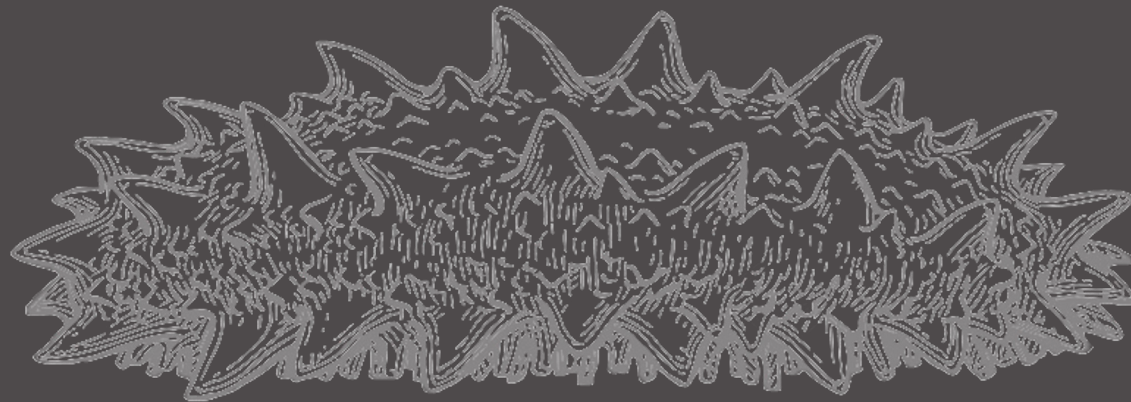


# Sea Cucumber Aquaculture



**The most profitable way to save our oceans**

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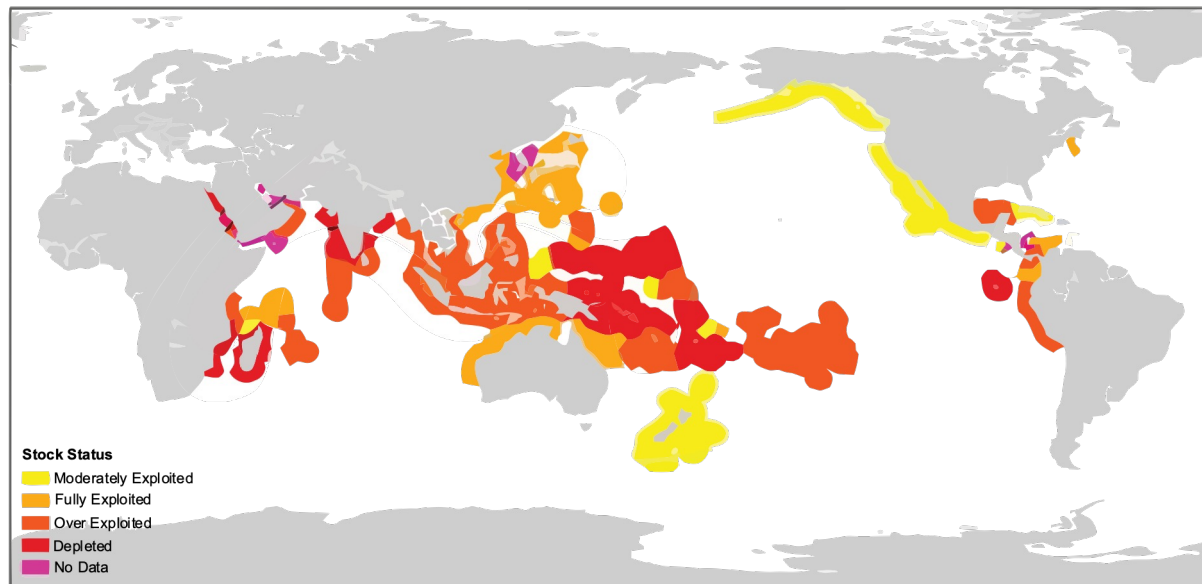


**Sea cucumbers have been a dietary delicacy and medicinal cure for East Asians for over 500 years.**



A natural superfood consumed in multiple forms

**By 2024, sea cucumber demand will exceed supply  
by 1.7x, a 340-million-kilogram shortage**



Increasing global demand and diminishing wild stock from overfishing are contributing to the shortage

# PanaSea grows sea cucumbers **in a hatchery** then maturing them in the ocean until harvest



A sustainable alternative to the traditional & destructive practice of harvesting wild catch

