Metropolitan Food Clusters & Agroparks

A regional planning perspective on agriculture

Mirte Cofino, April 3, 2016

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For quality of life

What if...

... Food would be high quality *and* affordable to all?

... Agriculture would produce no waste?

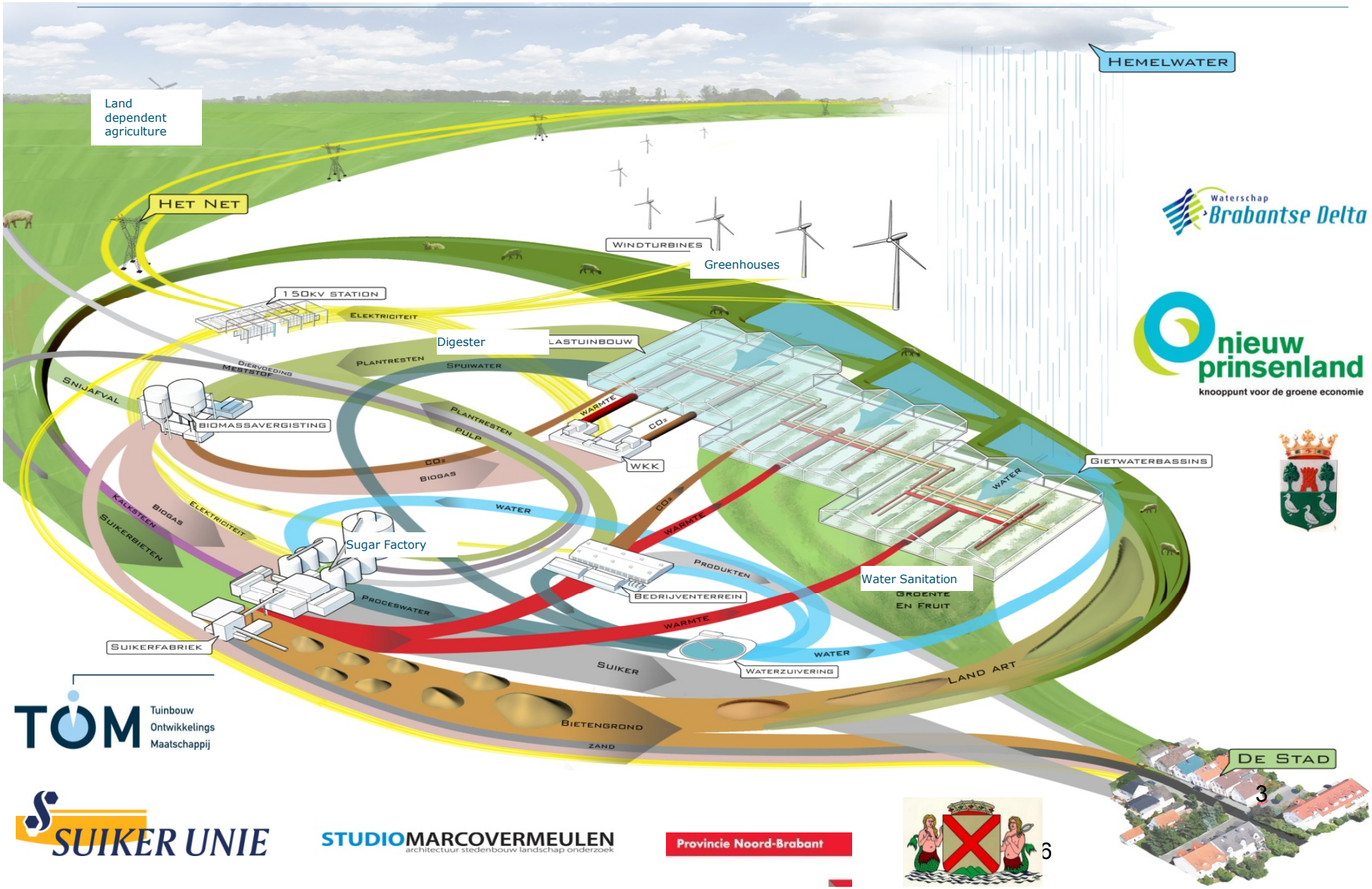
... Agriculture would no longer be dependent on intermediary traders?

... Post-harvest losses would be reduced to a minimum?

... Agricultural production and processing could be done without harming its environment?

... Agriculture would generate significant added value in the economy?

