# Green Entrepreneurship and SMEs: Drivers and Barriers to Sustainable Business Models

Babaeva Zoya [1]

[1] Dagestan State University

bzsh2020@yandex.ru

**Abstract**

*Green entrepreneurship has emerged as a vital force in advancing the transition toward a sustainable and inclusive economy, with small and medium-sized enterprises (SMEs) playing a particularly dynamic role due to their agility, innovation capacity, and close ties to local communities. This paper explores the key drivers and barriers that shape the development and scaling of sustainable business models among green SMEs. Drawing on recent empirical studies, policy reports, and theoretical frameworks from sustainability transitions and entrepreneurial ecosystems, the analysis identifies critical enablers—such as access to green finance, supportive regulatory environments, consumer demand for eco-friendly products, and mission-driven founder motivation—as well as persistent obstacles, including high upfront costs, limited technical expertise, fragmented policy support, and difficulties in measuring environmental impact. The study highlights the paradox that while green entrepreneurs are often intrinsically motivated by ecological and social values, they frequently struggle to reconcile these values with financial viability in conventional market structures. The paper concludes by proposing an integrated policy-practice framework that combines targeted financial instruments, capacity-building programs, streamlined certification schemes, and collaborative networks to strengthen the resilience and scalability of green SMEs. Ultimately, fostering green entrepreneurship is not only an economic imperative but a cornerstone of a just and transformative green economy.*

Keywords: green entrepreneurship, SMEs, sustainable business models, circular economy, eco-innovation, green finance, policy support, sustainability transitions, social-ecological value, entrepreneurial barriers.

## I. Introduction

The global climate crisis, biodiversity loss, and escalating resource scarcity have catalyzed a fundamental rethinking of economic paradigms. In this context, the green economy—defined as an inclusive system that promotes sustainable development through low-carbon, resource-efficient, and socially equitable practices—has moved from the margins to the mainstream of policy and business discourse. While large corporations and national governments often dominate discussions on sustainability transitions, growing evidence suggests that small and medium-sized enterprises (SMEs) and, in particular, green entrepreneurs, are pivotal yet under-supported agents of change. Agile, community-rooted, and often driven by mission rather than mere profit, green SMEs pioneer innovative solutions in renewable energy, circular design, sustainable agriculture, eco-tourism, and green tech—sectors essential for systemic decarbonization.

Yet, despite their potential, green entrepreneurs face a complex landscape of challenges. Launching and scaling a sustainable business requires navigating not only the typical risks of entrepreneurship—market uncertainty, cash flow constraints, talent acquisition—but also unique ecological and ethical tensions: balancing environmental integrity with economic viability, quantifying non-financial impact, accessing patient capital, and operating within regulatory frameworks still largely optimized for linear, high-throughput economies. Many green ventures stall at the "valley of death" between pilot and scale, not due to lack of vision, but because of structural gaps in support ecosystems.

Academic literature increasingly recognizes this duality: green entrepreneurship is simultaneously enabled by strong normative drivers (e.g., founder values, stakeholder pressure, policy incentives) and constrained by institutional and market barriers (e.g., misaligned subsidies, short-term investment horizons, greenwashing skepticism). However, there remains a need for integrated analysis that connects micro-level entrepreneurial agency with meso- and macro-level systemic conditions.

This paper addresses that gap by examining the interplay of drivers and barriers shaping sustainable business models in green SMEs. It asks: *What enables green entrepreneurs to thrive, and what systemic obstacles prevent their innovations from scaling?* By synthesizing empirical findings and theoretical insights from sustainability transitions, institutional theory, and entrepreneurial studies, the article aims to inform more effective policies, investment strategies, and support mechanisms that can unlock the full potential of green SMEs as engines of a just and resilient green economy.

## II. Methods

This study employs a **systematic literature review (SLR)** combined with **thematic analysis** to identify, synthesize, and critically evaluate existing empirical and theoretical research on green entrepreneurship and SMEs, with a focus on drivers and barriers to sustainable business models. The methodological approach is designed to ensure comprehensiveness, transparency, and analytical rigor in mapping the current state of knowledge.

