



# POULTRY DROPPINGS INTO PROTEIN

# GLOBAL STRATEGIC PROBLEMS



**Food security**



**Waste disposal**



**Reducing CO<sub>2</sub> emissions**



**UNITED NATIONS**



## ADVANTAGES

- ✓ **BIOREACTOR SYSTEM**
- ✓ **AUTOMATED INSECTARIUM**
- ✓ **THE COST OF PROTEIN LESS THAN FISH MEAL**
- ✓ **SELECTIVELY BRED IMPROVED INSECT POPULATION**

## Poultry droppings

**House Fly**  
( *Musca Domestica* )



**Organic  
fertilizer**



**Protein**

## *bpp*'s Lab. the bioreactor system

Insect protein **LOW** price, because of:

- ✓ HR resources reduced to **a third**;
- ✓ the costs of the climate system less **by 50%**;
- ✓ the required areas reduced to **a quarter**;
- ✓ the growth time of larvae reduced **by 33%**;
- ✓ the amount of protein per unit of waste **up to 14%**.

## COMPETITORS the tray system

Insect protein **HIGH** price, because of:

- × High number of HR;
- × the need for a high-power climate system;
- × the need for large production areas;
- × manual insectariums;
- × source of raw materials - food waste;
- × used Black Soldier Fly



