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Reimagining elite sport through the lens of degrowth*

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ABSTRACT

Research Question: This article examines how degrowth could inform a rethinking of elite sport amid environmental and social crises. It argues that dominant sustainability approaches in elite sport remain constrained by green-growth assumptions and therefore struggle to confront ecological limits and inequality, and explores elite sport through a degrowth lens.

Research Method: Drawing on ecological economics, sustainability studies, sport governance, and critical pedagogy, the article develops a theoretical–conceptual synthesis that interrogates growth-oriented assumptions in elite sport and conceptualises degrowth as an alternative sustainability paradigm.

Results and Findings: The article develops an analytical framework structured around five interrelated domains (i.e. energy and environment, governance and geopolitics, production and consumption, inequality, and culture and education). This framework functions as a set of heuristic lenses that reveal how dominant green growth strategies, weak sustainability approaches, and technological fixes reproduce structural contradictions in elite sport. Through this lens, we illustrate alternative ways of thinking about scale, governance, resource use, equality, and meaning in elite sport.

Implications: This article contributes to emerging debates on degrowth in elite sport by moving the analytical focus from optimisation and efficiency to scale, sufficiency, limits, justice, and legitimacy. It provides a conceptual foundation for future empirical research on the political, institutional and social conditions under which degrowth-oriented transformations in elite sport may emerge and invites scholars to reconsider growth as an organising principle of sustainability in sports.

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Introduction

In 1972, the Club of Rome's report *The Limits to Growth* warned that continued population growth, industrial expansion, and resource depletion could exceed the Earth's

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ecological limits within a century, triggering environmental degradation and social disruption (Meadows et al., 1972). Fifty years on, many of these predictions have materialised. Despite technological advancements and global policy frameworks such as the Sustainable Development Goals (SDGs), core challenges persist. Economic growth in industrialised nations has slowed, resource extraction has become more costly, and social inequalities have deepened due to the uneven distribution of economic benefits (Jackson, 2019). At the same time, many governments and organisations continue to promote the expectation that economic growth can be decoupled from environmental degradation through technological innovation and market-based measures. This assumption is increasingly challenged within ecological economics and sustainability research (e.g. Fitzpatrick et al., 2022; Jackson, 2019).

This reluctance to critique growth is mirrored in elite sport. Elite sport remains deeply embedded in growth-oriented logics, as illustrated by the expansion of mega-events such as the Men's FIFA World Cup or the ever-growing number of events (e.g. Nations League, FIFA Club World Cup: cf. Gammelsæter & Loland, 2023). At the same time, elite sport is increasingly exposed to environmental impacts. Scholars have compared the sector's current trajectory to 'acting as if your house is on fire' (Breitbarth et al., 2023, p. 9), highlighting that sport both is affected by and contributes to unsustainable environmental dynamics (McCullough, 2023; Orr & Inoue, 2019). Elite sport is increasingly disrupted by climate impacts (e.g. heat, extreme weather, sea-level rise; cf. Driscoll et al., 2008; Ebi et al., 2021; Fairley et al., 2015; Hollander et al., 2021; Murfree & Moorman, 2021; Orr et al., 2022; Orr & Schneider, 2018), while adaptation measures (e.g. relocation, indoor venues) can raise energy use and greenhouse gas emissions (McCullough, 2023).

Furthermore, elite sport also drives greenhouse gas emissions via infrastructure projects (Kellison & Hong, 2015), scope 3 travel and fan consumption (Bunds et al., 2019; Cooper & McCullough, 2021) and sponsorships and merchandising that promote high-carbon lifestyles (Gammelsæter & Loland, 2023; Tricarico & Simms, 2021). This particularly matters as elite sport is a highly relevant societal subsystem with wide-reaching symbolic influence that shapes norms and identities (Grix & Carmichael, 2012; Smith & Westerbeek, 2007; Weed et al., 2015).

In response to these dynamics, many sport organisations have adopted sustainability strategies, including climate neutrality targets and alignment with the SDGs (McCullough et al., 2020a; Trendafilova et al., 2014). However, a growing body of research characterises these efforts as insufficient, describing them as 'weak, hollow, and half-hearted' (Wilson & Millington, 2020, p. 2), lacking the depth to address the scale of crisis (Orr & Inoue, 2019; Stegmann & Suter, 2026). These efforts can be attributed to a 'green growth' paradigm, prioritising efficiency, offsetting, circular-economy framings, and technological fixes while leaving the underlying growth orientation of elite sport largely intact (Gammelsæter & Loland, 2023; Tangen, 2021). Economic imperatives (e.g. revenue generation) often precede environmental goals (Backman & Svensson, 2022; Fouillouze et al., 2023; Næss, 2020). Critics argue that these approaches are incapable of delivering the scale of transformation required (Gammelsæter & Loland, 2023). As a result, a widening gap has emerged between sustainability rhetoric and the material realities of elite sport, raising questions about the sector's legitimacy in a climate-constrained world (Cury et al., 2023). In this context, McCullough (2023) calls for more radical sustainability concepts such as degrowth.

Against this backdrop, we argue that elite sport sustainability debates require a more explicit engagement with alternative paradigms that do not treat economic growth as compatible with the given environmental constraints. We propose degrowth, understood as a planned reduction in energy and resource use designed to bring social systems back into balance with environmental limits while reducing inequality and improving well-being (Hickel, 2021), as one such paradigm. Although degrowth has gained prominence in ecological economics (e.g. Kallis et al., 2025), it remains underdeveloped in sport and sustainability research, where it is often invoked as a provocative critique (McCullough, 2023). As a result, conceptual clarity and a coherent research agenda remain limited, as Gammelsæter and Loland (2023) highlight.

This article, however, does not offer a blueprint for degrowth to be implemented in elite sport, nor does it claim that the proposed transformations are readily feasible under current political, economic, or governance conditions. It is conceptual as it takes ecological limits as a non-negotiable starting point and asks which forms of elite sport are plausible at all under such constraints. Thus, this study prioritises reframing (e.g. offering alternative problem definitions; cf. Alvesson & Sandberg, 2011) over feasibility. However, it has to be acknowledged that feasibility itself is not neutral but structured by the growth assumptions of the predominant system (Corley & Gioia, 2011). The article makes three contributions: it (1) demonstrates why green-growth strategies in elite sport reproduce weak sustainability (e.g. technological optimism, offsetting, narrow boundary-setting), (2) adapts Fitzpatrick et al. (2022) into a five-domain framework on how elite sport could look like under the premises of degrowth, and (3) advances a research agenda for future research on sustainability and degrowth in elite sport.

