



# Bühler's role in the insect industry

InsectSavo, 14.04.2021



**Protix opens insect protein production plant**  
BERGEN OP ZOOM, NETHERLANDS – Protix opened its 14,000-square-meter insect protein processing plant on June 11 in Bergen op Zoom, Netherlands. It is the first industrial insect protein production plant built by Bühler Insect Technology.

Source:Protix



**Innovafeed launches world's largest insect factory, announces new US site and closes €140 million in new fundraising**  
SalmorBusiness - 20 November 2020

Source:Innovafeed



**This France-based startup raises €190.6M to build world's largest insect farm by 2022 ; Here's why**  
by Shubham Sharma — October 7, 2020 in News, (Crowd)funding, Startups silicon can

Source:Ynsect



# About Bühler Insect Technology





# Every day, billions of people come into contact with Bühler



06:30

07:15

10:00

15:00

19:00

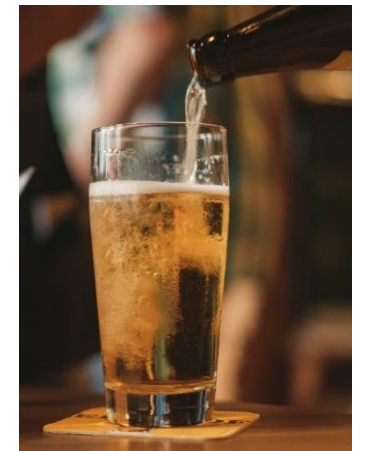
07:00

07:30

12:00

18:00

20:00





# Strong position in our industries

## Our market shares

### Grain Milling



### Optical Sorting



### Feed Production



Die Casting: Share of Parts in Cars



Leybold Optics: Glass Coaters



Grinding & Dispersion of Printing Ink

# Bühler at a glance

Global market leader with a strong presence in local markets



**CHF 3.3 billion**

Turnover



**140**

Countries



**98**

Service stations



**32**

Manufacturing sites



**12,767**

Employees



**100%**

Family-owned company



**Up to 5%**

of turnover are invested in  
Research & Development

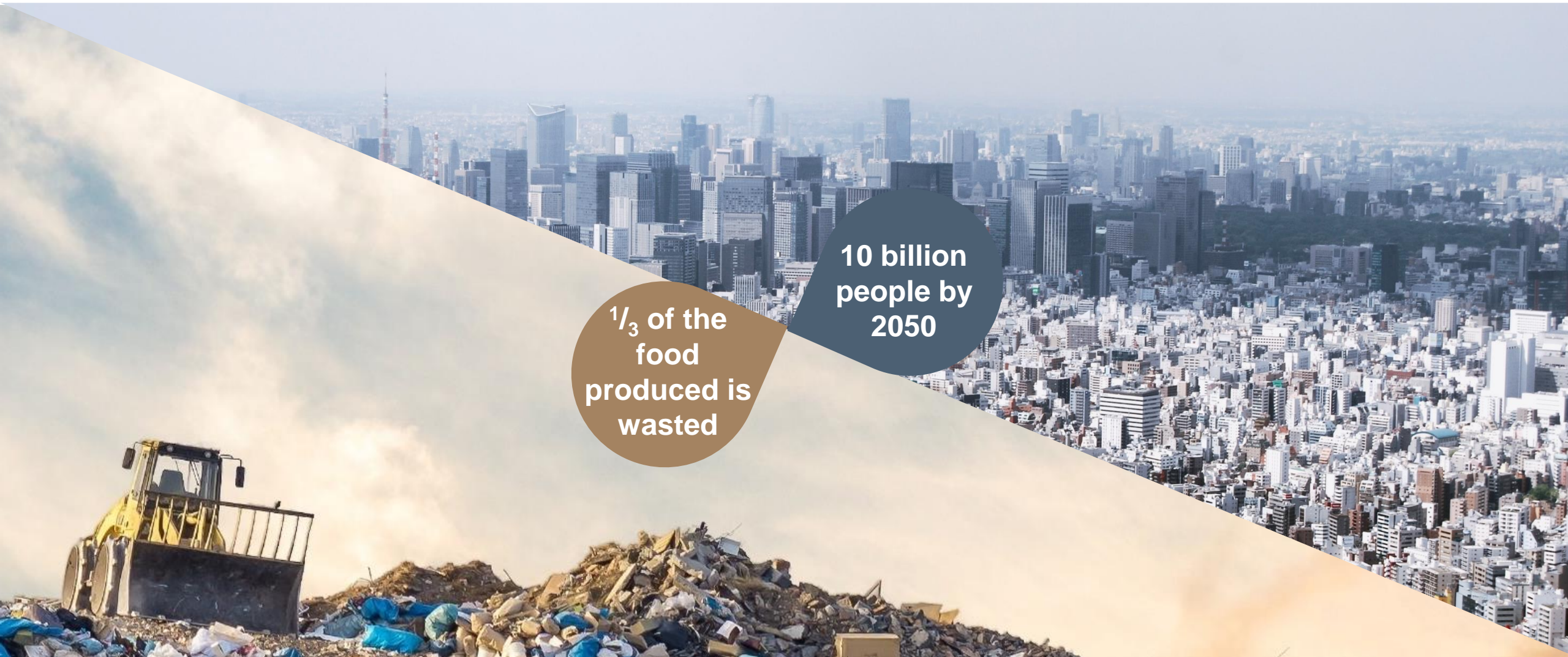


**50%**

reduction of energy, waste, and  
water in our customers' value  
chains by 2025.



