
Bamboo cutlery

a. Introduction

Disposable cutlery is the most exasperating thing for people trying to live a sustainable life, we hardly carry a spoon, fork and knife with us all time. When we order food online, plastic cutlery is delivered along with food. After single use the plastic cutlery are thrown away. Like plastic straws, plastic cutlery items are not recycled. They are too lightweight, and small. So, they end up in the landfills and waterways. Using plastic cutlery is an unconscious and wasteful habit.

Bamboo made cutlery set of spoon, fork, and knife is the most convenient item for those looking for an alternative to plastic cutlery. It's portable and convenient, one can carry the cutlery set and instead of using a plastic spoon or fork it can be used for both single use as well as one can reuse it also.

b. Market Demand

Growing demand for disposable and inexpensive utensils in various emerging economies is catalysing the rise in the biodegradable cutlery market. They have gathered traction in a range of large gatherings such as parties, rallies, and social events. In several parties and big events, the demand for reusable spoons and plates is fast gathering steam.

In recent years, a number of social events and international sport events have made efforts to popularize biodegradable cutlery. Manufacturers also have been coming out with exotic design. The biodegradable cutlery market has prospered on the back of these initiatives. Further, as the use of single-use plastics have been cutting flak from several quarters in various parts of the world, biodegradable cutlery is coming out as promising cost-effective options, feels investors in the market.

c. Production Target

Bamboo cutlery 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

Manufacturing of Bamboo cutleries manually/ by hand follows the following steps;

- Cutting of bamboo culms
- Making cutlery embryos (Cutting size of the spoon/ fork and knife)
- Engraving bamboo spoon/fork/knife
- Sanding/ Polishing
- Mineral/Vegetable oil coating

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

- The tools required for manual making of bamboo cutlery are; hand saws, shaving knives and hand drills, Flat/ 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 and angle grinder.

Sl. no	Tools & Equipments	Nos.	Unit Price in INR)
1	Hand saws	5	200
2	Shaving knives	5	250
3	Flat/ round rasp file (set)	2	750
4	Bench Vice	2	1,250
5	Electric cross-cutter	1	10,500
6	Angle Grinder	1	2,500

Note: Disposable Bamboo cutleries can also be made by setting up of automatic bamboo cutlery production line from bamboo culm and also from bamboo fibres and corn starch to form a paste, which is then mixed with a resin. Melamine is added as a binder, to ensure that the product is durable and suitable for higher temperatures. This type of units requires large investment and expert advices.

ONE PAGER SUMMARY OF BAMBOO CUTLERY

Sl. No.	Particulars	Description				
A. Project Description						
1	Proposed Project	Bamboo Cutlery				
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, Boric Borax, Sanding Paper, Colour/Dye agent, Miscellaneous items, Varnish/Lacquer				
5	Final Product	Bamboo Cutlery				
6	Infrastructure Required	Shed (500 sq ft)				
7	Plant and machinery	Hand saws Shaving knives Flat/ round rasp file (set) Bench Vice Electric cross-cutter Angle Grinder				
8	Employment Generation	10 Hired labour – 8 semiskilled, 1 skilled, 1 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					0.23
4	Others					0.30
5	Sub-total (A)					1.53
6	Working Capital Margin @40% of Total WC Requirement					0.22
7	Total Project Cost					2.07
8	Total Working Capital Req (B)					0.54
C. Means of Finance (Figures in Rs. Lakhs)						
9	Total Funds Required(A+B)					2.07
10	TERM LOAN (75% of A)					1.15
11	WORKING CAPITAL (60% of B)					0.33
12	Total					1.47
13	Equity					0.60
14	Total					2.07

D. Financial Benchmarks		(Figures in Rs. Lakhs)			
		Year- 1	Year- 2	Year- 3	Year- 4
1	Target Revenue (Lakh)	11	13	15	16
2	Break Even Point	59.23%	51.34%	44.65%	39.52%
3	DSCR including Principal repayment	4.64	3.34	4.46	5.82
E. Basic Assumptions					
1	Production of Bamboo Cutlery	Price of each set of cutlery comprising knife, spoon and fork assumed as Rs 90 to be financially viable.			
2	Machinery	This is a profile of a household level enterprise with 9 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 in the Negative list under NEIDS and MSME?	No			