A response to the World Inequality Lab: Degrowth for global justice?

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Abstract: The World Inequality Lab's "Global Justice Project" presents the results of an ambitious modelling exercise exploring global transition scenarios for social justice and environmental sustainability. This response offers a constructive critique from the perspective of ecological economics and post-growth theories, advancing three arguments. First, it shows that the report's working definitions of sufficiency and degrowth depart from established scholarly usage, and proposes a sharper conceptual mapping that distinguishes sufficiency from eco-efficiency and planned degrowth from mere recession. Second, it argues that the headline finding – that "targeted sufficiency can be more effective than uniform degrowth" – rests on an asymmetric comparison; once sectoral change is held constant across pathways, every degrowth scenario outperforms Sustainable Convergence (SC) on cumulative emissions. Third, it raises several doubts about the biophysical viability of SC: its reliance on a single climate constraint, the weak empirical basis for economy-wide dematerialisation, and the conditionality of its 1.8°C outcome on a best-case energy transition. The conclusion is not that the report errs, but that its own logic points further toward degrowth than its authors allow.

Introduction

On June 4th, the World Inequality Lab launched the Global Justice Project. The outcome is a 136-page report ("A Plan for Equality & Prosperity Within Planetary Boundaries") coordinated by a team of seven researchers (Lucas Chancel, Jonas Dietrich, Cornelia Mohren, Rowaida Moshrif, Moritz Odersky, Thomas Piketty, and Anmol Somanchi). The document presents the results of a modelling exercise exploring global transition scenarios for social justice and environmental sustainability.[1] The launch benefited from wide coverage in the media and I've heard it'll lead to the publication of a book in the Fall.[2] The attention is well-deserved for this is an outstanding piece of scholarship. As its lead author Lucas Chancel explains: "24 months of work, 45 researchers from all over the world, combining insights from economics, history and climate science." The outcome is colossal and the level of ambition revolutionary.

And this is why I'm writing a response. I want to offer a constructive critique based on my particular expertise (ecological economics and growth-critical theories), pointing to a few areas for improvement. My hope is that these humble remarks will help this report to be as powerful as it can be at a moment where we urgently need more ideas like these. My contribution is quite niche and narrow. There are three points I want to make. First, I want to challenge their definitions of sufficiency and degrowth, showing that their usage of the terms could be better articulated. Second, I want to show that their "uniform degrowth" scenario is not exactly what it claims to be. And finally, I want to raise several doubts concerning the biophysical viability of the Sustainable Convergence scenario.

Green growth, degrowth, or sufficiency?

"The Global Justice Report," the authors write (p. 27), "provides a transparent framework for engaging in debates around 'green growth', 'degrowth', and 'sufficiency' […] it allows these debates to be grounded in concrete quantitative scenario analysis." That's a welcome effort, especially concerning degrowth and sufficiency, since most of this literature remains conceptual. Yet, turning these complex ideas into computable numbers is a perilous exercise. What I hope to show is that the authors have taken certain liberties with these terms which are at odds with established scholarly usage, including in peer-reviewed publications. To strengthen the theoretical rigour of the report, I will propose a more adequate conceptual mapping of these different concepts.

Sufficiency and eco-efficiency

The term "sufficiency" has been used in a variety of ways.[3] Following an older tradition (e.g., the German *Suffizienz* introduced by Wolfgang Sachs in the 1990s), the work by Princen (2005) popularised the "logic of sufficiency" as an organising principle aiming at enoughness, the sweet spot between not enough (minimum) and too much (maximum). Today, one finds this min-max approach in concepts like Ingrid Robeyns's "limitarianism," Doris Fuchs and colleagues' contribution of "consumption corridors" now supplemented by Bärnthaler and Gough's "production corridors," or most famously in Kate Raworth's "doughnut economics."

In theories of justice, the minimum dimension of sufficiency is termed "sufficientarianism" (e.g., Shields, 2020). In a famous text from 1987, the American philosopher Harry Frankfurt summarised this position as follows: "what is important from the point of morality is not that everyone should have the same but that each should have enough." Today, this perspective is explored in the literature pioneered by Narasimha Rao and Jihoon Min on "decent living standards," where researchers measure the ecological footprint of a basket of goods and services considered essential for the satisfaction of human needs (e.g., Millward-Hopkins et al., 2020; Kikstra et al., 2021; Vélez-Henao and Pauliuk, 2023; Vélez-Henao et al., 2026; Kromand et al., 2025). This enables scholars to estimate how many people do not have enough (poverty defined as a state of *insufficiency*). For instance, Fanning and Raworth (2025) uses 22 indicators across 12 dimensions to show that the median level of social shortfall in the world has gone from 47% in 2000 to 35% in 2022. The decent living standards concept of Rao and Min (2018) and the literature that builds on it rests on theories of needs such as Max-Neef (1991) and Doyal & Gough (1991), which hold that fundamental human needs are universal, finite and satiable, even if the "satisfiers" that meet them can vary across time and cultures. Ecological economists study the biophysical prerequisites in order to live well, paying specific attention to economic systems that manage to deliver high wellbeing with low ecological footprints (for a good description of this approach, see Brand-Correa and Steinberger, 2017).

While decent living standards look at sufficiency as a minimum (having enough), other streams of research treat sufficiency as a maximum (not having too much). Often, this starts from estimates of ecological overshoot using the planetary boundaries framework (a good example of this approach is Lalieu et al., 2024 for Belgium). If a country's macro-ecological footprint is unsustainable, sufficiency becomes an imperative of reduction (sometimes termed "ecological sufficiency" or "eco-sufficiency"). When interpreted as such, "sufficiency" is often considered a rival to "efficiency" (or more specifically, to "eco-efficiency").[4] If any environmental impact can be written as a level of activity times the impact per unit of activity, *efficiency* acts on the second term, lowering the impact intensity of each unit while *sufficiency* works on the first, lowering the quantity of activity itself.

One could say that sufficiency aims at less while efficiency aims for leaner. For example, Krpan et al. (2025, supplementary materials, p. 4) define sufficiency as "reducing non-essential forms of

production and sharing resources more equitably," which the authors contrast to efficiency ("wasting less materials and energy in the process of production through technological innovation"). In the German Avoid-Shift-Improve (ASI) framework, originally used for studying transport systems, efficiency is concerned with *improve* (e.g., more fuel-efficient engines) and sufficiency with *avoid* (e.g., smaller distances travelled), while a third category of "consistency" is assigned to the *shift* stage (e.g., modal shift from car to bike).

