The Machete of change: Driving Green Revolution in Organizations for Climate Change Mitigation and Greenhouse Gas Reduction

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Abstract- ***Climate change poses one of the greatest challenges of the twenty-first century, with organizations positioned as both major contributors to greenhouse gas (GHG) emissions and critical agents of mitigation. This opinion and policy paper advances the metaphor of the "machete of change" to describe the urgent, decisive, and transformative action required to drive a green revolution in organizations. Drawing on a desk-based review of empirical and conceptual studies, the paper highlights three central findings: first, that green innovation significantly reduces organizational emissions while improving competitiveness; second, that policy instruments such as carbon trading schemes and green bonds provide strong incentives for corporate climate action; and third, that persistent barriers—particularly in developing economies—continue to constrain organizational transformation, with risks of greenwashing undermining credibility. The paper argues that effective mitigation requires coordinated strategies across policy, finance, governance, and organizational culture. Recommendations include embedding sustainability into corporate strategy, expanding green finance mechanisms, strengthening environmental disclosure and accountability, and adapting global climate policies to local contexts. Ultimately, the machete of change is presented as a call to action for organizations to cut through structural, cultural, and financial inertia, and to lead in reducing GHG emissions. By combining empirical insights with policy advocacy, this paper contributes to the ongoing discourse on organizational responsibility in the era of climate change.***

Keywords: Climate Change, Greenhouse Gas Reduction, Green Revolution, Organizational Transformation, Sustainability, Policy Advocacy

I. INTRODUCTION

The world is standing at a decisive crossroads. Climate change, once a distant threat, has now become a daily reality, with rising sea levels, extreme weather events, and the intensifying greenhouse gas (GHG) effect threatening lives, economies, and ecosystems (IPCC, 2023). While governments globally debate policy frameworks and international bodies negotiate emission targets, organizations—both public and private—hold in their hands one of the sharpest tools for immediate change: the capacity to innovate, restructure, and act decisively. This is the "machete of change," a metaphor for the urgent, bold, and sometimes uncomfortable transformations required to slash through entrenched habits of unsustainable growth.

Organizations are not merely passive contributors to global emissions; they are central players in shaping both the problem and its solution (Delmas & Toffel, 2021). From the carbon footprint of industrial operations to the policies that govern supply chains, corporate choices directly influence climate trajectories (Porter & Kramer, 2019). Yet, too often, climate change is framed as an external issue—something to be managed through compliance or symbolic corporate social responsibility initiatives (Okereke & Coventry, 2016). What is needed, however, is a revolution in organizational culture and strategy: a green revolution that embeds sustainability into the DNA of business practice.

In this context, organizational leaders, policymakers, and change agents must recognize that the fight against climate change is no longer optional or symbolic—it is existential (Rockström et al., 2020). The machete of change calls for decisive cuts: eliminating wasteful practices, restructuring energy systems, rethinking supply chains, and embracing green innovations that reduce greenhouse gases at their source (Geels, 2018). The stakes are high, but so too are the opportunities. Organizations that act now will not only safeguard the planet but also secure competitive advantage in a rapidly greening global economy (Nidumolu, Prahalad, & Rangaswami, 2009).

Statement of the Problem

Despite decades of warnings and global agreements, climate change mitigation remains slow, fragmented, and insufficient. Greenhouse gas emissions continue to rise, with 2022 recording some of the highest levels in human history (IEA, 2023). Organizations, which contribute significantly to global emissions through industrial production, energy use, and supply chain activities, often fall short of implementing effective sustainability practices (Crifo & Forget, 2015). Many corporate climate initiatives remain limited to surface-level compliance or symbolic "greenwashing" campaigns, failing to deliver the systemic change required (Delmas & Burbano, 2011).

The problem is compounded by weak regulatory enforcement, inadequate incentives for green investments, and the high upfront costs of renewable technologies in developing economies such as Nigeria (Akinbami, Akinwumi, & Adeoye, 2019). As a result, organizations face a paradox: they recognize the existential risks posed by climate change but struggle to align their operations with transformative green practices. This inertia has left a dangerous gap between climate commitments and climate actions, threatening global progress toward net-zero targets (UNEP, 2022).

