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Entrepreneurial Pathways to Innovation and Sustainability: An Insight from Assam

Jaya Rani Das¹, Dr. Monoj Kumar Chowdhury²

¹Assistant Professor, Department of Business Administration, NERIM, Guwahati, Assam, India

Research Scholar, Department of Business Administration, Gauhati University, Assam, India

²Professor (Retired), Department of Business Administration, Gauhati University, Guwahati, Assam, India

Abstract- Entrepreneurship uses creativity and innovation to generate social, environmental, and economic benefits. In recent years, sustainable and green entrepreneurship has gained importance as a response to challenges created by population growth, industrialisation, and environmental degradation. Assam, known for its rich culture, natural beauty, and diverse resources, is witnessing a growing rise in innovation-driven and sustainability-oriented entrepreneurial ventures. Its start-up ecosystem spans sectors such as technology, agriculture, healthcare, and tourism. Using a case study framework, the article explores how entrepreneurs in Assam adapt to their environment, create sustainable markets, and use innovative business models to address social and environmental issues while gaining competitive advantage. The study contributes to the understanding of sustainable entrepreneurship and may encourage aspiring entrepreneurs to adopt responsible and sustainable business practices.

Keywords- Assam, Entrepreneurship, Innovation, Sustainability, start-up

I. INTRODUCTION

The world is facing an unprecedented sustainability crisis, characterised by the interconnected threats of climate change, inequality, and resource depletion. These are currently the main barriers to sustainable development on a worldwide scale. The rate at which the world's natural resources are being drained is alarming. All planetary boundaries must be protected to meet the needs of sustainable development. Due to demographic factors like race or gender, disadvantages in political power and access to public resources, and disparities in income and assets, "the state of not being equal, especially in status, rights, and opportunities" (Alfonso et al., 2015) can be experienced in a variety of ways. These are currently the main barriers to sustainable development on a worldwide scale. The rate at which the world's natural resources are being drained is concerning. Additionally, inequality undermines sustainability and the solution of environmental issues.

Discrimination against certain groups and economic, social, and geographical disparities can force people at the bottom into unsustainable behaviours that increase inequality, environmental degradation, and unsustainability. Therefore, there are a variety of strategies to attain sustainability, each with its trade-offs and synergies with varying degrees of inequality; political economy greatly influences the decisions made regarding these options (Schmitz and Scoones, 2015). Current methods of agriculture, urbanization, and patterns of energy and natural resource usage appear to be largely unsustainable and urgently need to be corrected. If ignored, these trends will result in less economic growth and hazardous climate change.

To establish economic processes on a more sustainable foundation, new ideas and different policies are required. It is becoming more widely accepted that one of the most important factors influencing economic growth, high-value job creation, wealth creation, and company expansion is innovative entrepreneurship. The idea that entrepreneurship is a major force behind development has gained popularity in recent decades. The necessity of fostering innovation and entrepreneurship as essential foundations for the development and progress of nations and regions is now widely accepted. However, as innovation necessitates the capacity to adjust to the quickly shifting demands and conditions of their surroundings, entrepreneurs and businesses have considerable obstacles in this regard. Even though innovation is so important in today's world, micro and small businesses frequently find it difficult to innovate because of their limited funding and operational limitations, which limit their capacity to support regional growth.

In an era where environmental consciousness is more important than ever, sustainable start-ups are making waves. These forward-thinking companies are not only helping the planet but also achieving remarkable success. Let's explore how green business models are driving the growth and prosperity of sustainable start-ups.



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Sustainable start-ups are companies that put social and environmental responsibilities foremost. From sourcing materials to production procedures, they integrate eco-friendly methods into their business operations to reduce their carbon footprint. These start-ups frequently focus on green technologies, sustainable agriculture, waste reduction, and renewable energy. The demand for eco-friendly products and rising consumer awareness have fuelled the shift towards sustainability. Green business models are growing in popularity because they reflect the attitudes of modern consumers who prioritize sustainability. These models include social entrepreneurship, zero waste, and the circular economy, which combine environmental issues with social impact and financial gain.

II. LITERATURE REVIEW

Jayanthi, R. (2019) found that entrepreneurship plays a significant role in the economic development of any country. The Government of India has undertaken several initiatives and instituted policy measures to foster a culture of innovation and entrepreneurship in the country. Through the Startup India initiative, the Government of India promotes entrepreneurship by mentoring, nurturing and facilitating startups throughout their life cycle.