Although most definitions of sufficiency emphasise demand and consumption, the concept can also be applied to supply and production. A government deciding to close down a national flight route (supply) or the generalisation of a 'flight shame' culture among travellers (demand) both lead to a reduction in flights. Both these sufficiency strategies can be contrasted to an eco-efficiency approach, which would consist, for example, in developing less-polluting fuels. Historically, the sufficiency literature emerged as a critique of strategies relying solely on efficiency. Indeed, efficiency gains tend to be partly or wholly cancelled by growth in production/consumption (the so-called "rebound effect"), which means that improving the ecological productivity of an economy is no guarantee of reducing its actual footprint – hence the need for sufficiency.

A popular definition is the one in the IPCC AR6, which was originally proposed by Yamina Saheb, the lead of the World Sufficiency Lab. Sufficiency is "a set of policy measures and daily practices which avoid the demand for energy, materials, land, water, and other natural resources, while delivering wellbeing for all within planetary boundaries."[5] The first part of the sentence emphasises sufficiency as reduction while the second part stresses the ideas of minimum floors and maximum ceilings. The phrase "wellbeing for all within planetary boundaries" is particularly powerful since it implies that, in an ecologically constrained world, the too-much of a minority of affluent people quickly becomes the not-enough of everyone else down the line (for more on environmental justice, see Parrique, 2025). It is the finitude of ecological budgets that connects the floors and the ceilings, making them two ends of a single fair-share constraint, leading to the idea of a "safe and just space for humanity" (the title of the 2012 working paper where Kate Raworth first presented the doughnut).

The concept of sufficiency has both individual and structural implications. At the personal level, it echoes notions of minimalism, downshifting, voluntary simplicity, the simpler life, and other philosophies of less-is-more with a panoply of lifestyle implications ranging from slower mobility, car-sharing, plant-based diets, reduced work hours, and shared living space (that's the "daily practices" in Saheb's definition) – for a typology of consumption changes, see Sandberg (2021). It might be worth clarifying that sufficiency is not asceticism or austerity because it is bounded by decent living standards; its aim is enough for a flourishing life, not the minimisation of production and consumption for its own sake.

But sufficiency also implies structural changes (the "policy measures" in the definition). This is what Schneidewind and Zahrnt (2014) call a "politics of sufficiency," referring to a mix of policies that remove the barriers to the daily practices of sufficiency (the subtitle of the book is: "making it easier to live the good life"). The most systematic inventory to date is the European Sufficiency Policy Database, which compiles and categorises close to 300 measures, from speed limits, frequent-flyer levies, and bans on short-haul flights, to progressive taxation of per-capita living space and incentives for cooperative housing, to restrictions on advertising for carbon-intensive products and plant-based menus in schools. A key lesson of this line of research is that the agenda of sufficiency goes beyond changing 'consumer behaviour' and includes a comprehensive mix of institutional changes that aims to make it possible and desirable to live with less.

The sufficiency-as-maximum approach can also be applied to money. In *Limitarianism: The Case Against Extreme Wealth* (2025), the philosopher Ingrid Robeyns argues for a cap on wealth accumulation. This is the concept of an "extreme wealth line" (EWL) explored in the New Economies for Eradicating Poverty project launched by the United Nations (the policy profile is actually written by

Ingrid Robeyns herself). The EWL provides a "context-sensitive reference point for identifying levels of individual net wealth associated with elevated risks to democratic governance, ecological sustainability, economic resilience, fiscal capacity, human rights protections, and the integrity of social and institutional trust. It is similar in concept to the extreme poverty line, but instead of defining the minimum resources needed to live with dignity, it defines 'how much is too much'."

The most sophisticated uses of the term "sufficiency" blend (a) minimum & maximum thresholds, include (b) monetary & non-monetary resources, span both (c) supply & demand, and consider both (d) individual & structural changes. Schramme (2024, p. 2), for example, speaks of "sustainable sufficientarianism," which aims at achieving "a level of provision that enables everyone, including future people, to live the best possible life that is reasonably feasible, given the task of maintaining livable conditions for all." For Slameršak et al. (2026), sufficiency is "a corridor between production and consumption floors […] where human needs are satisfied universally, and production and consumption ceilings where economic activity remains within safe ecological limits." More generally, Gough (2023) proposes the term "sufficiency economy," defining sufficiency as "the space between a generalizable notion of human *wellbeing* and ungeneralisable *excess*" (italics in original).

Degrowth and green growth

If sufficiency is the principle of "enough," which justifies specific policies and practices, I would say that degrowth is its macroeconomic counterpart: the deliberate, equitable downscaling of an economy as a whole. And just as sufficiency is usually posed against efficiency, degrowth is posed against *green growth*, the wager that GDP can keep growing while footprints decrease due to the eco-efficiency gains brought by technological progress.

The concept of degrowth (*décroissance*) emerged in France in the early 2000s (for a detailed history, see Chapter 5: Origins and definitions). In the way the term is being used today, it has three interdependent dimensions: a critique, a strategy, and a utopia. Originally, it was born as a *critical theory* continuing an older tradition of "objections to growth" dating back at least to the 1970s. Additionally, it is also used as a specific *transition strategy*. In my own work – in *Slow down or die* (2025) and more formally in "Defining degrowth" (2025) –, I have defined the term as a "downscaling of production and consumption to reduce ecological footprints planned democratically in a way that is equitable while securing wellbeing."[6] Finally, the third dimension focuses on a *utopian vision* (one could also say a *society project*). A good example is Kallis and D'Alisa (2025, p. 16) who define degrowth as "a compass of classless, egalitarian societies of frugal abundance – of personal sobriety, socialized sufficiency (and organising principle of production as it is in the commons), and collective luxury." Degrowth is all these three things together: (1) a critique of economic growth justifying (2) a transitional slowdown of rich economies making way for (3) a radically different economic system (often described with terms like "post-growth" and "post-capitalism").

Usually, the modelling literature studies degrowth as a transition. There are two main ways of modelling it. GDP can be treated as an *exogenous* target imposed on the model, or it can be an *endogenous* outcome that emerges from a bundle of modelled policies. A good example of the first approach is Kikstra et al. (2024) who use an IAM to model 51 scenarios where Australian consumption levels are capped between $10k and $70k. Likewise, Moyer (2023) uses another IAM to simulate several scenarios that contract global GDP by -30% to -92% (see Table 2, p. 10). This target-based, 'max-GDP' approach is the one chosen by the team of the Global Justice Project (I shall return to this at greater length in the next section).