Theoretical overview

Sustainability, growth, and the limits of green growth in elite sport

Sport is a socially influential subsystem whose elite segment is increasingly embedded in commercial, growth-oriented and performance-driven logics (Coakley, 1994, 2016; Horne et al., 2005; Vail, 2007). While recreational sport is often associated with inclusivity and well-being, elite sport operates within global media, sponsorship, and infrastructure regimes that intensify material throughput and environmental impact (Barker et al., 2014; Szathmári & Kocsis, 2022). Although sport is frequently positioned as a vehicle for sustainable development (UNGA, 2015) and as a catalyst for societal benefits such as well-being and increased grassroots participation (De Bosscher et al., 2021), mega-events and professional competitions have also been linked to ecological degradation, infrastructure overcapacity, and human rights concerns (Müller & Gaffney, 2018; Heerdt & Roorda, 2023).

Sustainable development is commonly framed along environmental, economic, and social dimensions (WCED, 1987). Here, a central distinction concerns weak and strong sustainability (Daly, 1977; Latouche, 2009). Weak sustainability assumes substitutability between natural and human-made capital and permits continued economic expansion if environmental harms are compensated elsewhere. Strong sustainability, by contrast, treats critical natural systems as non-substitutable and imposes absolute

ecological limits on economic activity, positioning the economy as embedded within ecological systems (Figure 1).

Elite sport organisations increasingly portray themselves as sustainability leaders while remaining embedded in growth-oriented commercial structures. Strategies such as climate-neutrality targets, SDG alignment, and sustainability ‘game plans’ have proliferated (FIFA, 2022; IOC, 2021; Paris, 2024, 2021a; UEFA, 2021, 2023; Formula 1, n.d.). Some organisations even articulate ambitions to ‘decarbonise the world’ (Formula 1, n.d.). Similarly, sport brands such as Nike or Adidas may market ‘eco-friendly’ product lines while simultaneously driving mass consumption, which demonstrates the tensions between growth-oriented strategies and genuine sustainability (Garcia-Ortega et al., 2023; Thomas, 2019). These sustainability strategies largely reflect a green-growth paradigm that assumes economic expansion can continue within planetary constraints through efficiency gains, technological innovation, and market-based instruments (Engler et al., 2024). Closely aligned with weak sustainability and ecological modernisation (Daly, 1977; Mol & Spaargaren, 2000), green growth frames environmental problems as technical challenges that can be solved without questioning growth itself.

At the core of green growth lies technological optimism, the belief that innovation (e.g. renewable energy, new materials, digital systems) can reduce environmental footprints without systemic change (Gonella et al., 2019). However, greater efficiency may lead to rebound effects, whereby energy or resource savings stimulate increased consumption (e.g. more events and competitions). In its strongest form, such dynamics can even result in net increases in total resource use, an outcome described as the Jevons’ paradox (Parrique et al., 2019). In so doing, rising energy demand may negate the benefits of renewable energy transitions (Mauger, 2023). Additionally, bio-fuels, while marketed as green, carry ecological costs, including biodiversity loss, land appropriation, and net increases in greenhouse gas emissions (Apfel & Ramirez, 2022; Bachram, 2004; Cudlínová et al., 2020), particularly in the Global South. Carbon offsetting and circular economy initiatives have also become relevant in sport sustainability strategies. However, offsetting schemes face criticism for double-counting, long time

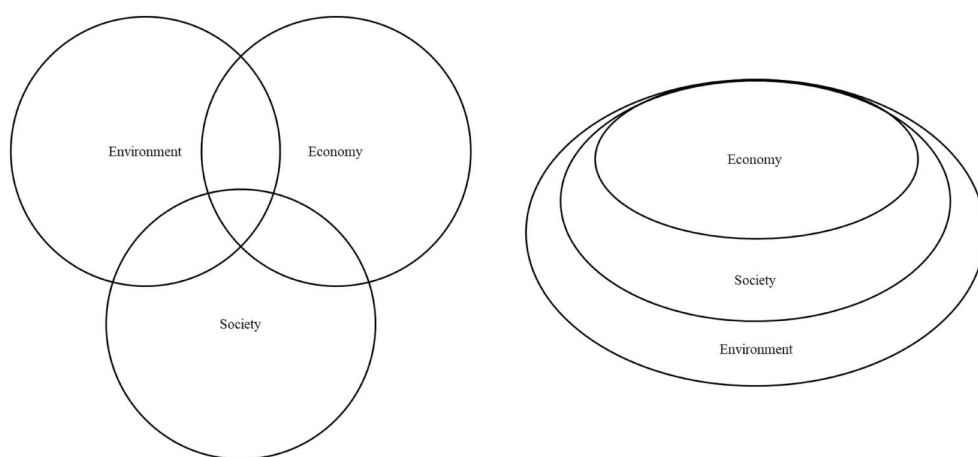


Figure 1. Weak and strong sustainability (own illustration).

horizons (e.g. maturing of trees), and vulnerability to environmental disturbances (e.g. drought, fire), and may displace local communities (e.g. climate colonialism; cf. Boyle, 2021; Dufrasne, 2022; Gill-Wiehl et al., 2024; Lee, 2022). Such measures, therefore, function less as genuine mitigation than as mechanisms that legitimise continued fossil-fuel dependence under claims of ‘climate neutrality’ (Fifa, 2021; Paris, 2021b). Circular economy initiatives likewise remain limited when they valorise waste without reducing absolute material throughput (Stegeman, 2019). What these measures share is that they tend to preserve existing scales of activity by displacing, deferring, or reframing ecological harm rather than reducing absolute throughput (Hickel & Kallis, 2020).

