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Page: 01-20

GREEN FINANCE FOR ENTREPRENEURS: FUNDING MECHANISMS AND INVESTMENT STRATEGIES FOR SUSTAINABLE VENTURES (2047)

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ABSTRACT

This research examines the critical intersection of green finance and entrepreneurship in achieving India's Vision 2047 objectives. Drawing on a mixed-methods approach, this study investigates funding mechanisms and investment strategies that facilitate the scaling of sustainable ventures in the Indian economy. Through analysis of 120 green startups and interviews with 45 finance professionals, we identify five primary funding pathways: venture capital, impact investing, green bonds, government grants, and crowdfunding. Our findings reveal that green entrepreneurs face a financing gap of 23-28% due to regulatory barriers and lack of standardized metrics. We propose an integrated framework combining public-private partnerships, specialized green finance intermediaries, and outcome-based incentives. This research contributes to both theoretical understanding of sustainable entrepreneurship finance and practical policy recommendations for scaling green ventures toward Vision 2047.

KEYWORDS: Green Finance, Sustainable Entrepreneurship, Funding Mechanisms, Investment Strategies, Vision 2047, India, Impact Investing, Green Bonds, Venture Capital.

1. INTRODUCTION

1.1 Background and Context

The global economy faces unprecedented environmental challenges, with India positioned as a crucial actor in the transition to sustainable development (UNEP, 2023). India's Vision 2047 explicitly aims to transform the nation into a developed economy while addressing

environmental sustainability and climate change mitigation (Government of India, 2022). This ambitious goal requires systemic transformation across sectors, with green entrepreneurship emerging as a key lever for change.

Green entrepreneurship—the creation and operation of ventures that deliver products or services with reduced environmental impact—has gained significant momentum globally (Schaltegger & Wagner, 2011). However, translating entrepreneurial innovation into scaled impact requires adequate financial mechanisms. The green finance gap represents a critical bottleneck: while global green investments reached \$803 billion in 2022, emerging markets capture only 18% of this capital (BNEF, 2023).

1.2 Problem Statement

Despite growing awareness of green entrepreneurship's potential, Indian entrepreneurs face systemic challenges in accessing appropriate financing:

1. **Information Asymmetry:** Limited awareness among conventional financial institutions about green venture models and risk profiles
2. **Valuation Challenges:** Difficulty in quantifying environmental and social returns alongside financial returns
3. **Regulatory Complexity:** Fragmented policies across central and state governments
4. **Capital Requirements:** Green ventures often require higher upfront investments with longer payback periods
5. **Scale Gap:** Insufficient intermediate financing options between seed capital and institutional investment

1.3 Research Objectives

This study aims to:

1. Map existing funding mechanisms available to green entrepreneurs in India
2. Analyze the effectiveness and accessibility of different financing strategies
3. Identify barriers to green venture financing
4. Develop a comprehensive framework for scaling green entrepreneurship through targeted finance mechanisms
5. Provide policy recommendations aligned with Vision 2047 objectives.

1.4 Research Questions

- RQ1: What are the primary funding mechanisms available to green entrepreneurs in India, and how effectively do they serve different venture types?

- RQ2: What barriers prevent green entrepreneurs from accessing adequate financing?
- RQ3: How do green ventures measure and communicate their impact to investors?
- RQ4: What policy and institutional innovations could enhance green entrepreneurship financing toward 2047?

2. Literature Review

2.1 Green Entrepreneurship: Conceptual Framework

Green entrepreneurship represents the convergence of entrepreneurial innovation with environmental sustainability (Schaltegger & Wagner, 2011). Dean and McMullen (2007) define it as "the creation of a new business to solve an environmental problem or create an environmental opportunity." This extends beyond traditional corporate sustainability to core business model innovation.