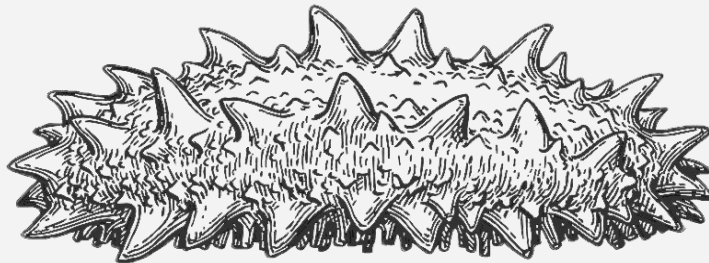
Pana+  
Sea

## A \$16B retail market expected to **exceed \$20B by 2024**



The Chinese middle-class accounts for 90% of global sea cucumber consumption and is projected to grow by **30% by 2024**

**Sea cucumbers are grown, processed, dried, and sold as a commodity for **\$150/kg** to wholesale buyers**

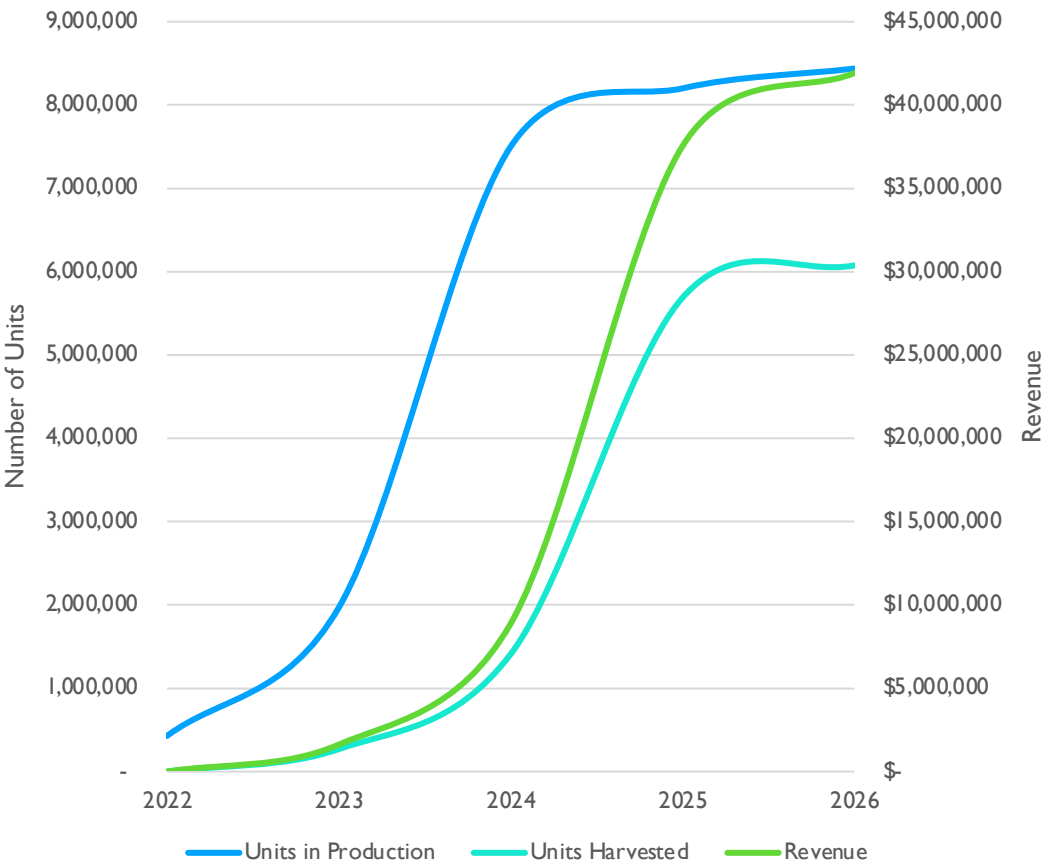


**South American Ginseng**

Production Cost: **\$50/kg**

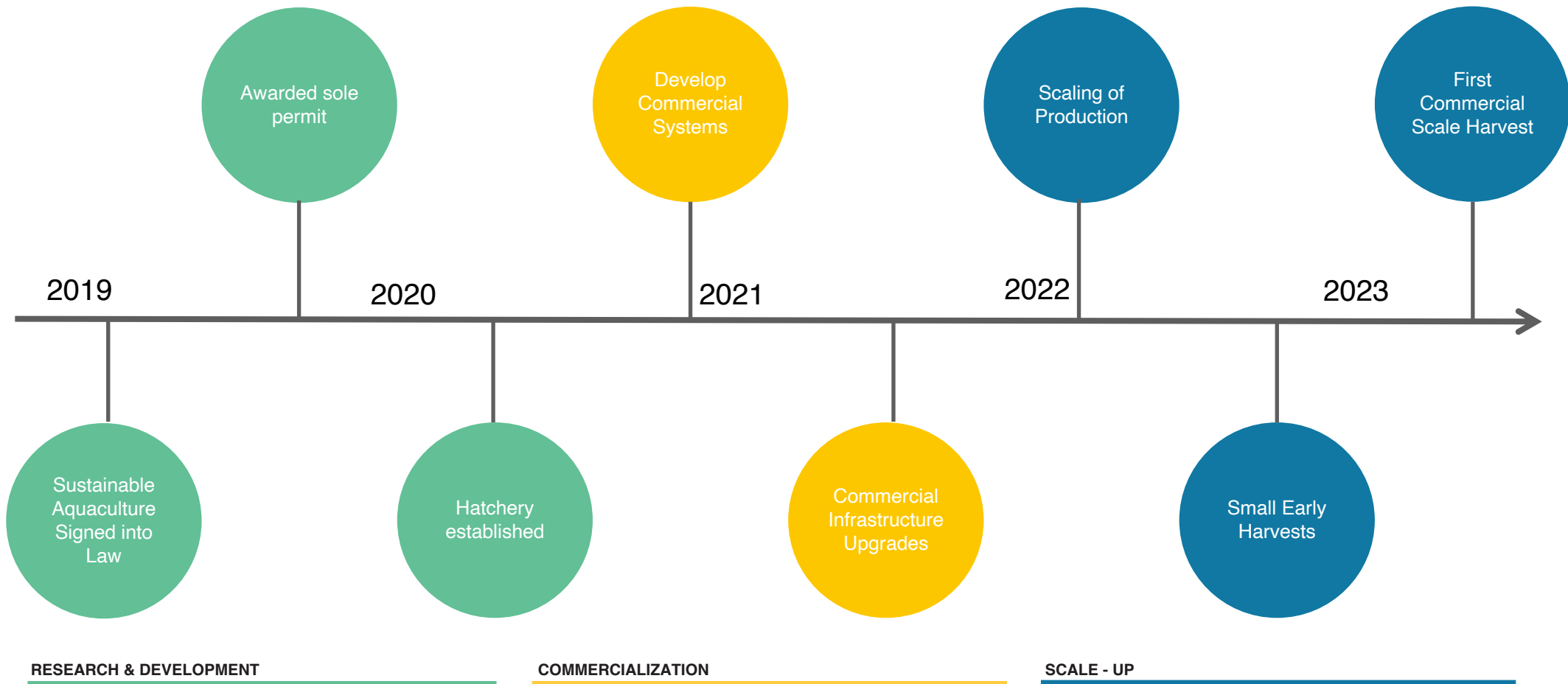
**\$100/kg profit margins** and the lack of supply will only increase these margins

Our operational capacity is **\$43 million revenue,**  
**6.3 million sea-cumbers harvested annually**



	2022	2023	2024	2025	2026
Revenue	-	\$1.6m	\$8.8m	\$37m	\$42m
Units In Production	0.5m	1.9m	8.1m	8.1m	8.4m
Units Harvested	-	0.2m	1.4m	5.6m	6.1m

# Scaling Up to Full Production Capacity



# PanaSea is A Triple Bottom Line **Opportunity**



## People

### Cash crop for communities

- Cash crop for coastal communities
- Generating sustainable employment
- Prioritize opportunities for women



## Planet

### Restore depleted fisheries

- Reduce ocean acidification by increasing water pH
- Prevent algal blooms which damage marine ecosystems
- Promote healthy coral reefs by releasing essential nutrients



## Profit

### Highest ROI in aquaculture

- Sea cucumbers have the highest ROI of any aquaculture operation
- Oversized returns due to unbridled demand and lack of competition
- Sole concession in Panama & first mover advantage in Indonesia

# A world class management team



David Grossman  
Chief Executive Officer



Having launching multiple sustainable business in Latin America with over 250 employees, Grossman has also been developing a sustainable platform for sea cucumber production in Central America since 2011



Dr. Luis Felaco  
Species Expert



One of the foremost experts in commercial Caribbean species, Dr. Felaco brings his decade of practical experience to PanaSea's R&D and operational protocols.



Jon Beer  
Chief Operations Officer



With over 15 years running industrial operations in Central America, Jon Beer is one of the leading experts in industrial engineering in emerging markets.