Moreover, the sport system also narrows its scope of responsibility, for example, when scholars caution against overstating sport’s environmental contribution and advocate for more restrained rhetoric (McCullough, 2023). While its direct emissions may be modest compared to those of heavy industry or aviation, its indirect footprint, through sponsorships, broadcasting, travel, merchandising, and demonstration effects, is substantial (Weed et al., 2015). Corporations leverage sport’s cultural capital to greenwash unsustainable practices (Canniford & Hill, 2022), while emissions associated with fan travel, merchandise production, and advertising are often omitted from sustainability evaluations. Taken together, these tendencies raise a critical question: Do such measures reflect genuine progress, or do they reveal a deeper contradiction between environmental rhetoric and continued growth and systemic lock-in (e.g. dependency on sponsorship from high-emission and fossil fuel-linked corporations such as Saudi Aramco, Shell UK, Coca-Cola)?

Scholars contend that current approaches often constitute ‘symptomatic treatments’ (Tangen, 2021, p. 3) that fail to confront the foundational growth paradigm underpinning elite sport. Gammelsæter and Loland (2023) describe elite sport’s pathway as ‘... keeping to the well-trodden path [of] procuring economic benefits first’ (p. 5), and similarly, Tangen (2021) contends that sport not only avoids confronting sustainability issues, but is fundamentally unsustainable as it ‘carries the DNA of modernity’ (p. 2), reflecting and reinforcing ‘the logic of progress and growth’ (Tangen, 1997, p. 10; cited in Tangen, 2021).

Against this backdrop, Gammelsæter and Loland (2023) advocate opening analytical pathways beyond green growth towards degrowth. Scholars emphasise the need to treat sustainability’s dimensions as interdependent rather than discrete (Köves et al., 2021; Tangen, 2021). Recently, sport and sustainability scholars have begun exploring paradigms such as degrowth that explicitly challenge growth dependency (e.g. Eriksson & Clausen, 2024; Köves et al., 2021; Szathmári & Kocsis, 2022; Szathmári & Kocsis, 2025).

Degrowth as a sustainability paradigm

Degrowth has emerged as a critique of growth-oriented sustainability paradigms in ecological economics and political ecology (e.g. Kallis et al., 2025). It starts from the premise that accelerating environmental degradation and socio-economic inequalities cannot be addressed within frameworks that treat continued economic growth as inevitable. Instead, degrowth recognises biophysical limits and the non-substitutability of critical

natural systems (Daly, 1977), arguing that economic activity should remain embedded within ecological boundaries.

Degrowth is best understood as a heterogeneous and contested body of scholarship (e.g. Parrique, 2019). It brings together strands of ecological economics, political ecology, feminist economics and decolonial critiques that challenge growth as a primary societal objective with different foci on material constraints, social justice, value of reproductive labour and universal basic income or democratic participation and cooperative non-market forms (D'Alisa et al., 2014; Martínez-Alier et al., 2010). Overall, degrowth, as an umbrella term, can be defined as a democratically planned reduction in economic production and consumption to align human activity with planetary boundaries, restore a sustainable ecological footprint, reduce inequalities, and improve quality of life (Hickel, 2021; Parrique, 2019). While related to broader post-growth approaches that seek prosperity without a structural reliance on GDP growth (Kallis et al., 2025), degrowth articulates an explicit commitment to absolute reductions in resource use and to sufficiency, care, and democratic participation as guiding principles.

In contrast to growth-oriented interpretations of sustainability, degrowth centres ecological limits and social well-being, treating continued economic growth as incompatible with sustainability (Hasselbalch & Larsen, 2026). The key distinction between degrowth and green growth lies in their assumptions about scale. Green growth assumes that environmental harms can be sufficiently decoupled from economic expansion through efficiency gains and technological innovation (Engler et al., 2024). Degrowth scholars argue that such decoupling is neither empirically substantiated nor physically plausible at the required scale (Engler et al., 2024). Degrowth research, therefore, suggests reducing and redistributing resource and energy flows as necessary steps toward sustainability (Kallis et al., 2025). Accordingly, degrowth shifts the focus from relative efficiency (i.e. reducing environmental impacts per unit of output) to absolute sufficiency (i.e. reducing environmental impacts by reducing the units). These paradigms thus diverge not only in their understanding of sustainability and growth and throughput, but also in their normative orientation and governance logics (see Table 1).

Table 1. Green-growth and degrowth as contrasting sustainability paradigms (own compilation based on Demaria et al., 2013; Hickel, 2021; Xue, 2018).

	Green-growth paradigm	Degrowth paradigm
Normative orientation	Economic growth and profit as primary societal objectives; social and environmental goals framed as compatible with growth	Social justice, ecological integrity, and well-being as intrinsic objectives, not subordinated to growth
Understanding of sustainability	Weak sustainability; the environment is treated as a constraint that can be managed through innovation and substitution	Strong sustainability; society and economy embedded within non-substitutable ecological limits
Growth and throughput	Assumption that continued economic growth is possible through decoupling from resource use and environmental impact	Planned reduction of material and energy throughput; rejection of absolute decoupling on the grounds that it is implausible
Primary governance logic	Market-based solutions, technological innovation, and efficiency-oriented regulation	Democratic governance, regulatory limits, redistribution, and collective decision-making
Efficiency and sufficiency	Priority on efficiency gains to reduce impacts per unit of output	Priority on sufficiency and collectively defined limits on scale, consumption, and resource use

Taken together, these premises position degrowth within a strong sustainability framework that rejects substitutability between natural and human-made capital and treats ecological integrity and social justice as non-negotiable conditions for economic activity (Daly, 1977; Latouche, 2009). Given its more radical positioning within sustainability debates, degrowth has faced significant criticism. Critics question its economic stability (e.g. employment ratios, public revenues, welfare systems), political feasibility in growth-dependent democracies (e.g. restricting individual freedoms), and potential implications for the development of the Global South (Dengler & Seebacher, 2019; Schneider et al., 2010; Van den Bergh, 2011). However, degrowth proponents argue that such critiques often presuppose growth-dependent institutions and therefore risk treating historically specific arrangements (e.g. excess consumption) as if they were unavoidable conditions of collective well-being (e.g. Kallis et al., 2025).

