Symbio®
BIOCULINARY

Redefining Food Waste

Problem

The US wastes 35% of our food each year

80%

of food waste is perishable

Capturing this lost value requires systems that:

- Intervene *before* spoilage
- Are economical at *scale*
- Yield *high-value* outputs

ReFED. (2025). From Surplus to Solutions: 2025 ReFED U.S. Food Waste Report. February 2025.

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Problem

Wasted food is an economic liability

$132 B

Of wasted food is lost annually by the agriculture and food manufacturing sectors.

Perishability drives waste, causing:

- Logistical/storage costs
- Hauling costs
- Tipping and disposal fees

ReFED. (2025). From Surplus to Solutions: 2025 ReFED U.S. Food Waste Report. February 2025.

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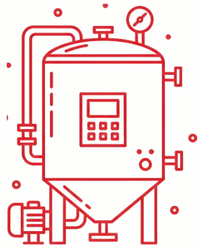
Solution

Symbio systems reduce cost and add value

Production side streams

On-site processing eliminates hauling

Rapid biomass reduction



Biomass reduction reduces storage

Enzymatic extraction and bioconversion

Bioprocessing extracts value

Food-grade ingredients and additives

Waste liabilities become revenue centers

Our on-site processing systems convert side streams into food-grade ingredients.

*Symbio can assist with distribution of system outputs

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Solution

Symbio builds bioprocess systems that transform waste into upcycled ingredients and additives.

Engineered Microbes

Bioprocess systems built for waste

Antioxidants
Amino acids
Bioactives
Functional sugars
Lipids

Using engineered fungi, our on-site systems make extraction and bioconversion of high-value compounds economical at scale

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Applications

Our modular systems can be configured for diverse sidestreams.

Bakery dough waste

Excess dough and bread waste

Enzymatic liquefaction, saccharification and refining

Glucose-maltose syrup

direct replacement for external sugars

Winery Grape Pomace

Grape pomace

Intensified enzymatic extraction and separation

Antioxidants

Anthocyanins and polyphenols

Fiber

Prebiotic and functional fiber

Organic acids

Dairy Proteins

Whey waste

Precision enzymatic polymerization

Galacto-oligosaccharides

Prebiotic proteins

*Other uses in development include lignocellulosic biomass, stone fruit pits and kernels, cashew fruit, citrus rinds, sunflower husks, poultry residue and other inputs.

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Case study

Case Study: Cocoa Processor with Husk Waste

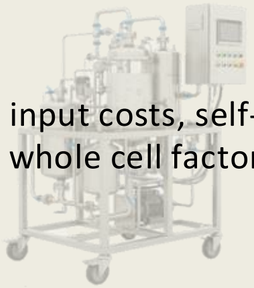
*Average large-scale cocoa processor, 7,300 tonnes/year husk produced**

Cocoa husk

Losses
~20% of bean weight
$1000/tonne
$7.8 Million/year*

Husk waste is an **inevitable economic liability** for processors

Integrated Biorefinery



Nominal input costs, self-replicating whole cell factories

On-site systems sequentially extract high-value outputs

High-value food grade outputs

Value creation
$4,877/tonne EBITDA
$43.5 Million/year in revenue

Waste streams becomes an **additional revenue center**.

"At Honeymoon Chocolates, sustainability is core to everything we do—but up to 25% of our annual waste by weight comes from cocoa husks. That challenge became an opportunity thanks to Elliott and the team at Symbio Bioculinary. Their deep expertise and collaborative approach **helped us transform cocoa husk waste into real value**. Their work **has opened new product avenues for us** and strengthened our commitment to sustainable innovation. We couldn't ask for a better partner."
Cam Loyet, CEO, Honeymoon Chocolates

System CapEx: $60 M

OpEx: $7.6 M per year

Annual revenue: $43.5 M

Simple ROI: 58% per year

Simple payback period: 1.7 years

IRR: 57.8%

Output	Volume	Market value
Theobromine	56.6 tonnes/year	$12.7 M
Caffeine	26 tonnes/year	$500,000
Dietary fiber	4,000 tonnes/year	$14.6 M
Polyphenols	126 tonnes/year	$12.6 M
Cellulose residue	3,100 tonnes/year	$3.1 M

