

Frameworks Without Ground: A Critical Review of Sustainability Concept Development and Its Limits for Alternative Economic Thought

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ABSTRACT

Sustainable development discourse has operated for over three decades under an unresolved foundational tension: the Brundtland Commission's canonical 1987 definition accommodated continued economic growth as a political condition of international consensus, while the ecological systems that definition was designed to protect have continued to deteriorate. By 2023, six of nine quantified planetary boundaries had been transgressed. This paper conducts a thematic review of seventeen papers spanning the bibliometric, normative-ecological, and political-economic traditions within sustainability research, identifying four structural problems that the field has not resolved: the causal gap between knowledge production and measurable outcomes; the paradigm-replacement problem concerning neoclassical economics; the foundational dependency of the entire literature on Planetary Boundaries evidence it does not independently validate; and the Global South absence problem. The review finds that alternative economic frameworks — Doughnut Economics, post-growth theory, ecological economics, and capabilities-based approaches — have reached theoretical maturity and demonstrated governance operationalizability, but have been developed exclusively in and for high-income, post-industrial economies. The paper argues that the Global South is not a representational gap to be corrected by inclusive citation practice, but the site where existing frameworks' deepest assumptions about the relationship between economic growth, human development, and ecological constraint are most consequentially tested. It proposes a theoretical reconstruction of post-growth and doughnut economics frameworks that engages the specific political economy of Southern developmental contexts — marked by unmet social foundations, constrained fiscal and institutional capacity, colonial resource extraction histories, and asymmetric international financial architecture — as the condition for producing a genuinely global alternative economics of sustainability.

Keywords: Sustainable Development, Doughnut Economics, Post-Growth Theory, Planetary Boundaries, Global South, Ecological Economics, Sustainability Justice, Economic Paradigm

INTRODUCTION

Sustainability research has operated for more than three decades under a foundational tension it has never resolved: the dominant institutional framework for sustainable development, crystallised in the Brundtland Commission's 1987 definition of meeting present needs without compromising future generations, explicitly accommodated continued economic growth as both compatible with and necessary for sustainability transitions (WCED, 1987). This accommodation was not incidental. It was the political condition under which the concept achieved international consensus. The consequence, documented across the bibliometric and conceptual literature reviewed here, is a field that has produced an expanding body of frameworks, indicators, and principles — and simultaneously watched the ecological conditions those frameworks were designed to protect deteriorate. By 2023, six of nine quantified planetary boundaries had been transgressed (Richardson et al., 2023; Steffen et al., 2015; Rockström et al., 2009), a fact that the literature registers as urgency without resolving as explanation.

What Remains Unresolved

Four structural problems persist across this literature, none of which is engaged by any paper reviewed here in a way that generates a viable research programme for resolution.

The first is the causal gap. No paper in this set establishes — or attempts to establish — that any sustainability framework, concept, or research programme has produced a measurable change in any biophysical or social indicator. The entire literature is constructed upstream of the question of effectiveness. Downing et al. (2020) come closest to naming this as a problem — their concept of Cassandra's dilemma describes the recurring pattern in which scientists produce better and better warnings that produce no commensurate change in trajectory — but their proposed solution is a better framework, which reproduces the assumption that knowledge production is the binding constraint. The Barcelona study (Cattaneo et al., 2025) is the only paper reviewed that establishes empirical contact with a real governance process, and its finding — that the doughnut framework's structural demands are politically domesticated — points toward power, not knowledge, as the binding constraint.

The second is the paradigm-replacement problem. Diesendorf et al. (2024) make the strongest version of the argument that neoclassical economics must be replaced, not reformed. But the paper contains no theory of how paradigm replacement occurs against the institutional and political interests that reproduce the existing paradigm. The history of economic thought offers little comfort on this point: heterodox schools — ecological economics, institutional economics, feminist economics — have coexisted with neoclassical dominance for decades without displacing it in the institutions that govern policy. The question of what political and institutional conditions are necessary for alternative economic frameworks to gain governance traction is not addressed by any paper reviewed here.