VS



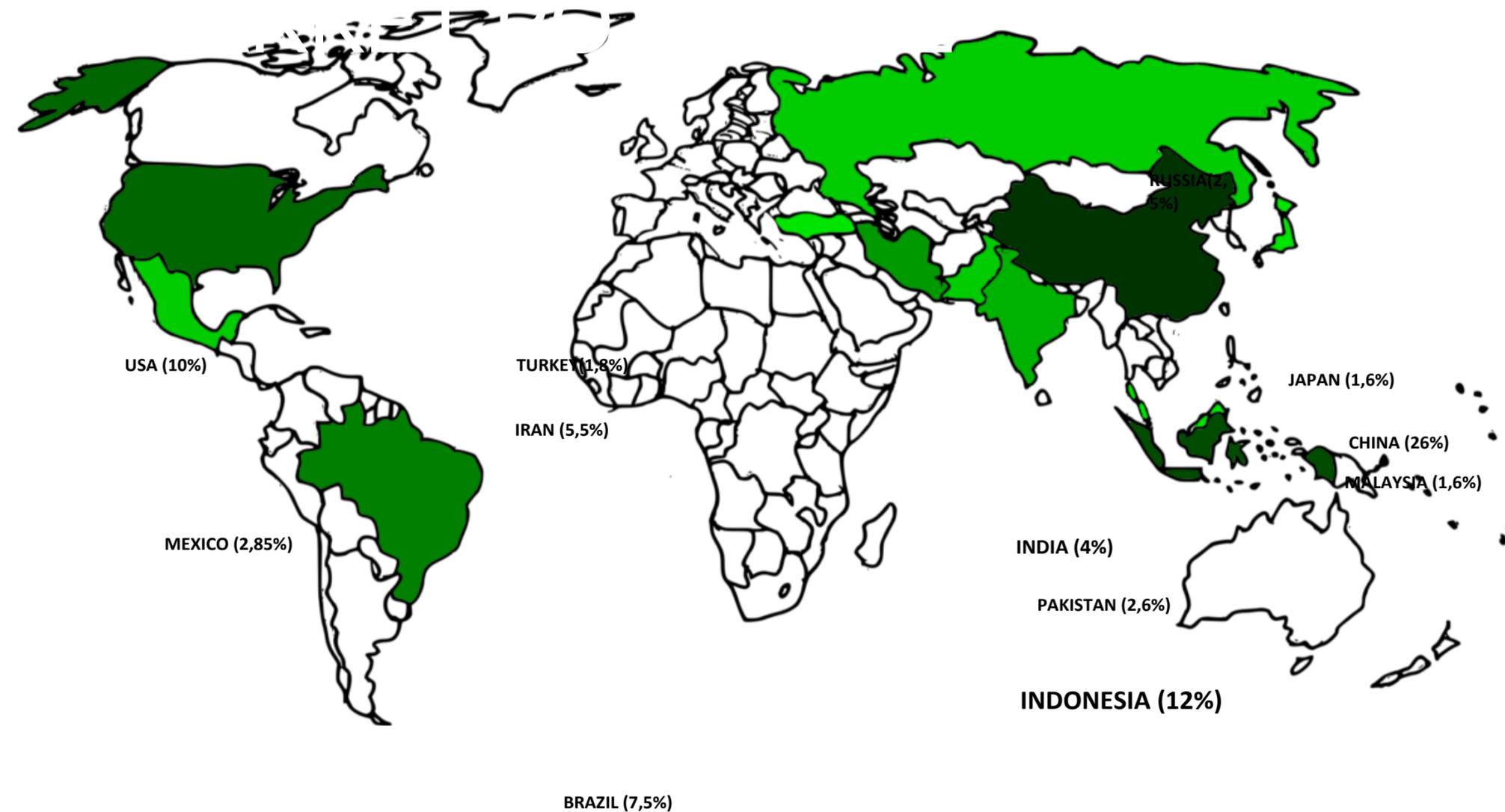


# MARKET TARGET

**POULTRY DROPPINGS**  
0,5% - 6,5 million tons

**PROTEIN MARKET**  
0,06% - \$611 MILLION

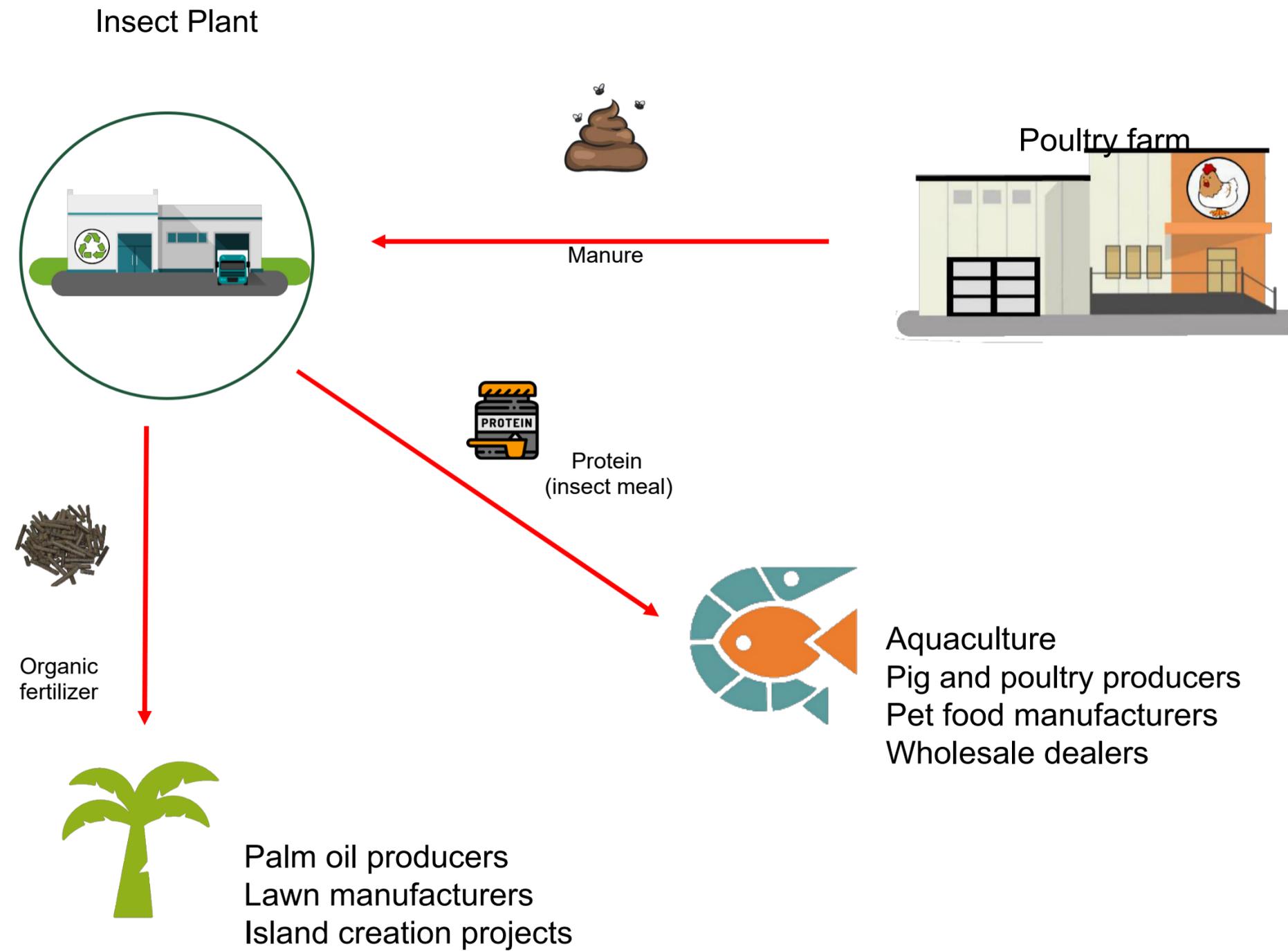
**ORGANIC FERTILIZER MARKET**  
0,07% - \$161 MILLION



