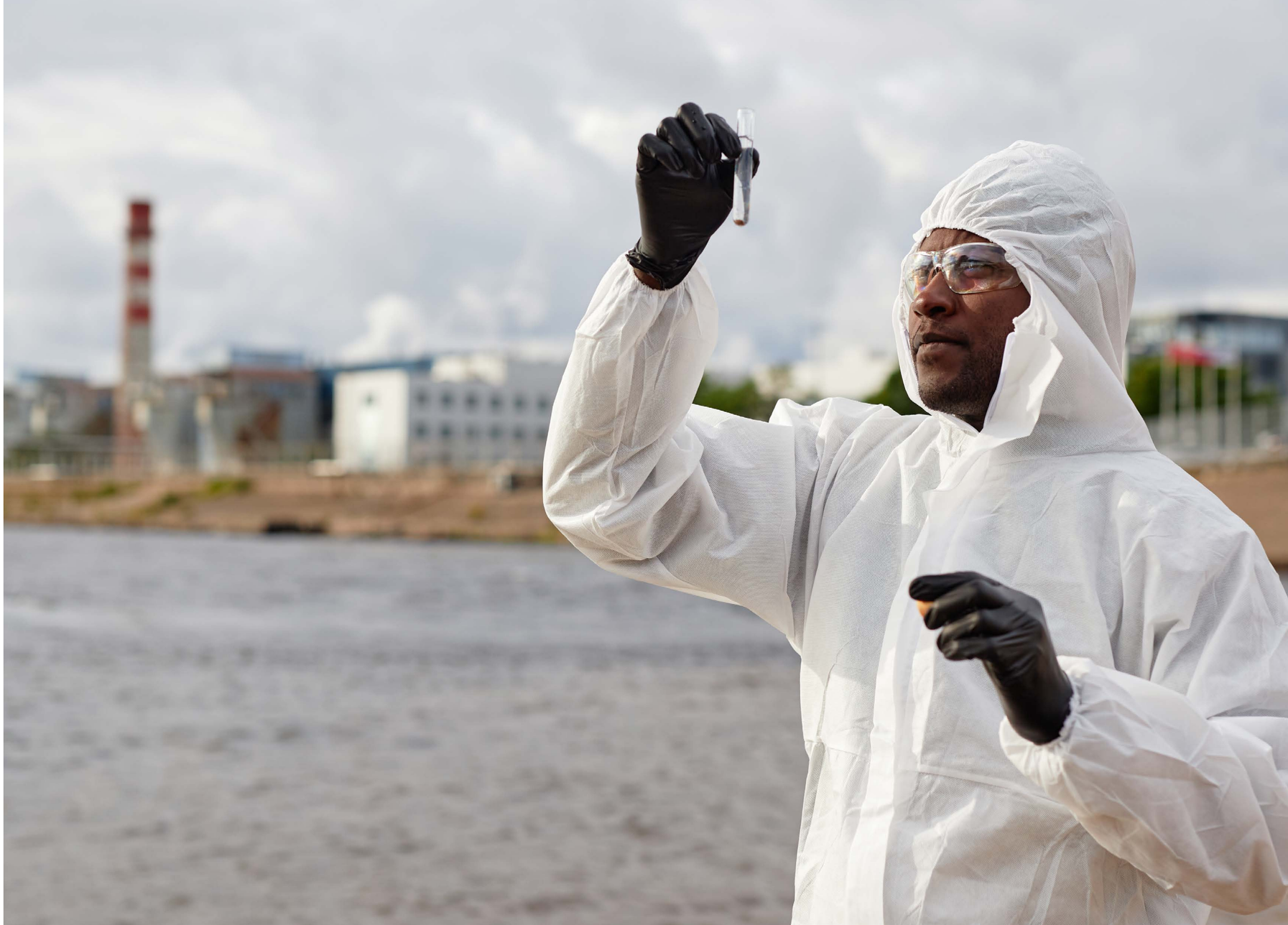
healthcare facilities in low- and lower-middle income countries lack reliable electricity access.