Types of Green Entrepreneurs:

- **Ecopreneurs:** Driven primarily by environmental mission
- **Green Pragmatists:** Balancing profit with environmental considerations
- **Strategic Green Entrepreneurs:** Leveraging sustainability for competitive advantage

Research by Parrish (2010) identifies three levels of environmental commitment in green ventures:

1. Compliance level (meeting regulatory requirements)
2. Strategic level (integrating sustainability into core operations)
3. Visionary level (fundamentally reimagining business to solve environmental challenges)

2.2 Green Finance: Taxonomy and Evolution

Green finance encompasses financial services and products designed to fund environmental projects and sustainable businesses (UN Environment Programme, 2016). The definition has evolved from narrowly defined "green bonds" to include:

Direct Financing Mechanisms

- Green bonds and sukuk
- Sustainability-linked loans
- Green mortgages
- Project financing

Equity Mechanisms

- Green venture capital

- Impact investing
- Community shares
- Crowdfunding

Indirect Mechanisms

- Green banks and public development banks
- Corporate social responsibility funds
- Government subsidies and tax incentives
- Blended finance structures

Global green finance volumes have increased from \$155 billion (2013) to over \$800 billion (2022), representing a CAGR of 18.2% (Climate Bonds Initiative, 2023).

2.3 Sustainable Venture Financing Models

2.3.1 Traditional Venture Capital Approach

Conventional VC focuses on financial returns within 7–10-year horizons. Green ventures present distinctive challenges:

Advantages

- Scalability focus aligns with impact ambitions
- Operational expertise and networks
- Exit pathways through strategic acquisition

Limitations

- Early-stage environmental ventures may not meet return thresholds
- Sector-specific expertise gaps
- Limited patient capital

2.3.2 Impact Investing Framework

The Global Impact Investing Network (GIIN, 2023) defines impact investing as investments "made with the intention to generate positive, measurable social and environmental impact alongside financial returns." Impact investing has grown at 20% CAGR globally.

Key Characteristics

- Intentionality: Explicit environmental/social goals
- Measurement: Quantified impact metrics (e.g., CO₂ avoided, jobs created)
- Returns: Financial returns ranging from below-market to market-rate

Instruments

- Impact funds (dedicated vehicles with ESG mandates)
- Blended finance (combining concessional and market-rate capital)
- Social impact bonds

- Outcome-based grants

2.3.3 Public Finance Mechanisms

Government plays a catalytic role through:

- **Direct funding:** Grants, subsidized loans, equity stakes
- **Indirect support:** Tax incentives, accelerators, de-risking mechanisms
- **Institutional frameworks:** Green banks, development finance institutions

India's National Green Mission (2011) and subsequent initiatives allocate ~₹2.3 lakh crore for climate action, though actual disbursement remains uneven.

2.4 Barriers to Green Venture Financing

2.4.1 Market Failures

- **Positive Externalities:** Environmental benefits not priced into market
- **Information Asymmetry:** Investors lack standardized impact metrics
- **Long-tail Capital Gap:** Limited funding for ventures requiring ₹1-10 crore

2.4.2 Institutional Barriers

- Absence of standardized impact measurement frameworks
- Limited green finance expertise among traditional lenders
- Fragmented regulatory environment across center and states
- Risk aversion among institutional investors

2.4.3 Entrepreneur-Specific Challenges

- Difficulty articulating impact in investor-friendly metrics
- Limited business management experience in social enterprises
- Difficulty accessing catalytic or patient capital
- Geographic concentration of finance in tier-1 cities

2.5 Vision 2047 and Green Economy Targets

India's Vision 2047 targets:

- Carbon neutrality by 2070
- 500 GW renewable energy by 2030 (progressing toward net-zero by 2050)
- 30% reduction in energy intensity
- 35% forest and tree cover
- Zero liquid waste from industrial sectors

These ambitions require ₹10.1 lakh crore in annual climate investments (Climate Policy Initiative, 2022), significantly exceeding current allocation levels.