Year 2030

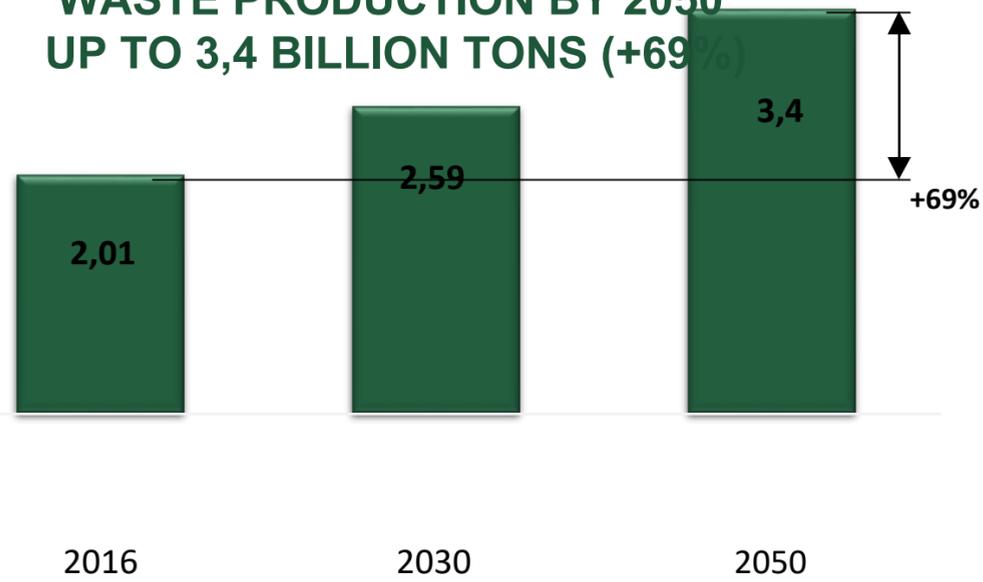
- Poultry dropping market– 1.2 billion tons
- The protein market – over \$1 000 billion
- Organic fertilizer market - \$230 billion

# BUSINESS MODEL



# ESG (Environmental Social Governance)

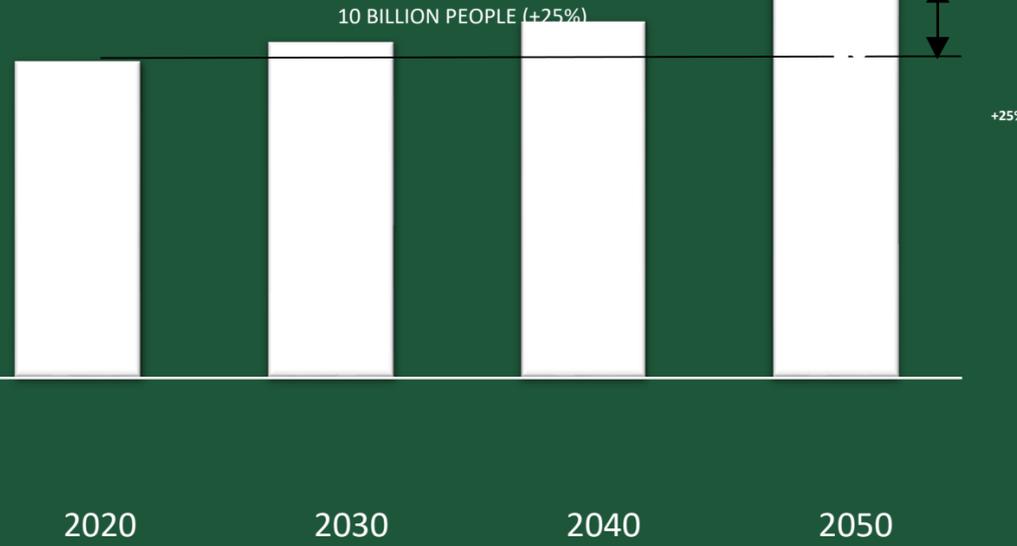
WASTE PRODUCTION BY 2050  
UP TO 3,4 BILLION TONS (+69%)