Agropark Suikerunie



Waterschap Brabantse Delta

nieuw prinsenland
knooppunt voor de groene economie

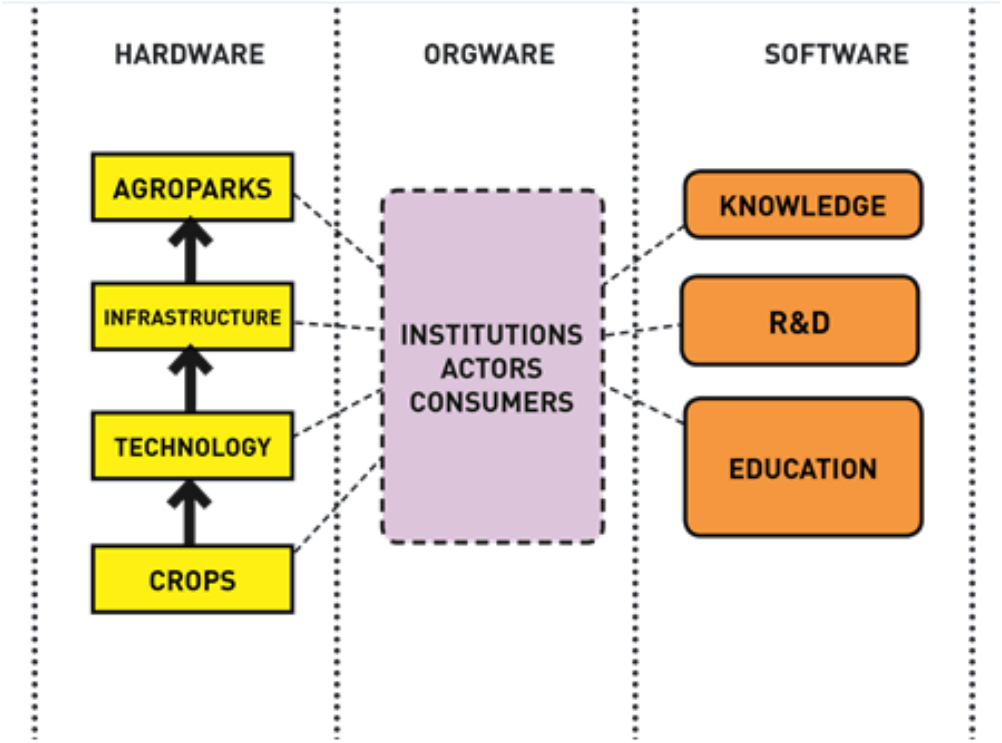
TOM Tuinbouw Ontwikkelings Maatschappij

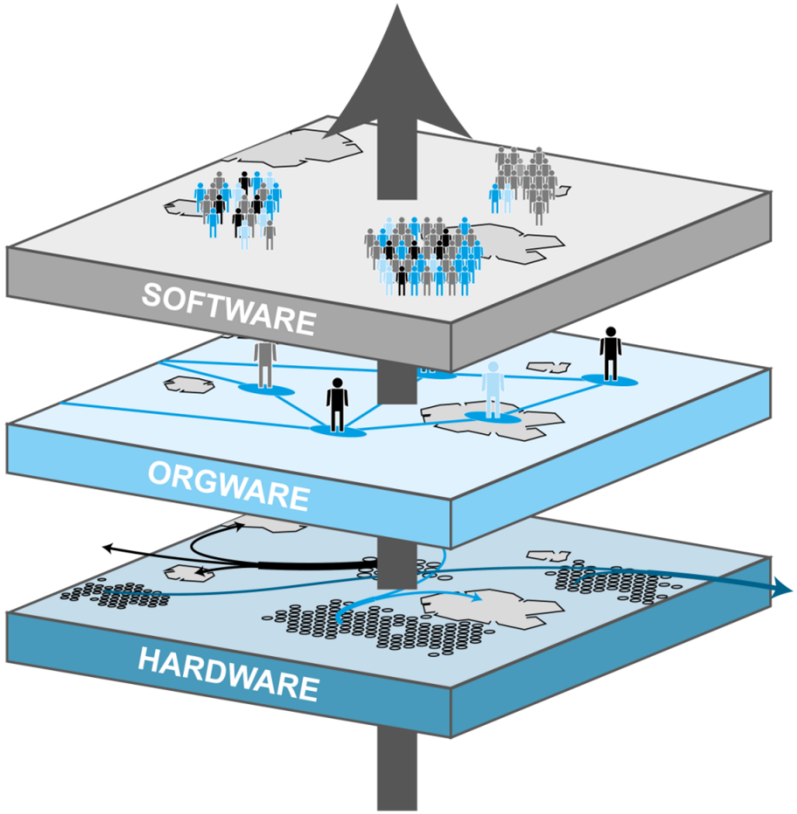
SUIKER UNIE

STUDIOMARCOVERMEULEN
architectuur stedenbouw landschap onderzoek

Provincie Noord-Brabant

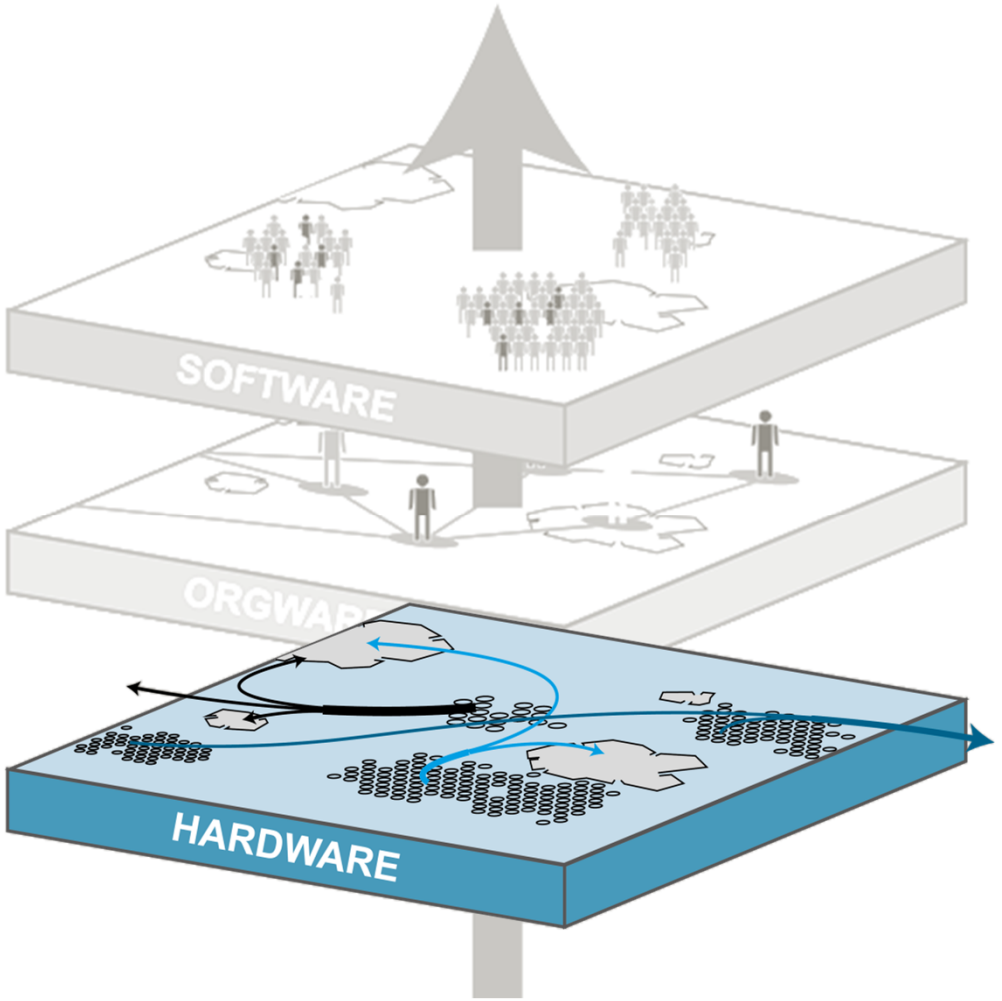
Agroparks require an integrated development





Leading design principles

- **Software**: creating the know-how for development and continuous innovation
- **Orgware**: Facilitating system innovation among all actors involved
- **Hardware**: resource use efficient production, processing and agrologistics



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Hardware: resource use efficiency

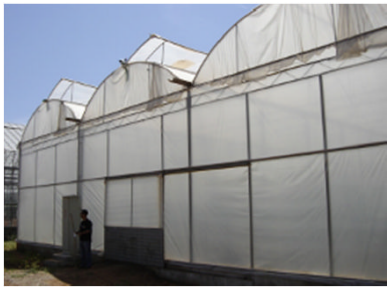
Law of the minimum factor:

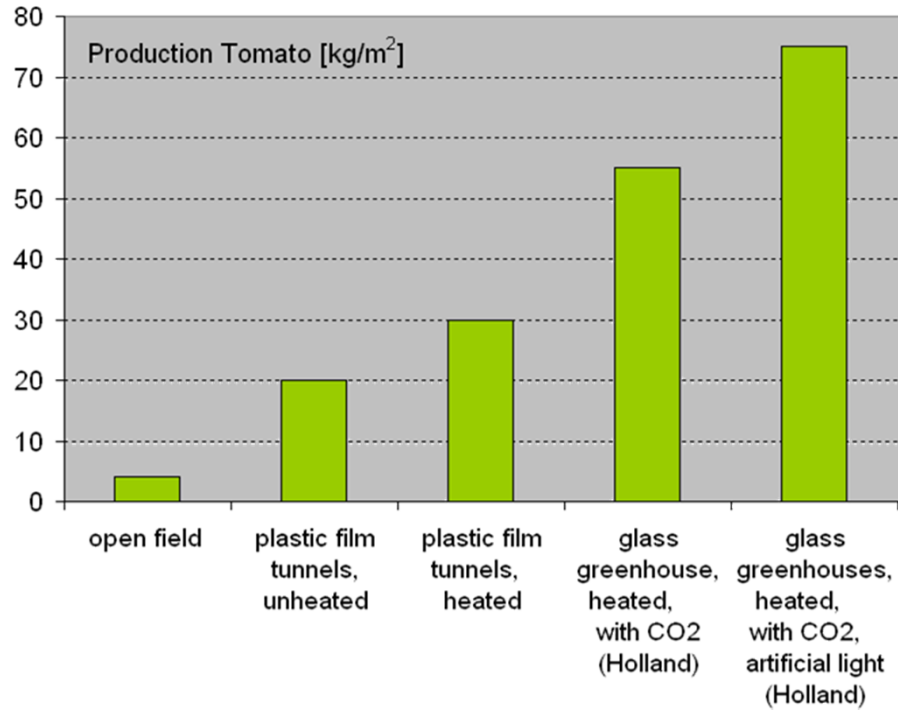
The overall result is as good as the weakest link

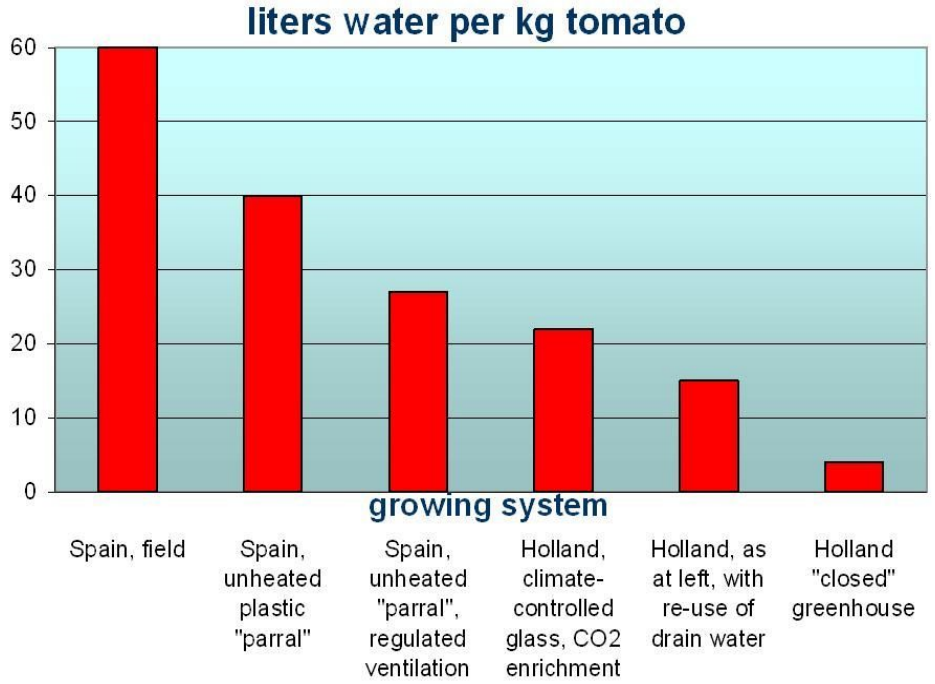
Law of integrated system development

Improvements have a better end result if other factors are also improved

Example: land- and water use in closed-system greenhouse production







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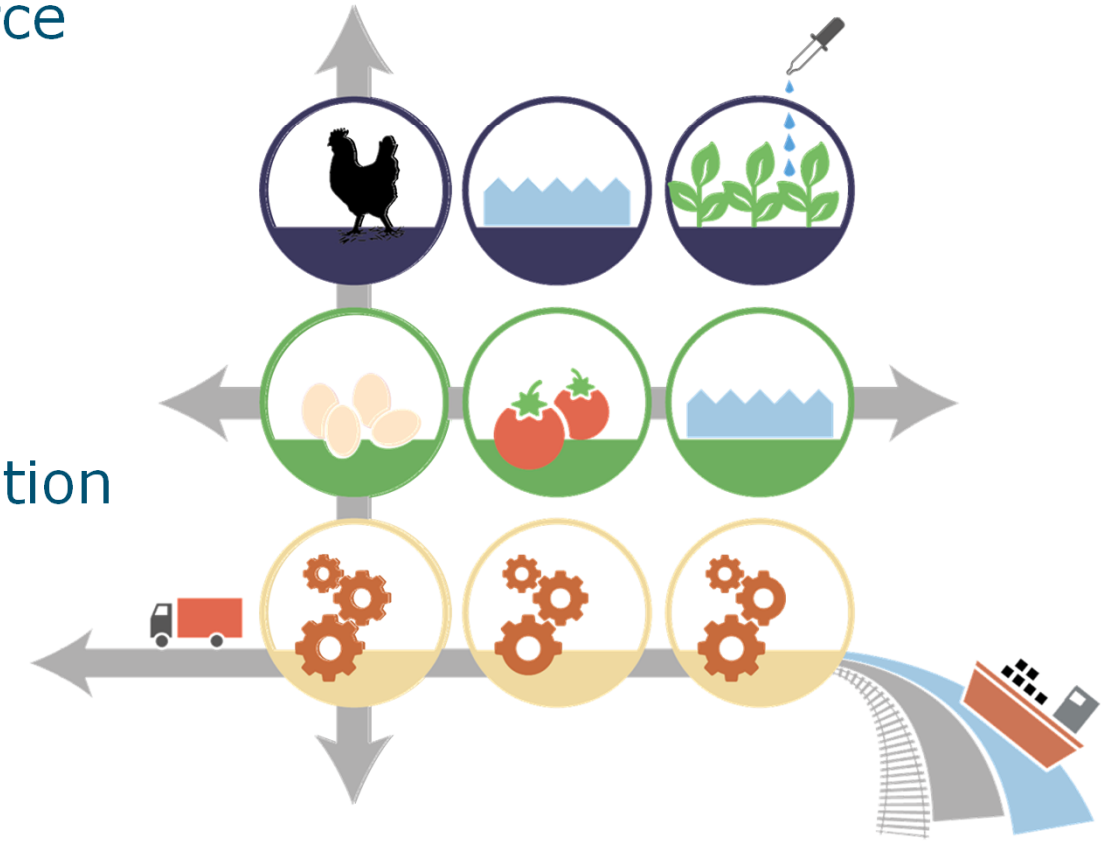
Technical innovation principles