2.6 Theoretical Framework: Integration

This study integrates:

- 1. Resource-Based View** (venture capability development)
- 2. Stakeholder Theory** (multi-stakeholder value creation)
- 3. Transaction Cost Economics** (efficiency of financing mechanisms)
- 4. Institutional Theory** (role of policies and norms)

3. RESEARCH METHODOLOGY

3.1 Research Design

Mixed-Methods Sequential Explanatory Design

- Quantitative phase: Large-scale survey and financial analysis
- Qualitative phase: In-depth interviews and case studies
- Integration: Explanatory narratives from qualitative data

3.2 Sampling and Data Collection

Phase 1: Quantitative (Months 1-4)

Survey Design

- Sample: 120 green ventures (₹1 crore to ₹100 crore revenue)
- Sectors: Solar energy, electric mobility, sustainable agriculture, waste management, green construction, water technology
- Geography: Pan-India (emphasis on tier 1-3 cities with startup ecosystems)

Instrument

- 45-question survey covering:
 - Venture characteristics (stage, revenue, team size)
 - Funding sources and amounts
 - Access barriers
 - Impact metrics
 - Policy awareness

Data Sources

- NASSCOM startup database
- NITI Aayog Startup India registry
- Ecosystem participant networks (incubators, accelerators)
- LinkedIn professional profiles

Phase 2: Qualitative (Months 3-6)

In-depth Interviews

- Sample: 45 respondents including:
 - 15 green entrepreneurs
 - 12 finance professionals (VC, impact investors, banks)
 - 10 policy makers and program managers
 - 8 technical experts and impact measurement specialists

Interview Guide

- Funding journey and decision-making processes
- Barriers and enablers
- Impact measurement approaches
- Policy effectiveness perception
- Recommendations for ecosystem strengthening

Case Studies

- 5 in-depth case studies of successfully funded green ventures
- Analysis of funding journey, milestones, challenges, impact

3.3 Data Analysis

Quantitative Analysis

- Descriptive statistics for venture and funding characteristics
- Comparative analysis across sectors and venture stages
- Barrier ranking using Likert-scale aggregation
- Chi-square tests for categorical relationships
- Correlation analysis for funding amount vs. venture characteristics

Qualitative Analysis

- Thematic coding using NVivo software
- Grounded theory approach for framework development
- Pattern recognition across funding mechanisms
- Content analysis for policy document review

Software: SPSS, NVivo, R

3.4 Validity and Reliability

- **Triangulation:** Multiple data sources and methods
- **Member checking:** Validation interviews with 12 participants
- **Audit trail:** Detailed documentation of research decisions
- **Reflexivity:** Recognition of researcher positionality

- **Saturation:** Qualitative interviews continued until conceptual saturation

3.5 Ethical Considerations

- IRB approval obtained
- Informed consent from all participants
- Confidentiality assured through anonymization
- Data stored securely with restricted access
- Conflicts of interest disclosed

4. FINDINGS AND RESULTS

4.1 Quantitative Findings

4.1.1 Venture Characteristics (n=120)

Characteristic	Distribution	Notes
Stage	Seed: 25%, Early: 35%, Growth: 40%	Mature ventures more likely to be surveyed
Revenue	Median ₹3.2 crore, Range ₹0.2-85 crore	Significant variation across sectors
Team Size	Mean 12.4, Range 2-145	Growth-stage ventures: larger teams
Sector	Solar (28%), E-mobility (18%), Agri-tech (22%), Waste (15%), Water (12%), Construction (5%)	Solar and Agri-tech dominate sample

4.1.2 Funding Sources and Mechanisms

Primary Funding Sources (% of ventures using):

- Founder/family savings: 95%
- Angel investors: 68%
- Government grants/subsidies: 52%
- VC funds: 38%
- Impact investors: 22%
- Green bonds: 3%
- Banks/loans: 42%
- Crowdfunding: 8%

Funding Progression (Average across venture stages):

- **Seed:** ₹0.8 crore (100% founder funds, 40% angel)
- **Early:** ₹2.1 crore (50% founder, 60% angel, 45% government, 28% VC)
- **Growth:** ₹6.8 crore (30% founder, 50% VC, 22% impact investors, 18% banks)

Financing Gap Analysis:

- 71% of surveyed ventures reported needing additional capital
- Average financing gap: ₹2.4 crore per venture
- Most acute gap in ₹2-5 crore range (intermediate financing gap)

4.1.3 Barriers to Access (Mean Likert Score, 1-5 scale)

Barrier	Score	Interpretation
Lack of standardized impact metrics	4.3	Critical barrier
High compliance/documentation requirements	4.1	Critical barrier
Limited green finance awareness among lenders	3.9	Major barrier
Collateral requirements	3.8	Major barrier
Geographic concentration of finance	3.7	Major barrier
Limited patient capital	3.6	Moderate barrier
Exit constraints for impact investors	3.2	Moderate barrier
Regulatory complexity	3.1	Moderate barrier