Reimagining elite sport through the lens of degrowth

Examining elite sport through a degrowth lens draws attention to forms of organisation that sit uneasily with dominant growth-oriented assumptions and prevailing sustainability frameworks. A degrowth perspective foregrounds questions of sufficiency, justice, and ecological constraints, and is analytically useful insofar as it renders visible alternative ways of organising elite sport (Alvesson & Sandberg, 2011). Drawing on the policy themes developed by Fitzpatrick et al. (2022), we adapt and distil their framework into five interrelated domains: 1) energy and environment, 2) governance and geopolitics, 3) production and consumption, 4) inequality, and 5) culture and education. Together, these domains indicate where a degrowth perspective may unsettle established growth-dependent assumptions within elite sport.

Energy and environment

This section explores how a degrowth perspective could reorient thinking on energy use and environmental impacts in elite sport by foregrounding ecological limits and sufficiency. It considers alternatives to high-impact mega-events, such as shared infrastructure, self-limitation, and travel-related emissions, as ways to reduce the environmental footprint. Moving beyond conventional eco-modernist sustainability approaches (e.g. technological efficiency), it also examines how much mobility, infrastructure expansion, and consumption can be justified under conditions of ecological constraint (Mol et al., 2014; Wicker, 2019).

First, mega-events such as the Olympic Games or the Men's FIFA World Cup often entail extensive infrastructure investments that remain underutilised, contributing to environmental degradation and economic inefficiency (Müller et al., 2021). Public support for more regionally based competitions suggests that elite sport could flourish without carbon-intensive formats (Geeraert & Gauthier, 2018). Decentralising mega-events into a series of smaller, regionally distributed competitions using pre-existing infrastructure could reduce international travel by fans, athletes, and their entourages, especially if supported by local fan zones. Ito and Higham (2023) propose a three-hub model linked via digital platforms to reduce domestic air travel and encourage local attendance. This aligns with evidence that athlete and spectator travel accounts for a

substantial share of sport-related emissions (Wicker, 2019). Localised events could retain core social benefits, fostering community connection, distributing economic gains more equitably, and promoting more meaningful engagement (McCullough et al., 2020a). Related concepts include a ‘mobile Olympic city’, composed of modular, transportable infrastructure that could be relocated for different events, particularly beneficial for resource-intensive sports like swimming, athletics, or golf (Köves et al., 2021).

A second dimension concerns self-limitation, with high-carbon sports such as Formula One or the Dakar Rally serving as paradigmatic cases for examining the ecological implications of unrestricted expansion, often occurring in ecologically vulnerable regions (Chen, 2023). Critics argue that Formula One exemplifies ‘techno-futuristic greenwashing,’ embedded in fossil fuel sponsorship and global circuits (Miller, 2016; Sturm et al., 2024). Unlike seasonal sports, it operates year-round and globally, embodying what Miller (2016, p. 721) terms ‘a perfect example of world capitalism physically transcending space and time.’ Although proposals to phase out such sports may be perceived as radical, from a degrowth perspective, they would function as cases that expose the ecological limits of growth-intensive sport formats. Historical precedents, such as bans on tobacco advertising in sports, demonstrate that policy can prevail when societal harm outweighs cultural value.

More moderate forms of self-limitation would not require abandoning elite sport, but rather the reorganisation of its temporal and competitive intensity. Measures such as extending event cycles, reducing tournament frequency or restructuring competition calendars (e.g. extending Olympic or World Cup cycle to six or eight years, reducing participating teams, limiting football leagues to one match per pairing per season, or generally reducing the frequency of events in other sports such as the amount of Diamond League meetings, ATP tournaments) would show that environmental impact is also driven by volume and acceleration. Sport has already taken (very small) initiatives: World Archery reduced its on-site broadcast crew from twelve to two by using remote operations (Orr, 2021). Similarly, Tokyo 2020 limited the number of athlete entourages, while Ito et al. (2022) proposed carbon taxes on companions. Although such measures may face resistance and entail difficult decisions, elite sport may increasingly operate within regulatory environments (e.g. top-down governmental regulations) in which external constraints encountered may become more salient and restrictive (Traberg et al., 2025).

Finally, public engagement remains crucial but challenging. For instance, attendees at the London 2012 Olympics often struggled to comprehend the Games’ ecological impact (Prayag et al., 2013). Consequently, this observation could direct attention to the role of participant and spectator behaviour in shaping sport-related environmental impacts. Event organisers could adopt clear sustainability criteria and offer incentives for low-carbon choices, such as discounted rail or public transport tickets. Behavioural change could also be encouraged through education and the influence of role models. Prominent athletes and local figures, especially those educated about the links between environmental degradation, health, and performance, could serve as change agents and environmental ambassadors (Eriksson & Clausen, 2024; Sambrook et al., 2023). Additional tools include travel reduction targets, eco-penalties, and visible sustainable practices during events. These examples show that the environmental significance of elite sport is shaped by event design and by the

norms and incentives that govern how participants and spectators understand acceptable forms of mobility and attendance.

Governance and geopolitics

This section examines how a degrowth perspective could inform democratic and redistributive forms of governance in elite sport by challenging hierarchies, institutional inertia, and the concentration of decision-making power. It considers democratic participation, legacy planning, institutional accountability, and redistributive financial models as possible means of shifting authority towards locally affected communities and away from international federations. Moving beyond growth-centred governance would require confronting extractive practices, uneven burdens, and the marginalisation of those most affected by elite sport's political and economic arrangements (Chen, 2023; Fitzpatrick et al., 2022; Köves et al., 2021).

First, a core governance problem lies in the systematic exclusion of local communities from hosting decisions. Historically, top-down processes from international federations and political elites have marginalised public interest (e.g. Sochi 2014, Qatar 2022). While proponents promise economic growth and improved infrastructure, residents often face displacement, rising living costs and limited long-term benefits (Contractor & Greenlee, 2018). From a degrowth perspective, governance arrangements that include substantive forms of community decision-making, up to and including veto rights, could be alternatives to prevailing top-down hosting models. Mechanisms such as local referenda, citizens' assemblies, and participatory budgeting could ensure that investments serve public priorities and reduce the risk of white elephant infrastructure. As Field (2025) documents, excluding locals has fuelled a 'half-century of protest and resistance,' leading to the rejection of Olympic bids in cities such as Munich and Innsbruck. These cases indicate that hosting decisions operate within contested contexts, where public resistance emerges when events are perceived as misaligned with local priorities (Coates & Wicker, 2015). Institutionalising such tools (e.g. local referenda) could reduce corruption, increase transparency, and anchor decisions in local accountability.