Maximum resource use efficiency through:

- Resource use efficient technologies
- Vertical integration
- Horizontal integration
- Intelligent agrologistics



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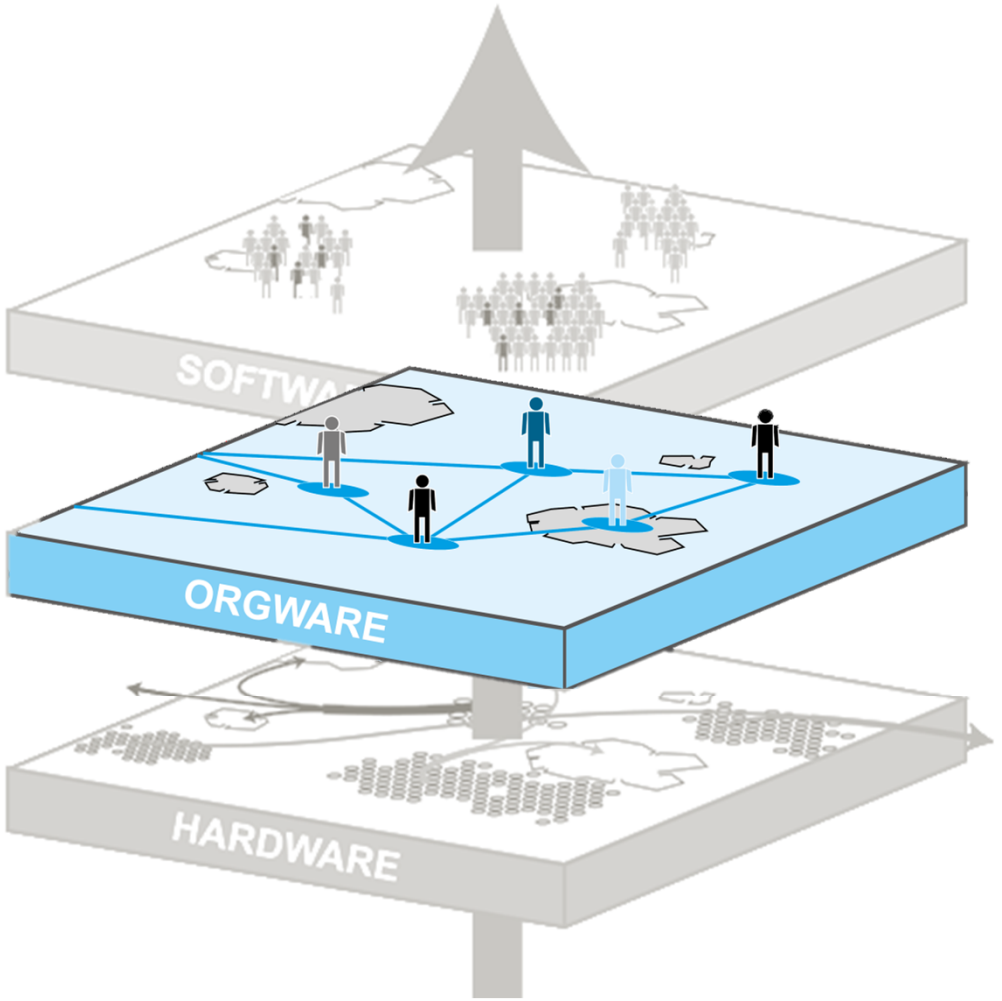

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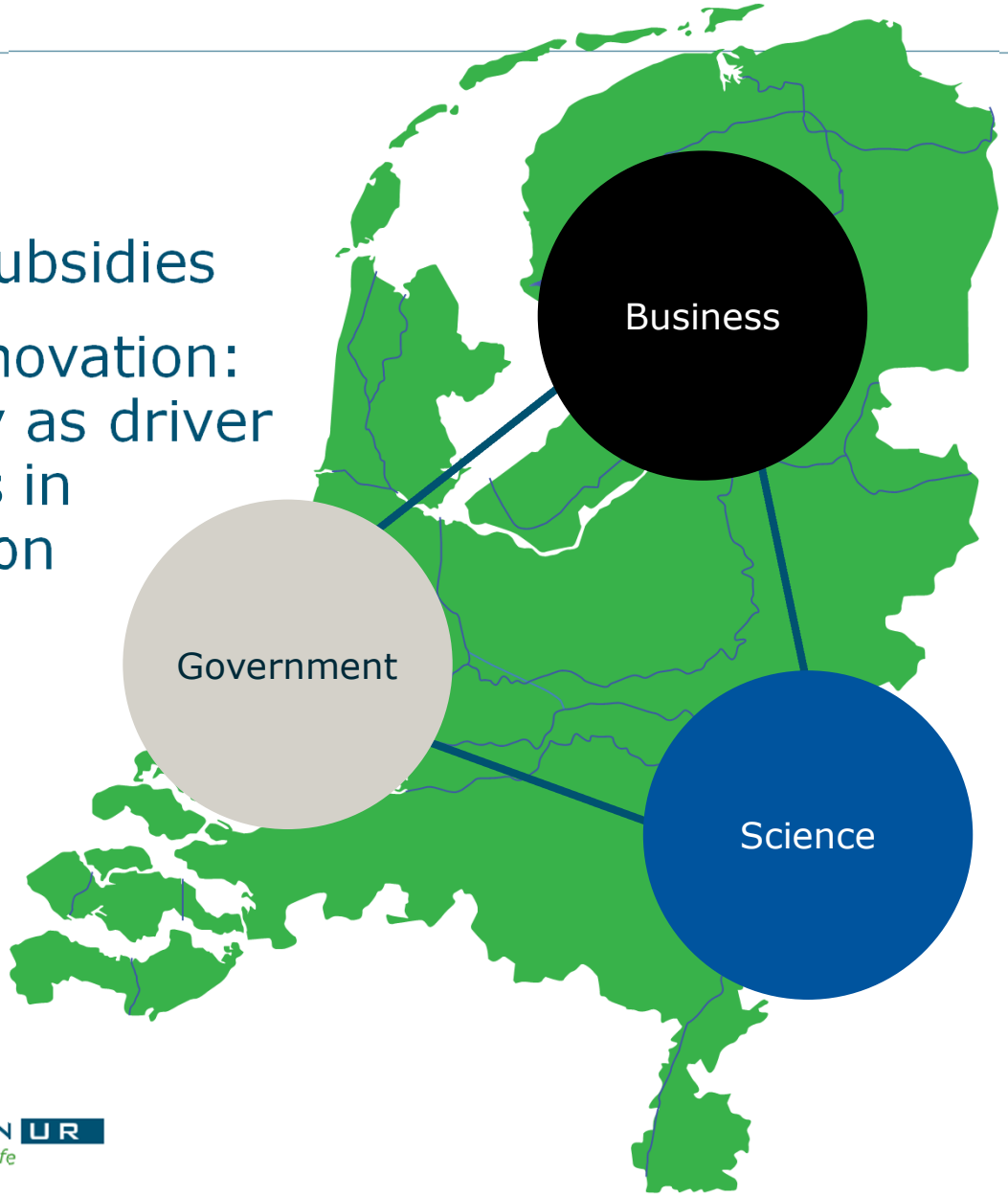
Orgware: triple (quadruple) helix collaboration

- PPPs <> subsidies
- System innovation: technology as driver of changes in collaboration structures