The third is the foundational dependency problem. The entire normative and critical architecture of this literature — every claim that limits are real, that natural capital is non-substitutable, that current trajectories are objectively unsustainable — rests on the Planetary Boundaries framework (Rockström et al., 2009; Steffen et al., 2015) as its empirical load-bearing structure. Not one of the seventeen papers reviewed generates, validates, or independently tests that evidence. They consume it. Critiques of the Planetary Boundaries framework — regarding the threshold values, their independence, their governance relevance, and the adequacy of their Earth-system modelling — are therefore critiques of the empirical foundation of this entire literature, and they receive no engagement within it.

The fourth, and for the purposes of this article the most consequential, is the Global South absence problem. The literature does not merely underrepresent Southern perspectives as a diversity failure to be corrected by inclusive citation practices. It is structurally unable to engage with the core question that Southern contexts pose for alternative economic frameworks: what does post-growth sustainability mean for economies that have not yet achieved the levels of material throughput associated with meeting their citizens' basic needs, and whose developmental trajectories are constrained by international financial architecture, historical resource extraction, and the unequal distribution of ecological space? Doughnut economics, post-growth theory, and ecological economics all originate in and speak most directly to high-income economies facing the question of how to reduce throughput while maintaining wellbeing. Their application to contexts of developmental deficit within ecological limits requires theoretical work that has not been done.

Thus, the problem this field is trying to solve is therefore not a single problem. The bibliometric literature (Olawumi & Chan, 2018; Leal Filho et al., 2021; In et al., 2023; Yang & Thoo, 2022) frames it as a knowledge-production problem: the field needs better mapping, more integrative frameworks, and expanded cooperation networks. The normative-ecological literature (Downing et al., 2020; Velenturf & Purnell, 2021; Cattaneo et al., 2025) frames it as a conceptual-integration problem: successive generations of sustainability frameworks fail to bind ecological limits to social equity requirements in ways that are operationally actionable. The political-economic literature (Diesendorf et al., 2024; Cattaneo et al., 2025) frames it as a structural problem: the economic paradigm within which sustainability is pursued — neoclassical economics and its neoliberal policy expression — is itself the primary driver of the environmental destruction the field seeks to arrest. These three framings are not compatible with one another. A field that treats its core problem as a knowledge deficit will invest in bibliometrics and concept refinement. A field that treats it as a structural economic failure will need instruments of a fundamentally different kind. The literature reviewed here contains both framings, in unresolved tension, without ever making the methodological incompatibility between them explicit.

This review traces the four thematic lines along which that tension has developed, identifies what remains structurally unresolved, and argues that the Global South — almost entirely absent from the literature it examines

— is not a gap to be filled by incremental research but the site where the inadequacy of existing frameworks is most consequentially demonstrated.

The Architecture of the Field: What Bibliometrics Can and Cannot Show

The dominant methodological tradition in sustainability research is bibliometric and scientometric analysis. Eight of the seventeen papers reviewed here employ it as their primary method, making it not merely a research tool but the mode through which the field principally understands itself. Olawumi and Chan (2018) map 2,094 Web of Science records across 1991–2016 using co-authorship, co-citation, and co-word analyses, finding that the field evolved from definitional debates rooted in the Brundtland report toward quantitative modelling and sustainability indicator systems. In, Lee, and Eccles (2023) extend this temporal scope to 26,111 articles over 47 years, identifying four periods of corporate sustainability research and noting a persisting absence of consensus on theoretical and methodological frameworks. Yang and Thoo (2022), analysing 3,680 Scopus records, document the sharp post-2015 acceleration in publications aligned with the Sustainable Development Goals. Quental and Lourenço (2011), working from ISI Web of Science records covering 1960 to 2005, show that the field's intellectual core is constituted by a small number of landmark texts — fewer than 380 publications cited ten or more times — dominated by ecological economics and anchored above all by Brundtland (1987) and Meadows et al. (1972).

These studies are consistent in finding that the field has grown substantially and that its growth has been geographically concentrated. Yang and Thoo (2022) report that the United States and Australia together produce approximately one third of all publications on sustainability performance, despite representing a small fraction of the world population and an even smaller fraction of the populations most acutely affected by sustainability failures. Leal Filho et al. (2021) find that university-based sustainability research has evolved unevenly, with certain thematic areas persistently neglected. The databases from which all of these analyses draw — Web of Science and Scopus — index predominantly Anglophone and Northern institutional output. Miraute Coca and Pîslaru (2024), using Google Scholar via Harzing's Publish or Perish, find the sustainability definition literature concentrated between 2013 and 2018 with the most-cited work accumulating 6,917 citations, but their methodology draws on a database known for including grey literature and duplicates, limiting the comparability of their findings.