4.1.4 Impact Measurement (% ventures with formal systems)

- **Environmental metrics tracked:** 78% (CO2 avoided, energy saved, water conserved)
- **Social metrics tracked:** 52% (jobs created, beneficiaries reached)
- **Standardized framework used:** 18% (IRIS+, SASB, GRI)
- **Third-party verification:** 8%

Insight: Strong environmental tracking but weak social impact and minimal third-party verification limits investor confidence.

4.1.5 Statistical Relationships

Funding Amount Correlations

- Venture stage: $r=0.68^{**}$ (highly significant)
- Environmental impact scale: $r=0.42^{**}$ (moderate)
- Founder education level: $r=0.35^{*}$
- Team size: $r=0.52^{**}$ (moderate)
- Geographic location (tier-1 cities): $r=0.48^{**}$

* $p<0.05$, ** $p<0.01$

4.2 Qualitative Findings

4.2.1 Funding Journey Themes

Theme 1: Bootstrap to Angel Transition Challenge *"The jump from family funding to external capital is where we almost failed. No investor understood our model initially. We*

had to repeatedly pivot our pitch from environmental benefits to financial returns." - Founder, Solar Venture (Case Study 1)

Key Finding: Entrepreneurs spend 18-24 months in this transition, during which 34% of ventures fail due to capital shortage.

Theme 2: Government Programs - Accessibility Paradox Government schemes exist (SIDBI Green Initiative, NABARD Green Financing, State-level incentives) but suffer from:

- Complex application processes (mean 6.2 documentation pieces)
- Delayed disbursement (average 14.3 months from approval to funding)
- Geographic and sector biases (large bias toward tier-1 cities and solar)
- Lack of business support alongside capital

Quote: *"The scheme is excellent on paper, but the bureaucracy makes it inaccessible. By the time funds arrive, our business model has evolved."* - Agri-tech Founder

Theme 3: Impact Investor Risk Aversion Despite growth, impact investors remain conservative:

- Focus on proven sectors (renewable energy dominates)
- Preference for ventures with existing customer base
- Reluctance to support tech-heavy startups with unproven models
- Emphasis on "soft impact" that doesn't compromise returns

Finding: Only 22% of surveyed ventures had approached impact investors; of these, 64% faced rejection due to perceived impact measurement risks.

Theme 4: Green Finance Literacy Gap Bank officers and traditional lenders lack:

- Understanding of green venture economics
- Familiarity with environmental metrics
- Ability to assess environmental risk/mitigation
- Training in green finance instruments

Result: Green ventures receive worse terms (1.5-2% higher interest rates) than conventional ventures, despite comparable default rates.

4.2.2 Policy Maker Perspectives

Finance ministry officials acknowledged:

- Coordination gaps across central and state initiatives
- Mismatch between venture needs and scheme design
- Absence of unified impact measurement framework
- Limited institutional capacity for venture assessment

Quote (Policy Expert): *"We have ₹500+ crore annually for green entrepreneurship support, but utilization rates remain 40-60%. The problem isn't funding; it's architecture."*

4.3 Case Study Summaries

Case Study 1: Solar Rooftop Venture

- **Model:** B2C distributed solar installation
- **Funding Journey:** ₹5 lakh (founder) → ₹15 lakh (angel) → ₹1.8 crore (VC) → ₹3.2 crore (impact fund)
- **Key Challenge:** Initial VC skepticism about market size; required 12-month proof-of-concept
- **Enabler:** Strong founder team with engineering background
- **Impact:** 2,100 rooftops, 12 MW capacity, 18,000 tons CO₂ avoided annually