In this context, the absence of radical, decisive organizational strategies—the "machete of change"—is a critical barrier. Without bold interventions to cut through the inertia of unsustainable practices, organizations will remain complicit in escalating climate risks. The challenge is not a lack of awareness, but a lack of transformative will, leadership, and policy alignment. This problem underpins the urgent need for a green revolution in organizational culture, innovation, and governance to drive measurable reductions in greenhouse gas emissions.

Research Objectives

This paper seeks to achieve the following objectives:

1. To examine the role of organizations in driving climate change mitigation through the adoption of sustainable practices, policies, and innovations.
2. To analyze the barriers that limit organizations from achieving meaningful greenhouse gas (GHG) reduction, particularly in contexts where regulatory, financial, and infrastructural constraints exist.
3. To advocate for a "green revolution" in organizational culture and strategy, highlighting the urgency of transformative approaches—what this paper terms the "machete of change."
4. To provide policy-oriented recommendations for aligning organizational practices with national and global climate change mitigation goals, particularly within emerging economies.
5. To stimulate discourse among policymakers, corporate leaders, and civil society on the necessity of bold organizational reforms as a pathway toward achieving net-zero targets.

II. REVIEW OF RELATED LITERATURE

1. Organizations as central actors in climate mitigation

Organizations are both major sources of greenhouse gas (GHG) emissions and essential agents of mitigation. Large firms' operational choices, supply-chain decisions, and investment strategies directly shape emission trajectories; thus, organizational change is central to delivering mitigation at scale (Delmas and Toffel, 2008). Institutional pressures (regulation, customers, investors) and internal strategic choices produce divergent organizational responses—ranging from symbolic compliance to deep structural transformation.

2. Empirical evidence: green innovation reduces emissions and can improve performance

A growing empirical literature finds that green innovation—investment in low-carbon technologies, energy-efficiency measures, and process redesign—consistently lowers firm-level carbon emissions and often supports productivity or financial gains. Panel studies and cross-firm analyses across contexts (China, Europe, multi-country samples) show green innovation is associated with measurable declines in emissions and, in some cases, improved firm performance (Frontiers in Environmental Science, 2024; PMC, 2024; ScienceDirect, 2025). These findings support the claim that mitigation is not only an environmental imperative but can be integrated into value creation (ScienceDirect, 2024).

3. Policy instruments and market signals shape organizational action

Empirical evaluations of policy tools—emissions trading schemes (ETS), green subsidies, and green bonds—show that credible market and regulatory signals materially affect corporate green behavior.

For example, evaluations of China's carbon trading pilots indicate positive effects on firms' green innovation (PMC, 2024). Similarly, firms that issue green bonds tend to reduce emissions more strongly than non-issuers in subsequent years (Bank for International Settlements, 2025).

4. Barriers to organizational transformation—global evidence and relevance to developing economies

Despite positive findings on green innovation, numerous empirical studies document persistent barriers: financing constraints, insufficient policy incentives, institutional fragmentation, and limited managerial capacity—especially pronounced in developing country contexts. Reviews of renewable and green energy adoption in Nigeria and other African countries point to high upfront costs, weak enforcement, and infrastructure gaps that slow corporate transition to low-carbon operations (Journal of Energy and Natural Resources Research, 2025).

5. Corporate signalling, disclosure, and greenwashing—empirical pitfalls

The literature also warns about the limits of voluntary action. Empirical work on corporate communications finds a significant incidence of greenwashing, where firms overstate environmental performance, often driven by brand protection motives or weak external scrutiny (Delmas and Burbano, 2011). Where disclosure regimes are weak, market signals can be noisy and sometimes mislead stakeholders, undermining trust in corporate climate claims.

6. Governance, managerial capacity, and organizational culture

Empirical and conceptual studies emphasise that technological fixes alone are insufficient: governance structures, board commitment, internal incentives, and green human capital play strong mediating roles in whether innovations translate into sustained emission reductions. Studies of environmental management practices find that green innovation often mediates the relationship between internal capabilities (e.g., environmental management systems, green HRM) and environmental outcomes (ScienceDirect, 2024; ScienceDirect, 2025).

7. Synthesis

Empirical evidence provides three policy-relevant messages that support the "machete of change"metaphor:

1. Green innovation reduces emissions and can improve firm competitiveness (Frontiers in Environmental Science, 2024; PMC, 2024).
2. Policy instruments such as ETS and green bonds accelerate organizational green behaviour (PMC, 2024; Bank for International Settlements, 2025).
3. Barriers and governance gaps persist, particularly in developing economies (Journal of Energy and Natural Resources Research, 2025).

