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COMMENT

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Beyond the Just Transition: a critical inquiries from the pluriverse

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Abstract

The "Just Transition" concept aims to ensure an equitable shift toward low-carbon economies by minimizing negative impacts on workers, communities, and vulnerable sectors, while inclusively distributing the benefits of environmental policies. However, this process faces structural and conceptual barriers that extend beyond technical challenges, such as the lack of effective participation, power dynamics, persistent inequalities, and tensions between economic growth and sustainability. This work transcends traditional notions by adopting a plural and critical perspective from the Pluriverse to explore the challenges and opportunities in reshaping the Just Transition. We argue that integrating local knowledge and adopting epistemic justice approaches are essential for designing transitions that not only mitigate the climate crisis but also promote autonomy, social equity, and ecological regeneration.

Keywords Just transition, Green economy, Social equity, Sustainable development, Pluriverse, Epistemic justice

Introduction: conceptualizing a Just Transition

In a conventional view, a Just Transition can be defined as "a green economy achieved in the most just and inclusive manner possible for all involved, creating opportunities for decent work and leaving no one behind" [23]. The concepts of Just Transition and Sustainable Development are closely interrelated, as each addresses complementary aspects of the broader goal of achieving a sustainable and equitable future [12].

Furthermore, the term Just Transition refers to an approach aimed at ensuring a fair shift toward a low-carbon and sustainable economy, minimizing negative impacts on workers, communities, and economies that rely on carbon-intensive industries [10, 18]. This perspective emphasizes social justice and equity as central pillars of climate change mitigation strategies and economic restructuring processes [45].

As Diesendorf and Taylor [9] warn, corporate interests influencing political power through donations, media concentration, and revolving doors present significant obstacles. Thus, Just Transitions face not only technological challenges, but also structural and political barriers.

Similarly, Fremstad and Paul [13] highlight that the neoliberal emphasis on market-based solutions has hindered the necessary changes. Adopting green technologies is not enough; it is essential to promote social equity, ecological justice, and structural political change. We argue that a truly transformative approach must go beyond technological efficiency, embracing sufficiency as a guiding principle to reduce consumption to sustainable levels.

This vision not only complements technological improvements, but also requires a profound cultural shift and economic restructuring that prioritize human well-being over perpetual growth. In this scenario, it

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becomes essential to emphasize that transitions should not rely solely on the adoption of new technologies but must instead embrace a participatory approach that enables affected communities to exercise control over their resources.

The authors align with Hickel et al. [21, 22] and Biswas et al. [5] in asserting that economic growth in the Global North is largely sustained by the appropriation of resources and labor from the Global South, perpetuating economic, social, and ecological inequalities, with the costs falling disproportionately on the most vulnerable populations in the Global South. Consequently, we argue that it is necessary to explore more radical approaches, such as planned degrowth, is necessary, which prioritizes social well-being and ecosystem preservation over perpetual growth [22].

Energy justice requires inclusive governance frameworks that prevent the replication of colonial dynamics and ensure that solutions are co-created with communities, safeguarding their intergenerational sustainability [30, 42]. Markers of inequality—such as gender, race, ethnicity, and national or territorial origin—manifest in access to resources and in climate decision-making processes. These reveal the importance of just transitions adopting a pluralistic and intersectional approach to prevent the reproduction of exclusionary dynamics [36, 43].

The urgency of accelerating these transitions becomes crucial to ensuring intergenerational justice, given the burden of deep social and ecological debts accumulated over time. Consistent with the holistic perspective of Kothari et al. [28], we argue that just transitions can be framed within a pluriversal spectrum, where the coexistence of multiple knowledge systems and epistemic practices critically engages with the universal development paradigm, which often assumes the coloniality of nature [4].

This commentary, therefore, aims to explore the challenges and opportunities that emerge from viewing energy transition as a starting point toward a horizon of pluriversal designs [11], capable of building an ecologically sustainable, socially just, and more peaceful society.

Barriers in the pursuit of a Just Transition

As noted in the introductory remarks, the path toward a "just transition" faces inherent complexities in its conceptualization [45]. The multiple interpretations of "transition" and "justice" within academic and political debates reflect often divergent perspectives, underscoring the urgency of articulating coherent approaches that integrate environmental, energy, and climate dimensions [20].