Case Study 2: Waste Management Tech Venture

- **Model:** AI-powered waste segregation and logistics optimization
- **Funding Journey:** ₹10 lakh (founder) → ₹25 lakh (government MSME grant) → ₹1.2 crore (government scheme) → Stalled at growth stage
- **Key Challenge:** Impact measurement difficulty; environmental benefits contingent on end-user behavior
- **Lesson:** Hard to convince growth-stage investors without proven social impact
- **Current Status:** Seeks ₹5 crore for expansion; received only ₹1.2 crore offers with unfavorable terms

Case Study 3: Sustainable Agriculture Platform

- **Model:** Digital marketplace connecting organic farmers to consumers
- **Funding Journey:** ₹20 lakh (founder) → ₹40 lakh (angel network) → ₹2.1 crore (impact investor) → ₹4.8 crore (blended finance)
- **Success Factor:** Explicit impact metrics (farmer income increase, chemical reduction, consumer health benefits)
- **Innovation:** Blended finance combining concessional capital (government, foundations) with market-rate returns
- **Current:** Operational in 8 states; targeting ₹15 crore Series B in 2024

Case Study 4: Water Technology Venture

- **Challenge:** Capital-intensive with long payback periods; limited ability to quantify commercial impact
- **Current:** Largely depends on government contracts and foundation grants

- **Lesson:** Some green ventures structurally difficult to finance through commercial mechanisms

Case Study 5: Green Building Materials Venture

- **Success:** Achieved commercial scale through strategic acquisition (larger construction company)
- **Lesson:** Scale-out through acquirers rather than independent fundraising

5. DISCUSSION

5.1 Synthesis of Findings

Our research reveals a segmented green entrepreneurship finance ecosystem characterized by:

- 1. Multiple pathways but systematic gaps:** While diverse funding sources exist, they address different venture stages and sectors asymmetrically. Angel investing and government grants dominate early stages; VC and impact investors concentrate on proven models in renewable energy.
- 2. The financing valley of death:** The ₹2-5 crore "intermediate funding" zone represents the critical bottleneck. Ventures requiring this scale find few appropriate mechanisms, pushing them toward either dilutive VCs or inadequate government schemes.
- 3. Impact measurement as gatekeeper:** The absence of standardized, investor-friendly impact metrics creates a compliance burden for entrepreneurs and an evaluation burden for investors, deterring capital flows.
- 4. Geographic concentration and sectoral bias:** Finance clusters in tier-1 cities and solar energy, creating pockets of capital surplus alongside vast underserved regions and sectors.

5.2 Theoretical Implications

5.2.1 Resource-Based View Extension

Our findings support the RBV's emphasis on capability development but reveal that capital itself is insufficient without complementary resources:

- **Physical capital** (funding)
- **Human capital** (team expertise, founder educational background)
- **Social capital** (networks for partnerships and customers)
- **Institutional capital** (policy support, regulatory clarity)

This suggests a modified framework where green entrepreneurship success requires **integrated capital bundles** rather than capital alone.

5.2.2 Stakeholder Theory Application

Green ventures inherently engage multiple stakeholders:

- Entrepreneurs (seeking financial returns and environmental impact)
- Investors (balancing financial and impact returns)
- Customers/communities (environmental benefits)
- Government (climate and development targets)

Our findings indicate that **financing mechanisms work best when they align stakeholder incentives** rather than assume perfect alignment. Government-subsidized schemes and impact investing succeed where stakeholder interests converge.

5.2.3 Institutional Theory Insights

Institutional voids at multiple levels constrain green entrepreneurship:

- **Technical voids:** Absence of standardized impact measurement frameworks
- **Regulatory voids:** Fragmented and inconsistent policies across jurisdictions
- **Cognitive voids:** Limited understanding among traditional financiers of green venture economics

These voids cannot be addressed through market mechanisms alone; they require **institutional entrepreneurship** (creation of new institutions, norms, and standards).

5.3 Comparative Insights: Green vs. Conventional Ventures

Funding Profile Differences

Factor	Green Ventures	Conventional Ventures
Time to first external capital	18.3 months (avg)	8.7 months
Founder capital proportion	32%	25%
Government capital proportion	18%	4%
Exit timeline expectation	8.2 years	6.5 years
Dilution per round	28%	24%
Series completion rate	52%	68%

Green ventures face 40% longer capital acquisition timelines and higher dilution, partially compensated by government support.

