

Towards A Sustainable Landscape Management: A Study of Green Business Practices and Strategies for Enhancing Global Competitiveness on Malaysian Landscape Industry Players

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ABSTRACT

This paper investigates the integration of sustainable landscape management and green business practices within Malaysia's landscape industry. It aims to address the dual challenge of environmental responsibility and global competitiveness by exploring how industry players can adopt eco-conscious strategies that align with international sustainability standards. A qualitative research approach was employed, incorporating policy content analysis and expert validation involving professionals from public and private sectors. Findings reveal that while awareness of sustainability is high, implementation is hindered by financial constraints, limited technical knowledge, and fragmented policy frameworks. However, businesses that embraced green practices reported improved operational efficiency, market positioning, and brand value. The study proposes a strategic framework for enhancing sustainable competitiveness and highlights the critical role of government policy, incentives, and cross-sector collaboration in driving sustainable transformation. These insights contribute to the advancement of Malaysia's landscape industry in alignment with global Sustainable Development Goals (SDGs).

Keywords: Sustainable Landscape Management, Green Business Practices, Global Competitiveness, ESG, Malaysia, Policy Framework.

INTRODUCTION

The global landscape industry is undergoing a transformative shift as sustainability becomes central to competitiveness, innovation, and urban resilience. In emerging economies such as Malaysia, the landscape sector plays a critical role in urban development, ecological preservation, and enhancing quality of life. However, it also faces the complex challenge of balancing environmental stewardship with economic growth. Malaysia's landscape industry—comprising landscape architects, contractors, horticulturists, and maintenance providers—is increasingly pressured to align with global sustainability trends. Yet, despite rising environmental awareness and the presence of national policies such as the National Landscape Policy 2.0 and the 12th Malaysia Plan, green practices remain inconsistently applied. High implementation costs, limited technical expertise, and fragmented policy support continue to hinder widespread adoption of sustainable strategies.

This study seeks to explore how green business practices can be strategically integrated into the Malaysian landscape industry to enhance global competitiveness. It examines the effectiveness of current sustainability efforts, the barriers to implementation, and how businesses can leverage eco-conscious strategies as a competitive advantage in international markets. By aligning with the United Nations Sustainable Development Goals (SDGs)—particularly those relating to sustainable cities, responsible consumption, and climate action—this research aims to provide a roadmap for enhancing both environmental and economic outcomes in Malaysia's landscape sector.

A comprehensive literature review is essential for establishing the theoretical foundation of a research study. In the context of sustainable landscape management (SLM), this review examines the intersection of green business practices and global competitiveness, particularly within the Malaysian landscape industry. Existing research highlights the environmental, economic, and social benefits of sustainable practices. However, the industry faces implementation challenges due to limited policy support, fragmented regulatory frameworks, and a lack of empirical research connecting sustainability to competitiveness. This section synthesizes prior studies, identifies research gaps, and justifies the study's direction, serving as a guide for the formulation of research objectives and methodological design.

LITERATURE REVIEW

Sustainable Landscape Management

Sustainable landscape management refers to the integration of ecological principles into landscape design, construction, and maintenance, with the aim of conserving biodiversity, promoting ecosystem services, and enhancing urban resilience. Scholars such as Hamid et al. (2016) and Rahman et al. (2019) emphasize that SLM not only mitigates urban heat islands and flood risks, but also improves air quality, aesthetic value, and community well-being.

Despite its multifaceted advantages, the adoption of SLM is hindered by high initial costs, limited technical expertise, and insufficient stakeholder awareness. Fragmented governance and inconsistent enforcement of policies further exacerbate these issues (Mahalingam & Abdullah, 2017). This study builds on these findings by exploring how integrated SLM strategies can also enhance a firm's market position in global contexts.

Sustainability in the landscape sector is increasingly viewed as a competitive advantage. The Triple Bottom Line framework (Elkington, 1998) and Competitive Advantage Theory (Porter & van der Linde, 1995) provide conceptual foundations for integrating environmental and economic objectives. Sustainable landscape management contributes to biodiversity conservation, urban health, and resource efficiency. However, empirical studies on Malaysia's landscape industry remain limited.

