



MAKERSXCHANGE



Co-funded by the  
European Union

# Uprooting Urbanism

a collaboration by Jonas Görden & Bram de Vos

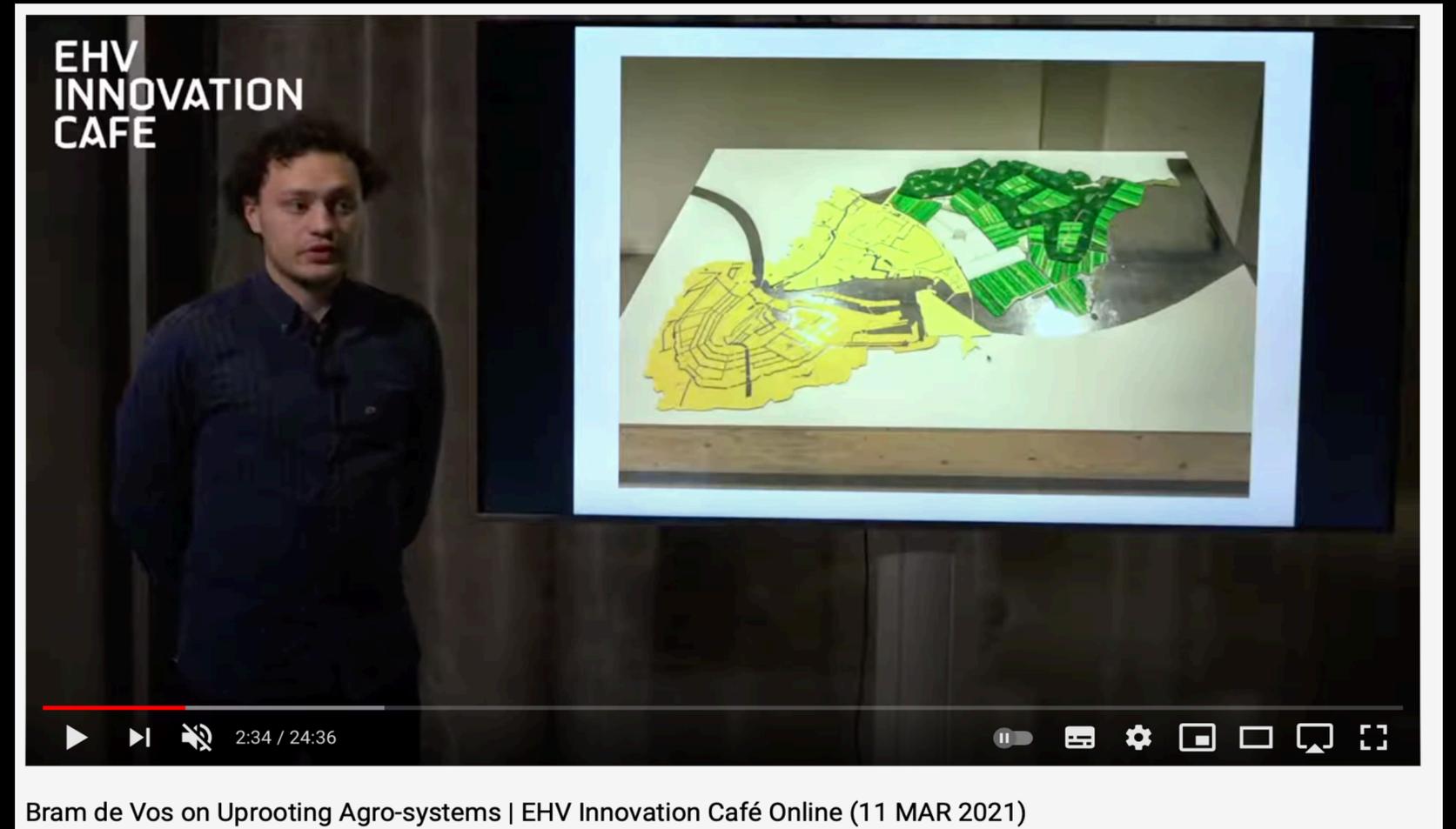




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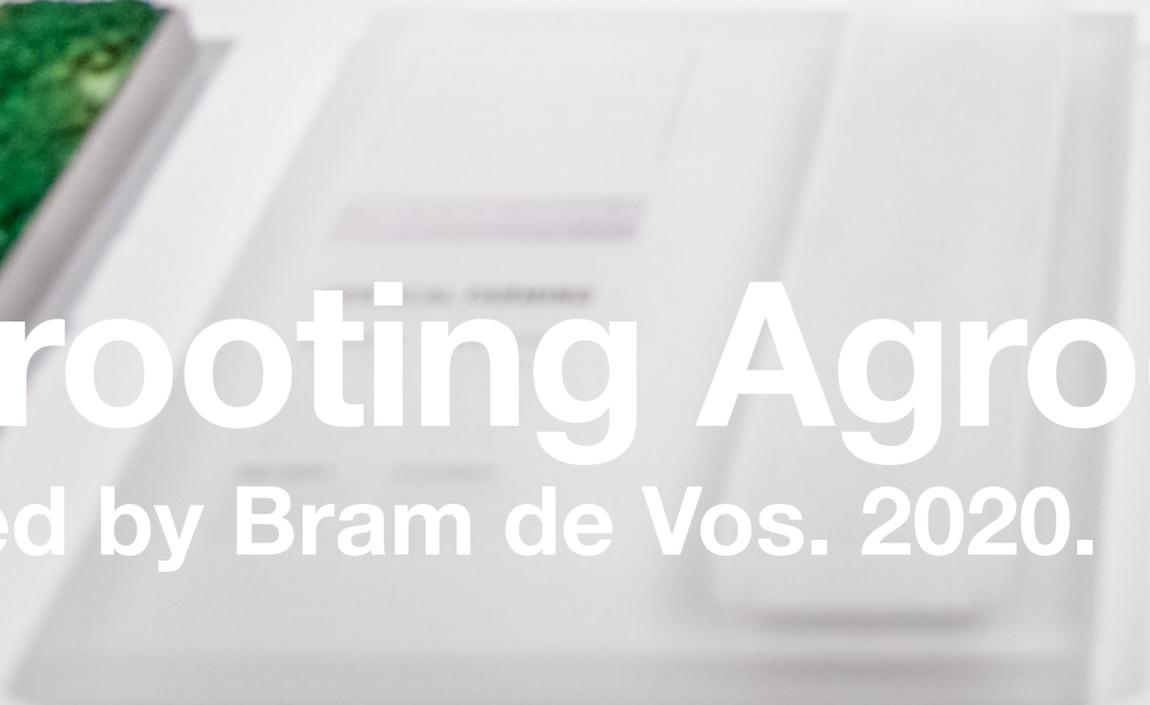


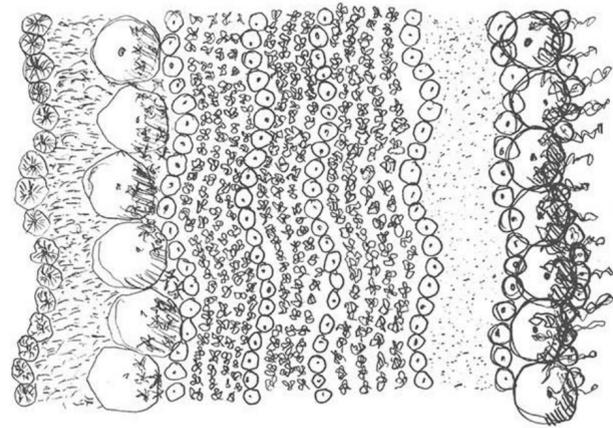
**6 months ago.  
What has happened in the last months?**



# Uprooting Agro-Systems

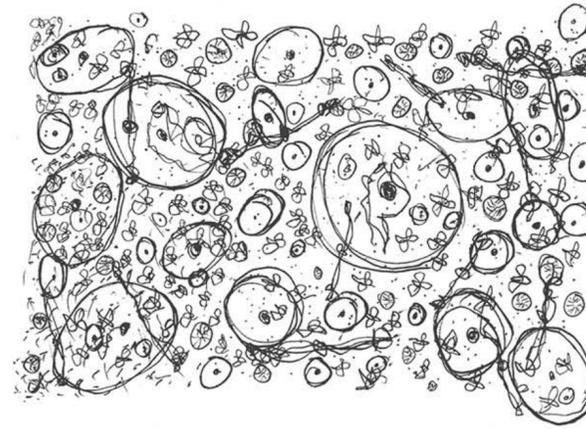
created by Bram de Vos. 2020.