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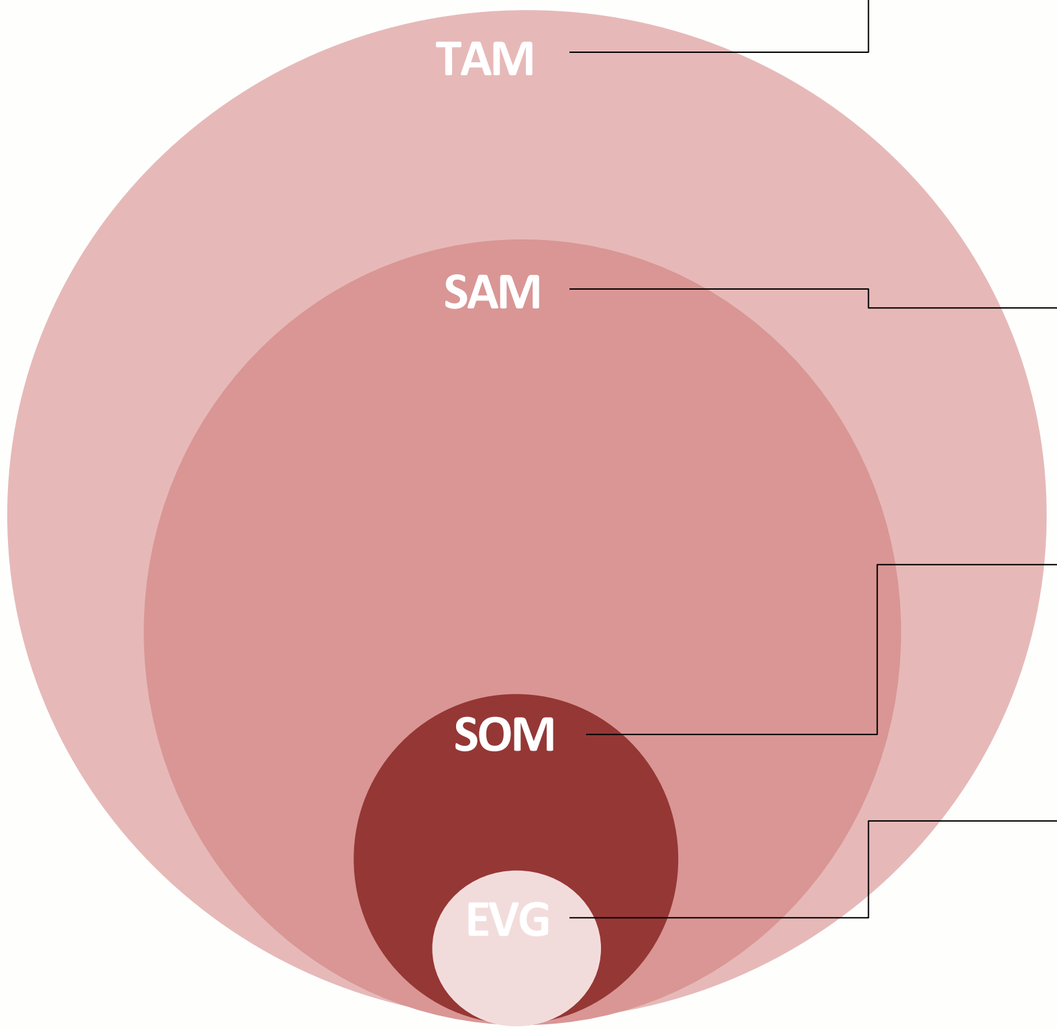
* Based on averages from North American quarterly grindings as reported by the National Confectioners Association
System economics are projected and estimated based on available data, and are variable due to input variability

Opportunity



US food waste opportunity

$382B
In surplus food wasted annually

$5.2B
Annual profit potential from food waste

US processing and agricultural waste

$132.6B
In annual waste

US high-value targets

$500M+
High-value agricultural side streams with significant valorization potential

Case study- cocoa husk

$7.8M
Cocoa husk economic losses per major processer

Massive quantities of underutilized material, a significant cost for firms.

