Anne-wil Min I Graduation presentation

New perspective on the [food] landscapes in MRA 2050



Developing a new perspective & design for resilient & attractive agricultural landscapes
in the metropolitan region of Amsterdam in 2050

Content

Challenges towards 2050

Content

Challenges towards 2050

[food] landscapes in the MRA

Content

Challenges towards 2050

[food] landscapes in the MRA

Problems in the agricultural landscapes

Content

Challenges towards 2050

[food] landscapes in the MRA

Problems in the agricultural landscapes

Maximization method & scenarios

Content

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New perspective on [food] landscapes in 2050

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Pilot projects: Waterland & Haarlemmermeer

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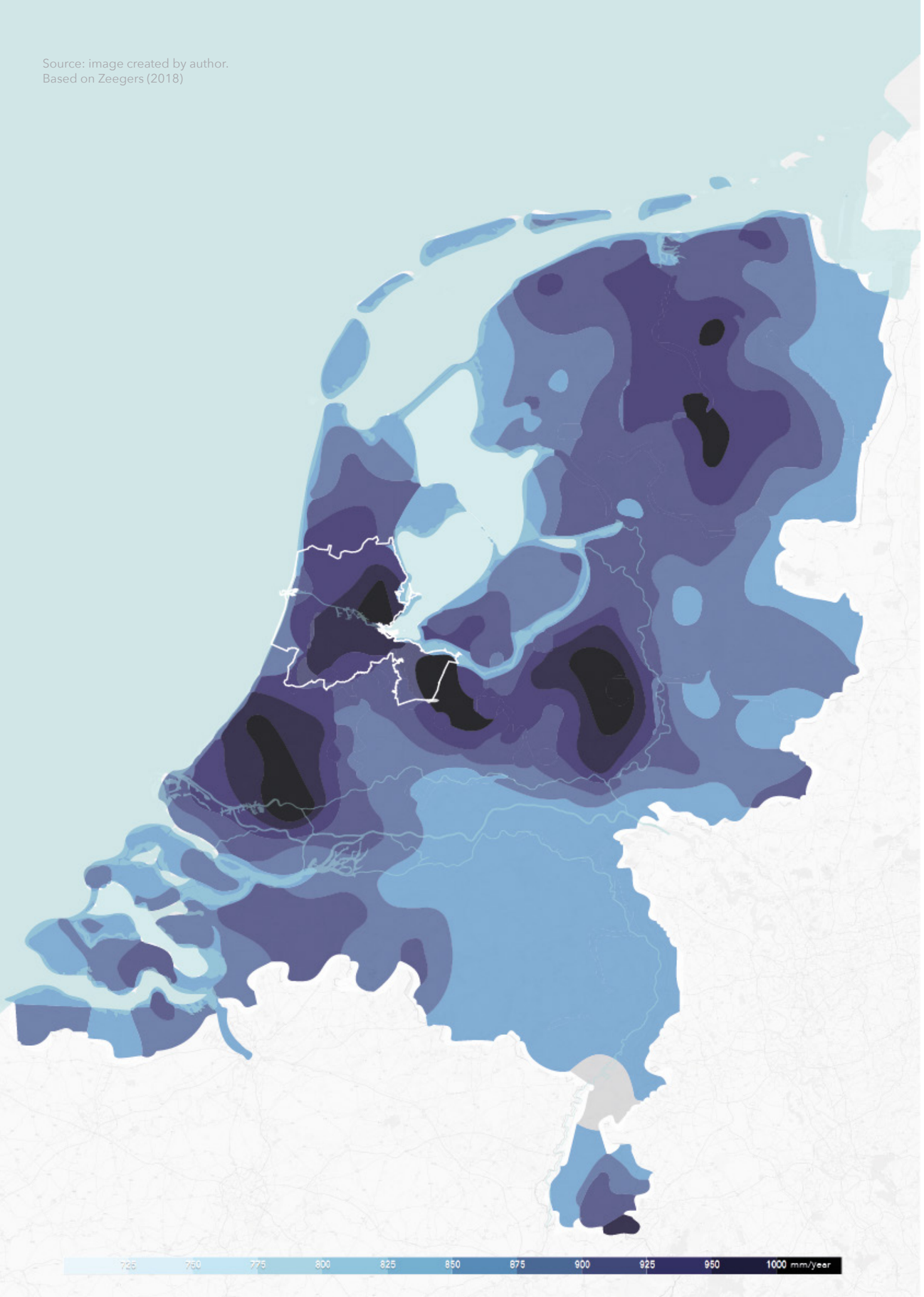
Source: image created by author.
Based on Zeegers (2018)





Source: image created by author.

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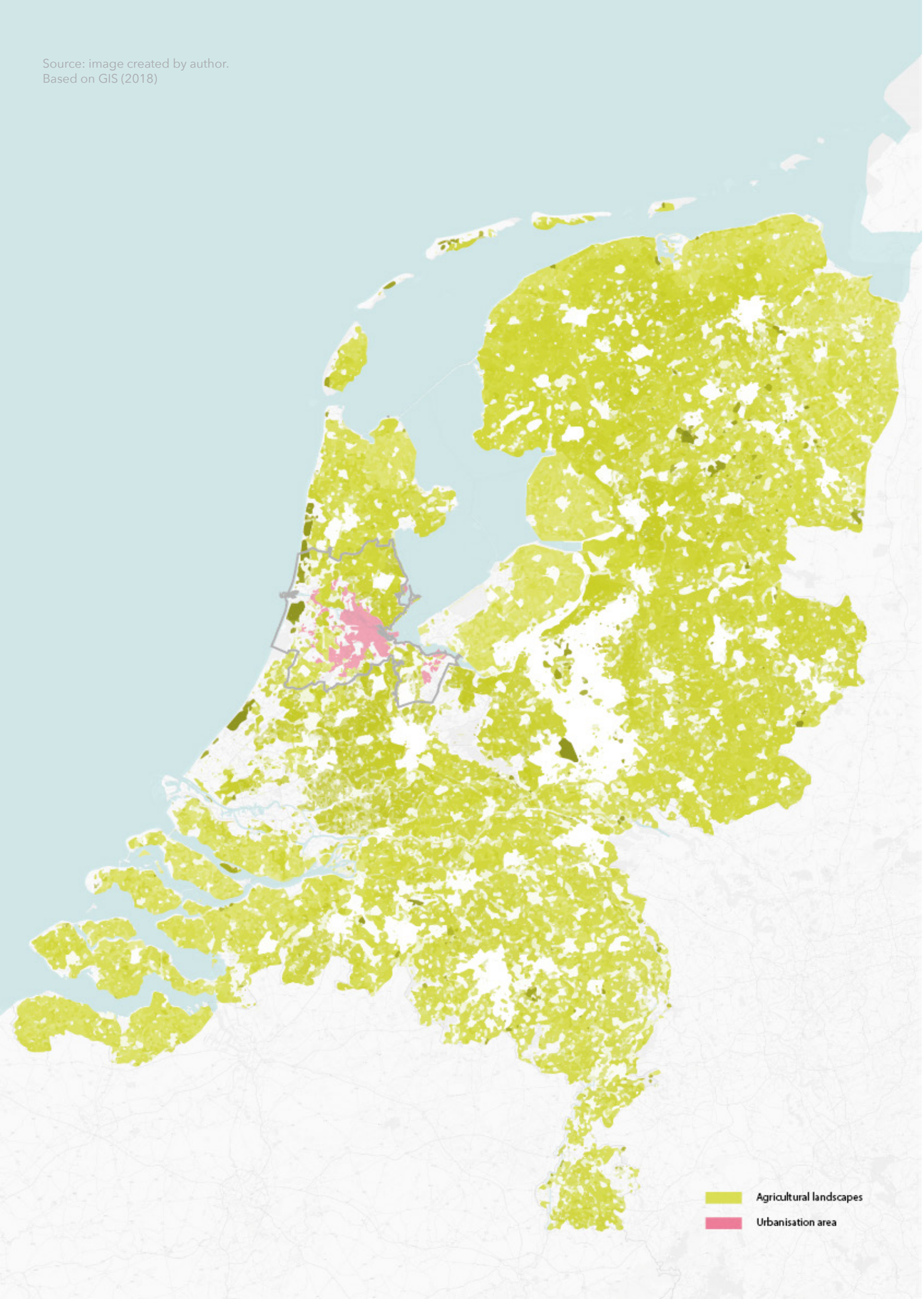



AGRICULTURAL POLLUTION IMPACT ON THE FOOD LANDSCAPE

Source: image created by author.

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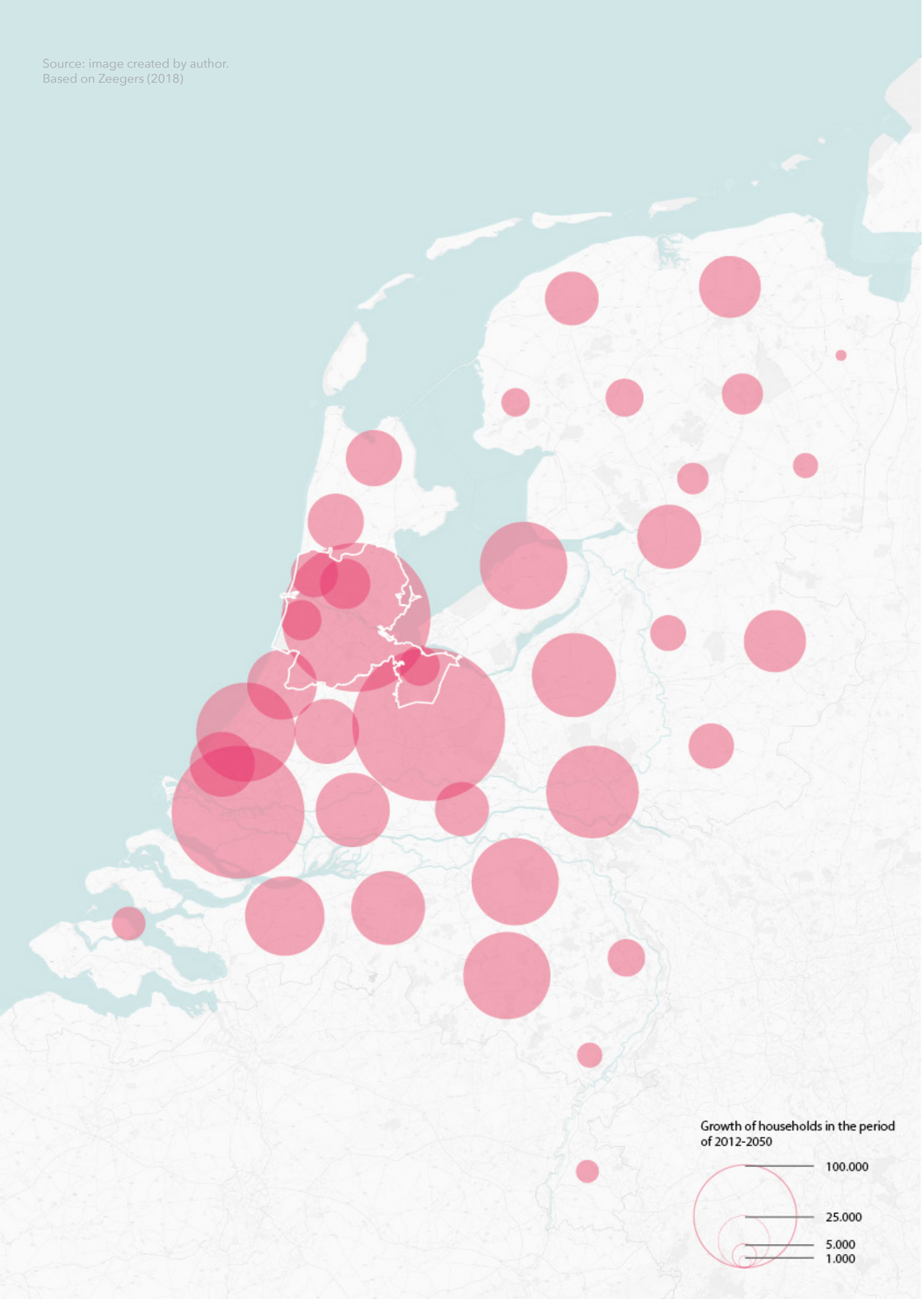
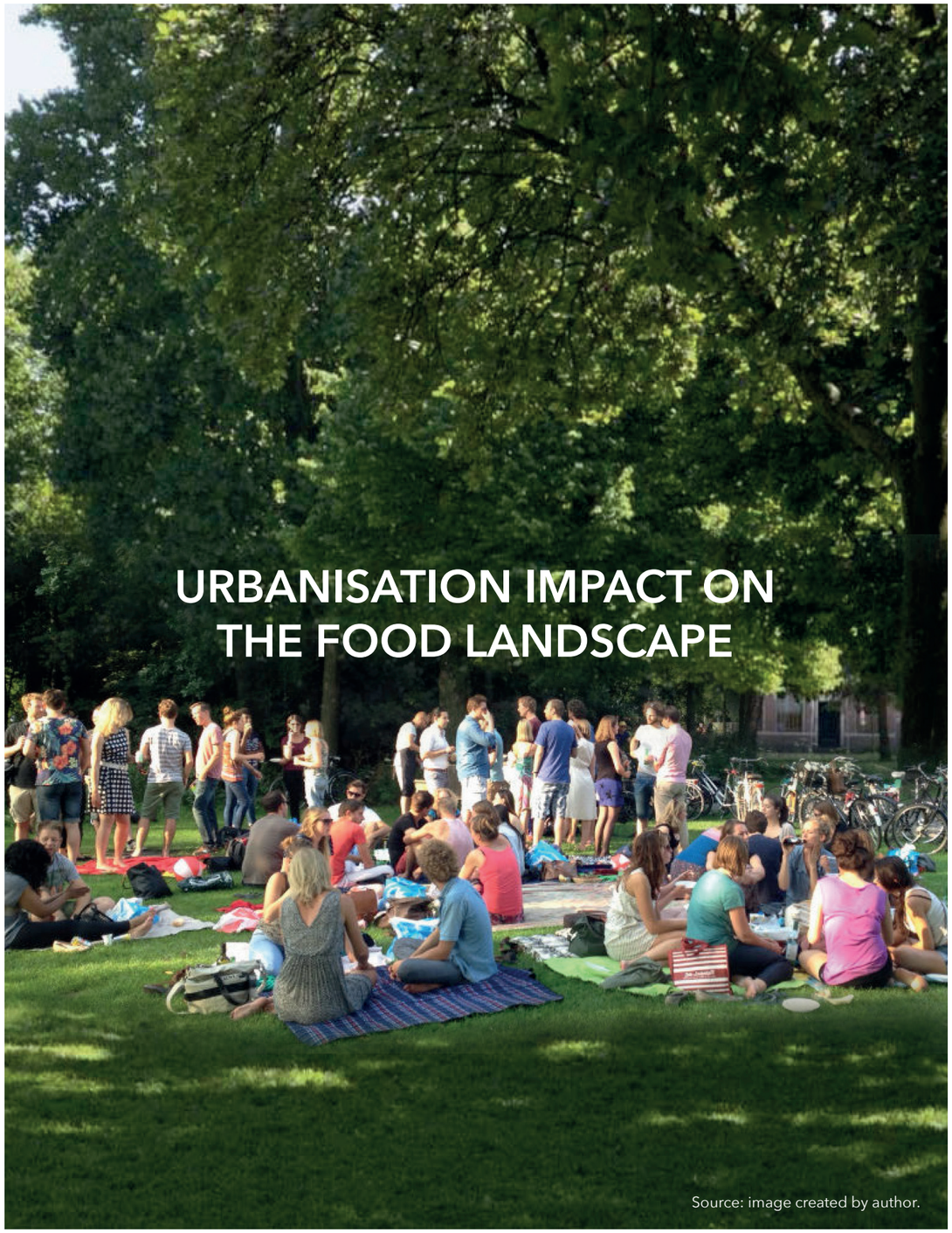
Based on Zeegers (2018)