Dr Georgina Robinson  
Science Advisor



With over 12 years' experience in the aquaculture industry in both temperate and tropical environments. Extensive experience in the field of tropical sea cucumber aquaculture around the world.

## Diverse & Versatile Advisory Board



Jean-François Hamel  
**Advisor**

Sea cucumber species expert-  
fundamental biology and  
reproductive habits



Dr. Beni Giraspy Daniel Azari  
**Advisor**

Commercial sea cucumber  
expert, having produced tens of  
millions of sea cucumbers.



Alvaro Polo  
**Advisor**

30 years of experience  
researching and commercially  
growing algae.



Javier Visuetti  
**Advisor**

Over a decade at the largest  
aquaculture company in  
Panama, Open Blue.



Laura Canevari  
**Advisor**

Over a decade working on  
climate adaptation and climate  
change risk management.



Peter Pesch  
**Advisor**

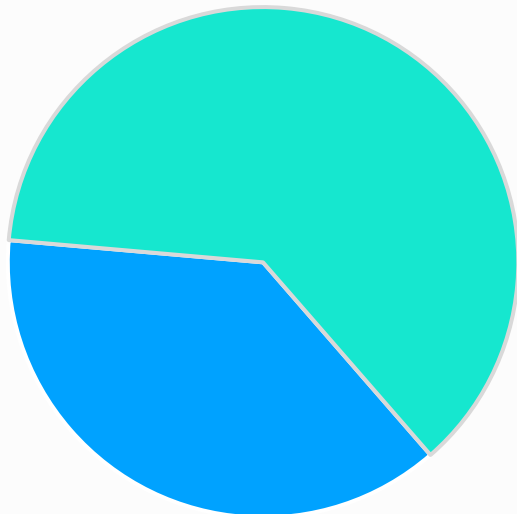
Sea cucumber hatchery  
operations expert, producing  
100k kilos annually.