# Challenges of the global food industry

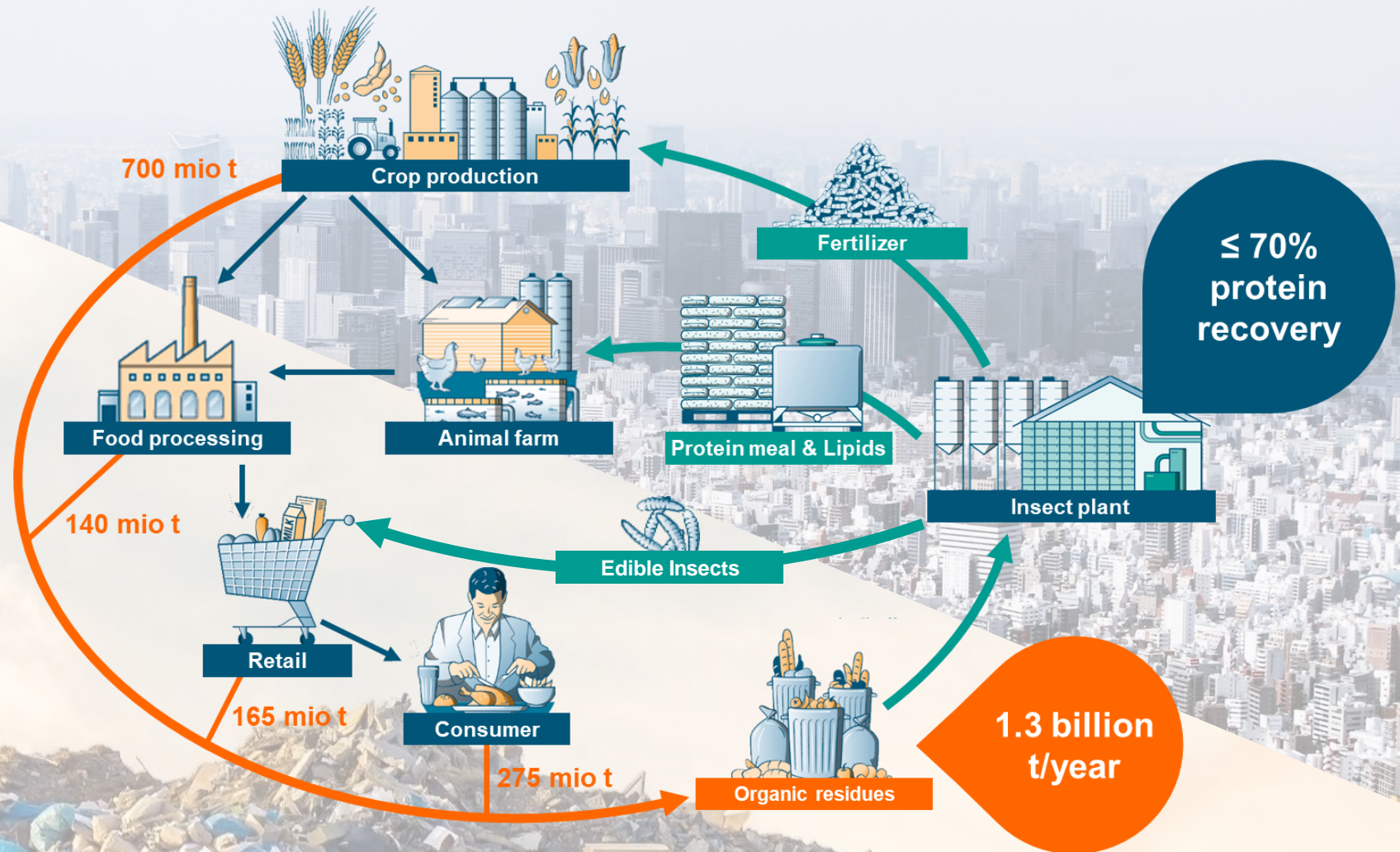


$\frac{1}{3}$  of the  
food  
produced is  
wasted

10 billion  
people by  
2050



... can be better addressed with the help of insects

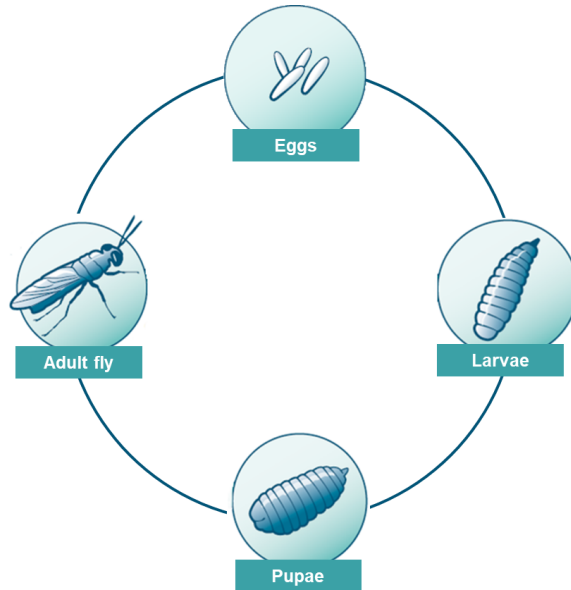




# What type of insects are we focusing on?

## Feed

Flexible on  
what they eat



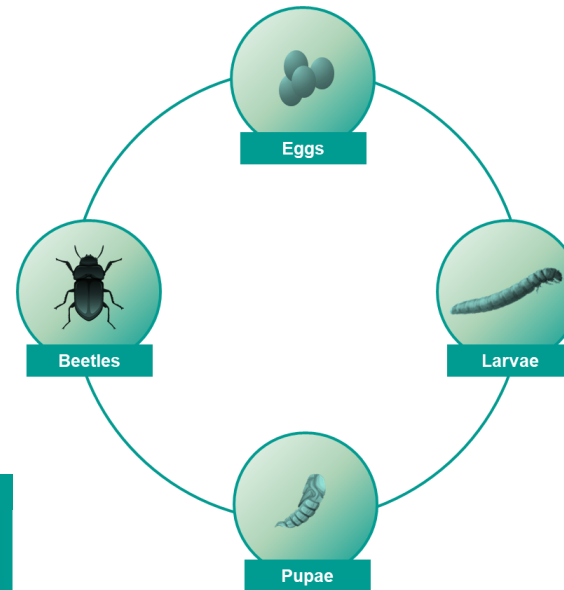
High nutrient  
accumulation

Naturally in  
high densities

**Black soldier fly**  
(*Hermetia illucens*)

