

Identifying and evaluating climate change adaptation action

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During the Critical Decade for Climate Action Conference, hosted by the Tyndall Centre for Climate Change Research at the University of East Anglia (UEA), climate experts gathered to showcase evidence-based ideas and critically evaluate opportunities for climate action. This briefing note serves as a summary of Session 6b on Tuesday 9 September 2025.

Climate change adaptation is essential in managing the unavoidable risks from observed and future climate change, even if we achieve the Paris Agreement and limit global warming to below 2°C. Yet, as global temperatures continue to rise through this critical decade, so do the number of catastrophic climate-related disasters. This has led to increasingly urgent calls for adaptation to become a global priority today, to help reduce the growing gap between adaptation effort and adaptation need and to establish a longer-term vision for a well-adapted world. The value of being able to precisely quantify greenhouse gas emissions is indisputable, providing a foundation for monitoring and evaluating progress against common baselines and driving policy towards international climate goals. In contrast, our ability to identify implemented adaptation action, as a baseline from which to monitor, evaluate or share best adaptation practice and knowledge, remains exceptionally limited and is a critical barrier in moving from adaptation theory to practice. This session focuses on a range of methods and approaches that have been applied to identify and measure climate change adaptation, and the benefits and insights of such evaluation. It is argued that better understanding of implemented adaptation can be invaluable to understand enablers and barriers to action, potential opportunities, gaps in the system, and to support future implementation. Furthermore, advancing such methods and approaches to identify implemented adaptation action effectively and efficiently will be paramount when considering the goals of the Global Adaptation Stocktake.

Introduction

Twenty-five years ago, climate discussions mainly focused on mitigation, while adaptation was seen as a distant need, or sign of failure to act. Today, the urgency of adaptation could not be clearer, as we see the consequences of climate change play out in unprecedented extremes such as floods, heatwaves and record-breaking weather.

Subsequently, over the past 25 years, science and policy have transformed our capacity to respond. The Paris Agreement elevated adaptation alongside mitigation, while many countries have national adaptation plans and are strengthening their resilience to climate impacts. Yet, recognition of the problem has not always translated into

action. Adaptation strategies often remain underfunded, disconnected from local needs, or too slow to match climate impacts. The challenge now is to ensure adaptation reflects practical needs and produces tangible outcomes on the ground.

Tracking adaptation progress: insights from the Adaptation Gap Report and opportunities and challenges for better decision-making – Dr Henry Neufeldt, UNEP Copenhagen Climate Centre

The UNEP Adaptation Gap Reports (AGR)¹ are annual scientific assessments of progress in adaptation planning,

¹ [Adaptation Gap Report 2024](#) | UNEP - UN Environment Programme

implementation, and finance. Dr Neufeldt highlighted key challenges in all three domains. While a vast majority of countries (90%) now have a national adaptation planning instrument, which shows that adaptation is taken very seriously almost everywhere, progress has come nearly to a standstill and 26 countries still lack any national plans. Moreover, many existing ones are outdated, lack sector-wide costing, or exclude key stakeholders. The AGR shows significant room for improvement in planning, but there is hope for new frameworks to support convergence across countries in terms of quality and comprehensiveness via the UAE Framework for Global Climate Resilience to support the Global Goal on Adaptation.

Adaptation implementation has generally grown over time but slowed since 2021. Notably, roughly half of UNFCCC funded projects were found to be of unsatisfactory quality and tend not to sustain themselves once funding ends. In 2022, international public finance for adaptation in developing countries reached \$28 billion, falling drastically short of the estimated \$187–359 billion needed annually until 2030 (UNEP, 2024). Despite the polluter pays principle and the principle of common but differentiated responsibilities and respective capabilities that guides the Paris Agreement, developing countries are often funding their own adaptation. Capacity building and technology transfer efforts are fragmented, expensive, and short-term, with agriculture, water, and coastal risk sectors accounting for 85% of capacity building and knowledge transfer.

Dr Neufeldt stressed that adaptation data remains fragmented and insufficient to fully understand the adaptation gap. More outcome-oriented data and local evidence that can be aggregated for national reporting are needed. Increased reporting is required from developed countries and more capacity building and peer-to-peer learning in the Global South. Local engagement and co-development are critical, and adaptation must be mainstreamed across all sectors such as food and water security to ensure climate resilience.

How can we improve our understanding of what adaptation action is actually happening? – Prof. Emma Tompkins, University of Southampton

As climate change intensifies, extreme weather events are becoming more frequent. The 1987 Great Storm was the first of its kind since 1703, yet the UK has experienced four similar storms since 2020. Recent years have also brought record-breaking summer heat. Despite these trends, few audience members (made up of climate experts) admitted to integrating climate change adaptation in their own behaviours, e.g. home improvements to withstand such events.

Moreover, there are no large-scale data collection initiatives that monitor how individuals (and which individuals) are adapting after such events. Of the eight global adaptation datasets that include the UK², none provide a comprehensive picture of small-scale, household-level actions or their prevalence. Instead, they focus on mapping vulnerabilities, risks and impacts. While this is important, Prof. Tompkins argues we need to understand who is adapting, to what, when, why, and how, to identify best practices, assess benefits and costs, and offer tailored guidance to households and small businesses. Without this database, we cannot track national progress or guide households on adaptation effectiveness.