According to Pardo, J.D. et al. (2025), the role and potential of innovative entrepreneurship for sustainable and inclusive development in emerging countries have immense positive prospects in contributing to the fight against systemic inequities and further advancement of global economic and social well-being. Innovation, ranging from business models through technologies to social ventures, is among the significant drivers of economic growth and social transformation, as well as environmental sustainability. Entrepreneurial initiatives created in different contexts—from rural enterprises to green and digital ecosystems—can generate substantial value while trying to contribute positively to solving the major challenges facing humanity. Yet, the findings also bring to light some critical limitations that call for further inquiry and practical refinement.

Nande, S.B. (2023) sheds light on the role of entrepreneurship in the economic development of India. The government has taken several initiatives from time to time for entrepreneurship development as Industrial Policies and Five-Year Plans, specifically focusing on the growth of the small-scale sector, setting up of Special Economic Zones (SEZs), and organizing Entrepreneurship Development Programmes (EDPs). One of the key factors that has contributed to the growth of entrepreneurship in India is the availability of capital.

India has a robust venture capital ecosystem, with several domestic and international venture capital firms investing in Indian startups.

The increasing emphasis on environmental, social, and economic sustainability around the world has made sustainability-driven entrepreneurship (SDE) a crucial topic of research in the literature on entrepreneurship and innovation. Entrepreneurs are increasingly recognized for their contributions to the economy as well as for using cutting-edge business strategies, technology, and practices to address sustainability issues (Schaltegger & Wagner, 2011).

Sustainability-focused entrepreneurs often identify problems based on their values, regional environmental issues, or new global trends (Cohen & Winn, 2007). According to research, a combination of resource scarcity, ecological deterioration, and regulatory pressures drives opportunity recognition in this setting (Dean & McMullen, 2007). However, much of the content presently in publication concentrates on the motivations for sustainable entrepreneurship rather than the methods or structures employed to systematically identify these kinds of possibilities (Belz & Binder, 2017).

Limited empirical research has been done on how entrepreneurs consistently identify opportunities in markets connected to sustainability across various industries and regions. The majority of current research is descriptive or sporadic, lacking comparative analysis and theoretical integration (Kuckertz & Wagner, 2010).

Innovative business models, including social enterprises, sharing economy platforms, and circular economy techniques, are common examples of sustainable entrepreneurship (Bocken et al., 2014). These methods seek to generate social and environmental benefits in addition to monetary benefits. Digital platforms for resource optimization, waste-reduction technologies, and clean energy solutions are examples of innovations in technology that are frequently highlighted as important enablers (Hockerts & Wüstenhagen, 2010).

Although several case studies have shown how innovative businesses can promote sustainability, there is a lack of comparison studies on the models' long-term effects. Furthermore, according to Evans et al. (2017), there isn't much research that evaluates the adaptability and scalability of sustainable innovations in various socioeconomic contexts.



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Public awareness, infrastructure for innovation, legislative frameworks that support it, and access to green financing are all essential success elements for sustainability-driven entrepreneurship (Hall, Daneke, & Lenox, 2010). Government initiatives, including tax incentives, grants, and sustainability reporting requirements, are seen as crucial enablers (York & Venkataraman, 2010). The lack of money, opposition from well-established industries, and consumer skepticism, on the other hand, are obstacles.

Although these facilitators and obstacles are recognized, there aren't many comprehensive frameworks that completely incorporate them all. Individual elements are often isolated in most research without considering their interdependencies or cumulative impacts on the performance of entrepreneurs (Klewitz & Hansen, 2014). Furthermore, especially in emerging economies, there is a lack of research on regional disparities in policy support and infrastructure.

Apostu, S.A., & Gigauri, I. (2023) investigated the relationship between sustainability and entrepreneurship in emerging countries. It discusses the impact of sustainable development on entrepreneurship and the influence of entrepreneurship on sustainable development. They found that all emerging countries in the sample have taken actions to achieve the Sustainable Development Goals. These results also confirm the contribution of entrepreneurship to sustainable development goals (Seelos & Mair, 2004).

The subject of sustainability-driven entrepreneurship is still scattered across disciplines, despite its rapid growth. Multidisciplinary research that links the identification of entrepreneurial opportunities with systemic enablers and sustainable business innovation is needed. To investigate how sustainable initiatives change over time and under various institutional circumstances, future research must employ cross-national and longitudinal methodologies.