Second, legacy planning could also be reconsidered beyond growth-centred expectations, especially given the mixed evidence on long-term urban and economic benefits (Müller et al., 2021). A degrowth perspective reframes legacy through ecological sustainability and social equity. Rather than building new, hypermodern venues, cities could adapt existing infrastructure for long-term local use benefit (Contractor & Greenlee, 2018). Sharples (2024) underscores the need to adapt sustainability strategies to local capacities, especially for Global South hosts. Holding bodies like the IOC accountable for enforcing region-specific guidelines could mitigate harm. Permanent legacy institutions may also be more effective than short-lived organising committees that disband post-event (Müller et al., 2021).

Third, addressing governance shortfalls requires confronting the power structures of major federations. Although organisations like FIFA and the IOC promote sustainability, critics argue these efforts are superficial, serving marketing goals or enabling eco-imperialism (Chen, 2023; Sturm et al., 2024). Despite green rhetoric, Olympic events remain economically driven and fall short of environmental goals (Millington et al., 2018).

Genuine accountability requires multi-level governance, including NGOs, local governments, and independent watchdogs.

In this context, regulatory developments such as the EU Green Claims Directive are relevant as illustrations of how external verification can ensure sustainability claims are more accountable (European Union, 2024). From a degrowth perspective, proposals such as devolving certain decision-making competences to regional bodies could serve as reference points for questioning highly centralised governance structures (e.g. FIFA) and for aligning with transparent, enforceable criteria, which could improve accountability (Gammelsæter & Loland, 2023). Hosting bids might be made contingent on environmental hearings and the inclusion of community veto mechanisms. Independent oversight bodies could be empowered to monitor, sanction, or revoke support for events that violate agreed standards (Geeraert & Gauthier, 2018).

Fourth, governance could also involve self-limitation, echoing the environmental arguments in the previous section. This includes scaling down the scope and intensity of elite sport. Measures like salary caps, transfer restrictions, or financial fair play – originally aimed at competitive balance – could also reduce social and ecological excess (Müller et al., 2012). Szathmári and Kocsis (2022) call for a ‘sustainable sport’ vision recognising athlete wellbeing and human dignity over performance optimisation. Such measures illustrate how governance instruments traditionally associated with competitive balance may, from a degrowth perspective, also be interpreted as mechanisms that challenge logics of acceleration and extraction.

Finally, degrowth-oriented reforms could address the financial architecture of elite sport. Traditional funding sources (e.g. fossil-fuel sponsors) often undermine sustainability (Tricarico & Simms, 2021). Examples such as community bonds, crowdfunding initiatives, or funding frameworks aligned with social and ecological criteria could serve as indicators of alternative financial logics that foreground accountability and collective benefit over extraction. For instance, Swiss Olympic (2024) has developed funding frameworks that align with social and ecological goals. Federations could also direct grants for grassroots or environmental initiatives, or community ownership and fan-led governance models may offer more transparent, accountable alternatives. Taken together, these examples point to the possibility of funding arrangements that align financial viability with social and ecological criteria.

Production and consumption

Elite sport reflects society’s growth-driven logics through resource-intensive events, global logistics, and high-tech consumption. While unifying, such practices normalise ever-expanding demand and unsustainable production. From a degrowth perspective, this pursuit of profit risks breaching ecological limits and undermining social equity (Tangen, 2021). Therefore, this section explores how elite sport’s production and consumption practices could be reimaged in line with degrowth principles.

First, an issue concerns advertising and sponsorships, which fuel elite sport’s consumerist ethos. Sponsorship arrangements, particularly from industries linked to environmental harm or public health risks (e.g. fossil fuels, industrial meat, gambling, fast fashion, alcohol, and tobacco), reinforce harmful consumption behaviours (Brown, 2016; Sturm et al., 2024; Yang & Goldfarb, 2015). While such partnerships provide

funding, they carry reputational risks and undermine broader sustainability commitments. From a degrowth perspective, restricting sponsorship from such sectors, whether through regulation or self-imposed codes, could be one way of reducing sport's complicity in environmentally and socially harmful production systems (Tricarico & Simms, 2021). Simultaneously, sport organisations could attract partners aligned with sustainability goals, such as plant-based food producers or eco-friendly (public) transport (Pape et al., 2023, 2024). Although this shift may involve short-term financial trade-offs, brands with ecological commitments might enjoy stronger consumer loyalty (Yang & Goldfarb, 2015). However, substantive backing of environmental claims is needed to ensure credibility (Gammelsæter & Loland, 2023; Tangen, 2021).

Second, a further issue concerns technological innovation in sport. Scientific advances in equipment, analytics, and medical interventions have influenced elite sport, shaping performance expectations and market demand (Balmer et al., 2012). However, relying on innovation to solve environmental issues carries risks as Wilson and Millington (2013) argue that organisers often use 'ecological modernisation' as a management ploy. By deploying 'technological fixes', such as artificial climate control or carbon-tracking apps, mega-events may project an image of sustainability through innovation. Ultimately, this obscures the need for systemic change, allowing the industry to prioritise the appearance of sustainability over the actual reduction of consumption (extending Hoberman, 1992). Furthermore, the pursuit of marginal gains often fuels unsustainable manufacturing cycles, fosters consumer pressure to adopt the latest technologies and normalises growth-centric approaches (e.g. high-tech swimming suits in the early 2010s; Wilkins & Joyner, 2024). Researchers also warn that such advancements exacerbate inequalities between athletes from high-income and low-income nations (Wilkins & Joyner, 2024). Critics argue that this 'technological arms race' contradicts sustainability by normalising a drive for performance enhancement (Gammelsæter & Loland, 2023).

Under such conditions, practices such as doping may not be understood as ethical failures but as structurally induced effects of a system organised around continual optimisation and expansion (Wilkins & Joyner, 2024). Reframing sporting success, for instance, by questioning record logics and introducing standards for high-footprint technologies, could illustrate how degrowth principles might unsettle dominant assumptions about performance and fairness in elite sport, while reducing overproduction and protecting athlete health (Balmer et al., 2012).

