



Panda Industries Inc.

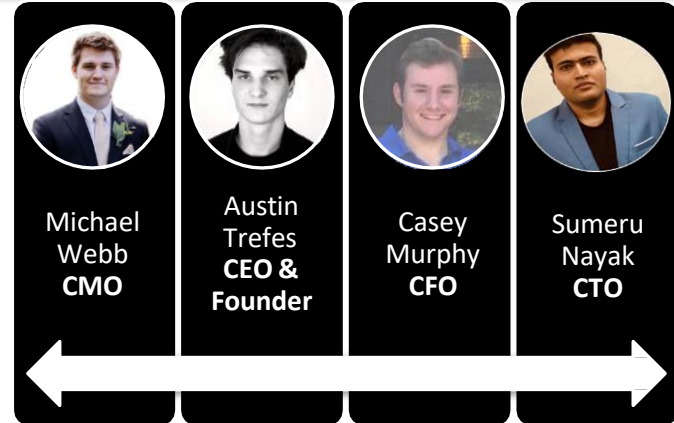
Executive Summary

Panda Processing: Build the Right Side of History

Company Orientation

- Mission {
- To provide the most cost effective and sustainable building material through the manufacturing of bamboo strand board (BSB).
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- Vision {
- To pivot the international timber market in a more sustainable direction by effectively reducing deforestation and carbon emissions.

Panda Processing Team



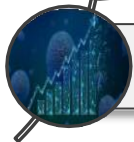
Panda Processing is seeking \$1,500,000 to begin manufacturing.
Investment Key Points:



1: Vertical Integration from Outset of Operations



2: Sustainability-driven Operations



3: Attractive Valuation



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Operational Overview

Vertical Integration

Business Description

Panda Processing is a lumber manufacturer that solely uses bamboo as its building material. Structural products that will be offered include oriented strand board (OSB). The manufacturing process will produce large cuts of laminated bamboo scrimber and lumber, and then perform additional cuts to fill specific customer orders.

Location

Initially, we will be based in Osaka, Japan as the country has a strong supply of bamboo, a high level of purchase power parity, and a large educated population. Since Japan is the world's fourth largest importer of wood, there is room to introduce a lower-cost method of obtaining building materials.

Business Model

Step 1: Moso Bamboo is cut at base and transported to Factory



Step 2: Raw material is inventoried at factory



Step 3: Order received, manufacturing process begins



Step 4: All pieces of order finished and bundled



Step 5: Order loaded onto truck and delivered.

Details at Different Steps

Bamboo is a grass-type plant, so if the culms (shafts) are cut at the base, the plant will regrow.

Panda Processing plans to acquire contracts with buyers prior to harvesting bamboo to refrain from over-stocking.

The max capacity of bundles (98 half-inch 4'x8' panels) per day is 60. The company will adjust production levels according to order size.

The designed factory location contains inventory space for raw materials and finished goods.

Panda Processing will own delivery trucks that will handle distribution, completing the vertically integrating product life-cycle



Why Osaka, Japan?

Startup Operations

Raw Materials

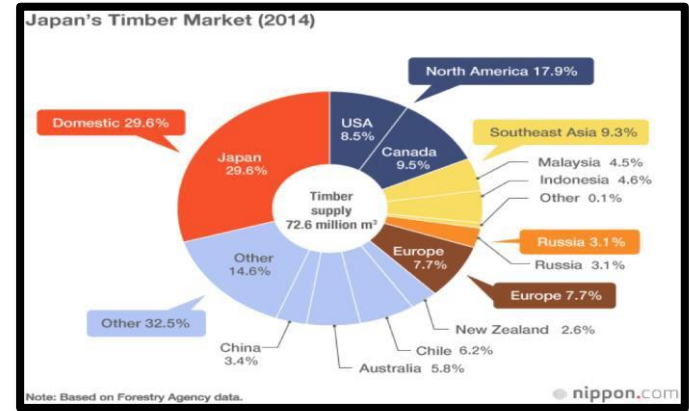
- Moso Bamboo is readily available and abundant on the outskirts of the city
- This reduces startup costs as we don't have to wait for bamboo to mature for harvest nor ship bamboo across the world

Human Capital

- Japan has a sophisticated workforce
- Machinery being used is domestic to Asia which enables quicker, more efficient employee training