Green Business Practices

Green business practices emphasize environmental responsibility across all stages of business operations. Rooted in the *Triple Bottom Line* (Elkington, 1998), these practices prioritize not only profit, but also social equity and environmental sustainability. Porter and van der Linde (1995) argue that environmental regulation, when designed effectively, can drive innovation and competitiveness.

In the landscape industry, green business models involve eco-friendly sourcing, water and energy conservation, waste minimization, and the use of sustainable materials. However, many small and medium enterprises (SMEs) in Malaysia lack access to the capital, training, and incentives required to implement such models. This research identifies these barriers and investigates how firms that overcome them achieve improved operational efficiency and reputational advantages.

Green business models typically involve environmentally responsible sourcing, energy-efficient operations, and waste reduction. These strategies not only improve ecological performance but also boost brand value. Globally, environmental, social, and governance (ESG) metrics have become crucial for market access and investment. In Malaysia, fragmented policies and limited incentives hinder adoption, necessitating a cohesive framework tailored to national conditions.

Global Competitiveness and the Landscape Industry

Global competitiveness entails the ability of firms to offer products or services that meet international quality and sustainability standards. According to the World Economic Forum (2023), sustainable innovation, market agility, and international certifications are key drivers of competitiveness. In the landscape sector,

competitiveness is increasingly linked to green credentials. Certifications such as ISO 14001 and LEED have become prerequisites for international contracts. Yet, access to these certifications remains limited for Malaysian SMEs. Comparative studies (Porter & Kramer, 2011) suggest that nations with strong institutional support and incentive structures outperform those with fragmented systems.

While substantial literature supports the integration of sustainability in business strategy, there is a significant gap in region-specific research that connects sustainable practices to competitiveness in the Malaysian landscape industry. Existing studies often generalize findings or rely on case studies that do not reflect long-term impacts or policy interactions.

This study responds to these gaps by:

- Synthesizing Malaysian policy documents through content analysis
- Engaging industry experts for validation and contextual relevance
- Proposing a strategic framework grounded in empirical and policy analysis

This approach offers a comprehensive understanding of how sustainable practices can be leveraged to improve both environmental outcomes and competitive positioning in emerging markets.

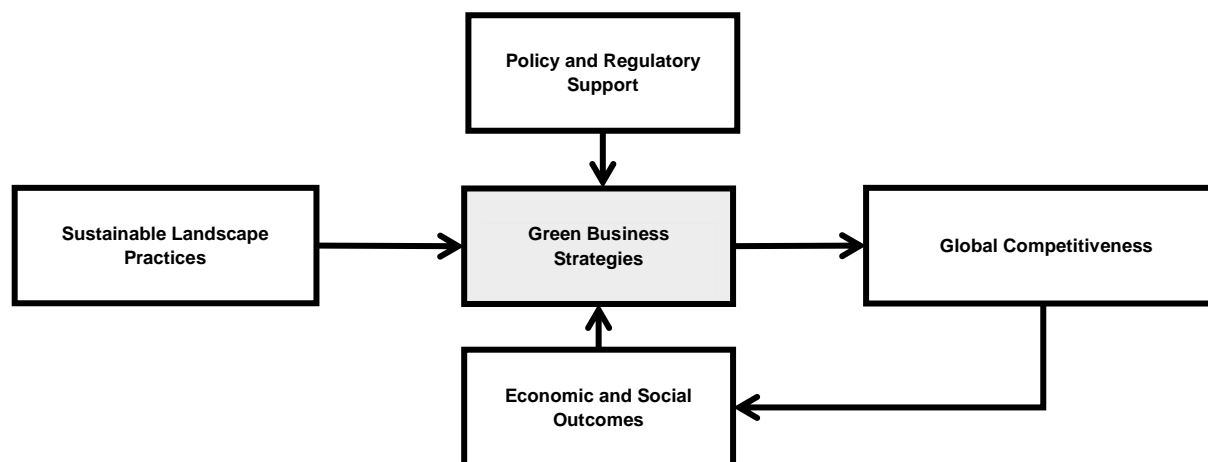


Figure 1: Conceptual Framework for Sustainable Landscape Management (Adapted from Author, 2025).