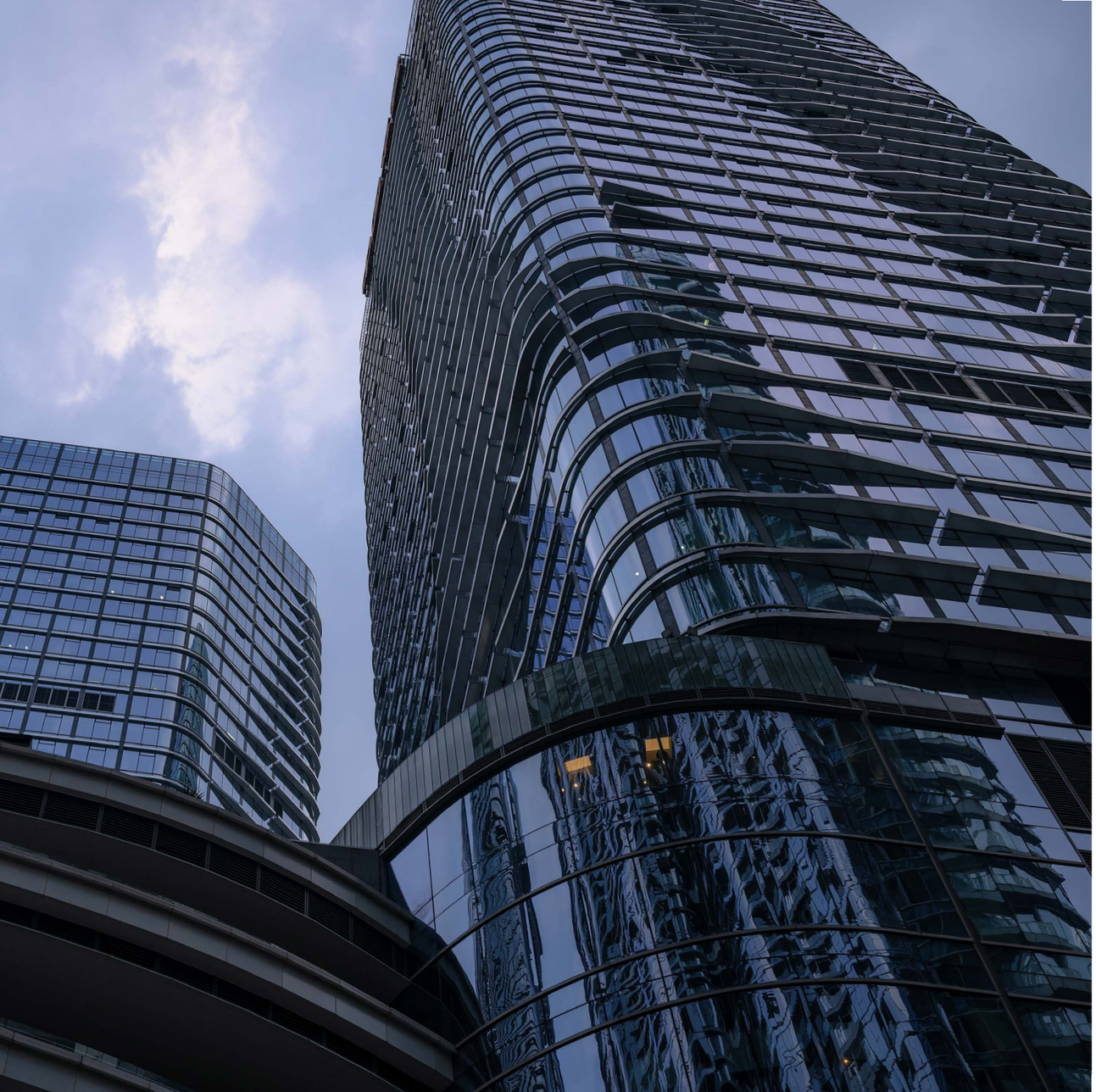
Source: World Health Organization WHO, 2022

The University of Birmingham's policy recommendations aim to create a comprehensive strategy that addresses climate change, health, energy security, and global equity while promoting sustainable practices and education.

These recommendations are based on research led by experts at the University of Birmingham including:

- Suzanne Bartington
- Aleksandra Čavoški
- Abril Herrera Chavez
- Lucy Crouch
- Rachel Jordan
- Robert G Lee
- Francis Pope
- Dmitri Nepogodiev
- Yuli Shan
- Meng Tian
- Katinka Weber





Driving climate finance: Understanding the role of responsible institutional investors

In 2009, developed nations committed to mobilising $100 billion annually by 2020 to support climate action in developing countries. The Paris Agreement extended this target through 2025 and called for a higher finance target beyond that date.