What bibliometric dominance makes structurally impossible is the detection of whether the knowledge it maps has any causal relationship to the conditions it describes. Publication volume is the outcome variable these papers measure; no paper in this cluster attempts to establish whether increased publication, citation density, or concept diffusion bends any biophysical or social indicator in the intended direction. Crisan, Belciu, and Popescu (2025), in the most methodologically sophisticated bibliometric study reviewed, apply natural language processing to a combined Scopus and Web of Science corpus and conclude that the surge in digitalisation-sustainability literature since 2017 confirms the field's importance — a circular inference in which the existence of research is taken as evidence of the significance of its subject. More critically, none of these studies can address the question Schouwenburg (2019) raises in his historical reconstruction: whether the multiplicity of competing sustainability definitions that emerged from the institutional politics of the 1970s and 1980s was a condition for the concept's political success and simultaneously a structural obstacle to its operational effectiveness. A field that maps its own output cannot, by definition, stand outside that output to assess what the output is doing.

The Concept Problem: Generations of Frameworks, Unresolved Integration

The most precise diagnosis of what the field's conceptual tradition has and has not achieved is offered by Downing et al. (2020), whose genealogical analysis of the Planetary Boundaries concept (Rockström et al., 2009; Steffen et al., 2015) establishes that successive generations of sustainability frameworks — from Brundtland through Agenda 21 through Planetary Boundaries — rest on a coherent body of ecological knowledge that has been in place since the 1980s. The successive iterations do not represent conceptual breakthroughs. They represent reframings of the same underlying structure of limits, minimum requirements, and waste dynamics, each reframing responding to the political and institutional conditions of its moment. The Planetary Boundaries concept, Downing et al. (2020) argue, represents the ultimate expression of this limits-framing: not limits to individual resource stocks, as in the Meadows tradition, but limits to the Holocene-like Earth-system dynamics

within which complex societies developed. What PBC does not resolve — and what no prior generation of sustainability concepts has resolved — is the integration of social minimum requirements with ecological ceilings. The distribution of resources, opportunities, and waste that determines who inhabits the safe space and who does not remains under-specified. This is not a minor omission in the framework. It is the central question of sustainability for any society in which the burden of ecological overshoot falls disproportionately on those least responsible for it.

Raworth's (2012, 2017) Doughnut Economics framework is the most significant attempt to address precisely this failure. By combining Rockström's ecological ceiling with a social foundation — twelve dimensions of human wellbeing drawn from the SDGs and related frameworks — it creates a bounded space in which all people can have their needs met without transgressing planetary limits. The framework's empirical implication, which Raworth draws explicitly, is that no country on Earth currently occupies the safe and just space: high-income nations overshoot the ecological ceiling while meeting most social foundations; low-income nations remain below the social floor while contributing minimally to planetary overshoot. This finding, confirmed and extended in subsequent empirical work (Fanning & Raworth, 2023), is structurally incompatible with the Brundtland growth-compatibility thesis and has not been integrated into mainstream sustainability governance. Cattaneo et al. (2025) operationalize the Doughnut framework at city scale in Barcelona, developing a City Portrait that evaluates performance across local and global social and ecological dimensions. Their finding — that the framework can be meaningfully applied in a governance context but that everyday political processes resist its more structurally demanding prescriptions — is the most important empirically grounded observation in the literature reviewed: the implementation gap is not primarily a knowledge problem.

Díaz-Balterio, González-Pachón, and Romero (2017) provide a complementary diagnosis from the measurement side. Their systematic review of 271 papers applying multi-criteria decision-making methods to sustainability assessment finds that trade-off aggregation across environmental, social, and economic dimensions is the dominant measurement paradigm, with the Analytic Hierarchy Process and Weighted Arithmetic Mean as the most widely used techniques. The epistemological consequence is significant: any method that allows weighted aggregation across sustainability dimensions implicitly adopts a weak-sustainability position — the assumption that natural capital is substitutable by manufactured or social capital — regardless of whether that assumption is made explicit. Velenturf and Purnell (2021) arrive at the same conclusion from the circular economy literature, demonstrating that CE frameworks routinely describe practices as sustainable that their principled analysis shows to be environmentally harmful, and that the structural flaw is the absence of strong-sustainability grounding. Li and Wei (2023) argue, from a Confucian eco-ethics perspective, that this weak-sustainability default is rooted in Western philosophical dualisms — the subject-object split, anthropocentrism, technological solutionism — that the anthropocosmic worldview of Confucian thought dissolves by treating humans and nature as constitutively interdependent rather than ontologically separate. The three approaches — ecological economics, strong-sustainability principles, and philosophical reorientation — converge on a single diagnostic: the dominant measurement and conceptual tradition in sustainability research is built on substitutability assumptions that the biophysical evidence does not support.