## Waste disposal

This is a serious source of dangerous emissions of gases into the atmosphere, soil contamination and unpleasant odor and the problem is getting worse

POPULATION INCREASE BY 2050



## Food security

The constant growth of the world's population has led to the need to find cheaper and better sources of protein  
Larvae have the highest energy conversion coefficient reaching 62%, which is twice much as other sources of protein, such as poultry, pork, milk, chicken egg and others  
Insect protein the most promising product for solving the global famine problem



**2,5 Mio tons**  
savings every year on  
emissions since 2032

## Reduction CO2 emissions

1 ton of waste → 1,5 tons of CO2 when it is thrown into the landfill  
1 ton of waste → 0.006 tons of CO2 when recycled by insects  
With **carbon credits** being at an average value of \$50 per tons, the above would represent a value of **\$125 Mio**.

# GLOBAL COMPETITORS

COMPETITOR	INVESTED	PRODUCT insects	Waste	Recycling	Fully	Insectariums
Ynsect	\$ 400M	Mealworm	Food waste	Tray	-	
InnovaFeed	€ 195M	Black soldier fly	Fruit and vegetable mix	Tray	-	
AgriProtein	\$ 122M	Black soldier fly	Fruit and vegetable mix	Tray	-	+
Protix	\$ 69M	Black soldier fly	Fruit and vegetable mix	Tray	-	-
BioflyTech	\$ 16M	Black soldier fly	Fruit and vegetable mix	Tray	-	
Nutrition Technologies	\$ 14M	Black soldier fly	Fruit and vegetable mix	Tray	-	
Enterra Feed	\$ 10M	Black soldier fly	Fruit and vegetable mix	Tray	-	
bpp's Labs.		Musca Domestica	Poultry droppings	Bioreactor	+	+

Total investment in insect recycling exceeds \$ 1B and continues to grow exponentially

# PROPOSED ROADMAP

Year	2023	2024	2025	2025	2025	2025		2025-6	2026	2026	2027	2028	2029
Numbers of plants										2	5	11	17
Terafactory													
Investment	\$200k	\$500k	\$1000k	\$1500k	\$1700k	\$1500k	\$1,3M (\$3,5M)	\$17M					
Progress	-Checked the basic technology start up a pilot plant in indonesia or/and Malaysia	-Created prototypes of new devices	-Opened laboratory -Created laboratory's equipment - Continuous production of products for testing and providing samples to potential customers	-A new technology has been created -A business model has been created -A financial model has been created -A preliminary design of the plant has been created	- A contract has been signed for the supply of 33,000 tons of protein - The first investments have been attracted	- MVP in indonesia - IP registration -signed memorandum with the UN on the construction of plants in Africa -signed contract for the sale of fertilizers for \$200 per ton	-Industrial production pilot line	-Construction of an automated pilot plant	-Creation and shipment of demonstration mobile container-stand bioreactors to: USA, Brazil, India. -Plants construction for credit funds, sales	-Chitin market launch	-Increase in protein yield per waste unit up to 14% as a result of laboratory work -TERAFACTORY for plant		-Exit -Sale to strategic investor (Mars, Cargill, Nestle) / IPO



# SUMMARY

In June 2023, we should have raised \$500K of investments to create an MVP, which is scheduled to be demonstrated in August 2023.

We also attract \$200K of investments for current stage.

Now we are seeking a reliable investor/partner for bpp's project, for the next two phases:

**Phase 1:** \$ 0,5M investment in the pilot line, which is a single module of the pilot plant.

**Phase 2:** \$ 17M investment in a fully automated commercial pilot plant with an output of 2700 to 3000 tons of protein per year