## Food

Approved as  
foodstuff



Native species

**Mealworm**  
(*Tenebrio molitor*)



**Why are we focusing mainly  
on industrial scale facilities?**

BUHLER



# Drivers towards industrialization of insect farming

Today's insect production as a hybrid between farming and industry



**Labour intensity**

**Inefficiency**

**Variations in  
product quality**



**High Prices**



**Limited Supply**



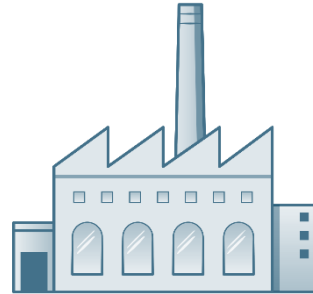
**Automation**

**Economies of  
scale**

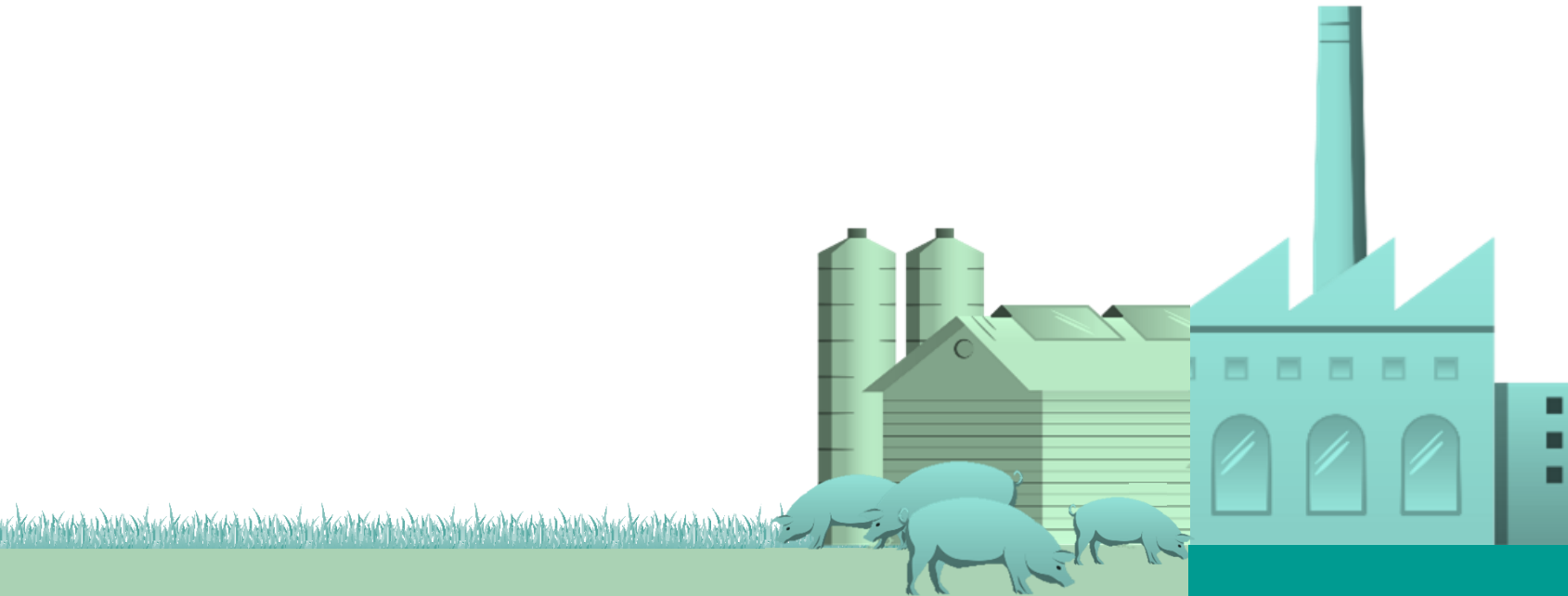
**Standardized  
products**



**Compatibility with  
feed and food industry**



# A sustainable alternative for farmers and the food industry



## Mealworms as alternative livestock for farmers

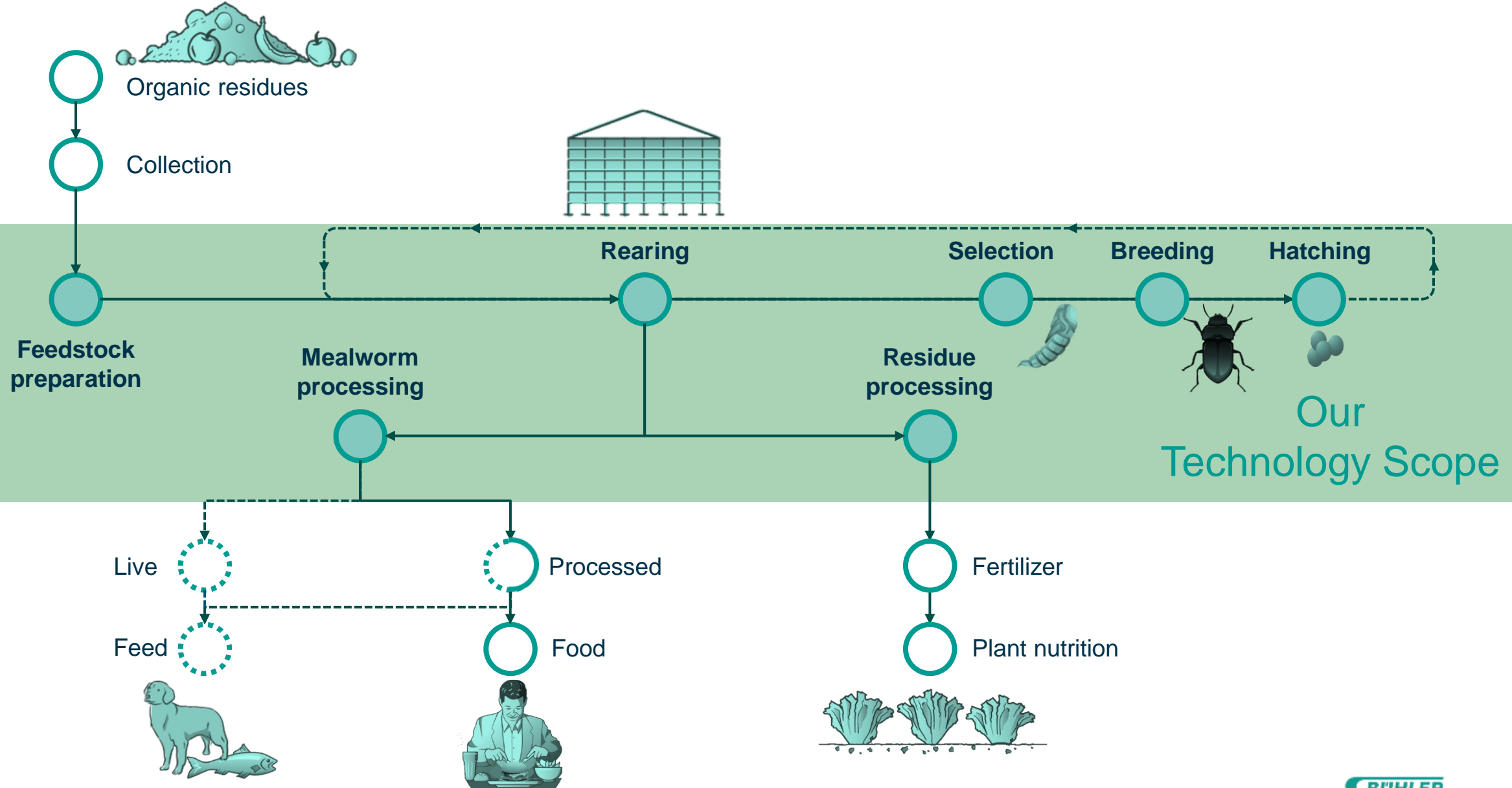
- Lower environmental impact than conventional livestock
- Transformation of existing agricultural buildings possible
- Ideal for co-operatives (decentralized rearing / centralized processing)