Attractive Demand

- Lumber demands on par with entire USA, despite having 1/3 population and land area roughly that of California



70% imported timber allows us to provide a more sustainable domestic alternative

We can manufacture at a cheaper rate by beginning operations where bamboo is abundant



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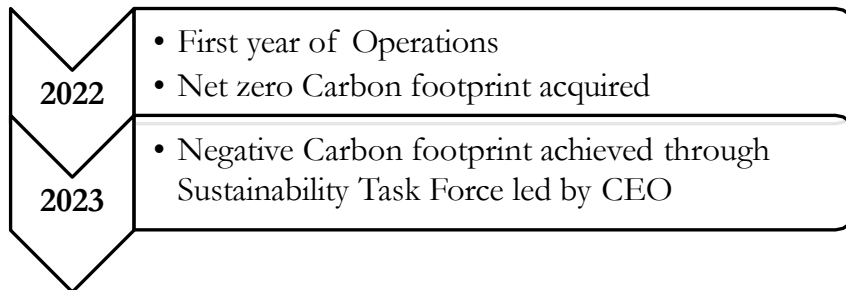
Product Sustainability and Comparison

Why Panda Processing was born

Measure	Traditional Plywood/OSB	Compared to	Bamboo Strand Board
Cost	\$25-\$80 per panel	➡	\$20 per panel
Carbon Emission	81% of tree carbon emitted when burnt	➡	Removes carbon dioxide from atmosphere, emits 35% more oxygen
Deforestation	Progressively diminishing forests	➡	Culms reaped and then regrow
Maturity Time	35-50 years until full harvest	➡	5-7 years until harvest

Timeline – Achieving Negative Carbon Footprint

The feasibility of Panda Processing to become carbon negative: Bamboo absorbs more carbon dioxide than is emitted during production and transportation. From this, our operations will net negative carbon emissions in 2023 as seen below.



Product Performance				
	Plywood	OSB	Bamboo Strand Board	% Advantage over next best alternative
Tensile (PSI)	4000	1500	7800	195
Bending (PSI)	7000	4000	17580	268
Compression (PSI)	5000	2500	35679	713
Shear (PSI)	1000	1500	8006	533



Income Statement Analysis

Assuming Full Success in First Operating Year

Fall 2022-2023 Annual Income Statement				
Revenue				\$ 31,250,000.00
Operating Expense				
	COGS			
		Shipping	\$ 106,400.00	
		Borax	\$ 817,152.00	
		Soy Glue	\$ 1,932,490.00	
		Machinery	\$ 900,000.00	
	Total COGS		\$3,756,042.00	
	Payroll expense		\$1,365,280.00	
	Marketing		\$ 10,000.00	
	General and Admin.		\$ 67,300.00	
	R&D		\$ 70,000.00	
	Equipment		\$ 470,000.00	
	Property		\$1,192,040.80	
	Utilities Expense		\$ 56,000.00	
	Total Operating Exp.			\$ 6,986,662.80
EBITDA				\$ 24,263,337.20
Depreciation and Amortization Expense				
	Depreciation Exp		\$ 150,083.36	
	Amort Exp. - Patent		\$ 100.00	
	Total D&A Expense			\$ 150,183.36
EBIT				\$ 24,113,153.85
Interest Expense*				\$ -
EBT				\$ 24,113,153.85
Income Tax Expense				\$ 5,063,762.31
Net Income				\$ 19,049,391.54
Profit Margin				60.96%
Total Sum of Cost				\$ 12,200,608.46
Minimum Revenue to Breakeven				\$ 12,200,608.46

*Contingent on whether or not we are financed by a loan

Assumptions

1. Lumber is sold at \$1.25 per board foot or \$1,960 per bundle
2. One bundle is 98 individual half-inch 4"x8", or 1,568 board feet
3. Factory operates 24 hours a day for 266 days a year
4. Each acre of the bamboo farm yields 2,227 culms every 5 years
 1. Each culm provides 40 board feet of usable lumber
 2. This equates to 16,020 bundles per year, if sold at \$1.25 per board foot it equals roughly \$31.25 million
5. Each factory employee works 8-hour shifts 5 days a week for \$20 per hour
6. Factory requires 5 employees each shift plus one manager
7. Sales Representatives earn 2% pretax commission on each sale
8. Factory produces 60 bundles a day, 266 days a year
9. Depreciation and Amortization expense calculated using the straight-line method