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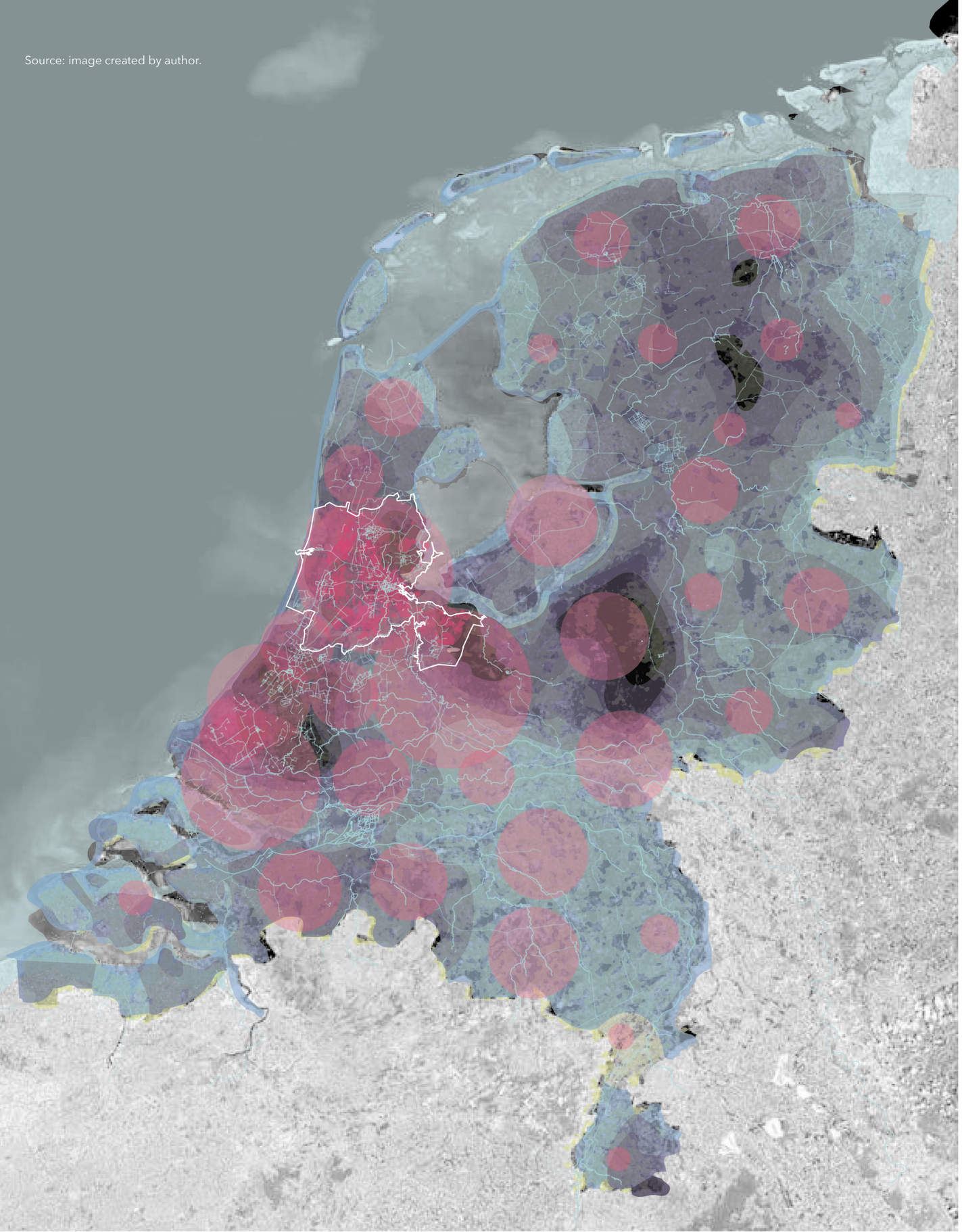

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THE METROPOLITAN REGION OF AMSTERDAM

Challenges towards 2050

[food] landscapes in the MRA

Problems in the agricultural landscapes

Maximization method & scenarios

New perspective on [food] landscapes in 2050

Pilot projects: Waterland & Haarlemmermeer

Conclusions

THE FOOD LANDSCAPES IN THE REGION

Source: image created by author.
Based on GIS (2018).

THE RESEARCH QUESTION

"How to design a new perspective on the food landscapes in the metropolitan region of Amsterdam towards 2050 for a landscape that is

- *Resilient to the effects of climate change*
- *Restore the ecosystem (in the water) of the landscape*
- *Create opportunities for new activities to start that will strenghten the connection between cities and landscapes*

for a resilient & attractive region?"

POLDER LANDSCAPES
(DROOGMAKERIJEN LANDSCHAPPEN)

Beemster landscape (Van de Biezen, 2018).

EXISTING FOOD LANDSCAPES (droogmakerij)



Picture of the polder landscapes in the metropolitan region of Amsterdam (Sikich, 2018)

PEAT LANDSCAPES (VEENWEIDE LANDSCHAPPEN)

Eilandspolder landscape (VVV, 2018).



EXISTING FOOD LANDSCAPES (veenweide)



Picture of the peat landscapes in the metropolitan region of Amsterdam (Meelker, 2018)

PROBLEMS IN THE FOOD LANDSCAPES IN 2050

DROOGMAKERIJ LANDSCAPES



Source: image created by author.

PROBLEMS IN THE FOOD LANDSCAPES IN 2050

VEENWEIDE LANDSCAPES



Source: image created by author.

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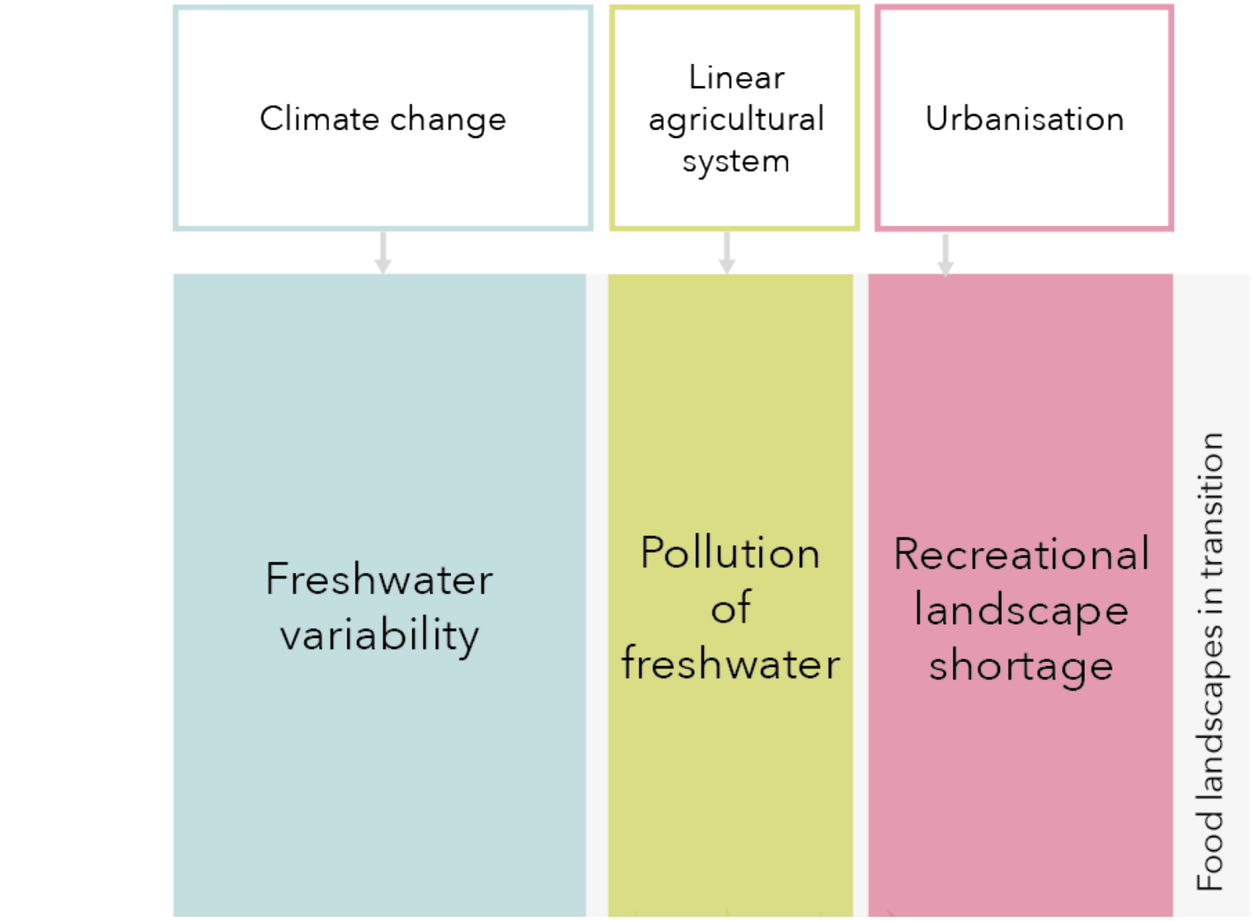
CREATING RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES

The maximization method: **maximization** + optimization + integration phase





PROBLEM 1

Climate change impact on the food landscapes

Soil subsidence

Schaal 1: 1:400000

Map created by author & based on GIS,
Van Paridon & de Groot landschapsarchitecten (2017: 59)
Provincie Noord-Holland (2014: 56)
BOOM landscape (2018)