III. NEED OF THE STUDY

This study is important for both theoretical and practical aspects because it addresses the growing need for sustainable solutions to global challenges such as resource scarcity, climate change, social inequality, and environmental degradation. It contributes to academic literature by linking innovation theory, sustainability studies, and entrepreneurial practice within a holistic framework. By integrating economic, social, and environmental dimensions, the study improves understanding of how entrepreneurship and innovation support sustainable development.

Practically, it provides useful insights for entrepreneurs and business leaders by identifying key success factors for building sustainable ventures and aligning business strategies with sustainability goals. The study also emphasizes the role of scalable and innovative business models in reducing negative impacts and promoting positive social and environmental change.

IV. RESEARCH OBJECTIVES

The primary objective of the study is to examine and assess the role of start-ups, innovation, and entrepreneurship in promoting sustainability across economic, environmental, and social dimensions.

The specific objectives of the study are:

1. To examine the relationship among entrepreneurship, innovation, start-ups, and sustainability outcomes through a review of existing literature.
2. To understand the role and importance of sustainable entrepreneurship in contemporary business and development contexts.
3. To analyse selected cases of successful entrepreneurs from Assam, focusing on their innovative practices and sustainability contributions in terms of economic, social, and environmental outcomes.

V. METHODOLOGY

The study is primarily characterised by its descriptive nature. Information about innovative entrepreneurs and sustainable ventures is collected and analyzed using a variety of sources, including start-up databases, case studies, journals, and reports. Finally, conclusions are derived from the case studies according to their broader importance.

VI. DISCUSSION

Academic literature contains several types of conceptual models and frameworks that show the way entrepreneurship, innovation, Start-ups, and sustainability results are interrelated. A summarized diagram and a literature-based explanation of the connections between these ideas are described below.

The interconnection between Entrepreneurship, Innovation, Start-up, and Sustainability-

A. Entrepreneurship Vs Start-ups

Entrepreneurship is the process of discovering opportunities and translating them into value-creating ventures, often emerging as Start-ups. Start-ups are usually seen as the vehicles of entrepreneurship.

- Shane & Venkataraman (2000): Define entrepreneurship as the discovery, evaluation, and exploitation of opportunities to create future goods and services.
- Blank & Dorf (2012): Emphasize that Startups are temporary organizations in search of a scalable and repeatable business model, often grounded in entrepreneurial vision.

B. Entrepreneurship Vs Innovation-

Innovation is a fundamental component of entrepreneurship, especially when introducing novel products, services, or business models.

- Schumpeter (1934): Coined the term "creative destruction," where entrepreneurs disrupt markets through innovation.
- Drucker (1985): Viewed innovation as the specific tool of entrepreneurs to exploit change as an opportunity.

C. Innovation Vs Sustainability outcomes-

Innovation, especially eco-innovation and sustainable innovation, is crucial to achieving sustainability outcomes.

- Boons & Ludeke-Freund (2013): Argue that sustainable innovation involves systemic changes in business models to improve environmental and social outcomes.
- OECD (2009): Points out that innovation can enhance resource efficiency and reduce environmental impact.

D. Start-ups Vs Sustainability Outcomes-

Due to their increased agility and absence of legacy system constraints, Start-ups, particularly green Start-ups, can play a key role in promoting sustainability.

- Hall, Daneke & Lenox (2010): Highlight how new ventures can address environmental and social problems through disruptive innovations.
- Cohen & Winn (2007): Propose that environmental market failures present opportunities for entrepreneurship.

E. Entrepreneurship & Innovation Vs Sustainable Innovation-

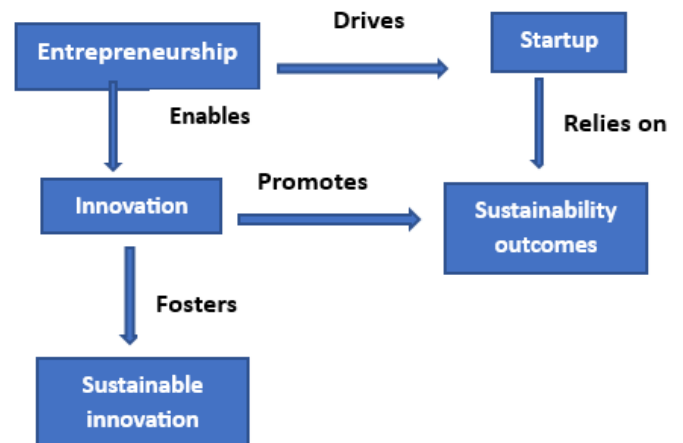
At the intersection of innovation and entrepreneurship, sustainable innovation specifically aims to solve problems related to sustainability.

