

Social Entrepreneurship in the Age of Climate Change: Innovative Solutions for Sustainable Development

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ABSTRACT

The urgent challenges posed by climate change have underscored the importance of sustainable practices, with social entrepreneurship emerging as a key solution. Social enterprises adopt innovative business models to address environmental issues such as waste reduction, renewable energy, and sustainable agriculture, generating both ecological and socio-economic benefits. This study examines the role of social entrepreneurship in providing climate solutions and fostering sustainable development. Using a qualitative research approach, data were collected from in-depth interviews with 30 social entrepreneurs and organizational documents on sustainability practices.

The findings reveal that social enterprises reduce carbon emissions by an average of 35% compared to traditional businesses, with notable success in waste management and renewable energy adoption. Community partnerships are identified as critical for enhancing local ownership and sustainability, while innovation drives efficiency and impact. Despite these achievements, financial constraints and regulatory barriers remain significant challenges, limiting the scalability of these initiatives.

To overcome these barriers, actionable recommendations include increasing impact investments to provide necessary funding, developing supportive policies that incentivize sustainable practices, and strengthening community partnerships to enhance local engagement. These strategies can enable social enterprises to expand their climate solutions effectively, contributing to long-term environmental resilience and socio-economic development.

This study highlights the transformative potential of social entrepreneurship in addressing climate challenges and emphasizes the need for systemic support to maximize its impact on sustainability.

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1. INTRODUCTION

The challenges posed by climate change require immediate and multifaceted solutions, particularly from sectors committed to sustainable development ((Dwivedi et al., 2022); (Muslim, 2024)). Social entrepreneurship has emerged as a powerful approach to address climate-related issues by fostering innovative solutions that benefit both society and the environment ((Karadayi et al., 2024); (Embry et al., 2019)). Social entrepreneurs prioritize social value over profit, leveraging business models to tackle pressing issues like waste reduction, renewable energy, and sustainable agriculture ((Gregori & Holzmann, 2020); (Lubberink, 2020)). This approach aligns with the global push towards sustainable development goals (SDGs), emphasizing environmental responsibility and community empowerment.

As climate change accelerates, the need for sustainable practices in business and society has become critical. The UN Intergovernmental Panel on Climate Change (IPCC) has highlighted the potential for severe

environmental, social, and economic consequences if immediate action is not taken. Social entrepreneurship is particularly urgent as it offers scalable, community-based solutions that can adapt to various local and global contexts. These ventures are essential in mitigating environmental degradation while simultaneously promoting socio-economic resilience.

Data from recent reports demonstrate the significant impact of social enterprises in promoting environmental sustainability. For instance, research shows that companies focused on sustainable solutions generate up to 30% higher social value than traditional. The table below compares the environmental and social impacts of traditional businesses versus social enterprises, illustrating the latter's advantage in areas such as carbon reduction and community engagement.

Table 1. Comparative Impact of Traditional Businesses and Social Enterprises on Key Sustainability Indicators

Indicator	Traditional Businesses	Social Enterprises
Carbon Emission Reduction (%)	10%	35%
Community Employment Growth (%)	5%	25%
Waste Reduction (%)	15%	40%

(Sources: World Bank, 2021)

Previous studies have emphasized the potential of social entrepreneurship in addressing climate change. Scholars such as Thompson et al. (2020) and Doherty et al. (2014) have explored how social ventures create environmentally friendly innovations, from sustainable agriculture to renewable energy solutions. These studies demonstrate that social entrepreneurs fill critical gaps in environmental policy by developing localized, grassroots approaches to sustainability. However, much of the research has focused on single-case studies, limiting broader insights into global trends and strategies.

Despite the growing body of literature, there is a gap in understanding the specific mechanisms and strategies that enable social entrepreneurs to scale their climate solutions effectively. Existing research often focuses on the outcomes of social entrepreneurship without exploring the factors that influence its sustainability and scalability ((Goyal & Sergi, 2015); (Saebi et al., 2019a)). This study addresses this gap by analyzing not only the environmental impact but also the operational strategies that allow social enterprises to drive sustainable change over the long term.

This study provides a novel perspective by focusing on the intersection of social entrepreneurship, innovation, and climate change. Unlike previous research that has treated social and environmental impacts separately, this study examines how social entrepreneurs integrate both dimensions to create comprehensive, sustainable solutions (Saebi et al., 2019b). The research highlights the role of innovation in enabling social entrepreneurs to address complex climate issues while ensuring community involvement and economic viability.

The primary purpose of this research is to explore how social entrepreneurship can offer innovative solutions to climate change, focusing on sustainable development practices that benefit both society and the environment. This study aims to identify strategies and operational models that allow social enterprises to maximize their impact on environmental sustainability and community resilience. By examining case studies and best practices, this research provides insights that can inform the development of more effective and scalable social enterprises in the context of climate action.

This research contributes to the field by providing an in-depth analysis of the factors that enable social enterprises to drive sustainable development and climate action. It offers a framework for understanding the unique role of social entrepreneurship in tackling environmental issues, highlighting the innovative approaches that make these ventures impactful and scalable. The findings will be valuable for policymakers, investors, and social entrepreneurs who seek to support or establish ventures focused on environmental sustainability.

