





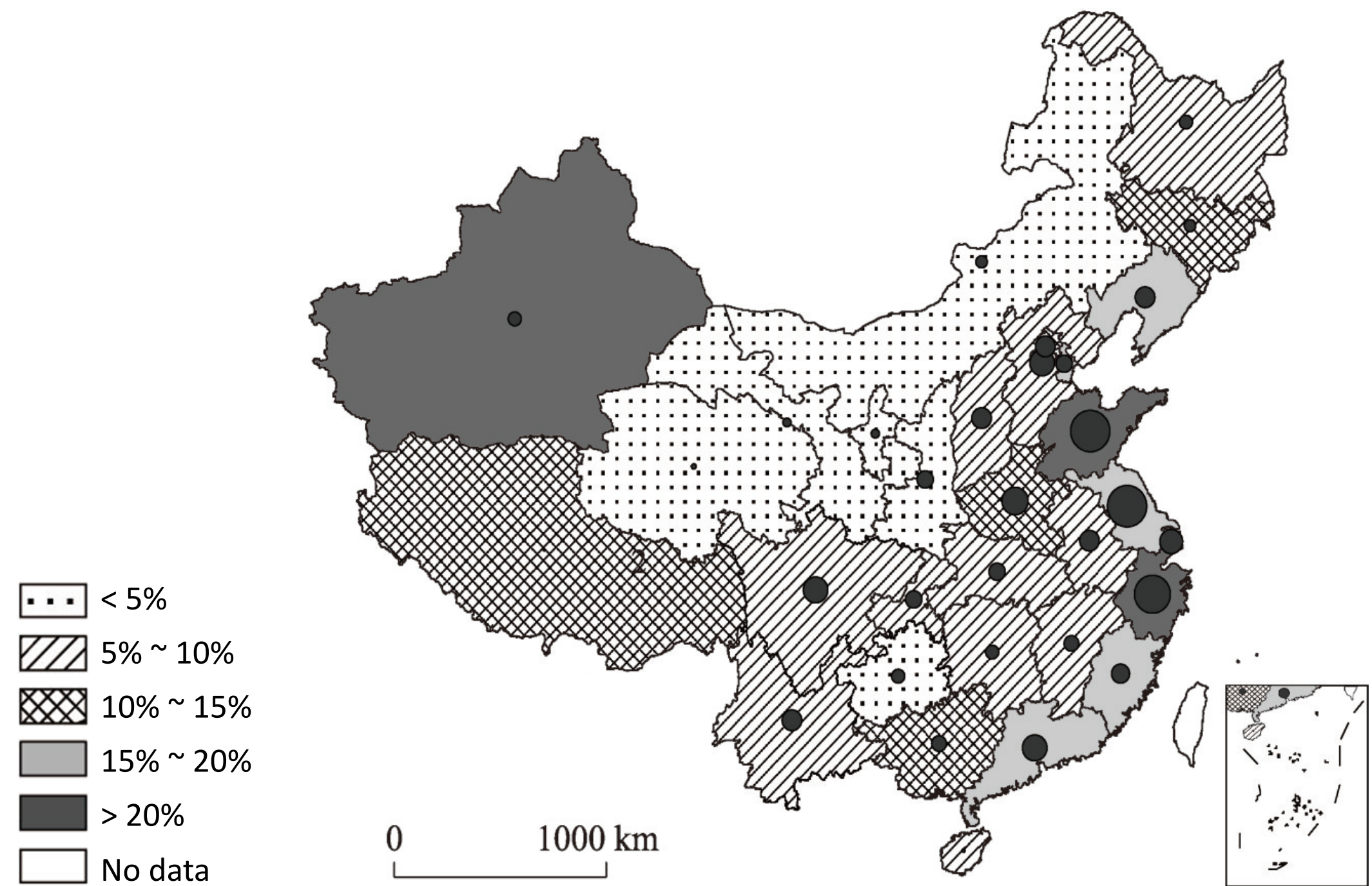
# THE URBAN-RURAL DICHOTOMY IN CHINA

中国的城乡二元化





DECREASING ARABLE LAND  
消失的耕地



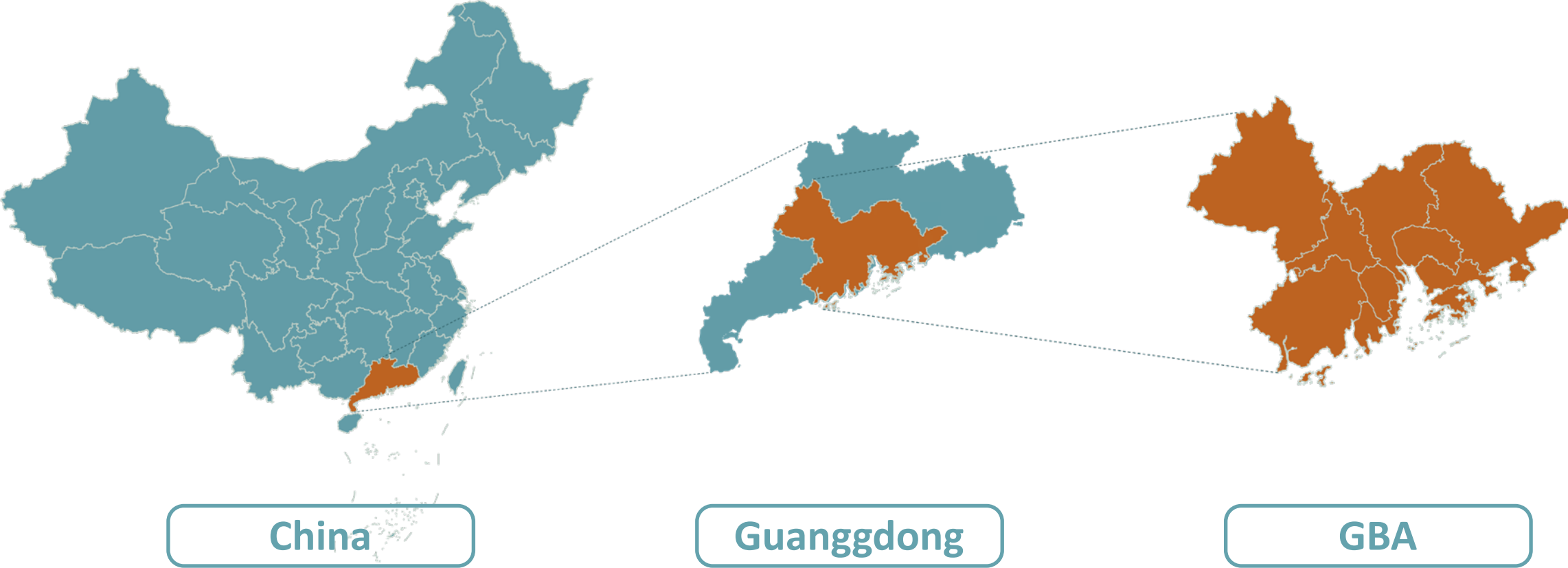
*Proportion of arable land occupied by construction land*

Source: Liu, T., Shi, Q., Wang, Y., & Yang, Y. (2018). Urban-rural development and occupation of cultivated land in China: Trends, geography, and drivers. *Geographical Research*, 37(8), 1609–1623.



# GREATER BAY AREA: THE LEADING DEVELOPING REGION

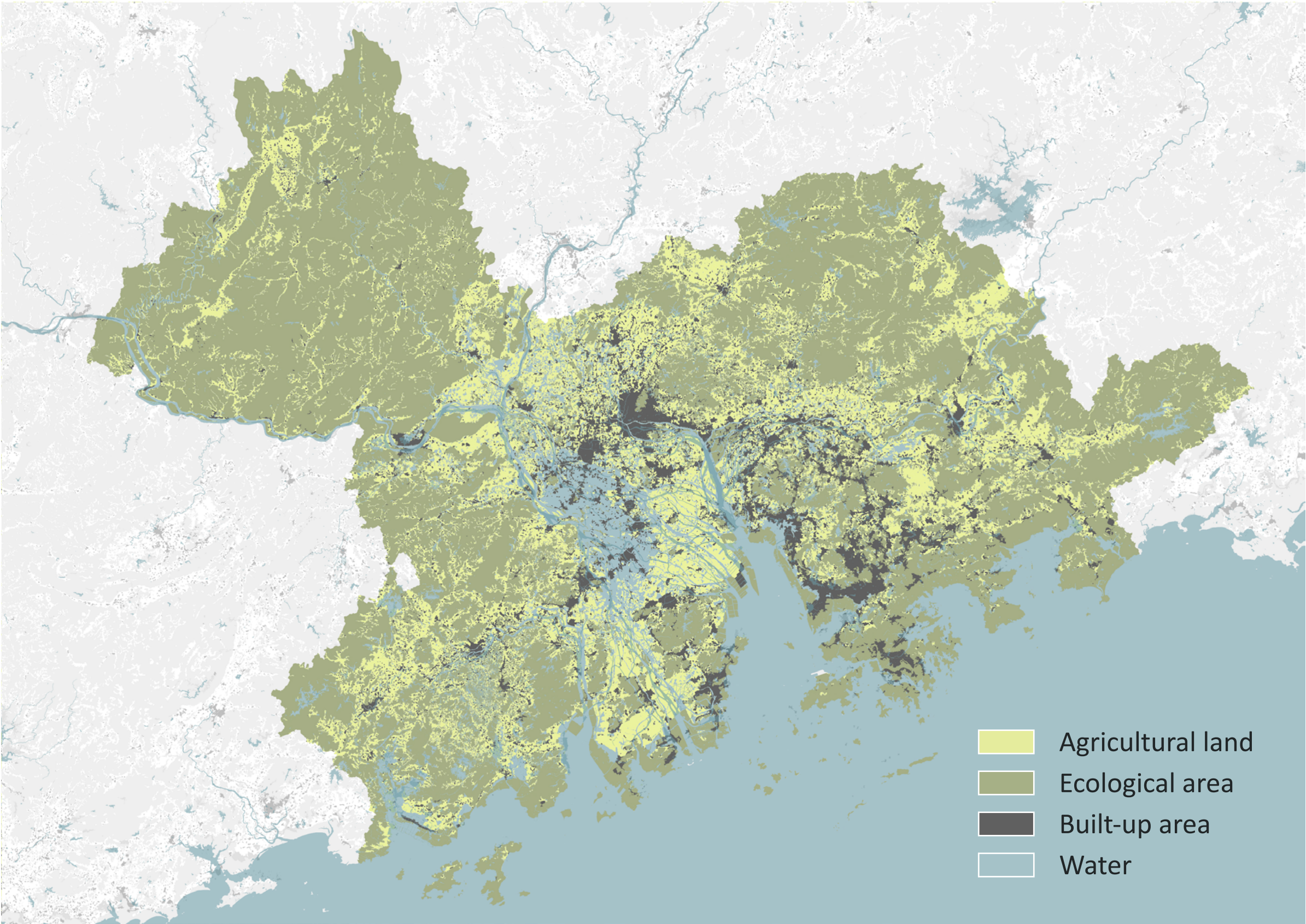
粤港澳大湾区：全国领先的发展地区





# GREATER BAY AREA: MASSIVE RURAL CONTEXT

粤港澳大湾区：广袤的乡村地区

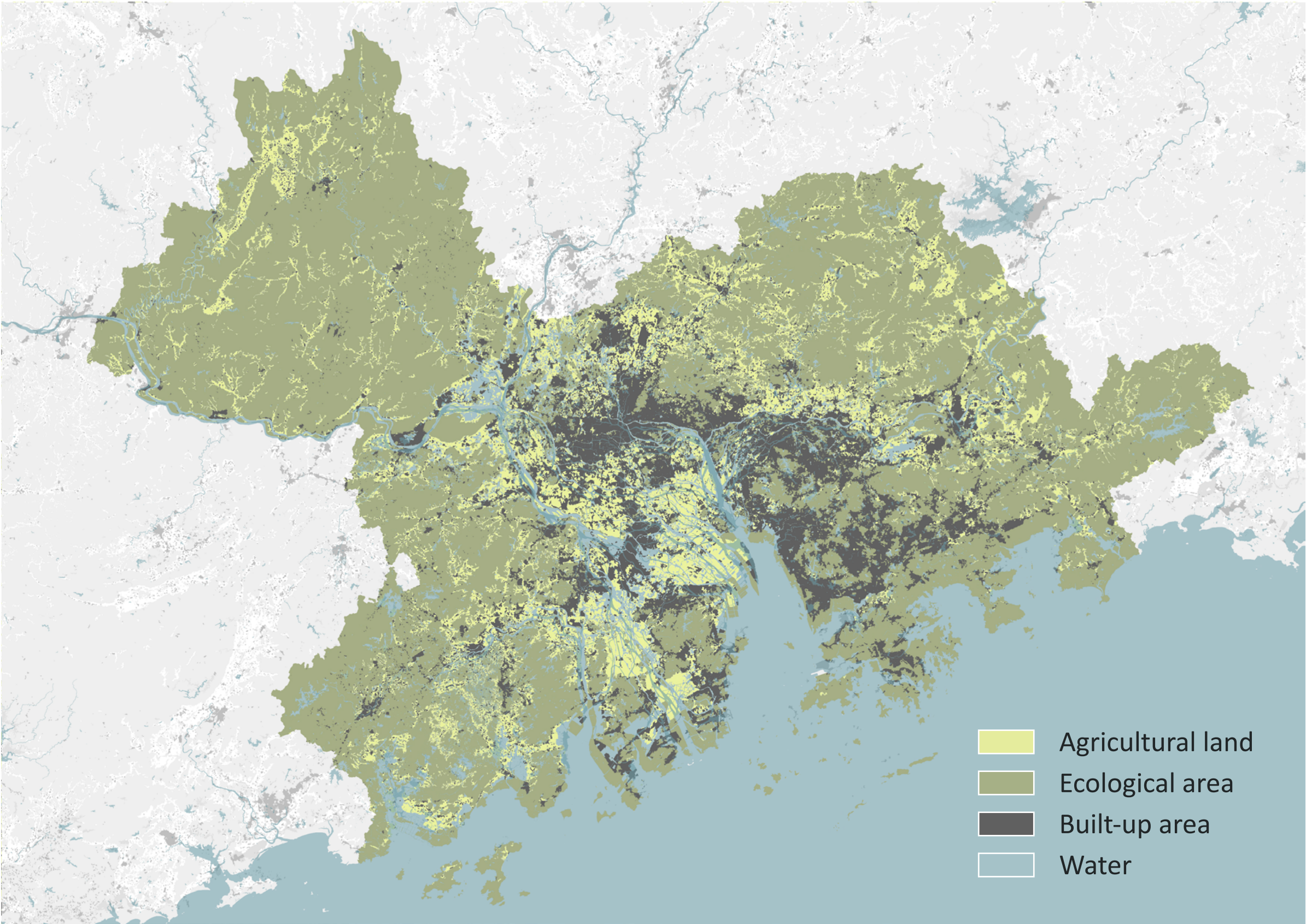


Source: Author, data from National Bureau of Statistics



# GREATER BAY AREA: MASSIVE RURAL CONTEXT

粤港澳大湾区：广袤的乡村地区



Source: Author, data from National Bureau of Statistics



## RURAL INDUSTRIALISATION

乡村工业化





# THE THREE RURAL PROBLEMS

三农问题

*People*



*Land use*



*Industry*









## DIGITALISATION INFLUENCING RURAL AREAS

数字化时代正影响乡村区域

- *E-commerce business*

Online trading activities that rely on digital platforms, which are creating more efficient and transparent global markets. They provide businesses with enormous built-in customer bases and effective ways to reach them.