METHODOLOGY

This study employed a qualitative research design incorporating two core methods: Policy Content Analysis and Expert Validation.

This dual approach enabled a comprehensive exploration of the alignment between sustainable landscape practices and global competitiveness within the Malaysian landscape industry.

Policy Content Analysis

A systematic review of national policy documents, development plans, and government initiatives related to sustainable landscape management and green business practices was conducted.

Key sources included:

- National Landscape Policy 2.0
- 12th Malaysia Plan (2021–2025)

- c) Green Technology Master Plan
- d) Industry guidelines and ESG standards

This content was analyzed thematically to identify strategic priorities, regulatory gaps, and the extent of alignment with sustainability goals and global competitiveness indicators.



Figure 2: Sustainable Landscape Management Overview (Adapted from Author, 2025).

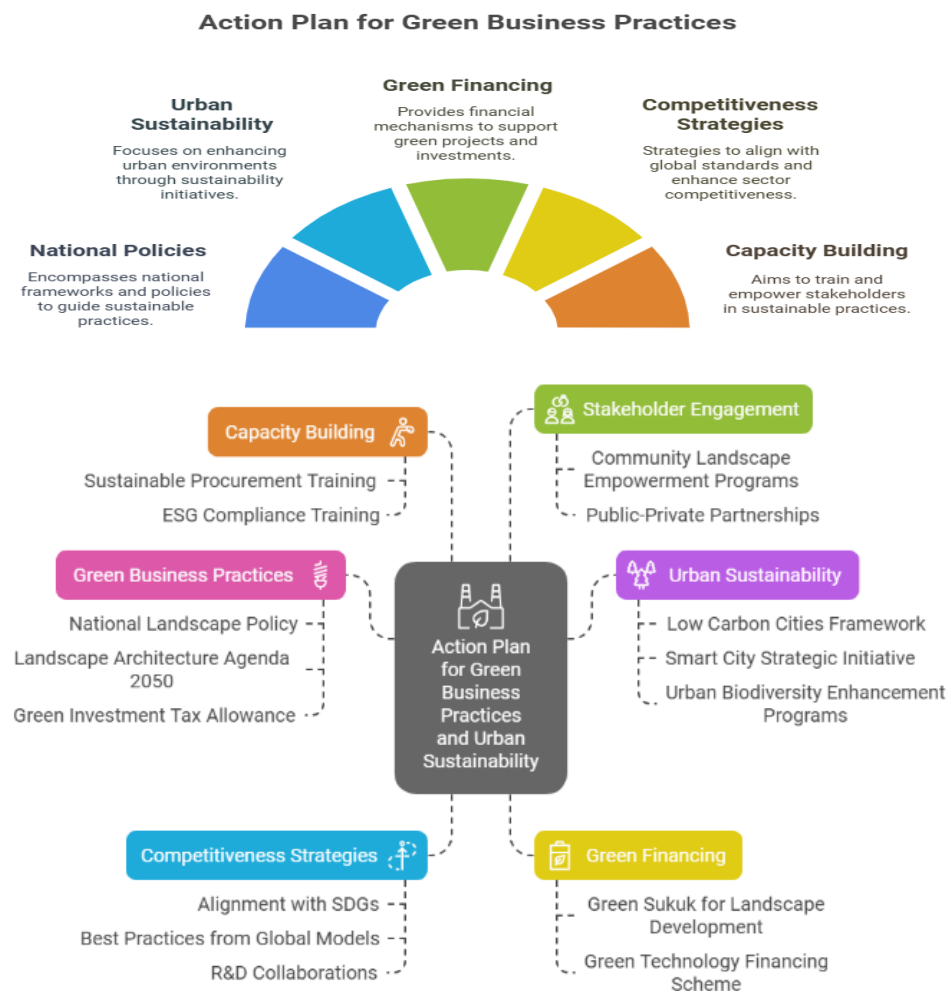


Figure 3: Action Plan for Green Business Practices Overview (Adapted from Author, 2025).