Sometimes, these negative growth scenarios are used in an attempt to discredit degrowth. For instance, in a 2017 blogpost, the economist Branko Milanovic argues that degrowth would reduce the income of 90% of the population of rich countries, concluding that "degrowth is *not* the way to go"

(italics in original; for a response, see Parrique, 2019, p. 376-378 and Hickel, 2020, 2021). More recently, Warlenius (2023) uses a simple IPAT equation to demonstrate that, to reach the 2°C target, the economies of the global North would need to contract by over 90%, leading to the conclusion that since it is "very unlikely to happen" and "politically unfeasible," then one should rather try to pursue green growth (for a response, see Jackson et al., 2024).

These exogenous negative GDP growth scenarios can be misleading if they equate degrowth with a simple recession. The difference between the two phenomena has been explained many times (Parrique, 2019, pp. 322-330). Hickel (2020, p. 1108), for example, lists six differences: degrowth is planned, selective, and environmentally motivated while designed to avoid austerity, undesirable unemployment, and inequality. Put differently, a recession is an unplanned contraction experienced in an economic system built to require growth (that's why recessions are considered undesirable). Degrowth, on the other hand, involves redesigning growth-dependent institutions in order to both degrow without disaster (in the short-term) and to prosper without growth (in the long-term) – for research on growth imperatives and dependencies, see Keyßer et al., 2025, and Corlet Walker et al., 2024). That's why I prefer to reserve the term "degrowth" when speaking about these specific cases of planned macroeconomic slowdown, while using more generic terms to describe general contractions (e.g., recession, negative GDP growth, slump, decline).

And yet, there is a more interesting way to model degrowth. Instead of treating GDP as a lever (which it is not in reality), one could study specific policies to see what happens to GDP, among other, more interesting variables. Zwetsloot et al. (2026), for instance, simulate seven degrowth policies in Sweden between 2026 and 2050.[7] Capital decommissioning removes a fixed fraction of accumulated capital per year (4% for livestock and industry, 3% for other agriculture, and 0% for services), corporate taxes slow down investments into new capital formation (50% for livestock and industry and 35% for other sectors), fossil fuel phase-out decommissions part of the energy infrastructure, and work time reduction (-55% over the period) pushes production down. But these contractive policies are complemented by other social measures: a global redistribution scheme, progressive taxation, and a universal basic income (p. 4). These are measures to ensure that the downscaling of production and consumption induced by other policies happens "in a way that is equitable while securing wellbeing," as noted in the previously mentioned definition of degrowth. In the study, the cumulated result of the seven policies is a contraction of the Swedish GDP of approximately 35% over the period (-1.7%/yr), which happens in parallel to a reduction of poverty, inequality, and unemployment. That's degrowth *by design* as opposed to recession *by disaster* (the expression is from Victor, 2019).

Another good example is the PhD work of Briens (2015) who built a highly detailed multisector model of the French economy to explore several transition scenarios from 2010 to 2060, with a focus on low-demand scenarios. Of the three scenarios investigated at the time, with a base year in 2012, the most radical assumed a reduction in animal products by 70-95%, a ten-fold reduction of military expenditures, an increase in cohabitation, a downshift to one car for 20-30 people, a five-fold reduction in long-distance travel, etc. (details pp. 312-324). These are the contractive assumptions. To this, Briens adds several social policy reforms (e.g., a maximum income at four times the minimum wage, a guaranteed minimum wage of 700-800€ in place of various existing schemes, and a work time reduction policy). In terms of GDP, the French economy contracts by 50% over the 2010-2060 period (≈ -1.3%/yr). This happens in parallel to a 35% decrease in worked hours, a reduction in unemployment (< 2.5% after 2030), and a stabilisation of the public debt below 60% of GDP. Despite very conservative technology assumptions, this degrowth scenario shrinks energy footprint by 75%, carbon footprint by 79%, reduces the volume of waste by half, while also reducing water use and air pollution. Again, this is a macroeconomic diet that is environmentally effective and socially desirable.

A third and, in some ways, more ambitious example is Mihci and Attar (2026), who use an environmentally extended multi-regional input-output model (built on the GLORIA dataset) to simulate

degrowth scenarios across six countries (US, UK, Germany, Turkey, South Africa, and China) between 2022 and 2032. Rather than imposing a GDP trajectory, they model four concrete policies and let output evolve as a consequence. On the contractive side, inessential high-emission sectors are downscaled, with managed divestment cutting capital formation in those same sectors faster than production itself. On the social side, there is a 25% reduction in working hours with no loss of pay, a guaranteed income and a maximum income, and a universal basic income. Their headline scenario cuts GHG emissions by 56% for a GDP contraction of 27% over a decade (≈ −3.1 %/yr). This happens while levels of inequality both within and between countries go down, and with almost no change in employment. What makes this paper genuinely distinctive, though, is its final move. To choose among its six hypothetical scenarios, they rank them using multi-criteria decision analysis under a range of political preference structures, showing that a specific scenario wins across the plurality of perspectives, even though it shrinks consumption and GDP substantially.

For more examples of postgrowth modelling studies, see the inventories by Pérez-Sánchez and Slameršak (2026) and Lauer et al. (2025). In an article titled "Principles for a post-growth scenario of ambitious mitigation and high human well-being," Slameršak et al. (2026) propose five core principles: well-being, sufficiency, reduced inequalities, realigned economy [i.e., improvement of essential production, downscaling of less-necessary activities, and advancement in labour rights], and north-south convergence (see Table 1). In summary, what makes a degrowth scenario is not only its final impact on GDP but rather the ambition to transform the structure of an economic system towards a smaller but more socio-ecologically efficient metabolism. One can therefore differentiate *degrowth-oriented policies* (degrowth treated as a means, which conceptually is close to the idea of a *sufficiency policy*) and degrowth as an end, a situation with smaller output, lower footprints, and better wellbeing (that's close in meaning to Gough's "sufficiency economy" and ideas like steady-state economy, eco-socialism and the wellbeing economy).

Green growth, by contrast, is a hypothesis positing that GDP can keep rising during the transition while environmental pressure falls (hence the notion of "decoupling"). The fair version of the green-growth case grants that several high-income nations have already decoupled emissions from GDP. The rebuttal is that this has not occurred for most environmental pressures (e.g., Sanyé-Mengual et al., 2019), that most cases of decoupling are relative and not absolute, that many of these cases vanish under consumption-based accounting, that a large part of these cuts actually happen during recessions (e.g., Infante-Amate et al., 2025), and that the observed cuts fall far short of the pace required to achieve science-based targets (e.g., Vogel and Hickel, 2023), especially when taking into consideration environmental justice (e.g., Tilsted and Bjørn, 2023). The empirical case against this is by now substantial (Haberl et al., 2020; Parrique et al., 2019; Hickel & Kallis, 2020; Vadén et al., 2020), and it's this empirical shortfall, not an a priori hostility to eco-efficiency, that motivates the degrowth claim that rich countries must reduce the scale of economic activity (sufficiency), not merely its impact intensity (efficiency).