## Mealworms as alternative protein source for the food industry

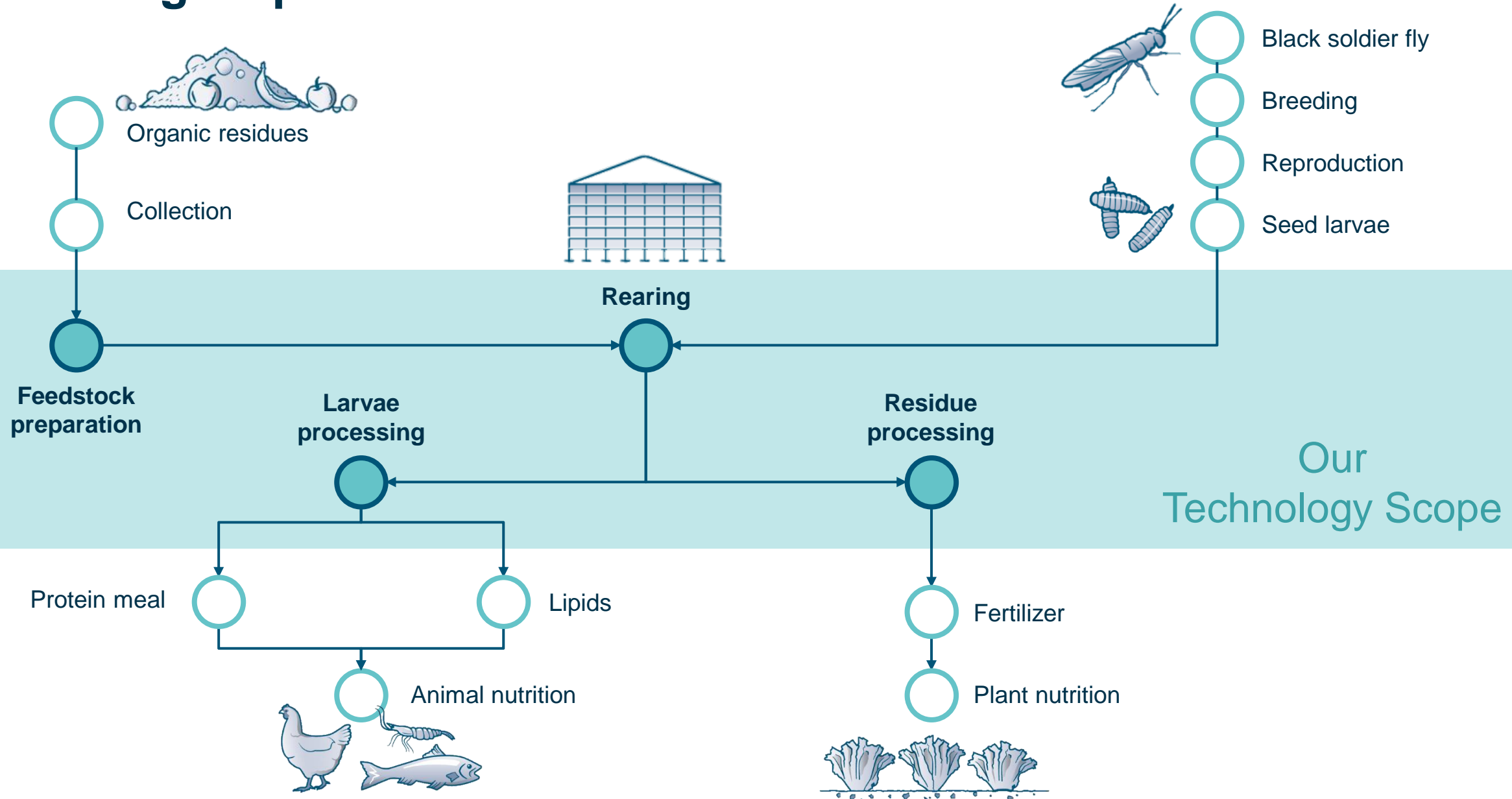
- Industrial-scale mealworm farming in the urban area
- Meet the growing demand for meat-alternatives
- Ideal for food processing companies that want to upcycle their side streams