The implications of this research are both academic and practical. Academically, it expands the literature on social entrepreneurship by focusing on climate change, encouraging further exploration of how social enterprises contribute to sustainable development. Practically, the study provides actionable insights

for social entrepreneurs, investors, and policymakers interested in fostering innovative solutions to environmental challenges. The findings underscore the importance of supporting social enterprises that prioritize environmental goals, as these ventures play a critical role in addressing urgent climate issues.

In conclusion, this research addresses a critical need to explore how social entrepreneurship can drive sustainable development in the face of climate change. Through a comprehensive analysis of innovative strategies and impactful solutions, this study aims to provide valuable insights that can support the growth and success of social enterprises focused on environmental sustainability. The findings will contribute to a deeper understanding of how social entrepreneurship can become a catalyst for climate action, enabling communities and businesses alike to adopt sustainable practices that meet both environmental and societal needs.

2. METHOD

Research Type

This study utilizes a qualitative research approach to explore the role of social entrepreneurship in addressing climate change through innovative solutions for sustainable development. The qualitative method enables an in-depth understanding of how social entrepreneurs design and implement environmental initiatives that create both ecological and socio-economic benefits. This approach captures the lived experiences, motivations, and challenges faced by social entrepreneurs in their efforts to achieve sustainable impact.

The population for this study includes 25 social entrepreneurs leading organizations or projects focused on environmental sustainability. Participants are selected using purposive sampling to ensure they are actively involved in addressing climate-related issues such as renewable energy, waste reduction, and sustainable agriculture. The sample includes representatives from 10 established social enterprises with over five years of operation and 15 emerging enterprises with less than five years of operation, providing insights into varied operational scales and strategies. Participants are drawn from diverse geographic regions, including Asia, Africa, Europe, and Latin America, ensuring a global perspective on social entrepreneurship.

Data Collection Technique

Data collection is conducted through two main techniques:

- 1) **In-Depth Interviews:** Semi-structured interviews are conducted with social entrepreneurs to gather detailed insights into their experiences and practices. The interviews are recorded, transcribed, and coded to capture themes and patterns.

Document Analysis: Relevant organizational documents, including annual reports, impact assessments, and project descriptions, are analyzed to complement the interview data and provide additional context on the environmental and social impact of each enterprise

Data Analysis Technique

Thematic analysis is used to analyze the qualitative data collected, focusing on identifying patterns and themes related to sustainable practices, climate impact, and entrepreneurial strategies. The coding process involves categorizing data into themes such as innovation types, community engagement, and environmental outcomes. These themes are interpreted to understand how social entrepreneurs contribute to sustainable development in the context of climate change. This analysis provides a detailed view of the factors that enable social enterprises to implement innovative, impactful solutions.

3. RESULTS AND DISCUSSION

The Role of Innovation in Social Entrepreneurship for Climate Action

The analysis reveals that innovation plays a crucial role in enabling social entrepreneurs to develop climate-focused solutions. Many social enterprises in the study have implemented innovative approaches, such as renewable energy products, eco-friendly materials, and waste-to-resource initiatives, to address environmental issues (Ahatsi et al., 2024). For instance, renewable energy projects in underserved communities allow access to clean electricity while reducing carbon emissions. Social enterprises emphasize innovation as a means to balance financial sustainability with environmental impact, thereby creating business models that are resilient in both social and environmental aspects.

Additionally, innovation in social entrepreneurship is often driven by resource constraints, which encourages the creative use of available materials and skills. Table 1 below shows various innovative approaches employed by social enterprises, highlighting the correlation between innovation type and environmental impact.

Table 2. Types of Innovations by Social Enterprises and Their Environmental Impact

Innovation Type	Environmental Impact	Example
Renewable Energy Solutions	Reduces carbon footprint	Solar-powered energy kits
Waste-to-Resource Programs	Minimizes landfill waste	Converting plastic waste into eco-bricks
Sustainable Agriculture	Conserves water and soil resources	Organic farming and permaculture practices

(Sources: Doherty et al., 2014; Kickul & Lyons, 2016; Rockström et al., 2009)

These innovative approaches enable social entrepreneurs to make significant strides in climate action while creating value for local communities.

Community Engagement as a Catalyst for Sustainable Impact

Community engagement emerged as a key theme in the efforts of social entrepreneurs to drive sustainable impact. By involving local communities in environmental projects, social entrepreneurs ensure that initiatives are culturally relevant and widely accepted, thus enhancing long-term sustainability ((Odunaiya et al., 2024)). Social enterprises working in rural areas often partner with community leaders to educate residents on sustainable practices, resulting in higher community buy-in and active participation.

Interviews with social entrepreneurs revealed that community engagement not only fosters local ownership but also equips residents with valuable skills, such as waste management, organic farming, and renewable energy maintenance. Figure 1 below illustrates the community engagement model commonly employed by social enterprises, showing the interaction between training, empowerment, and sustainable outcomes.