Still, collecting the data poses several challenges. Should we include adaptations that might occur anyway (e.g. replacing a broken fence, or old development initiatives to reduce vulnerability) or just actions specifically in response to climate or weather hazards? Prof. Tompkins suggests initially including all adaptation, regardless of intent to enable the start of an evidence base.

Some useful smaller adaptation datasets exist, including UNFCCC³ (self-reporting), systematic review⁴ and inventory methods⁵, but these datasets and existing data collection methods have drawbacks. Self-reporting tends to only include successful adaptations, systematic reviews exclude grey literature, and inventory methods of manual online data collection are costly and time-consuming. Prof. Tompkins calls for affordable, scalable, and replicable methods that capture the full picture, including inaction. Even a dataset that records “0 entries” is valuable if it reflects the reality of what is, or is not, being done.

What would transformational adaptation look like and how do we do it? – Dr Helen Adams, Kings college London

Dr Adams defines transformational adaptation as progressive adaptation that challenges power dynamics, underlying structures and systems that leave people vulnerable, highlighting its political and social nature. Unlike incremental adaptation which protects business-as-usual through physical adaptations, transformational adaptation focuses on values, justice and aspirations. Equity is as vital as maintaining infrastructure, meaning that

² Notre Dame Global Adaptation Initiative Country Index (ND-GAIN); Global Climate Risk Index (GCRI); World Development Indicators (WDI); Human Development Index (HDI); World Risk Index (WRI); Worldwide Governance Indicators (WGI); Emergency Events Database (EM-DAT); Index for Risk Management (INFORM).

³ Private Sector Initiative database, UNFCCC (N=102). Includes many sectoral actions, mostly consulting and environmental services.

⁴ Global Adaptation Mapping Initiative, GAMI (N=1682). Includes empirical academic studies of adaptation.

⁵ UK Adaptation Inventory Database, Jenkins et al. (2021) (N=300+). Private and public sector adaptations.

resilience plans are insufficient if they fail to prioritise vulnerable communities. Under this broader definition, any form of civic engagement or action to reduce inequality would be classified as adaptation and should be included in data. One example is Scotland's National Adaptation Plan 2024-2029⁶, which treats community engagement as an outcome and progress indicator.

This is important as Dr Adams highlights that current utopian visions of a climate-resilient future are disconnected from the people that would live in such a future and not aligned with current social structures, offering an end goal without concrete steps to reach it. Dr Adams also stresses the need for a funding shift from vulnerability and risk assessments to implementation, with a focus on learning through reflexive processes.

Despite the challenges, Dr Adams remains positive about the potential to live in a better world under climate change, echoing the work of Friederike Otto⁷ who highlighted that climate change itself is not the sole problem. Rather, it is the absence of social safety nets that turns its impacts into severe harm. Thus, transformational outcomes will require the mainstreaming of equity into everything we do across all sectors.

Discussion

Following presentations, the discussion centred around how we could collect better data and varying interpretations of transformational adaptation. Dr Adams challenged the false dichotomy between incremental and transformational adaptation, arguing that both are necessary, and that further discussion is needed on how incremental adaptation can create pathways for transformation. Prof. Tompkins agreed but acknowledged that this perspective is normative. She emphasised that other diverse and conflicting interpretations of transformational adaptation exist, and that despite assumptions, we are not all on the same page about

adaptation. Dr Neufeldt reinforced this, noting that transformational adaptation is viewed less favourably by his usual policy-focused audience, and can raise concerns within UNFCCC negotiations where it could be seen as adding an additional layer of complexity for funding adaptation. Further questions echoed this divisiveness and suggested a need for greater specificity around the normative intent of transformational adaptation.

The conversation explored the disconnect between climate adaptation and other sectors (such as energy retrofits) and the lack of cross-sector collaboration. Speakers underlined the need for adaptation to help individuals, and the prevalence of missed opportunities for interventions requiring engagement from many diverse sectors, e.g. health.

One question posed was why it remains so difficult to articulate adaptation visions. In response, Prof. Tompkins referred to the book by Mike Hulme (2009) *Why We Disagree About Climate Change*⁸, emphasising that each individual's personal values and priorities shape how adaptation is understood and pursued. Dr Neufeldt agreed, noting that goals are political decisions, with nations responsible for defining their own priorities and the acceptable levels of risk.

Conclusion

The focus on climate change adaptation has become increasingly urgent over the past 25 years, and is today seen as a global priority, yet action is still lacking. Despite increased planning and policy frameworks, implementation and financing remain insufficient and uneven. Better data, especially at local and household levels, is essential to understand who is adapting and how effectively. Transformational adaptation demands confronting social inequities and embedding justice within all resilience efforts. Ultimately, progress depends on integrating adaptation across sectors, aligning values, and ensuring that action translates into tangible outcomes for vulnerable communities.

⁶ [Climate change - Scottish National Adaptation Plan 2024-2029: monitoring and evaluation framework - gov.scot](#)

⁷ Otto, F. (2025) *Climate injustice: Why we need to fight global inequality to combat climate change*. Translated by Pybus, S. Vancouver, Berkeley: David Suzuki Institute: Greystone Books Ltd.

⁸ [Why We Disagree About Climate Change](#)