Alternate Sales Scenarios

If only 50% of projected sales:

•Net Income (Loss): \$5,758,898

If only 25% of projected sales:

•Net Income (Loss): \$290,147



Competition

Advantages

Problem with Current Bamboo Companies

- Companies either manufacture specialty beams, preventing mass production or focus on specified non-structural items i.e. furniture or flooring.
- No company has a steady domestic supply of bamboo
- No product currently on the market can be nailed without splitting; Our patented product can be nailed without splitting.

Relevant Competitors

- With no developed bamboo-lumber companies our primary competition stems from traditional lumber companies
- Biggest competitors are based in North America

Top 5 Biggest Competitors

Company	Capacity (MMBF)	No. of Mills	Location
Weyerhaeuser Co.	3,552	16	U.S./Canada
Georgia-Pacific Co.	2,949	27	Tucker, GA
West Frazer	2,354	15	Vancouver, BC
Sierra Pacific Industries	2,077	11	Anderson, CA
Interfor	1,952	13	Vancouver, BC

*Million Board Feet



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Risk Analysis

Market Headwinds

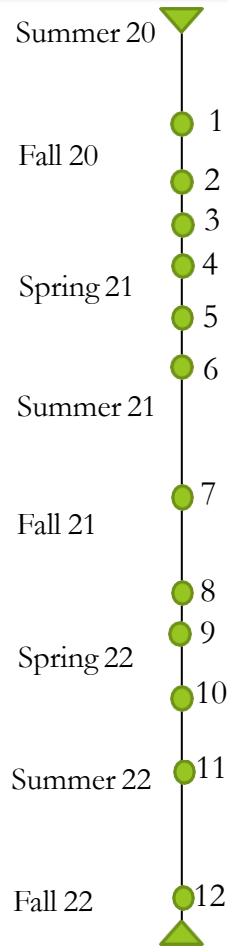
	Industry	Panda Processing Specific
Factors	<p>Interest Rates</p> <ul style="list-style-type: none"> If interest rates go up, residential starts and purchases decline. 	<p>Capital needs – Significant cash infusion required to launch company</p>
	<p>Commodity Products</p> <ul style="list-style-type: none"> Easily accessible products from a wide variety of competitors 	<p>Japanese Housing Market – dwindling population paired with record vacancies</p>
	<p>Residential Demand</p> <ul style="list-style-type: none"> Poor demand for residential construction would adversely effect operations 	<p>Inventory Overflow – high levels of production could lead to sunk inventory costs</p>
Aversion	<p><u>Interest-Rates</u></p> <ul style="list-style-type: none"> No U.S. rate hikes until 2022 	<p>Risk-based forecasting to ensure long-term financial stability and due diligence.</p>
	<p><u>Commodity Products</u></p> <ul style="list-style-type: none"> Sustainable labeling for customers 	<p>To meet financial goals, acquiring .0027% of Japanese market would suffice.</p>
	<p><u>Residential Demand</u></p> <ul style="list-style-type: none"> Identify alternate customers 	<p>Inventory floor and ceiling amounts set at outset of operations w/ disclosure to customers.</p> <p>Strong connections and insights obtained from Summer 2021 Business Mapping trip.</p>



Recap & Strategic Growth Plan

Timeline of Operations

Milestone Timeline



Thesis Recap

Panda Processing is seeking \$1,500,000 to carry out initial market research and product development. This amount can effectively jump-start this vertically integrated company, with a mindset to exponentially reduce the timber industry's carbon footprint. The strategic growth timeline (as seen below and to the left) are made possible from this investment. If you have any questions on this presentation, please contact Casey Murphy by email at casey@pandaprocessing.org or by phone at (502) 435-6912.