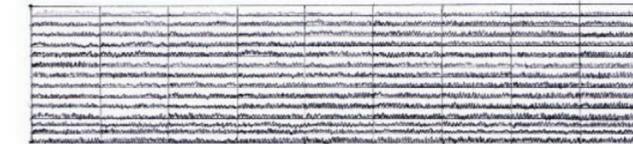
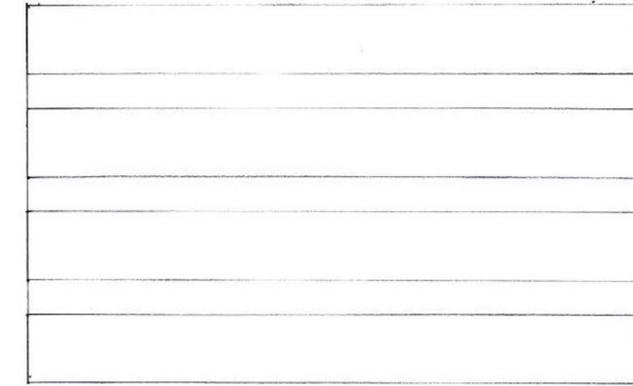
## SYNTROPIC FARMING

- + **BIODIVERSITY**  
Combining different crops together creates a rich ecosystem with high biodiversity. Plants can benefit from each other, for example by attracting insects that feed on the neighbour plant's pest.
- + **HIGH EFFICIENCY**  
Rows of certain plants grow densely beside each other. The long rows are very efficient to manage which is why it's a strong competitor of mono-culture.
- **SMALL VARIETY**  
On a small space of land Syntropic Farming can't provide the necessary variety of crops to feed a city.
- **SEASONAL VARIATIONS**  
Few plants have the capability to grow and produce food during the winter months.



## FOOD FOREST

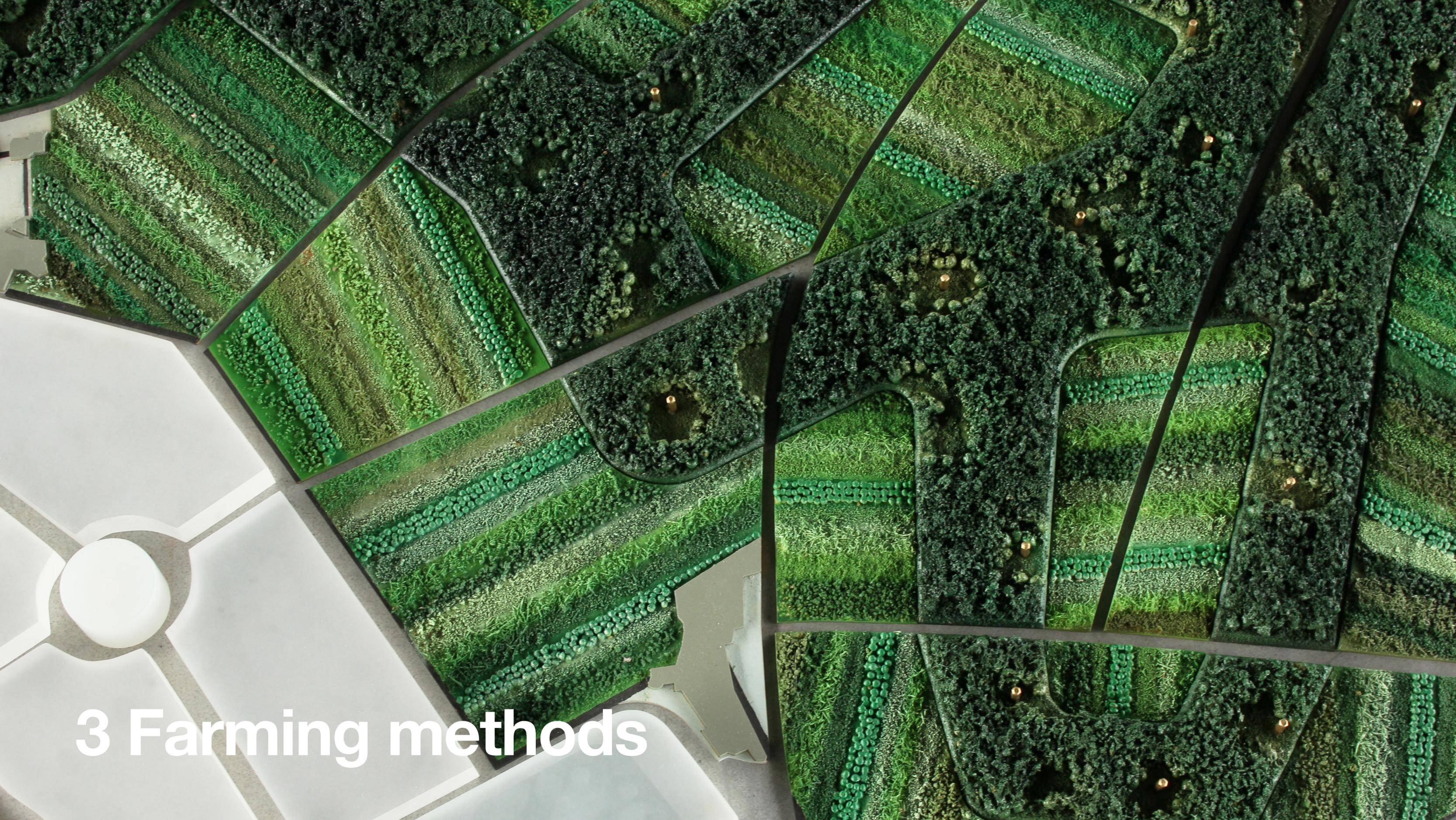
- + **LARGE VARIETY**  
A well managed food forest can contain over 500 different edible species. The selection in supermarkets will change.
- + **BIODIVERSITY**  
A healthy food forest will evolve the richest biodiversity you can imagine. This does not only benefit farming but will also act as the lungs of Amsterdam improving air quality of the area.
- **SELF SUFFICIENT**  
In its mature state a healthy food forest will take care of itself.
- **QUANTITIES**  
More space is needed to produce the same amount as syntropic farming. But the kind of produce from the food forest is needed in smaller quantities.
- **SEASONAL VARIATIONS**  
Few plants have the capability to grow and produce food during the winter months.



## VERTICAL FARMING

- + **HIGH EFFICIENCY**  
An artificial robotic environment where the optimal conditions for plants are simulated. This ultimate control over the plants enables them to grow faster than they would in nature.
- + **CONSISTENT OUTPUT**  
Artificial light, regulated temperature, calculated input of organic nutrients and water. Plants can grow in this controlled environment all year round independent of weather and seasons.
- **SMALL VARIETY**  
Few crops are capable of growing in a vertical farm whilst being economically viable.
- **LITTLE DIVERSITY**  
Shielded from sunlight and locked up in a building, vertical farming does not contribute to biodiversity.