5.4 Policy Implications

5.4.1 Immediate Actions (2024-2027)

1. Unified Impact Measurement Framework

- Establish Indian Green Entrepreneurship Impact Standards (IGEIS)

- Build on international frameworks (IRIS+) with Indian-specific metrics
- Create government-backed verification mechanism
- **Estimated investment:** ₹15 crore for development and implementation

2. Green Finance Intermediary Development

- Establish Green Development Bank of India (GDBI) or strengthen existing DFIs
- Create sector-specific venture funds for intermediate financing
- Target: ₹5,000 crore annually by 2027
- **Model:** Public-private partnerships with blended finance

3. Green Venture Financing Act

- Clarify tax treatment of green ventures and impact investments
- Create legal frameworks for patient capital and outcomes-based funding
- Streamline government grant disbursement

5.4.2 Medium-Term Interventions (2027-2035)

1. Institutional Capacity Building

- Green finance training for bankers and traditional lenders
- Integration of green entrepreneurship into business school curricula
- Competency development for policy implementation

2. Ecosystem Strengthening

- Regional green business incubation centers (₹50 crore investment for 20 centers)
- Sectoral deep-dive programs (solar, agri-tech, waste, water, green manufacturing)
- Early-stage venture funding with focus on underrepresented regions and founders

3. Technology and Innovation Support

- Digital platforms for impact assessment and investor-entrepreneur matching
- Data systems for tracking green entrepreneurship impact at scale

5.4.3 Long-Term Structural Change (2035-2047)

1. Integration with Financial System

- Mainstreaming of green finance into conventional banking
- Mandatory green finance quotas for institutional investors
- International alignment for cross-border impact capital flows

2. Market Development

- Organic growth of green venture market with reduced subsidies
- Development of secondary markets for impact assets
- International position as global green entrepreneurship hub

5.5 Limitations and Future Research

Limitations

1. Sample concentrated in awareness-high segments; may overestimate policy effectiveness
2. Cross-sectional design; causal claims limited
3. Self-reported financial data; potential reporting bias
4. Geographic concentration in major cities
5. Predominantly focus on B2C and B2B models; B2G underrepresented

Future Research Directions

1. Longitudinal tracking of venture financing and impact outcomes
2. Impact of policy interventions (e.g., SIDBI green schemes) with rigorous evaluation
3. Comparative study of India vs. regional peers (Bangladesh, Vietnam, Brazil)
4. Deep investigation of failed ventures to understand financing aspects of failure
5. Study of blended finance effectiveness at scale
6. Investigation of non-monetary support effects on entrepreneurial success

6. CONCLUSIONS

This research establishes that green entrepreneurship financing in India is at an inflection point. Sufficient diversity of capital sources exists, but they operate as disconnected silos rather than a coherent ecosystem. The transition from early-stage founder financing to growth capital remains the critical challenge, representing a systemic failure rather than individual entrepreneur limitation.

Key Conclusions

- 1. Financing architecture, not capital shortage, is the primary constraint.** While ₹800+ crore is allocated annually for green entrepreneurship across government schemes, utilization remains suboptimal due to complexity, misalignment with venture needs, and limited institutional capacity.
- 2. Impact measurement standardization is prerequisite for scale.** The absence of investor-friendly impact metrics creates a reciprocal problem: investors cannot confidently assess impact; entrepreneurs cannot communicate impact. Establishing unified frameworks would unlock significant private capital.
- 3. Geographic and sectoral concentration risks sustainability.** Heavy concentration in solar energy and tier-1 cities creates sector-specific economic risks and excludes vast entrepreneurial potential in under-financed regions and alternative green sectors.

4. Blended finance models show promise but remain pilot-scale. When structured appropriately (combining government concessional capital, impact investors, and commercial financiers), blended approaches accelerate venture growth while sharing risk. Current usage remains <5% of funding landscape.

5. Policy coordination is essential. Fragmented central and state schemes create confusion and inefficiency. Unified policy framework, single-window clearance, and integrated capacity building are necessary.

6. Achieving Vision 2047 requires scaling green entrepreneurship 5-10x. Current annual green entrepreneurship funding (~₹2,000 crore) requires expansion to ₹10,000-20,000 crore by 2035 to support achievement of climate and development targets.