PROBLEM 1

Climate change impact on the food landscapes



Soil subsidence

Water problems

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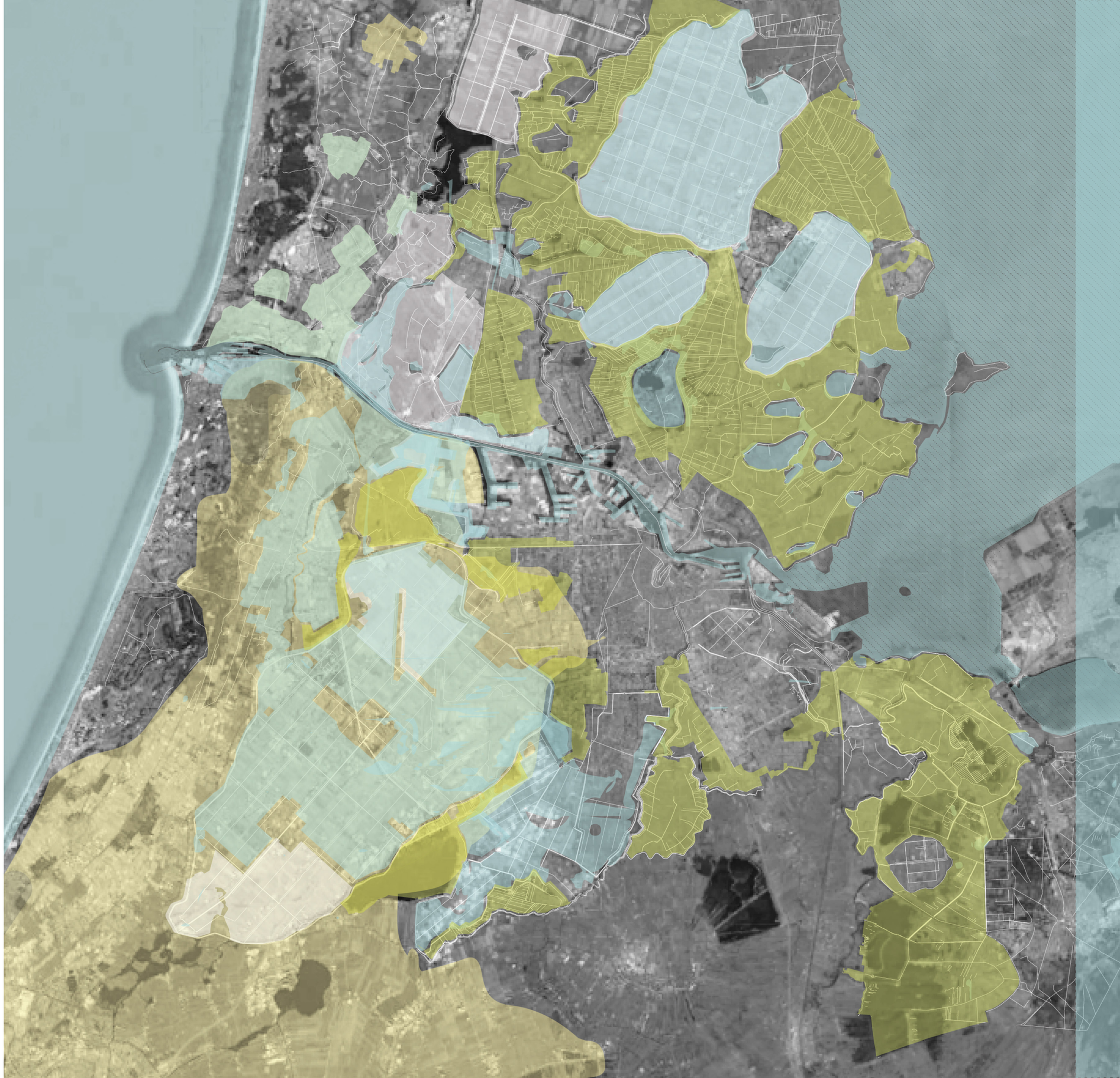
Climate change impact on the food landscapes



Soil subsidence
Water problems
Desiccation
Salinization

Schaal 1: 1:400000

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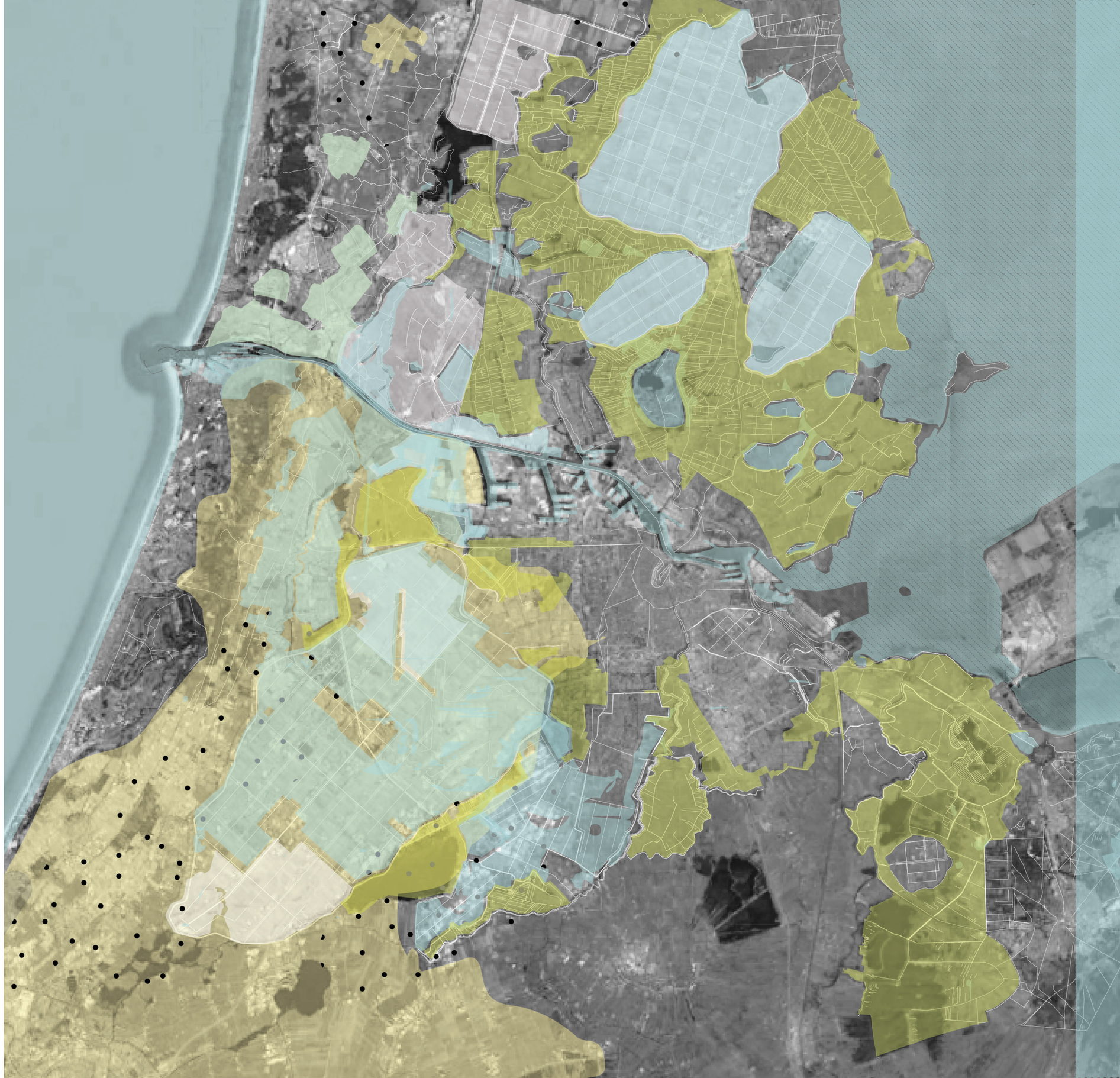

Soil subsidence

Water problems

Desiccation

Salinization

Intensive cultivation, critical water users

Schaal 1: 1:400000

Map created by author & based on GIS,
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CLIMATE ADAPTATION SOLUTIONS IN THE FOOD LANDSCAPE IN 2050

WATERSTORAGE

NEW FOOD TYPES

SUSTAINABLE ENERGY



Source: image created by author.

DROOGMAKERIJ LANDSCAPES

CLIMATE ADAPTATION SOLUTIONS IN THE FOOD LANDSCAPE IN 2050

NEW WATER LEVELS

NEW FOOD TYPES

SUSTAINABLE ENERGY



Source: image created by author.

VEENWEIDE LANDSCAPES

PROBLEM 2

Agricultural impact on the
(freshwater) ecosystem
in the landscapes



Bad ecological quality

Inadequate ecological quality

Moderate ecological quality

Schaal 1: 1:400000

Map created by author & based on GIS,

PROBLEM 2

Agricultural impact on the
(freshwater) ecosystem
in the landscapes



Bad ecological quality

Inadequate ecological quality

Moderate ecological quality

Nature landscapes

Schaal 1: 1:400000

Map created by author & based on GIS,

PROBLEM 2

Agricultural impact on the
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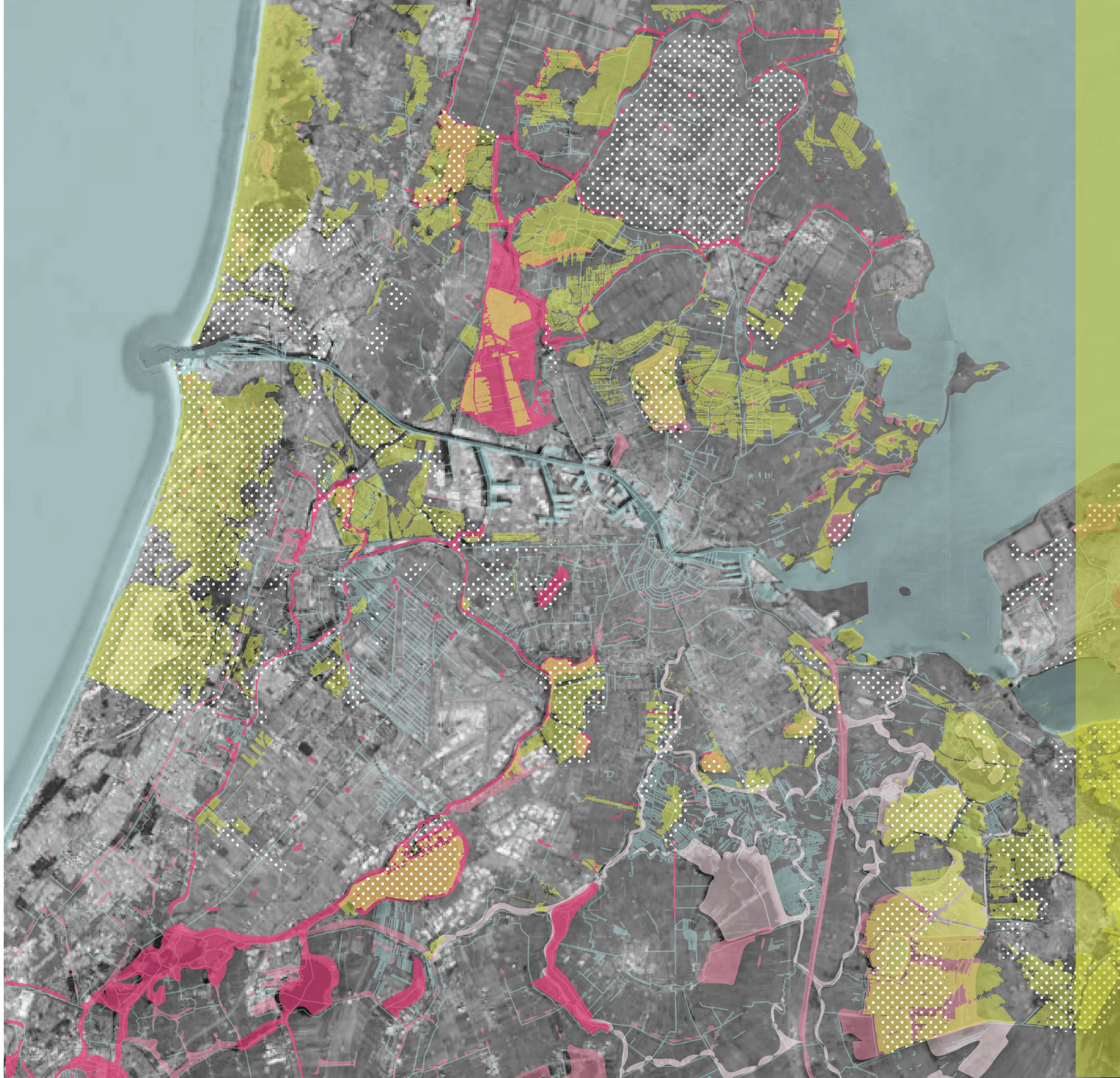

Bad ecological quality

Inadequate ecological quality

Moderate ecological quality

Nature landscapes

Recreational landscapes

Schaal 1: 1:400000

Map created by author & based on GIS,

PURIFYING SOLUTIONS IN THE FOOD LANDSCAPE IN 2050

CIRCULAR WATERSYSTEM

PURIFYING NATURE

CIRCULAR / PURIFYING GREENHOUSES



Source: image created by author

DROOGMAKERIJ LANDSCAPES

PURIFYING SOLUTIONS IN THE FOOD LANDSCAPE IN 2050

CIRCULAR WATERSYSTEM

PURIFYING NATURE



Source: image created by author.