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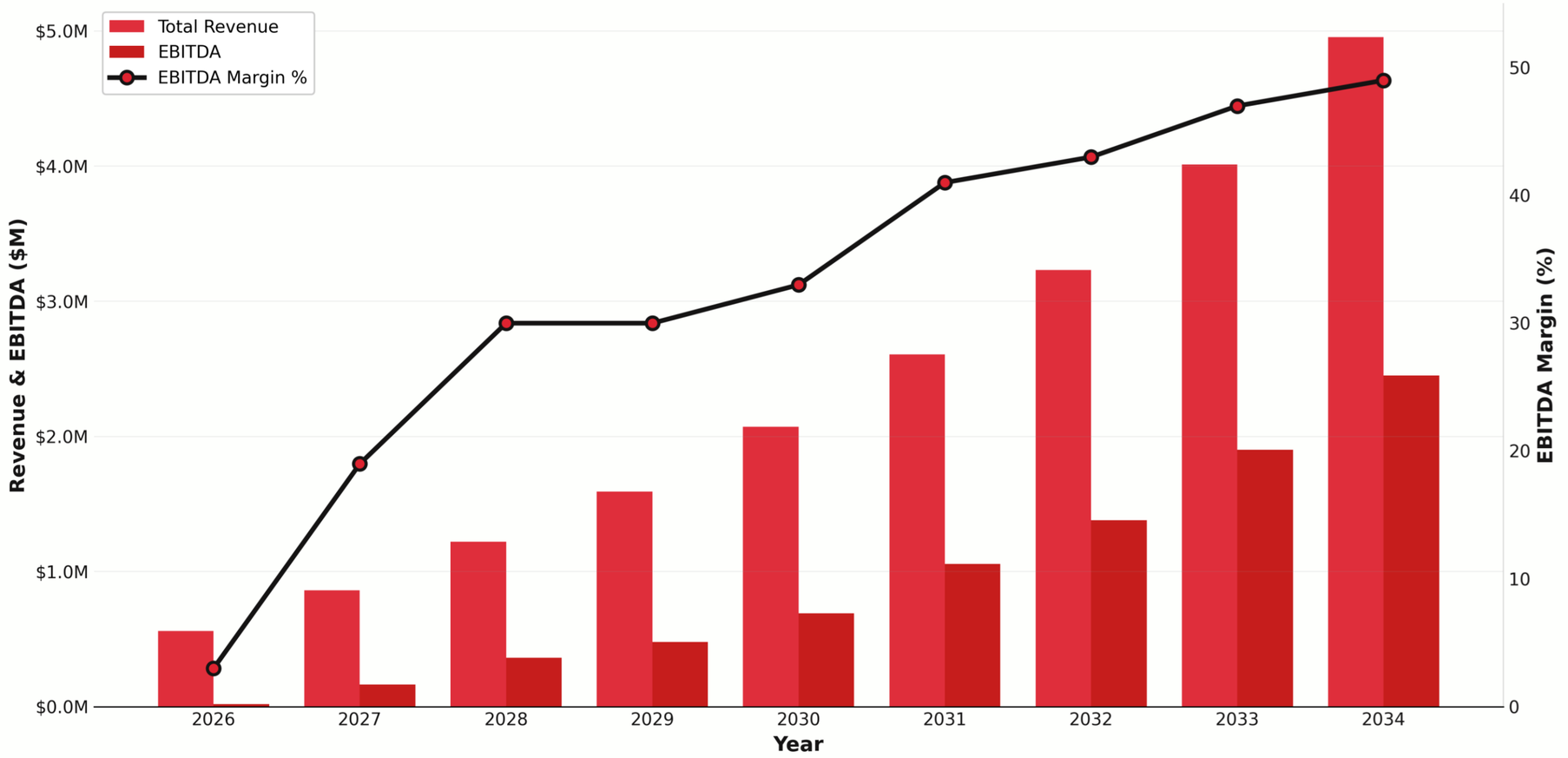
ReFED. (2025). From Surplus to Solutions: 2025 ReFED U.S. Food Waste Report. February 2025., Symbio Internal data

Financial Projections

Financial Projections 2026-2034



Funding Stage: Pre-seed

Raised $215K in Angel Round

Raising $1M in Pre-seed

Impact

PEOPLE

make sustainable & circular food ingredients

PROFIT

increase profit margins and create new value from waste

PLANET

divert food waste and reduce carbon impact

SDG 2: Zero Hunger Utilization of side streams creates new food sources

SDG 12: Responsible Consumption & Production
Enabling a shift toward circularity

SDG 8: Decent Work & Economic Growth
New job creation and stimulation of circular economy

SDG 13: Climate Action
Diversion from landfills reduces methane emissions

Business Model

We develop and implement on-site upcycling systems built on our modular technology platform.

Bioprocess system hardware sales

Dual model balances scalability and diversification

Customized systems

built on our modular technology platform for novel and high-potential waste streams.

Scalable turnkey systems

for common waste streams, preconfigured for rapid deployment.

IP licensing and system support

Licensing of engineered strains & ongoing system support

IP licensing & sales

of novel engineered strains and biocatalysts.

System Support

Ongoing support, optimization and maintenance for the life of the system.

Competitive Outlook

Existing solutions result in lost value and a cost burden for producers

Compost & biogas

- Loss of value
- Cost burden or break-even
- Continued greenhouse gas emissions

Off-site upcycling

- Hauling required
- Minimal producer value retention
- Limited processing capacity

Traditional disposal

- No value retained
- Cost burden for producer
- Significant environmental impacts

Symbio on-site bioprocess

- Eliminates hauling and transport
- Maximum value retention for producer
- Eliminates continued emissions and supports ESG goals
- Human grade, high-value outputs

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Differentiation

Symbio has distinct technology, unique positioning and sector flexibility

Technology

- Bioprocess systems **built specifically for the challenges of waste**
- Turnkey systems reduce complexity by combining upstream and downstream processing in a single unit.
- Custom reactor design integrates into existing processing infrastructure

Positioning

- Allows processors' entry into a rapidly growing market
- Internalizes production of key inputs.