Milestone References

- ✓ December 2020: Receive seed-round funding of \$83,000 in order to create prototypes and pay for Summer 2021 business mapping trip.
- ✓ November/December 2020: Prototypes of products completed
- ✓ January/February 2021: Prototypes tested
- ✓ March 2021: Summer 2021 business mapping trip planned out and itinerary complete
- ✓ April/May 2021: Draft a plan of action for all areas visited in Japan in order to decide the advantageous location for headquarters
- April/May/June 2021: Secure ~\$1.5 million to launch operations by 2022
- June/July/August 2021: Move to Japan and purchase factory and machines
- January 2022: Operations launch



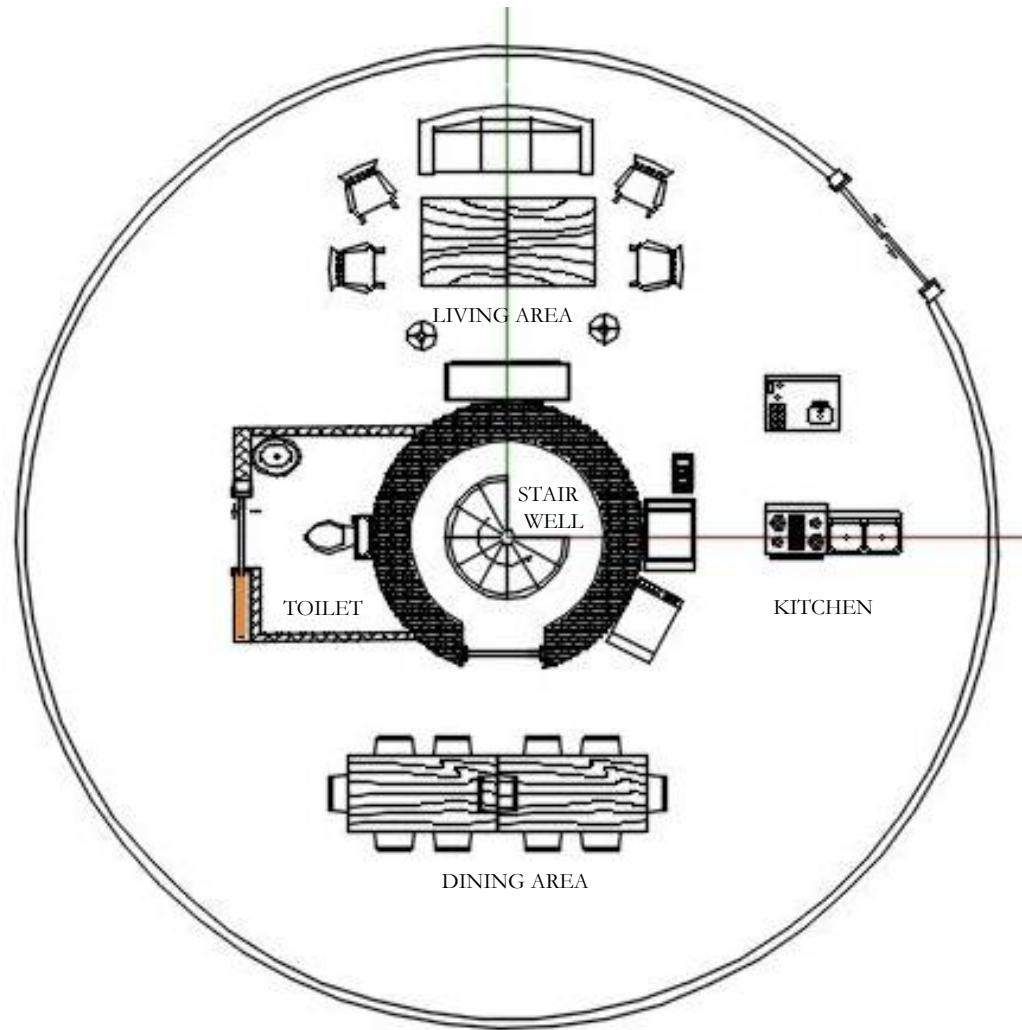
National Science Foundation SBIR Grant Small Business Innovation Research Program Provides Seed Funding for R&D

April, 2021-Panda Processing has been awarded a National Science Foundation (NSF) Small Business Innovation Research (SBIR) grant for **\$256,000** to conduct research and development (R&D) work on sustainable additive manufacturing for structural purposes.