# Investment & Use of Funds

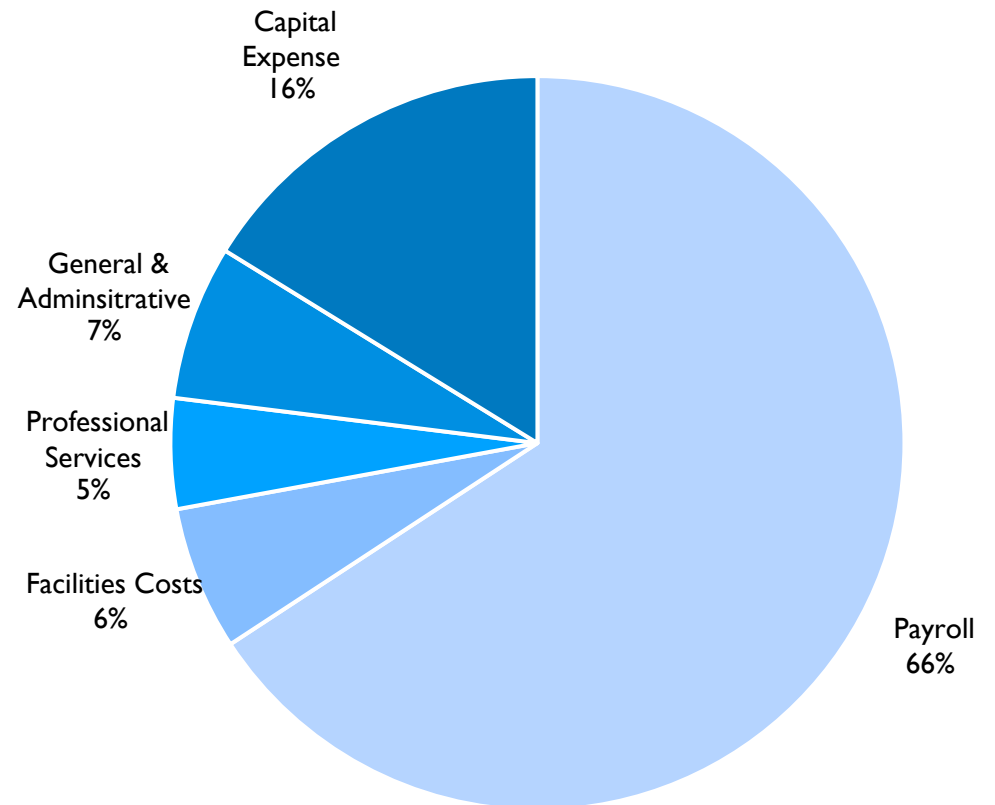
**Raised: \$1,120,000**

of a \$1.8m capital round

\$8m pre-money valuation



■ Available ■ Raised



# Financing Sources to Date

## EQUITY & CONVERTIBLE NOTE INVESTMENTS

2014- 2017: \$150K @ \$2M Valuation

2018-2019: \$320K @ \$2M Valuation

2019-2020: \$720K @ \$5M Valuation

2020-2021: \$1.29M @ \$7-8M Valuation

Current Round 2021: \$1.05M @ \$8M Valuation

**Total Equity Investment: \$2,398,920**

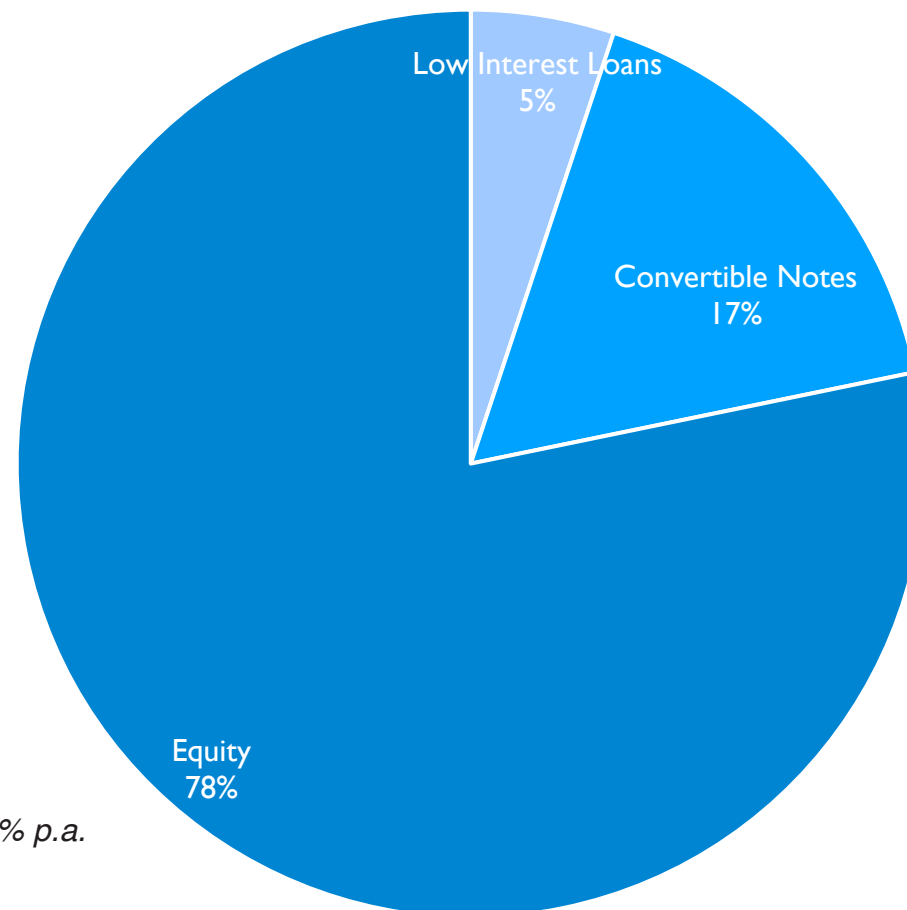
**Total Convertible Note Investment: \$490,000**

**Total Investment 2014-2022: \$2.8M**

## LOW INTEREST LOANS

2021 InterAmerican Dev Bank Loan: \$150K at 2.0% p.a.

**Total Loans: \$150K**



## Key Points

**Sea Cucumbers:** A delicacy & medical cure-all for over 500 years

**Market Size:** \$16B market growing to \$20B

**Supply Shortage:** Growing demand and a diminishing natural supply from overfishing.

**Great business economics:** Our tropical species costs approx. \$50/kg to produce and currently sells for \$150 wholesale.