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IV. METHODOLOGY

This study adopts a qualitative and interpretive methodology appropriate for a thought-leadership and policy-oriented opinion paper. Rather than collecting primary data, the paper relies on a desk-based review of secondary sources, including academic journal articles, policy reports, international energy outlooks, and corporate disclosures. The approach allows for triangulation of insights across empirical studies, conceptual frameworks, and policy debates to inform a coherent argument on organizational green revolution and climate change mitigation.

The research design is guided by the following steps:

1. Literature Identification
A systematic search of peer-reviewed journals (e.g., Journal of Cleaner Production, Business Strategy and the Environment, California Management Review), databases (ScienceDirect, SpringerLink, JSTOR), and grey literature (International Energy Agency reports, Bank for International Settlements policy notes) was conducted. Search terms included green innovation, organizational sustainability, climate change mitigation, GHG reduction, and corporate environmental strategy.

2. Selection Criteria
Studies were selected based on relevance to organizational climate action, empirical evidence on GHG reduction, and policy implications. Priority was given to recent studies (2010–2025), though seminal works (e.g., Delmas and Toffel, 2008; Delmas and Burbano, 2011) were included to establish theoretical grounding.

3. Analytical Strategy
A thematic analysis was applied to the reviewed materials. Key themes included: (a) drivers of organizational green innovation; (b) effectiveness of policy instruments such as carbon trading schemes and green bonds; (c) barriers in emerging economies; and (d) risks of greenwashing. The themes were

synthesized into a policy-advocacy narrative framed by the "machete of change" metaphor.

4. Positioning as an Opinion/Policy Paper
While rooted in empirical evidence, the analysis goes beyond description to offer critical reflections, normative judgments, and forward-looking recommendations. This interpretive stance aligns with the opinion-paper genre, which prioritizes thought leadership and actionable insights for policymakers, corporate leaders, and civil society.

V. DISCUSSION OF FINDINGS

The findings from the review of related literature and secondary evidence suggest that organizations play a dual role in the climate crisis: as contributors to global GHG emissions and as potential leaders in mitigation. The discussion is organized thematically to highlight the key insights.

1. Green innovation as a driver of organizational transformation
Empirical studies consistently show that green innovation—whether through renewable energy adoption, eco-efficient technologies, or circular economy practices—has a significant positive impact on carbon reduction and, in many cases, firm performance (Frontiers in Environmental Science, 2024; ScienceDirect, 2024). This finding underscores the argument that climate action is not merely a compliance issue but a strategic advantage for organizations that embrace innovation.

2. Effectiveness of policy and financial instruments
The review indicates that credible policy instruments, such as carbon trading schemes and green bonds, significantly influence organizational climate strategies. For instance, firms in China's pilot carbon trading system reported increased investment in low-carbon technologies (PMC, 2024), while companies issuing green bonds demonstrated stronger subsequent reductions in GHG emissions (Bank for International Settlements, 2025). These findings highlight the importance of robust regulatory and financial frameworks in driving the "machete of change" that cuts through inertia and accelerates green revolutions within organizations.

3. Persistent barriers in developing economies
Despite progress, significant obstacles remain in contexts such as Nigeria and other African economies. High upfront costs of renewable energy, weak policy enforcement, and infrastructural limitations are major barriers to organizational climate action (Journal of Energy and Natural Resources Research, 2025). These findings suggest that the global green revolution is uneven, with firms in developing countries often constrained by systemic challenges beyond their immediate control.

4. Risks of symbolic action and greenwashing
Another critical finding is the prevalence of greenwashing, where organizations exaggerate their environmental performance to satisfy stakeholder expectations without achieving meaningful change (Delmas and Burbano, 2011). This undermines trust and dilutes the legitimacy of corporate climate commitments. The implication is that stronger disclosure requirements, transparency, and third-party verification are essential for ensuring accountability.

5. Organizational culture and governance as mediating forces
The findings also show that technological solutions alone are insufficient. Effective governance structures, leadership commitment, and green human resource management practices are necessary to translate innovations into sustained reductions in emissions (ScienceDirect, 2025). Organizations that embed sustainability into their core strategy and culture are more likely to sustain climate action.