*Farmers selling fruits by Taobao platform*



*Picture of a successful Taobao Village*

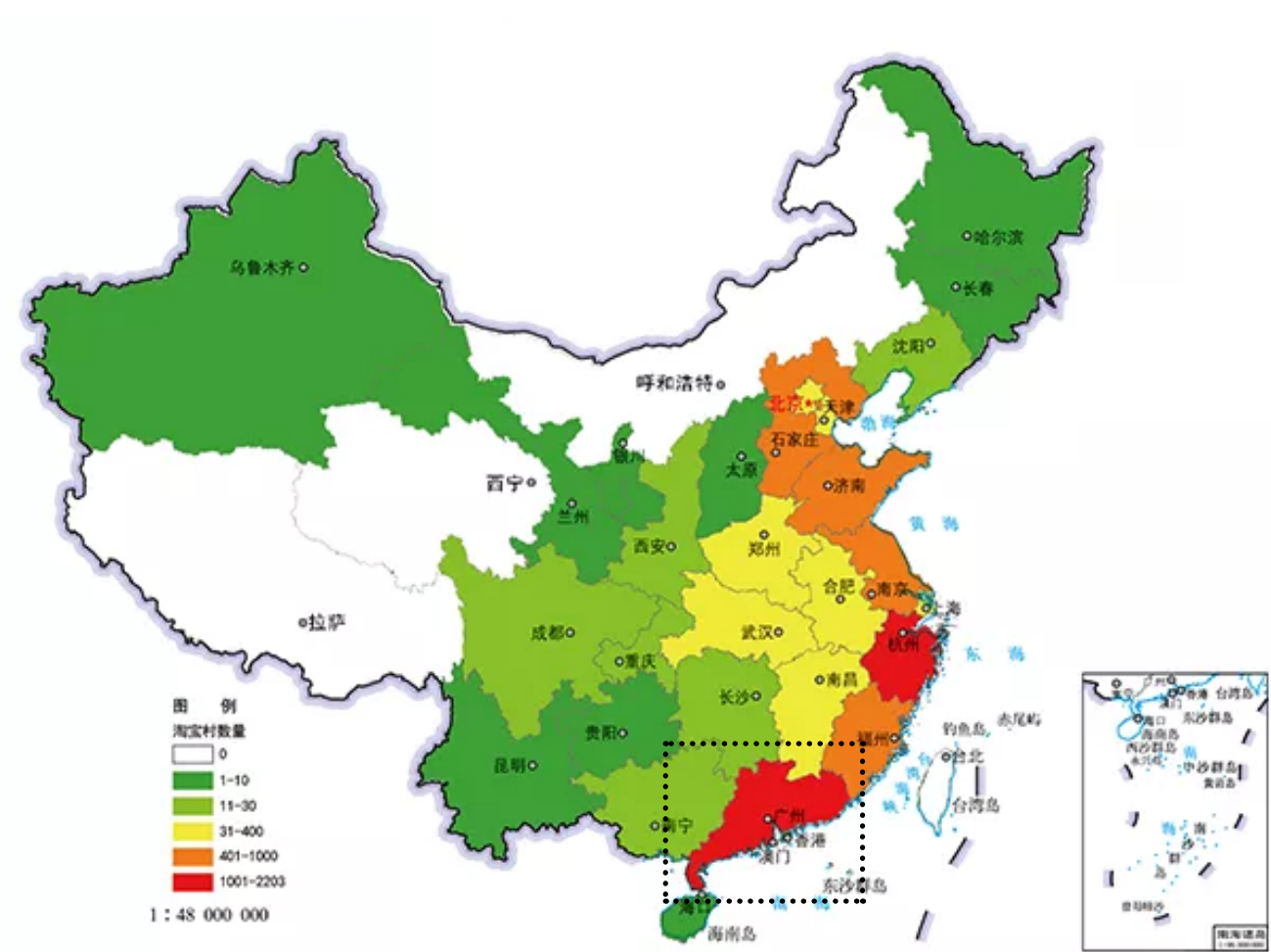


# THE THRIVING TAOBAO VILLAGES IN CHINA

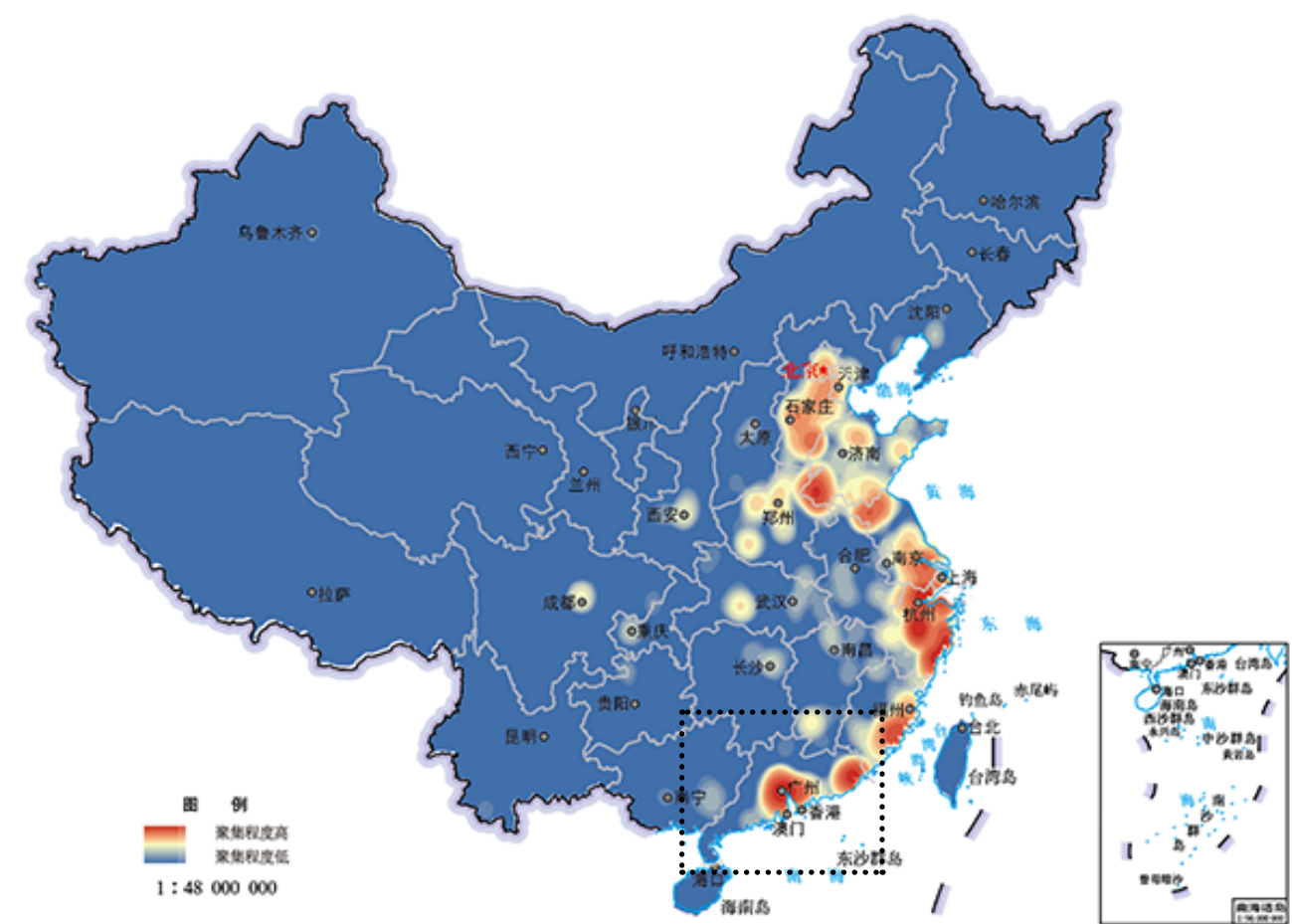
## 中国蓬勃发展的淘宝村

- *Taobao Village*

Based on the Internet information technology conditions, the villages developed e-commerce spontaneously based on Taobao and other online platforms as a medium for production and trading economic activities.