Expert Validation

Semi-structured interviews and expert engagement sessions were held with 15 professionals representing government agencies, landscape architects, SMEs, and sustainability consultants. These participants were selected based on their involvement in policy implementation, urban greening, or sustainable project delivery. The expert validation process provided critical feedback on the applicability of green business strategies, challenges in implementation, and effectiveness of policy frameworks. Thematic coding was applied to capture patterns, consensus, and divergence in professional perspectives.

Prioritizing Strategies for Sustainable Landscape Management in Malaysia



Figure 4: Findings on Expert Validation.

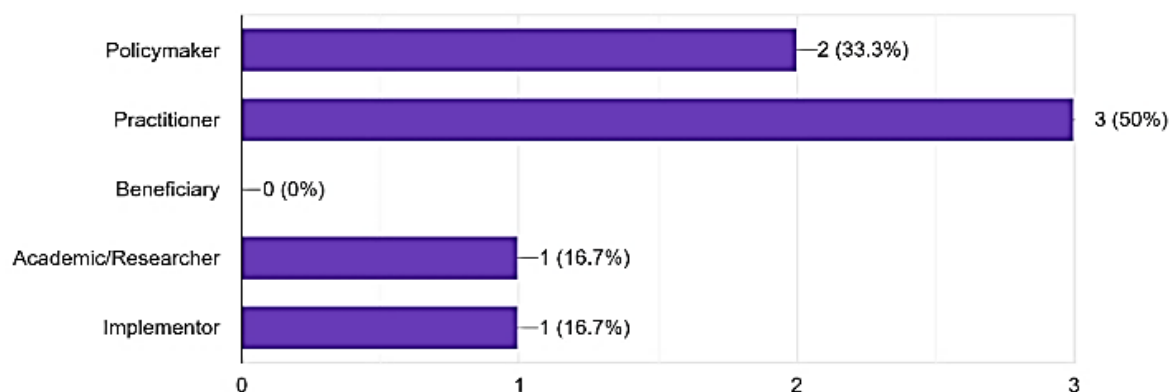


Figure 5: Summary on Sector of Respondents.

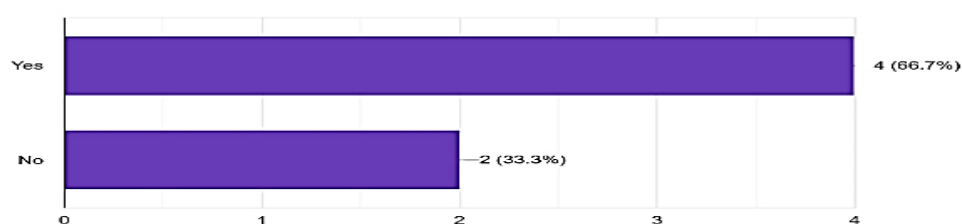


Figure 6: Summary of Responses on Implementation and Initiatives Related to Sustainable Landscape Management or Green Business Practices.

