PART I

Introduction

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Living on the Edge of 1.5

Scientists have long warned of the risks of global heating, with the science getting more refined, more precise and more urgent each year. Even without the science, events and patterns on the ground bear witness to increasingly desperate manifestations of a rapidly changing climate. Yet year after year, these warnings have gone largely ignored – diluted by political compromise, buried by business interests or presumed economic necessities, or deferred with blind faith in future technologies.

Where leaders have made any efforts, they have placed disproportionate faith in market-based solutions and technological fixes, while underplaying the need for deep structural, social and cultural transformations. Above all, we have collectively downplayed the power of mutuality, care and justice. We have largely chosen not to trust in the public's ability to accept radical but necessary and fair decisions. The result? Global average temperatures continue to climb, now reaching thresholds that threaten to unleash accelerating heating and climate impacts.

Scientists now warn that the world is on the verge of passing the 1.5-degree Celsius (°C) warming limit. Recent observations show that warming is already approaching this threshold, and the remaining carbon budget is now so limited that, if current emission levels persist, it could be exhausted by around 2028 – making it almost certain that the 1.5°C target will be breached in the near future (Forster et al. 2025).

1.5°C is not an abstract number. It represents lived experiences in a hugely unequal world: jet-setters hopping across continents for fun while subsistence farmers lose their annual harvests to floods; well-off consumers enjoying shopping sprees in glitzy air-conditioned malls while slum-dwellers in megacities are exposed to intensifying lethal heatwaves. Behind that number are diverse stories of fear, displacement and attempts to adapt.

The deepening climate crisis is causing knock-on effects, disrupting societies in a multitude of ways. Soon, growing numbers of climate refugees will fuel political and cultural tensions. The inconvenience of heat will turn to pandemics as old glaciers thaw, unleashing long-dormant microbes for which we have not had time to build immunity. Infrastructure – from hospital equipment to transport systems – built for the "normal" temperatures of the past, is already straining in today's extreme heat. And as the mercury rises, so do our tempers.

Our focus in this report is on *lifestyles*[1] – a deceptively simple concept that captures complex patterns of behaviour shaped by infrastructure, policy, social norms and culture. Lifestyles are not just about personal choices and behaviours but are embedded in provisioning systems, economic models and political institutions. They are reflections of what societies prioritise – and whose needs, desires and opinions they prioritise. That is why examining how lifestyles are driving the climate crisis, as we do in this report, is not mainly about blaming individuals for behaving irresponsibly, but more importantly about uncovering the deeper, systemic structures that lock us into high-emission pathways.

It also involves clarifying how human consumption should change: to fall within a ceiling of maximum consumption (defined by safe ecological boundaries) and a floor of minimum consumption (defined by the material standards needed to secure human needs, wellbeing and fairness) – what we call the *fair consumption space*.

1 This report adopts the definition of sustainable lifestyles used by the United Nations (UN) Environment Programme: "a cluster of habits and patterns of behaviour embedded in a society and facilitated by institutions, norms and infrastructures that frame individual choice, in order to minimize the use of natural resources and generation of wastes, while supporting fairness and prosperity for all" (Akenji and Chen 2016).

This space is hair-raisingly small and shrinking. If everyone were to enjoy even a basic dignified standard of living – defined by access to clean energy, housing, healthy food, education and health care – the associated emissions would push us near or beyond the 1.5°C limit. This assumes that these needs are met with technologies that are commonly used currently, and that high-end consumers do not make rapid and drastic cuts in carbon-intensive consumption. Over- and underconsumption are interlinked and must be tackled simultaneously, in ways that reflect these linkages.

The most recent decarbonisation pathways indicate that emissions from the average lifestyle must fall from the current 7.1[2] tonnes of CO_2 equivalent (tCO_2e) per capita down to around 1.1–1.4 tCO_2e per capita by 2035, and as low as 0.3–0.7 tCO_2e by 2050, with these ranges reflecting the pathways to remain within warming of 1.5°C and 1.7°C. For many high-income countries, this implies emission cuts of over 80%. Reductions of this magnitude, and within such a limited time frame, cannot be achieved only through changes in individual behaviour or the deployment of cleaner technologies. They require a fundamental transformation in society.