# Appendix

# Aligned with Economic Growth, Climate Action, Life Below Water

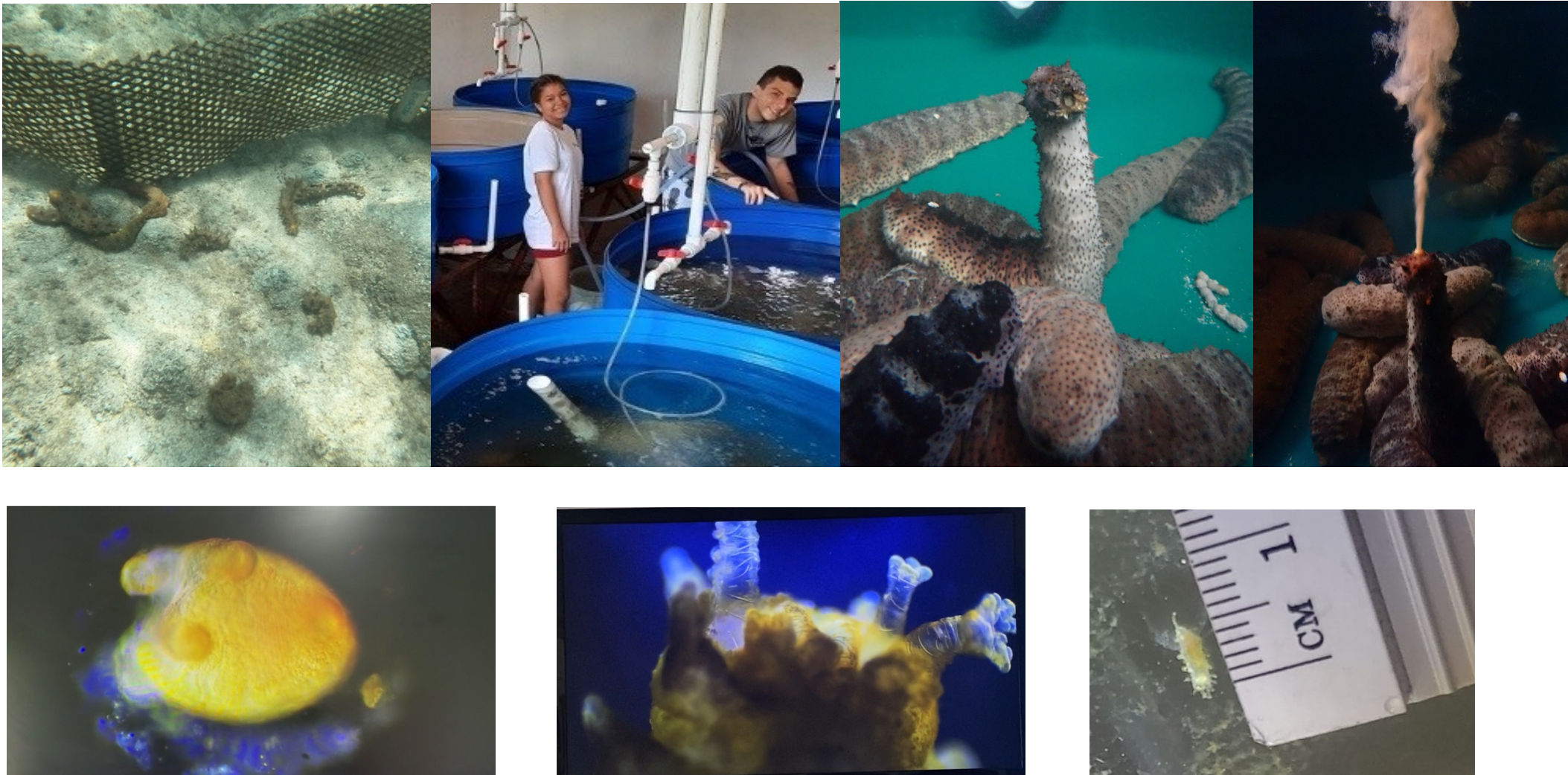


**PanaSea spawns sea cucumbers in our seaside hatchery and then sea ranches them in the ocean until they are ready for harvest.**



**Sea cucumber aquaculture is the only sustainable alternative to the traditional and destructive practice of harvesting wild caught sea cucumbers.**