However, a 2024 UNFCCC analysis of Nationally Determined Contributions (NDCs) from 142 countries estimates that between $5.036 and $6.876 trillion in investment may be required to meet climate goals. Negotiations for a new post-2025 finance goal began at COP26 in Glasgow (2021) and continued at COP27 in Sharm el-Sheikh (2022). At COP28 in Dubai, parties agreed to develop a draft negotiating text ahead of COP29 and to continue discussions through 2024 and 2025. The IPCC has made clear that while sufficient global capital exists, significant barriers prevent its redirection toward climate action, especially in developing countries.

Institutional investors play a crucial role in bridging this gap by mobilising private capital through green financial instruments. Financial systems and investors must align with global mitigation and adaptation objectives if we are to meet climate goals. Yet adaptation financing, especially from private sources, remains critically underfunded. Perceived risks, and uncertain returns make such investments less attractive. Understanding what motivates institutional investors' is crucial to unlocking the capital needed to close the climate funding gap and support more equitable, resilient outcomes.

The University of Birmingham research explores what drives institutional investors globally to invest in green financial instruments and whether responsible investors can strengthen firms' Environmental, Social, and Governance (ESG) performance.

Policy Recommendations
UK national

- The UK Government should design innovative incentive packages to encourage institutional investors to direct private capital towards adaptation-focused projects.
- Regulatory bodies should accelerate efforts to harmonise sustainability-related disclosures and align the UK's proposed green taxonomy with the implementation of IFRS S1 (General requirements for disclosing sustainability-related financial information) and IFRS S2 (Climate-related disclosures) as set by the International Sustainability Standards Board.
- The UK regulator should foster financial market innovation by promoting the development of climate-related financial instruments tailored to local sustainability priorities.
- Government and financial regulators should work together to establish a regulatory framework for innovative financial instruments and invest in the technological infrastructure needed to scale climate-related finance.
- Regulators should strengthen efforts to link executive compensation with measurable ESG performance to drive accountability and long-term impact.
- Facilitate knowledge exchange between institutional investors, local governments, and stakeholders to expand funding for renewable energy, resilient infrastructure, and energy efficiency initiatives.

Policy Recommendations
International

- COP30 should consider establishing an International Research, Development, and Innovation (RD&I) fund to advance the development and deployment of technologies that address climate-related externalities in lower-income nations. The fund would facilitate technology exchange and promote international cooperation to accelerate the global adoption of climate solutions.
- Policymakers should take further steps to harmonise sustainability-related regulations and standards, establish clearer global taxonomies, and strengthen mechanisms for data sharing and cross-border collaboration. These actions will support more robust research and enable informed, evidence-based decision-making.
- Develop a more effective mechanism for international communication and collaboration among institutional investors as part of a global engagement strategy. This should include structured cooperation between major financial institutions, both bilateral and multilateral, to address climate-related risks and investment challenges.
- Governments should reduce financing barriers for scaling climate investments by aligning public finance strategies to lower regulatory hurdles, reduce financing costs, and de-risk investments. Improving the risk-return profile of investments will help mobilise greater private sector participation.
- Enhance international cooperation in access to finance, technology, and capacity building to accelerate mitigation and adaptation efforts, boost climate action, and support the effective implementation of NDCs.
- Encourage international dialogue on restructuring future COP meetings and advocate for global regulatory frameworks that empower shareholders climate activism and corporate accountability.

Total global climate finance needed for developing countries by 2035

$300 Billion/year

Source: COP29 agreement

Scale up public and private finance to $1.3 trillion annually for developing countries by