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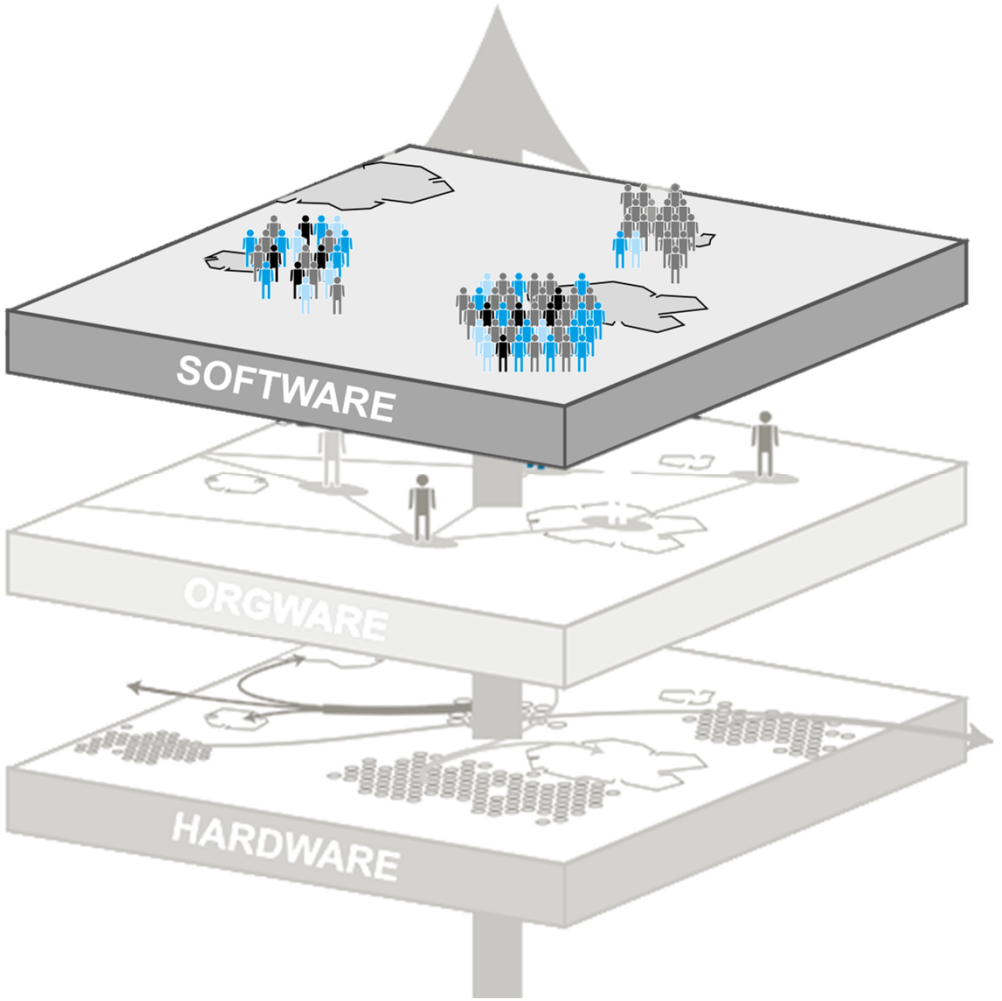

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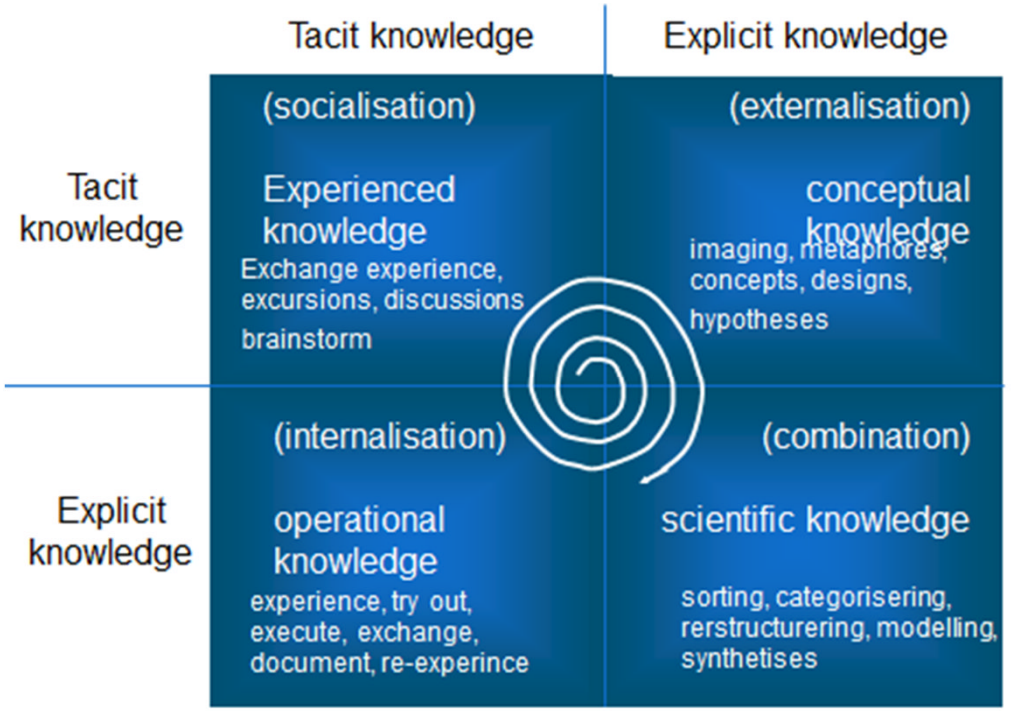
Software: strong collaboration between knowledge institutes and private sector

High tech
=
knowledge intensive



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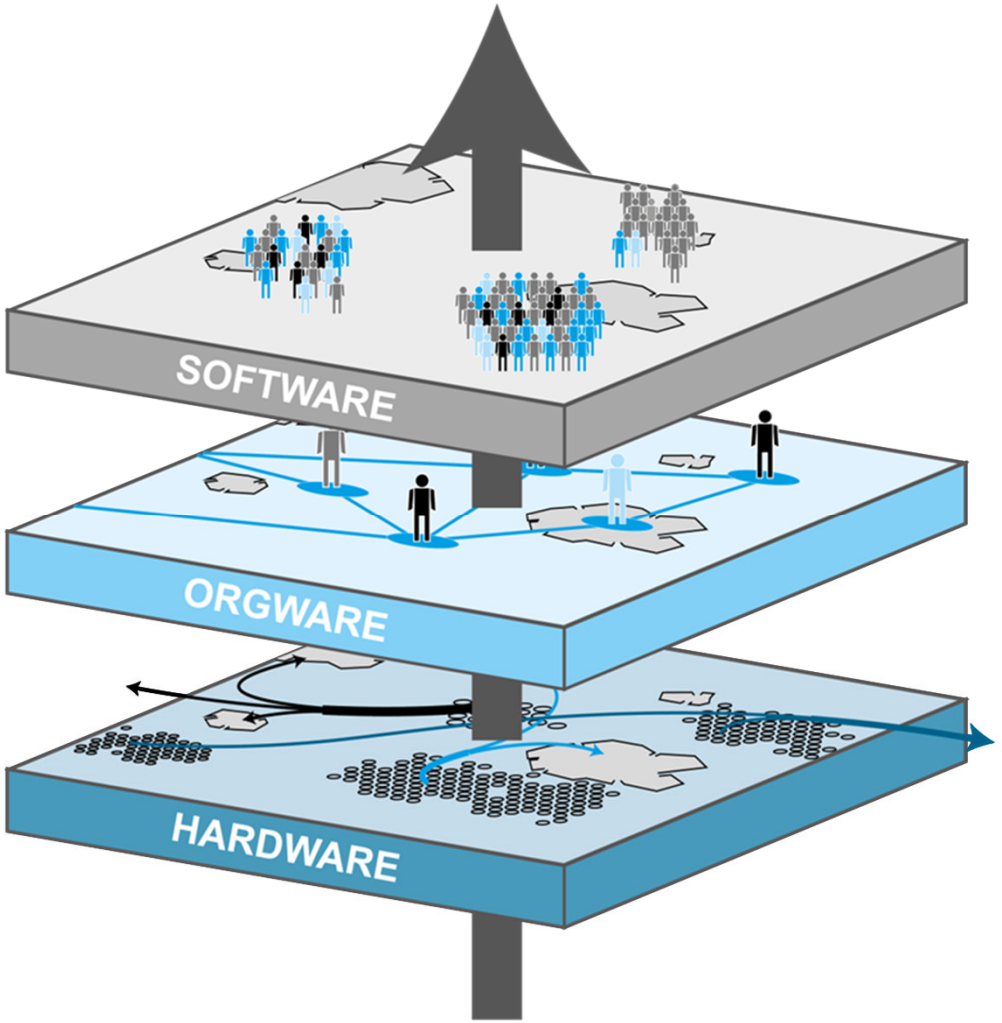