# Processing steps – Insects for food



# Processing steps – Insects for feed





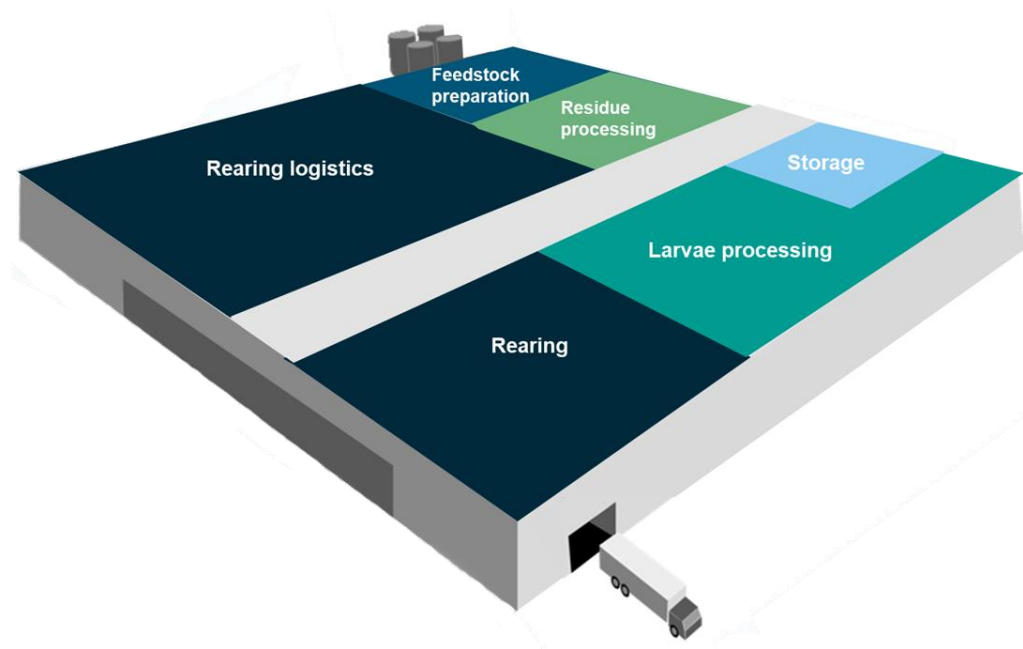
# BIT Product Portfolio - Insect Plants

Capacities	Feedstock*	Larvae Processing**	Protein Output***
Pilot	5 – 25 t/d	0.5 – 1 t/h	0.3 – 1.5 t/d
Medium	50 – 150 t/d	2 – 3 t/h	3 – 9 t/d
Large	200 – 500 t/d	4 – 7 t/h	12 – 30 t/d