- Adams et al. (2016): Describe sustainable innovation as integrating environmental and social concerns into core innovation processes.
- Bocken et al. (2014): Present sustainable business model innovation as an emerging field combining entrepreneurship, innovation, and sustainability.

Conceptual Interconnections-

- Entrepreneurship serves as the catalyst, establishing companies that often aim to solve environmental and socioeconomic issues.
- Innovation is the tool through which Entrepreneurs create innovative products, processes, or business models.
- Start-ups act as the vehicles for implementing these innovations, bringing them to market and scaling their impact.
- Sustainability Outcomes are the goals, including social equity, economic sustainability, and environmental protection.

In the pursuit of sustainable development, these components are interrelated, one impacting and supporting the others. A visual representation of these relation





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Below are some of the case studies of budding entrepreneurs of Assam, highlighting their Innovation models, sustainability outcomes and prospects or opportunities in expansion and diversification-

CASE 1- Mushroom cultivation venture exemplifies grassroots innovation and sustainable entrepreneurship

Junmoni Devi, a resident of Mayengia village in Morigaon district's Charaibahi area, has become an inspiration for many people by embracing mushroom cultivation as a means of self-employment. A mother of two children, she has demonstrated that with determination and hard work, anyone can achieve success in their respective endeavours. Junmoni began her mushroom cultivation journey in 2021 on an experimental basis with 100-200 cylinders. Today, she has expanded her operation to 1500 cylinders, producing a significant quantity of mushrooms. The wholesale market price of mushrooms ranges from Rs 130 to Rs 150 per kilogram, while the retail price is Rs 200 per kilogram. Each cylinder yields 2-3 kilograms of mushrooms, which can be sold within 25-30 days of sowing the seeds. With the potential for three crops per year, mushroom cultivation has become a lucrative venture for Junmoni. The most remarkable thing about her approach is that she has not only focused on mushroom cultivation but also added value to her produce through various processing techniques. She prepares pickles, yogurt, biscuits, protein powder, and papads using mushrooms, which have gained popularity in the market due to their good quality. Many customers even purchase mushrooms directly from her home for consumption. Her success has inspired some other women in her community to take up mushroom cultivation. She has been actively involved in training and guiding these women, sharing her knowledge and expertise with them. The fact that mushroom cultivation does not require large tracts of land or significant investment makes it an attractive option for many people. Her story serves as a testament to the fact that with hard work, determination, and a willingness to learn, anyone can achieve self-sufficiency and become a successful entrepreneur. Her journey is an inspiration to thousands of unemployed youth and women in Assam, showcasing the potential of mushroom cultivation as a viable and profitable venture. (source: newspaper, Assam Tribune, May 12, 2025)

1. Innovation Introduced-

Junmoni Devi introduced innovation at the grassroots level by utilizing locally available raw material and knowledge, without any formal backing or large-scale institutional support.

She focused on solving livelihood challenges with practical and low-cost methods. Her venture takes a major role in women empowerment, through training and shared economic opportunity.

- *Process Innovation:* increasing production from 100–200 cylinders to 1500 while optimizing yield through effective sowing–harvest cycles.
- *Product Innovation:* Creating value-added items like pickles, yogurt, biscuits, protein powder, and Papads from mushrooms to diversify the product line.

2. Sustainability outcome-

- *Economic Sustainability:* Through consistent revenue generation from both fresh mushrooms and a range of value-added goods including pickles, protein powder, and cookies, Junmoni Devi's mushroom cultivation firm has strong economic sustainability. The enterprise provides substantial profits with very low land and financial requirements, making it a highly accessible and consistent model for others, particularly in rural areas.
- *Environmental Sustainability:* Because mushroom farming is naturally sustainable, Junmoni's business has no significant impact on the environment. It reduces waste and encourages recycling by using agricultural waste, such as straw, as a growing medium. Additionally, mushrooms can be grown in small areas, allowing for effective land use and reducing the demand on bigger agricultural holdings.

3. Future prospect-

The venture has the potential for business expansion through scaling operations and establishing a local and regional brand through diversifying value-added mushroom products. Due to high demand for healthy, organic, and plant-based products, it can tap into online and urban food markets. There is a scope of institutional sales by supplying the product to hotels, restaurants, and other wellness centers.