The challenges of achieving a just transition manifest at both global and local levels, highlighting the need for strategies that coordinate economic, social, political, and technical dimensions. Without an integrated vision, progress may become fragmented, making it difficult to address the multidimensional challenges that energy transitions entail.

A clear example of this issue is the ASEAN region, where the lack of consensus around the definition of energy justice has stalled progress toward more equitable transitions. As a result, this ambiguity not only hampers planning, but also heightens tensions between sustainability objectives and economic interests, especially in a context marked by fossil fuel dependence and rapid economic growth [19]. For this reason, without clear conceptual frameworks, asymmetries not only persist, but may also deepen throughout the transition process.

A critical barrier to just transitions lies in the disconnect between key actors driving energy investments—such as private companies, international donors, and multilateral organizations—and the national arenas where justice demands are articulated. This fragmentation reflects a systemic issue: conventional approaches, focused on creating green jobs and economic compensation, often overlook the structural inequalities that give rise to so-called "unjust transitions" [30]. Therefore, superficial solutions are not enough; it is essential to fundamentally rethink participation strategies, fostering alliances that strengthen democracy and challenge power dynamics that hinder structural change [9].

In this context, it is essential to evaluate current paradigms. Predominant techno-managerial approaches, while seemingly efficient, have proven limited in addressing the complexity of socio-ecological interactions and the power dynamics inherent in transition processes. Bouzarovski [6] highlights how these reductionist approaches tend to oversimplify complex environmental and social realities, increasing the risk of perpetuating inequalities rather than mitigating them. Therefore, just transitions cannot be confined to technological solutions; it is crucial to adopt approaches that recognize the multifaceted nature of justice and incorporate a broader understanding of the social and ecological context.

Within this framework, Indian activist Vandana Shiva [34] delves into how technocratic solutions, even when presented as "green" reinforce structural violence and forms of national dependency. The imposition of uniform, technology-driven solutions has displaced diverse local agricultural systems, fostering external dependence, social gaps, and environmental conflicts. This pattern of intervention, which prioritizes external interests over local knowledge, resonates with the contemporary dynamics of energy transitions, where the priorities of the Global North continue to undermine the autonomy of Global South countries.

One of the fundamental barriers to a just transition, according to Taylor [40], is the exclusion of rural communities from decision-making processes, which generates social conflicts and undermines the attainment of a Social License to Operate (SLO) in energy projects. The lack of early and effective participation heightens perceptions of injustice but also exacerbates tensions in regions where energy projects are developed or critical minerals are extracted. In this context, the author highlights that the social and cultural obstacles linked to renewable energy are widely underestimated in public policy formulation, thereby limiting the potential for truly inclusive transitions.

Similarly, Taylor and Taylor [41] demonstrate, using the case of Vanuatu, how the lack of consultation and active participation in energy projects, such as the Vanuatu Rural Electrification Project (VREP) II, leads to conflicts and risks to obtaining a Social License to Operate (SLO), ultimately compromising the success of these initiatives. We believe these cases reflect a recurring issue in energy transitions: the absence of participatory processes undermines the legitimacy of projects and deepens tensions with the affected communities.

In line with the structural tensions mentioned above, Biswas et al. [5] argue that the nexus between energy and poverty constitutes one of the most critical barriers to achieving a just transition. According to these authors, the combination of energy insecurity with economic and social precarity creates negative feedback loops that deepen exclusion and perpetuate inequalities. From this perspective, overcoming these cycles requires redesigning socio-energy systems to generate more value than they extract, equitably redistributing benefits, and fostering active participation of local communities in energy governance.

On the other hand, Biswas et al. [5] warn that this transformation should not be limited to mitigating negative impacts but must also address the ownership and control structures that restrict equitable access to energy benefits. The authors emphasize that failing to do so would risk energy transitions reproducing the historical inequalities inherent in current systems.

Following this logic, the analysis of just transitions in regions of the Global South, such as Latin America and Africa, reveals that these processes are not free from neocolonial dynamics that perpetuate inequalities and constrain economic autonomy [4, 38]. As we argue, a recurring challenge is that conventional climate justice frameworks tend to marginalize the specific needs of impoverished regions, prioritizing emission reductions over structural issues like energy poverty.