*Taobao Villages distribution map*



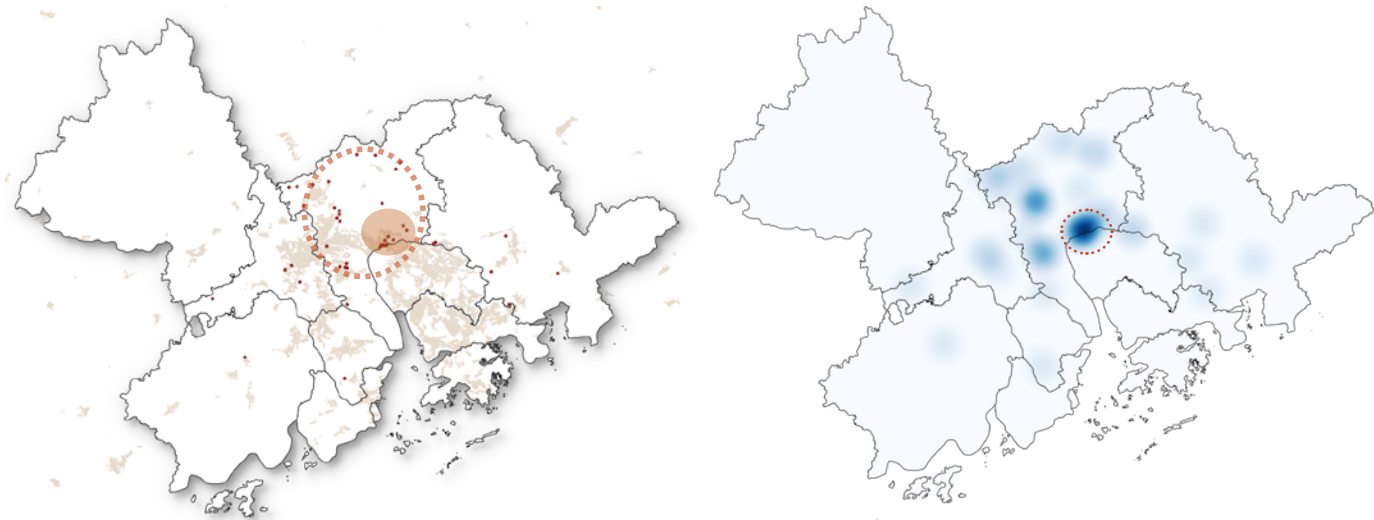
*Heatmap analysis of Taobao Villages*



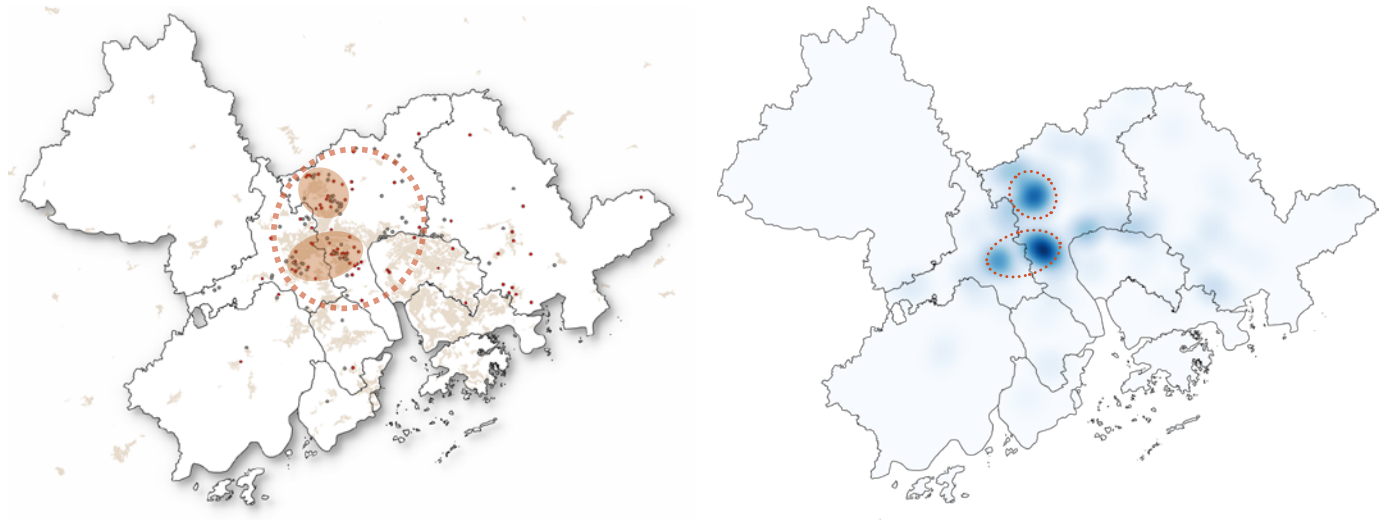
# GBA AS THE LEADING DEVELOPING REGION

粤港澳大湾区成为全国领先的淘宝村发展区域

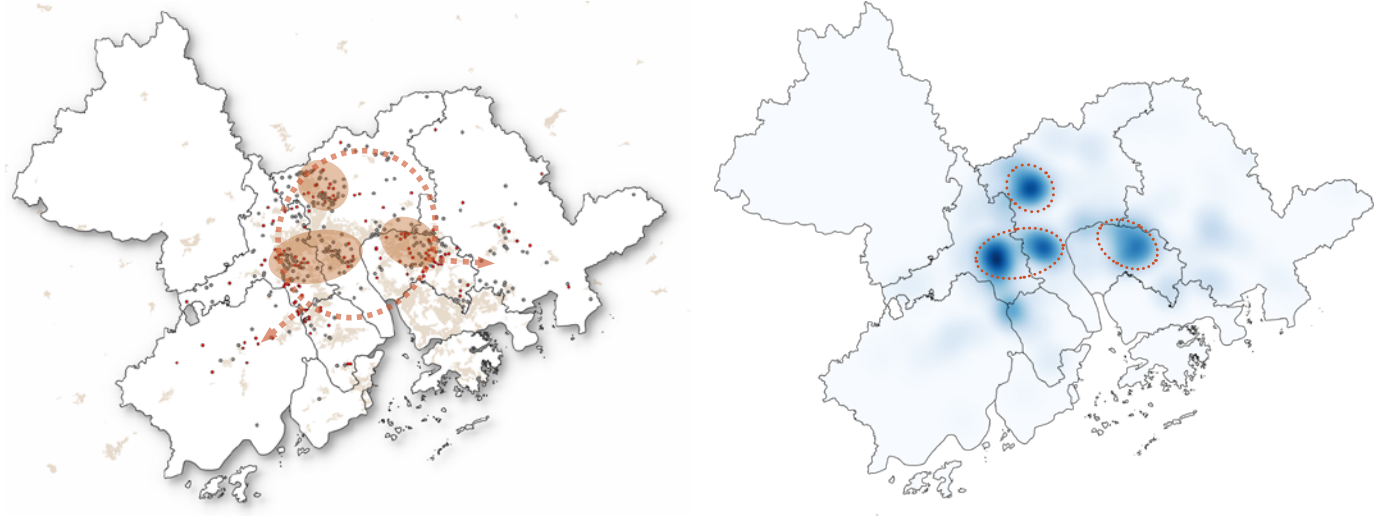
Phase I: Emergence (before 2014)



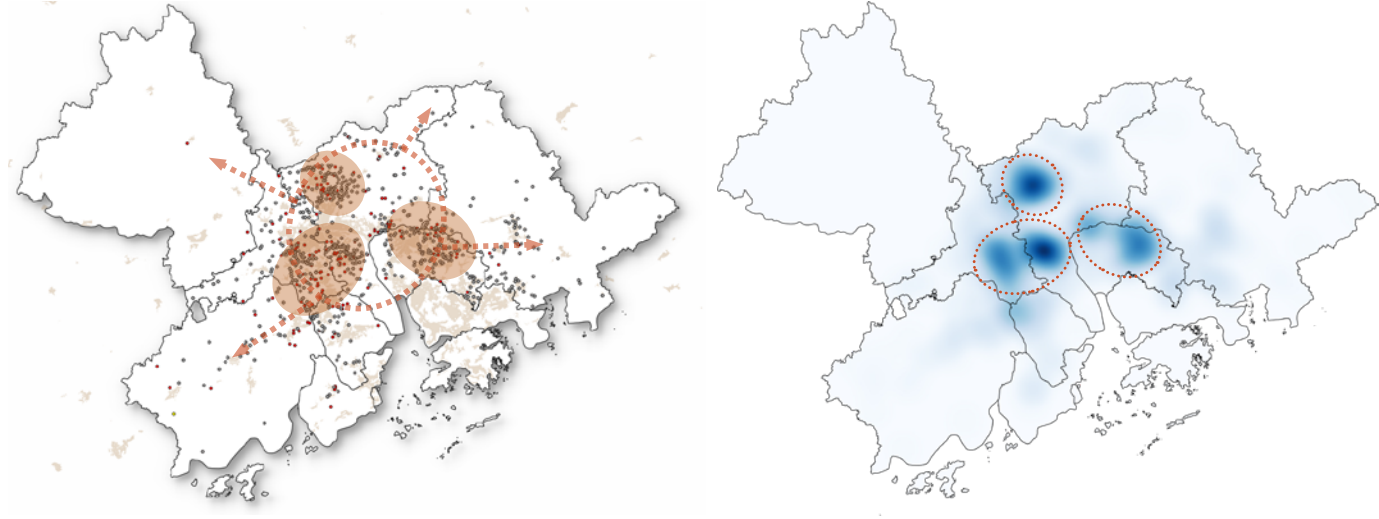
Phase II: Radiation (2014-2016)



Phase III: Diffusion (2016-2018)



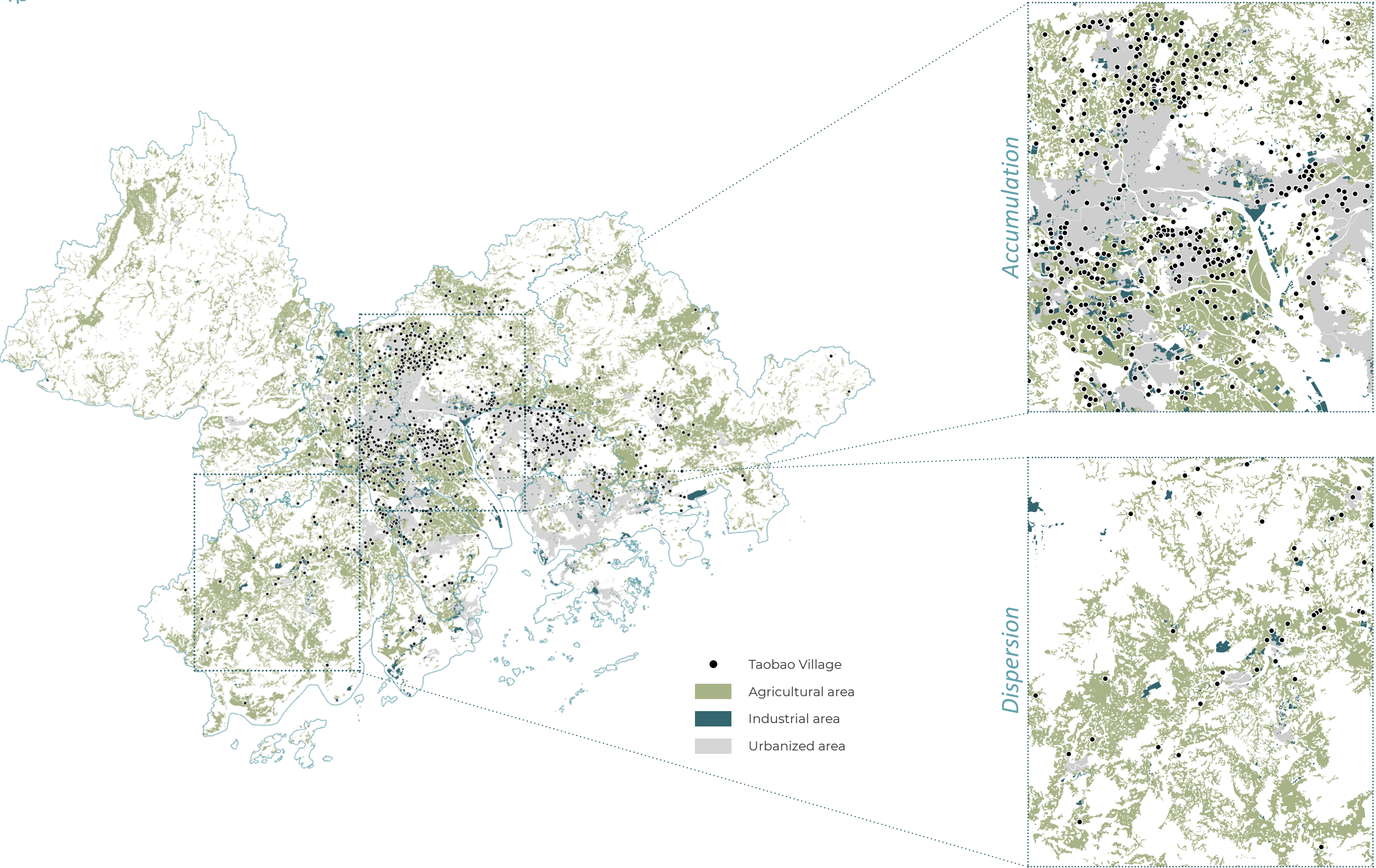
Phase IV: Clustering (2018-2021)





DIFFERENTIATED SPATIAL DISTRIBUTION

差异悬殊的空间分布





## SPATIAL CONFLICTS BETWEEN INDUSTRY AND VILLAGE

工业与乡村的空间矛盾



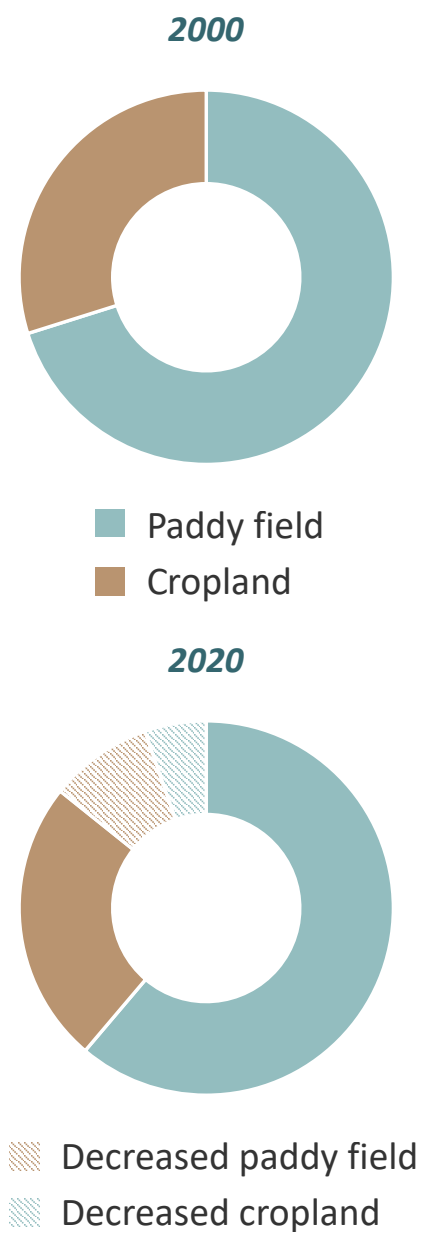


# DESTRUCTION OF AGRICULTURE

农业的退化



Degraded agricultural land  
in GBA from 2000 to 2020

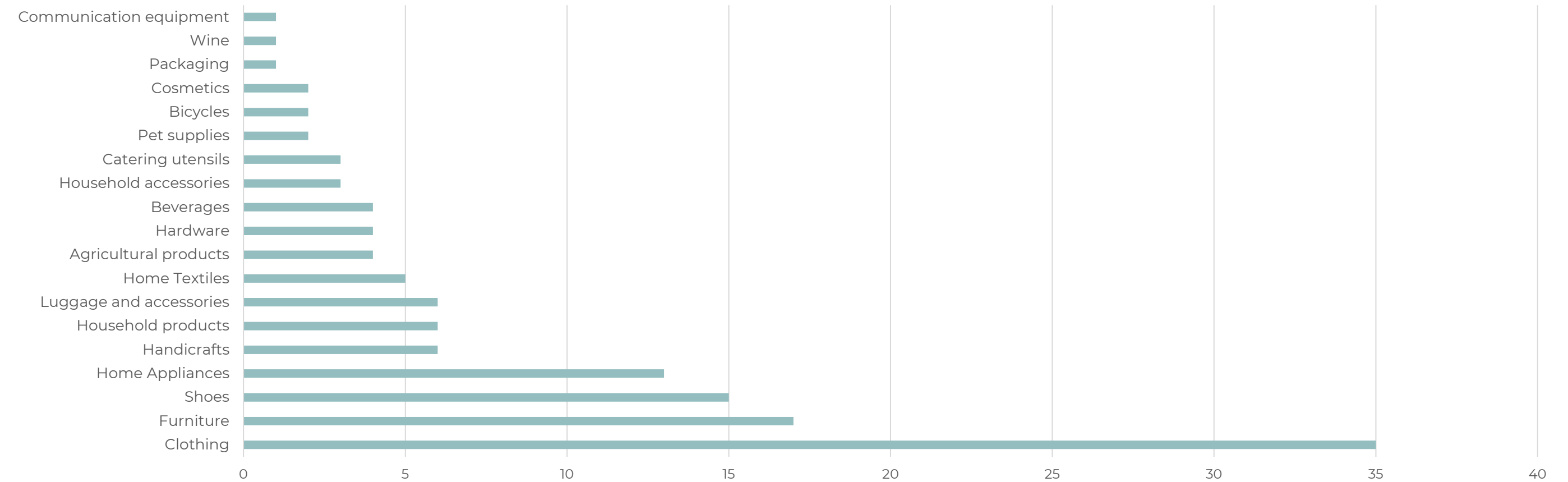


Source: David Greedy/Getty Images, <https://insideclimatenews.org/news/30032022/crop-insurance-premiums-flood-agriculture/>; Wang, X., Zhang, C., Liao, Y., Liu, G., Wang, B., & Yu, J. (2021)