VEENWEIDE LANDSCAPES

PROBLEM 3

Urbanisation impact on the shortage in recreational landscapes



Urbanisation towards 2040

Schaal 1: 1:400000

Map created by author & based on GIS
Stichting Recreatie (2008)

PROBLEM 3

Urbanisation impact on the shortage in recreational landscapes



Urbanisation towards 2040

Landscapes with a low experience grade

Schaal 1: 1:400000

Map created by author & based on GIS
Stichting Recreatie (2008)

PROBLEM 3

Urbanisation impact on the shortage in recreational landscapes



Urbanisation towards 2040

Landscapes with a low experience grade

Cycling network

Walking network

Recreational routes for boats

Schaal 1: 1:400000

Map created by author & based on GIS
Stichting Recreatie (2008)

PROBLEM 3

Urbanisation impact on the shortage in recreational landscapes



Urbanisation towards 2040

Landscapes with a low experience grade

Cycling network

Walking network

Recreational routes for boats

Recreational landscape shortage

Schaal 1: 1:400000

Map created by author & based on GIS
Stichting Recreatie (2008)

ATTRACTIVE
[FOOD] LANDSCAPE

ACCESSIBLE
[FOOD] LANDSCAPE



Source: image created by author.

RECREATIONAL SOLUTIONS IN THE FOOD LANDSCAPE IN 2050

ATTRACTIVE
[FOOD] LANDSCAPE

ACCESSIBLE
[FOOD] LANDSCAPE



Source: image created by author

VEENWEIDE LANDSCAPES

Challenges towards 2050

[food] landscapes in the MRA

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Maximization method & scenarios

New perspective on [food] landscapes in 2050

Pilot projects: Waterland & Haarlemmermeer

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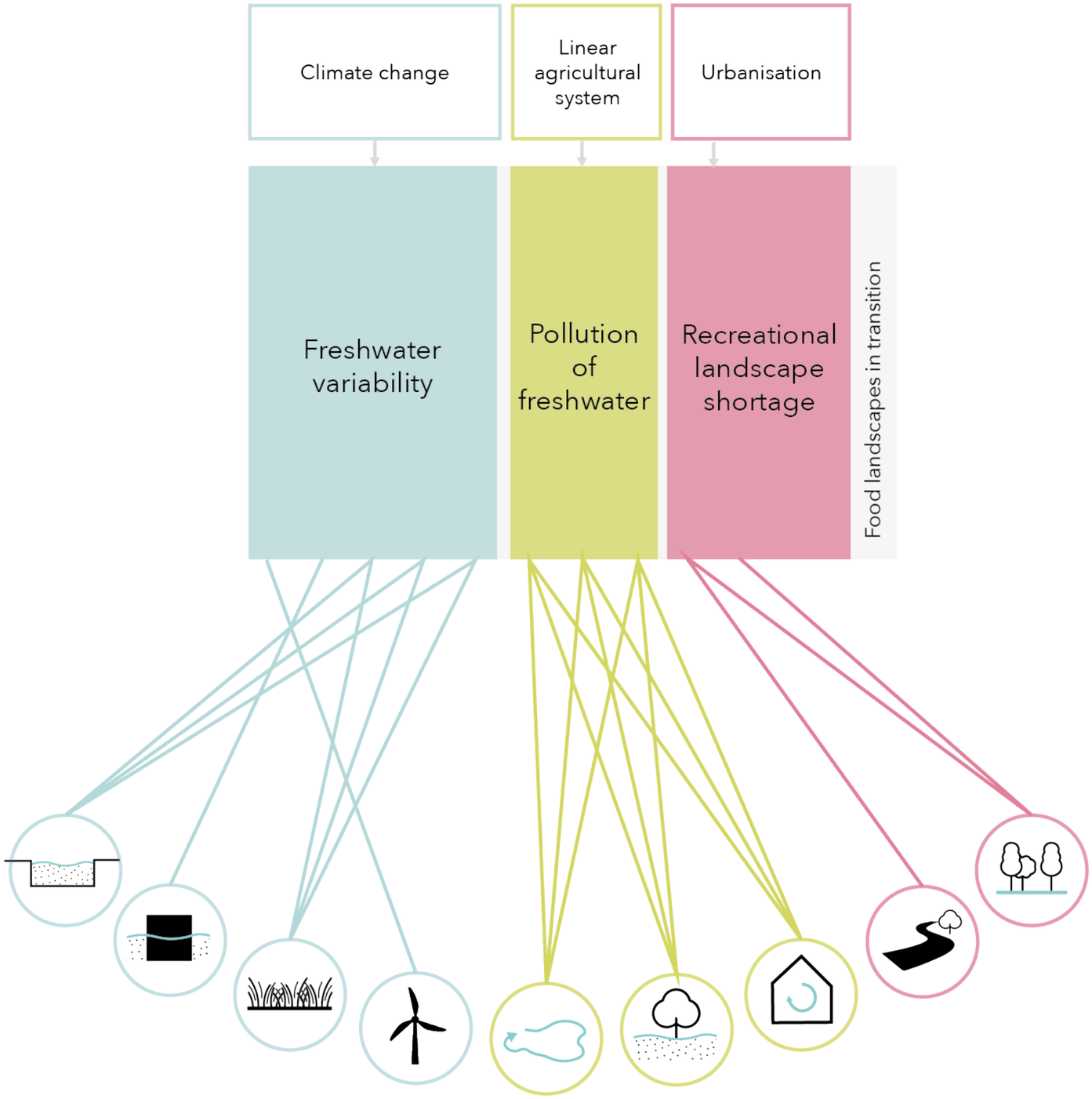
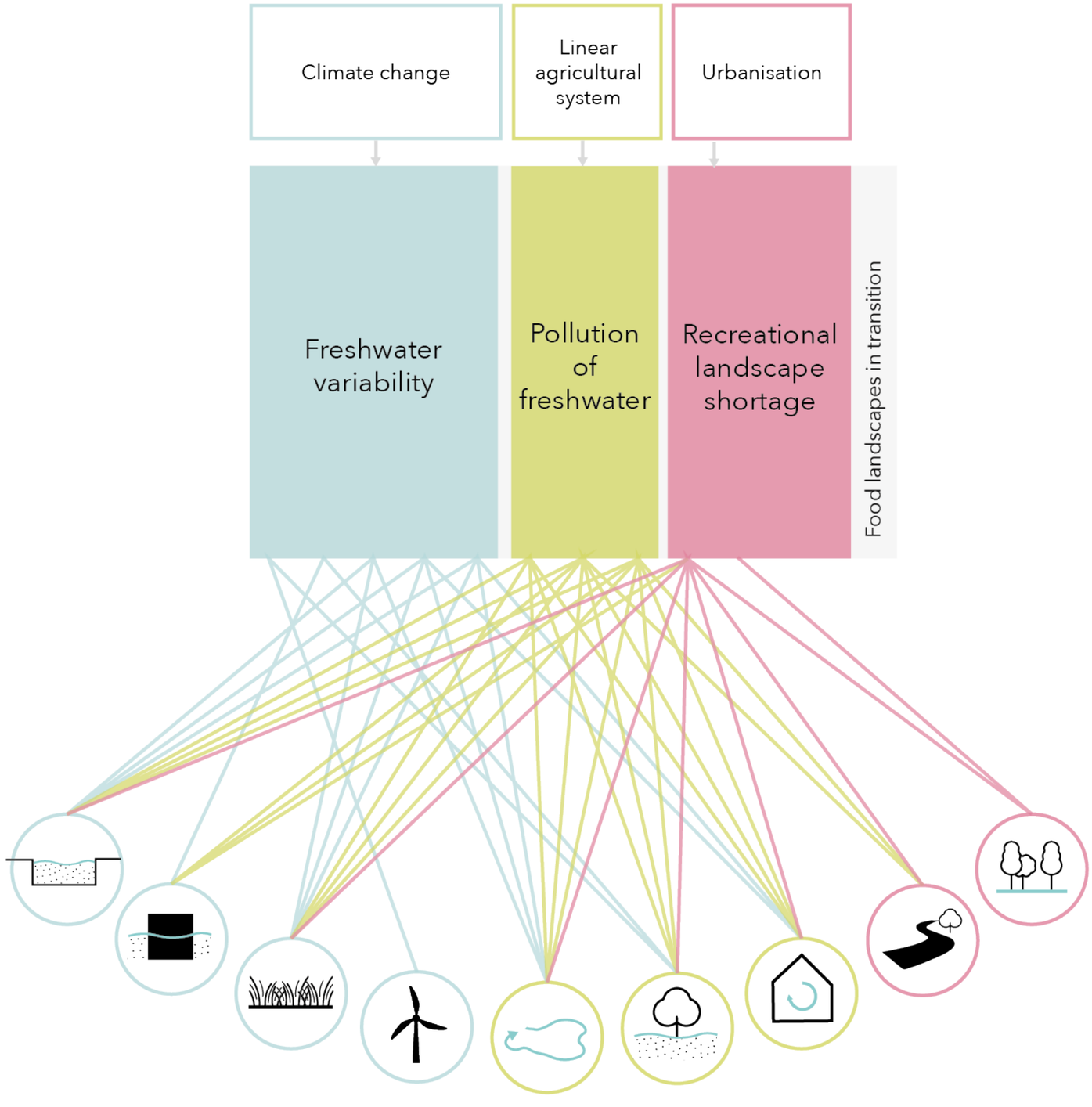
CREATING RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES

The maximization method: **maximization** + optimization + integration phase



CREATING RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES

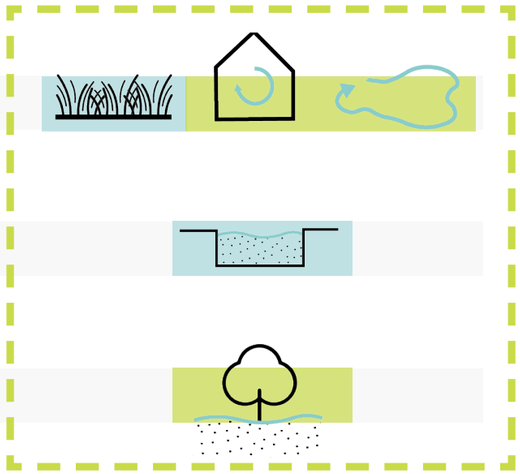
The maximization method: maximization + **optimization** + integration phase



Number of solutions to problems

10
9
8
7
6
5
4
3
2
1

Most potential solutions combination with the maximization method











2x negative

1x negative
1x neutral

1x negative
1x positive

2x neutral

1x positive
1x neutral

2x positive

Impact on solving the other theme's problems

OPTIMIZATION PHASE:
DESIGNING NEW [FOOD] LANDSCAPES TOOL







Climate adaptation scenario



Purifying agriculture scenario



Recreational landscape scenario





Climate adaptation scenario



Purifying agriculture scenario



Recreational landscape scenario



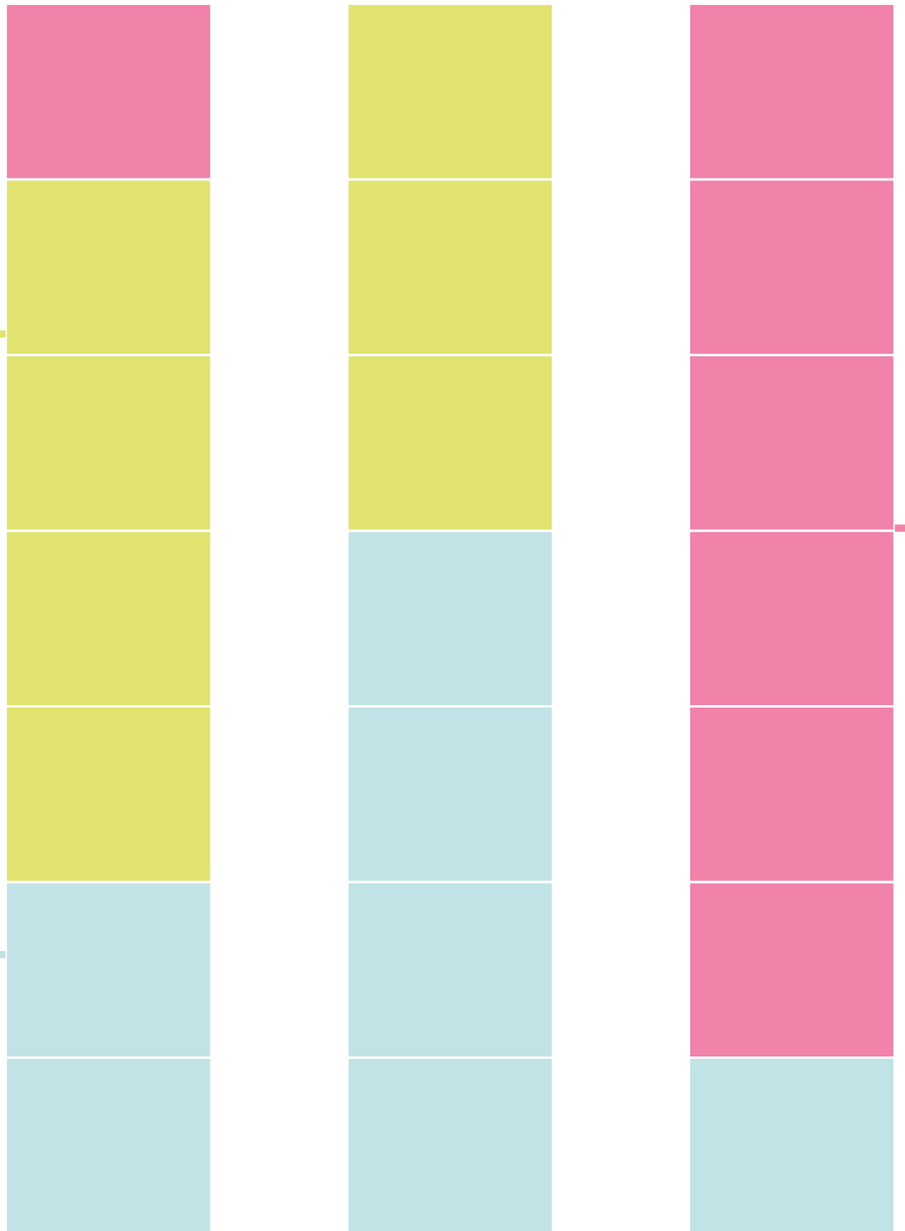
INTERVIEW RESULTS ON THE SCENARIO'S



Purifying agriculture scenario



Climate adaptation scenario



1st choice

2nd choice

3rd choice



Recreational landscape scenario

Graphic created by author & based on interviews
with Ad Stavenuiter (waterquality)
Steven Slabbers (landscape quality & transitions)
Andre Smit (nature)
Marijn Bos (metropolitan landscape & recreation)
Ton Bossink (Environmental vision 2050 & landscape of Amsterdam)
Peter Graven (agriculture)
Danielle Lieuwen (nature inclusive agriculture)
of the different sectors at the Province of Noord-Holland (2019)