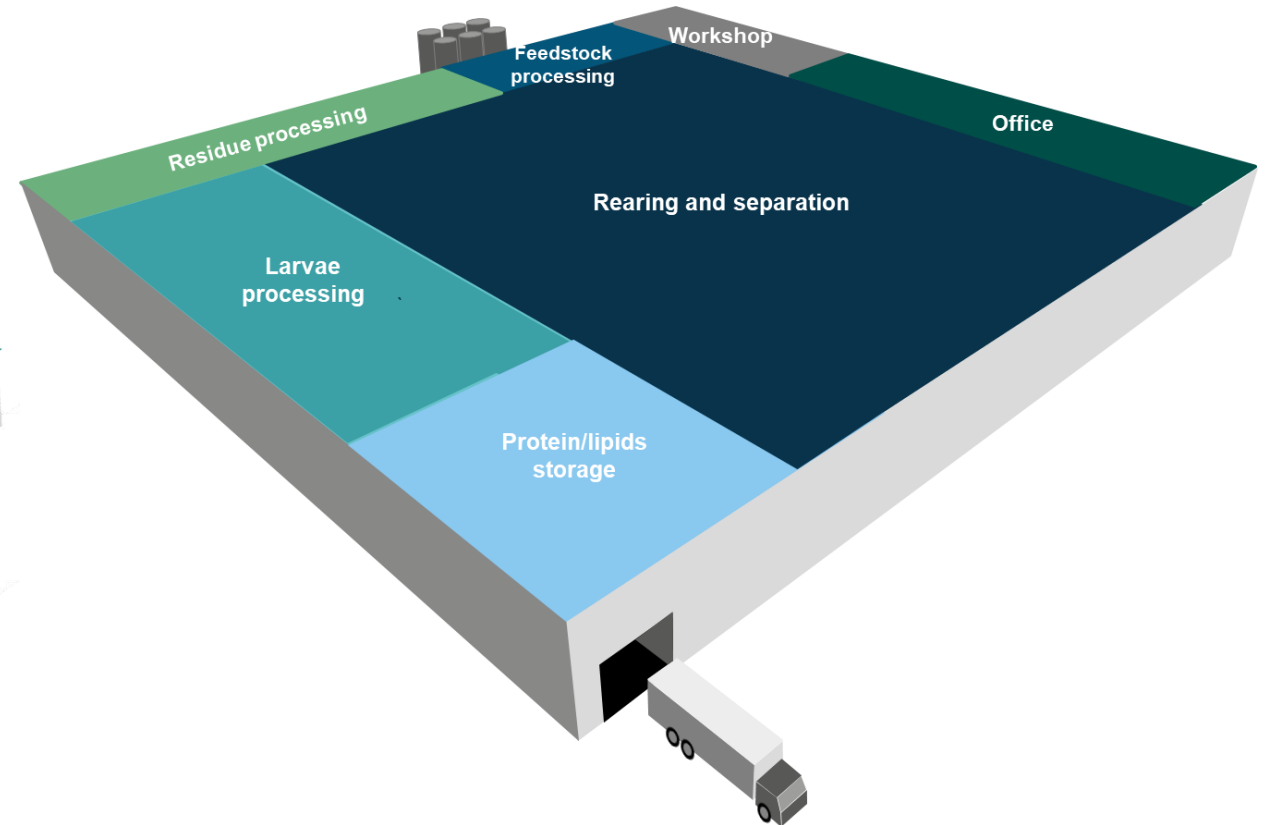
\*wet feedstock

\*\*wet larvae

\*\*\*dry protein meal

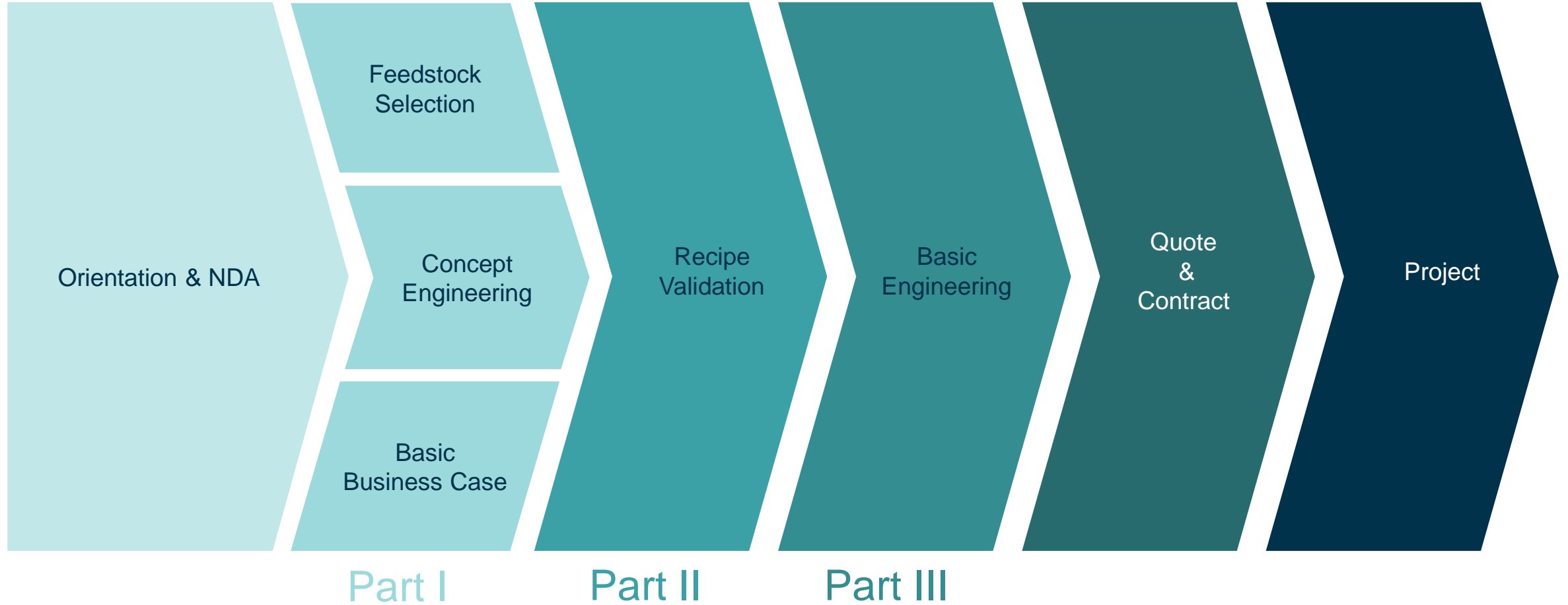


**Pilot Insect Plant**  
Footprint ~1400 m<sup>2</sup>



**Medium-Large Insect Plant**  
Footprint ~10'000-20'000 m<sup>2</sup>

# The feasibility package is the basis for a successful project





**Thank you for your attention!**