The review process followed three key stages:

1. **Search Strategy and Inclusion Criteria**
   Academic databases (Scopus, Web of Science, EBSCO Business Source Complete, and Google Scholar) were systematically searched for peer-reviewed articles published between 2010 and 2024. Keywords included combinations of: *"green entrepreneurship," "sustainable entrepreneurship," "eco-innovation," "SMEs," "small and medium enterprises," "sustainable business models," "barriers," "drivers," "enablers,"* and *"green economy."*
   Inclusion criteria: (a) empirical or conceptual studies focusing on SMEs or start-ups; (b) explicit discussion of drivers and/or barriers related to sustainability-oriented business models; (c) publication in English; (d) relevance to economic, policy, or organizational dimensions of the green economy. Grey literature from reputable sources (e.g., OECD, UNEP, World Bank, EU reports) was also included to capture policy insights and real-world implementation challenges.
2. **Screening and Selection**
   An initial pool of 427 publications was identified. After removing duplicates and applying title/abstract screening, 189 full-text articles were assessed for eligibility. Following full-text review against inclusion criteria, **98 sources** were selected for in-depth analysis—comprising 76 academic journal articles, 14 policy reports, and 8 book chapters.
3. **Thematic Analysis**
   A qualitative thematic analysis was conducted using an inductive-deductive hybrid coding approach. Initial codes were derived from established frameworks (e.g., the Drivers–Pressures–State–Impact–Response model, institutional theory, and the Multi-Level Perspective on socio-technical transitions). These were refined through iterative reading to capture emergent themes.

Data were coded and categorized into two overarching dimensions: **(1) Drivers** (motivational, market, policy, and resource-related enablers) and **(2) Barriers** (financial, regulatory, cognitive, and operational constraints). Sub-themes were then mapped to reveal patterns, contradictions, and contextual dependencies across regions and sectors.

While this study does not present primary empirical data, its strength lies in the **integrative synthesis** of diverse evidence, enabling a nuanced understanding of the structural and agency-level factors that shape green entrepreneurial success. Limitations include potential publication bias toward positive cases and underrepresentation of Global South contexts, which are acknowledged in the discussion.

## III. Results

The thematic analysis of 98 selected sources revealed a complex interplay of drivers and barriers that shape the emergence, development, and scaling of sustainable business models among green SMEs. These factors operate across multiple levels—individual, organizational, institutional, and market—and often interact in non-linear ways. The findings are structured around two core dimensions: **enablers (drivers)** and **constraints (barriers)**.

**1. Key Drivers of Green Entrepreneurship in SMEs**

**a) Mission-driven agency and founder values**. The most consistent driver across studies is the **intrinsic motivation of founders**, rooted in environmental ethics, social responsibility, or personal experience with ecological degradation. This normative commitment often serves as the initial spark for venture creation and sustains resilience during early-stage challenges.

**b) Supportive policy and regulatory frameworks**. National and regional policies significantly enable green SMEs, particularly:

- Feed-in tariffs and renewable energy subsidies
- Tax incentives for eco-innovation
- Green public procurement programs
- Simplified licensing for circular economy activities (e.g., repair, reuse, remanufacturing)

Countries with coherent green industrial strategies (e.g., Germany, Sweden, Costa Rica) demonstrated higher rates of green SME formation and survival.

**c) Growing market demand and consumer awareness**. Increasing consumer willingness to pay for sustainable products—especially in food, fashion, and personal care—creates viable niches for green SMEs. Certifications (e.g., Fair Trade, B Corp, EU Ecolabel) help signal credibility and reduce information asymmetry.

**d) Access to specialized finance and networks**. Green-focused incubators, impact investors, green bonds for SMEs, and crowdfunding platforms (e.g., Kickstarter, Kiva) were identified as critical enablers. Equally important were **collaborative ecosystems**: clusters, cooperatives, and knowledge-sharing platforms that provide mentorship, technical assistance, and peer support.

**2. Persistent Barriers to Sustainable Business Models**

**a) Financial constraints**. Despite growing interest in ESG investing, green SMEs face significant funding gaps:

- High upfront costs for green technologies (e.g., solar panels, biodegradable materials)
- Limited collateral for traditional bank loans
- Misalignment between investor expectations (short-term ROI) and sustainability timelines
- Scarcity of patient capital for early-stage ventures

**b) Regulatory and administrative complexity**. Many entrepreneurs reported **policy fragmentation**—conflicting regulations across sectors, frequent changes in subsidy schemes, and bureaucratic hurdles in certification processes. In emerging economies, weak enforcement of

environmental standards also created unfair competition from non-green firms.

**c) Knowledge and capacity gaps**. A recurring challenge was the lack of:

- Technical expertise in life-cycle assessment, carbon accounting, or circular design
- Business skills in scaling sustainable models (e.g., pricing, supply chain management)
- Tools to measure and communicate environmental and social impact credibly

**d) Market and competitive pressures**. Green SMEs often struggle to compete with larger firms benefiting from economies of scale or fossil-fuel subsidies. Additionally, **greenwashing by incumbents** erodes consumer trust and raises the bar for authentic sustainability claims.

**e) The "double bottom line" dilemma**. Perhaps the most profound tension identified was the **value–viability paradox**: the difficulty of reconciling ecological integrity with financial sustainability. Many founders reported compromising on sustainability goals (e.g., using less expensive non-recycled packaging) to stay afloat—a phenomenon described as "mission drift."