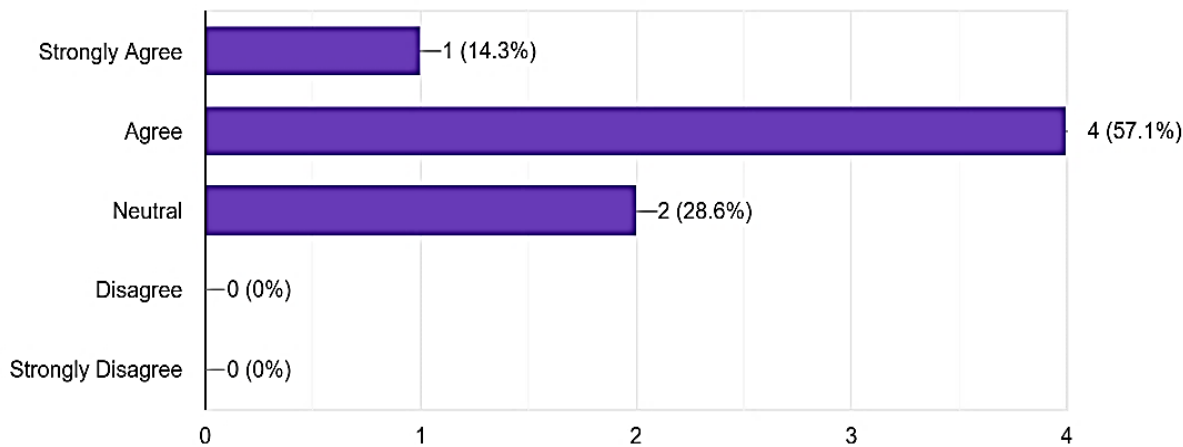


Figure 7: Summary of Key Findings and Recommendations Provided from the Policy Review.

Data Synthesis

Findings from both data sources were integrated using a comparative matrix, allowing triangulation between policy provisions and practical industry realities. This method enabled the development of a context-specific strategic framework for enhancing competitiveness through sustainability.

RESULTS AND DISCUSSION

The findings of this study provide critical insights into the integration of sustainable landscape management and green business practices in Malaysia's landscape industry. Through policy content analysis and expert validation, the research highlights the complex interplay between sustainability, competitiveness, and institutional frameworks. This section discusses the significance of the results, interprets them in light of existing literature, and outlines their implications for practice, policy, and future research.

Policy Landscape and Institutional Gaps

The policy review revealed a fragmented approach to sustainable landscape management in Malaysia. While the *National Landscape Policy 2.0*, *Green Technology Master Plan*, and *12th Malaysia Plan* emphasize sustainability, implementation mechanisms remain inconsistent across agencies.

Most policies lack sector-specific enforcement strategies for the landscape industry, particularly regarding certification, incentives, or integration into municipal planning.

Key challenges include:

- Absence of a unified green certification framework tailored for landscape businesses
- Inadequate financial incentives to support green technology adoption
- Weak alignment between national sustainability goals and local authority practices

The Role of Policy and Institutional Support

A significant theme emerging from expert validation was the fragmented nature of Malaysia's policy landscape. Despite the presence of guiding documents such as the *National Landscape Policy 2.0* and the *12th Malaysia Plan*, many industry players expressed concerns over vague directives, insufficient enforcement, and a lack of alignment with global certification schemes like ISO 14001 and LEED. This reflects the broader policy incoherence noted in the literature (Hamid et al., 2016). Participants emphasized the need for more specific,

landscape-sector-oriented policies that include financial incentives, training programs, and accessible ESG compliance tools.

This aligns with Ahmad and Ramli's (2020) argument that sector-specific guidelines are crucial for translating high-level sustainability goals into actionable practices. The study thus underscores the need for stronger institutional scaffolding to support SMEs in making a green transition.

Industry Practices and Perspectives

Insights from expert interviews highlighted a general awareness of sustainability's importance among Malaysian landscape players, yet significant gaps in application remain. Most firms—particularly SMEs—lack access to financing, technical training, and ESG guidance to operationalize green business models.

Perceived Barriers:

- High initial investment for sustainable materials and systems
- Lack of skilled labor and technical know-how
- Limited awareness of international sustainability certifications (e.g., LEED, ISO 14001)

Perceived Benefits (Among Implementers):

- Improved operational efficiency and resource use (e.g., rainwater harvesting, native planting)
- Enhanced brand reputation and client trust, especially in urban development tenders
- Better alignment with global market expectations

Interpreting the Role of Green Business Practices

The results reaffirm that green business practices are no longer peripheral but essential to strategic growth in the landscape sector. Participants who had implemented sustainable initiatives—such as using native plants, reducing chemical inputs, and adopting water-efficient irrigation—reported improved brand reputation, reduced operational costs, and stronger appeal to environmentally conscious clients. These outcomes align with Porter and van der Linde's (1995) hypothesis that environmental innovation enhances competitiveness rather than inhibits it.