CASE 2: Kumbhi Kagaz Pvt Ltd:

From Assam's overflowing wetlands to a growing eco-startup, Rupankar and Anikhet have crafted a new future, turning water hyacinth into chemical-free, handmade paper. They founded Kumbhi Kagaz Pvt. Ltd, a startup that produces 100% tree-free, biodegradable, blot-free, and chemical-free handmade paper. Their tree-free paper is not just a product, it's a movement for greener innovation, empowering local communities and reimagining the possibilities of waste.



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The floating aquatic weed known as the Terror of Bengal is now the raw material behind Assam's latest innovation, which is eco-friendly. Handmade paper has already been made from cotton waste, banana fibre, and even elephant dung. Water hyacinth, locally known as "panimeteka", is widely available across Assam. Its stems and roots spread across water bodies, choking them and depleting oxygen levels. This kills aquatic life. But through a blend of innovation and sustainability, this invasive species is being transformed into a valuable resource. Rupankar discovered that water hyacinth is a lignin-poor plant, with over 85% cellulose and hemicellulose components, strong ingredients for paper-making. Using a DIY approach, he began experimenting with handmade paper production during the COVID-19 lockdown and successfully created prototypes. Around the same time, they focused on trekking, conservation storytelling, and biodiversity research. In 2021, their efforts paid off when they won the UK-based WasteAid Organisation's "Zero Waste Cities Challenge-Guwahati" and secured a grant of 10,000 INR. The challenge aims to support entrepreneurs turning waste into sustainable solutions while creating jobs. By early 2023, they launched their business through an online store and B2B connections, receiving encouraging feedback for their tree-free paper alternative. So far, KKPL has received grants totalling Rs 35 lakh to further develop and grow their work. At present, KKPL produces around 1000 A4 sheets a month. Although their machines can handle up to 2500 sheets, limited drying capacity has slowed down full-scale production. Over the last two years, KKPL has made sales worth Rs 20 lakh and has converted 92 tonnes of water hyacinth into handsome paper. The current cost of manufacturing an A4 sheet is Rs. 15, but after expansion, they aim to bring this down to Rs.1. They also plan to produce 16,000 sheets a day, eventually scaling up to 40,000 sheets daily.

1. Innovation introduced-

- **Eco-Innovation:** Kumbhi Kagaz Pvt. Ltd addresses environmental deterioration and sustainable product demand by converting water hyacinth, an invasive aquatic weed, into an eco-friendly product.
- **Process Innovation:** Using lignin-poor plant matter (water hyacinth), a special substance not frequently utilized in commercial papermaking, they created a novel, chemical-free method of producing paper.
- **Product Innovation:** The development of handmade paper that is 100% tree-free, biodegradable, and blot-free helps the stationery and packaging industries adopt more environmentally friendly options.

2. Sustainability outcome-

- **Environmental sustainability:** By turning 92 tons of invasive water hyacinth into usable paper and assisting in the restoration of nearby water bodies, Kumbhi Kagaz has made a substantial contribution to environmental sustainability. While the chemical-free production approach reduces pollution and promotes a non-toxic, biodegradable product lifecycle, their entirely tree-free procedure aids in forest conservation and biodiversity protection.
- **Social sustainability:** By generating income opportunities through the harvesting and processing of water hyacinth, the project strengthens local communities. By promoting creativity and information exchange in sustainable practices at the local level, it also promotes skill development.
- **Economic sustainability:** In line with the ideas of the circular economy, Kumbhi Kagaz encourages the creation of green jobs. To make the product more inexpensive and increase its competitiveness in the market, its scaling plan seeks to reduce the current manufacturing cost per A4 sheet, which is Rs. 15, to Rs. 1.

3. Future prospects:

The business has indicated strong efficiency and scalability potential. With premium packaging, eco-stationery, corporate gifting, and green branding, the product has a high scope to expand in the domestic and international eco-conscious market. Kumbhi Kagaz Pvt. Ltd. is a strong intersection of green entrepreneurship, ecological restoration, and circular economy innovation. It has a good chance of becoming a major player in the sustainable materials industry on a national or international scale with focused investments in capacity and market access.

CASE 3: Brahmaputra Fables-

Assam's Dhruba Jyoti Borah the founder founded it in 2017 after realizing that North East India's assets, talent, and beauty were not receiving the recognition they deserved. It is a platform for commerce that allows users to select from a variety of genuine handicrafts that are carefully sourced from local artists. In June 2017, they launched it with 30 craftsmen selling 100 items. The items primarily consisted of silk clothing from Sualkuchi and metal and brass work. It currently employs 3,000 artisans. Only 10–20% of the sales are retained by the craftspeople; the rest is pocketed.