These pressures are compounded by the *sportification* of local practices, where commercialisation and standardisation convert community-based activities into globalised industries, thereby putting local traditions, cultures and customs at risk of being subsumed by global market logics (McCullough et al., 2020b; Tangen, 2021). As leagues increasingly adopt corporate strategies, overconsumption of travel or merchandise is normalised (Backman & Svensson, 2022). Degrowth principles, including limiting event frequency or moderating consumption could help disrupt these dynamics and the understanding of seeing growth as synonymous with progress (Gammelsæter & Loland, 2023).

Finally, reframing the commercial and marketing dimensions of elite sport could shift fan expectations away from hyperconsumption. Traditional marketing strategies encourage fans to purchase new merchandise and attend large-scale events (Trail &

McCullough, 2020). In contrast, alternative marketing approaches could emphasise local engagement, low-impact travel, and mindful consumption (Mallen et al., 2010). While such shifts are unlikely to transform elite sport in isolation, they indicate how alternative marketing narratives (e.g. sponsorship models, community ownership structures) could help reorient commercial priorities away from hyperconsumption and towards ecological and social well-being (Gammelsæter & Loland, 2023).

Inequality

This section examines how a degrowth perspective could inform more equitable structures in elite sport by challenging existing disparities in access, infrastructure, and participation. It considers equipment sharing, community engagement, and human rights protections as tools for redistributing resources and promoting fairness, particularly between the Global North and South. Moving beyond growth-centred logics could require confronting resource concentration, affordability barriers, and uneven exposure to environmental vulnerabilities (Sambrook et al., 2023).

First, material and technological inequalities are structurally embedded in elite sport and systematically advantage wealthier actors (Köves et al., 2021). Degrowth-oriented sharing practices could demonstrate how existing resource asymmetries in elite sport are not incidental but institutionally produced and could, in principle, be addressed through alternative ownership and access arrangements (e.g. Frenken & Schor, 2017). Access-over-ownership models (e.g. such as equipment rental systems, shared facilities, or co-use of sports spaces) could reduce resource hoarding and lower participation barriers (Frenken & Schor, 2017; Szathmári, 2024). A concrete example is Norway's BUA (Barn Unge Aktivitet), a voluntary initiative that offers free access to sport equipment in local communities to enhance inclusion, reduce participation costs, and promote environmental responsibility (Tjønndal & Nilssen, 2019b). In elite sport, ownership of professional equipment could shift from individuals or nations to clubs, events, or rental providers (Szathmári, 2024). At elite competitions, centralised and neutralised service infrastructures (e.g. shared waxing facilities or mandatory use of event-provided equipment) could counteract technological arms races, in which wealthy nations deploy expensive mobile service units while athletes from resource-scarce countries rely on improvised solutions (Tjønndal & Nilssen, 2019a). From a degrowth perspective, scaling such access-based models to elite sport, particularly in the context of mega-events, could help reduce ownership-centred, high-throughput models that currently reproduce material inequality, provided technological innovation is actively regulated (cf. production and consumption section). These models would reflect a broader commitment to embedding social sustainability into sport governance (McCullough et al., 2020a, 2023; Taks, 2013).

Second, economic and regulatory inequalities are reinforced through governance arrangements that prioritise global commercial interests over local economies and athletes' autonomy. Mega-events often operate under sponsorship regimes that restrict local economic participation through clean zones (e.g. advertising exclusivity, such as Rule 40), limiting athletes' ability to promote personal sponsors (Dixon & Backhouse, 2016). These mechanisms consolidate commercial power while marginalising locally embedded businesses from the economic benefits of these sport events. Revisiting such

regulations could facilitate regional value creation over monopolistic global branding. Mega-events often reproduce spatial inequalities, displacing marginalised groups to create ‘beautified’ spaces for global visitors, resulting in rising living costs and an uneven distribution of post-event benefits (Contractor & Greenlee, 2018). From a degrowth perspective, infrastructure should serve enduring community purposes rather than short-term spectacle. Mandatory environmental and social impact assessments, community-led evaluations, and benefit-sharing mechanisms might help rebalance costs and gains. Ensuring priority access schemes or reduced ticket allocations for local populations further foregrounds distributional justice in event planning. Such reforms would reorient attention from economic growth to questions of who benefits and who bears the burdens.

Third, inequality manifests through labour precarity and human rights violations across the lifecycle of mega-events. Events such as the Olympics have repeatedly been associated with exploitative labour practices, displacement, and restrictions on civil liberties (Lin & Song, 2024). Embedding human rights frameworks throughout the event lifecycle could be one way to mitigate such harms. From a degrowth perspective, however, rights-based approaches should extend beyond procedural compliance, emphasising long-term socio-economic and ecological legacies, including who has their livelihoods secured and who has their environments degraded. Evaluating mega-events through this broader temporal lens aligns with calls to ensure equitable and durable outcomes for affected communities (Cornelissen et al., 2011).

Finally, inequality in elite sport is also epistemic as sustainability frameworks and governance models are often developed within WEIRD (Western, Educated, Industrialised, Rich, Democratic) contexts and subsequently universalised (Evans et al., 2020). Such templates risk overlooking context-specific capacities and vulnerabilities, particularly in Global South host regions. Calls for context-sensitive sustainability strategies underscore the need to address capability inequalities between host nations (Sharples, 2024). Wolfe (2023) stresses that any meaningful change should centre on the articulated lived experiences and concerns of affected communities. Thus, epistemic inequality concerns not only whose knowledge is included, but which forms of experience and capacity are treated as legitimate in defining sustainable futures for elite sport.

Culture and education

This section explores how cultural transformation and education can be examined as conditions that render a degrowth-oriented rethinking of elite sport conceivable. It considers the reproduction of dominant growth paradigms in sport management education, the role of critical pedagogies in enabling alternative forms of thinking, and the inclusion of marginalised perspectives and pluriversal worldviews. Education is not merely a site for knowledge transmission but a space for unlearning, reimagining, and co-producing more just and sustainable futures. Orr (2024) contends the historical inertia in sports climate action stemmed less from a lack of scientific documentation than from a scarcity of ‘translators’ capable of making that evidence legible and urgent to stakeholders. As UNESCO (2021) highlights, education can reshape how individuals relate to the world and is therefore vital for sustainability. Although sustainability is increasingly integrated into higher education (UNESCO, n.d.; UCL, 2022), scholars critique its quality, arguing

that it often fails to challenge the assumptions underpinning unsustainable systems (Getzin, 2021; Kaufmann et al., 2019; Kopnina, 2020). Even in general curricula, educators may perpetuate values of anthropocentrism, technological optimism, competition, commodification, and market-centric growth (Prádanos, 2015). In business education, a neoliberal 'hidden curriculum' privileging profit and growth is identified (Kiss et al., 2024; Sutrop, 2015; Smith et al., 2023).