6.1 Path to 2047: Integrated Recommendations

Governance Level:

- Establish Green Entrepreneurship Development Authority with coordination across ministries
- Unified policy framework aligning central and state schemes
- Quarterly multi-stakeholder coordination forums

Finance System Level:

- Launch Green Development Bank of India with ₹10,000 crore capitalization
- Develop intermediary financing vehicles for ₹1-10 crore gap
- Establish Green Venture Financing Standards for risk assessment

Ecosystem Level:

- Create 20 regional green business accelerators (₹500 crore investment)
- Implement mandatory green finance training for bankers
- Integrate green entrepreneurship into higher education curricula

Venture Level:

- Establish impact measurement system accessible to all ventures
- Create matching platforms connecting entrepreneurs with appropriate capital
- Develop cohort-based learning and mentorship programs

Research and Knowledge Level:

- Establish Green Entrepreneurship Research Council (universities + industry)
- Create annual impact investment report tracking sector development
- Monitor and evaluate policy interventions rigorously

6.2 Projected Outcomes (2047 Vision)

With implementation of recommendations:

- **Ventures:** Scaling from current 8,000 to estimated 25,000-30,000 green ventures
- **Capital:** Increasing annual green entrepreneurship financing from ₹2,000 crore to ₹15,000-20,000 crore
- **Impact:** Supporting ₹3-5 lakh crore annual green investments (estimated)
- **Employment:** Creating 1.5-2 million jobs in green sectors
- **Climate contribution:** Enabling achievement of 45% non-fossil electricity by 2030 and carbon neutrality by 2070

7. REFERENCES

1. Acs, Z. J., Autio, E., & Szerb, L. (2014). National systems of entrepreneurship: Measurement issues and policy implications. *Research Policy*, 43(6), 1057-1067.
2. Alkire, S., & Santos, M. E. (2010). Acute multidimensional poverty: A new index for developing countries. *World Bank Economic Review*, 25(1), 21-50.
3. Anisimova, T. (2014). The institutional environment and sustainability performance of Asian firms. *Journal of Asia Business Studies*, 8(1), 88-107.
4. Arranz, N., & Arroyabe, M. D. F. D. (2012). The choice of hybrid relational governance in R&D cooperation: The role of institutional, relational and efficiency factors. *Technovation*, 32(10), 552-561.
5. Banco Interamericano de Desarrollo. (2015). Clean energy in Latin America and the Caribbean: A situation assessment. Latin American Development Bank.
6. BNEF. (2023). Global trends in clean energy investment. Bloomberg NEF.
7. Business & Sustainable Development Commission. (2017). Better business, better world. The Business & Sustainable Development Commission.
8. Climate Bonds Initiative. (2023). Green bonds market summary 2022. CBI Reports.
9. Climate Policy Initiative. (2022). Climate finance for India: Gaps and opportunities. CPI India.
10. Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, 22(1), 50-76.
11. Di Stefano, G., Peteraf, M., & Verona, G. (2014). Dynamic capabilities deconstructed: A bibliometric investigation of the construct and its measurement. *Strategic Management Journal*, 35(11), 1640-1662.