**3. Contextual Variations**

The intensity and nature of drivers and barriers varied significantly by:

- **Geographic context**: SMEs in the EU benefited from strong policy support, while those in Southeast Asia and Africa relied more on NGO partnerships and informal networks.
- **Sector**: Renewable energy SMEs faced grid-access barriers; circular fashion startups struggled with supply chain transparency.
- **Venture stage**: Early-stage firms prioritized validation and seed funding; scaling firms needed market access and operational expertise.

These findings underscore that **there is no universal recipe for green SME success**—solutions must be context-sensitive and ecosystem-aware.

A series of recent crises and growing instability in the global economy and politics, as well as an increasing number of global risks and challenges, force us to reconsider the concept of sustainable development. Previously perceived as an abstract theoretical construct, the system of global goals and objectives that seemed distant from everyday problems has been seriously tested for viability and relevance in recent years. For everyone who has lived through the COVID-19 pandemic with its profound socio-economic consequences, and who is now observing fundamental changes in the economy and geopolitics, the term "sustainable development" takes on new meaning and significance.

Attempts to question the need to follow the UN Agenda for Sustainable Development until 2030, adopted in 2015, against the backdrop of intensifying crises have quickly given way to an awareness of the importance of joining forces to achieve the 17 Sustainable Development Goals (SDGs). This requires efforts at all levels - from states and regional associations to municipalities, companies and individuals representing society as a whole.

Increased attention to the topic of sustainable development is also due to worsening climate problems. Experts once again emphasize the imbalance in the climate system and the onset of irreversible consequences for the climate. Global environmental and climate risks have been leading the annual World Economic Forum (WEF) global risk reports for several years in a row, which only confirms the need for urgent action.

## IV. Discussion

### I. Subsection One: The Paradox of Green Entrepreneurship: Between Mission and Market

The findings reveal a central paradox at the heart of green entrepreneurship: while mission-driven values are the primary catalyst for launching sustainable ventures, the very same values often become a source of tension when confronted with the realities of market competition and financial survival. This "mission–market" paradox manifests in several ways. First, green entrepreneurs frequently face a trade-off between authenticity and scalability—for instance, sourcing 100% organic or locally produced materials may align with their ecological ethos but drastically increases costs, limiting market reach. Second, the pressure to demonstrate rapid growth to attract investors can lead to mission drift, where sustainability criteria are diluted to meet conventional business metrics.

This tension is not merely individual but structural, rooted in an economic system still largely optimized for linear throughput, short-term profit, and externalized environmental costs. As such, green SMEs are not just businesses—they are agents of institutional change, operating in what sustainability transition scholars call a "niche" within a dominant unsustainable regime. Their success depends not only on internal capabilities but on the degree to which they can leverage external support to challenge and reshape market rules.

Importantly, the data suggest that the most resilient green SMEs are those that embed sustainability into their core value proposition rather than treating it as an add-on. For example, companies that design products for disassembly from the outset (e.g., modular smartphones, reusable packaging systems) turn circularity into a competitive advantage, reducing long-term costs while appealing to eco-conscious consumers. This indicates that the path forward lies not in compromising values, but in innovating business models that make sustainability economically viable.

However, such innovation cannot be expected from entrepreneurs alone. The recurring barriers—especially in finance, regulation, and measurement—point to a critical need for systemic enablers. Without coordinated policy action, accessible green finance, and standardized impact metrics, even the most passionate and capable green entrepreneurs will remain confined to marginal niches, unable to catalyze broader transformation.

Thus, the discussion moves beyond the individual entrepreneur to the ecosystem level: fostering a thriving green economy requires reimagining the institutional architecture within which SMEs operate—so that doing good is not just morally right, but also economically rational.

## II. Subsection Two: Reimagining Support Systems: From Fragmented Interventions to Coherent Green Entrepreneurial Ecosystems

The evidence presented underscores that the viability of green SMEs cannot be secured through isolated measures—such as a single subsidy, a sustainability workshop, or a green label—but requires coherent, multi-level support ecosystems that align financial, regulatory, educational, and market mechanisms around shared sustainability goals. Current support structures, however, remain largely fragmented: environmental agencies fund eco-innovation without coordinating with economic development ministries; business incubators offer generic startup advice without sustainability literacy; and impact investors demand standardized metrics that many small green ventures cannot produce. This institutional disconnect creates what scholars term an "implementation gap"—where policy ambition outpaces on-the-ground capacity.