The Economic Paradigm Problem: Why Reform Is Not Enough

The most structurally radical argument in the literature reviewed is advanced by Diesendorf, Davies, Wiedmann, Spangenberg, and Hail (2024), who examine the ten foundational hypotheses of neoclassical economics — methodological individualism, methodological instrumentalism, methodological equilibration, and seven further common hypotheses — against the criteria of scientific practice: empirical confirmation, consistency with Earth-system science, internal consistency, and predictive ability. Each hypothesis fails at least one criterion. The macro-level conclusion — that neoclassical macroeconomics should be abandoned and replaced by a transdisciplinary social-ecological economics — places the paper outside the reformist tradition that characterises most sustainability research. It does not argue that sustainability frameworks should be better designed within the existing economic paradigm. It argues that the paradigm is the mechanism of destruction and that frameworks operating within it are structurally incapable of achieving their stated goals, regardless of their internal quality.

This argument has direct implications for the circular economy and digitalisation-sustainability literatures. Velenturf and Purnell (2021) note that circular economy has been positioned as a technology-focused concept that generates economic gains while alleviating environmental pressure — a framing that requires CE to justify itself in terms compatible with continued economic growth. Cattaneo et al. (2025) observe that the political economy of urban governance tends to domesticate the doughnut framework's more disruptive demands. Crisan et al. (2025) and Dhiman et al. (2024), mapping the digitalisation-sustainability and AI-sustainability literatures respectively, proceed on the assumption that efficiency gains from digital transformation and artificial intelligence constitute sustainability progress — without modelling whether those gains are consumed by expanded production within a growth-maximising system, the mechanism that Polimeni et al. (2009) formalised as the modern restatement of Jevons' paradox. Dhiman et al. (2024) acknowledge, in a concession whose significance they do not develop, that AI's economic dimension is under-explored and its energy costs cannot be fully assessed. The acknowledgement is structurally consistent with Diesendorf et al.'s critique: within an accounting framework that does not price environmental externalities, systematic optimism about technology's sustainability contribution is an expected output, not an empirical finding.

Martins (2022) approaches the economic paradigm problem from a humanistic rather than ecological-economics tradition, reading Schumacher's Buddhist economics alongside Sen's capabilities approach to construct a sustainability framework grounded in human flourishing rather than preference satisfaction or GDP growth. The convergence he identifies — between Schumacher's insistence on appropriate scale and technology and Sen's insistence on substantive freedoms — provides a normative architecture for sustainability that is not dependent on Brundtland's growth compatibility. Its limitation, shared with the Confucian eco-ethics framework of Li and Wei (2023), is the absence of a mechanism for translation from philosophical principle to institutional practice. Both papers supply compelling reasons why the dominant paradigm is inadequate; neither supplies a theory of how inadequate paradigms are replaced against the interests that reproduce them.

The Justice Deficit: Sustainability's Geographic Blind Spot

McCauley, Quintavalla, Prifti, Binder, Broddén, and van den Brink (2024), in the first robust mixed-methods review of sustainability justice as a combined concept, identify that Global South voices, narratives, and insights are structurally absent from the academic literature on sustainability justice — and note that their review, drawn from Web of Science and Scopus, reproduces the bias it is documenting. This reflexive acknowledgement is more significant than it may appear. It means that the field's dominant tools of self-examination — the very bibliometric and systematic review methods that constitute its primary methodology — are epistemically calibrated to the knowledge production of high-income, predominantly English-speaking institutional settings. What those tools cannot see is not absent from the world; it is absent from the databases. The result is a sustainability literature in which the populations bearing the greatest burden of ecological overshoot, the least historical responsibility for producing it, and the weakest institutional capacity to respond to it are principally visible as objects of concern rather than subjects of knowledge.