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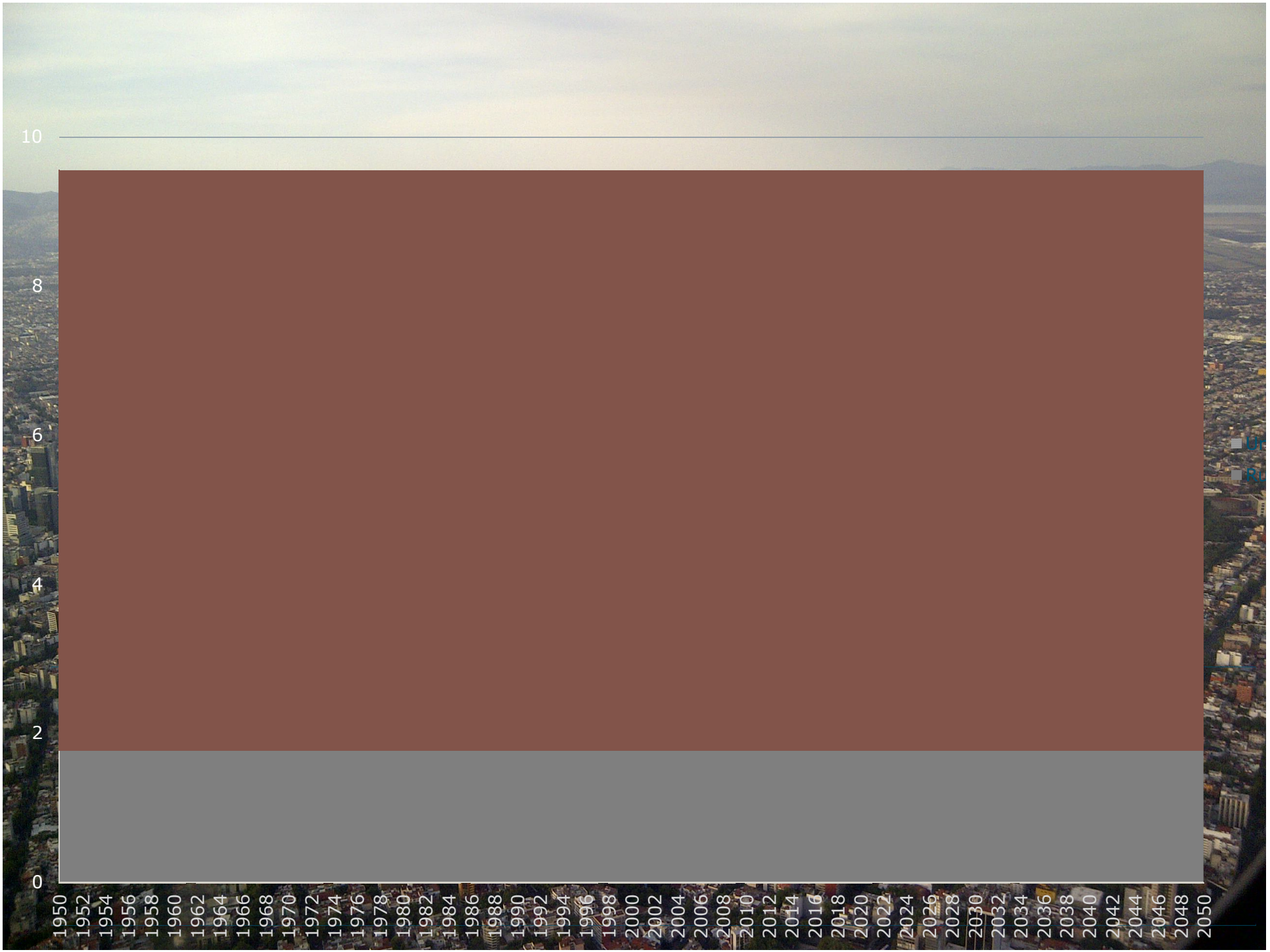
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Focused on market demand...

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Urban consumers in determine the demand for food produced in the network

...and its (sub)urban fabric

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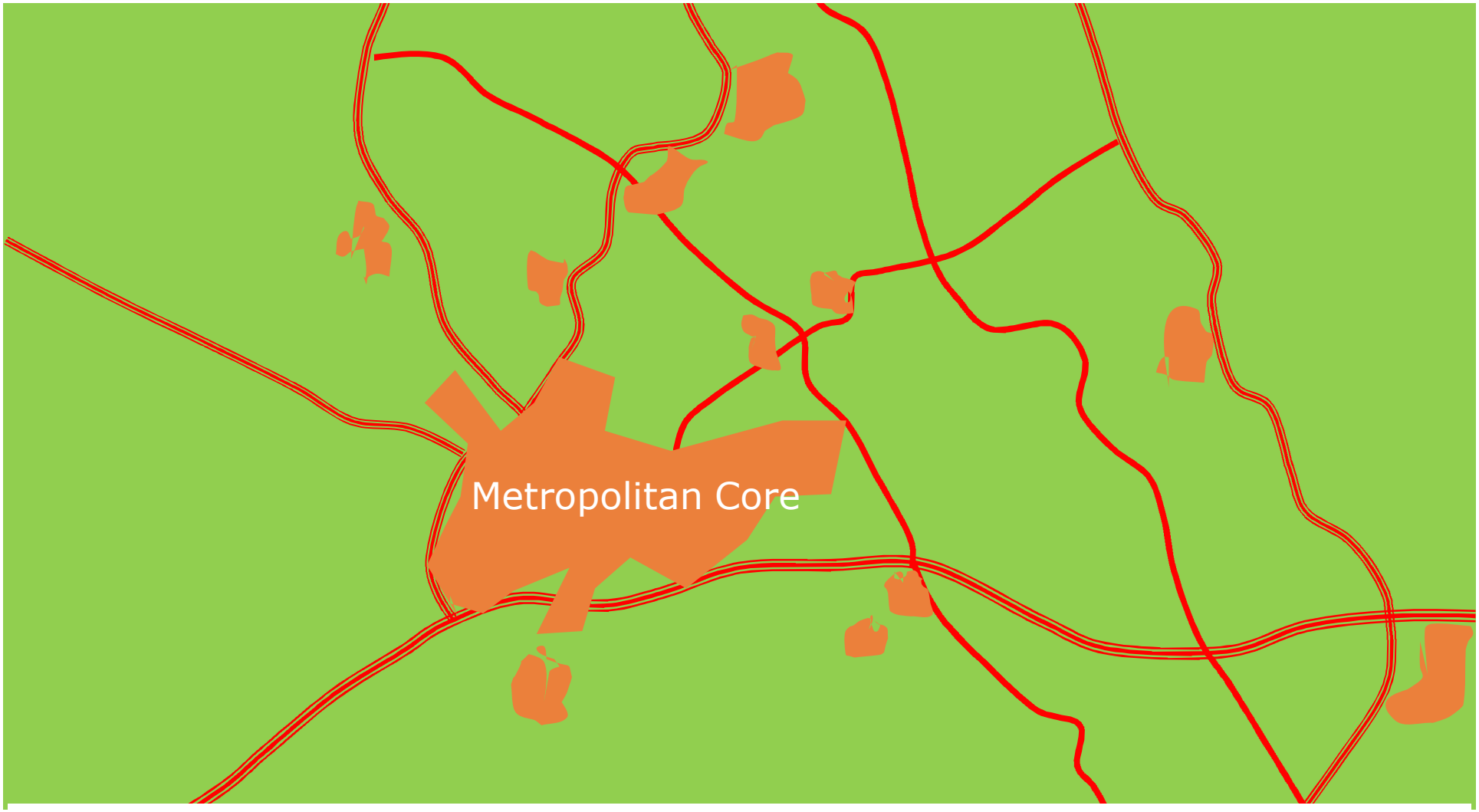
Its infrastructure



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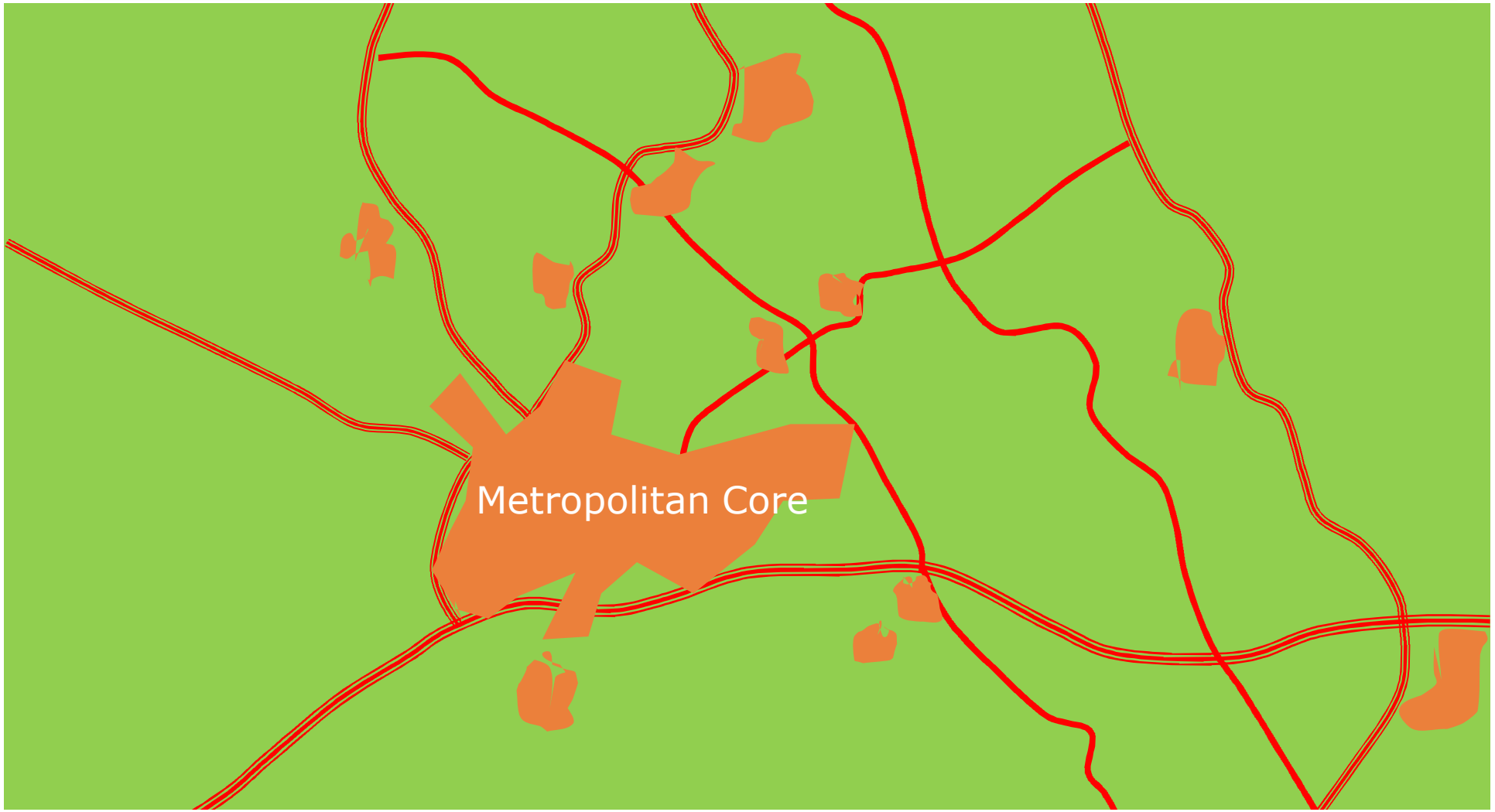
Infrastructure determines the spatial structure of the metropolitan food cluster