However, the adoption of such practices remains limited across the industry due to perceptions of high initial costs and a lack of short-term return on investment. This supports findings by Rahman et al. (2019) and Mahalingam & Abdullah (2017), who observed similar hesitancy in other sectors.

The findings imply that while the value proposition of sustainability is recognized, widespread implementation is hindered by structural and financial barriers.

Competitiveness as an Outcome of Sustainability

Another important finding is the perception shift among landscape firms that implemented sustainability strategies. Rather than viewing sustainability solely as a compliance requirement, these firms began to see it as a business differentiator. Their ability to access new markets—especially international ones—and secure higher-value contracts indicates that sustainability can enhance competitiveness.

This is consistent with the *Triple Bottom Line* framework (Elkington, 1998), which positions sustainability at the intersection of environmental, social, and economic value creation.

Moreover, it aligns with global evidence suggesting that firms that lead in ESG reporting and sustainable

practices tend to outperform their peers in long-term profitability and risk management (KPMG, 2022).

Towards a Strategic Framework

Based on the findings, a conceptual framework was developed linking three core components:

1. **Policy Enablement** – Coherent regulations, fiscal incentives, and certification pathways
2. **Business Innovation** – Adoption of eco-design, efficient practices, and green technologies
3. **Capacity Development** – Technical training, knowledge exchange, and professional upskilling

These elements form a feedback loop that can elevate sustainability from a compliance issue to a driver of global competitiveness.



Figure 8: Enhancing Global Competitiveness through Green Business Practices (Adapted from Author, 2025).

Drawing on the synthesis of expert insights and policy analysis, the research proposes a strategic framework that integrates three core components: **Policy Enablement**, **Business Innovation**, and **Capacity Development**.

These pillars form a feedback loop where policy incentives stimulate innovation, and innovation necessitates upskilling and stakeholder engagement. This echoes the call for holistic approaches made by scholars like Hart (1995) and Steg & Vlek (2009), who advocate for sustainability models that address environmental challenges while promoting economic viability.

The framework is not merely theoretical—it is designed to be operationalized by industry actors, policymakers, and educators. It fills a crucial gap in existing models by offering a regionally adapted, actionable strategy that links sustainability to competitive performance.

CONCLUSION AND IMPLICATIONS

This study underscores the critical role of green business practices in enhancing the global competitiveness of Malaysia's landscape industry. While policy frameworks such as the *National Landscape Policy 2.0* provide an overarching vision, the operationalization of sustainable strategies at the industry level remains limited.

It contributes to the growing body of knowledge at the intersection of green economy, sustainability, and global competitiveness. It highlights that environmental practices can be reframed as business assets rather than liabilities.

For Malaysia, whose landscape industry is poised for regional leadership, the findings signal a timely opportunity to integrate sustainability more deeply into national economic strategies.

Moreover, the research sets the stage for future work that could apply this framework in other emerging economies with similar socio-political and ecological contexts.

It demonstrates how sustainability-driven innovation, when supported by coherent policy and institutional structures, can drive meaningful change in both business performance and environmental outcomes.