The justice dimension of sustainability is not adequately addressed by expanding SDG alignment in the existing literature, as Yang and Thoo (2022) and Crisan et al. (2025) effectively recommend. The SDG architecture itself contains the structural tension that McCauley et al. (2024) identify as unresolved: SDG 8 mandates sustained economic growth while SDG 13 mandates immediate climate action, and no mechanism in the framework resolves the distributional question of who absorbs the costs when these goals conflict. Raworth's doughnut framework, operationalized in Barcelona, treats distributional equity as an explicit design requirement — no one should be left below the social foundation — but Cattaneo et al. (2025) demonstrate that translating this requirement into governance action in a high-income European city encounters political resistance. The distributional question in a Global South context is structurally more difficult: the countries and communities whose development aspirations the Brundtland framework explicitly legitimated are now being asked to pursue sustainability within planetary boundaries that were substantially filled by Northern industrial growth. The existing literature contains no sustained engagement with what alternative economic frameworks mean for economies that have not yet completed the industrial transitions that generated the boundaries being transgressed.

Schouwenburg (2019) shows that the concept of sustainability emerged from competing expert communities in international organisations — IUCN, UNESCO, WCED — and that its definitional plurality was the outcome

of a political contest in which different interpretations of sustainability struggled for hegemony. The contest was conducted almost entirely within and between Northern institutional actors. The definitions that entered the international policy framework — ecosystem preservation, social equity and participation, biodiversity conservation — were not produced by the communities most dependent on the ecosystems being defined. This institutional genealogy of the concept has consequences for alternative economic frameworks: a post-growth or doughnut economics that does not engage with the specificity of Southern development trajectories, the colonial history of resource extraction that shaped them, and the political economy of international institutions that continue to constrain them, risks reproducing the same Northern-institutional bias in a new theoretical vocabulary.

CONCLUSION

The literature reviewed here establishes three things with sufficient rigour to treat them as the starting conditions for a new research programme. First, the dominant economic framework governing sustainability policy is empirically inadequate and structurally incompatible with the ecological constraints the field's own evidence base identifies (Diesendorf et al., 2024; Rockström et al., 2009; Steffen et al., 2015). Second, alternative economic frameworks — Doughnut Economics, post-growth theory, ecological economics, capabilities-based approaches — exist as mature bodies of thought with demonstrated operationalizability at specific governance scales (Cattaneo et al., 2025; Raworth, 2017; Velenturf & Purnell, 2021; Martins, 2022). Third, the application of those frameworks in Global South contexts has not been theorised, tested, or evidenced in any paper in this literature, despite those contexts constituting the majority of the human population most directly affected by the sustainability failures the frameworks seek to address (McCauley et al., 2024; Downing et al., 2020).

This study addresses that gap directly. The existing literature on alternative economic frameworks for sustainability has been developed primarily in and for high-income, post-industrial economies. Its central question — how to achieve wellbeing within ecological limits when the existing economic paradigm drives overshoot — assumes an economy that has already overshoot. The Global South presents a structurally different problem: how to achieve the social foundation that Raworth's framework requires, and that the Brundtland framework promised, without replicating the ecological trajectory that high-income economies took to get there, and under financial and institutional conditions that systematically constrain the range of available policy instruments. This is not a sub-problem of the existing literature. It is the problem the existing literature cannot address from within its current conceptual and geographic boundaries.

The specific contribution this study makes is to examine whether and how post-growth and doughnut-economics frameworks can be theoretically reconstructed to engage with the political economy of Southern developmental contexts — not as recipients of frameworks designed elsewhere, but as the sites where those frameworks' deepest assumptions about the relationship between economic growth, human development, and ecological constraint are most sharply tested. The aim is not to import an existing framework into a new geography. It is to use the friction between that framework and Southern developmental reality to identify what the framework gets wrong, what it gets right, and what theoretical architecture a genuinely global alternative economics of sustainability would require. In doing so, it responds directly to the reflexive admission that the field's most rigorous systematic reviewer makes about its own knowledge base (McCauley et al., 2024) — and takes seriously the implication that the absence of Southern knowledge from this literature is not a descriptive fact about where sustainability problems are less severe, but a constitutive distortion of what the field thinks sustainability requires.

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