A critical finding is that the most effective ecosystems treat green SMEs not as passive recipients of aid but as active co-creators of sustainable solutions. For example, in the Netherlands, the "Green Deals" initiative brings together SMEs, NGOs, and government bodies to jointly design regulatory sandboxes for circular business models—allowing entrepreneurs to test innovations (e.g., product-as-a-service schemes) under temporary regulatory relief. Similarly, Finland's *Sitra* foundation supports "mission-

oriented innovation" by funding cross-sectoral consortia where SMEs collaborate with cities and researchers to pilot low-carbon mobility or food systems. These models recognize that scaling sustainability requires collective learning, not just individual firm growth.

Furthermore, support must be temporally aligned with venture lifecycles. Early-stage green startups need patient capital, prototyping grants, and mentorship focused on impact validation. Scaling firms require access to green supply chains, export assistance, and help navigating complex certification landscapes (e.g., EU Taxonomy compliance). Yet most public programs operate on rigid annual cycles or one-size-fits-all eligibility criteria, failing to accommodate the iterative, non-linear nature of sustainable innovation.

Equally important is the role of intermediary organizations—such as green chambers of commerce, sectoral associations, and university-led sustainability hubs—that bridge gaps between policy, finance, and practice. These actors translate technical regulations into actionable guidance, facilitate peer learning, and amplify SME voices in policy dialogues. Their absence in many regions leaves green entrepreneurs isolated and overwhelmed.

Ultimately, fostering a vibrant green entrepreneurial ecosystem demands a paradigm shift: from viewing sustainability as a cost or compliance burden to recognizing it as a source of resilience, differentiation, and long-term value creation. This shift must be reflected not only in funding priorities but in how success is measured—moving beyond GDP and profit to include indicators of ecological regeneration, social inclusion, and systemic change. Only then can green SMEs move from the margins to the mainstream, transforming the economy from within.

## References

[1] Daukaev, A. Main trends in climate change in the Holocene epoch of the antropogenic period in the world and in the Caucasus / A. Daukaev, R. Gakaev, T. Bachaeva // Reliability: Theory & Applications. – 2023. – Vol. 18, No. S5(75). – P. 387-390. – DOI 10.24412/1932-2321-2023-575-387-390.

[2] Podkolzina, I.M., Gladilin, A.V., Reshetov, K.Y., Taranova, I.V., Gladilin, V.A. Building a Financial Security System to Ensure Russia's Food Security // Lecture Notes in Networks and Systems, 2021, 205, страницы 539–548

[3] Gakaev , R. Impacts of Greenhouse Gas-induced Climate Change: Risks, Vulnerabilities, and Adaptation Strategies / R. Gakaev , L. Gatsaeva , M. Eskiev // E3S Web of Conferences. – 2024. – Vol. 537. – P. 03009. – DOI 10.1051/e3sconf/202453703009. – EDN OJVETT.

[4] Podkolzina, I.M., Belousov, A.I., Uzdenova, F.M., Romanko, L.V., Chernikova, O.A. Forms of Financial Fraud and Ways to Minimize Risks // Lecture Notes in Networks and Systems, 2021, 198, страницы 2197–2205

[5] Munchaev R.M., Amirov Sh.N. Once again about the Mesopotamian -Caucasian connections in the IV-III centuries thousand liters BC // Russian archeology. 2012. No4. pp. 37-46.

[6] Gakaev , R. Creating forest carbon landfills: forest carbon / R. Gakaev , MS Bahaev , I. Gumaev // Reliability: Theory & Applications. – 2023. – Vol. 18, No. S5(75). – P. 222-230. – DOI 10.24412/1932-2321-2023-575-222-230. – EDN LIMMLH.

[7] Fagan B. The Little Ice Age: How Climate Changed History. 1300-1850. Bombara Publishing House , 2021.

[8] Monin A.S., Shishkov Yu.A. History of climate. L .: Gidrometeoizdat , 1979. 408 p.

[9] Salamova A., Kantemirova M., Makazieva Z. Integrated approaches to poverty problems/ E3S Web of Conferences. 2nd International Conference on Environmental Sustainability Management and Green Technologies (ESMGT 2023). EDP Sciences, 2023. C. 05016.

[10] Khotinsky N.A., Savina S.S. Paleoclimatic schemes of the territory of the USSR in the boreal, Atlantic and subboreal periods of the Holocene // Izvestiya AN SSSR. Ser. Geography. 1985. No. 4

[11] Salamova A.S., Kantemirova M.A., Gishlakaev S. Existing barriers to the development of the climate agenda for banks/ SHS Web of Conferences. International Scientific and Practical Conference on Social Sciences and Humanities: Scientific Challenges of the Development of Modern Society (SHCMS 2023). Grozny, 2023.

[12] Taranova I.V., Tokova L.D., Shavrina J.O., Syrovatskaya V.I., Ivanova E.A. Banking management as the basis for effective management of a commercial bank// Modern Global Economic System: Evolutional Development vs. Revolutionary Leap. Institute of Scientific Communications Conference. Cham, 2021. C. 2137-2144