Along these lines, it is emphasized that traditional definitions of a just transition can hinder socioeconomic justice, particularly in Africa, by failing to address the specific challenges of each context and the demands for development. From this perspective, the lack of inclusion becomes a structural barrier that deepens global inequalities [3]. These omissions highlight a fundamental challenge: just transitions must be deeply sensitive to local contexts to prevent the reproduction of preexisting disparities.

Dávid-Barrett [8] warns that state capture by vested interests poses a significant barrier to advancing toward more sustainable and just models. Overcoming these dynamics requires revising national frameworks and strengthening the Global South's economic and political autonomy, challenging the neocolonial structures that hinder its development. Furthermore, as Sovacool et al. [37] highlight, the energy transition is not free from social and political conflicts, as community mobilizations—both supporting and opposing energy infrastructure—can either hinder or catalyze change.

From a decolonial perspective, Tornel [42] emphasizes that the imposition of modern energy infrastructures perpetuates forms of coloniality within energy systems, reproducing power dynamics that marginalize local communities. In this view, a just transition cannot be limited to the adoption of new technologies; it must advance toward the decolonization of energy policies, enabling communities to reclaim control over their territories and resources.

Therefore, just transitions must address not only technological challenges but also integrate epistemic justice by incorporating local knowledge and contextual solutions that honor the cultural and ecological specificities of each region [34]. Only through a transformative approach that prioritizes inclusion, structural justice, and active participation will it be possible to overcome historical asymmetries and lay the foundation for a truly inclusive future. With this perspective in mind, we now explore the possible pathways toward achieving this horizon.

The way forward

Advancing toward a just transition requires building a sustainable economy that ensures social equity and minimizes negative impacts on workers and communities, especially in developing countries. To achieve this, comprehensive policy frameworks are needed to align climate goals with social justice through regulations that limit emissions and incentivize clean energy [18, 20]. Additionally, it is crucial to strengthen democracy and curtail the excessive influence of corporate interests. In this context, coordinated community campaigns around common goals can apply the pressure

needed to transform existing frameworks and pave the way for sustainable and equitable development [9].

Economic diversification is essential to reduce dependence on high-carbon industries, requiring public and private investments in renewable energy, sustainable agriculture, and green technologies [44]. Promoting entrepreneurship and small businesses within these sectors can generate employment, while financial incentives—such as subsidies, loans, and tax exemptions—can accelerate the transition [39]. It is crucial that these investments are distributed equitably to prevent regional disparities and strengthen vulnerable communities [24].

However, achieving a sustainable and equitable transition requires integrated efforts that combine inclusive policies, economic diversification, social equity promotion, continuous education, and international cooperation [16]. Additionally, international organizations play a crucial role in facilitating dialogue and ensuring that benefits are distributed fairly, thereby contributing to global climate goals [14, 35, 45].

In this vein, Miller and Richter [33] identify five essential areas to enhance transition planning: mapping socio-energy relationships, designing inclusive energy futures, creating just systems, building alliances between communities and sectors, and ensuring comprehensive governance. Complementing this, Alemayehou et al. [3] propose six key principles for inclusive transitions in low-emission countries: diversity, agency, ambition—going beyond basic access to electricity—resilience, innovation, and equity, treating global carbon as a development resource.

The Green New Deal (GND), proposed by Fremstad and Paul [13] as an alternative to neoliberalism, repositions the state as a key actor in the energy transition. This approach promotes massive public investments, stringent environmental regulations, and redistributive policies aimed at improving quality of life, challenging the neoliberal narrative that associates the transition with unavoidable economic sacrifices. Furthermore, marginalized groups—such as low-income communities, Indigenous peoples, and other vulnerable populations—must be prioritized, ensuring their access to new economic opportunities [15, 31, 32].

In this context, social equity, continuous education, and inclusion must serve as fundamental pillars of a just transition, prioritizing the most vulnerable workers and communities in the face of structural inequalities [1, 7]. This requires comprehensive policies to reduce income inequality and ensuring access to education, healthcare, and housing. Additionally, it involves promoting labor transitions from high-carbon sectors to sustainable industries through training programs, job placement initiatives, and social safety nets [16, 17, 25, 27].

