Bamboo straw

a. Introduction

Bamboo straws are a great alternative to plastic straws! They are sustainable and eco-friendly. They can be used for one or multiple drinks before being discarded. In metro cities, average per person uses over 150 straws made out of unsustainable material like plastic each year, but most of these plastic-straws end up in landfills, Bamboo straws are much more durable than plastic ones and are washable and reusable.

b. Market Demand

It is found that about 1 billion plastic straws are used every day worldwide. The government in various nations impose restrictions on plastic straws. Bars and restaurants around the world are finding new ways to replace plastic straws that have become a necessary part of dining, whether a fast-food outlet or a restaurant. Bamboo straws provide a sustainable alternative to the plastic straws. These factors are expected to drive the growth of global bamboo straws market during the next decade. The growing inclination of people towards the use of environment-friendly products is expected to drive the growth of bamboo straws.

c. Production Target

The manufacturing process of Bamboo Straw are very simple and can be manufactured in a very decentralised manner and is easily done by small carpentry shops/ HH carpenters. The unit may be established on a small scale as private household businesses or on a larger scale as a cooperative or government enterprise. Especially for Bamboo artisans, individual carpenters and other disadvantaged groups, which can also ensure better income distribution, and earns valuable foreign exchange through exports.

d. Assumptions, if any

The essential requirements for a successful unit are:

- Regular supply of mature bamboo culms (appropriate diameter)
- Unskilled and skilled labour
- Small amount of start-up capital; and
- Market access.

e. Production Process

Some bamboo species grow up to 2–3 meters but doesn't get thicker and naturally has hole, which are suitable for Bamboo straw. Species like B.Pallida and M.Baccifera (diameter of the bamboo that grows after the bamboo shoot is removed is suitable for straws) may be used to make straws. The recommended diameter of the straws should be 6-8 mm and length as per client requirement is usually from 8 cm to 12 cm.

- Cutting of bamboo culms (at least 8 inches long and 1/2 inch wide)
- Treatment and Drying (Boil the straw using saltwater and neem and leave the bamboo vertically in a dry area under sunlight until it turns tan)
- Sanding and Cleaning the Straws (Smooth the outside and inside of the straw with sandpaper or angle grinder/a belt sander, Clean out the inside of the straw with a pipe-cleaning instrument/brush)

- Overall fine processing, branding and packaging using laser engraving

f. List of machinery required along with quantity with Unit Price.

- The tools required for manual making of bamboo straw are; hand saws, shaving knives and hand drills, round rasp file, bench vice and emery papers. These tools can easily be purchased from any local tool supplier.
- Electric hand and power tools can be used to increase productivity and reduce wastage of raw materials, The main machines are crosscutting machine, angle grinder/belt sander, power drill.

Sl. no	Tools & Equipments	Nos.	Unit Price in INR)
1	Hand saws	5	200
2	Shaving knives	5	250
3	Round rasp file (set)	2	750
4	Bench Vice	2	1,250
5	Electric cross-cutter/chop saw	1	10,500
6	Electric drill kit	1	4,500
7	Angle Grinder/belt sander	1	6,500
8	Laser engraving (optional)	1	3,50,000

ONE PAGER SUMMARY OF BAMBOO STRAW

Sl. No.	Particulars	Description				
A. Project Description						
1	Proposed Project	**Bamboo Straw**				
2	Capacity of the machine (at 100% capacity utilization)					
3	Year wise capacity utilization	**Year- 1**	**Year- 2**	**Year- 3**	**Year- 4**	**Year- 5**
		70%	80%	90%	100%	100%
4	Raw Materials Required	Bamboo (B.Pallida or M.Baccifera), Cleaning metal brush, Salt and neem for natural treatment				
5	Final Product	Bamboo Straw				
6	Infrastructure Required	Shed (500 sq ft)				
7	Plant and machinery	Hand saws Shaving knives Round rasp file (set) Bench Vice Electric cross-cutter/chop saw Electric drill kit Angle Grinder/belt sander Laser engraving machine (optional)				
8	Employment Generation	10 Hired labour – 8 semiskilled, 2 unskilled				

B. Project Cost		**(Figures in Rs. Lakhs)**
1	Land (own)	0.00
2	Civil works and Buildings (500 sqft @200/sqft)	1.00
3	Machinery	4.83
4	Others	0.30
5	**Sub-total (A)**	**6.13**
6	Working Capital Margin @40% of Total WC Requirement	0.85
7	**Total Project Cost**	**8.27**
8	Total Working Capital Req **(B)**	2.14
C. Means of Finance		**(Figures in Rs. Lakhs)**
9	**Total Funds Required(A+B)**	**8.27**
10	TERM LOAN (75% of A)	4.60
11	WORKING CAPITAL (60% of B)	1.28
12	**Total Loan**	**5.88**
13	Equity	2.39
14	**Total Own Contribution**	**8.27**

D. Financial Benchmarks					(Figures in Rs. Lakhs)
		Year- 1	**Year- 2**	**Year- 3**	**Year- 4**
1	Target Revenue (Lakh)	**25**	**29**	**32**	**36**
2	Break Even Point	**67.39%**	**52.32%**	**40.64%**	**32.46%**
3	DSCR including Principal repayment	**3.09**	**2.15**	**2.84**	**3.68**
E. Basic Assumptions					
1	Production of Bamboo Straw	8 semi-skilled will on average be able to produce 300 nos of finished bamboo straws per worker per day, working 300 days in a year. Price of each Straw is assumed as Rs 5 considering laser engraving done and inclusive of metal brush. If laser engraving is not opted for, the straws may be sold at Rs3.50 per piece. Unskilled labour will help in manually cross-cut the bamboo, treatment and sorting the straws			
2	Machinery	This is a profile of a household level enterprise with 10 hired labour.			
3	Interest rate assumed	11%			
4	Repayment period	5 Years with 3 months moratorium			
F. Others					
1	Training Institutes	CBTC Meghalaya, BCDI Agartala, IIE Guwahati, TRIBAC			
2	Whether the service is inthe Negative list under NEIDS and MSME?	No			