# LABOUR-INTENSIVE MANUFACTURING

劳动密集型产业



Industrial foundation of top 100 Taobao Villages

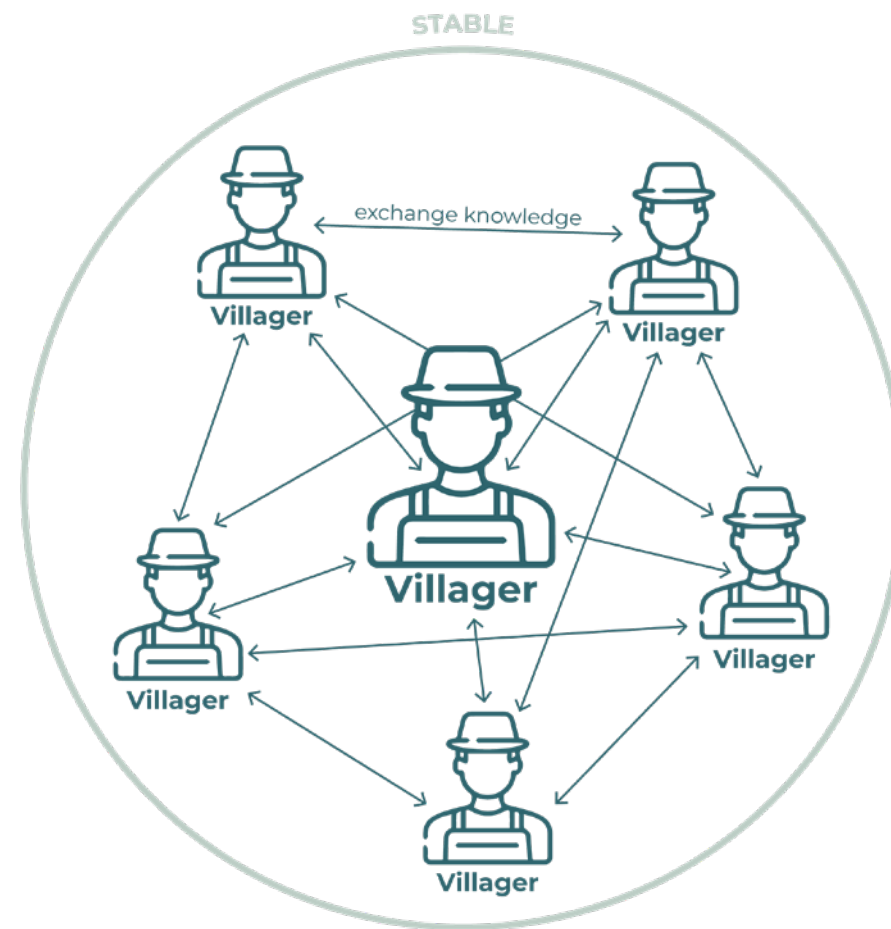
Source: Baidu Pictures; Diagram drawn by author, data from Alibaba Research Institute



# IMPACTS ON RURAL SOCIETY

对乡村社会的冲击

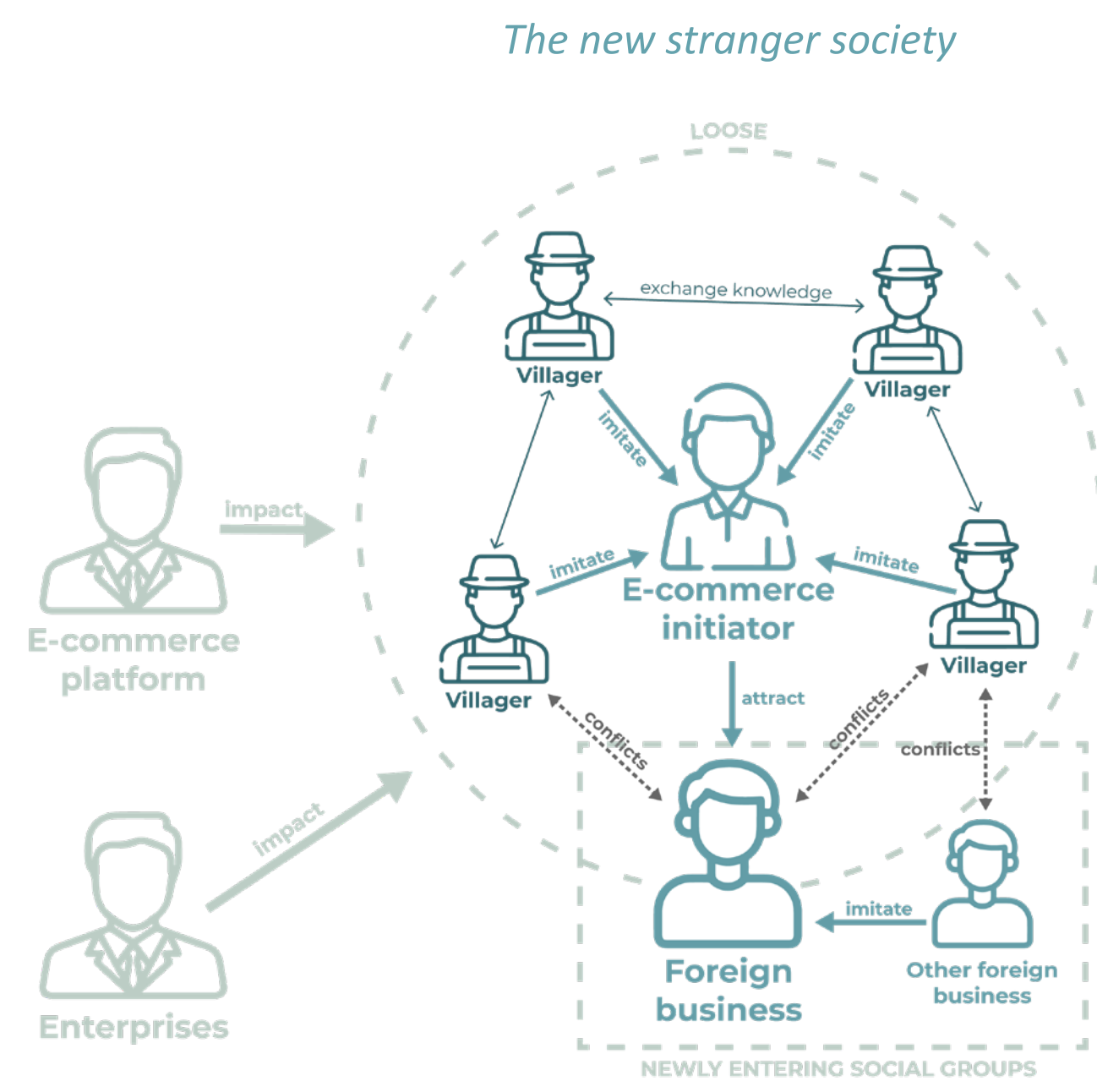
*The original acquaintance society*





# IMPACTS ON RURAL SOCIETY

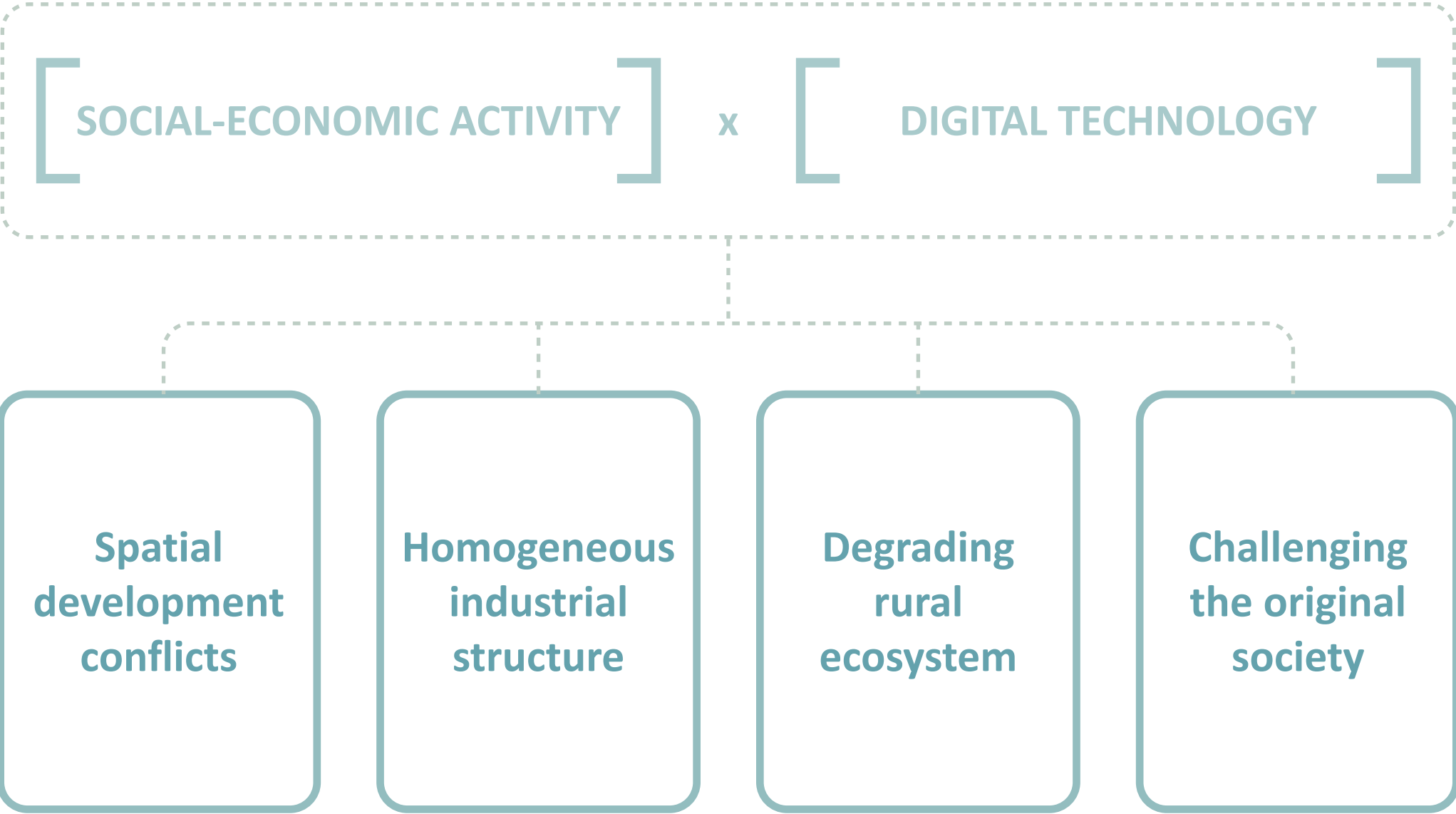
对乡村社会的冲击





PROBLEM POSITIONING

问题综述





# R E S E A R C H Q U E S T I O N

---

**How to construct 'Smart Village' based on the optimized Taobao Village model to upgrade the agricultural industry and improve rural liveability for future rural revitalization in GBA?**

## UNDERSTAND

*How to understand the spatial impact of the digital economy on rural areas and optimise the Taobao Village mechanism for rural development?*

## EXPLORATION

*What spatial approaches need to be implemented to improve the quality of life and protect ecosystems in rural areas?*

## APPLICATION

*How can the network system positively impact the development of localised industrial structures and sustainable agriculture?*

## REFLECTION

*How to mitigate social segregation and help reconstruct social relations in the face of new populations entering rural areas?*



## WHAT IS TAOBAO VILLAGE?

什么是淘宝村？





TAOBAO VILLAGES: INDUSTRIAL-BASED & AGRICULTURAL-BASED

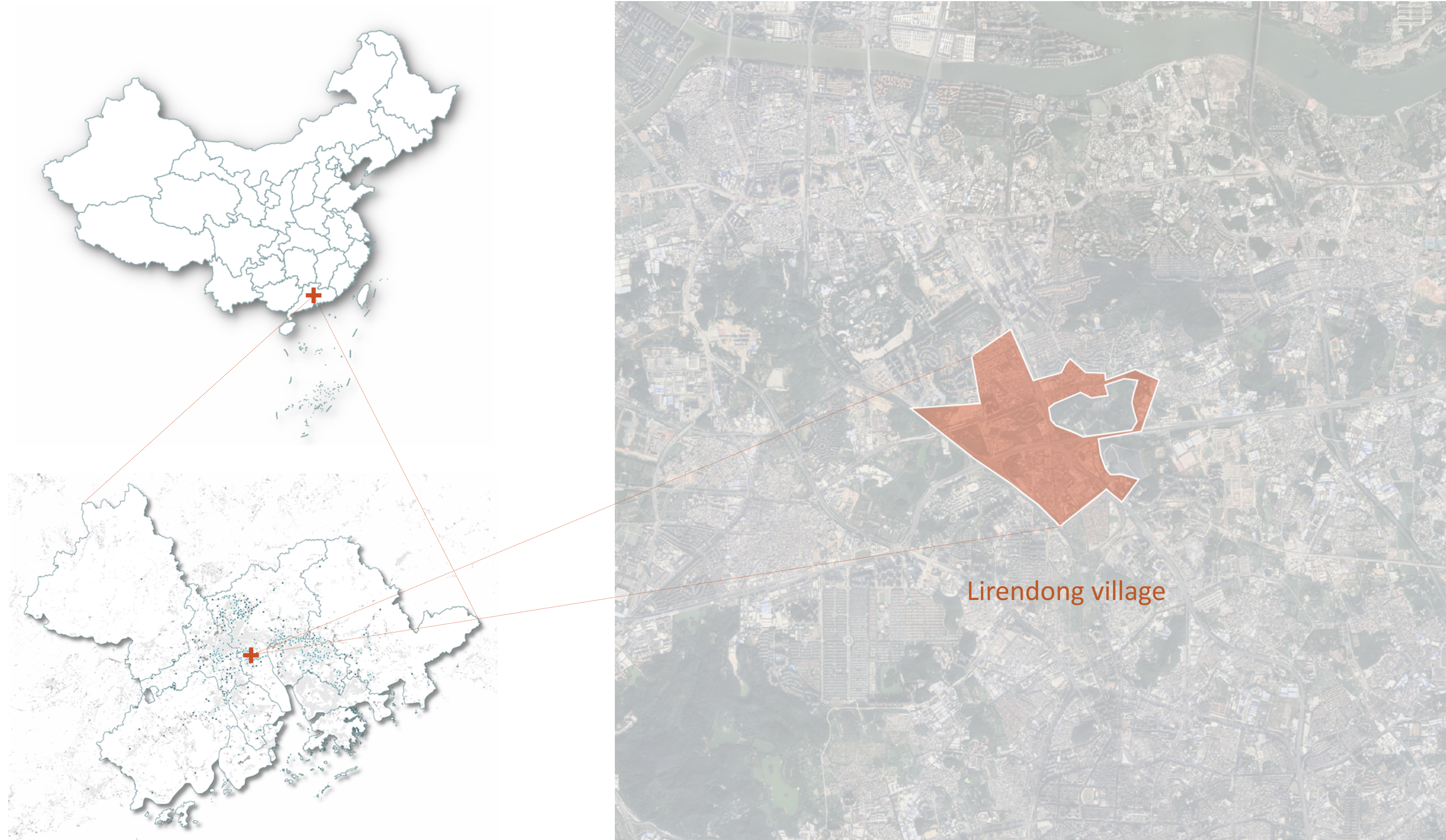
工业型淘宝村 & 农业型淘宝村





# LIRENDONG VILLAGE: INDUSTRIAL-BASED TAobao VILLAGE

里仁洞村：工业型淘宝村





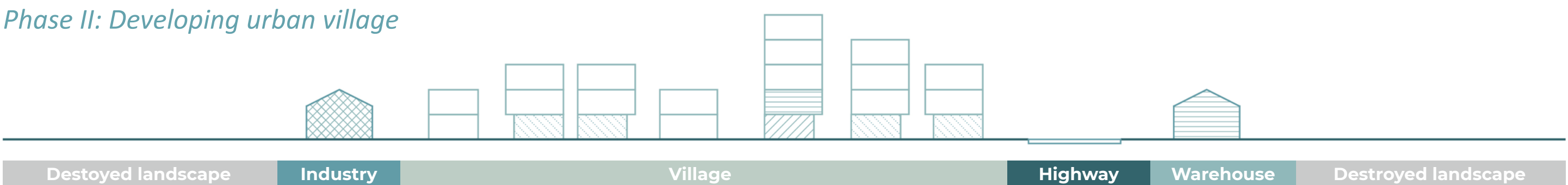
# LIRENDONG VILLAGE: INDUSTRIAL-BASED TAobao VILLAGE

