



Case Study

for Plastic Innovation Challenge

Sunbird Straws

Implemented by



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Startup Summary



Date of Incorporation
November 23, 2020



Headquarters
Bengaluru, Karnataka, India

The Founder



Saji Varghese
Co-Founder & Chief Visionary Officer

Saji is a professor by profession and grassroots innovator by passion. With over 10 years of experience in product development, he has more than 10 patents to his name. His expertise in sustainable innovation led to the breakthrough of creating the world's first coconut leaf drinking straw, setting a new standard in eco-friendly alternatives.



Chirag M G
Co-Founder & Head of Innovation & Business Development

Chirag has a Master's degree in Space Engineering and 6 years of experience in technology management and business development. His expertise lies in scaling sustainable innovations, optimizing production efficiencies, and global business expansion. His passion for sustainability and technical expertise has been instrumental in bringing Sunbird Straws to the forefront of the global eco-friendly market.

Introduction

Sunbird Straws is the world's first patented multi layered drinking straws made from naturally fallen dried coconut leaves that otherwise gets burnt in open kitchens and landfills. We do this while empowering women across rural India.

Products/Services Provided

➤ Straws



The Solution

Sunbird Straws provides a **sustainable, scalable, and durable alternative** to traditional paper straws. Unlike paper straws, which become soggy in beverages, Sunbird Straws remain intact for **3-4 hours** in both hot and cold drinks.

Key Features

Chemical-Free Manufacturing

No artificial waterproofing agents are used. Instead, the natural wax layer on coconut leaves makes them naturally hydrophobic and antifungal.

Rapid Decomposition

Unlike PLA, corn starch, or cane-based straws, which require industrial composting, Sunbird Straws decompose naturally in any environment.

Customization & Branding

The straws can be tailored in various sizes and feature personalized branding for hospitality businesses.

Scalability & Raw Material Availability

With abundant coconut leaflets available in India and other tropical countries across the world, Sunbird Straws has the capacity to cater the global demand by scaling their operations. Their proprietary machinery enables them to produce a straw in under one second, making their costs competitive with paper straws.

Value Proposition

Eco-Friendly Alternative: Provides a sustainable and chemical-free solution compared to traditional paper straws.

Durability & Performance: Retains structure in beverages for over 3-4 hours, including carbonated drinks, without affecting taste. These findings are based on extensive trials conducted over the past three years and consistent feedback from customers.

Customization Flexibility:

- Offers the option to customize length and diameter, meeting unique hospitality and consumer needs.
- Branded Straws – Logos or messages can be printed directly on the straw.
- Customized Wrappers – Individually wrapped straws can be tailored with unique branding.

Scalability & Production Efficiency: Sunbird Straws is also working on making straws with Pineapple and Pandanus leaflets which will further increase the ambit of raw material options and at the same time provide additional income streams to pineapple farmers. Their proprietary machinery enables them to produce a straw in under one second, making their costs competitive with paper straws.

Potential Use case for the Hospitality Sector

Sustainability Goals: Hotels, resorts, and restaurants are transitioning to eco-friendly alternatives to align with global sustainability initiatives and consumer expectations.

High Straw Consumption: Hospitality businesses such as hotels, resorts, restaurants, and bars are among the highest users of disposable straws, making them a key target market.

Premium Appeal: Sunbird Straws' aesthetic and natural appeal resonate well with premium and eco-conscious hospitality brands, enhancing their brand image.

Sunbird Straws have been regularly catering to all major five star hotels across India including, Four Seasons, Leela Group, Paragon group, IHCL (Taj, Selections, Vivanta etc), Accor group etc.

Quantified climate and social impact

Zerocircle's seaweed-derived solutions provide scalable, ocean-safe alternatives to petro-based plastics, reducing reliance on fossil fuels and agricultural inputs. Seaweed farming benefits coastal communities, particularly women, and supports the blue economy

Carbon Footprint

1.28g

CO₂eq per straw (validated by Climate Impact Forecast, Netherlands).

Current Impact

6.4

metric tons of CO₂ emissions prevented, replacing 5 million plastic straws.

Future Reductions

176

metric tons of CO₂eq reduction is targeted annually with scaling



Pilots

Project

India

Sunbird Straws recently onboarded IHCL (Taj, Vivanta, and Selections) for all their domestic properties and will be scaling full operations by May 2025. Additionally,

- Four Seasons
- The Leela Group
- Marriott
- Accor Group
- Stories

Outcomes

- 50% Reduction in Straw Consumption:** Businesses switching from paper straws to Sunbird Straws have seen a 50% decrease in overall straw usage
- Enhanced Customer Satisfaction:** Sunbird Straws eliminate the need for double-stacking, resolving soggy issues associated with paper straws.
- Operational Cost Savings:** Reduced waste and improved durability lead to significant cost reductions for hospitality partners.

Long term goals and target

- Production Scale-Up:** Increase capacity to **100,000 straws** per day by March 2025 and further expand to 500,000 straws per day by December 2025.
- Job Creation:** Employ **500 rural women** as part of their social impact mission by 2025.
- Global Expansion:** Strengthen presence in international markets, catering to demand in the **US and Europe**