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In barely 18 months, the company has shipped its items within India and made Rs. 25 lakhs in revenue. Products, including designer jewellery, silk fabrics, handicrafts, and brass and bell metals, are being promoted.

1. Innovation introduced-

Through technological innovation, the business has created a digital platform to connect the artisans of Northeast India with the buyers of the rest of the world. Earlier, traditional arts had limited visibility, but with innovation, they can bridge the gap between rural craftsmanship and urban/national consumers. This not only improves Market access but also revives and sustains Indigenous art forms through modern market channels.

2. Sustainability outcome-

- *Environmental sustainability:* By encouraging the sale of handcrafted silk and metal/brass goods, reliance on industrial manufacture decreases, and low-impact, environmentally friendly production is encouraged.
- *Social sustainability:* The site helps in the preservation of cultural heritage and empowers more than 3,000 craftsmen.
- *Economic sustainability:* The Company has great potential, as seen by its Rs. 25 lakhs in income in just 18 months. Better revenue sharing is required for more equitable economic participation, which encourages micro-entrepreneurship and gives craftsmen access to national markets.

3. Future prospects-

The platform has already gained a market share by offering a wide range of designer jewellery to bell metal crafts, which can further diversify into home décor, fashion accessories, and custom design collaborations. With strategic improvements in artisan compensation and digital expansion, the enterprise can position itself as an ethical, sustainable marketplace for indigenous crafts, attracting the eco-conscious buyers.

CASE 4: DB Industries- Dhritiman Borah

Dhritiman Borah, who dropped out of school after Class 12 to create a bamboo furniture, kitchen, and agricultural tool company, is the creative force behind D B Industries. Started by offering a variety of bamboo products, including furniture, wall hangings, partitions, flower pots, mats, and crockery. It took him 17 years to develop a product, the Bamboo Water Bottle. After exhibiting at an international fair in Delhi, the first order came from the UK. It takes roughly five hours to complete each organic bottle. Prices for the bottles range from Rs. 250 to Rs. 400.

Social media is a key component of Dhritiman Borah's product marketing strategy. Nearly all of the products are handmade. Approximately 100 to 150 bamboo stalks are required each month. Although they have the potential to make 8,000 bottles per month, they currently only produce 1500 bottles each month.

1. Innovation introduced-

Product innovation: A completely handmade, organic product, the Bamboo water bottle, is a unique alternative to plastic bottles. Through eco-innovation, it not only aligns with global environmental goals, but also reflects deep local ingenuity and resilience.

2. Sustainability outcome-

Environmental sustainability: D B Industries replaces plastic in items like water bottles, furniture, and utensils with bamboo, a material that is quickly renewable and biodegradable. This promotes eco-conscious consumption by lowering carbon emissions and environmental waste.

3. Future prospects-

It has a significant potential to expand to international markets, by the strategy to position the brand as a premium, sustainable lifestyle label, and also incorporate better tools and artisans' training.

CASE 5: TamBul- Arindom, Nidhi and Anirban

Three passionate social entrepreneurs, Arindom, Nidhi, and Anirban, founded the company and started operations. In 2012, they flagged their fully functional production equipment and began making Arecanut leaf bowls and plates. SEED-Un and other international organizations gave them their first worldwide recognition. In 2013, they secured their initial funding round from Rianta Capital and Upaya Venture. They began collaborating with the Assam government in 2014 to expand this initiative throughout the state's 20 districts. In 2016, they shipped their first batch of Arecanut leaf plates to Europe. To satisfy international quality and quantity standards, they adopted cutting-edge hydraulic machinery. Through the production of Arecanut leaf plates, they want to employ over 50,000 young people in north-eastern India.

1. Innovation introduced-

- *Product Innovation-* Developed eco-friendly, biodegradable plates and bowls from Arecanut leaves—transforming agricultural waste into sustainable tableware.



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- *Process Innovation*- Implemented advanced hydraulic machinery to enhance production efficiency and meet global quality standards.

2. *Sustainability outcome*-

- *Environmental sustainability*- By encouraging the use of natural, biodegradable materials, the project lessens environmental degradation and dependency on plastics. Additionally, it promotes eco-friendly and productive industrial methods.
- *Economic sustainability*- The concept shows great promise for scalability, export growth, and investor attraction by capitalizing on expanding market demand and establishing strategic alliances.