里仁洞村：工业型淘宝村

Phase I: Traditional rural village



Phase II: Developing urban village



Phase III: Industrial-based Taobao Village





## ATMOSPHERE OF INDUSTRIAL-BASED TAobao VILLAGE

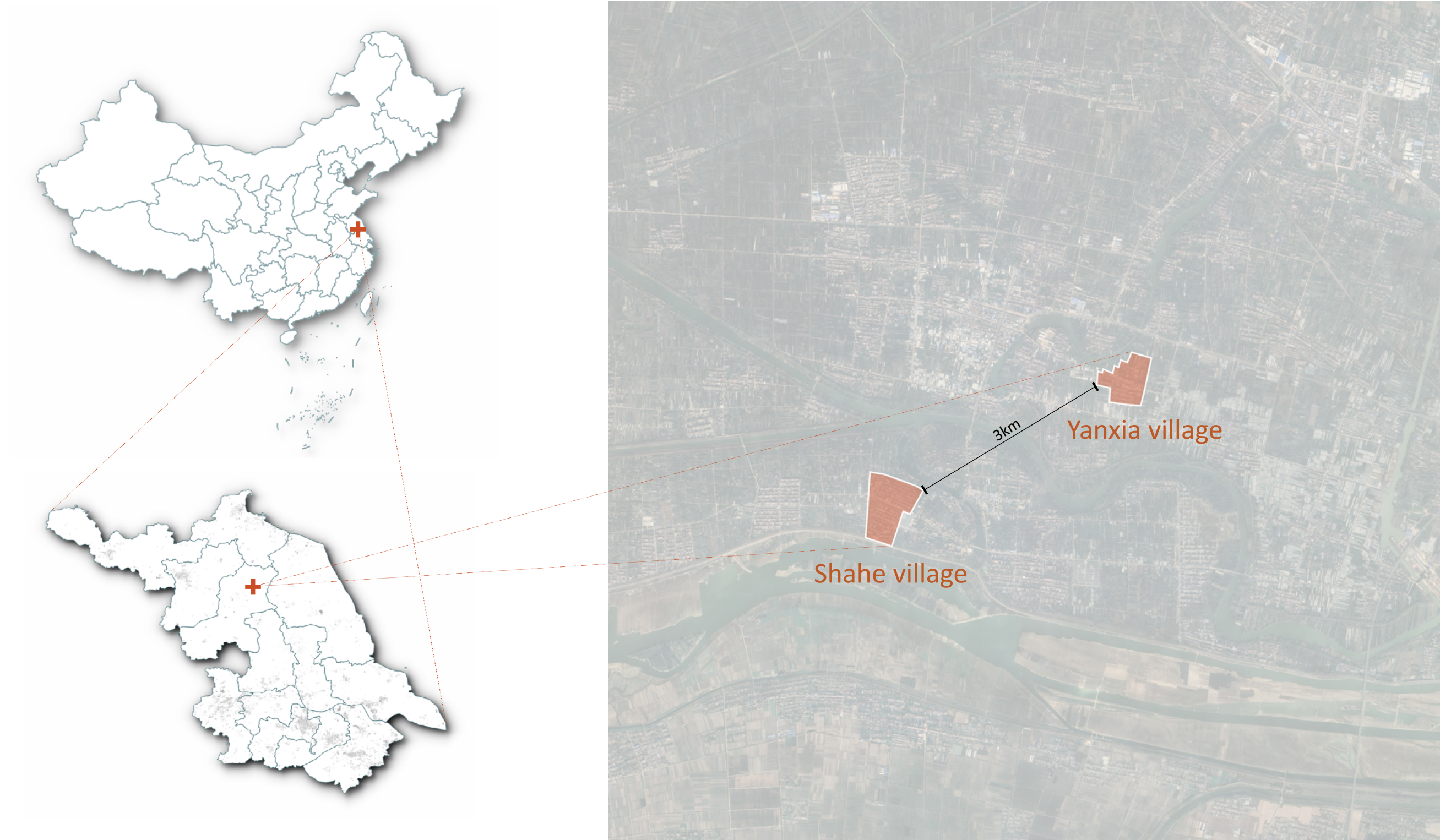
工业型淘宝村的景象





## SHAHE & YANXIA VILLAGE: AGRICULTURAL-BASED TAOBAO VILLAGE

沙河村 & 堰下村：农业型淘宝村





# SHAHE & YANXIA VILLAGE: AGRICULTURAL-BASED TAobao VILLAGE

沙河村 & 堰下村：农业型淘宝村

Phase I: Traditional rural village



- Residential
- E-commerce
- Shop
- Industry
- Warehouse
- Greenhouse

Phase II: Developing rural village



Phase III: Agricultural-based Taobao Village





# ATMOSPHERE OF AGRICULTURAL-BASED TAOBAO VILLAGE

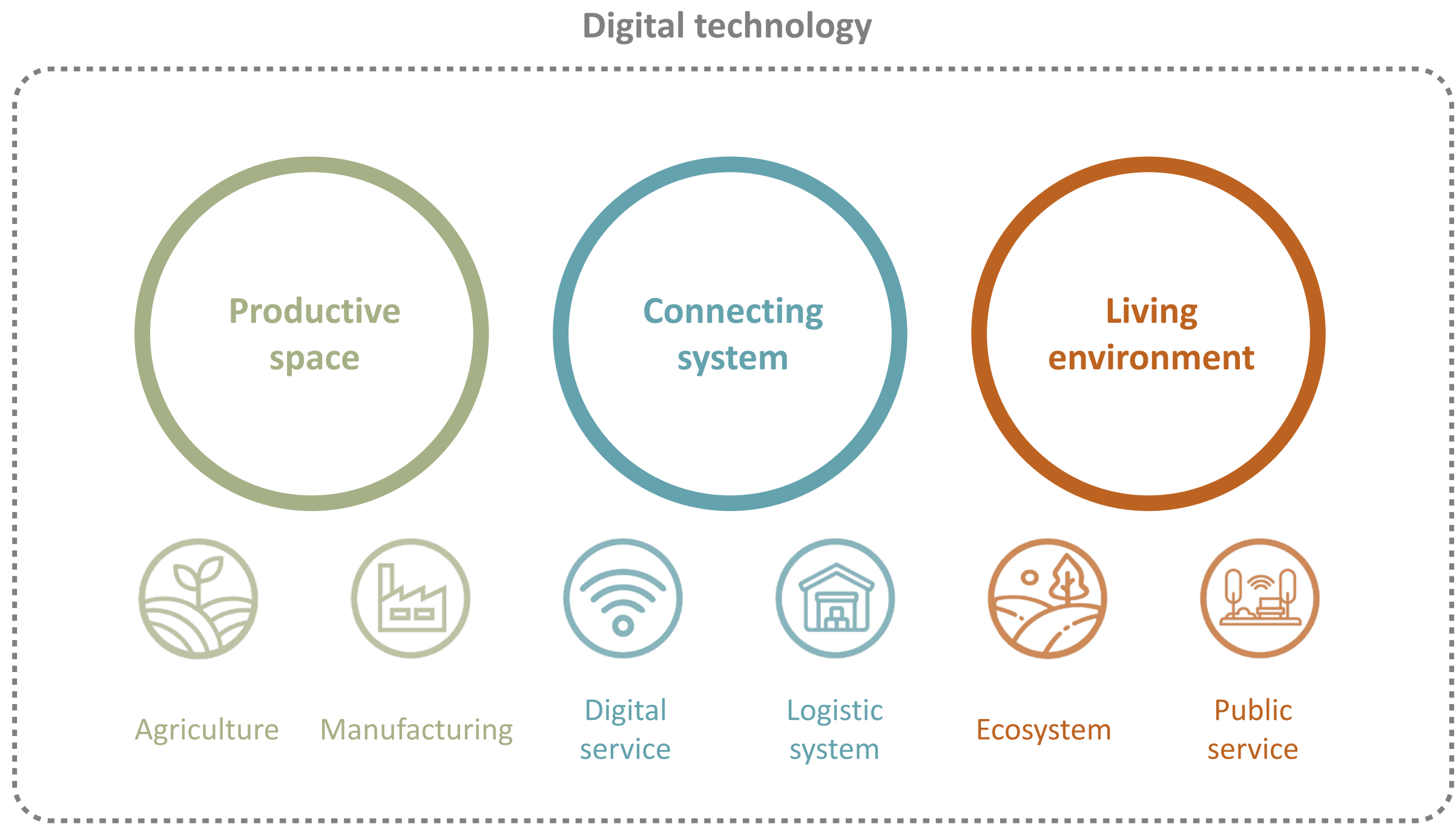
农业型淘宝村的景象





# SPATIAL IMPLICATIONS FOR SMART VILLAGES

对智慧乡村空间发展的启发





# IMPROVMENTS TO SMART VILLAGES

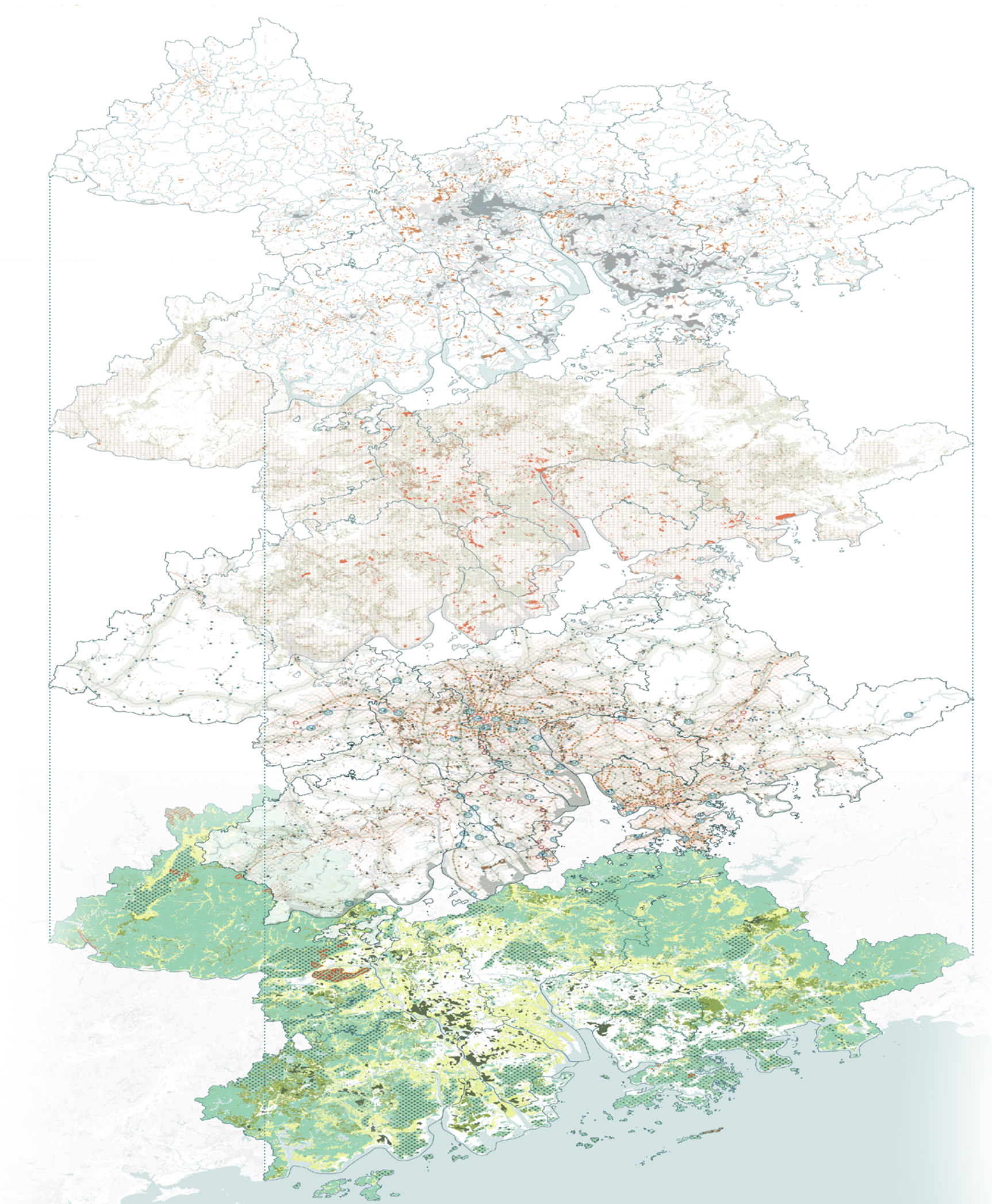
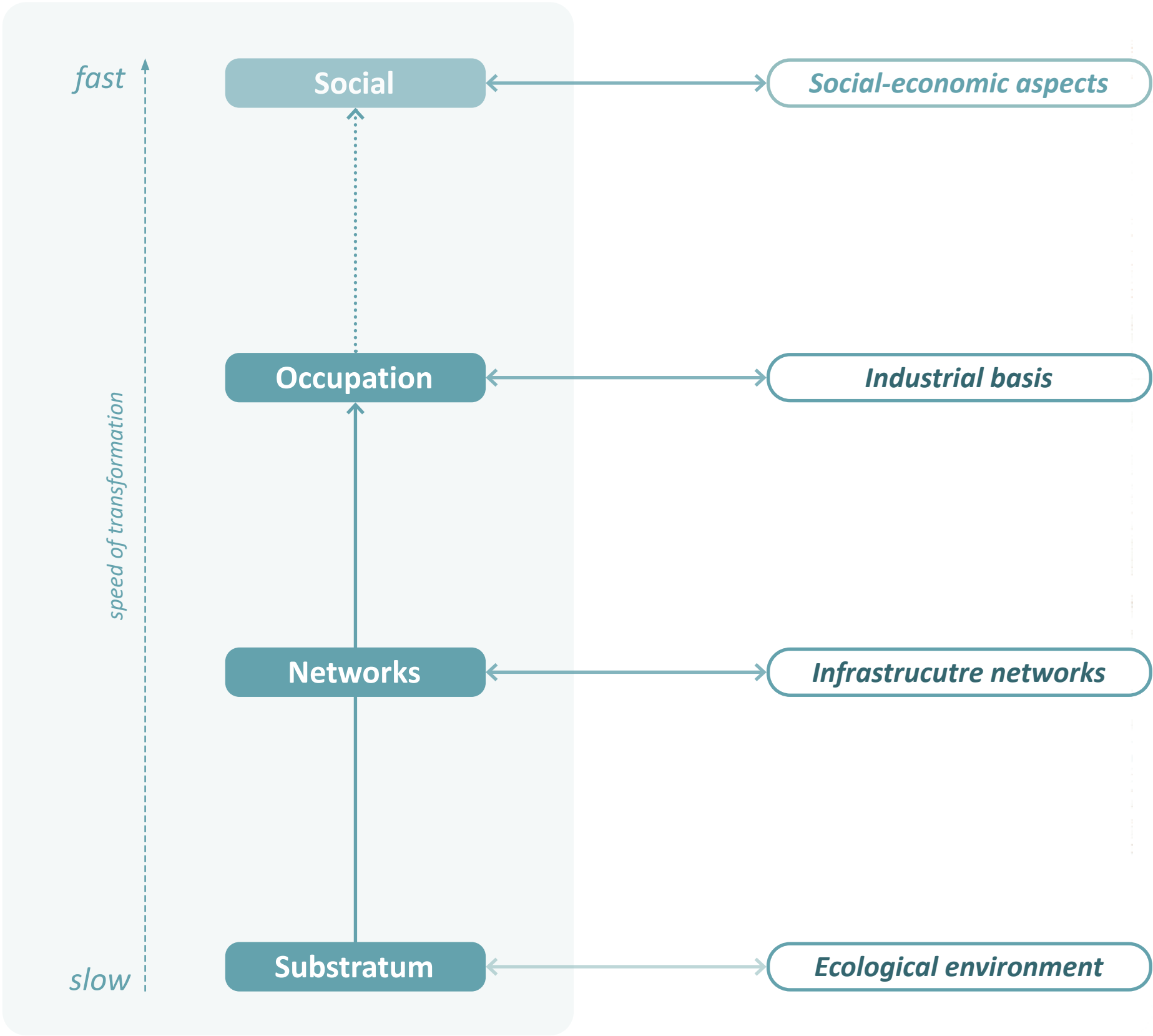
朝智慧乡村升级