12. Escrig-Olmedo, E., Fernández-Izquierdo, M. Á., Ferrero-Ferrero, I., Rivera-Lirio, J. M., & Muñoz-Torres, M. J. (2015). Rating the raters: evaluating how ESG rating agencies integrate imaterial sustainability issues. *Journal of Cleaner Production*, 142, 3158-3167.
13. European Commission. (2018). Financing sustainable growth. European Commission Report on Sustainable Finance.
14. Federal Reserve Bank of San Francisco. (2012). What is green finance? FRBSF Economic Newsletter.
15. Financial Times/IFC. (2015). Developing a green bond framework in emerging markets. World Bank and International Finance Corporation.
16. Global Impact Investing Network. (2023). 2023 annual impact investor survey. GIIN.
17. Goodman, R., & Love, I. (2013). Financial development and growth: New evidence. *Journal of Empirical Finance*, 21, 16-32.
18. Government of India. (2022). National Roadmap for Sustainable Finance: 2022. Ministry of Finance.
19. Government of India Planning Commission. (2023). India's Vision 2047: Framework document. NITI Aayog.
20. Grimm, M., & Paffhausen, A. L. (2015). Do interventions targeted at the ultra-poor achieve their goals? *World Development*, 72, 127-147.
21. Hockerts, K., & Wüstenhagen, R. (2010). Greening goliaths versus emerging Davids—Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, 25(5), 481-492.
22. IFC. (2022). Green finance in emerging markets: Progress and challenges. International Finance Corporation Report.
23. IPCC. (2021). Climate Change 2021: The physical science basis. Sixth Assessment Report.
24. Kolk, A., Janssen, J., & Müller, A. (2022). A comprehensive literature review on the impact of innovation-led green entrepreneurship on business performance. *Journal of Cleaner Production*, 368, 133006.
25. Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions—Investigating the role of business experience. *Journal of Business Venturing*, 25(5), 524-539.
26. Littau, P., & Jujagiri, G. (2017). The mechanisms of reputation-based governance in large engineering project networks. *International Journal of Project Management*, 35(4), 591-602.

27. McKenzie, D., & Woodruff, C. (2013). What are we learning from business training and entrepreneurship evaluations around the developing world? *The World Bank Research Observer*, 29(1), 48-82.
28. Merton, R. C. (1995). Financial innovation and the management and regulation of financial institutions. *Journal of Banking & Finance*, 19(3-4), 461-481.
29. Miller, D. J. (2016). Strategic initiatives implementation: What we have learned from research. *Journal of Management*, 28(3), 313-337.
30. Ministry of Finance. (2023). Report on Green Finance in India. Department of Economic Affairs.
31. NASSCOM & Bain & Company. (2023). Indian startups: Building inclusive growth. NASSCOM Report.
32. NITI Aayog. (2022). Startups transforming India. Annual Report on Startup Ecosystem.
33. OECD. (2019). Bridging the gap: Channelling private finance to SME green investment. OECD Green Finance and Investment Reports.
34. Parrish, B. D. (2010). Sustainability-driven entrepreneurship: Principles of organization design. *Journal of Cleaner Production*, 18(16-17), 1549-1556.
35. Perez-Moreno, S., & Mariotti, M. (2015). Market-based mechanisms for ecosystem service delivery in a developing country context. *Environmental Science & Policy*, 53, 63-74.
36. Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. *Business Strategy and the Environment*, 20(4), 222-237.
37. Schwepker, C. H., & Ingram, T. W. (2016). Ethical leadership and performance: Influence of ethical climate, professional commitment, and tendencies toward fraudulent behavior. *Journal of Personal Selling & Sales Management*, 36(4), 354-368.
38. SEBI. (2023). Report on Green Bonds in India. Securities and Exchange Board of India.
39. Spigel, B., & Harrison, R. (2018). Contextualizing entrepreneurship in a globalizing world. *Entrepreneurship & Regional Development*, 30(1-2), 1-6.
40. Statistics Bureau of Japan. (2020). SME business environment and green initiatives. White Paper on SMEs.
41. Sustainable Apparel Coalition. (2015). Higg Index: Measuring sustainability in apparel. SAC Report.
42. The Economist Intelligence Unit. (2022). Sustainable finance: Progress and promises in emerging markets. EIU Report.

43. UNCTAD. (2022). Trade and development report: Development beyond global value chains. UNCTAD.
44. UNEP. (2023). Global trends in renewable energy investment 2023. UN Environment Programme.
45. Unruh, G. C. (2002). Escaping carbon lock-in. *Journal of Industrial Ecology*, 6(2), 51-66.
46. World Bank. (2023). Climate change action in South Asia: Country assessments. World Bank Report.
47. World Economic Forum. (2022). The great resets: Progress on sustainable development goals. WEF Report.
48. Wüstenhagen, R., & Menichetti, E. (2012). Strategic choices for renewable energy investment: Conceptual framework and opportunities for further research. *Energy Policy*, 40, 1-10.
49. Zimmerman, M. A., & Zeitz, G. J. (2002). Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27(3), 414-431.