
Bamboo Glass

a. Introduction

Bamboo Glass can be used in place of re-usable/disposable glass that is made from other materials. There are a number of benefits to using this. Bamboo can be grown sustainably, does not pollute the environment, and composts relatively quickly. They are a great eco-friendly choice if you are looking to swap out your throwaway coffee/tea/beverages glass and go reusable.

With change in lifestyle now days Bamboo glass are used to serve beverages in hotel and restaurants especially in ecotourism, or a regular usage in home and offices. The beautiful natural hand-crafted bamboo glass provides perfect gift along with aesthetics and added socio economic and environmental benefits.

b. Market Demand

Bamboo glass are re-usable/ zero waste. The glass can be used again and again. It can last for years, if one takes good care of it and is manufactured without any emission/pollution. So, the market for bamboo handicrafts especially “Bamboo glass” is large and ever-expanding. Handicrafts are very popular in many countries of the world where their natural appearance and their environmentally friendly production methods are major selling points.

c. Production Target

Bamboo glass 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

Bamboo glasses can be made by hand.

- Cutting of bamboo culms
- Making glass embryos (Cutting size of the glass)
- Processing the inner wall of the bamboo glass
- Process the outer wall and bottom of the bamboo glass
- Overall frosted fine processing

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

- The tools required for manual making of bamboo glass 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, bamboo turning machine, power drill, 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	Electric bamboo turning machine	1	34,000
7	Angle Grinder	1	2,500

Note: Disposable Bamboo glass can also be made with 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 GLASS

Sl. No.	Particulars	Description				
A. Project Description						
1	Proposed Project	Bamboo Glass				
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, Super Glue, Colour/Dye agent, Miscellaneous items, Varnish/Lacquer, Food grade epoxy for inner lining				
5	Final Product	Bamboo Glass				
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 Electric bamboo turning machine Angle Grinder				
8	Employment Generation	9 Hired labour – 8 semiskilled, 1 skilled				
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					0.63
4	Others					0.30
5	Sub-total (A)					1.93
6	Working Capital Margin @40% of Total WC Requirement					0.21
7	Total Project Cost					2.44
8	Total Working Capital Req (B)					0.51
C. Means of Finance						(Figures in Rs. Lakhs)
9	Total Funds Required(A+B)					2.44
10	TERM LOAN (75% of A)					1.45
11	WORKING CAPITAL (60% of B)					0.31
12	Total Loan					1.75
13	Equity					0.69
14	Total Own Contribution					0.69

D. Financial Benchmarks		(Figures in Rs. Lakhs)			
		Year- 1	Year- 2	Year- 3	Year- 4
1	Target Revenue (Lakh)	13	15	17	19
2	Break Even Point	25.07%	21.42%	18.28%	15.85%
3	DSCR including Principal repayment	13.72	9.06	11.42	14.23
E. Basic Assumptions					
1	Production of Bamboo Glass	8 labour will on average be able to produce 10 semi processed mugs per worker per day, working 300 days in a year. Price of one such Glass is assumed as Rs 80. Only the part with nodes shall be used. Rest may be used for other craft items. Roughly 80 Glasses shall be finished using the single turning machine. One skilled labour will work on the turning machine.			
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			