# 3 Farming methods



# 3 Farming methods

# Inclusive

## STORAGE

Pickling, freezing, vacuumsealing, dark dry rooms or deep frying are all clever techniques that help to have as much as possible available at any time and avoid food waste.



## LOGISTICS

A new form of water transport will get food from the farm to the people in Amsterdam. The distribution centre sends their online orders out by boat and delivers to the doorstep. This could work the same for households, restaurants or supermarkets.



## COMMUNITIES

Durgerdam  
Ransdorp  
Het Noeind  
Zunderdorp  
Broek in Waterland  
Zuiderwoude



## WILDERNESS

A place where nature is left untouched to develop a high and complex biodiversity over time. This is also necessary to complement and support the neighbouring farms.



## WATER

Water is essential for the farm infrastructure. The harvested food is sent by boat to the distribution centre where it's further divided or shipped to the storage. Besides that, open waters provide recreational and travel opportunities for people. An ideal location for markets to sell fresh produce.



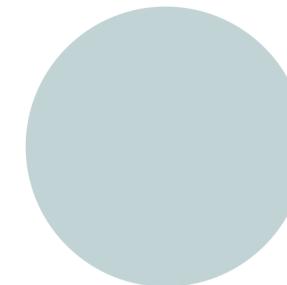
## DEVELOPMENT

Non-residential areas to develop in the near future. There is potential for expanding residential, industry, basic needs, leisure activities etc.



## CONTROL HUB

The control tower is the core of the system where information from all farms about their harvest is assembled, orders are processed and transport is managed. Data from sensors in the vertical farms and planting/harvesting routines are monitored here.



## DRONE TOWER

Harvesting fruit that grows high up in the trees is slow and relatively hard work. A specialised drone could help collecting fruit that is difficult to reach. This will give the food forest a huge boost in efficiency.



# Conversation

- Many questions but no answers
- Paris Agreement climate change
- Transitions



# Jonas Görgen



*Hoi*

# Jonas Görgen

- Brussels based Designer
- expertise in sustainable design, modular construction & circularity
- aspiring Urbanist & Spacial Planner



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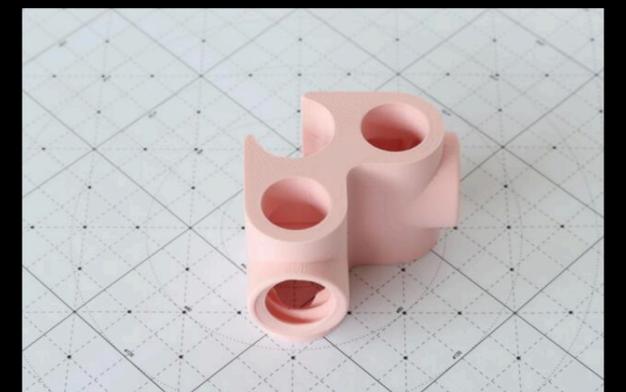
Hoi