1.1. In this report

This report is a major update to the 2021 edition *1.5-Degree Lifestyles: Towards A Fair Consumption Space for All* and builds on a series of related publications (Box 1.1). It is updated to reflect the most recent scientific assessments of the remaining carbon budget to stay within the 1.5°C limit, and related decarbonisation pathways.

Part II of the report presents quantitative analyses of lifestyle-related greenhouse gas emissions for 25 countries, representing some of the highest-consuming countries as well as middle-income countries and countries where many people struggle to meet even basic needs. This is a much larger and more diverse set of countries than was analysed for the previous editions of the 1.5-Degree Lifestyles report, providing a stronger basis for conclusions.

For each country, section 3 identifies emission hotspots of consumption and estimates the *lifestyle carbon footprints* of the population in comparison to target levels for keeping within warming limits. Reduction pathways for nine selected case countries are explored through a range of options that, if prioritised for climate and social impact, would contribute to bringing lifestyles within a fair consumption space for all.

For this 2025 edition of the 1.5-Degree Lifestyles report, we have taken the difficult – and profoundly sobering – step of analysing not just the pathways to remain within 1.5°C, but extending this to 1.7°C. This is not a concession; it is an act of honesty. The remaining carbon budget consistent with a two-thirds chance of limiting warming to 1.5°C has shrunk considerably to just around two years of emissions at current rates (Forster et al. 2025). Scenarios that reach 1.7°C are associated not only with increasing expected impacts but also with higher uncertainties and hard-to-assess risks, especially regarding feedback loops – potential self-reinforcing negative impacts that could be triggered at temperature increases exceeding 1.5°C. Getting close to 1.5°C is already triggering dangerous reactions from the Earth system, and we are still far from understanding the full consequences of going up to 1.7°C.

Acknowledging and analysing 1.7°C pathways carries its own dangers. It risks contributing to a shifting of the goal posts – endorsing, even if unintentionally, the delay tactics and inaction of governments, businesses and high-consuming elites. But ignoring this reality would be worse. Analysing the 1.7°C scenarios also means recognising that we will face greater dangers than what we are already experiencing – and, again, that the worst impacts will fall hardest on the world's poorest populations, who have contributed little to this problem in the first place.

Part III of this report presents critical perspectives from the front line of systems thinking around societal transformation. Through six reflection pieces, experts engage with the scientific understanding that we are on the cusp of crossing a critical threshold – one that is both biophysical and social – and explore the broader implications of *sufficiency* as an approach to ensuring wellbeing for all. The pieces challenge longstanding assumptions around private property, the "carbon cost" of poverty eradication, and traditional narratives of sustainable lifestyles being about sacrifice. They present strategies for organising and movement-building and make concrete suggestions around changes needed to mainstream 1.5°C lifestyles (Box 1.2).

The report concludes with **Part IV: Recommendations**, which considers the results of the analysis and asks the question: Where do we go from here? As we look at crossing ecological thresholds, we now have no choice but to also cross social ones; we cannot keep "solving" climate change the same way we have done so far, up to this failure. Section 11 of the report recommends six ways forward, from actions by individuals all the way up to international governance levels. They are starting points that, although rather demanding, constitute only the minimum that is needed if we are to address the magnitude and urgency of ecological overshoot.

2 Unweighted average across the 25 countries assessed in the report.

Box 1.1. Heating up: some reports in the 1.5-Degree Lifestyles series

The first report *1.5-Degree Lifestyles: Targets and Options for Reducing Lifestyle Carbon Footprints* (IGES et al. 2019) was published in 2019. Consumption data for five countries combined with global emission reduction pathways from the database of the Intergovernmental Panel on Climate Change (IPCC) showed that keeping global heating below 1.5°C was challenging but still achievable. The report highlighted the stark inequality in emissions and presented a scenario for an equitable decarbonisation where countries' average per capita emissions from lifestyles would converge by 2030.

The 2021 report *1.5-Degree Lifestyles: Towards A Fair Consumption Space for All* (Akenji et al. 2021) – analysing consumption data for a diverse set of 10 countries – indicated that pathways aligned with the 1.5°C limit still existed for most countries, although for those with very high per capita lifestyle carbon footprints, no such scenarios could be identified. The study emphasised the need to accelerate emission reductions from production systems while also transforming lifestyles towards lower levels of consumption, particularly in high-income countries and among the wealthy, worldwide. The report introduced the concept of the fair consumption space, stressing the importance of eliminating excessive consumption while ensuring that basic needs are met universally.