Optimizing existing and new initiatives



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Agroparks are clusters of land independent production and processing of food

Wijnen bv, Capsicum grower in 50 ha hightech greenhouse in Agropark California near Venlo

Recycling of harvested rainwater

Capsicum plants

Storage of heat

Semi-mechanized sorting, packing and quality control

Export to Japan

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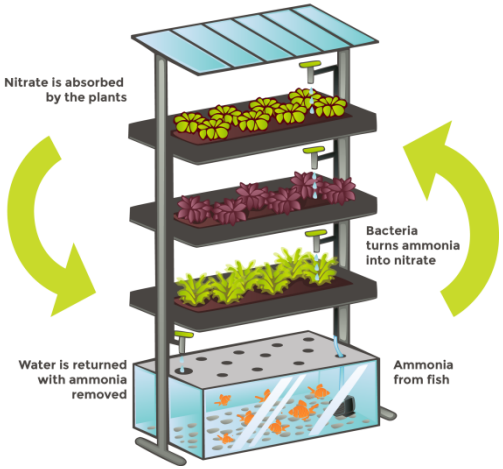
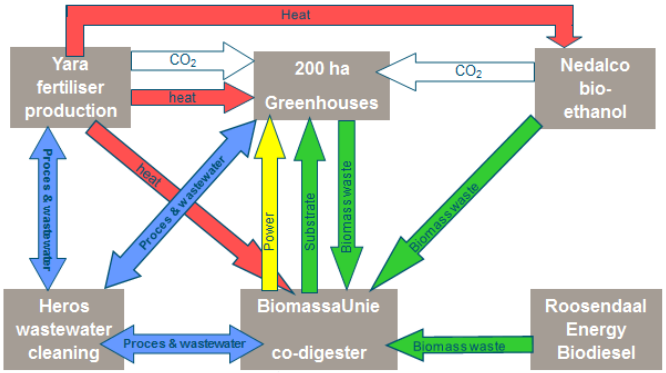
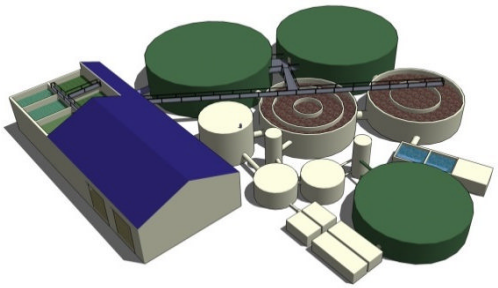
Plenty of additions can still be done...







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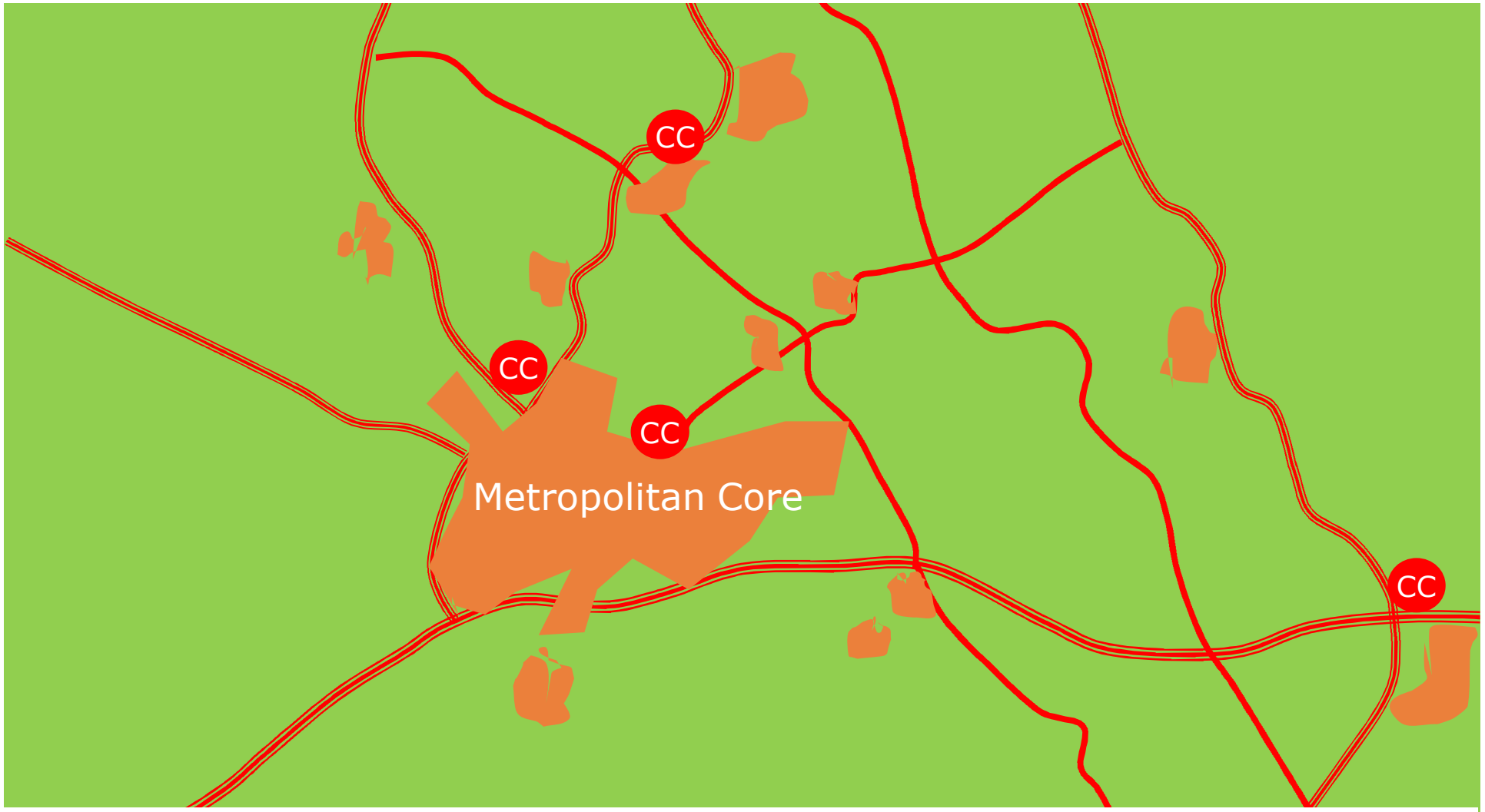
Optimizing logistics through specialized consolidation centers



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Consolidation centres redistribute large into small loads serving demand of metropole's retail outlets

Consolidation Centre: Fresh Park Venlo

- Storage, distribution, processing, trade and services
- Main clients: 7 mln consumers in German Ruhr Area
- In a consumer responsive way throughout the whole year
- Seasonal products not available from local producers are being supplied from storage or by world wide trade

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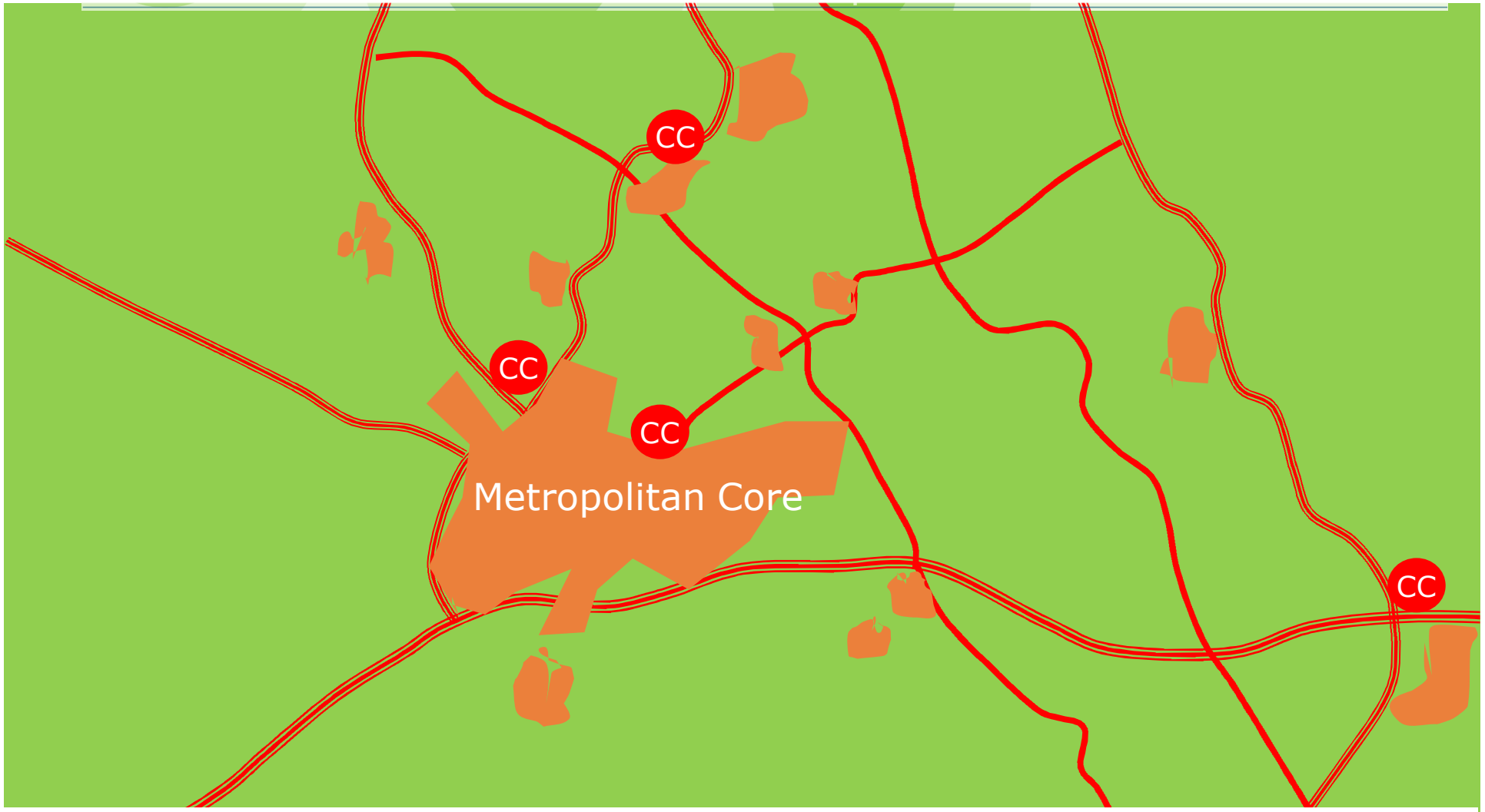
Including land-dependent production