Minimal Water 2019



The Line 2019



OS FOG 2018

FOOD

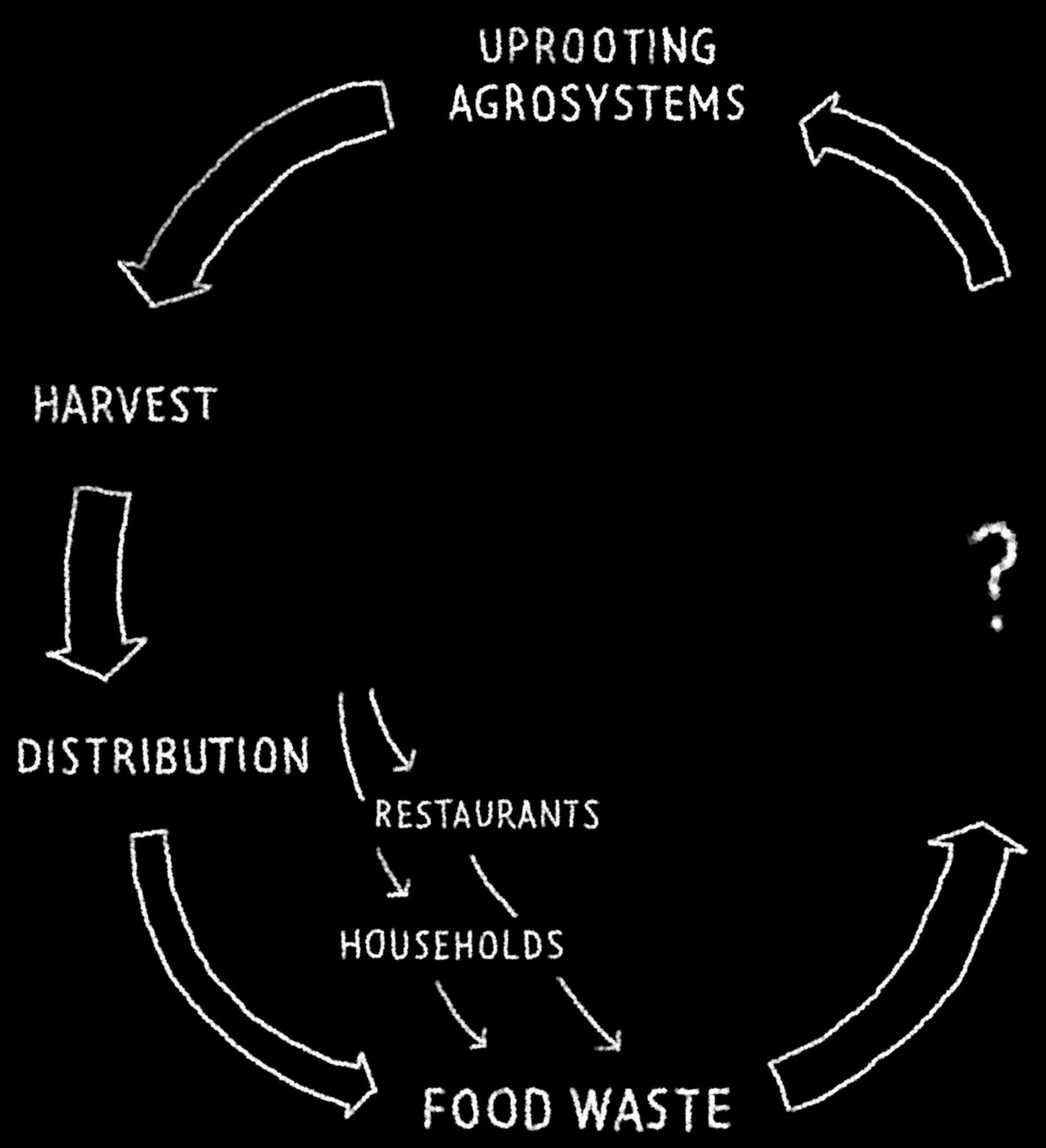
WASTE

FOOD

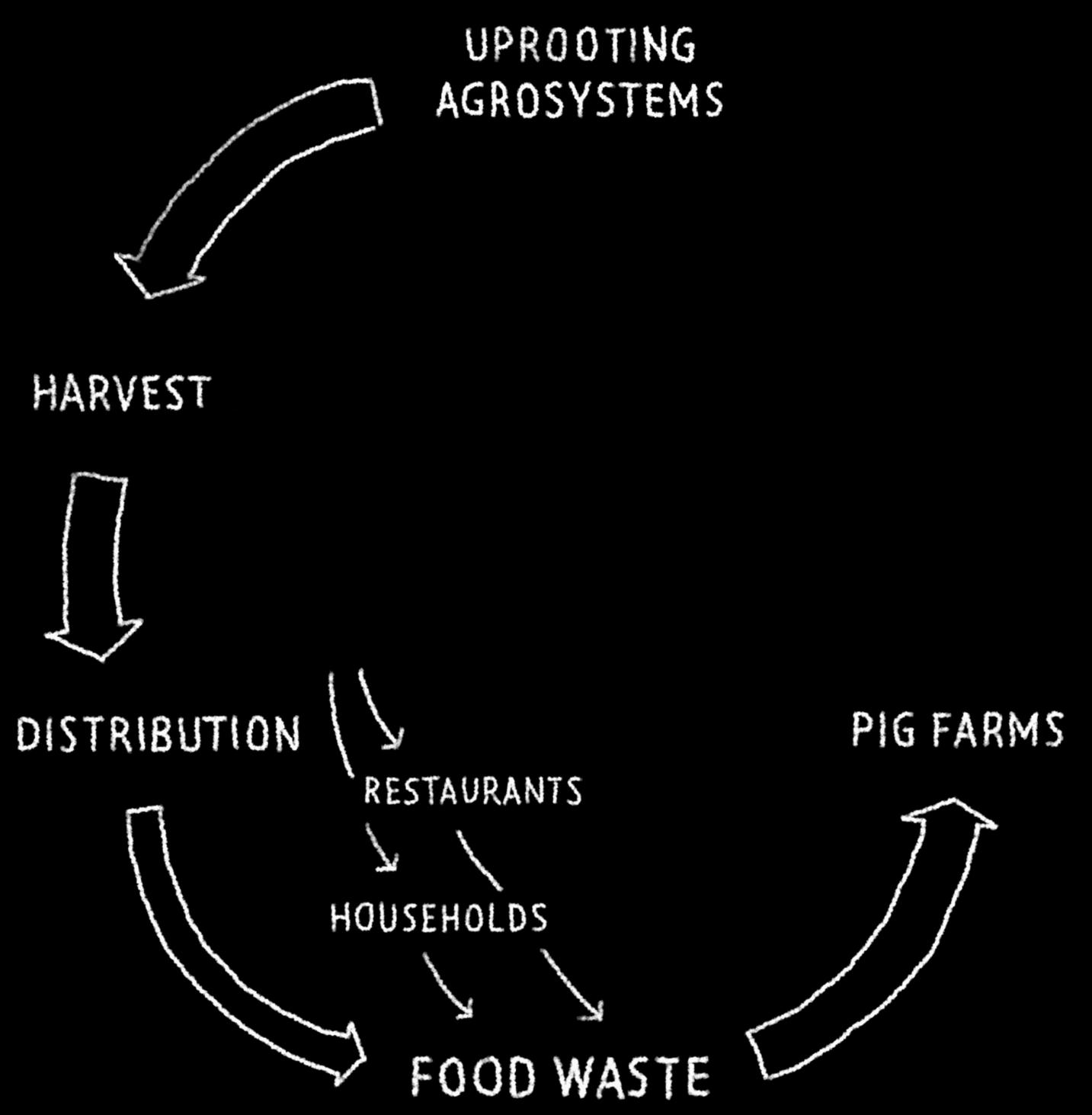
WASTE

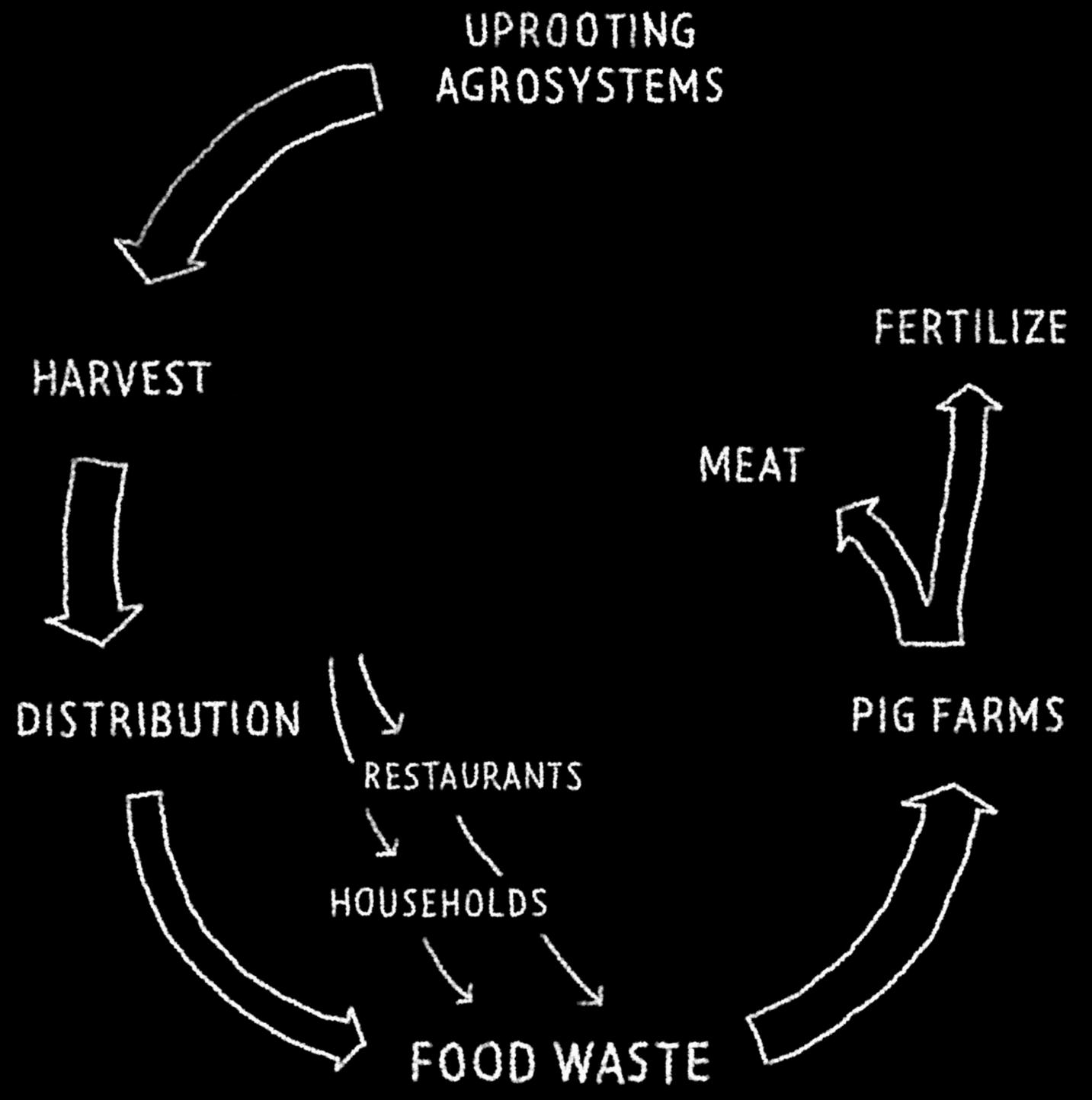


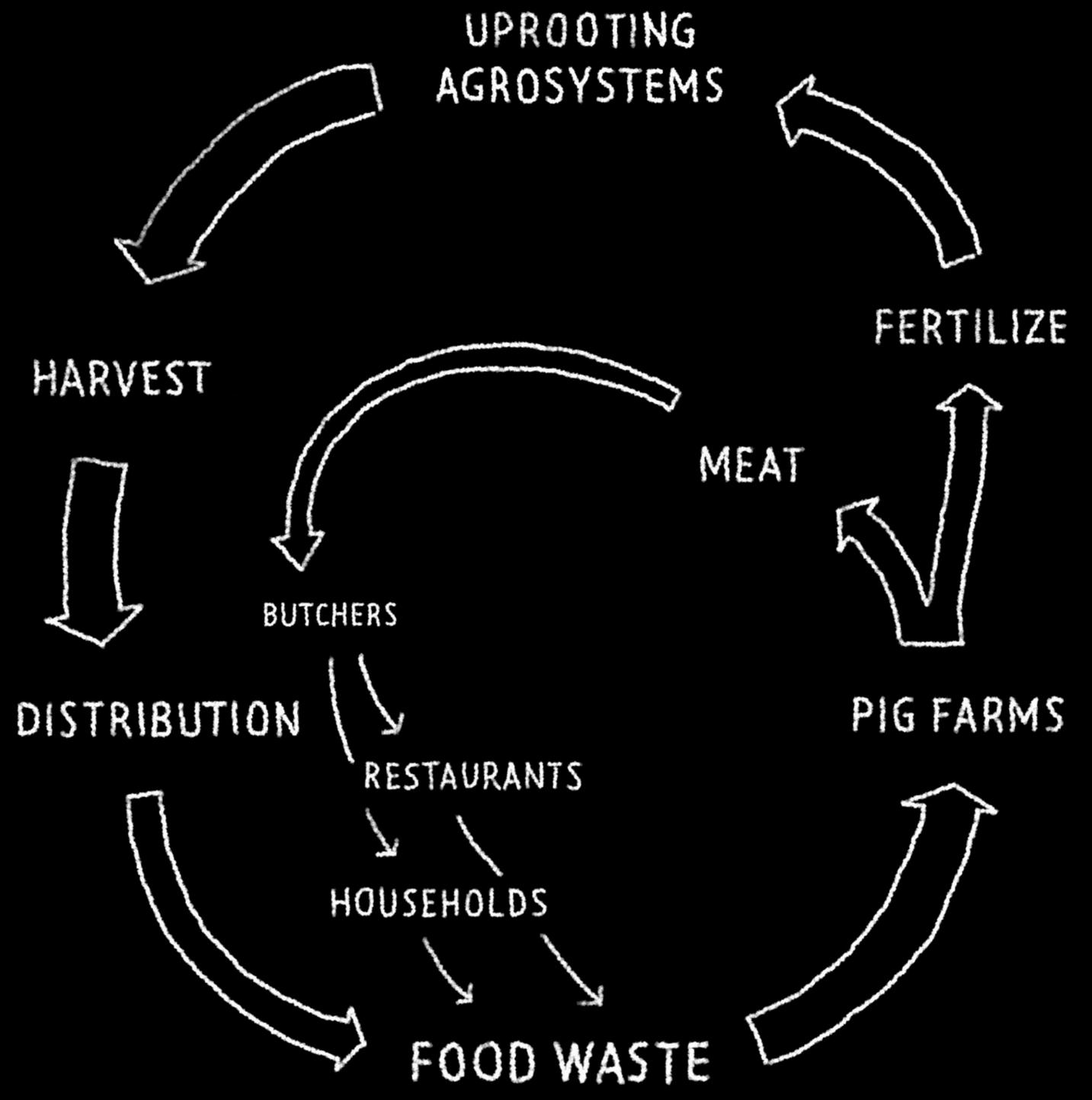


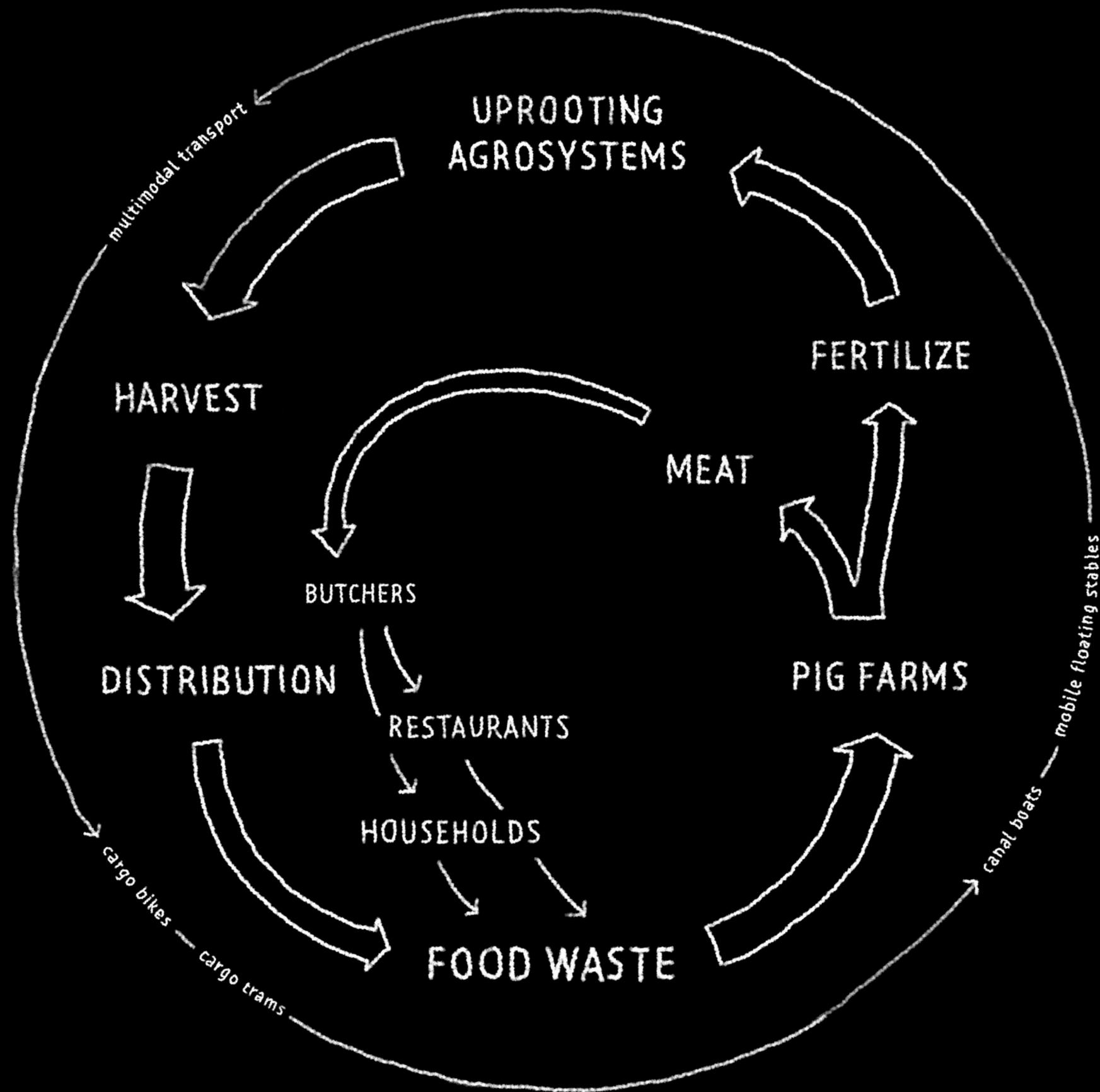