# UNDERSTAND GBA WITH THE LAYER APPROACH

基于分层方法论理解粤港澳大湾区





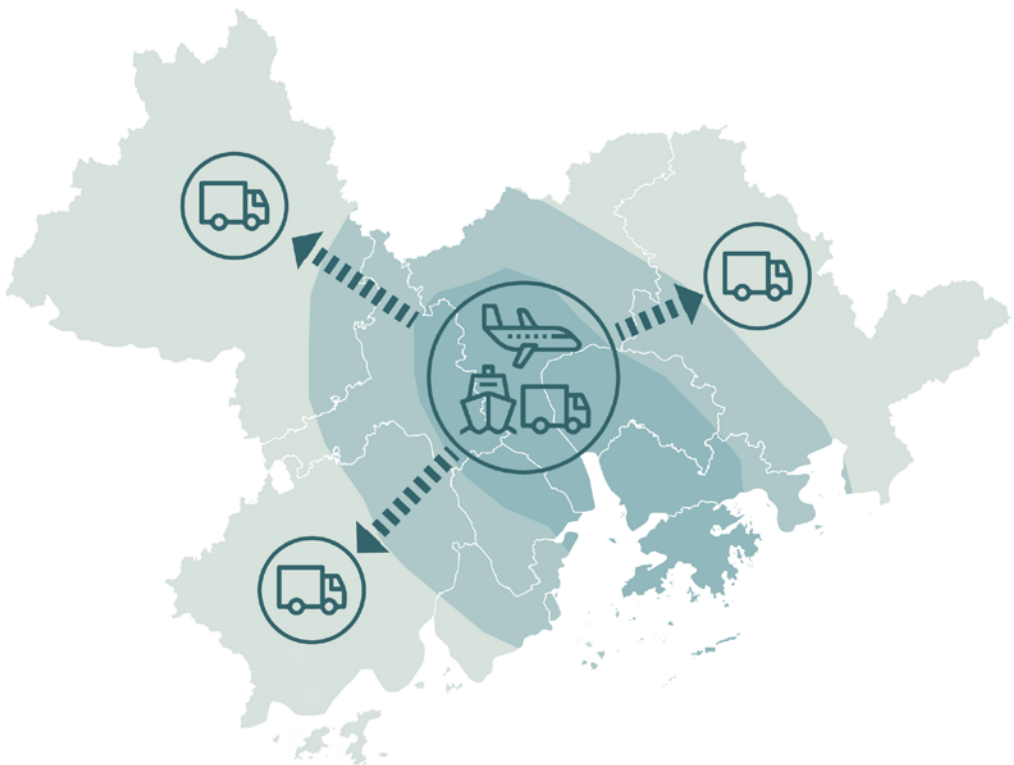
DEVELOPING POTENTIAL OF GBA

粤港澳大湾区的发展潜力

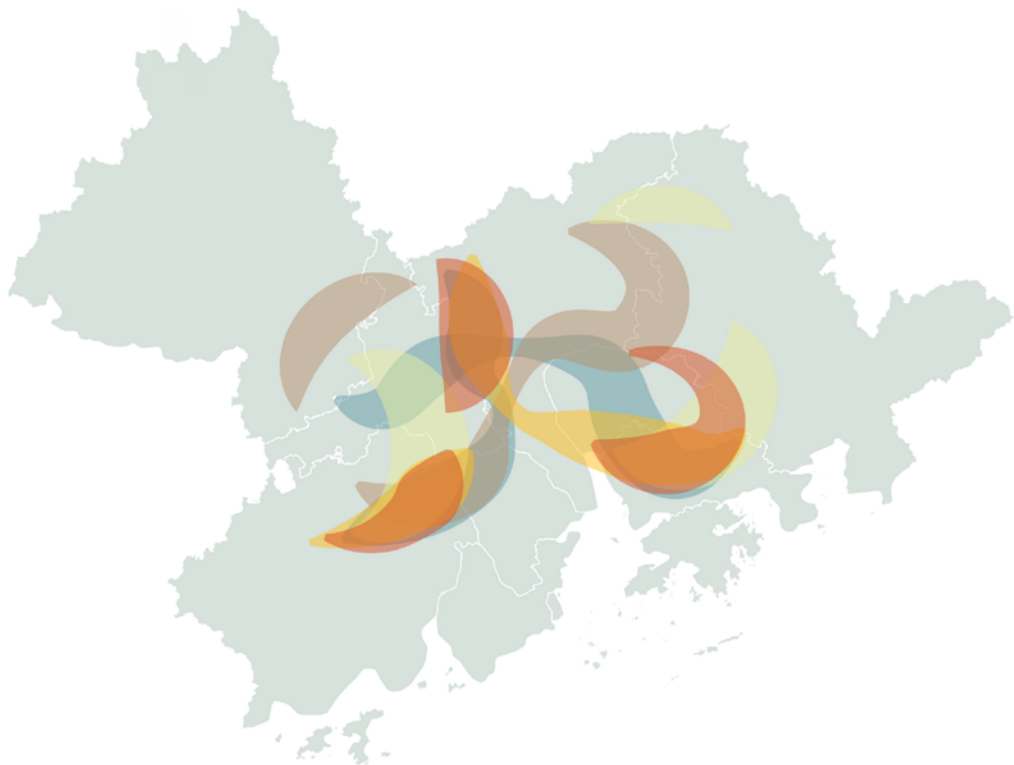
Agricultural potential



Transportation potential



Industrial potential



Developing potential



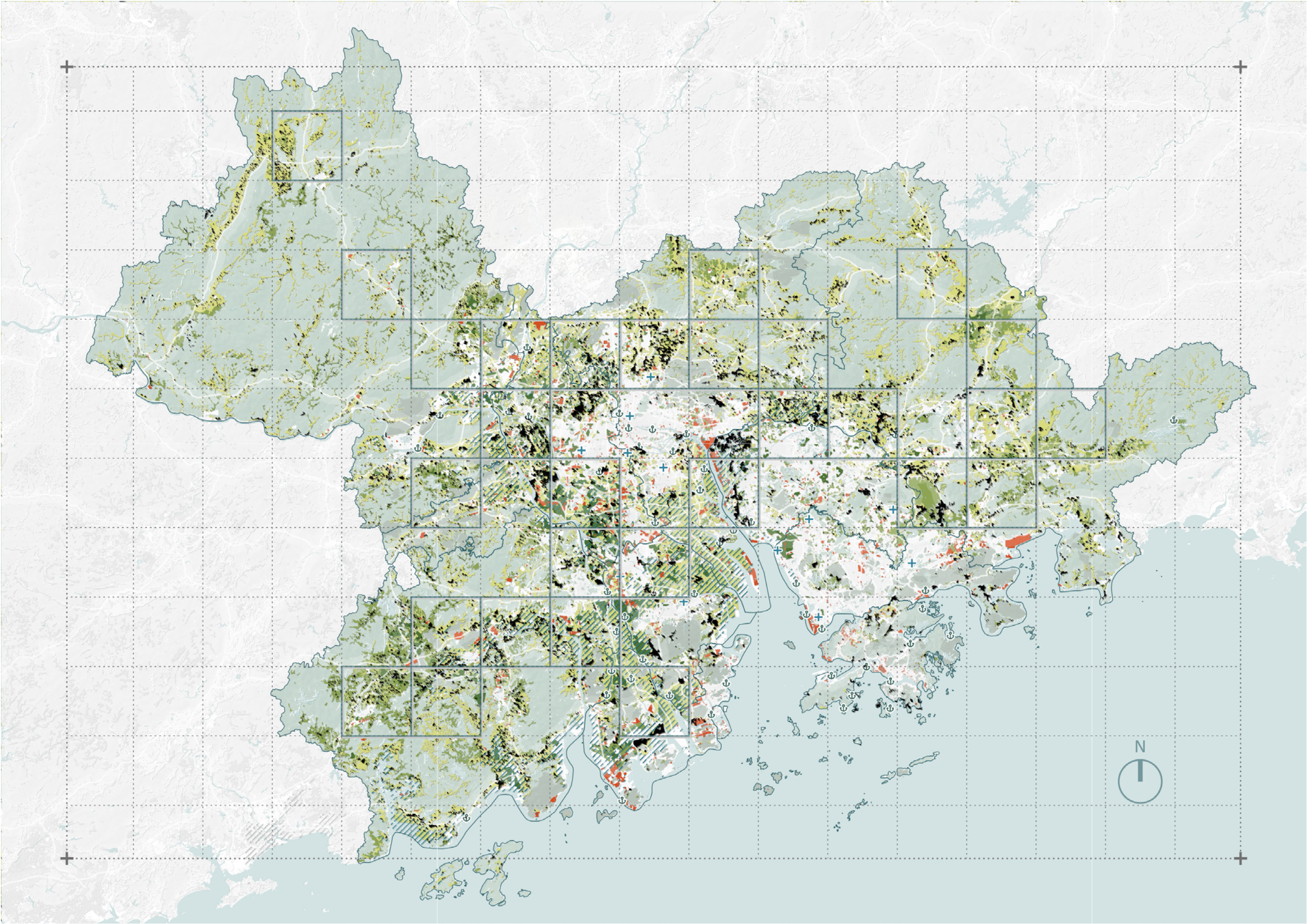


# POTENTIAL REGION

潜力区域

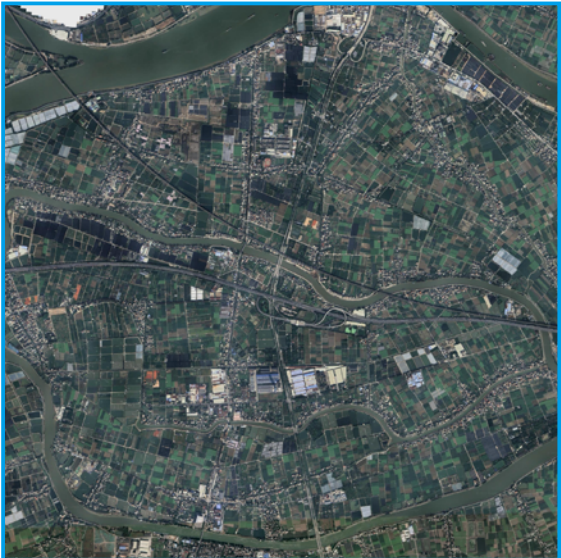
- Enhancing existing resources  
- Implementing scarce resources

- + Logistic park
- ⚓ Port
- Highway
- Flooding risk
- Rural area
- Industrial area
- Dyke pond
- Paddy field
- Cropland
- Mountain
- Water
- Potential developing area