# How it Works: Phase 1 Spawning & Larval Rearing



# How it Works: Phase 2

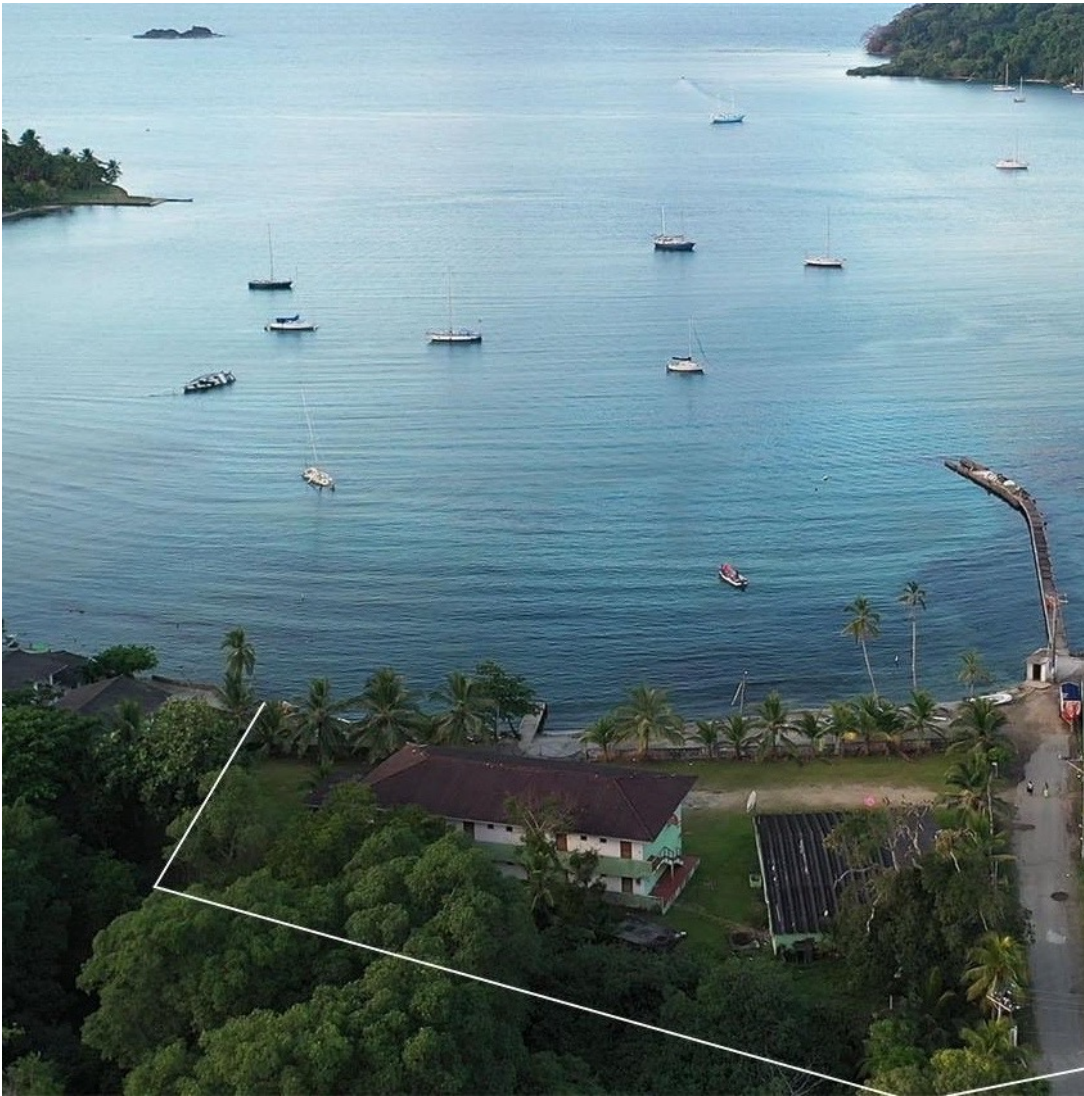
## Happa Net Growth Cycle: .2g-7g



## How it Works: Phase 3

### Seabed Growout & Processing: 7g-250g





- A. 800 METER OCEANIC WATER INTAKE PIPES
- B. ALGAE, MASS CULTIVATION
- C. PUMP PIT
- D. ELECTRICAL POWER HOUSE
- E. R&D LAB
- F. MICROALGAE LAB
- G. HATCHERY INFRASTRUCTURE
- H. BROODSTOCK SPAWNING
- I. 90 TON RESERVOIR
- J. LARVAL REARING TANKS
- K. NURSERY POND
- L. BROODSTOCK CONDITIONING & NURSERY TANKS