SCENARIO FOR THE [FOOD] LANDSCAPES IN THE REGION

DROOGMAKERIJ LANDSCAPES



VEENWEIDE LANDSCAPES



CREATING RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES

The maximization method: maximization + optimization + **integration** phase



Climate adaptation scenario



Purifying agriculture scenario



Recreational landscape scenario



New perspective on the metropolitan [food] landscape in 2050

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Scale 1: 1:400000

Map created by author & based on GIS,
Google Earth
& the optimization and integration phase
of the maximization method (2019)

NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

Scale 1: 1:400000

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NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050



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NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050



NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050



NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

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NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

ZAANSTREEK LANDSCAPE

BEEMSTER LANDSCAPE

WATERLAND LANDSCAPE

HAARLEMMERMEER LANDSCAPE

NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

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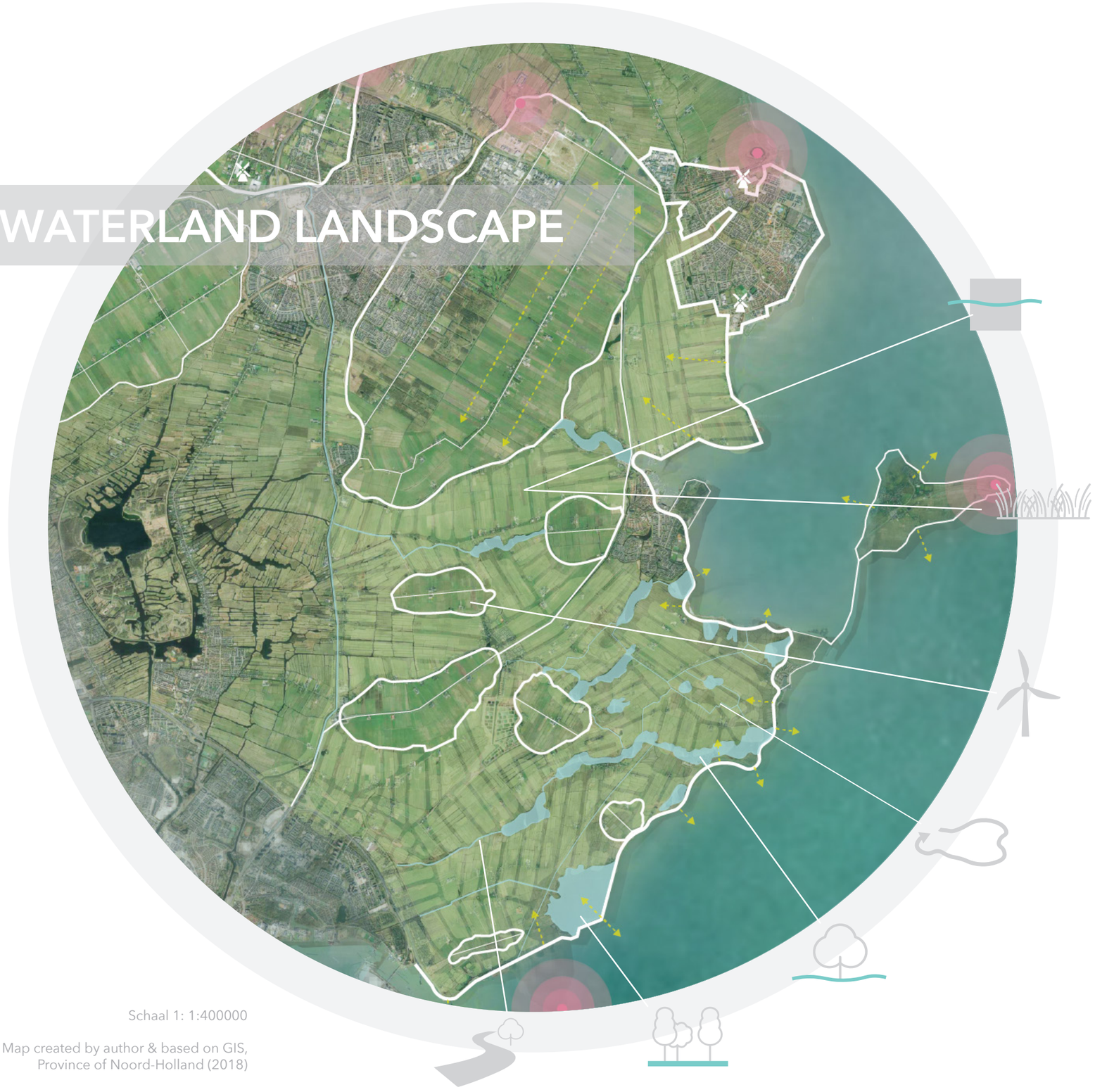
WATERLAND LANDSCAPE



Schaal 1: 1:400000

Map created by author & based on GIS,
Province of Noord-Holland (2018)

Landscape structures

Waterstructures

Sightlines in landscapes

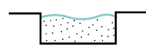
Fortifications (Stelling van Amsterdam)

WATERLAND LANDSCAPE

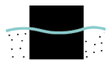


Schaal 1: 1:400000

Map created by author & based on GIS, maximization method in this report



Water storage



New water level



New food types



Sustainable energy



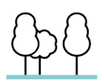
Circular water greenhouse



Circular water system



Purifying nature

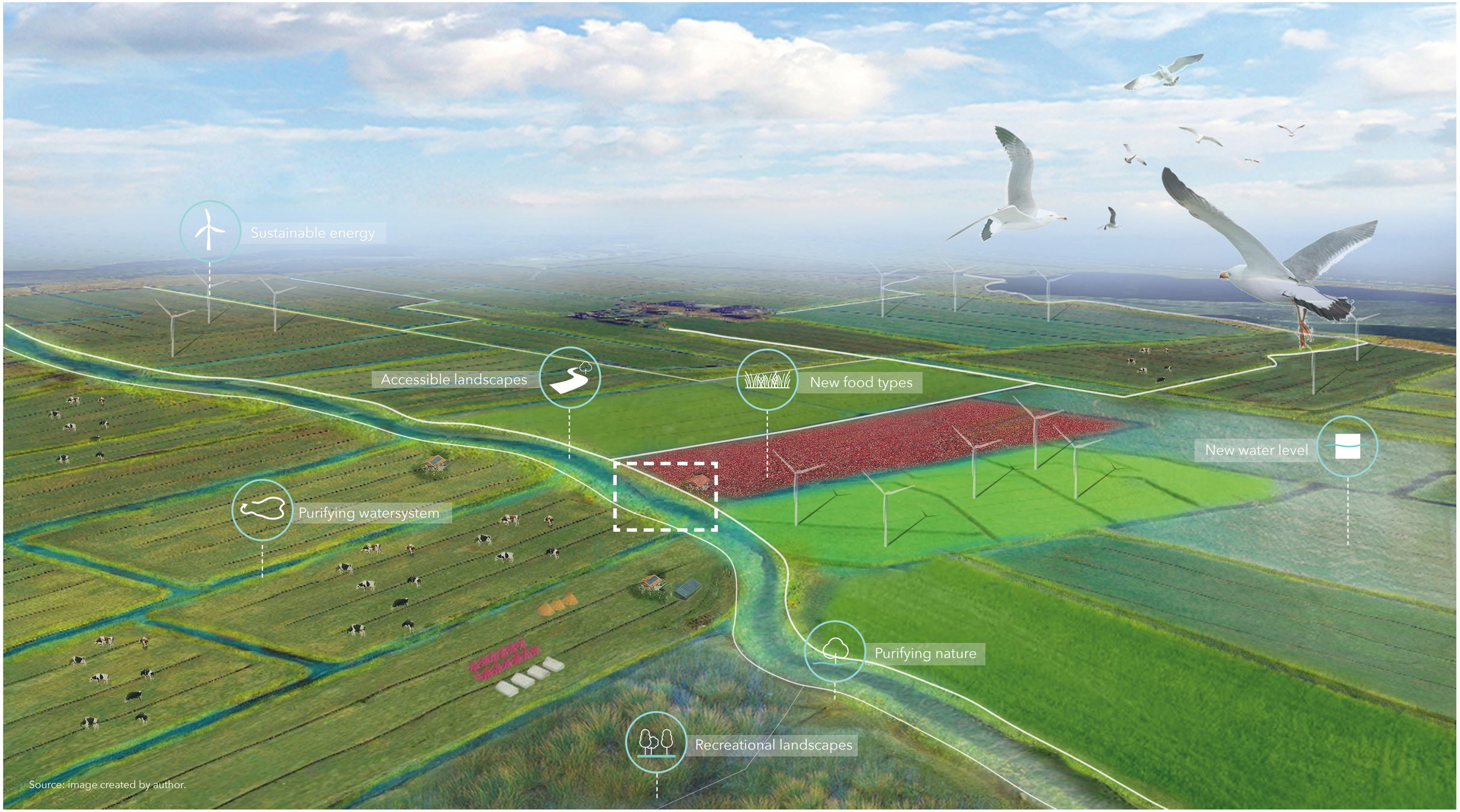


Attractive food landscape



Accessible food landscape

Impression of the integrated solutions in the Waterland



Source: image created by author.

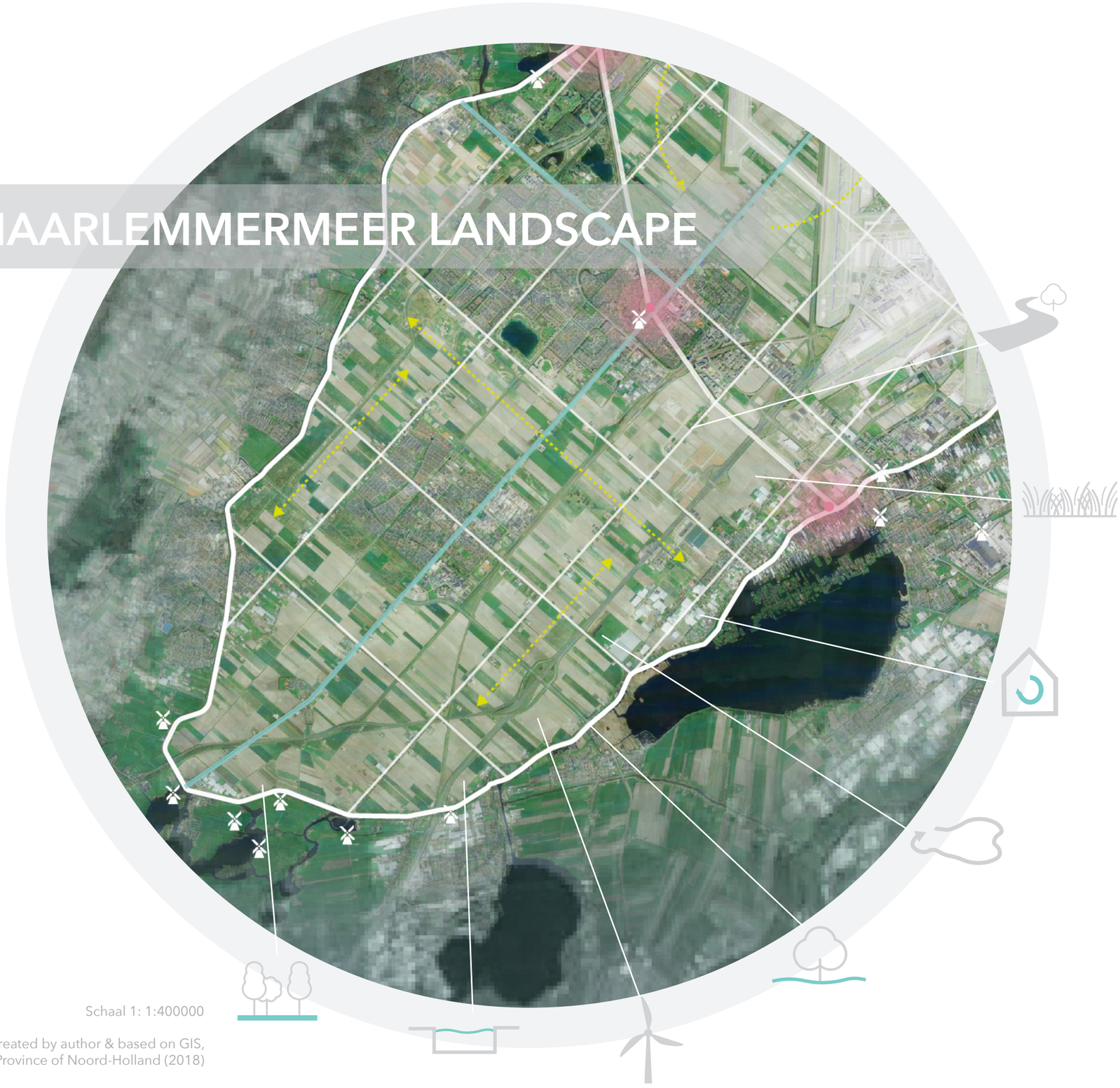
WATERLAND

Impression of the integrated solutions in the Waterland landscape



Source: image created by author.