Upcycled Ingredients Market-Global

$74.8B
Total market Size by 2029

5.6%
CAGR

Flexibility

- **Computational modeling** accelerates R&D for novel side streams.
- **Modular systems** allow rapid development for new sectors and simplifies scaling.

BCC Research. Global Upcycled Food Market. 2024

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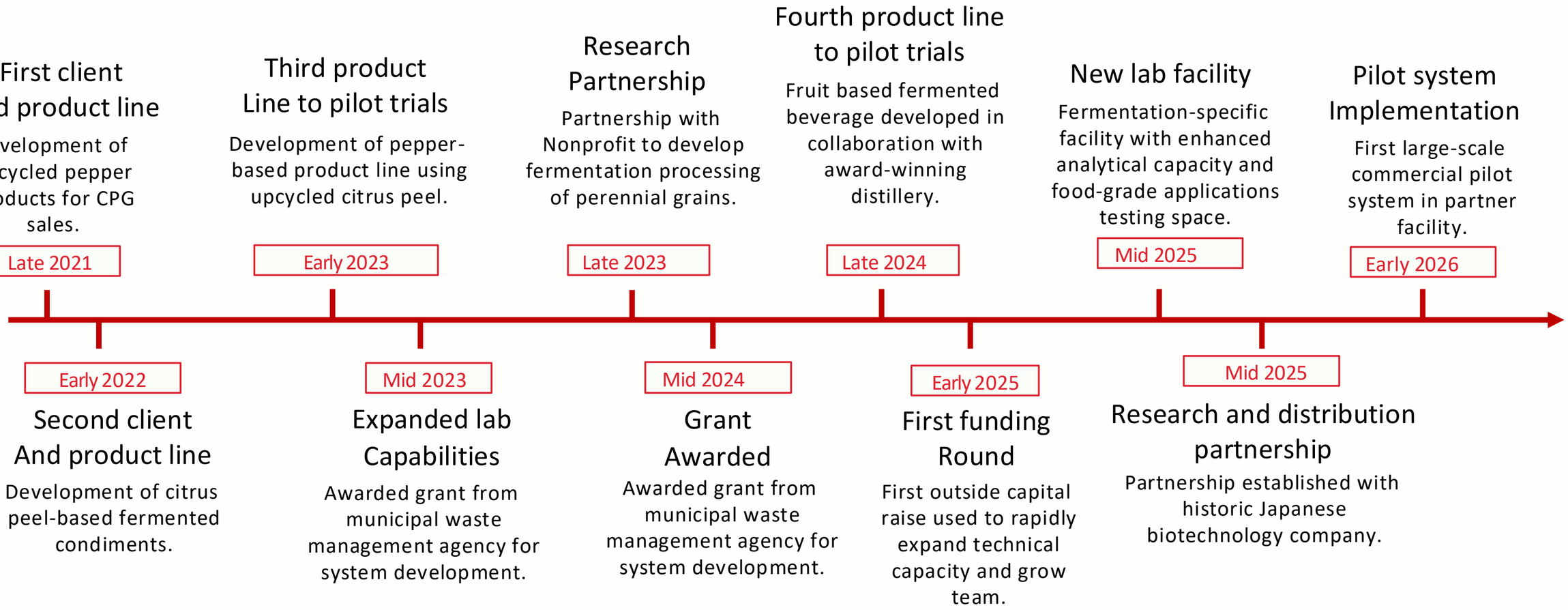
Company history



Team

Elliott Notrica

Founder & CEO

Chef and fermentation microbiologist, Future Founders Fellow and Amgen scholar.

Niko Valencia Glushchenko

Technical Sales & Dev. Lead

Chemist specializing in technical sales.

Omar Santoyo

Fermentation Technology Lead

Biologist specializing in fermentation bioengineering.

Johnny Drain, PhD

Scientific Advisor

Food tech entrepreneurship

Internationally-renowned fermentation expert and entrepreneur.

Travis Wyman, PhD

Scientific Advisor

Genetics and Bioengineering

Molecular biologist and geneticist with 20+ years in biodefense.

Andrew Lusk, Esq.

Strategic Advisor

Business strategy

Experienced corporate attorney and investor.

Travis Hawk, MBA

Strategic Advisor

Finance and Operations

Former CFO and established executive.

Charles Ross

Strategic Advisor

Sales and distribution

Experienced food ingredients executive.

Jonathan Finau

Strategic Advisor

Business Development

Food manufacturing expert

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