In the report, the Sustainable Convergence scenario (henceforth SC) is contrasted with two "growth-focused" scenarios – Productivist Convergence (PC) and Persistent Inequality (PI). The team behind the report refer to them as "'green growth' pathways," which they say they are skeptical about. "A pathway that maintains material consumption growth at current rates while decarbonising production processes will only further transgress [planetary] boundaries" (p. 47). Compared to the PC scenario where all countries converge at 120k€ without any work time reduction, the increase in GDP in SC is indeed modest. As the authors remark: "note that by 2100, the size of the world economy […] is about twice as small in the SC scenario as in the two alternative scenario [PC and PI]" (p. 45). Indeed, SC pushes world GDP from 139 trillion euros in 2025 to 565 trillion in 2100 (+1.9 % yearly over the period) while the two other scenarios lead to a world GDP of €1,023 trillion (+2.7%) and €1,130 trillion

(+2.8%). "[T]he SC scenario," the authors write, "represents a significant attempt to apply the principles of material degrowth, at least in relative terms (i.e. relative to alternative high-growth scenarios)."

The term "material degrowth" (p. 45) is clumsy.[8] By that, the authors mean a change in the sectoral structure of the economy where the share of material-intensive sectors (food/agriculture, construction/housing, manufacturing, energy/mining, and transport) decreases while the share of less-material sectors like health and education increases. To avoid misunderstanding, I think it is preferable to avoid the use of the term "degrowth" in that context, which could easily be substituted by simpler terms. Concerning SC, it is a *slow growth* scenario in terms of world GDP, and in comparison with business-as-usual or PI and PC, it can be considered a *bounded growth* scenario for most high-income countries that have not yet reached the 60,000€ per capita target.

Uniform degrowth

Let's now turn to the report's central claim about degrowth. The authors phrase it like this: "we find that targeted sufficiency can be more effective than aggregate degrowth" (p.12). (This sentence is repeated several times throughout the report, sometimes adding "large" before "aggregate degrowth" or "uniform degrowth.") Based on the conceptual elements discussed in the previous section, I'm going to argue that this label is misleading. This is a point worth making since it reveals a second, more striking discovery.

The way Thomas Piketty and his team choose to explore degrowth is to cap world GDP per capita to specific levels. They calculate three alternative pathways to their SC Scenario (60k€)[9], each having a different yearly GDP per capita target for all countries in the world in 2100 (45k€, 30k€, and 15k€). In the SC scenario, the GDP per capita grows by an annualised average of +1.60%/yr to reach 3.5 times today's level in 2100 (aggregate world GDP, which also reflects population growth, rises about fourfold). That's a bit faster than what has been observed in the past. Historically, per capita GDP was multiplied by 18 between 1800 and 2025, rising from €900 to €16,000, which represents a +1.3% average annual real growth rate (Bharti et al., 2025, p. 18).

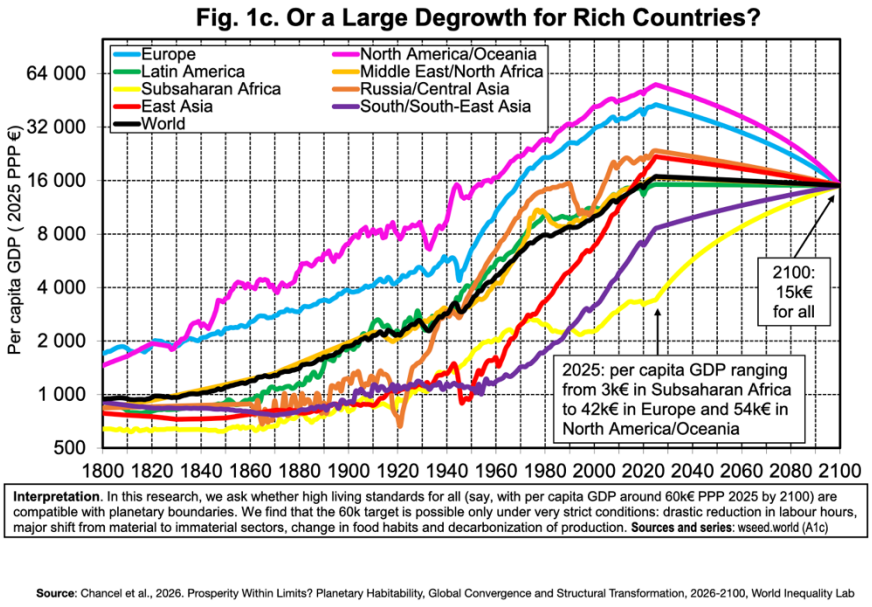
Of the three other targets, two of them are still growth scenarios, even though more modest than SC and far more modest than PC and PI: +1.23%/yr for the 45k€ and +0.72%/yr for the 30k€. The only negative growth scenario is the GDP target of 15k€, which contracts world GDP by a yearly -0.15%, leading to a total reduction of -11% in 2100.[10]

To get a better sense of what this means, let's look at two random countries, one in the global North (France) and another one in the global South (Sudan). Under the SC scenario, the French monthly GDP per capita goes from 3,230€ in 2020 to 5,000€ in 2100, a total increase of +54%, or +0.55% per year. To compare, the PC scenario triples the French GDP (+209%) with an annual compound rate of +1.42%/yr. As for the 45k€ target, it's still a growth scenario but much more modest (+16% in total, or +0.19%/yr). The 30k€ and 15k€ are negative growth scenarios, shrinking GDP by respectively -22% (-0.32%/yr) and -61% (-1.18%/yr). (To put these numbers in perspective, the average yearly growth rate of the French economy over the last decade was around 1%.)

Sudan starts from a much lower GDP per capita (51€ per month). In the SC scenario, it experiences a yearly +5.9% growth that multiplies its GDP by a factor of 98 over the period. All the other scenarios are also growth scenarios: +5.52%/yr to reach the 45k€, +4.99%/yr to reach the 30k€, and +4.08%/yr to reach the 15k€. Note that even the 15k€ target is a convergence scenario: rich countries like France contract while poor countries like Sudan grow toward the common target – an important remark since many detractors of degrowth like to mislead, affirming that degrowth would contract all countries in the same manner. A good example of such mischaracterisation is the American economist Noah Smith, who recently commented on the report, saying that "Piketty's preferred solution to climate change is *degrowth*. He envisions detailed central planning to achieve deliberate

impoverishment of large portions of the world's population — mandated reductions in the consumption of various specific goods, including food" (for a general rebuttal, see Parrique, 2019, pp. 368-383).