HAARLEMMERMEER LANDSCAPE



Schaal 1: 1:400000

Map created by author & based on GIS, Province of Noord-Holland (2018)

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Waterstructures

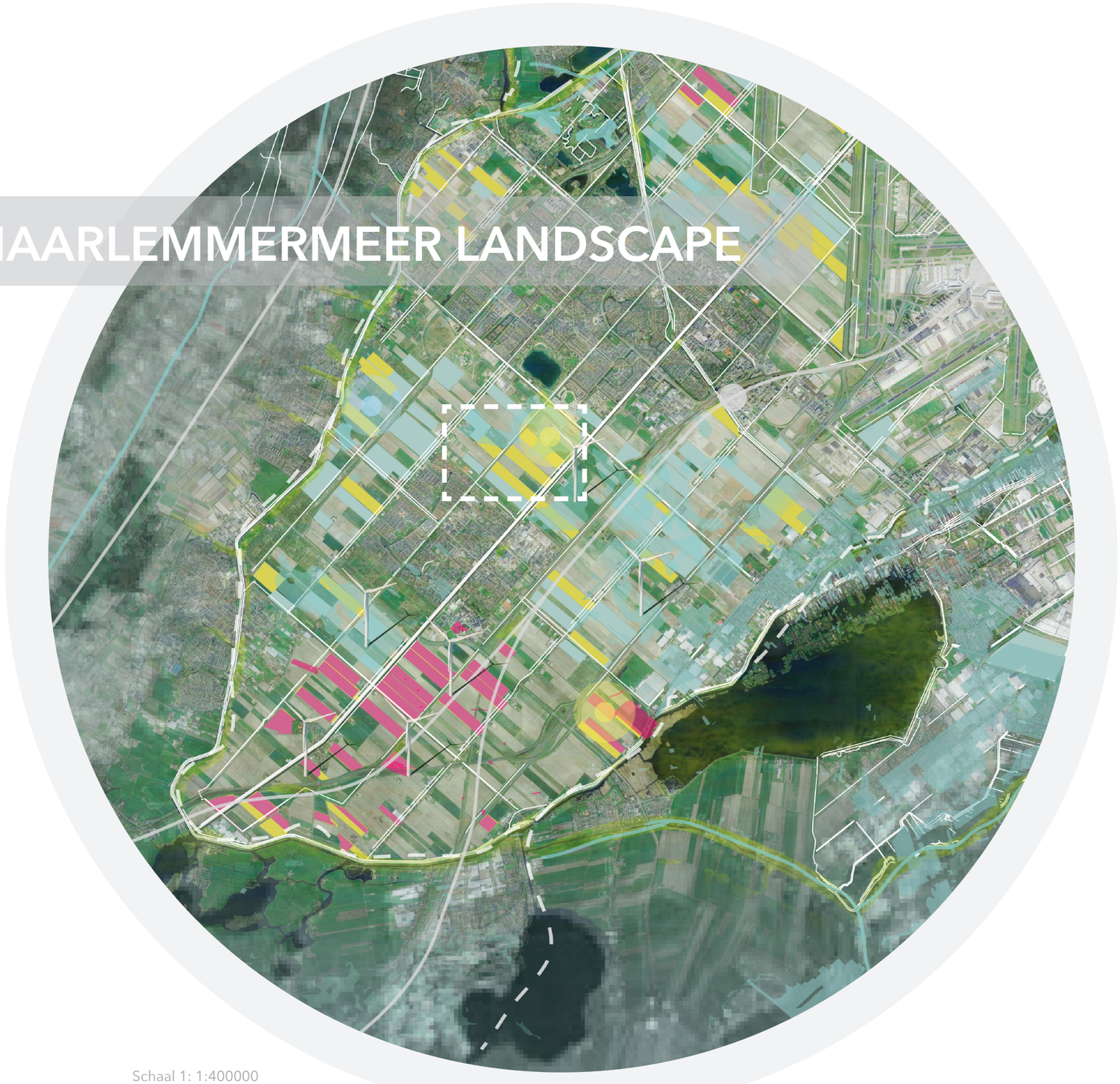
Sightlines in landscapes

Fortifications (Stelling van Amsterdam)

Traditional windmills

Schiphol Airport (landscape with restrictions)

HAARLEMMERMEER LANDSCAPE



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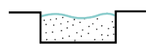

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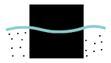

New water level



New food types



Sustainable energy



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Circular water system



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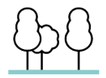
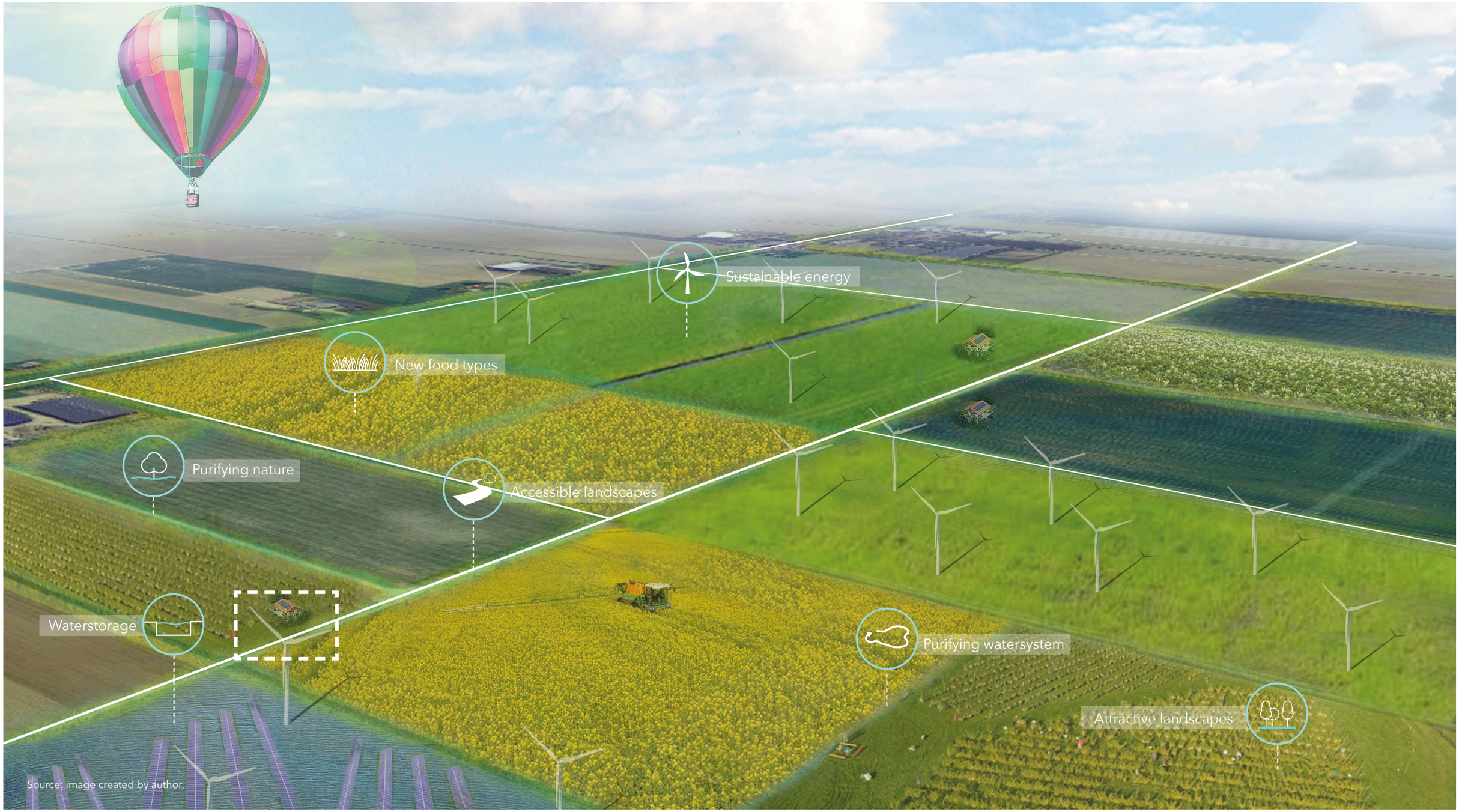


Attractive food landscape



Accessible food landscape

Impression of the integrated solutions in the Haarlemmermeer landscape



Source: image created by author.

HAARLEMMERMEER

Impression of the integrated solutions in the Haarlemmermeer landscape



Source: image created by author.

Challenges towards 2050

[food] landscapes in the MRA

Research question

Problems in the agricultural landscapes

Maximization method & scenario's

New perspective on [food] landscapes in 2050

Pilot projects: Waterland & Haarlemmermeer

Conclusions

THE RESEARCH QUESTION

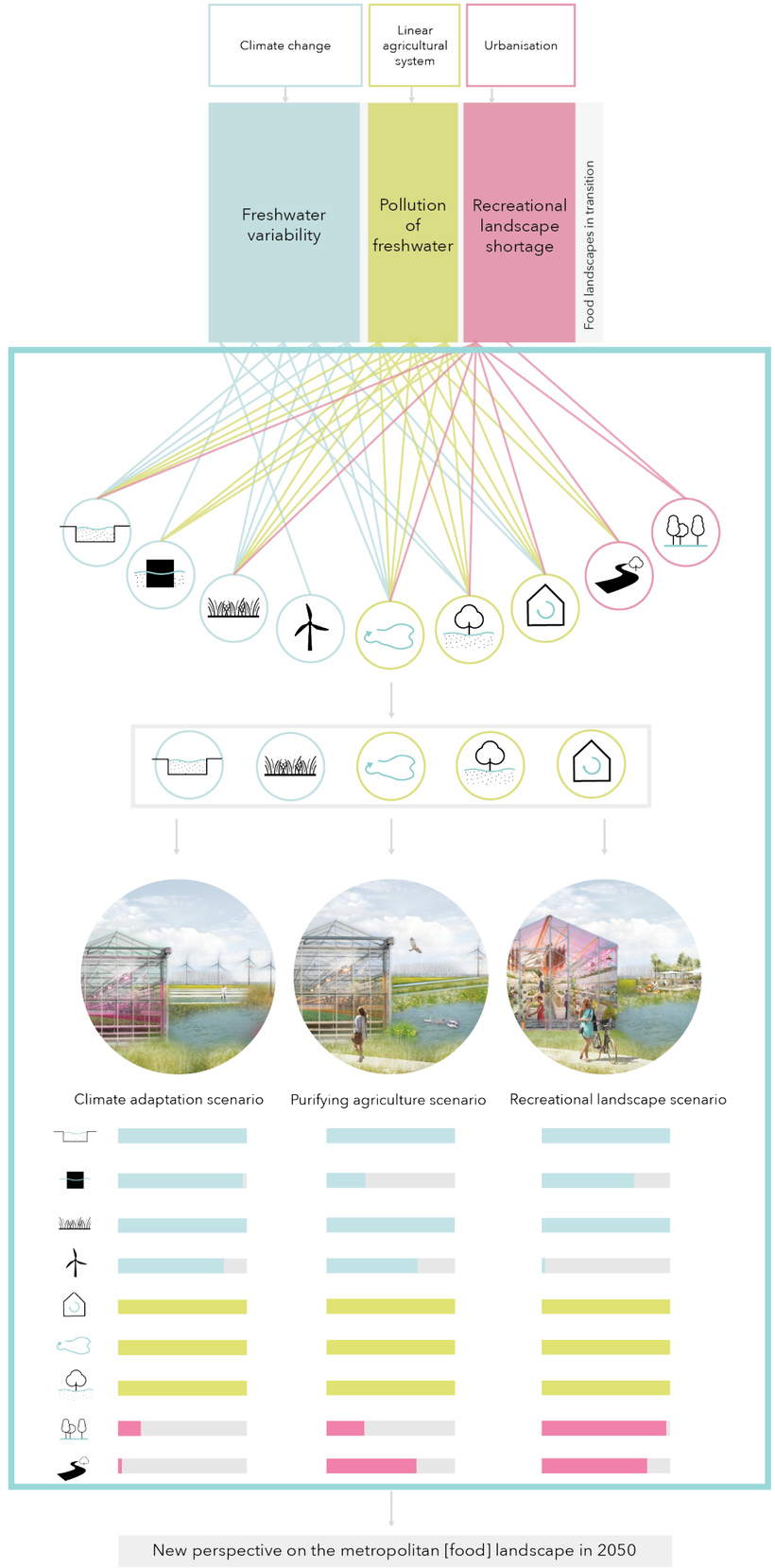
‘‘How to design a new perspective on the food landscapes in the metropolitan region of Amsterdam towards 2050 for a landscape that is

- *Resilient to the effects of climate change*
- *Restore the ecosystem (in the water) of the landscape*
- *Create opportunities for new activities to start that will strenghten the connection between cities and landscapes*

for a resilient & attractive region?’’