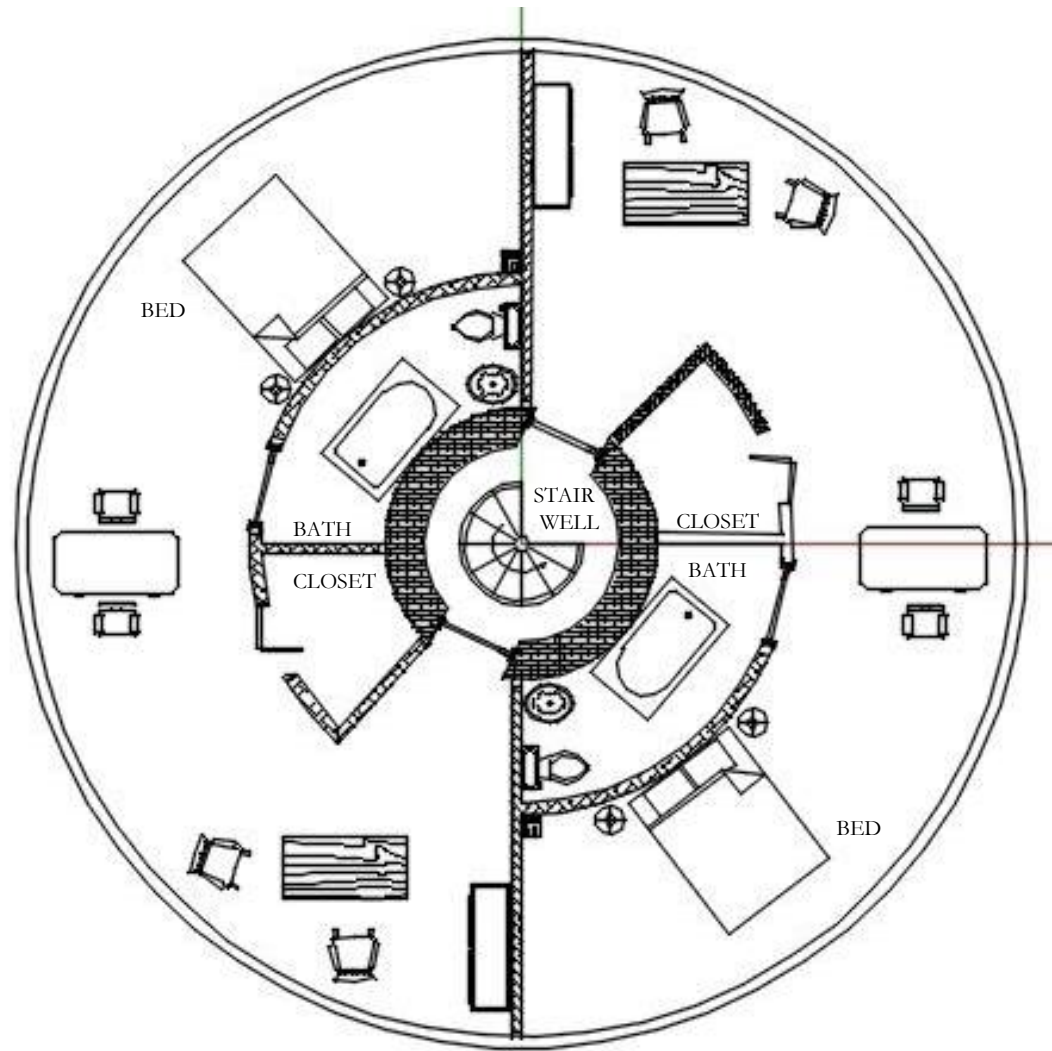
The biggest issue at hand right now that touches the lives of every human and every other living thing on Earth is carbon dioxide (CO₂) being emitted at unsustainable rates. This SBIR Phase I project is attempting to combat this problem by creating a structural bamboo filament that could replace 3D printer filaments made of concrete. The problem with this is that concrete is a very unsustainable material. Panda Processing plans to take its knowledge about bamboo lumber and direct it towards developing a competitive filament to concrete that could be used in structural applications.

“NSF is proud to support the technology of the future by thinking beyond incremental developments and funding the most creative, impactful ideas across all markets and areas of science and engineering,” said Andrea Belz, Division Director of the Division of Industrial Innovation and Partnerships at NSF. “With the support of our research funds, any deep technology startup or small business can guide basic science into meaningful solutions that address tremendous needs.”