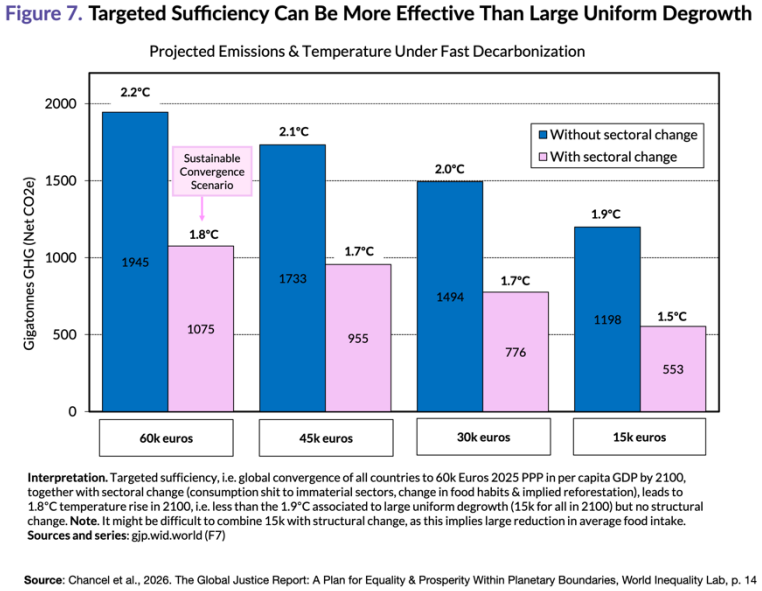
Figure 1: The 15k€ scenario (Chancel et al., 2026b)



Source: Chancel et al., 2026. Prosperity Within Limits? Planetary Habitability, Global Convergence and Structural Transformation, 2026-2100, World Inequality Lab

Let's continue to understand the methodology of the report: each of these scenarios is further divided into two pathways. There is one "without sectoral change" (in blue in Figure 2), and another one "with sectoral change" (in pink in Figure 2), involving the four major transformations associated with the idea of sufficiency (see details in the report pp. 33-43). There is (1) a reduction in working time (from 2,100 hours per employed individual in 2025 to 1,000 hours in 2100); (2) a reduction in the share of material sectors (transport, energy, manufacturing, construction, housing, and food) in gross national expenditure (from 53% to 35%), and a reallocation of labour toward education and health, whose share of global labour hours rises from 11% in 2025 to 43% in 2100; (3) an increase in forest cover (from 4.1 billion hectares to 4.8 billion), which requires a significant reduction in meat production/consumption; and (4) three hypothetical energy transitions (*slow*, *intermediate*, and *fast* decarbonisation), with the most ambitious one phasing out coal, gas, and oil by 2100, with an energy mix solely composed of hydropower-solar-wind electricity (78%) and low-carbon fuels (22%).

Figure 2: The Uniform Degrowth scenario (Chancel et al., 2026a)



We can now better understand the phrase I cited earlier. "Targeted sufficiency can be more effective than large aggregate degrowth" means that the SC scenario (60k€ with sectoral change) cuts more emissions than the 15k€ degrowth scenario without sectoral change. But the term is inaccurate since, as I showed in the previous section, degrowth is never envisioned as a blind contraction of GDP. They make the point that "the sectoral composition of production and consumption patterns matters – and not only the level of GDP" (p. 49), and everyone would agree.[11] But to avoid falling into a common (and often debunked, see, for example, Hickel, 2020) mischaracterisation of degrowth, one should in fact say that *targeted sufficiency can be more effective than a recession*. One could object that the authors model the "without sectoral change" pathways deliberately, in order to isolate the effect of the GDP lever from that of structural change. Fair enough, but this is precisely why labelling the bare-contraction pathway "uniform degrowth" is unfortunate: it invites readers to equate a concept that, by definition, bundles contraction *with* structural changes, with its exact opposite (a uniform recession).

I concede that, phrased like that, the finding loses a bit of its charm. But don't worry because there is another way of interpreting these results. It goes like this: the best-performing scenario to lower global temperature is the 15k€ degrowth scenario with structural change. This is the only one that achieves the 1.5°C target. In fact, all the degrowth scenarios with structural change outperform SC: 553 Gt for the 15k€, 776 Gt for the 30k€, and 955 Gt for the 45k€, compared to 1,075 Gt for SC. The most radical degrowth scenario brings down total emissions to half of SC and one fourth of the business-as-usual projection. This is acknowledged in one of the working papers (p. 5): "we find that this [substantial absolute degrowth for rich countries] could lead to significantly better outcomes on the climate front, with a limitation of temperature rise close to 1.5°C by 2100." One of the main findings of the Global Justice Project is therefore that *degrowth can be more effective than targeted sufficiency*.[12]

This slightly changes the angle of the discussion. "We therefore argue that integrating the cultural transformation that sufficiency brings into public discourse may not only be more politically viable […] but also more effective environmentally" (p. 49). For the sake of precision, the SC scenario is more effective environmentally than two green growth scenarios (PC and PI), a business-as-usual scenario (60k€ without sectoral change), and three negative growth scenarios (15k€, 30k€, 45k€) without sectoral change, but it is *less* effective environmentally than the three degrowth scenarios with

sectoral change. It is completely okay to opt for a less ambitious, more politically palatable scenario, but it should not obscure the fact that, of all options considered, degrowth-inspired strategies are the fastest way for the global North to decarbonise.[13]

I'm not arguing that a 15,000-euro GDP per capita should be considered the grail of the ecological transition. It's a random number, just like €60,000 or €45,000. What's interesting is what the difference between these pathways tells us about the link between GDP and macro-ecological footprints. It fits the theory: the smaller the volumes of production and consumption, the lower the rates of resource extraction and the softer the environmental impacts (for more, see Parrique, 2026). In the midst of stagnating ecological efforts, rich countries should do everything they can to reduce their (massive) environmental footprints, even if it lowers their national income. Placing a 60,000€ target in 2100 for global North countries risks legitimating their current economic size.

The case for degrowth can be made even stronger on the report's own terms. In one of the working papers (Chancel et al., 2026, Section 7), the authors incorporate the valuation of leisure and planetary habitability into a more comprehensive welfare measure they call *augmented* GDP. For working time, they assume that an additional hour of leisure carries the same marginal value as an hour of work; said differently, leisure is valued at the foregone hourly wage. Because the SC reaches 60k€ with 1,000 hours of annual work, against 2,000 hours for PC and PI, the 1,000 freed hours are worth a further 60k€, lifting SC's augmented GDP to 120k€.