3. *Future prospects*-

With global and national bans on single-use plastics, the enterprise is well-positioned as an eco-conscious brand. With further automation and product diversification, it can tap into the regional/ international market, which can drive large volume sales.

CASE 6: Recycling and Education –Sustainable Entrepreneurship

The Akshar Foundation, founded by Mazin Mukhtar, Parmita Sarma, and Prof. Alka Sarma, addresses child labour, illiteracy, and environmental degradation through an innovative, not-for-profit model in Assam. It's a school that uses a hybrid education system combining academics with vocational training, enabling students to earn by teaching peers and learning skills like carpentry, recycling, and solar installation. To tackle poverty-driven child labour, the model offers financial incentives, allowing children to return to school while supporting their families. A key feature is the acceptance of plastic waste as school fees, promoting recycling and environmental awareness. Students collect, sort, and repurpose plastic into Bio-Bricks for campus construction, making them active participants in sustainability and social transformation

1. *Innovation introduced*-

By using an integrated approach to address poverty, illiteracy, child labour, and environmental degradation, the Akshar Foundation is a prime example of a sustainable social enterprise. By blending academic study with vocational education, it presents an innovative strategy that allows students to make money while they learn. It is reflected in its emphasis on skill development and peer-teaching methodology.

In terms of the environment, the development of Bio-Bricks and the use of plastic for school fees encourage recycling practices throughout the community. Through a micro-entrepreneurial approach that empowers students and fosters long-term sustainability, it provides economic help to low-income families.

2. *Sustainability outcome*-

- *Environmental Sustainability*- The concept fosters environmental responsibility from a young age by encouraging sustainable construction using Bio-Bricks, reducing garbage burning, and promoting plastic recycling.
- *Societal Sustainability*- Through the "plastic as fees" approach, it encourages parents to adopt responsible behaviours, boosts school retention, prepares young people with skills, and lowers child labour.
- *Economical Sustainability*- Including vocational training, it gives students real-world skills for future work, allowing them to earn money while they are in school and fostering long-term financial stability.

3. *Future Prospects*-

The Akshar Model is very scalable and can be used in areas with similar issues with poverty, child labour, and environmental degradation. Encouraging skill-based, sustainable educational systems, it provides opportunities for policy integration. To further improve youth employability and community development, the model can broaden its social impact by integrating advanced occupational skills, digital learning, and entrepreneurship. It also offers chances for collaborations with governments, non-governmental organizations, and corporate social responsibility programs.

CASE 7- The Tea Story: How one Assamese entrepreneur is brewing change through tea

The Tea Story, founded by Assamese entrepreneur Nayan J Kalita in 2019, is a remarkable success story of grassroots innovation and sustainable entrepreneurship. Transitioning from a background in computer science to community development, Kalita was inspired by local tea innovators and tried to transform the taste of a simple tea cup into the flavoured, earthy, fresh, and vibrant taste by exploring tea fermentation. Soon, he realized that tea can be a powerful medium for impact, not just a drink. With his co-founders, - Priyankush Kalita and Asif Nasir, they scaled the business with curated tea gift boxes and B2B sales, focusing on storytelling, quality, and authenticity.



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Here, each product is not just a beverage; it carries a message while staying true to its core values: sustainability, transparency, and farmer empowerment. Its probiotic tea beverages like Kombucha, ensure fair compensation to growers (by removing the middleman), and at the same time, consumers enjoy high-quality tea. The business exceeded Rs 35 lakh in lifetime revenue in less than a year. Through honest storytelling and word-of-mouth, they developed a devoted clientele. Their teas are now available in many Indian cities, and among their best-selling items are Kombucha and green tea.

1. Innovation Introduced-

Product innovation- development of probiotic beverages like Kombucha using regional teas. The business model is also a part of social innovation as it's empowering small farmers through direct trade and ethical sourcing.

2. Sustainability Outcome-

The model ensures that The Tea story remains eco-conscious. The company employs eco-friendly packaging, avoids artificial ingredients, and educates customers about mindful brewing, composting, and reusing leaves. The goal is to restore harmony between humans and the environment, not just make money.

3. Future prospects:

The entrepreneur believes “The Tea Story” is an environmental initiative as well as a tea brand. Future goals include bringing Kombucha to health cafés around Indian metro areas and opening a tea-testing experience center in Assam, working together with government initiatives to help more farmers, and also presenting export-quality blends for international wellness markets. The startup ecosystem in Assam is evidence of the state's capacity for innovation, adaptation, and change. Assam has established an identity for itself in the national and international startup landscape as long as the entrepreneurial spirit persists. Assam's startups have the potential for a promising and profitable future due to government assistance, a wide range of sectors, and a talent pool.