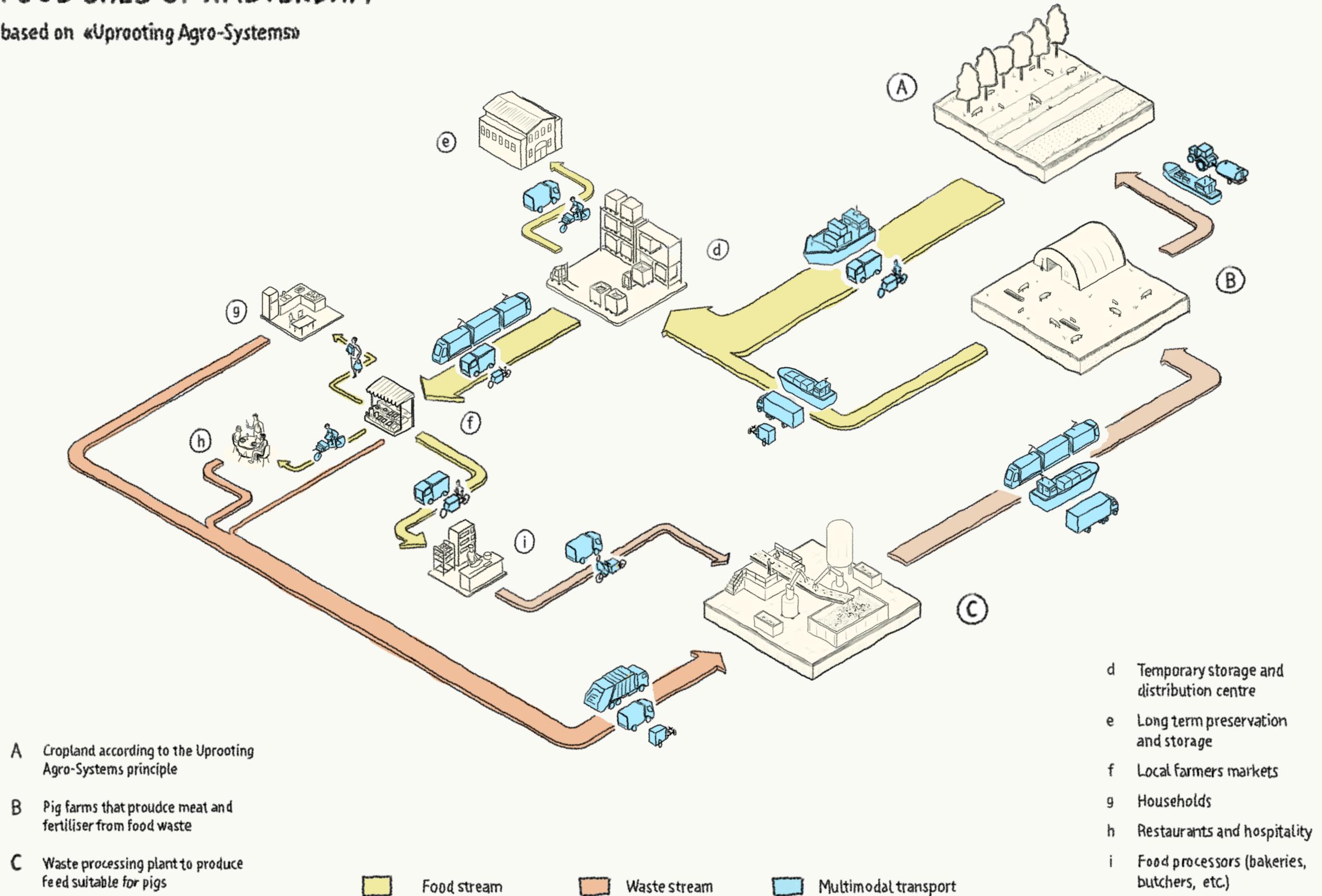






# FOOD SHED OF AMSTERDAM

based on «Uprooting Agro-Systems»





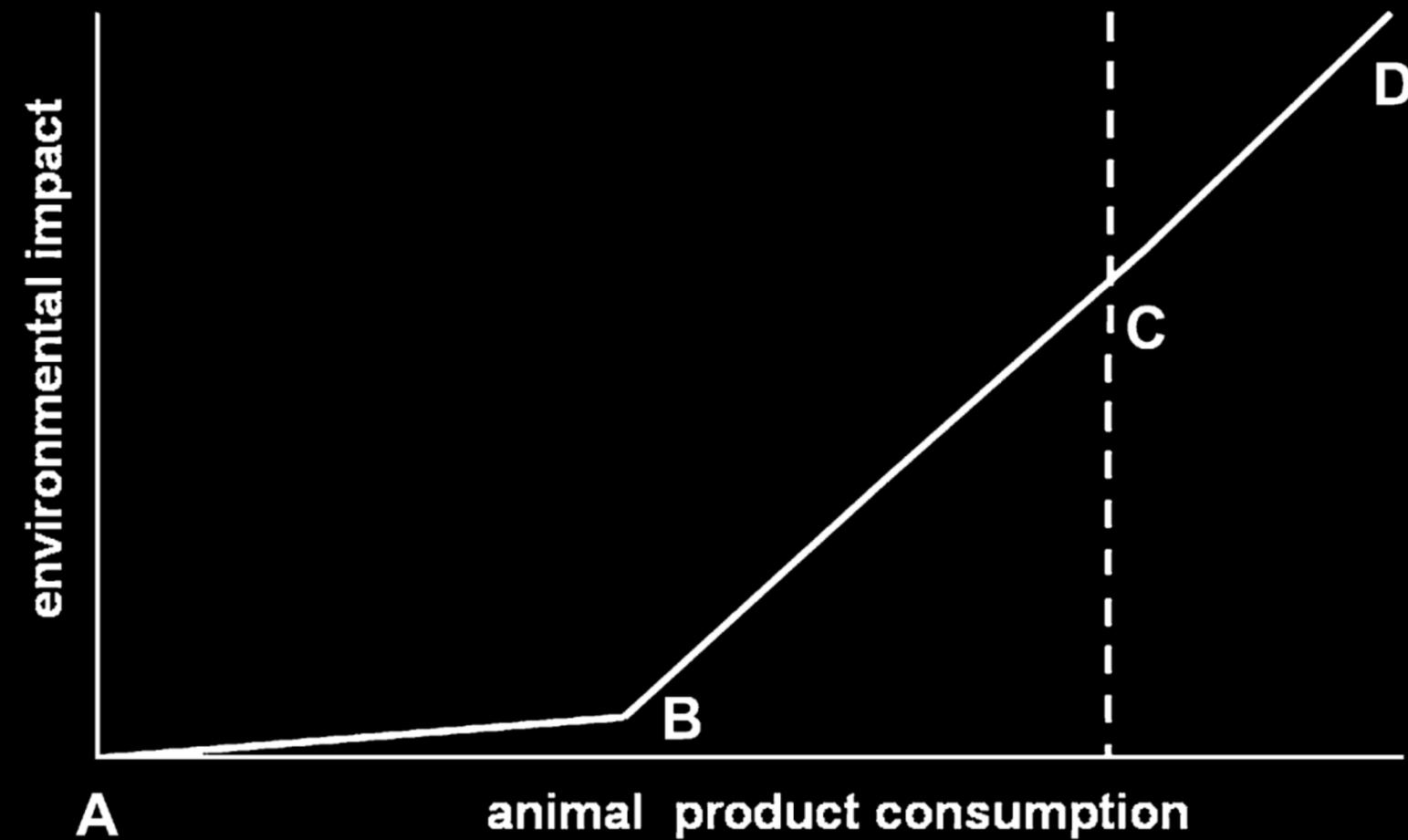


Fig. 4. The environmental impact of animal product consumption. In section A–B food residue is fed to livestock. In section B–D feeding crops are required as feed. The dotted line represents the current animal product consumption in the Netherlands.

When corrected for the total share of food residue in feed the amount of meat is equivalent to the amount of animal proteins advised by health organizations. However, current Dutch consumption is much higher.