Rural processing centres process products from land dependent agriculture for agroparks and consolidation centers

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Rural processing Centre: Vreba Melkvee

1400 ha land

40% of fodder imported

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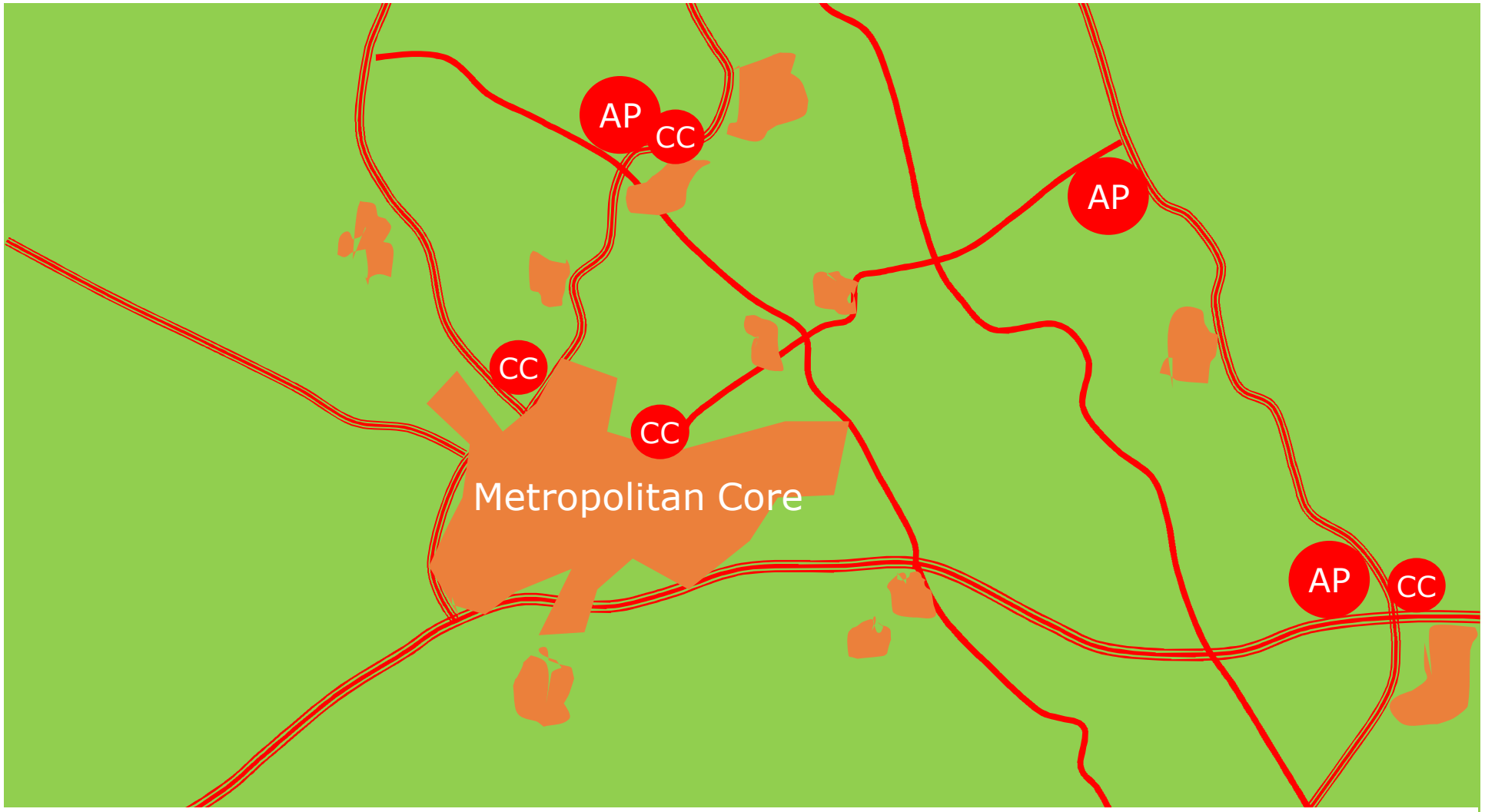
And rendering space for nature and recreation



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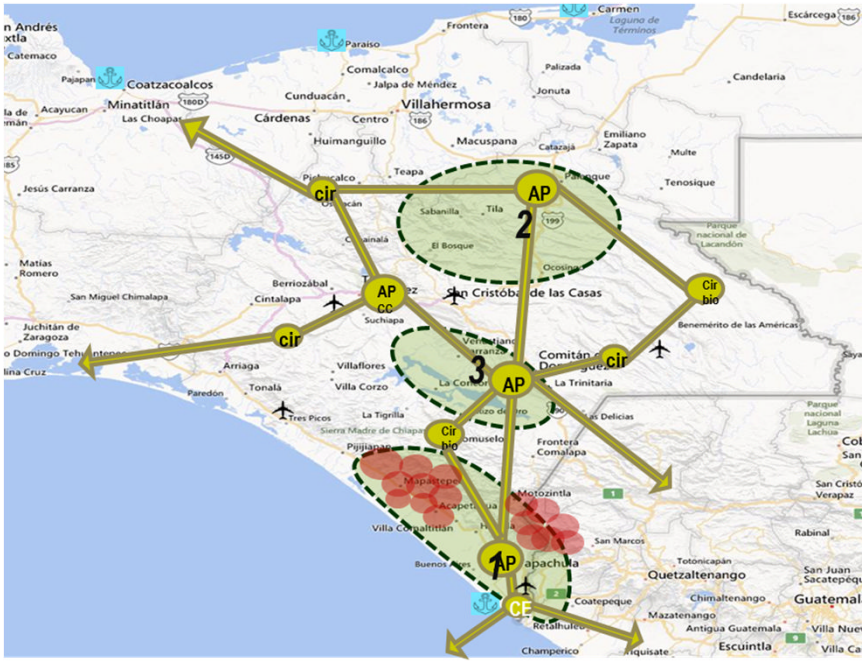
Other functions like biodiversity protection or water management determine the spatial fabric

Regional planning for sustainable development of agrofood production (Chiapas, Mexico)



And projects in wider Mexico, China, India, Philippines, South Africa, Qatar, Singapore, ...