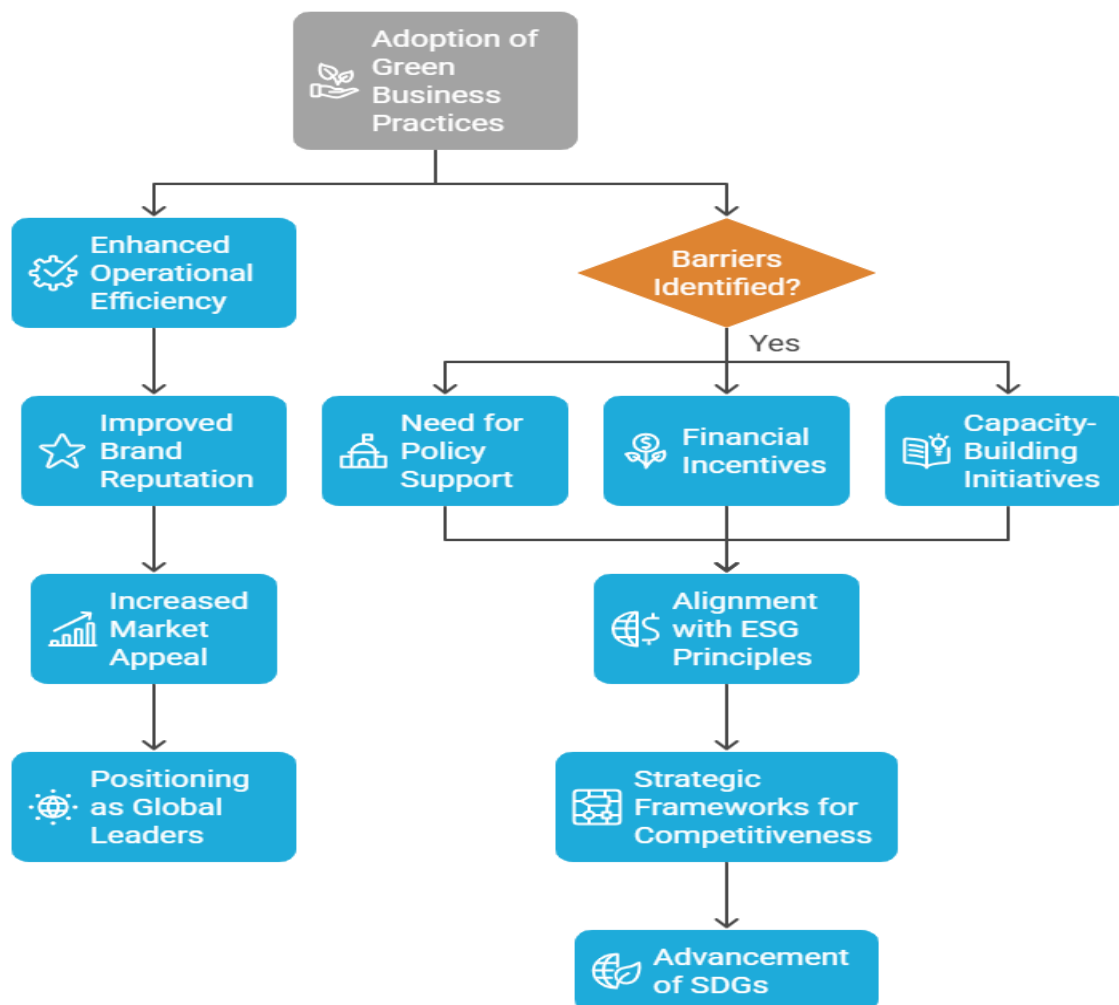


Figure 9: Summary of Integrating Sustainable Practices in Malaysian Landscape Industry (Adapted from Author, 2025).

Through policy analysis and expert engagement, the research revealed that:

- Sustainability is increasingly recognized as a competitive asset, not just an environmental obligation.
- The lack of sector-specific guidelines, financial support, and technical training significantly hampers implementation.
- Firms that adopt green practices benefit from improved efficiency, reputation, and access to environmentally conscious markets.

To strengthen the industry's trajectory toward sustainability, the following implications are proposed:

1. Strengthen Policy and Incentive Structures

Introduce targeted grants, tax relief, and green procurement mandates to encourage sustainability adoption among SMEs.

2. Promote Certification and Standards

Develop a national green certification framework for landscape firms aligned with international standards to facilitate global market access.