# **“Use pigs against food waste.**

**The pig is one of the few animals that can handle food leftovers for human consumption. Through this animal, the enormous mountain of food residues can be given a useful purpose, thus partially closing the food and climate cycles again.”**

**Linda Janssen, chairman of the Producers' Organisation for Pig Farming (POV)**





# Uprooting Urbanism

Tools for the future  
made possible by the MakersXchange



**Food Forest**



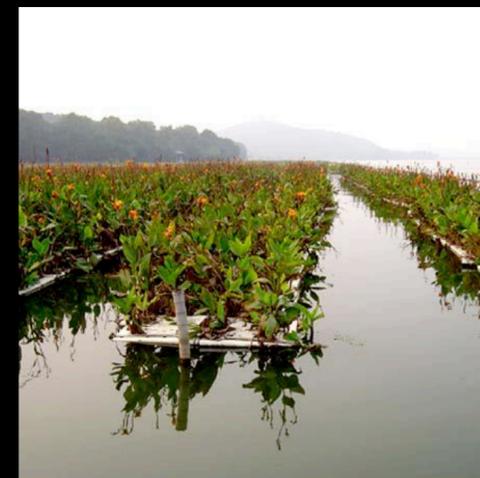
**Syntropic Farming**



**Agroforestry**



**Strip Cropping**

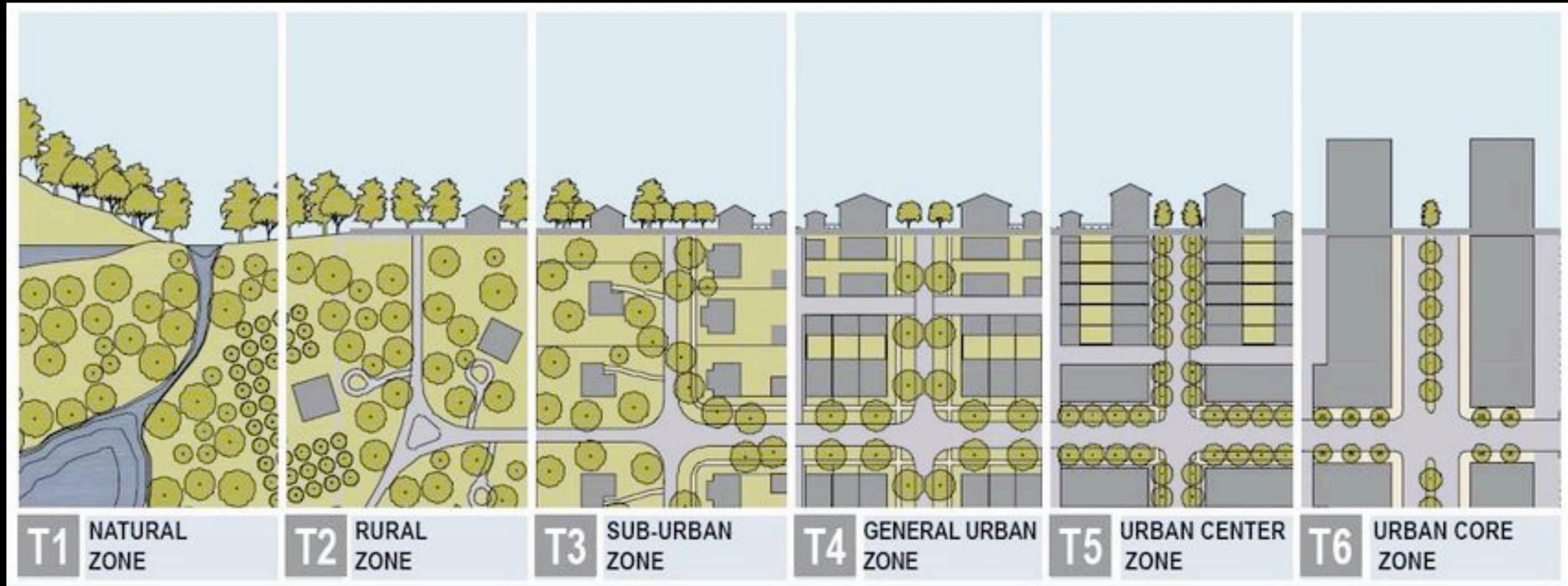


**Aquaponics**



**Vertical Farming**

## **Farming methods in focus**



Food Forest  
 Syntropic Farming  
 Agroforestry  
 Strip Cropping  
 Aquaponics

Food Forest  
 Syntropic Farming  
 Agroforestry  
 Strip Cropping  
 Aquaponics

Syntropic Farming  
  
 Aquaponics  
 Vertical Farming

Vertical Farming

Vertical Farming

# Rural to Urban Transect

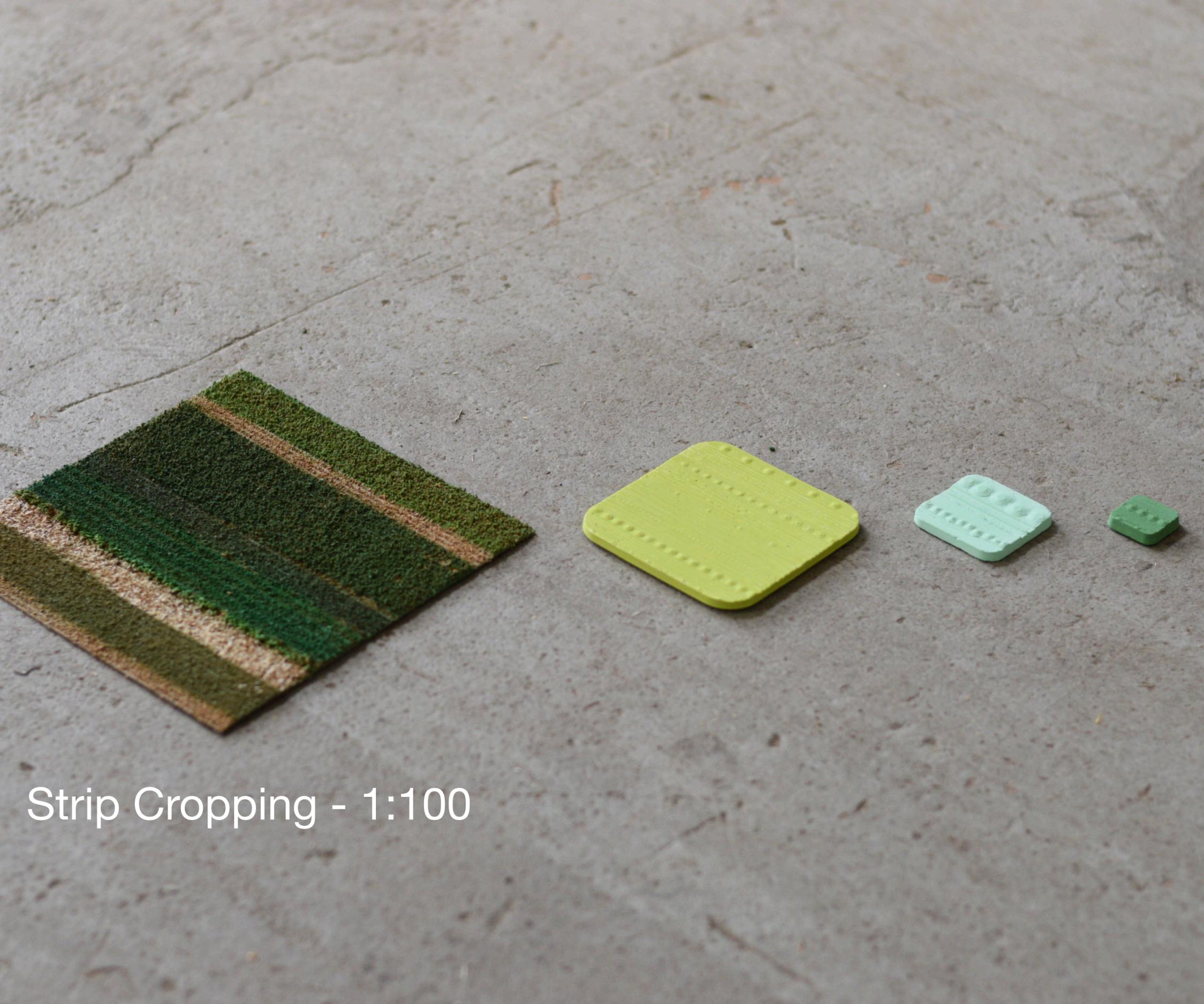
**How can we design these 'answers'?**

**By starting the conversation, in a visual and interactive way.**

**Implementing a variety of methods we together can create a formula. A formula that could answer the concerns and goals of the specific location.**