The 2022 report *Unfit, Unfair, Unfashionable: Resizing Fashion for a Fair Consumption Space* (Cosciemeet al. 2022) applied the fair consumption space concept to the global fashion sector and explored what level of consumption might be compatible with the 1.5°C limit. The data highlighted the need for industry to drastically reduce production volumes and, from the demand side, suggested a consumption of no more than five newly produced clothing items per person per year.

Applying this further to sectors, and now to a specific country, the 2023 report *Food Production and Consumption in a 1.5°C World: Options for Germany* (Latva-Hakuni et al. 2023) analysed the climate impact of food consumption in Germany. It confirmed the need for major changes at all stages of the value chain, including a shift to plant-based diets. It also highlighted the double dividend of reduced meat consumption – how this can reduce emissions from livestock rearing and feed production, but also free up land that can become a carbon sink through rewilding or reforestation.

The 2024 report *Towards a Fair Consumption Space for All: Options for Reducing Lifestyle Emissions in Norway* (Bengtsson et al. 2024) presented pathways to 1.5-degree lifestyles in Norway, one of the wealthiest countries in the world. The study looked not only at the carbon footprint of an average person's lifestyle but also explored the role of within-country inequality. It found that a higher-consumption lifestyle that many Norwegians aspire to, without being regarded as luxurious, has almost twice the climate impact of an average lifestyle in the country.

This 2025 edition of the 1.5-Degree Lifestyles report, *A Climate for Sufficiency: 1.5-Degree Lifestyles – 2025 Update* is an extensive update of the 2021 global edition, reflecting the most recent climate science, and is based on consumption data for 25 countries across all world regions. It shows that sufficiency is imperative as we look set to transgress the 1.5°C environmental ceiling while failing to ensure decent living standards for all, as the consequences of inequality and climate warming collide. It is through a sufficiency approach that lifestyles can be realigned to support both human flourishing and planetary health, including climate stability.

Box 1.2. Expert perspectives in this report

Part III of this report presents critical perspectives from the front line of systems thinking to explore implications of sufficiency as an approach to ensuring wellbeing for all.

Triggering social tipping dynamics. This perspective explores how social change can be triggered by learning from the systems dynamics concept of ecological tipping points. Social tipping can be achieved by identifying key components, or tipping elements, of society that – when pushed – pass a critical threshold at which even small changes can quickly lead to big, self-reinforcing shifts, triggering fast and wide-reaching transformations in behaviours, norms, technologies and infrastructure.

Carbon cost of eliminating poverty. This perspective challenges the conflated argument that raising living standards for billions of people is in conflict with reducing climate-warming emissions. The misconception lies in the perverse and disproved assumption that the rich have to increase their own emissions through economic growth to create opportunities that would eliminate poverty. Such arguments usually fail to consider the need to reduce emissions of the rich in order to open up opportunities for the poor within the fair consumption space. The present report brings an optimistic lens to argue that it is still possible to achieve wellbeing for everyone within the remaining carbon budget for 1.5°C, but high inequality substantially complicates this task and must be addressed.

Accessing wellbeing co-benefits. Climate change mitigation, particularly when it involves changes in consumption or lifestyles, is typically presented as a sacrifice and threat to material comforts of modern life. A wellbeing approach, however, distinguishes between wellbeing outcomes that are valuable to us in their own right, and determinants of wellbeing – which are important but are not ends (for individuals) in themselves. Although changes in transport systems and working hours can enhance wellbeing, misinformation and the existing inertia of unsustainable modes often limit these gains.

Engaging citizen assemblies. There is surging interest in "deliberative mini-publics" – which include citizens' assemblies, citizen juries and citizen panels – that bring together small but representative samples of citizens to discuss complex issues and propose new solutions. When well-designed and well-timed, citizens' assemblies provide a counter-narrative to political polarisation and climate backlash. As well as exploring recent examples of citizen assemblies and lessons learned, this report makes recommendations on what is needed to fully realise the promise of deliberative mini-publics as catalysts for a more sustainable world.