However, education could first expose learners to the social conditioning that sustains unsustainable practices, enabling them to explore alternative visions (Getzin, 2021). Degrowth pedagogies have been described as fostering critical reflexivity, aiming not to accumulate knowledge but to unlearn dominant patterns of thinking and acting (Getzin, 2021). They prioritise experiential, problem-based learning grounded in real-world contexts. Through this collaborative and emancipatory process (Kiss et al., 2024; Wiek et al., 2011), students can evolve into the very 'translators' Orr (2024) calls for, professionals equipped not only to understand the crisis but to interpret what is at stake for coaches, athletes, and administrators. In elite sport and sport management, this implies cultivating learning environments that promote curiosity, dialogue, and co-creation of knowledge. Prádanos (2015) calls for 'a dynamic community of (un)learning,' where teachers and students are co-subjects in a mutual learning process. Such approaches illustrate how educational settings might create conditions under which future sport managers can critically interrogate the growth imperative and imagine alternative models of elite sport. This requires critically interrogating the ownership and construction of knowledge: whose interests are served, and at what cost (Fernandez-Balboa, 1993).

Second, mainstream sport sustainability education often emphasises 'green growth' via the UN SDGs, leaving deeper structural assumptions unexamined (Getzin, 2021). From a degrowth perspective, sport management curricula become a critical site for examining how economic and ecological assumptions are reproduced or challenged. Topics such as environmental ethics, decolonial theory, political philosophy, and Indigenous knowledge systems would allow students to interrogate the Western, market-centric assumptions through which elite sport is often rendered intelligible. Although this article does not offer a curriculum blueprint, parallels from other disciplines may offer inspiration. For example, Prádanos (2015, in Hispanic studies) suggests engaging students in critical analyses of GDP or exposing implicit anthropocentrism in course materials. Sport management students could similarly analyse how textbooks frame sustainability and compare these narratives with alternative models that centre on ecological and social justice.

Third, Kiss et al. (2024) argue for participatory pedagogies that challenge students to question dominant expertise. Methods such as *world cafés* or *backcasting* (Köves et al., 2021) support pluralistic, non-hierarchical dialogue. The definition of expertise could expand to include those most affected by elite sport, such as displaced residents, asylum seekers, Roma communities, and low-income populations. Their lived experiences can be understood as epistemically relevant perspectives that are often marginalised in education discourses. Participatory models such as Human Libraries (Abergel, 2019) and partnerships with activist movements, such as NOlympics LA, could embed marginalised voices into the learning process. Tasks might include redesigning the Olympic Games from a degrowth perspective or debating the viability of

alternative sporting models grounded in pluriversal worldviews (Kothari et al., 2019).

However, resistance to degrowth integration is likely, as Díez-Gutiérrez and Palomo-Cermeño (2023) found that degrowth rarely appears in teacher education curricula and is often dismissed as ideological. In sport management, the tight alignment of curricula with industry demands (Guidotti et al., 2023) creates tension when introducing degrowth ideas. Embedding degrowth perspectives would likely require cross-sectoral collaboration between universities, policymakers and sport organisations. While students may choose not to embrace a degrowth-oriented vision of sport, exposing them to alternative paradigms enables them to base their decisions on a more informed understanding of diverse sustainability pathways rather than uncritically accepting dominant narratives. In this context, researchers and teachers can play a role in questioning dominant sustainability narratives and discussing transformative pedagogies (cf. the EU *REAL* project).

From reimagination to research questions on degrowth and elite sport

Building on the previous section, we have developed a research agenda that outlines empirical directions for systematically examining the implications, contradictions, and political-economic conditions of degrowth-oriented transformations in elite sport (cf. Table 2). Thus, the questions presented in Table 2 are selective only. They are intended

Table 2. Research agenda for future research in degrowth and elite sport.

Policy Topics	Research Questions
Energy and Environment	• How do current competition formats and mobility patterns influence absolute resource use and emissions in elite sport? • What environmental and organisational effects emerge when event frequency, scale, or infrastructure expansion are deliberately reduced? • Which institutional and commercial interests inhibit the adoption of binding ecological ceilings in elite sport governance?
Governance and Geopolitics	• How are hosting decisions currently structured, and whose interests are prioritised or marginalised in these processes? • Under what conditions can participatory mechanisms (e.g. veto rights, citizen assemblies) reshape hosting and legacy models? • How do international federations maintain growth-oriented incentives, and what governance reforms could destabilise these dynamics?
Production and Consumption	• How do sponsorship, marketing, and technological innovation reproduce growth-dependent consumption patterns in elite sport? • What happens to competitive balance, revenues, and legitimacy when high-carbon sponsorships or performance-enhancing technologies are restricted? • Which legal and commercial arrangements lock elite sport into current sponsorship and commodification models?
Inequality	• How do qualification systems, infrastructure standards, and knowledge production reproduce material and epistemic inequalities? • Under what conditions do access-over-ownership or benefit-sharing models reduce structural exclusion? • How are global power asymmetries between federations, sponsors, and host communities institutionalised and contested?
Culture and Education	• How do sport management curricula and professional norms reproduce growth-oriented worldviews? • What pedagogical interventions foster critical reflexivity toward growth dependency in sport institutions? • Which institutional incentives and accreditation structures constrain curricular transformation toward post-growth perspectives?

to stimulate further empirical and theoretical engagement across the five domains addressed before, if it is to move beyond the limitations of current sustainability debates in sport management. Within these questions, we identify three dimensions (exploratory, transformative, and structural), each addressing areas for further research. These dimensions are similar to other distinctions in transformation research (e.g. David, 1985; Geels, 2002; Kallis, 2011).