2035

Source: COP29 agreement

Market capitalisation in the green bond market in 2024

$2.9 trillion

The private sector financed less than

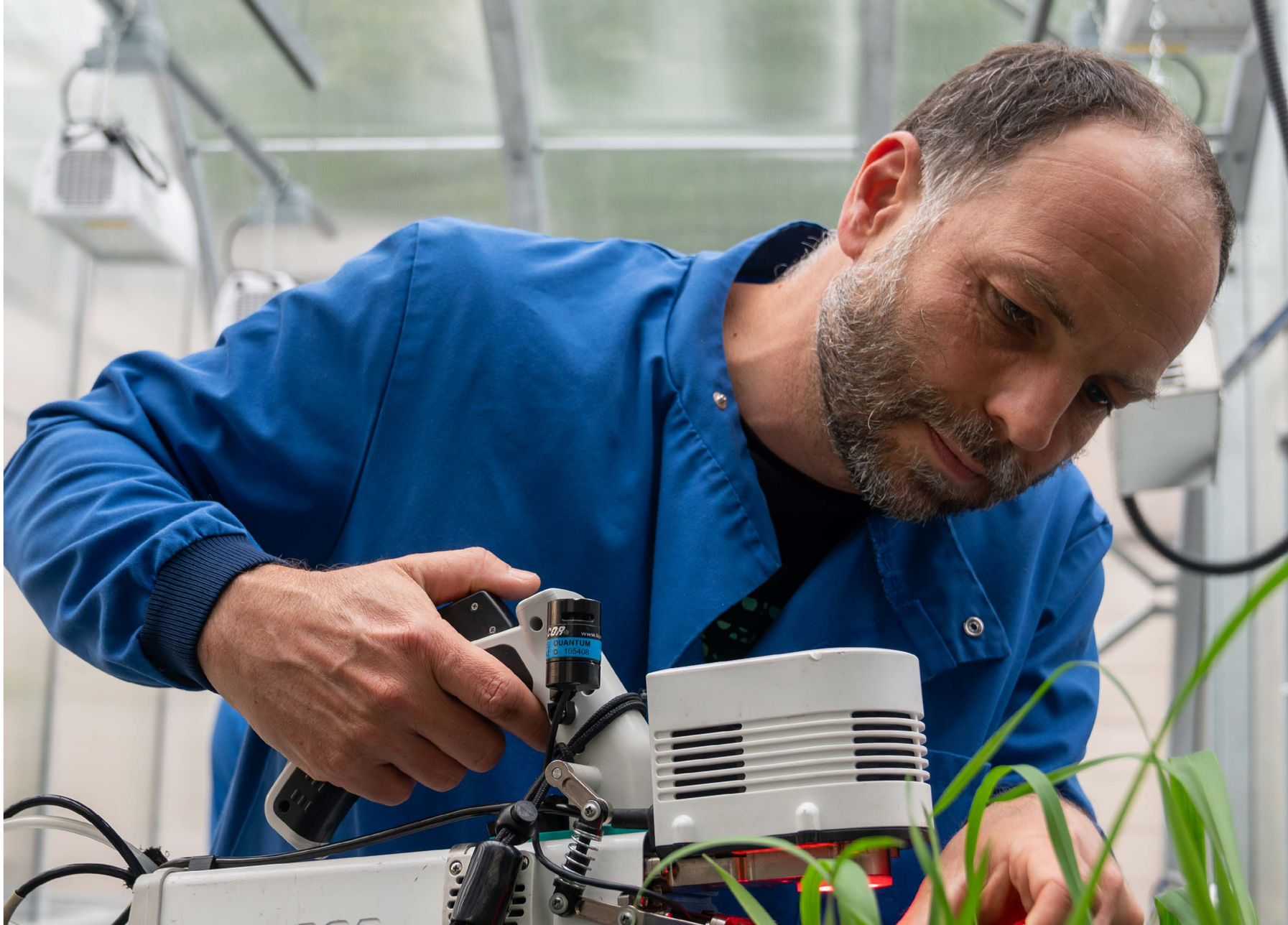
3% of global adaptation activities

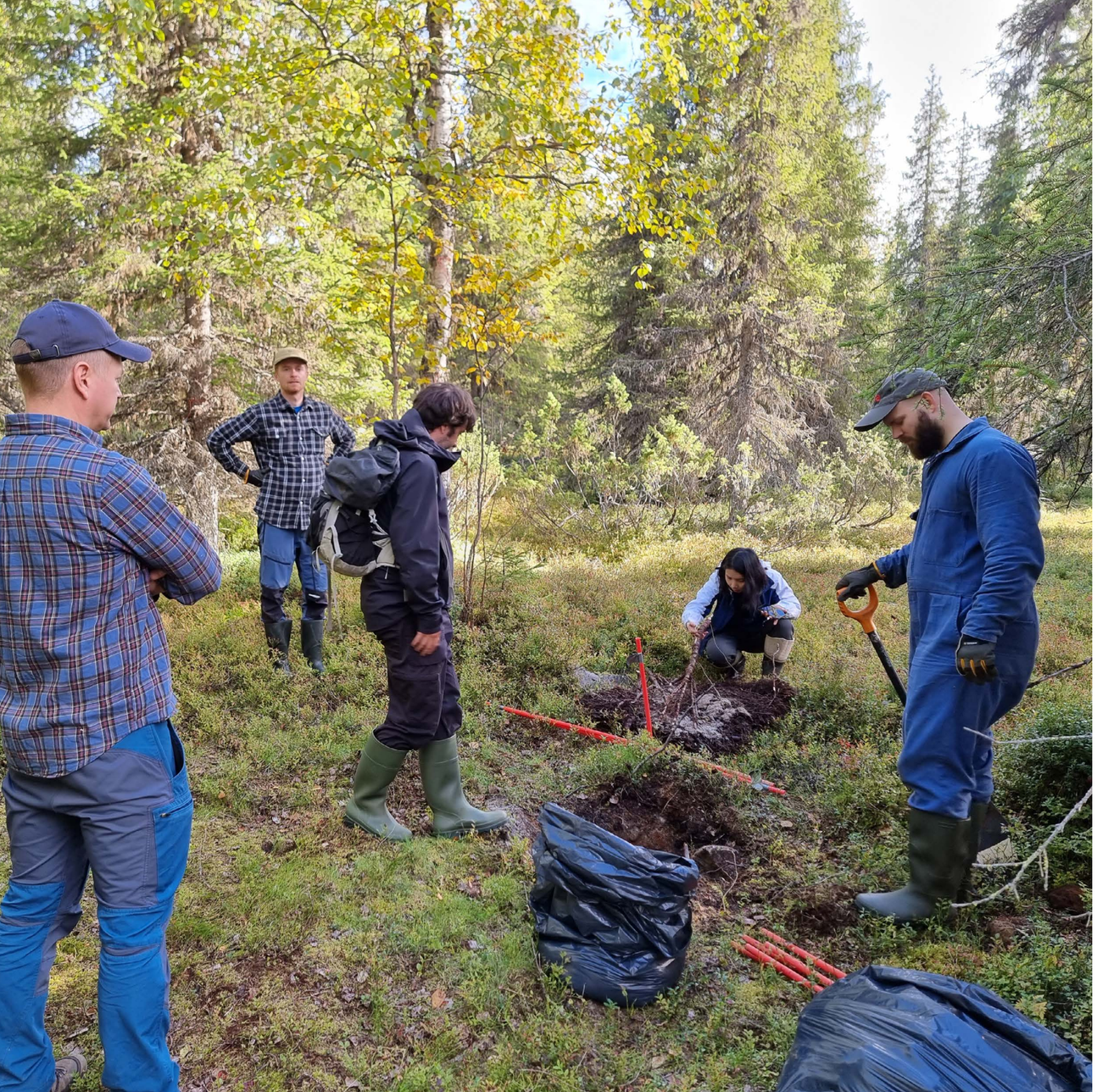
Source: State and Trends in Climate Adaptation Finance 2023

The financial services sector plays a key role in addressing the multifaceted climate challenges faced by our planet. The University of Birmingham's policy recommendations provide a comprehensive framework to help achieve this goal. They emphasise the need for innovative financial instruments, harmonised sustainability standards, and enhanced international cooperation to address climate challenges. Our recommendations aim to mobilise private capital, improve sustainability disclosures, and accelerate global climate action.

These recommendations are based on research led by experts at the University of Birmingham including:

- Hisham Farag
- Yuru Guan
- Ye Hang
- Yuli Shan
- Xiaofei Xing





Afterword

Universities play a vital role in addressing today's most complex global challenges. As hubs of research and innovation, they unite experts across disciplines to shape solutions through evidence and dialogue.