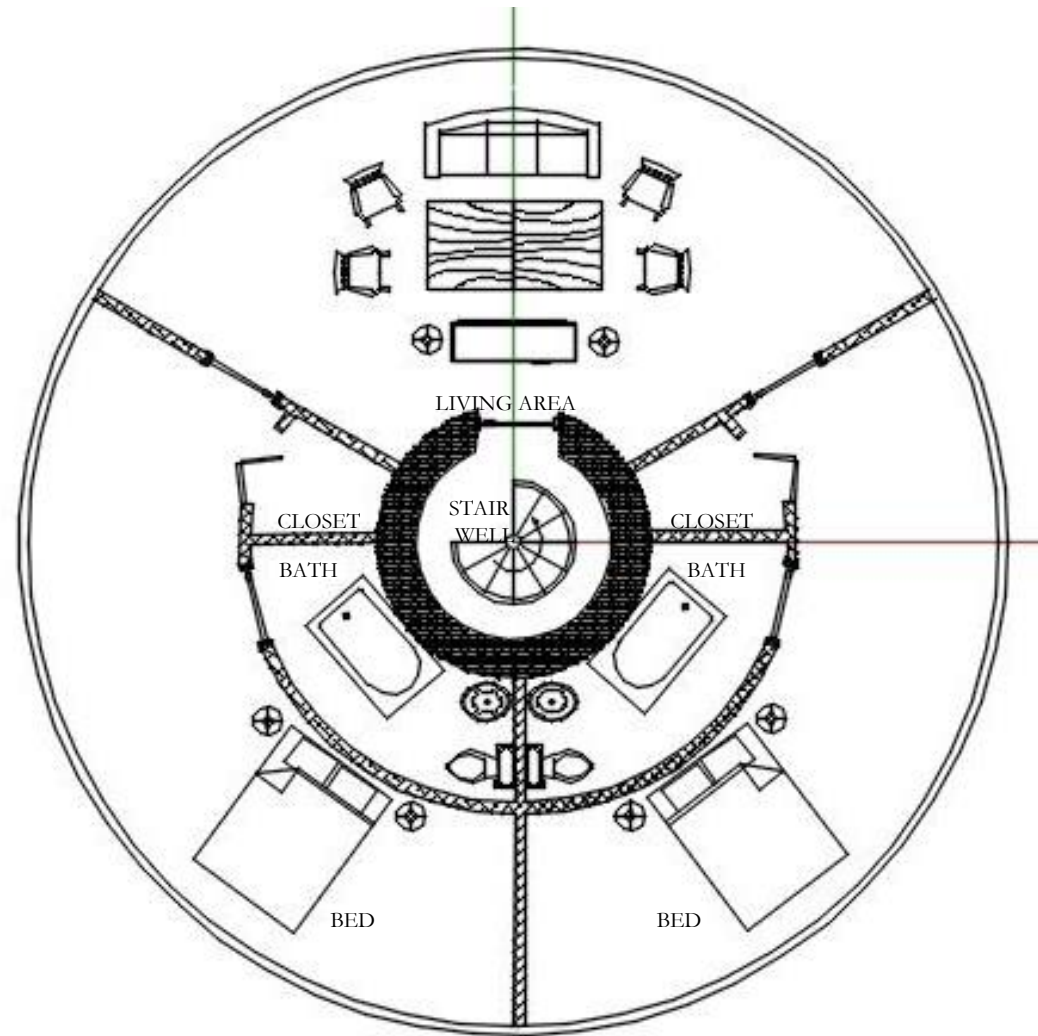
Floor 1



Floor 2



Floor 3



Sources

Slide 3

- <https://eia-global.org/subinitiatives/japan-forests>

Slide 4

- <https://www.earthisland.org/journal/index.php/articles/entry/logging-carbon-emissions-us-forests/#:~:text=Overall%2C%20about%20two%2Dthirds%20of,of%20the%20carbon%20is%20e>mitted.
- <https://www.logees.com/reduceyourcarbonfootprint#:~:text=Because%20of%20its%20rapid%20gr>owth,to%20reduce%20your%20carbon%20footprint.
- <https://www.moso-bamboo.com/wp-content/uploads/MOSO-Bamboo-products-LCA-TP35.pdf>

