

Waste to Worship Incense Business Venture: A Business 5.0 Case Study in Sustainable Innovation

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Abstract

This case study presents an first in the world of its kind, innovative product Idea and a sustainable venture. A business that transforms sugarcane waste (bagasse) into eco-friendly incense sticks. Our startup revolves around the principles of Business 5.0 by integrating humancentric design, Product innovation, and a strong commitment to environmental and social sustainability. This work explores how our business addresses critical global sustainable development goals defined by the United Nations, such as waste management, deforestation, and poverty alleviation, paving the new path for the incense industry on a global level.

Keywords: Business 5.0, Innovation, Incense, Sugarcane waste, SDGs

1. Introduction

As the world faces unprecedented environmental and social challenges, the Idea of Business 5.0 emerges as a framework for enterprises that takes into account several aspects like, economic prosperity, human well-being and ecological balance. This paper introduces our venture, a pioneering initiative that exemplifies these core tenets by transforming agricultural waste into a valuable, sustainable product.

The venture's innovative idea, secured the **first position** in the Agri-Hackathon-2025 organized by the **Centre for Agribusiness Incubation and Entrepreneurship (CAIE), Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Gwalior** on June 27, 2025. The incubation centre is sponsored by NABARD.

2. The Genesis of the Idea: Addressing Global Challenges

Initially, the venture started collecting the sugarcane waste from the local juice vendors, which gave them income support and saved their money from the municipal corporation to dispose of the waste. This gave the vendors the revenue for their waste, saved their money, and also generated temporary employment for collecting waste and dropping it at the processing location.

This incense venture is a testimonial to the power of circular economy principles and represents a promising initiative in sustainable innovation. The idea was conceived to address two significant environmental issues: the burning of **sugarcane bagasse**, which contributes to air pollution, and **deforestation** caused by the use of charcoal in traditional incense stick production. By repurposing a significant portion of India's annual bagasse waste, the business directly tackles these challenges.

Furthermore, its operational model is designed to uplift rural communities, particularly women, thereby contributing to social equity and economic empowerment.

2.1. Status of Bagasse in India and the scale of opportunity.

"India is second in the world for the production of sugarcane after Brazil, As a result it holds a massive generation of approximately **158 million tonnes of sugarcane bagasse (SCB)**. This figure is derived from FAO data reporting ~527 million tonnes of sugarcane production [1], with bagasse constituting approximately 30% of this weight by standard industry conversion. While a portion of this residue is used for cogeneration within sugar mills, a significant surplus remains underutilized. A conservative estimate suggests that **15-20% of this total, equating to 23.7 - 31.6 million tonnes of bagasse annually, is not efficiently utilized** and is often disposed of through environmentally detrimental methods like open-field burning [2, 3]. Our venture, directly targets this substantial waste stream, transforming a pervasive agricultural problem into a pioneering sustainable product."

And then there is the waste available locally for which no data would be available, but can be processed like the venture did in its pilot phase.

3. The Incense Venture and Business 5.0: A Symbiotic Relationship

Business 5.0 defines a shift from just profit-driven models to those that prioritize human well-being, societal impact, and environmental concerns. This venture's operational framework aligns seamlessly with these principles:

3.1. Human-Centric Approach

The manufacturing process leverages modern machinery for high-volume production but maintains a strong social focus. The core workforce, predominantly composed of **women workers**, is involved in critical steps such as operating the automated incense stick-making machines, quality checking, and handling all packaging operations. This commitment provides dignified employment to women. Furthermore, the business significantly increases farmer income by **200%** through the purchase of bagasse, saving them money they would otherwise pay for waste disposal. This direct positive impact on human lives and livelihoods is a cornerstone of the Business 5.0 philosophy.

3.2. Resilience and Adaptability

The venture's commitment to using agricultural waste ensures a highly resilient supply chain. **India is the world's second-largest sugarcane producer, generating approximately 158 million tonnes of sugarcane bagasse (SCB) annually.** This massive, constantly replenished supply base makes the venture inherently resilient and less susceptible to the price volatility and scarcity associated with traditional, finite resources like wood or wood charcoal. The efficiency of the mechanized production model further enhances its adaptability, allowing for rapid scaling to meet increasing domestic and global demand for eco-friendly products.