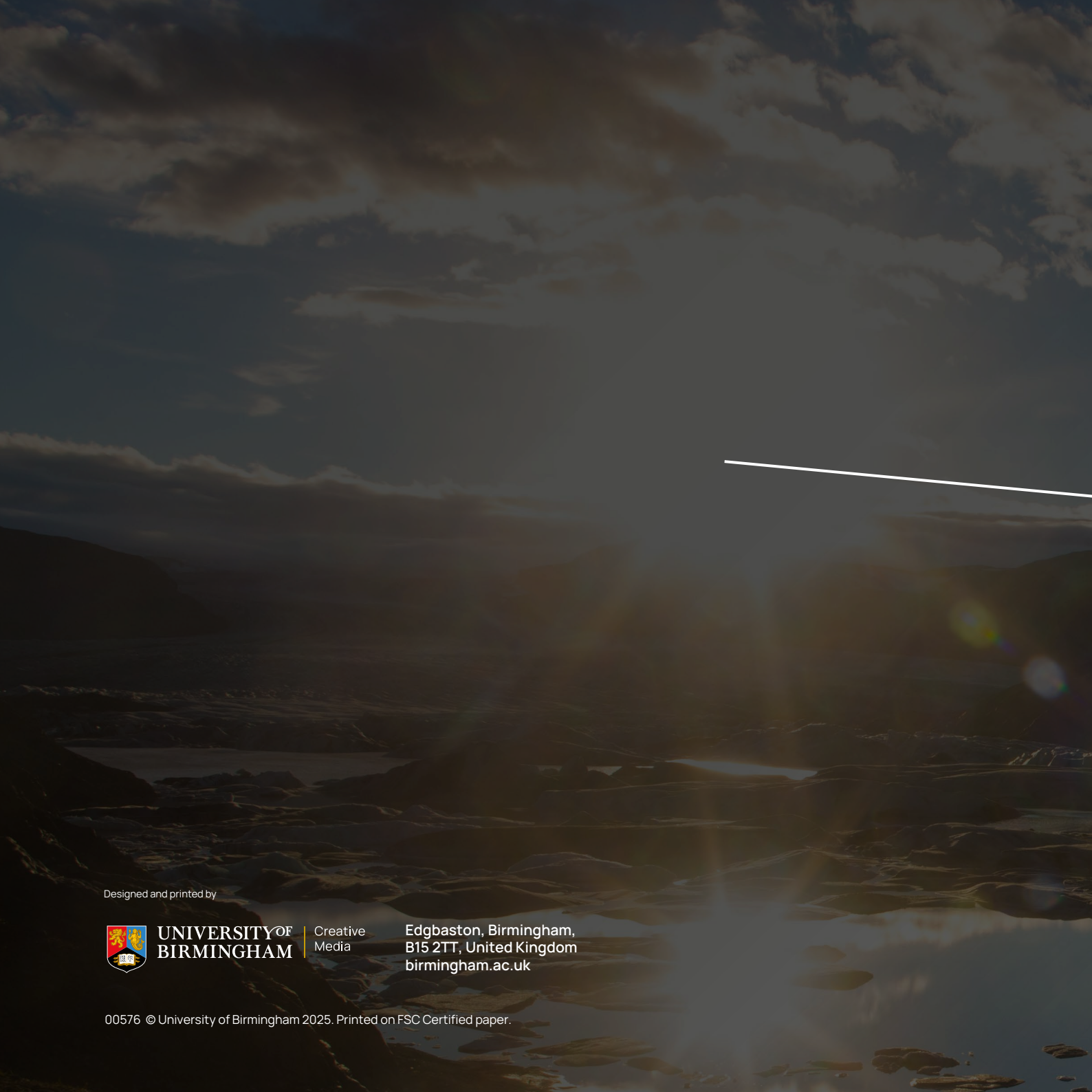
These five Policy Briefs, spanning adaptation and resilience to decarbonisation and an equitable transition, underscore the critical role of science in driving progress. At UNESCO, the 'S' in the name—science—is fundamental to our mission. From climate action to sustainable development, science provides both the evidence base and the collaborative platform for meaningful change.

These Briefs call for embedding science more deeply into climate policy, strengthening the ties between research, decision-making and communities on the frontlines of change. In his introduction, Professor Hannah underscores the vital role of research partnerships in accelerating action on the world's most urgent priorities.

The Briefs explore how growing bodies of evidence can be translated into just and effective solutions at national and global levels.

As we reflect on the decade since the Paris Agreement, we are reminded of the distance still to go and the tireless efforts of researchers, policymakers, and communities who continue to push for more ambitious climate action. COP30 must be a turning point and a moment of reckoning and renewal. The science is clear, the tools are available, and the stakes could not be higher. Now is the time to rise above division and match urgency with resolve.

Dr Lídia Brito
Regional Director of Science for LAC Region
UNESCO



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