To this the authors add the value of avoided warming. SC limits the temperature rise to 1.8°C, some 2.3°C below the PI/PC benchmark of 4.1°C-4.2°C. Scaled linearly from the Dietrich-Nichols (2025) estimate, that differential is equivalent to a 45% gain in subjective well-being, and, at an assumed 10% of output lost per degree, a further 31% gain in output. Compounding these on top of the leisure-augmented figure brings SC to 227k€, twice as large as per capita GDP in PC/PI. "To summarize," the authors write, "the Sustainable Convergence scenario appears to be twice more desirable than the alternative scenarios when we look at comprehensive well-being, while the opposite was true when we focused on traditional per capita GDP."

This invites a question the authors do not pursue: what augmented GDP would a radical degrowth scenario attain under the very same accounting? If the 60k€ scenario requires 1,000 hours of yearly work (i.e., 25 hours per week), and the PC/PI requires twice that, let's say that a 15k€ scenario would only require one fourth of that, so 250 hours per year, a little over five hours a week. Measured against the same 2,000-hour comparative benchmark, the 1,750 freed hours are worth 105k€, so the leisure-augmented GDP is once again 120k€. This is no coincidence. Under the authors' rule, an hour of leisure is valued the same as an hour of work. However, what if we were to value leisure time *more* than work?[14] Then a degrowth scenario with radical, selective cuts in production and consumption would bring more welfare than more work-intense scenarios.

It is the climate effect that breaks in favour of degrowth. As we've seen earlier, 45k€ and 30k€ with sectoral changes limit warming to 1.7°C, and 15k€ with sectoral change limits warming to 1.5°C (against 1.8°C for SC and 4.1-4.2°C for PC/PI). Applying their valuation consistently, the 15k€ scenario enjoys a 2.6°C differential, worth a 53% well-being gain and a 35% output gain. Compounded on its leisure-augmented base of 120k€, this yields an augmented GDP of about 248k€, above SC's 227k€. As for the 45k€ and 30k€ scenarios reaching 1.7°C, they land at roughly 232k€, also above SC. On the framework's own terms, then, the targeted degrowth scenarios are not merely competitive with SC, they achieve better results.

Does sufficiency mean degrowth?

"Sufficiency does not mean degrowth," writes Cornelia Mohren in an interview given for *The Guardian*. "It is about less working hours, a different composition of consumption, and more health and education." Let's dissect this claim carefully with the conceptual ground we've just covered. The authors differentiate sufficiency from degrowth (which they understand as an end, looking at GDP as a target) following the results of their modelling exercise, which finds that it is possible for rich countries to limit global temperature to 1.8°C while maintaining their GDP at current levels.

In the Global Justice Project's report (p. 6), sufficiency is defined as "a structural transformation of the economy involving shorter working hours, a lower material footprint, a shift from material-intensive sectors toward relatively immaterial sectors such as education and health, and major changes in food systems and land use" (that's the four transformations described in the previous section). Cornelia Mohren is right in her affirmation because, in SC, most rich countries implement these sufficiency-oriented policies while growing their economies – hence her statement that "sufficiency does not mean degrowth" – I say "most" because there are only two countries – Norway (70.9k€) and Denmark (60.1k€) with a per capita GDP higher than the 60k target in 2025.[15]

Degrowth scholars might object that what the authors of the Global Justice Project describe as a sufficiency strategy is very close to what others define as degrowth. Consider, for example, the degrowth proposal summarised by Krpan et al. (2025, supplementary materials, pp. 3-4). The second paragraph captures the changes in consumption patterns ("scale down non-essential forms of production and consumption") and the third focuses on "ensuring universal access to high-quality public services (e.g., healthcare, education, public transit, childcare), affordable housing, and living wages." They don't mention work time reduction in that specific description but many others do. In fact, it's one of the most popular degrowth proposals. It's the second most frequently studied policy in the 75 degrowth and postgrowth-related modelling works reviewed by Lauer et al. (2025). It's also the most popular policy objective and the second most popular policy instrument among the 530 degrowth proposals analysed by Fitzpatrick et al. (2022, p. 8 / p. 10).

Conceptually, there is little difference between *degrowth*-oriented and *sufficiency*-oriented policies, and these two terms have more commonalities than differences. The disagreement is elsewhere. Degrowthers posit that the sufficiency policies required to bring a high-income country back within its planetary boundaries are so significant that it would necessarily involve a contraction of GDP. The team invests all its hope in the Sustainable Convergence (SC) scenario, which they describe in their tribune in *The Guardian* as "an economically and ecologically compatible path." And that's where the disagreement lies. Unfortunately, the architecture of the model in its current form won't be able to settle the debate, but let's nonetheless propose a few open-ended questions.

There is a first general point worth making. The Global Justice Project functions with a single environmental constraint, having to do with greenhouse gases and global warming. The authors are perfectly aware of that, and they stress this very point in the conclusion of the report (pp. 128-129).[16] And yet, in terms of actual modelling, they don't walk the talk. It's always good to remember that carbon is only one colour of the Rubik's cube. In addition to climate change, there are eight other planetary boundaries. What is considered ecologically sustainable from the sole perspective of climate change might not be when looked at from a multidimensional planetary boundary perspective. For example, from a climate-only lens, data centres are not particularly problematic if they run on low-carbon energies. And yet, they can be a problem if they require a lot of materials, artificialise land, consume large volumes of water, and degrade surrounding biodiversity. A scenario that decarbonises while quadrupling the size of the world economy may simply shift the pressure from one kind of overshoot to another, one that is perhaps not represented in the model.

The authors state that "all countries [should be] able to sharply reduce the share of material sectors" (p. 39), pointing to Norway and Sweden, where 30-35% of labour hours go to education and health. However, the shift towards a service-based economy in Nordic countries did not coincide with a fall in material use. Take Norway: between 1992 and 2021, Norwegian GDP rose 86% while its material footprint increased by 93%, meaning material productivity actually fell by 4%, the opposite of what dematerialisation predicts. Sweden does better (+95% GDP against +56% material footprint, a 25% gain in material productivity), but even there the footprint kept climbing in absolute terms; tracking its domestic material consumption, it has consistently remained above 20 tonnes per capita, with a +10.8% increase between 2000 and 2023. (For a similar argument concerning the evolution of greenhouse gases in Nordic countries, see Tilsted et al., 2021.)