# Financial Projections

	Projected Total 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
<b>Metrics</b>					
Juveniles	427,500	1,968,750	8,100,000	8,100,000	8,437,500
Harvested Units	-	270,000	1,409,063	5,686,875	6,075,000
Harvested Weight Dry (Kg)	-	8,100	42,272	170,606	182,250
Profit / Kg		\$ 38.20	\$ 146.80	\$ 193.41	\$ 204.41
Cost / kg		\$ 161.80	\$ 63.20	\$ 26.59	\$ 25.59
<b>Financials</b>					
Revenue	\$ -	1,620,000	\$ 8,877,094	\$ 37,533,375	\$ 41,917,500
Cost of Good Sold	-	<u>101,196</u>	<u>429,404</u>	<u>1,615,577</u>	<u>1,684,275</u>
<b>Gross Profit</b>	\$ -	<b>\$ 1,518,804</b>	<b>\$ 8,447,690</b>	<b>\$ 35,917,798</b>	<b>\$ 40,233,225</b>
Gross Profit Margin		94%	95%	96%	96%
<b>Expenses</b>					
Total Operating Expense	\$ 387,986	\$ 713,730	\$ 1,704,535	\$ 2,368,340	\$ 2,412,262
Total General, Administrative, & Sales	\$ 490,236	\$ 495,636	\$ 537,590	\$ 552,070	\$ 566,899
<b>Total Expenses</b>	<b>\$ 878,221</b>	<b>\$ 1,209,366</b>	<b>\$ 2,242,125</b>	<b>\$ 2,920,410</b>	<b>\$ 2,979,161</b>
<b>EBITDA</b>	<b>\$ (878,221)</b>	<b>\$ 309,438</b>	<b>\$ 6,205,564</b>	<b>\$ 32,997,388</b>	<b>\$ 37,254,064</b>
Profit Margin		19%	70%	88%	89%
<b>Cash Flow</b>					
Starting Cash Balance	\$ 173,579	\$ 766,058	\$ 2,116,195	\$ 7,814,260	\$ 40,419,148
CapEx Financing (Banco AgroPecuario)	-	500,000			
Equity Investment	\$ 1,576,000	\$ -	-	-	-
InterAmerican Dev Bank Financing	\$ 45,000	\$ 1,000,000			
Financing from Off-Taking (Advanced Orders)	-	-	-	-	-
Cash From Operations	(878,221)	309,438	6,205,564	32,997,388	37,254,064
Capital Expense	\$ (150,300)	\$ (459,300)	\$ (507,500)	\$ (392,500)	\$ (392,500)
<b>Ending Cash Balance</b>	<b>766,058</b>	<b>2,116,195</b>	<b>7,814,260</b>	<b>40,419,148</b>	<b>77,280,712</b>

# Capital Expenses

	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
Hatchery Infrastructure	\$66,000	\$102,000	\$60,000	\$40,000	\$40,000
Laboratory, Machinery And Equipment	\$5,000	\$15,000	\$15,000	\$15,000	\$15,000
Algae Production Equipment	\$7,000	\$27,000	\$0	\$0	\$0
Total Permitting	\$0	\$50,000	\$50,000	\$0	\$0
Staff Housing	\$20,300	\$27,300	\$12,500	\$12,500	\$12,500
Grow-out Harvest	\$ 37,000	\$ 238,000	\$ 370,000	\$ 325,000	\$ 325,000
Accelerated Facility Expansion	\$0	\$0	\$0	\$0	\$0
Vehicle	\$15,000	\$0	\$0	\$0	\$0
Total	\$150,300	\$459,300	\$507,500	\$392,500	\$392,500

# Oceans & Sea Cucumbers



## Ocean Acidification

A quarter of the atmospheric carbon dioxide is absorbed by the world's oceans, causing a measurable decline in the water's pH.<sup>7</sup>



## Coral Reef Decline

Coral reefs are home to more than 25% of all marine species



## Fisheries Depletion

Today, nearly 90% of the world's marine fish stocks are fully exploited, overexploited or depleted.<sup>1</sup>



## Sea Cucumber Decimation

As the “earthworms of the sea”, they are essential nutrient recyclers that release calcium carbonate needed for coral growth into the sea water and increase the water's pH, counteracting acidification.<sup>2</sup>

**Sea cucumber are full of nutrients with 70% body weight is collagen.**



**Bio-Active  
Compounds**

Glycoside, saponin, sterol, collagen, peptides, lectin, polysaccharides, sulfate, frondoside-A

**Nutrition** Vitamin A, Vitamin B, Calcium, Magnesium, Zinc, Iron

**Benefits**

Anti-oxidant, Anti-angiogenic, Anti-inflammatory, Aphrodisiac / Impotence

# Human Health Remedies & Research

A thousand years  
of Eastern medicine  
confirmed by  
modern medicine.

- ✓ **Treats High Cholesterol and Hypertension**
- ✓ **Magnesium and Chondroitin Sulfate**  
**Promote Bone Health**
- ✓ **Fights Pancreatic Cancer Cells**
- ✓ **Treats Erectile Dysfunction**
- ✓ **Treats Arthritis and Joint Pain**