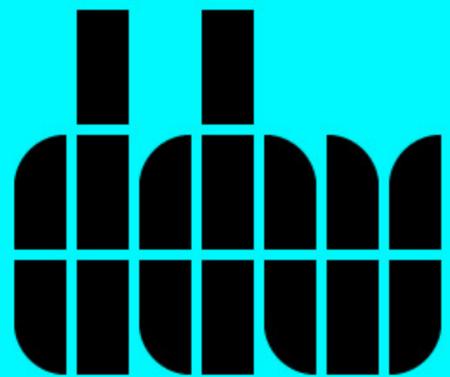
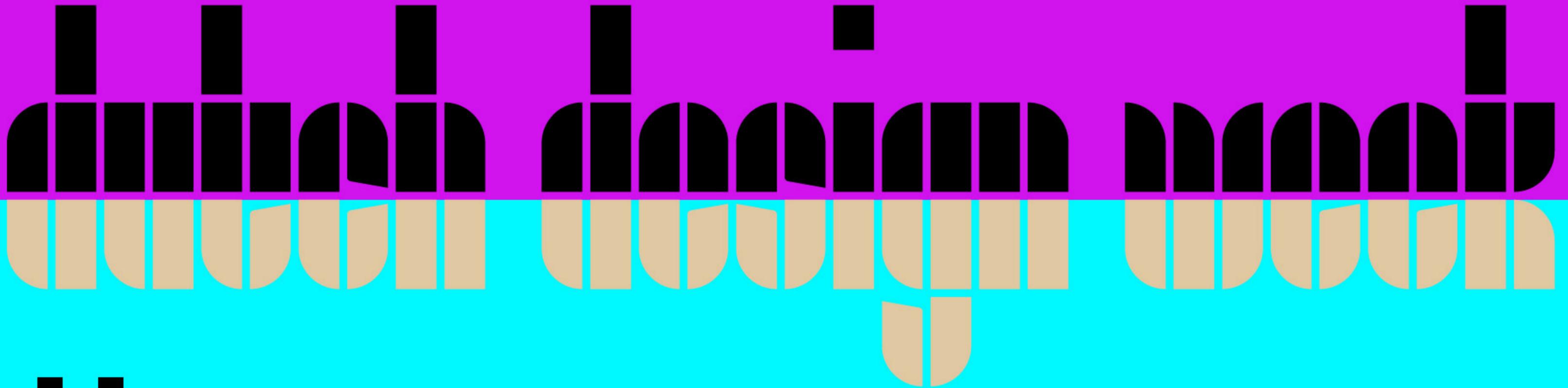


Strip Cropping - 1:100



# Our deadline.

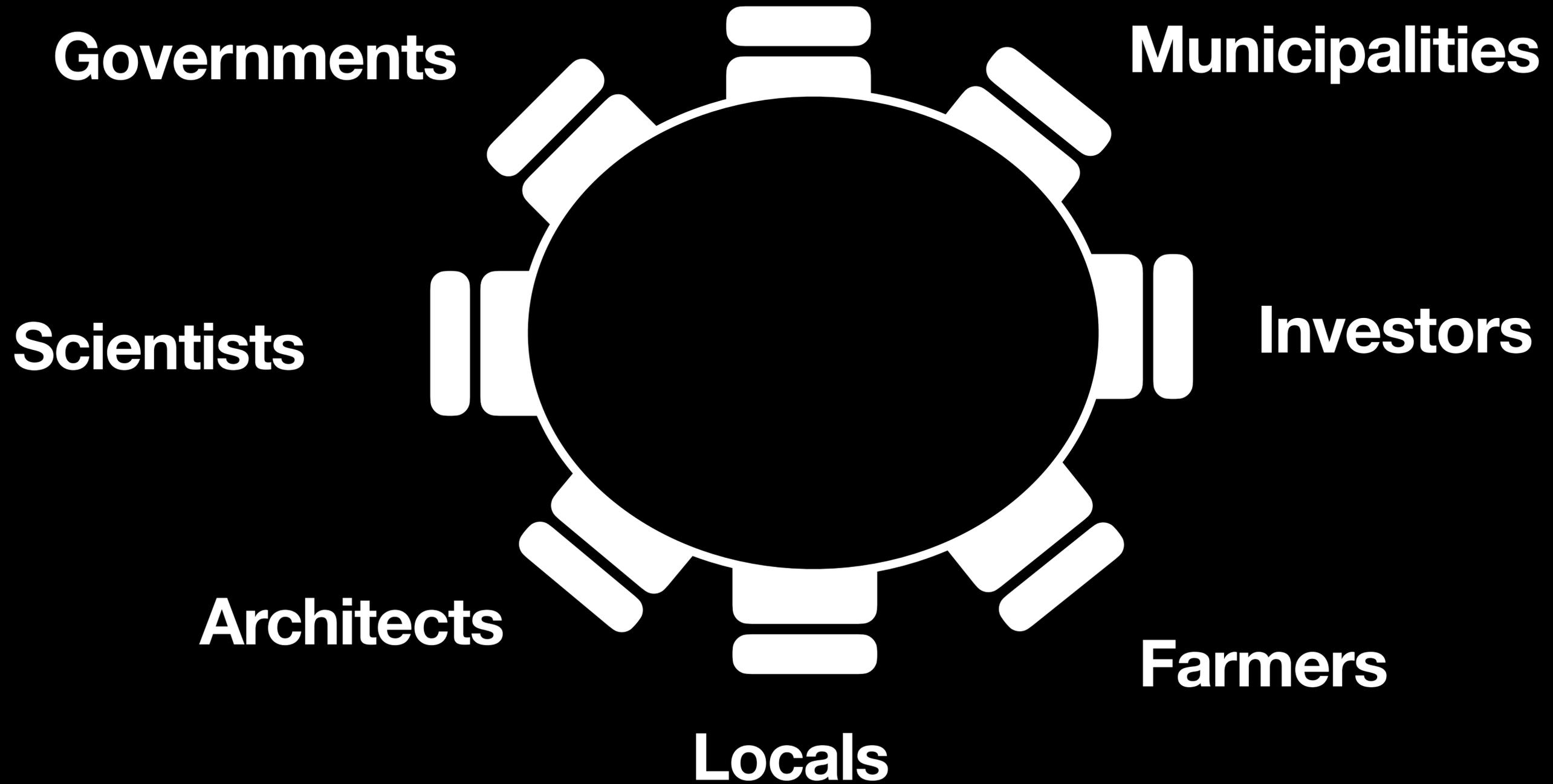
Exhibited with DrivingDutchDesign in the Pullman Hotel.



16-24  
october

# THE GOAL

# UPROOTING URBANISM



EXPO 2022

FLORIAD

AMSTERDAM - ALMERE NL



# The next expo

Floriade World Horticultural Exhibition,  
April 14 to October 9, 2022

**Thank you for listening  
Till the next time!**