Rich economies enjoy apparent immateriality precisely because they import the material substrate of their service economies. In a world where every country dematerialises at once, it is hard to see who builds and maintains – let alone expands – the material infrastructure necessary to run a service economy.[17] This is, in fact, the "striking finding" that the authors report in one of the working papers (p. 31): "there was actually no decline in the share of material sectors in final consumption expenditure over the 1970-2025 period. At the global level, [the share rose] from 40% to 42%." Their conclusion is worth keeping in mind: "there is no reason to expect market-driven economic development to lead to a major shift from material to immaterial sectors. Past development patterns rather seem to be characterized by an addition – rather than a substitution – of expenditure patterns." This is the story of "more and more and more" told by the environmental historian Jean-Baptiste Fressoz. I don't think it's only a market problem here; we're rather dealing with an inescapable physical feature that applies to all economic systems.

Then, there is the issue of unpredictable risks. In the report, the temperature outcome is overwhelmingly driven by the assumed change in the energy mix. Under a *fast* decarbonisation pathway, SC keeps warming to 1.8°C. But if decarbonisation is only *intermediate*, reflecting current national pledges and commitments, the warming jumps up to a catastrophic 2.7°C. And under the *slow* decarbonisation assumption, which reflects only currently implemented policies, warming reaches a Mad Max-like 3.3°C by 2100. In other words, the headline 1.8°C result is conditional on a hypothetical, best-case scenario energy transition, which is a risk. In SC, sufficiency already does 44% of the work of emission reduction, against 56% for the energy transition, and the report rightly stresses that these two strategies are complementary. One could go the extra mile and project scenarios that lean even harder on sufficiency, to the point of turning into degrowth scenarios.

Extra efforts matter. SC limits warming to a global temperature rise of 1.8°C in 2100, but this overshoots the 1.5°C threshold defined as the safe boundary for the climate-change dimension of the planetary-boundary framework. 1.5°C was also the most ambitious target in the Paris Agreement whose Article 2 speaks of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." As I showed in the previous section, the only pathway in the report that actually reaches 1.5°C is the most radical degrowth scenario (15k€) with structural change. This is one more reason to explore more ambitious sufficiency/degrowth scenarios in already-rich countries.

This becomes especially important when we discuss climate justice. The more we include historical emissions, the more it shrinks the carbon budget fair-shares of high-income nations, forcing them to cut emissions much more rapidly. For instance, Tilsted and Bjørn (2023) examine the Danish target of reducing emissions by 70% of 1990 levels by 2030, concluding that it appears "drastically insufficient." Using different burden sharing approaches to reach 1.5°C, they show that the remaining carbon budget is much smaller than the legislated one. A thorough inclusion of historical responsibility[18]

even brings the remaining emissions budget into negative territory, requiring between -151 and -442 $MtCO_2eq$ of negative emissions (see Figure 2, p. 14).

Another doubt concerns the engine of the model itself. Throughout the scenarios, GDP keeps rising even as working hours fall, because labour productivity is assumed to grow more or less autonomously. But this independence is questionable. Historically, much of the measured growth in labour productivity has been underwritten by the rising energy and material throughput which gives each worker more powerful tools (Ayres and Warr, 2005, 2009). If a sufficiency transition genuinely shrinks the biophysical scale of the economy, it is not obvious that labour productivity can keep climbing at the assumed pace. The report may thus be importing, through its productivity assumptions, precisely the throughput it claims to be retiring through its sufficiency aspirations.

Perhaps my general point is simply this: I would like to see more radical sufficiency/degrowth scenarios. If the most sustainable resource is the one we manage not to use, why not invest further in the idea of producing and consuming less in countries that already have more than enough? Some will say it is utopian and therefore better left unsaid, but the authors are already being attacked as utopians! Worse, they are being attacked as "degrowthers."[19] These cheap shots are the sad evidence that our collective imaginary around the economics of social-ecological transitions is still pretty barren. But if they cannot escape being labelled as "degrowth advocates," they might as well harness the full power of the literature on the subject.

Conclusion

"Our main conclusion," write the authors at the end of the report (p. 128), "is that it is possible to reconcile planetary habitability and high well-being for all, but that this requires a major shift towards sufficiency (including a sharp reduction in labour hours and a large change in consumption patterns, food habits and land use), fast decarbonization of energy systems requiring unprecedented climate investments, and most importantly a drastic reduction in inequality of income, wealth and power in order to ensure that these transformations are economically financed and politically sustained."

That's a powerful finding. This could be another Meadows moment where a piece of research comes to shake the very foundations of our collective imaginary. In this response, I have proposed several refinements meant to make the claim even more rigorous – and more revolutionary – than it already is: a sharper vocabulary on sufficiency and degrowth, a more optimistic reading of hypothetical degrowth scenarios, and a few open questions about the biophysical viability of the Sustainable Convergence scenario. The Global Justice Project is opening a fantastic space for discussion, and I hope that many other scholars will be as eager as I am to join the party.

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Footnotes

[1] The report is supported by two underlying working papers (Chancel et al., 2026b and Bothe et al., 2026), and a number of other publications from the World Inequality Lab: Andreescu et al. (2025a) on global labour hours, Nievas and Piketty (2025) on unequal exchange and North-South relations, Bharti et al. (2025) on the evolution of human capital, Bauluz et al. (2025) on global wealth accumulation and ownership patterns, and Andreescu et al. (2025b) on equality and development.

[2] "A good life for the 99% isn't a pipe dream: it can be done. Here's how" (*The Guardian*); "'Happiness is not just about GDP': ambitious plan or utopia?" (*The Guardian*); "Les ambitieuses pistes du laboratoire codirigé par Thomas Piketty pour réduire les inégalités mondiales tout en limitant le réchauffement climatique" (*Le Monde*); "Inégalités, sobriété, décarbonation et redistribution : le projet utopique de Thomas Piketty" (*Le Point*), "Argent, travail, écologie… Les trois idées choc de ces économistes qui ont imaginé un monde utopique en 2100" (*Huffpost*); "Climat : concilier habitabilité de la planète et bien-être pour tous est possible, estiment des économistes" (*Sud Ouest)*; "Thomas Piketty et un groupe d'économistes proposent un plan pour une vraie équité mondiale" (*Ouest France*); "Le modèle de sobriété que nous proposons dessine une autre définition de la prospérité" (*Alternatives Économiques*).

[3] For a literature review on the concept of sufficiency, see Jungell-Michelsson and Heikkurinen (2022) or Lage (2022).

[4] It seems that the authors share this understanding of the term when they summarise the sufficiency literature as "emphasiz[ing] reducing demand for resource-intensive goods and services rather than merely greening their production" (Chancel et al., 2026b, p. 8).