GENERAL CONCLUSIONS

- The maximization method provides a **new perspective on solving problems in the future in an integrative way.**



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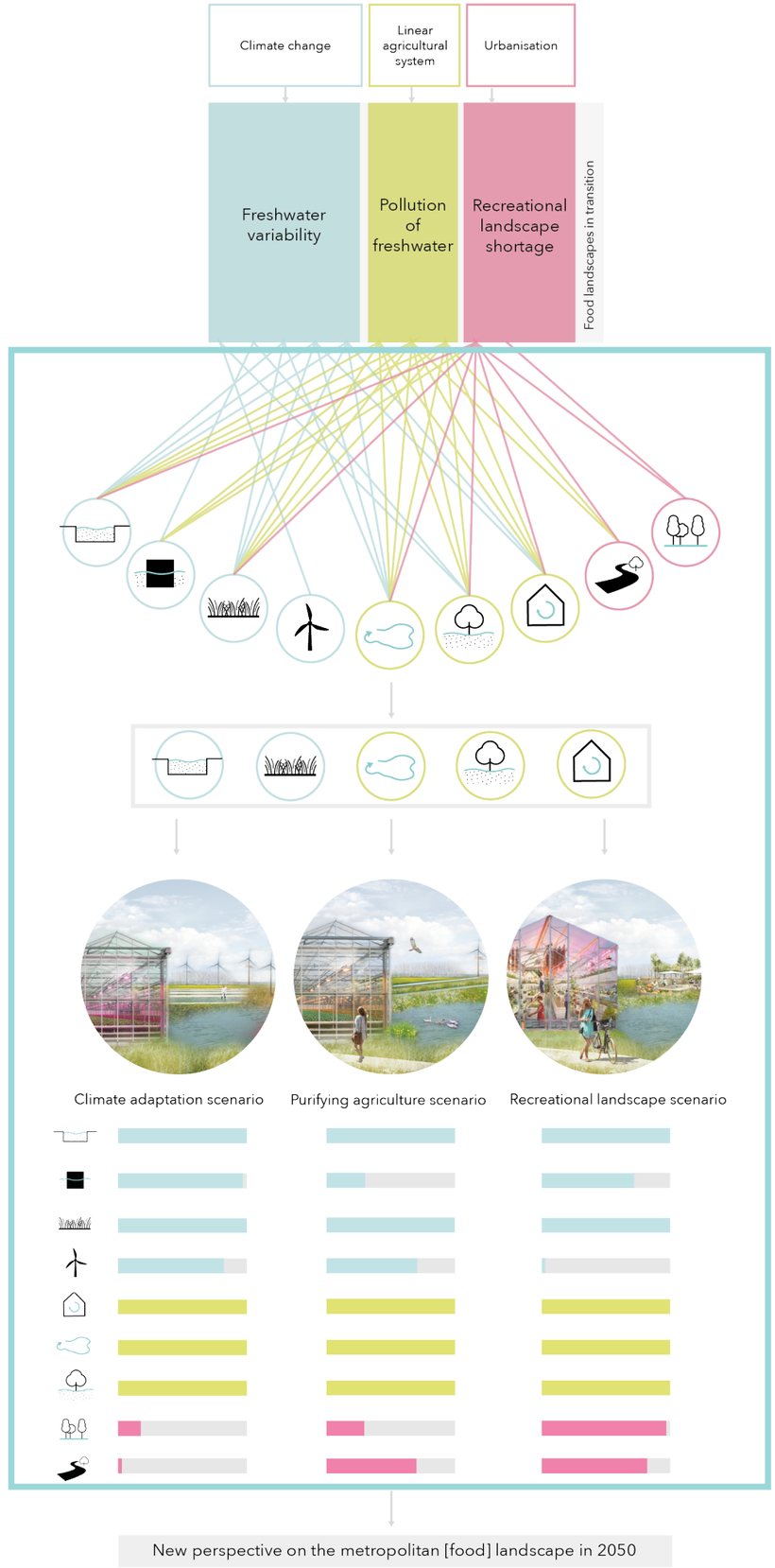
- The maximization method provides a **new perspective on solving problems in the future in an integrative way.**

- The **scenario's** as a addition to this method to include **designing with uncertainty** towards 2050 & including **the actors in the design process.**



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- The maximization method provides a **new perspective on solving problems in the future in an integrative way.**

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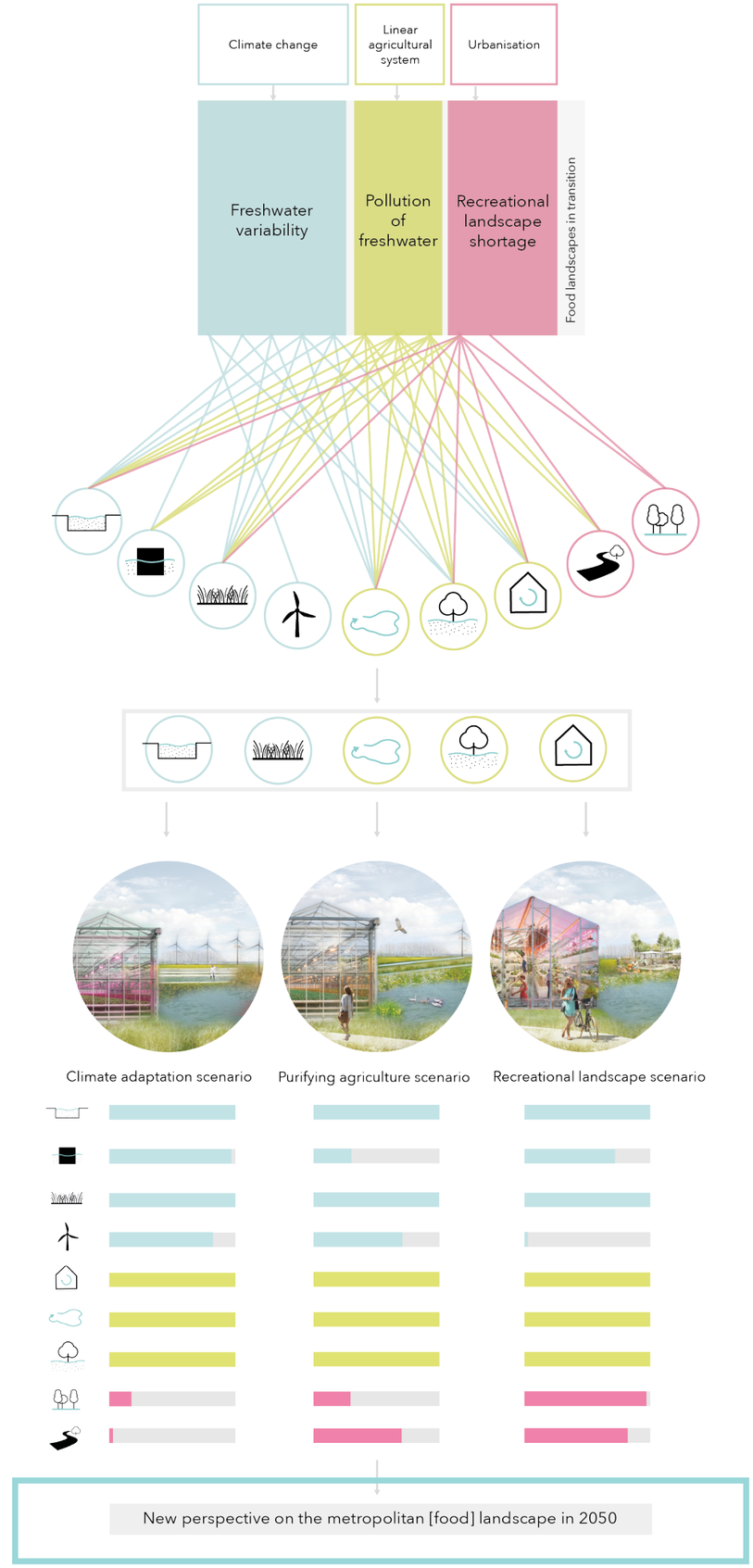
- The **design** of a new perspective on the [food] landscapes in the region is a **spatial example of this.**



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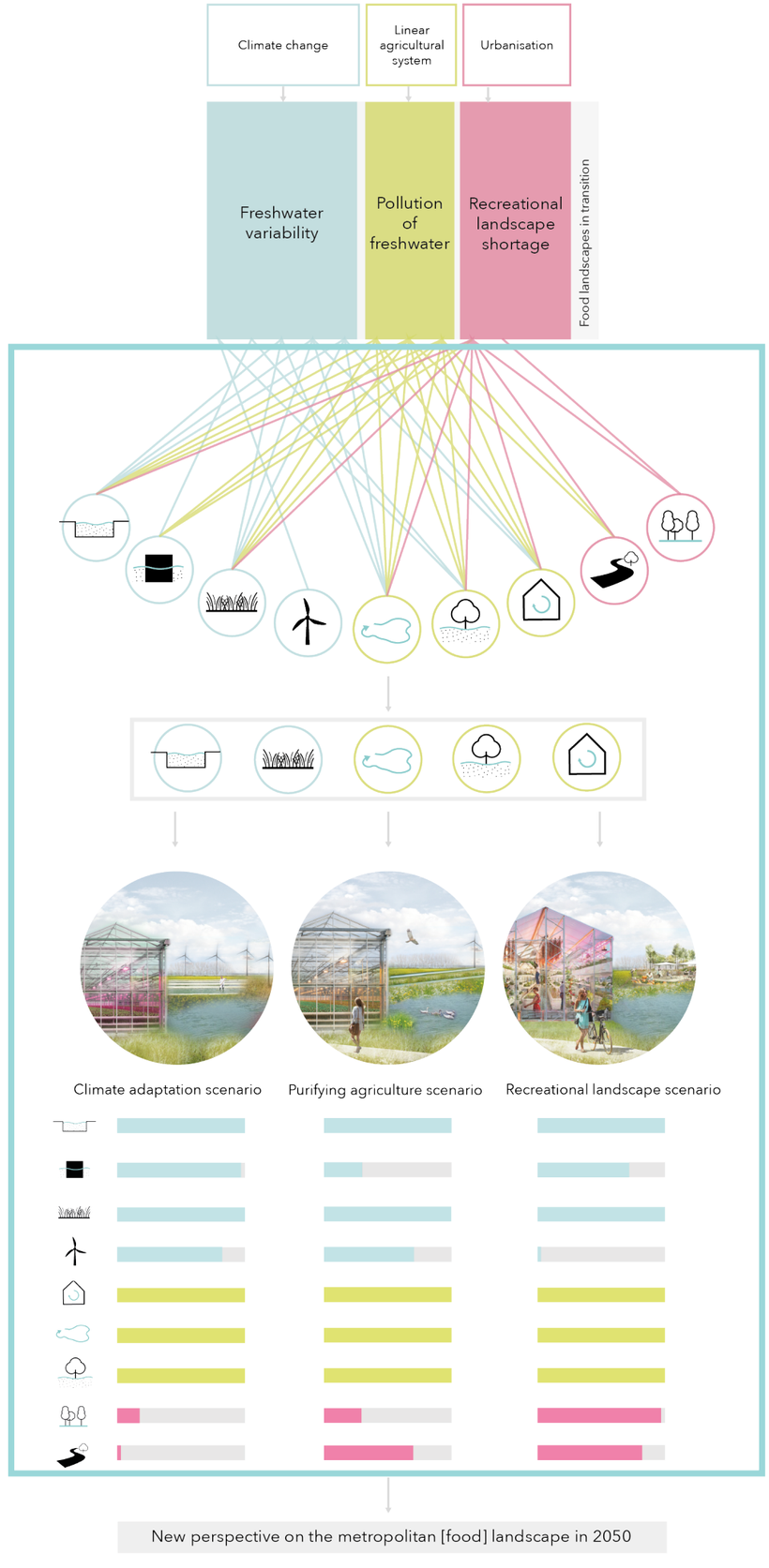