VI. POLICY IMPLICATIONS AND RECOMMENDATIONS

The findings from this study have several implications for policymakers, corporate leaders, and civil society. Addressing climate change through organizational transformation requires coordinated efforts that extend beyond technical innovation to encompass governance, finance, and culture.

Policy Implications
1. Integration of organizations into national climate policy
Governments must explicitly recognize organizations as central actors in national climate strategies. Empirical evidence shows that firms respond strongly to regulatory frameworks such as carbon trading and emissions disclosure requirements (PMC, 2024). Without such integration, organizational action risks remaining fragmented and voluntary.

2. Finance as a lever for change
Access to green finance instruments—such as subsidies, low-interest loans, and green bonds—emerges as a decisive factor in enabling firms to invest in low-carbon transitions. The success of green bond issuances in reducing emissions (Bank for International Settlements, 2025) suggests that Nigeria and other developing countries should deepen domestic green finance markets.

3. Strengthening accountability to prevent greenwashing
The prevalence of symbolic action (Delmas and Burbano, 2011) calls for tighter regulations on environmental disclosures, third-party auditing, and penalties for misleading claims. This will ensure that reported progress translates into real emission reductions.

4. Bridging the developed–developing economy divide
The review highlights systemic barriers in African contexts, such as inadequate infrastructure and weak enforcement (Journal of Energy and Natural Resources Research, 2025). Policymakers in developing economies must therefore adapt global policy instruments to local realities, including capacity-building programs and technology transfer initiatives.

Recommendations
Based on the above implications, the paper recommends the following:

1. For Policymakers
Develop hybrid regulatory frameworks combining market-based instruments (e.g., carbon trading) with command-and-control measures.
Expand public–private partnerships to support renewable energy adoption in organizations.
Establish robust monitoring and reporting systems to track corporate climate performance.

2. For Organizations
Treat climate change as a strategic opportunity rather than a compliance burden by embedding sustainability into corporate strategy.
Invest in green human resource management to foster employee commitment to sustainability goals (ScienceDirect, 2025).
Increase transparency by voluntarily adopting internationally recognized disclosure standards (e.g., Global Reporting Initiative, Task Force on Climate-Related Financial Disclosures).

3. For Civil Society and Academia
Advocate for stronger environmental justice frameworks to hold firms accountable.
Conduct further research on the intersection of green innovation, corporate culture, and emission reduction, especially in emerging markets.
Conclusively, if implemented, these recommendations would operationalize the “machete of change” metaphor by cutting through structural, cultural, and financial barriers that currently hinder organizations from leading the green revolution. Coordinated action at multiple levels is critical to accelerate climate change mitigation and reduce global greenhouse gas emissions.

VII. CONCLUSION

This paper has argued that organizations hold a pivotal role in the global effort to mitigate climate change and reduce greenhouse gas (GHG) emissions. By adopting green innovation, embedding sustainability in corporate strategy, and aligning with robust policy frameworks, organizations can drive the “green revolution” that this study metaphorically terms the “machete of change.”

The review of related literature shows that green innovation and supportive policy instruments significantly reduce organizational emissions and often enhance competitiveness (Frontiers in Environmental Science, 2024; PMC, 2024; Bank for International Settlements, 2025). However, the persistence of barriers in developing economies, coupled with the risks of greenwashing, highlights that change is neither automatic nor evenly distributed (Delmas and Burbano, 2011; Journal of Energy and Natural Resources Research, 2025). These findings reinforce the need for a systemic approach that combines regulation, finance, governance, and cultural transformation.

From a policy perspective, governments must integrate organizations into climate strategies through regulatory enforcement, financial incentives, and accountability mechanisms. From an organizational standpoint, leaders must treat sustainability not as a peripheral initiative but as a core strategic imperative—embedding green culture, governance, and innovation across all operations.

Civil society, meanwhile, must act as watchdog and advocate to ensure transparency and justice in climate action.

In conclusion, the machete of change symbolizes the urgent, bold, and transformative action required of organizations to cut through barriers of inertia, short-termism, and symbolic compliance. The stakes are clear: without decisive organizational leadership, the global community risks falling short of critical climate goals. But with coordinated efforts, organizations can not only reduce GHG emissions but also position themselves as pioneers in a sustainable, low-carbon future.

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