[5] For an analysis of sufficiency in the IPCC AR6, see Parrique (2022).

[6] Another widely used definition of degrowth understood as a transition strategy is the one that emerged from the first international conference on the topic in Paris back in 2008: "An equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level, in the short and long-term [and which is] offered as a social choice, not imposed as an external imperative for environmental or other reasons" (Schneider et al., 2010, pp. 512-513). Another good, recent definition: "the planned and equitable downscaling of economic activities that are ecologically destructive and do not contribute to human well-being, to reduce ecological pressures and free up resources for decent living for all" (Slameršak et al., 2026).

[7] The seven policies are described in Table 3 in Zwetsloot et al. (2026, p. 4): (1) global redistribution, (2) corporate taxes, (3) capital decommissioning, (4) fossil fuel phase-out, (5) progressive taxation, (6) universal basic income, and (7) work time reduction.

[8] I would also caution about the use of the "sustainability of economic growth." In one of the working papers (Andreescu et al., 2025, p. 24), it is used in a mainstream fashion, referring to the idea of "sustained growth," meaning a rate of growth that can be maintained over time. This could be confusing since they use the same term in their "*sustainable* convergence" scenario, but this time stressing ecological sustainability.

[9] "The 60k benchmark target for 2100," the authors write, "has been chosen because it is approximatively equal to the level currently observed in the world's richest countries" (Chancel et al., 2026b, p. 26). For example, it is currently 70k€ in Norway, 60k€ in Denmark, 59k€ in the United States, and 42k€ in Europe.

[10] But what happens after 2100? The answer lies buried in one of the working papers (pp. 39-40): a "post-2100 steady state." By "steady state," they do not mean the concept of Herman Daly, who conceptualised a no-growth

economy with stable biophysical throughput, but rather a "steady-state growth path" where "all countries in the world are on a balanced growth path with per capita GDP growth rate equal to 0.8% per year" (p. 39).

[11] "These results demonstrate that *if fast decarbonization and shifts in consumption patterns prove unattainable*, even "degrowth" in today's rich countries cannot limit warming to tolerable levels" (Chancel et al., 2026b, p. 57, italics added).

[12] This is consistent with the literature. Keyßer and Lenzen (2021), for example, compares 1.5°C degrowth pathways with IPCC archetype scenarios, finding that "the degrowth scenarios minimize many key risks for feasibility and sustainability compared to technology-driven pathways, such as the reliance on high energy-GDP decoupling, large-scale carbon dioxide removal and large-scale and high-speed renewable energy transformation."

[13] Figure 1.19 "Targeted sufficiency can be more effective than large uniform degrowth" (p. 49 of the report) has an interesting sentence in the note below the figure: "It might be difficult to combine 15k with structural change, as this implies large reduction in average food intake." To the best of my knowledge, this is the only downside of that scenario mentioned by the authors.

[14] One way to counter this argument would be to demonstrate the existence of a "leisure satiation" effect, as hypothesised in one of the working papers (Andreescu et al., 2025, p. 26): "Generally speaking, the fact that the cross-sectional elasticity using contemporary data is lower than the historical elasticity could also be due to additional factors, including a possible "leisure satiation" effect since the 1980s-1990s. That is, the private value of additional leisure was arguably much larger when labour hours were as large as 50-60 hours per week (with no little or paid vacation) than it is today with 40 hours per week (or less) and several weeks of paid vacation. This could potentially contribute to explain the lowering of the elasticity since the 1980s-1990s."

[15] Keep in mind that the report divides the world GDP into a core set of 48 main countries, that's why we don't see these few countries that definitely have a higher GDP per capita than 60,000€ (e.g., Luxembourg, Qatar, Ireland, Singapore, Switzerland, Liechtenstein, Monaco). In any case, there are not many of them, and they represent only a small fraction of world GDP.

[16] "In particular, there are other planetary boundaries beyond climate change (biodiversity loss, freshwater depletion, ocean acidification, mining extractivism etc.), which are sometime more difficult to quantify, but which cannot be studied through decarbonization alone. These other boundaries should be explicitly included in our material accounting system in the future, together with monetary accounting" (pp. 128-129).

[17] Let me here reuse a paragraph from *Decoupling debunked* (2019, p. 42): "The development of new types of services adds-up to other polluting activities instead of substituting to them. Consumers buy a Netflix account with, and not instead, of a computer, and workers can produce services if they are nourished, transported, and housed, not instead of food, vehicles, and homes. Immaterial products require a material infrastructure. Software requires hardware, a massage parlour requires a heated room, and the platform on which we are writing these very words requires a computer along with all the material equipment and energy necessary to make the Internet run. Services cannot be generated without raw material extraction, energy provision, and infrastructure building, all of which are tightly coupled with environmental pressures. The expansion of the service sector can hardly be decoupled because it is part of an economy that grows as an integrated whole."

[18] To explore carbon budgets under different allocation principles, see the "Zero Carbon For All" online platform of the World Sufficiency Lab. For instance, let's look at the required emission cut in Denmark to for 67% probability of not exceeding +1.5°C based on a consumption-based scope and on responsibility approach (i.e., considering the country's cumulative emissions and its share of the global population between 1970 and 2050). While past emissions have evolved from 62 Mt in 1970 to 72 Mt in 2006 and 45 Mt in 2022, they would be required to fall to 0 Mt in 2023.

[19] As evidence, here are a few quotes from articles in the media responding to the report: “Degrowth is the ultimate luxury belief. It's dreamed up by tenured professors in Paris and progressive think-tank pundits in Brussels. These are people who already have high incomes, comfortable apartments, generous health care, and pensions, and whose ideas would pull up the ladder on billions of poor people” (V. De Rugy, *Reason*); “The report calls for the Global Justice Fund to be “governed by strict rules of democracy and transparency”, but then also wants it to prioritize degrowth. (…) the GJF would have to act as a kind of global dictatorship: imposing policies that voters would never back, policies favored exclusively, as far as I can tell, by a minuscule elite of first-world degrowther intellectuals who hang out with Thomas Piketty (…) But I’m indebted to Piketty for following the degrowth agenda through to its utmost consequences” (Q. Toro, *1% Brighter*). Plus a few random posts on Twitter: “Piketty’s gone degrowth”; “this report pushes Piketty firmly into the so-called “degrowth” camp”; “it's disappointing to see that Piketty has gotten onto the degrowth train to nowhere”; “I'd argue that pushing for degrowth will likely have corrosive effects on broad public suppport for stringent climate policy”; “The degrowth emphasis is concerning”; “This is the authoritarian socialist de-growth agenda.”