Exploratory questions are needed to understand how elite sport currently stabilises a 'normalised' high throughput through infrastructures, mobility regimes, consumption and attention arrangements, and professional cultures of success (Gram-Hanssen, 2011; Shove, 2010). Such questions can reconstruct the mechanisms through which growth dependency is continuously reproduced within the field (Shove & Walker, 2010). Thus, they reveal how growth is stabilised as the norm and why environmental impacts often appear to be unavoidable side effects of sporting success (Gammelsæter & Loland, 2023; McCullough et al., 2020a). Such exploratory work may, for example, examine how competition formats, marketing strategies, hosting decisions or technological innovation reproduce growth-dependent consumption logics or inequalities. Exploratory questions help demonstrate the lock-ins through which elite sport reproduces growth dependence as an apparently normal and self-evident condition (e.g. Stegmann & Suter, 2026).

Transformative questions are needed to analyse degrowth alternatives as comparable institutional configurations (Kallis, 2011). This means that such questions could investigate alternative institutional arrangements under conditions of sufficiency, redistribution, and ecological limits (Gammelsæter & Loland, 2023). This includes asking how competition formats, hosting models, governance structures (e.g. Eriksson & Clausen, 2024; Jackson & Victor, 2015), or consumption norms could be reorganised, and what social, ecological, and organisational consequences would result (O'Neill et al., 2018; Sandberg, 2021). Transformative questions, therefore, shift degrowth alternatives from the status of normative critique to that of empirical objects of inquiry.

Finally, structural questions are used to understand how dependencies on, for example, sponsorship, media and continuous growth dilute or block alternatives. Thus, such questions analyse the power and dependency structures that define which alternatives are even conceivable (Burbank et al., 2002; Geels, 2014). Such questions foreground that transitions toward degrowth are unlikely to depend solely on voluntary organisational reform, but are embedded in conflicts over resources, authority, legitimacy, and distribution (McCullough & Bramley, 2025). In this sense, the structural dimension helps understanding why certain alternatives remain marginal or are resisted.

All three of these dimensions should be investigated. Exploratory questions alone may only identify that elite sport repeatedly reproduce themselves and become locked in due to a bias towards stability of the system (e.g. Shove & Walker, 2010). Transformative questions alone may only yield normatively appealing counterimages without field realism, and they may underestimate which routines or practices are actually central to systemic change (e.g. Koch et al., 2025; McCarthy et al., 2025) and increase the likelihood that adjustments will be made to irrelevant factors (e.g. trash recycling instead of flying). Structural questions alone, by contrast, may only slide into macro-critique and macro-determinism without sufficient attention to the mechanisms through which actors reproduce or contest existing arrangements (e.g. Avelino & Rotmans, 2009;

Stegmann & Suter, 2026). Taken together, however, the three dimensions enable a more differentiated form of transformation research that treats reproduction, opportunities, and constraint as interconnected processes. This, in turn, helps explain why sustainability in elite sport so often remains limited to selective adaptation and symbolic compensation (e.g. McCullough, 2023; Stegmann & Suter, 2026).

Conclusion

This paper began by recalling the warning issued by Meadows et al. (1972) over fifty years ago. Despite this and many subsequent alerts, including the identification of nine planetary boundaries by Rockström et al. (2009), of which four had been crossed by 2015, six by 2023, and seven by 2025 (Stockholm Resilience Centre, 2015, 2023, 2025), society's commitment to economic growth remains largely unshaken. Elite sport remains closely aligned with the broader societal focus on expansion, as illustrated by continued investment in larger infrastructures, bigger event formats, and the institutional normalisation of further growth. As such, plans for a 100,000-seat Manchester United stadium and discussions about expanding the FIFA World Cup to 64 teams signal a continued alignment with growth-oriented agendas (Communications Department, 2025; MacInnes, 2025; Panja, 2025).

At the same time, it would be inaccurate to claim that sport scholarship is silent on sustainability. On the contrary, academics document the environmental footprint of elite sport and its vulnerability to climate impacts such as heat and extreme weather (Cury et al., 2023; Orr et al., 2022). More critical contributions have gone further, arguing that the relentless pursuit of growth undermines not only planetary boundaries but also the integrity and social meaning of elite sport itself (Gammelsæter & Loland, 2023; Tangen, 2021). Together, these critiques suggest that prevailing sustainability paradigms, often rooted in green growth and weak sustainability, are insufficient or even counterproductive.

This article advances the debate by exploring how degrowth might inform a fundamental rethinking of elite sport. It has examined the relationships among sport, nature, and society, and clarified conceptual distinctions between weak and strong sustainability, as well as between green growth and degrowth. Furthermore, the article has mapped how elite sport could be reimagined across five analytical domains: energy and environment, governance and geopolitics, production and consumption, inequality, and culture and education. These domains are not intended as an implementation blueprint, but as a conceptual framework for facilitating alternative ways of thinking about the organisation, purpose, and limits of elite sport under conditions of environmental constraint.

Political constraints under which more radical sustainability transformations would have to occur should be acknowledged. Feola (2025), building on Buch-Hansen (2018), notes that degrowth faces a tension between normative visions of systemic change and the limitations of contemporary political structures. In the current volatile geopolitical context marked by conflict, remilitarisation, strategic competition, and authoritarian tendencies, the conditions for coordinated top-down transformation appear limited. However, these constraints do not diminish the relevance of exploring degrowth. On the contrary, they expose the fragility of growth-dependent systems.

When extended to elite sport, these dynamics may highlight the misalignment between prevailing growth-oriented sport models and the material, ecological, and social constraints within which elite sport currently operates. Athletes, fans, and scholars increasingly question a sport system reliant on continual expansion, energy-intensive infrastructures, global mobility, and escalating resource demands (Fuchs, 2022; Gammel-sæter & Loland, 2023; McCullough, 2023; Müller et al., 2023).

Above all, this article's contribution lies in shifting the starting point of sport and sustainability research from asking how elite sport can continue to grow to questioning whether growth itself remains a viable organising principle under ecological constraints. By doing so, the article invites further empirical and conceptual research into degrowth as one among multiple sustainability pathways beyond dominant frameworks. Degrowth may not provide *the* definitive route to sustainability in elite sport, nor is it intended to be one, but it offers a critical space for rethinking entrenched assumptions, decentring profit and performance, and imagining alternative futures. At its best, such reimagining may help preserve the ecological conditions that sustain life on earth and the social and cultural meaning of elite sport for generations to come.

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