3.3. Sustainability at Core (Addressing 6 SDGs)

- **Environmental Sustainability:** The product is **coal-tar-free, biodegradable**, and boasts a **carbon-negative footprint**. The use of bagasse prevents significant CO₂ emissions, leveraging the material's inherent carbon-neutrality and climate mitigation potential (supported by FAO data on bagasse bioenergy). The commitment to a **circular economy model** is further reinforced by the planned inclusion of a **plantable seed paper insert** within the packaging.

- **Economic Sustainability:** The venture maintains a competitive edge with a production cost that is at par with, or slightly lower (2–3%) than, conventional alternatives. This allows it to be positioned as a premium product while achieving **70% profit margins**.
- **Social Sustainability:** The venture contributes to several Sustainable Development Goals (SDGs), including No Poverty (SDG 1), Gender Equality (SDG 5), Decent Work and Economic Growth (SDG 8), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), and Life on Land (SDG 15).

4. Technological Integration and Innovation

The venture's product is a blend of eco-friendly traditional practices and modern technology. While rooted in traditional practices, the venture leverages modern technology for efficiency and market reach. The **solar drying process** for bagasse exemplifies innovative, low-cost technology adoption. Furthermore, the go-to-market strategy includes a **direct-to-consumer (D2C) model** the new and proven retailing practice via Shopify and Amazon, demonstrating an understanding of contemporary e-commerce platforms for global outreach. The product's uniqueness lies in its use of **natural binders like guar gum** and its solar-dried, low-smoke formulation.

5. SWOT Analysis

Strengths:

- **Innovative and Sustainable Product:** Venture's core product is unique, first of its kind in the world, environmentally friendly, and aligns with growing consumer demand for sustainable products.
- **Strong Social Impact:** The business model empowers women and supports farmers, creating a strong social narrative.
- **High-Profit Margins:** The potential for 70% profit margins provides a strong financial foundation.
- **Strong Market Network & Retail Ambition:** The founding team possesses 30 years of experience in the traditional agarbatti wholesale business, providing a strong existing network. This foundation is being leveraged to build a new retail D2C brand through platforms like Shopify and Amazon Global, aiming for significant margins in the retail segment.

Weaknesses:

- **New Brand in a Crowded Market:** As a new entrant, Ikshu faces the challenge of building brand recognition in a competitive market.
- **Dependence on a Single Raw Material:** While resilient, the reliance on bagasse could be a vulnerability if supply is disrupted.

Opportunities:

- **Growing Eco-Conscious Consumer Base:** The global trend towards sustainable and ethical products presents a significant market opportunity.
- **D2C and Global Reach:** Platforms like Shopify and Amazon Global offer a direct route to a global customer base, bypassing traditional retail gatekeepers.
- **Partnerships and Collaborations:** Collaborating with environmental organizations, spiritual centers, and wellness brands can enhance credibility and reach.

Threats:

- **Competition from Established Brands:** Traditional agarbatti brands may introduce their own eco-friendly lines, increasing competition.

- **Price Sensitivity:** While positioned as a premium product, price sensitivity in some market segments could be a challenge.

6. Future Work and Scalability

The venture's initial success, highlighted by the **first-prize victory** in the Agri-Hackathon 2025, and its strong alignment with Business 5.0 principles, position it for significant future growth and impact.

The global shift towards sustainable, non-toxic, and eco-friendly products is the primary catalyst for market expansion. The overall Global Incense Market is valued at over **USD 3.69 Billion in 2024** and is expected to grow at a Compound Annual Growth Rate (CAGR) of over **7.04%** from 2025-2030, with the demand for organic and herbal incense being a key driver of this accelerating growth (Bonafide Research). The "Greener Glow Agarbatti," which is inherently eco-friendly and charcoal-free, is well-positioned to capitalize on this rapidly expanding segment, whose growth rate is anticipated to outpace the overall market.

The venture aims to capture **5% of the eco-incense market**, targeting a revenue of **₹200 Cr by 2027**. The scalability of the model lies in its ability to replicate the decentralized manufacturing process, empowering more women's SHGs and integrating additional agricultural waste streams. Further research could explore product line diversification, incorporating other natural waste materials, and expanding into new markets.

7. References

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