Rethinking private property. If we are serious about confronting climate breakdown, we must confront the property regimes that lock us into destruction. Private property is often celebrated as the cornerstone of prosperity – praised for fuelling innovation, protecting individual freedom and anchoring civilization itself. But in reality, the modern institution of private property frequently works in reverse: producing instability, deepening inequality, and concentrating control over land, labour and life in the hands of a few. What is framed as a vehicle for liberty and abundance often functions as a mechanism of exclusion, hoarding and environmental degradation. Rethinking private property is a necessary condition for any just and liveable future.

Escaping climate tunnel vision. The ongoing crisis is more profound and multi-faceted than seen through the "carbon tunnel vision" of mainstream sustainability policy. A deeper reason for our ecological and social failures may be that modern societies have tended to value scientific knowledge and technology over other ways in which people understand and relate to nature. Indigenous and local knowledge systems, built over generations of living in close connection with ecosystems, contain valuable wisdom about how to live sustainably. More than technical optimisation, what is needed is a cultural renaissance and a chance for societal renewal. In an age of global unrest and fragmentation – from regional conflicts to geopolitical rivalries – reconnecting with nature can also mean reconnecting with each other.

1.2. Sufficiency and the fair consumption space

The previous report in this series introduced the concept of the *fair consumption space*. This edition expands on that idea, demonstrating how *sufficiency living* – lifestyles without excess consumption – can support human flourishing while achieving climate stability. The analyses show that a sufficiency approach is essential, especially as we appear on course to transgress the 1.5°C environmental ceiling while a large share of humanity remains below the floor of essential consumption. The dual crises of inequality and climate breakdown are increasingly colliding.

Economistic thinking has falsely equated material accumulation with success – or even with wellbeing itself. This narrow way of thinking has seeped into individual and household choices, as well as into how governments plan, invest and govern. Citizens have been reduced to consumers, and the natural world is treated as capital to be extracted, all in service of endless growth and profits. Since we only measure production growth and do not account for negative effects on the climate and ecosystems, the overall consequences of a growing economy are shrouded in darkness. The worsening ecological crisis, rising social unrest and green backlash episodes, and deepening mistrust in public institutions are not separate problems – they are symptoms of this same flawed logic.

Bounded by this way of thinking, dominant approaches to addressing climate change have failed to recognise that the system of endless accumulation itself is the problem. Instead, the focus has been on optimisation – making the system more efficient and productive, using fewer resources to achieve the same end goal. This ignores that even with the strictest and most efficient standards for production, the current economic system will still end up breaching planetary boundaries. Enhancing efficiency might delay ecological collapse, but it cannot prevent it. By giving the impression that effective action is taken, a narrow focus on efficiency could even be counterproductive, locking us even further into a system that is destined for breakdown.

The starting point for *sufficiency* is fundamentally different. It begins by asking: how much is enough to ensure wellbeing within the regenerative limits of the Earth? Efficiency involves achieving short-term, marginal technological improvements – doing more with less – hoping that these marginal efforts will add up to humanity living within ecological limits. This overlooks that through rebound effects[3], efficiency often ends up enabling increased consumption rather than reducing environmental pressures. Sufficiency, on the other hand, is about reducing absolute consumption in the long term. It is grounded in the biophysical processes of the planet and aims to align human activity with what the Earth can actually sustain (Princen 2003).

Sufficiency is a transformative approach to living well within planetary boundaries – not by striving for "more", but by redefining how much is "enough". It shifts our focus away from accumulating goods and towards cultivating wellbeing and meaningful lives – moving from consumerism to care, from economic growth to shared prosperity. Achieving sufficiency involves reorganising systems and values so that quality of life can be maintained or improved even as material throughput decreases.

3 Efficiency gains can unintentionally increase emissions elsewhere. Direct rebounds (e.g., driving more due to fuel-efficient cars) can offset up to 30% of expected savings, while indirect or economy-wide rebounds can exceed 50% (Schmidt-Bleek 1993; Sorrel 2012). Rebounds can also occur with modal shifts and sufficiency actions (Buhl 2014; Ottelin et al. 2017). Sharing economy models may also risk increasing emissions if they generate additional demand (Clausen et al. 2017).