3. Invest in Training and Capacity Building

Provide continuous professional development (CPD) programs focused on ESG integration, eco-design, and sustainable maintenance.

4. Encourage Cross-Sector Collaboration

Foster partnerships between government, academia, and private enterprises to accelerate innovation and knowledge sharing.

By addressing these areas, Malaysia's landscape sector can transition from fragmented sustainability efforts toward a coherent, competitive green economy. This research contributes to the discourse on sustainable landscape management in developing countries, offering a replicable model for strategic alignment between environmental responsibility and market growth.

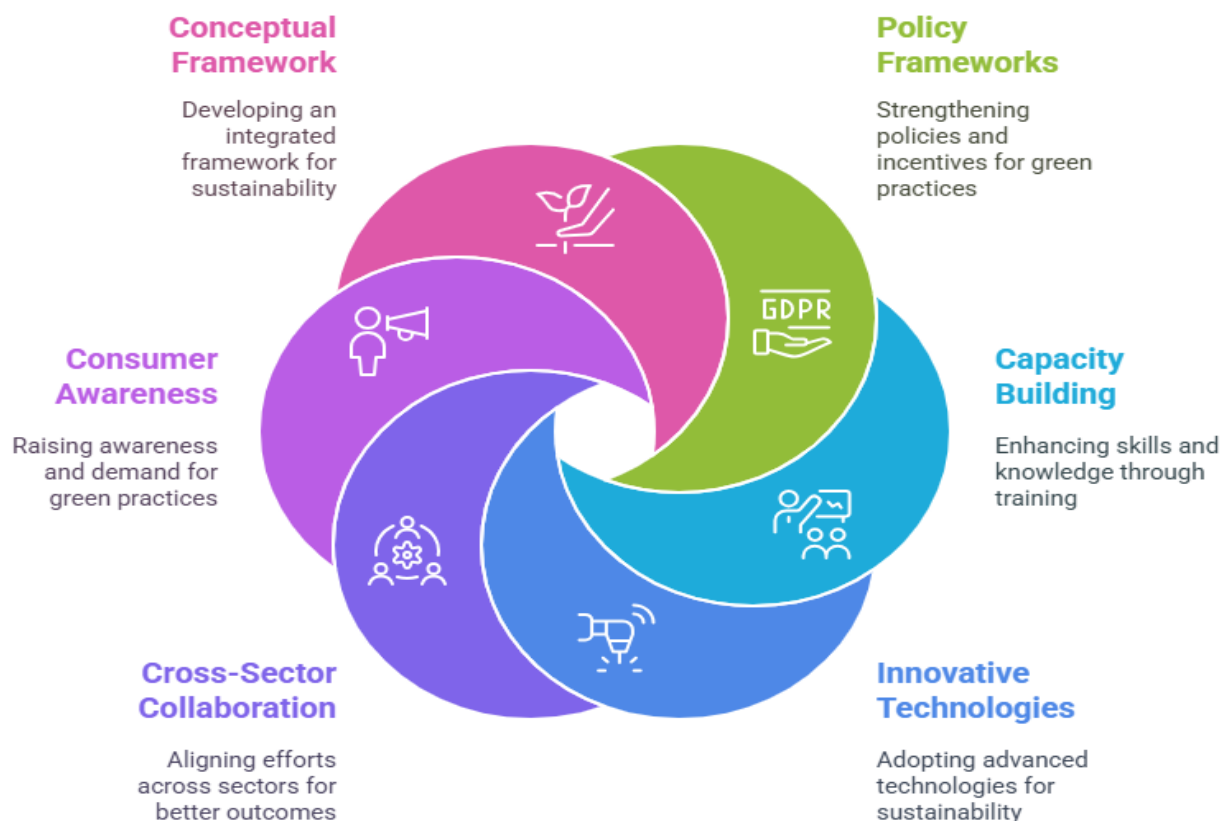


Figure 10: Strategic Green Practices for Malaysian Landscape Industry (Adapted from Author, 2025).

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