UNDERSTAND RURAL AREAS  
认知乡村地区



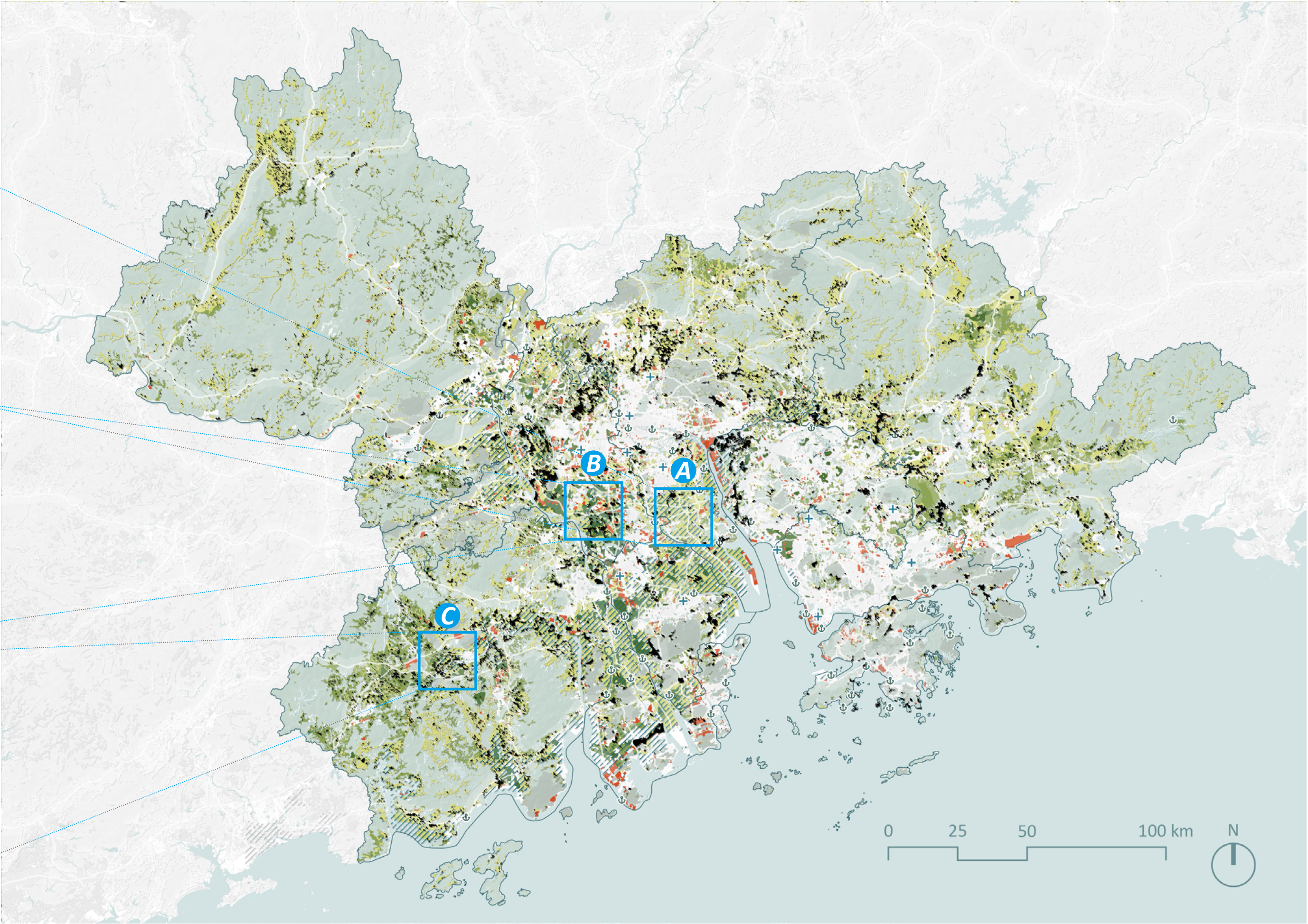
A



B

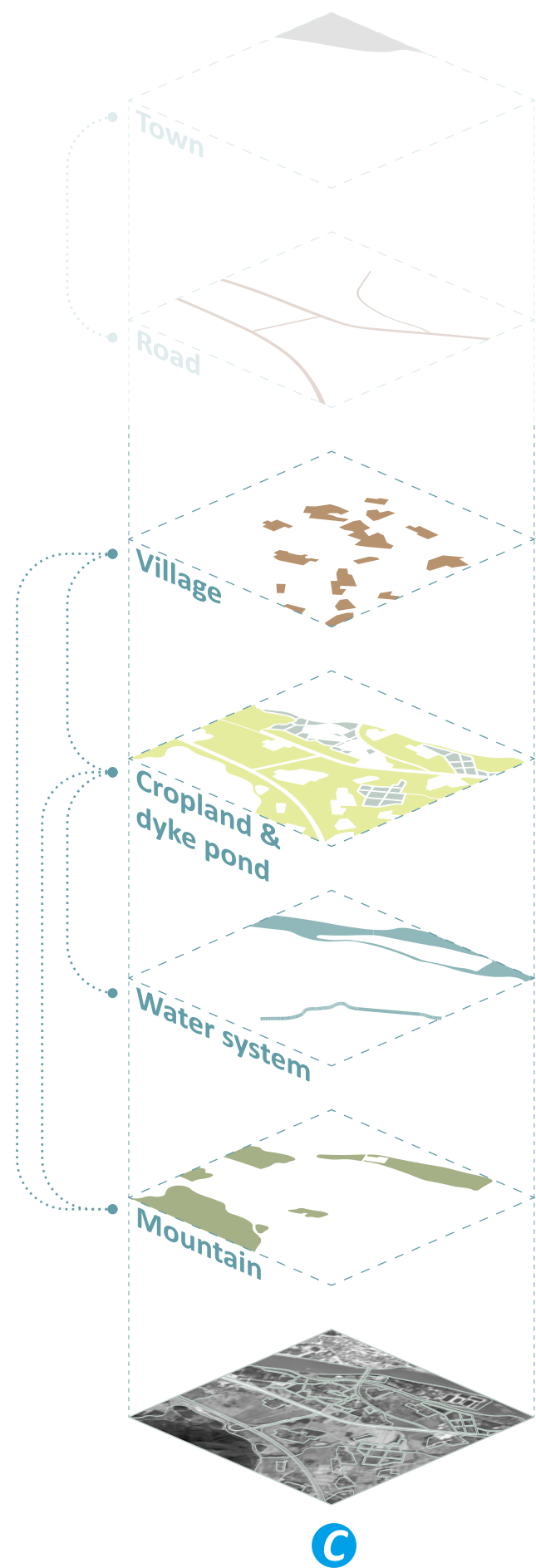
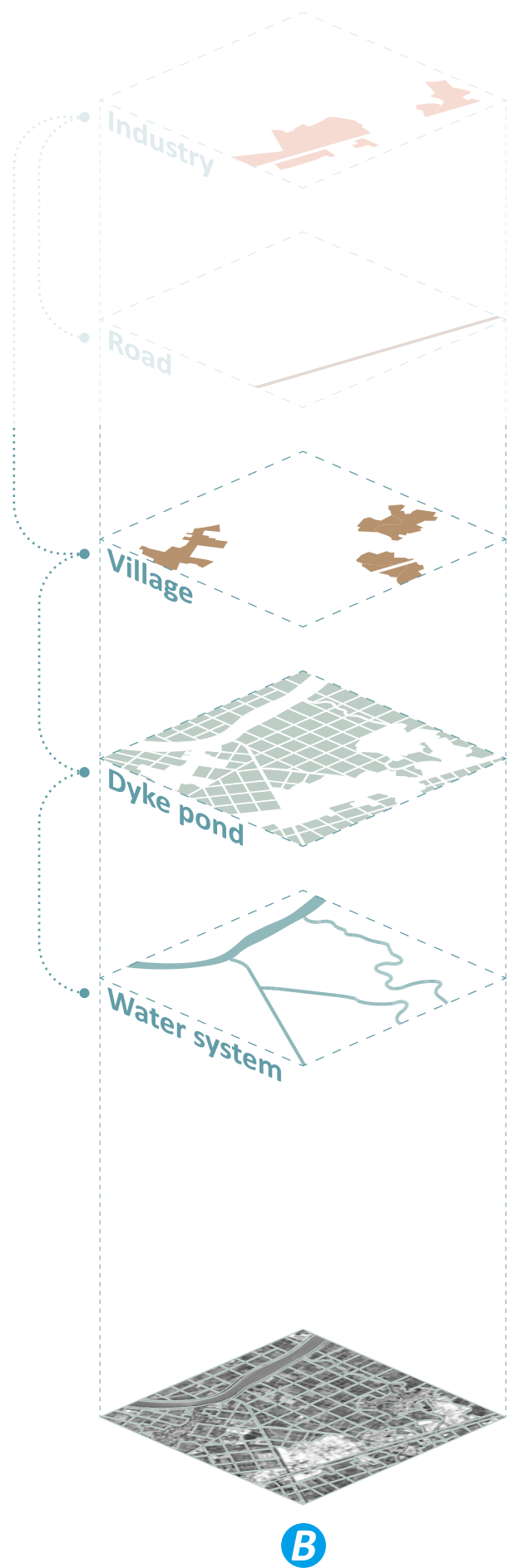
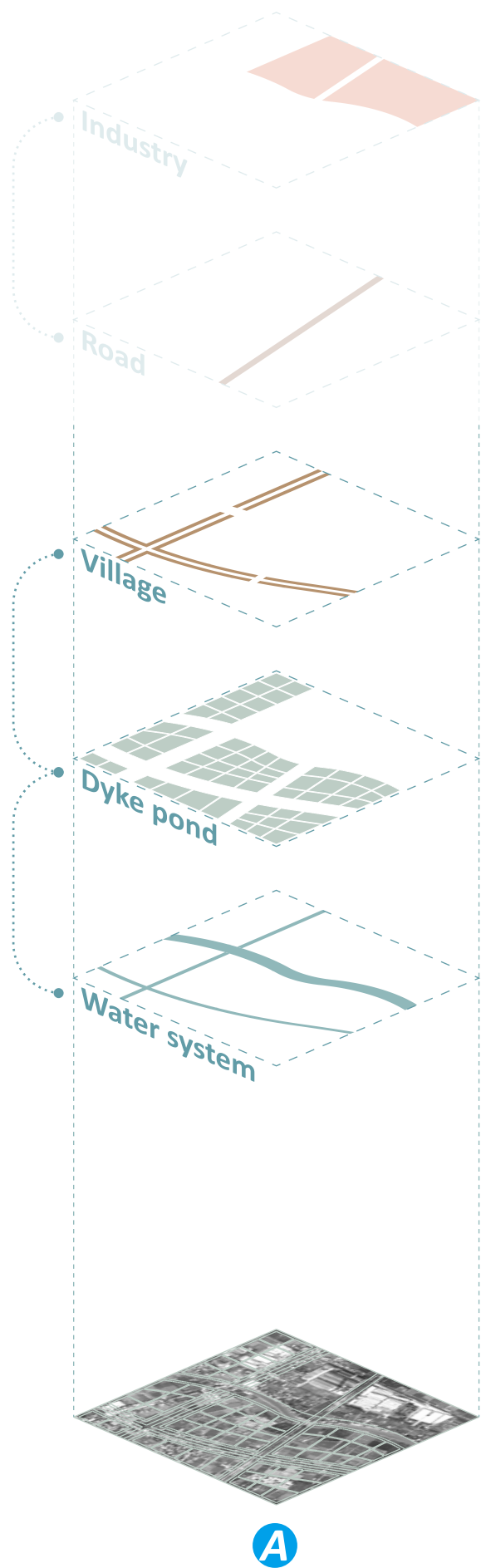