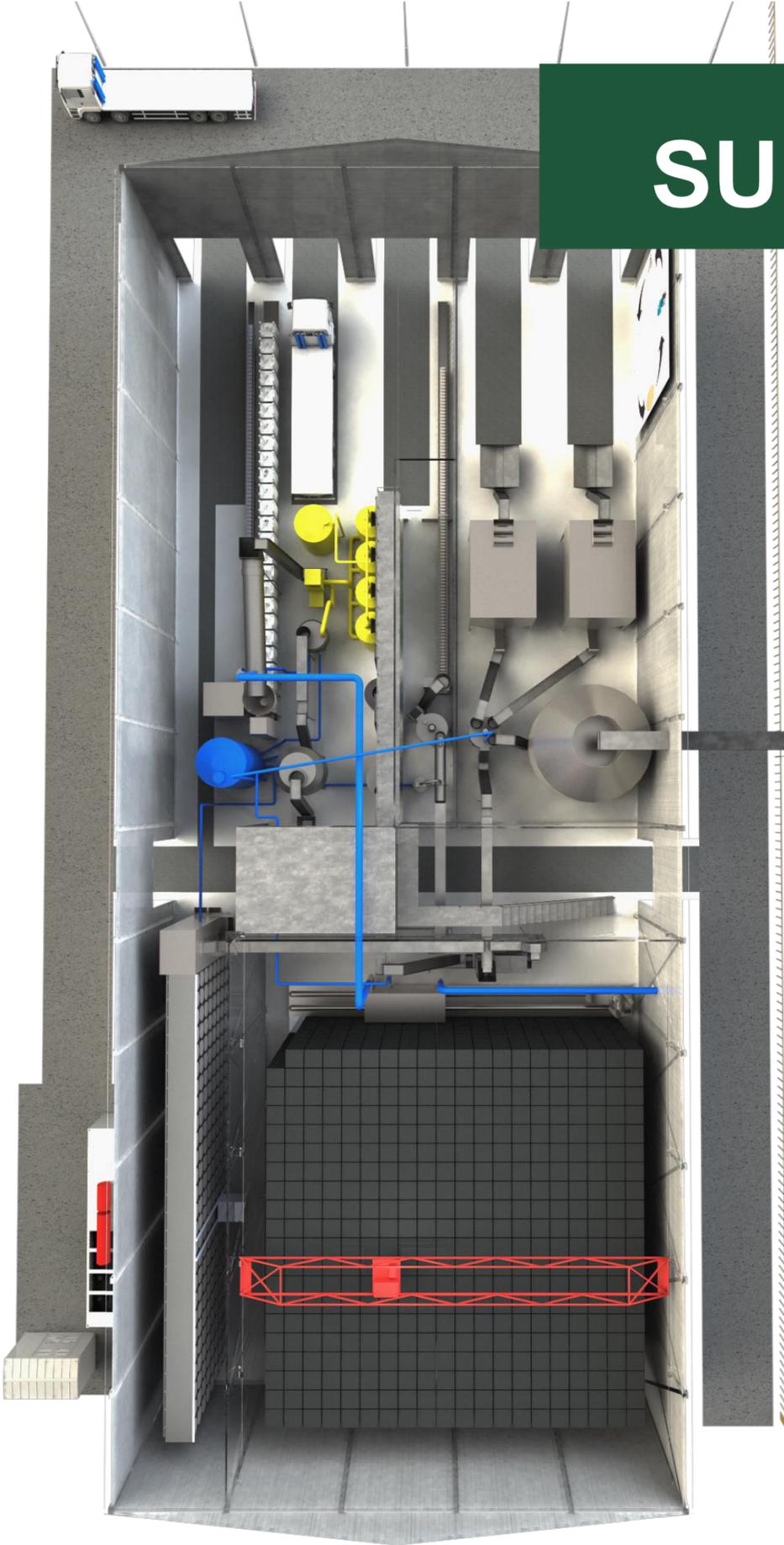
**Total project implementation time:** 14 months.

**IRR:** avg. of 67% over 5 years

**Equity IRR :** depending on the equity/debt mix and interest rates in the country of project implementation.

**Partnership structure:** Open for productive dialogue to agree on the share split / practical collaboration structure.

**Return index (average per year in 5 years):** 300%



# SUMMARY

bpp's current and conservative business model is based on the production & sales of the following produce:

- **Proteins for animal feed** (signed contract for protein for 2\$/kg for 30 thousand tons)
- **Organic fertilizer** (signed contract for fertilizer for 200\$/t for 50 thousand tons)
- **Construction of plants** (signed memorandum with the UN on the construction of plants in indonesia and memorandum for Israel)

The business model does not include the potential upsides through:

- **Revenues for recycling of organic waste** (we did not take into consideration any revenues for the waste collection/processing).
- **Revenues from chitin and chitosan** (both higher value produce that can be obtained with limited amounts of effort/additional capex).
- **Revenues from the transition to production of liquid humic fertilizers** (higher value produce that can be obtained with limited amounts of effort/additional capex).
- **Revenues from reducing greenhouse gas emissions** (for every tons of organic waste we process, we reduce CO<sub>2</sub> output by well over 1.5 tons of, with carbon credits currently trading between \$40 – 80 per tons).
- **Subsidies from the state** (we do not take into consideration any subsidies/tax advantages related to green investments).

# CONTACTS



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