Community involvement is essential for creating a sustainable impact, as it allows social enterprises to operate with the support and collaboration of the communities they serve (Doherty et al., 2014; IPCC, 2021; World Bank, 2021).

Financial Sustainability and Environmental Goals: Achieving a Balance

One of the most significant challenges faced by social entrepreneurs is balancing financial sustainability with environmental objectives. Many social enterprises rely on innovative funding models such as impact investments, grants, and social bonds to support their climate-focused initiatives ((Hokmabadi et al., 2024)). These funding sources enable social enterprises to pursue environmental goals without solely depending on profit-driven revenue models. Table 2 highlights the diverse funding strategies adopted by social enterprises, illustrating how each approach supports financial and environmental balance.

Table 3. Funding Strategies for Social Enterprises and Their Impact

Funding Strategy	Financial Sustainability	Environmental Impact
Impact Investment	Medium	High
Grants	High	Medium
Social Bonds	Medium	High

(Sources: Rockström et al., 2009; Kickul & Lyons, 2016; UNEP, 2020)

This balance is critical for ensuring that social enterprises can operate sustainably over time, maintaining their commitment to climate action without compromising financial viability.

Challenges and Barriers in Scaling Climate Solutions

While social entrepreneurship offers substantial potential for climate action, scaling these solutions remains challenging due to operational and regulatory barriers. Many social entrepreneurs face limitations

such as restricted access to funding, regulatory hurdles, and a lack of government support, which hinder their ability to expand ((Dwivedi et al., 2022)). Approximately 65% of participants in this study cited financial constraints as a major barrier to scaling their environmental initiatives.

Moreover, regulatory frameworks in many regions do not adequately support social entrepreneurship, particularly for climate-focused ventures that require innovative policies on renewable energy, waste management, and environmental conservation (OECD, 2020; Rockström et al., 2009; UNEP, 2020). It presents the primary barriers identified by social enterprises in the study, highlighting their impact on the scalability of environmental solutions.

Addressing these challenges will require supportive policies, public-private partnerships, and a greater commitment from stakeholders to facilitate the growth of social enterprises working in climate action.

Practical Implications for Supporting Social Entrepreneurship in Climate Action

The findings of this study have significant implications for policymakers, investors, and other stakeholders aiming to support social entrepreneurship in climate action. By providing tailored funding options, creating supportive regulatory frameworks, and promoting community involvement, stakeholders can empower social entrepreneurs to maximize their impact on environmental sustainability. For instance, government incentives for renewable energy and waste management can reduce costs for social enterprises and encourage broader adoption of sustainable practices.

Additionally, investors and financial institutions can play a pivotal role by offering impact investment options designed specifically for climate-focused social enterprises. The study highlights the importance of a collaborative approach that combines financial, regulatory, and community resources to support social entrepreneurs in scaling their environmental initiatives.

In summary, social entrepreneurship offers an innovative pathway to address climate change through sustainable development solutions. By fostering a supportive ecosystem, stakeholders can enhance the capacity of social enterprises to create enduring environmental and social impacts.

4. CONCLUSION

This study highlights the pivotal role of social entrepreneurship in addressing climate change through innovative, sustainable solutions that benefit both communities and the environment. Social enterprises are uniquely positioned to leverage local resources, engage communities, and foster environmentally friendly practices. The findings demonstrate that social entrepreneurs implement diverse approaches, such as renewable energy projects, waste reduction initiatives, and sustainable agriculture, to mitigate environmental issues while promoting socio-economic resilience. Community engagement emerges as a key factor in the success of these initiatives, building local ownership and empowering residents to contribute actively to climate solutions.

However, the research also identifies challenges that hinder the scalability of these climate-focused initiatives. Financial constraints, regulatory barriers, and limited access to technical expertise create significant obstacles for social enterprises aiming to expand their impact. These findings suggest that supportive policies, such as government incentives and impact investment funds, are crucial for enabling social enterprises to scale their climate solutions sustainably. By addressing these barriers, stakeholders—including policymakers, investors, and community leaders can create a supportive ecosystem that amplifies the role of social entrepreneurship in driving meaningful, lasting climate action and sustainable development.

A) Recommendations for Policymakers:

- Introduce subsidies or tax incentives for social enterprises implementing climate solutions to alleviate financial constraints.
- Develop supportive regulatory frameworks that simplify the process of launching and scaling climate-focused social enterprises.
- Establish impact investment funds or public-private partnerships to provide accessible financing options for social entrepreneurs.

B) Future Research Directions:

- Investigate the role of digital tools, such as AI, IoT, and blockchain, in enhancing the scalability and efficiency of social enterprises.
- Conduct comparative studies across regions to identify best practices for community engagement in climate-focused social enterprises.
- Explore the long-term socio-economic impacts of social enterprises on vulnerable communities facing climate challenges.

By addressing these barriers and leveraging policy support, stakeholders—including policymakers, investors, and community leaders—can create a supportive ecosystem that amplifies the role of social entrepreneurship in driving meaningful, lasting climate action and sustainable development.

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