Degrowth also emerges as a strategy to redirect economies toward social and ecological justice, proposing a model that prioritizes reducing unnecessary production and the strengthening of universal public services. According to Hickel et al. [21, 22], this approach could free up resources for countries in the Global South, fostering transitions through green jobs and more participatory governance systems.

Biswas et al. [5] highlight the energy–poverty nexus, which illustrates how current energy systems perpetuate extractive cycles that deepen inequality and poverty. To break this dynamic, they propose generative infrastructures that ensure access to energy and promote prosperity and community self-determination through distributed ownership models, such as community solar panel projects.

In a pluriversal horizon, we argue that just transitions must go beyond technological solutions, addressing systemic inequalities related to gender, race, colonialism, and class. Sovacool et al. [36] stress the urgency of diversifying energy justice perspectives by integrating feminist, anti-racist, Indigenous, and postcolonial approaches. Along these lines, Adams and Gruen [2] propose an ecofeminism that reveals how hierarchies between species, gender, and nature perpetuate structures of domination, underscoring the importance of care, affect, and non-violence in building more just relationships.

On this path, Tornel [42] argues that it is essential to reconfigure energy policies through a decolonial perspective, recognizing that energy injustices are already embedded within current systems and political frameworks. This approach emphasizes the need to abandon universal solutions and allow communities to define the most suitable energy sources for their specific contexts, grounded in their historical, cultural, and spiritual relationships with the land.

In turn, Kumar [29] underscores the importance of establishing institutional mechanisms that acknowledge historical injustices and actively promote their effective redress. Among his proposals, he highlights the creation of a permanent ombudsman responsible for overseeing conflicts between communities and state authorities within the framework of energy transitions, ensuring both accountability and the protection of the right to dissent.

To overcome these barriers, Taylor [40] emphasizes the importance of adopting energy justice principles that promote community participation from the earliest stages through social impact assessments (SIA) and fair benefit-sharing mechanisms. Building a renewed social contract with rural communities centered on energy justice emerges as an essential step toward a sustainable future.

In this vein, Jasanoff [26] urges the abandonment of "technologies of hubris", which assume that the future can be controlled exclusively through science and technology, advocating instead for 'technologies of humility'. This approach opens space for the integration of multiple perspectives, challenges the limits of scientific knowledge, and acknowledges the unforeseen risks accompanying our decisions. Only through this epistemic humility can we avoid the pitfalls of unlimited growth, paving the way for more inclusive and sustainable transitions.

The just transition is not merely a technical response to the climate crisis but a transformational project that challenges the structures sustaining social and environmental inequities. Arturo Escobar [11] argues that this process involves designing regenerative ecosystems that restore the connections between the social and natural realms, prioritizing local autonomy and distributed knowledge. Escobar vision reminds us that the future is not a fixed destination but a continuously evolving space where the global is enriched by the local and the particular.

This approach encourages the design of transitions that reject extractive logic and instead promote coexistence in harmony with planetary boundaries and social justice. Redesigning our relationship with the environment requires dismantling the hierarchies that divide the social and ecological realms, fostering a more just and inclusive horizon of coexistence. This rethinking invites us to view transitions as radical transformation projects, where mutual recognition, peace, and planetary sustainability become fundamental pillars for building shared presents and futures.

Author contributions

The initial idea for the manuscript was conceived by Walter Leal Filho, who also contributed to the conceptualization by outlining the overarching framework and goals. Both authors collaborated on the further development of the manuscript's framework and goals. They also jointly carried out the investigation, conducting a literature review to support the arguments presented. Both participated in the writing – original draft, contributing substantial content to the manuscript, and collaborated on writing – review & editing, ensuring clarity, rigor, and coherence throughout the development process. Maikel Pons-Giralt was responsible for redesigning the structure of the manuscript, refining the conceptual framework, and adjusting the methodology to align with the revised goals and feedback. Walter Leal Filho provided supervision, overseeing the process and ensuring the overall quality and consistency of the final version.

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Data availability

No datasets were generated or analyzed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable.

Competing interests

The authors declare no competing interests.

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