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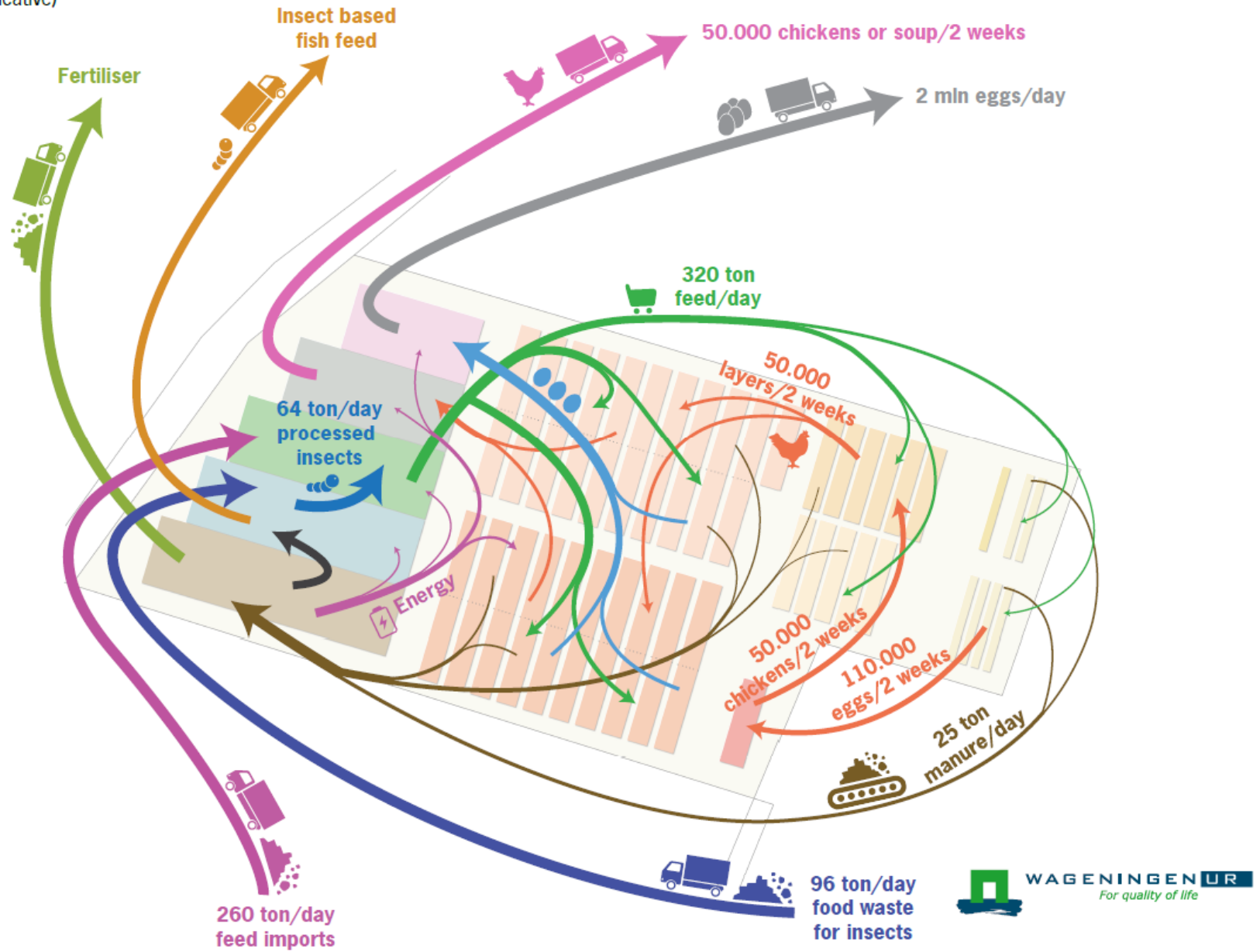
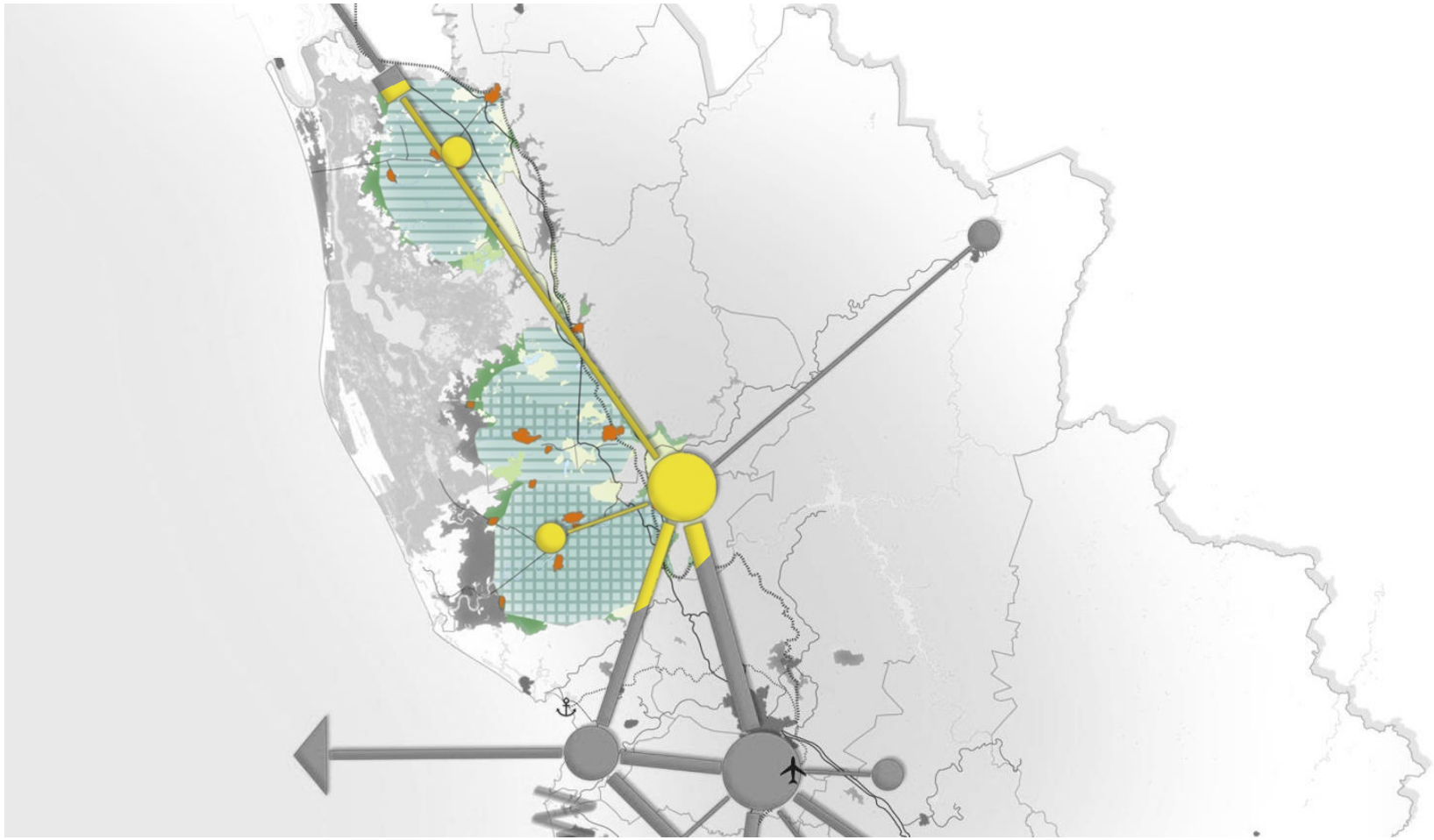
Product flows (with insects)

Flows of products in the layer chain when insects are added.
(numbers are indicative)



Nayarit: Yago



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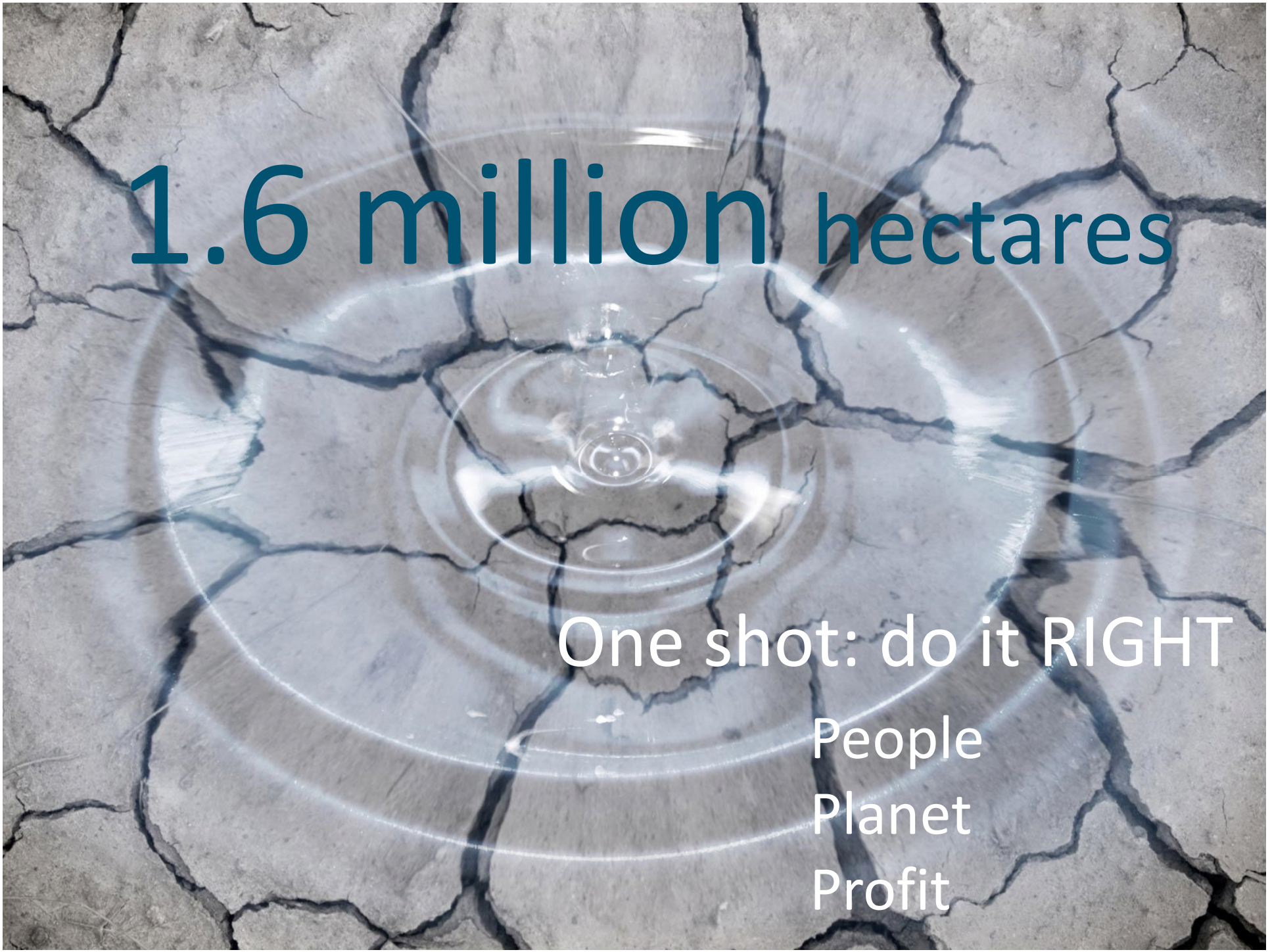
1.6 million hectares
One shot: do it RIGHT
People
Planet
Profit

Thank you for your attention

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