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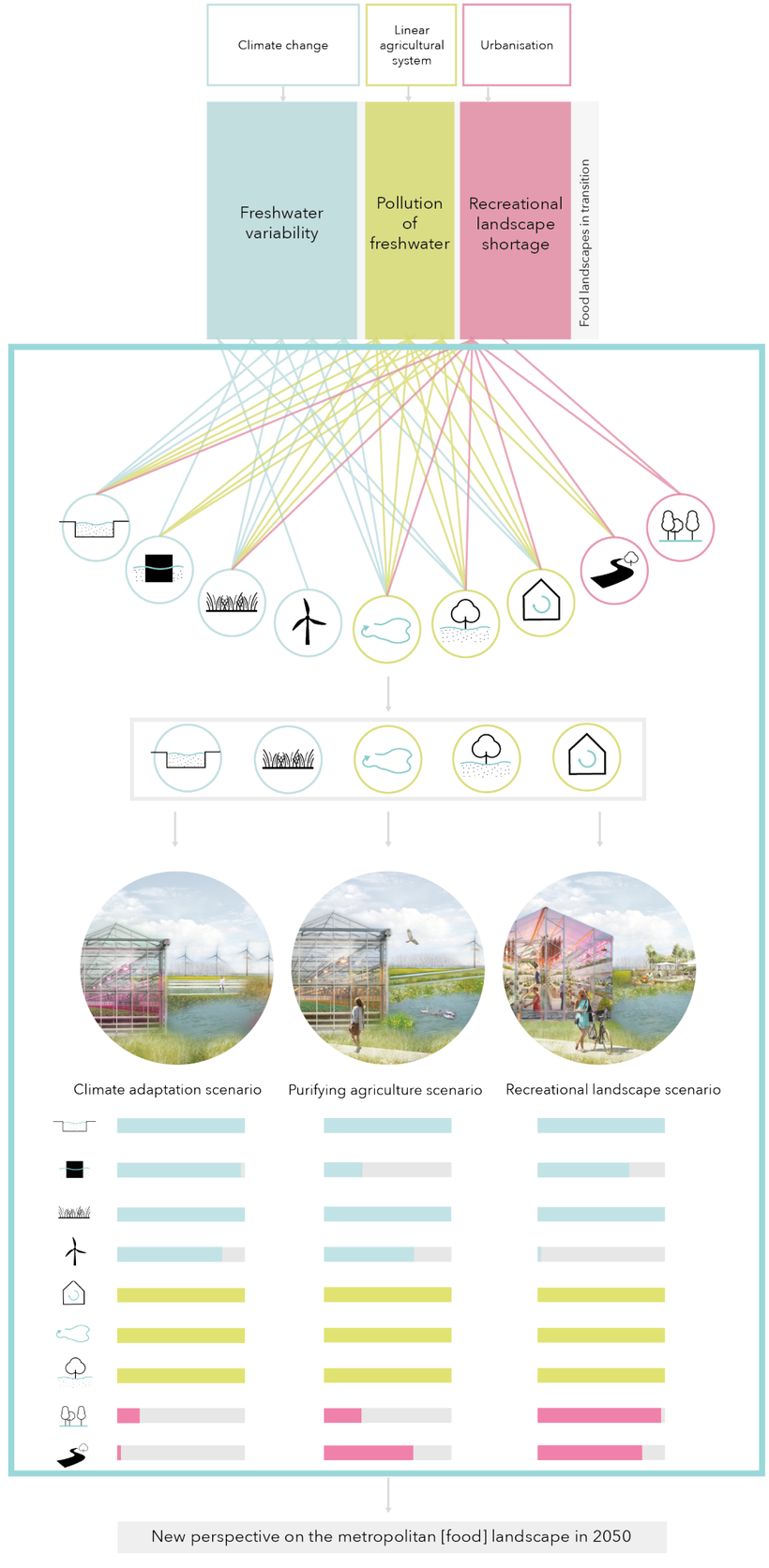
- This watersystem is **combined with climate adaptation solutions** and at locations where there is **a lot of potential with recreational solutions.** Since the purifying scenario was chosen in this project (by interviews with actors).



ZAANSTREEK LANDSCAPE

BEEMSTER LANDSCAPE

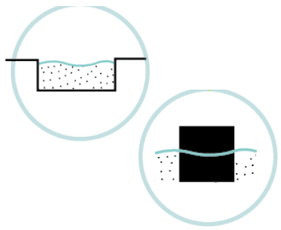
WATERLAND LANDSCAPE

HAARLEMMERMEER LANDSCAPE

NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES IN 2050

LANDSCAPE SPECIFIC CONCLUSIONS

- The solutions of **waterstorage & new water levels** are **landscape specific solutions for the droogmakerij and veenweide landscapes**. Because of the unique waterstructure and soil type.



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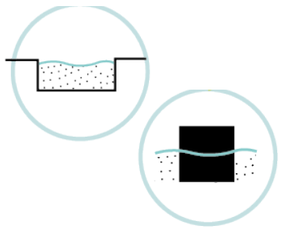

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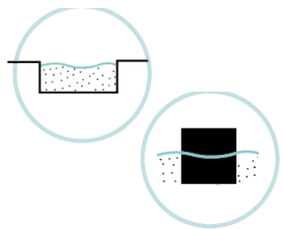

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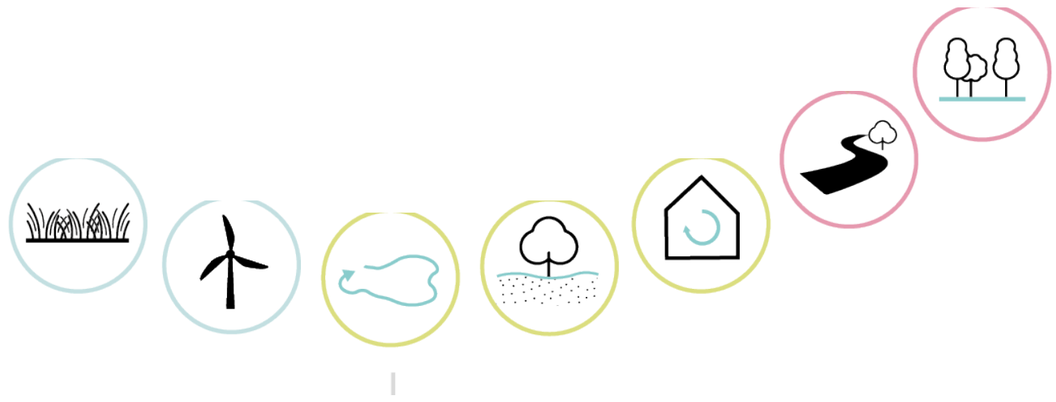

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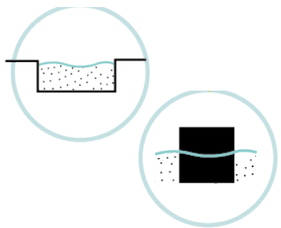

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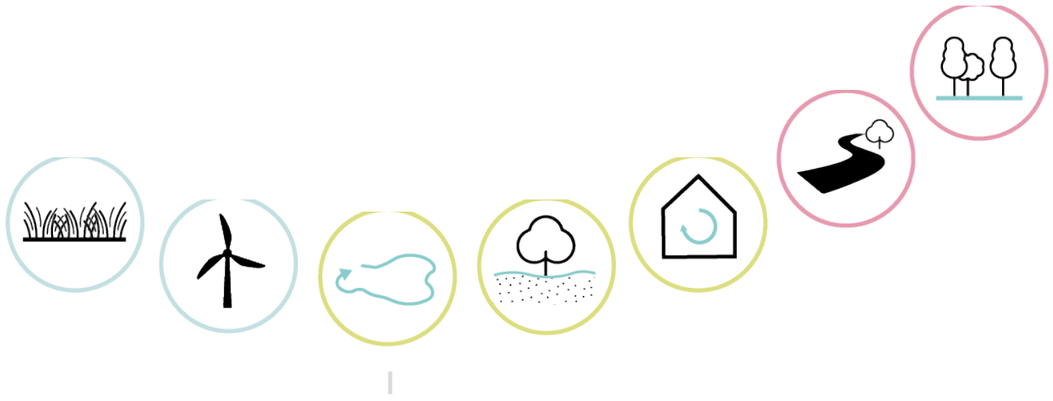
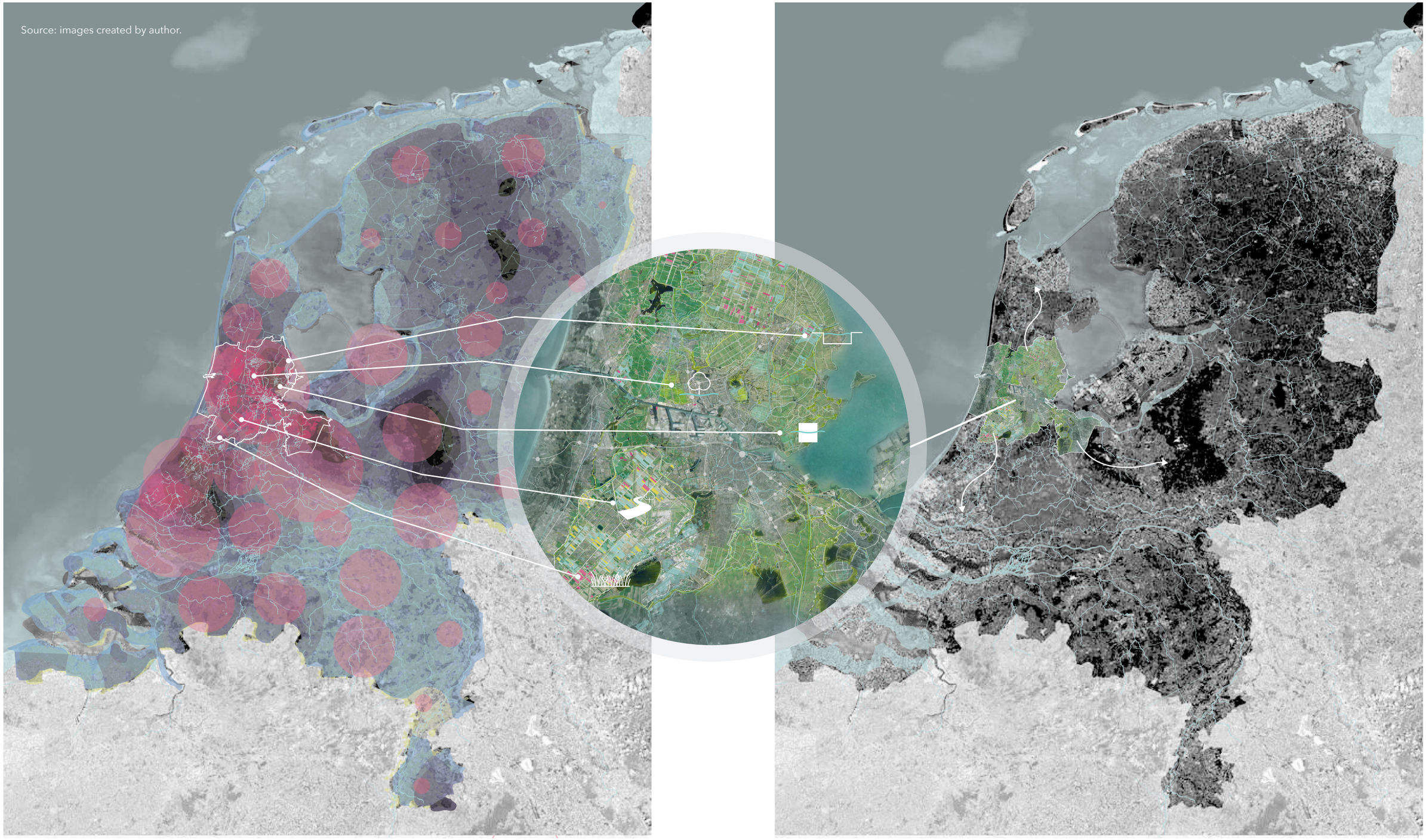


NEW PERSPECTIVE ON THE [FOOD] LANDSCAPES & TRENDS IN 2050

Source: images created by author.



PROBLEMS IN THE FOOD LANDSCAPES IN 2050

DROOGMAKERIJ LANDSCAPES



VEENWEIDE LANDSCAPES



RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES IN THE METROPOLITAN REGION OF AMSTERDAM IN 2050



RESILIENT & ATTRACTIVE [FOOD] LANDSCAPES IN THE METROPOLITAN REGION OF AMSTERDAM IN 2050



THANK YOU!