VII. ANALYSIS AND FINDINGS

Key findings from seven case studies, which are organized under key areas to highlight broader significance and actionable insights:

i. Innovation at the grassroots level as a catalyst for local transformation-

Across the various case studies like Junmoni Devi’s mushroom cultivation, Kumbhi Kagaz Pvt Ltd, The tea story, etc, it is clear that innovation is deeply rooted in need-based problem solving. It doesn’t originate from high-tech labs, nor does it require large capital or institutional support- it needs only awareness, persistence, and local adaptability.

ii. Sustainability as a core model- Not an add-on

Akshar Foundation, TamBul, D.B. Industries – in all ventures, sustainability is not a secondary objective-rather it’s a foundation of their business models. It represents sustainability across environmental, economic, and/or social domains.

TABLE I

Venture	Environmental	Social	Economic
Akshar Foundati on	Bio-brick recycling	Reducing child labour	Vocational upskilling
TamBul	Biodegradable Arecanut plates	Rural employmen t	Export & investment appeal
D.B Industrie s	Plastic replacement via Bamboo		Premium lifestyle brand potential

iii. Micro-entrepreneurship serves as a vehicle for the inclusive development of historically disadvantaged groups

The business models of Junmoni Devi’s mushroom cultivation, TamBul and Akshar foundation demonstrate how social entrepreneurship can help in promoting economic participation of historically marginalized groups, i.e, women, youth, rural artisans etc. These entrepreneurs can not only transform their own lives, but able to become mentors for others. They are not only creating employment opportunities for capable youth but also providing training and handholding to equip them with job-ready skills.

iv. Revival and modernization of indigenous knowledge-

Cultural preservation is made possible by heritage-based entrepreneurship, which also generates business prospects. These ventures demonstrate how tradition may be innovatively reinterpreted to satisfy modern consumer expectations.



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v. *Circular Economy and Waste-to-Wealth Approach-*

Kumbhi Kagaz, Akshar, and TamBul showcase the business model, which underscores the importance of a circular economy approach. In this system, materials never become waste. It believes in the practice of reuse, recycling, refurbishment, and composting to minimize resource use, cut waste, and reduce carbon emissions.

vi. *Digital innovation model and market expansion-*

Use of e-commerce and online retail can bridge the gaps in the rural-urban market. It helps in wide reach, enhances visibility of local products, and creates scalable enterprises beyond local geographies.

vii. *Potential for Replication and Policy Integration-*

Many business models described in the case study are modular and have the potential for replication across regions. But it will be possible only through the proper strategic framework, governmental policy support, CSR funding, and institutional assistance to make it a tool for national-scale transformation.

VIII. CONCLUSION

In the age of unemployment alongside fewer job opportunities, there is a need to build own market and earn income, and also provide employment for others. There are a lot of people who have succeeded in doing this. Utilizing effective resources, procedures, and processes contributes to the development of a sustainable environment in which the company considers contributing to society through sustainable products and jobs, in parallel to generating profit. In this case, using environmentally friendly practices and goods is crucial for sustainable growth. Assam, a state in north-eastern India, is experiencing a significant rise in green entrepreneurship and sustainable innovation projects, highlighting the region's rising commitment to both environmental preservation and economic advancement. Understanding the fundamental causes of this trend is essential to successfully fostering and supporting green entrepreneurs. There are numerous examples of successful initiatives that balance economic growth with environmental preservation. Green entrepreneurship promotes sustainable development by increasing resource efficiency, combating climate change, generating employment, and positively impacting the environment and society.

IX. RECOMMENDATIONS FOR FUTURE RESEARCH

The study suggests the need for investigating the feasibility and implementation of renewable energy systems

in various industries. Future research should aim to investigate the relationship between diversity, equity, and inclusion practices and sustainable business outcomes. The study suggests the need for examining the economic implications of transitioning to a green economy. These areas offer an opportunity for future research in sustainable business. Future research can also focus on the role of digital entrepreneurship in driving sustainable transitions and its impact on the innovation system. By exploring these research avenues, scholars can gain a deeper understanding of the complex relationships between innovation, entrepreneurship, and sustainability, ultimately informing policies and practices that promote sustainable economic growth and development.

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