C



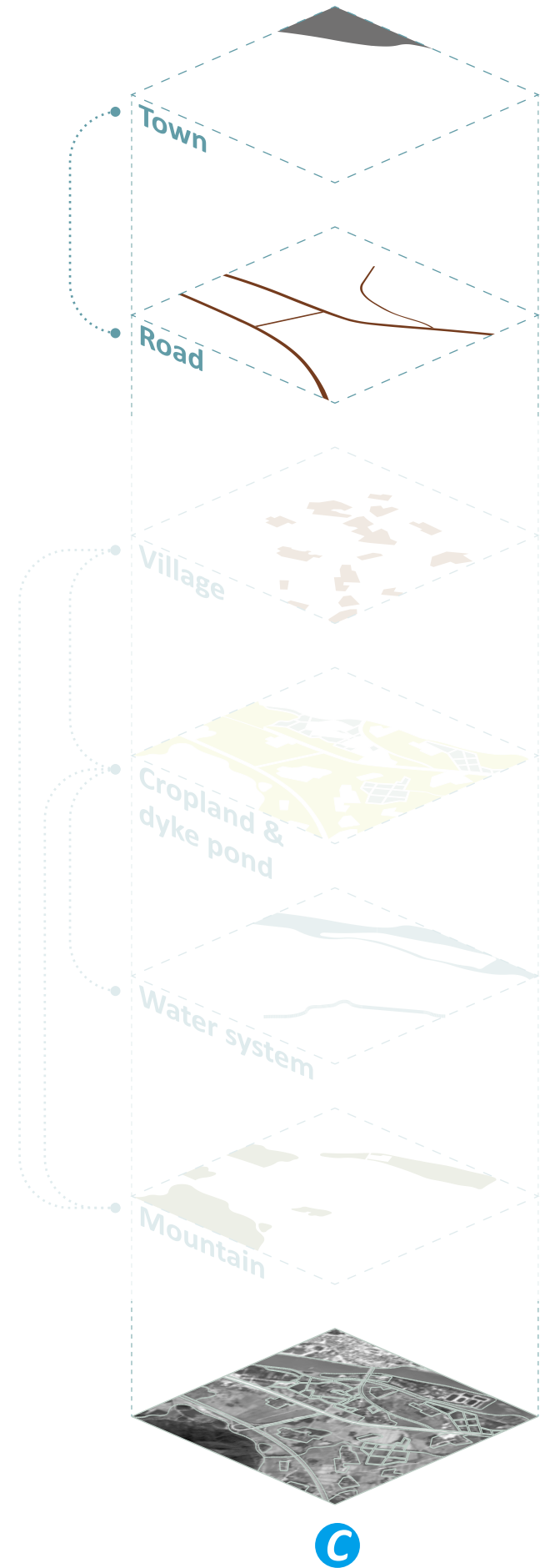
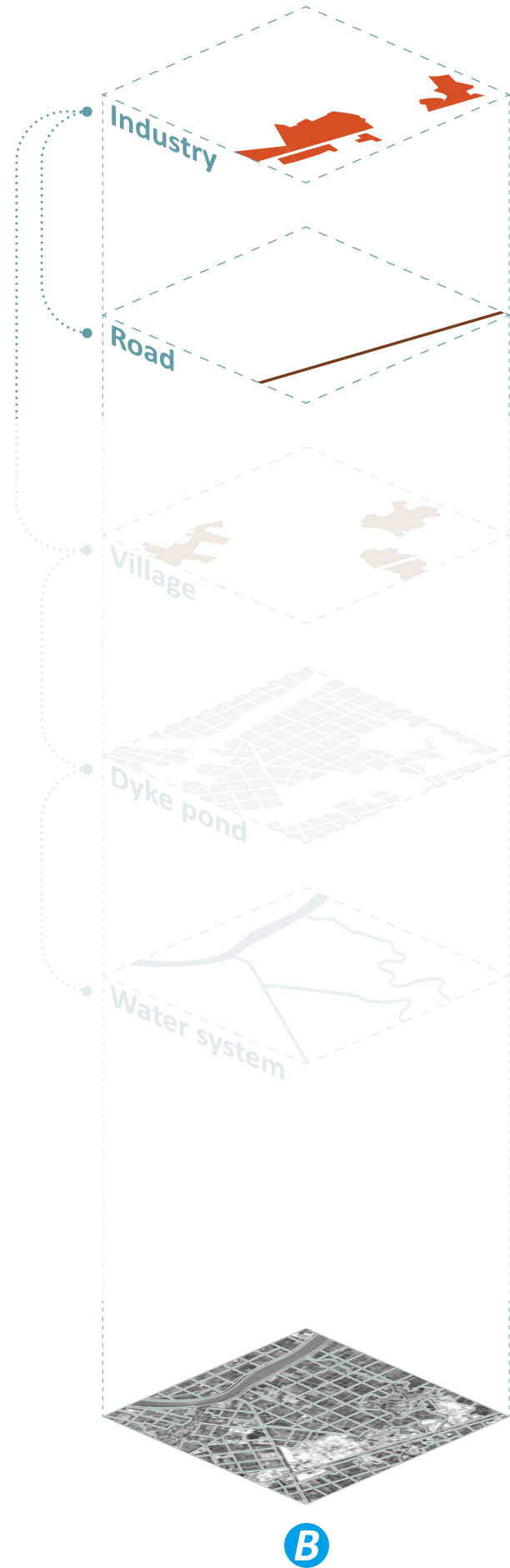
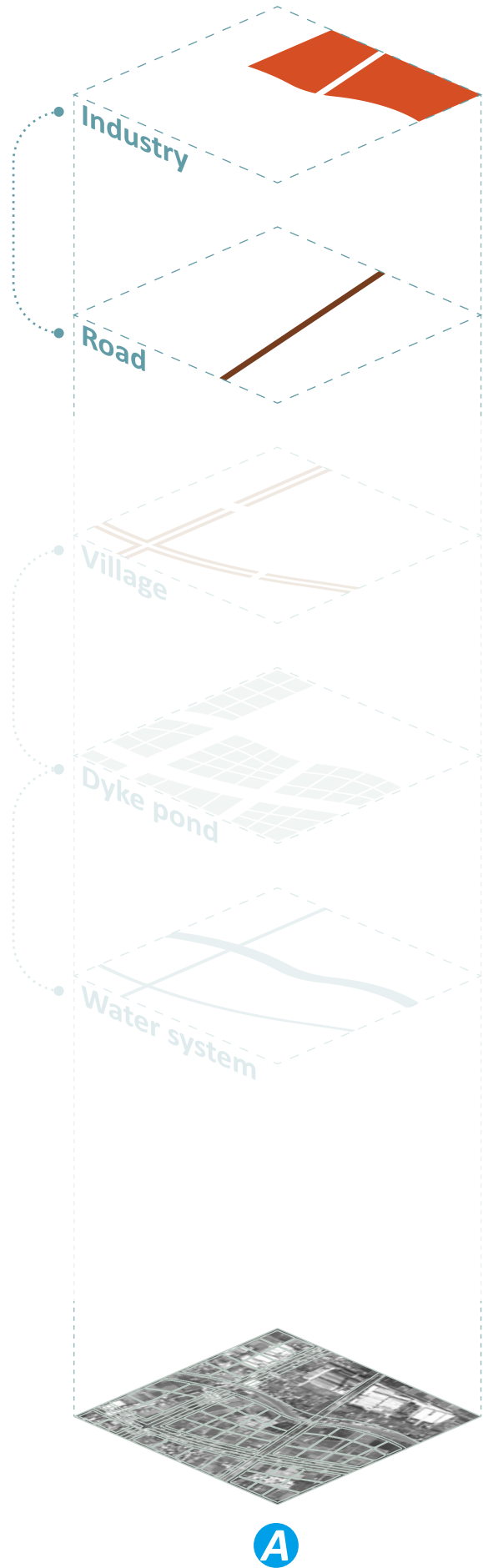


SPATIAL RELATIONSHIPS  
空间关系



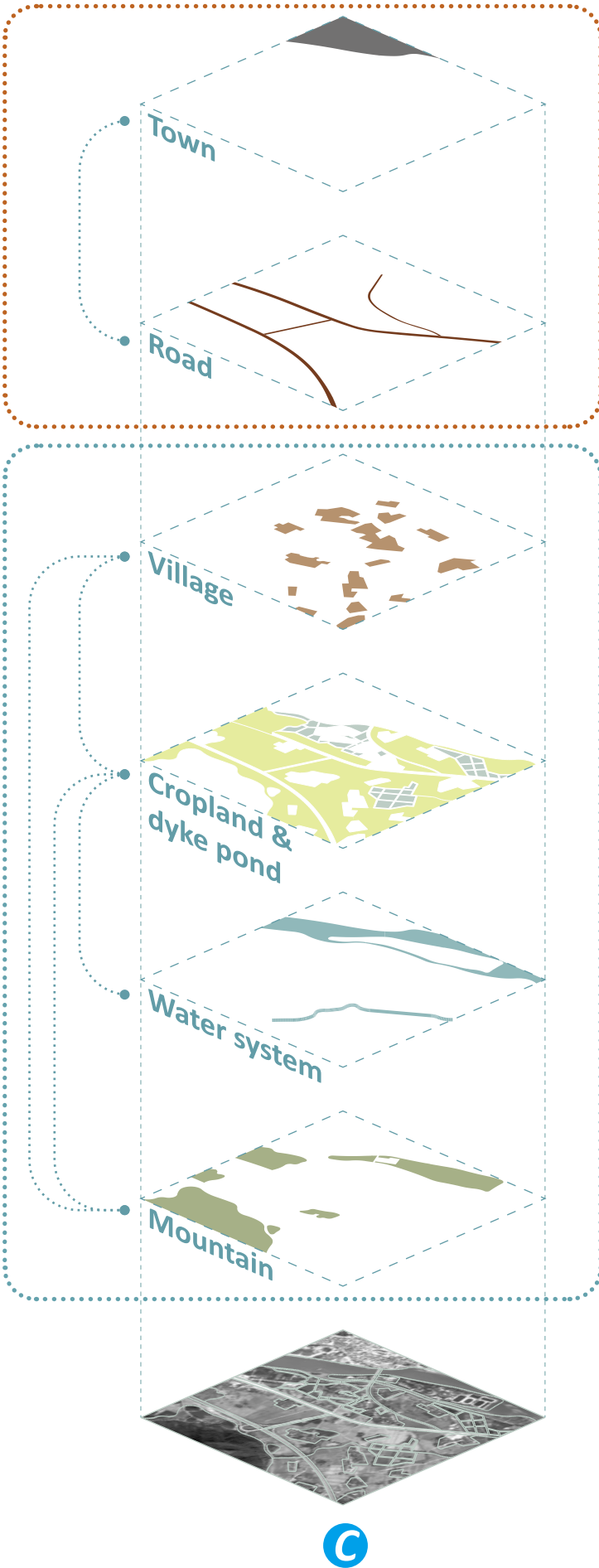
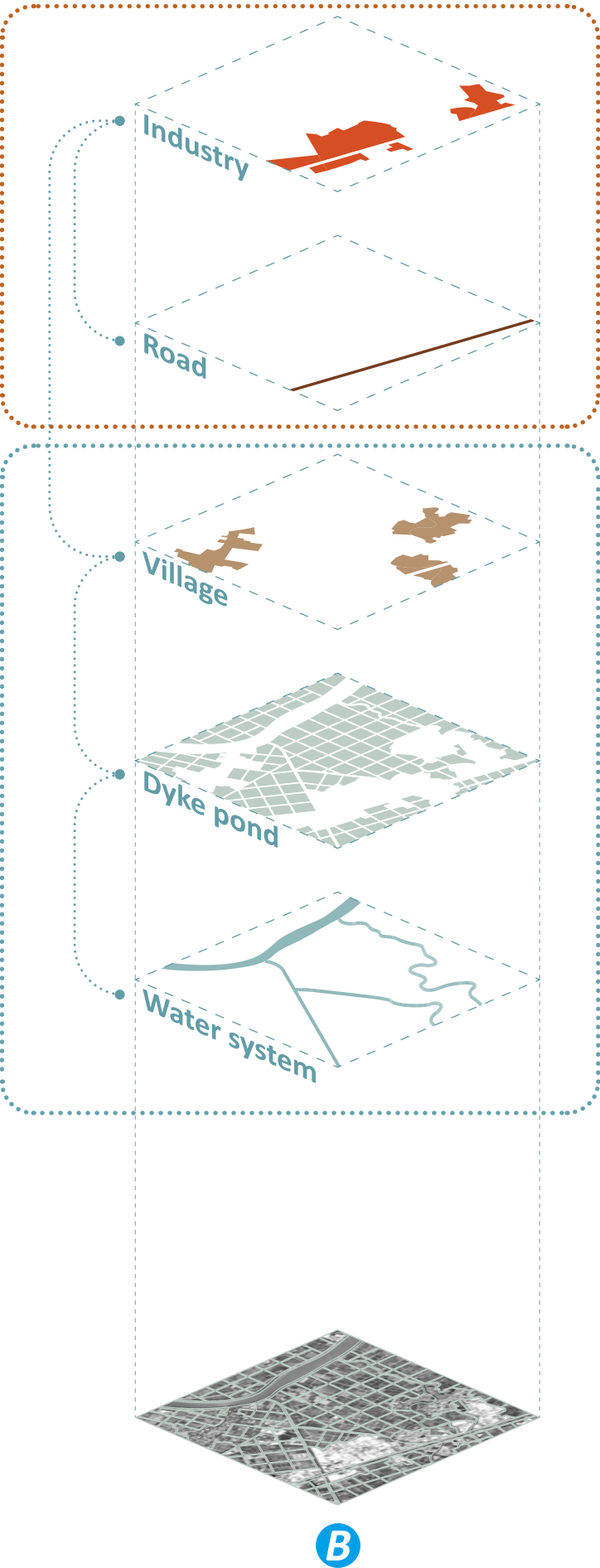
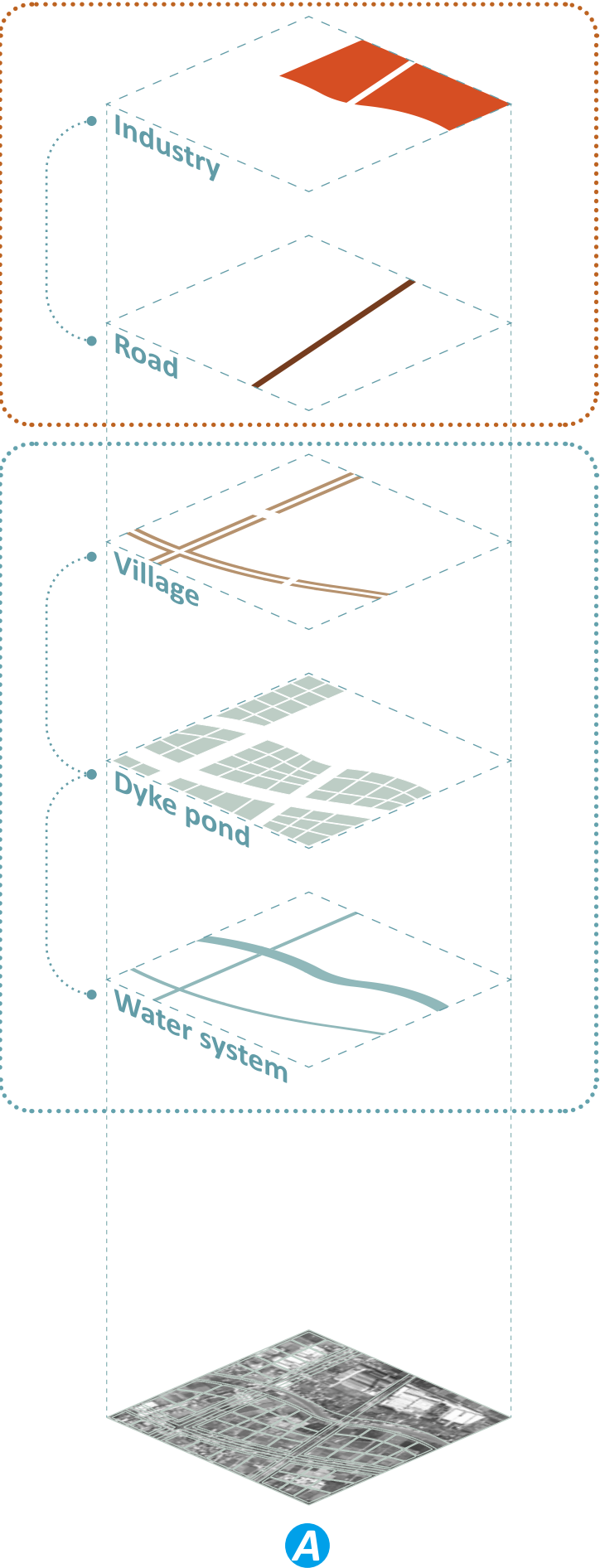


SPATIAL RELATIONSHIPS  
空间关系





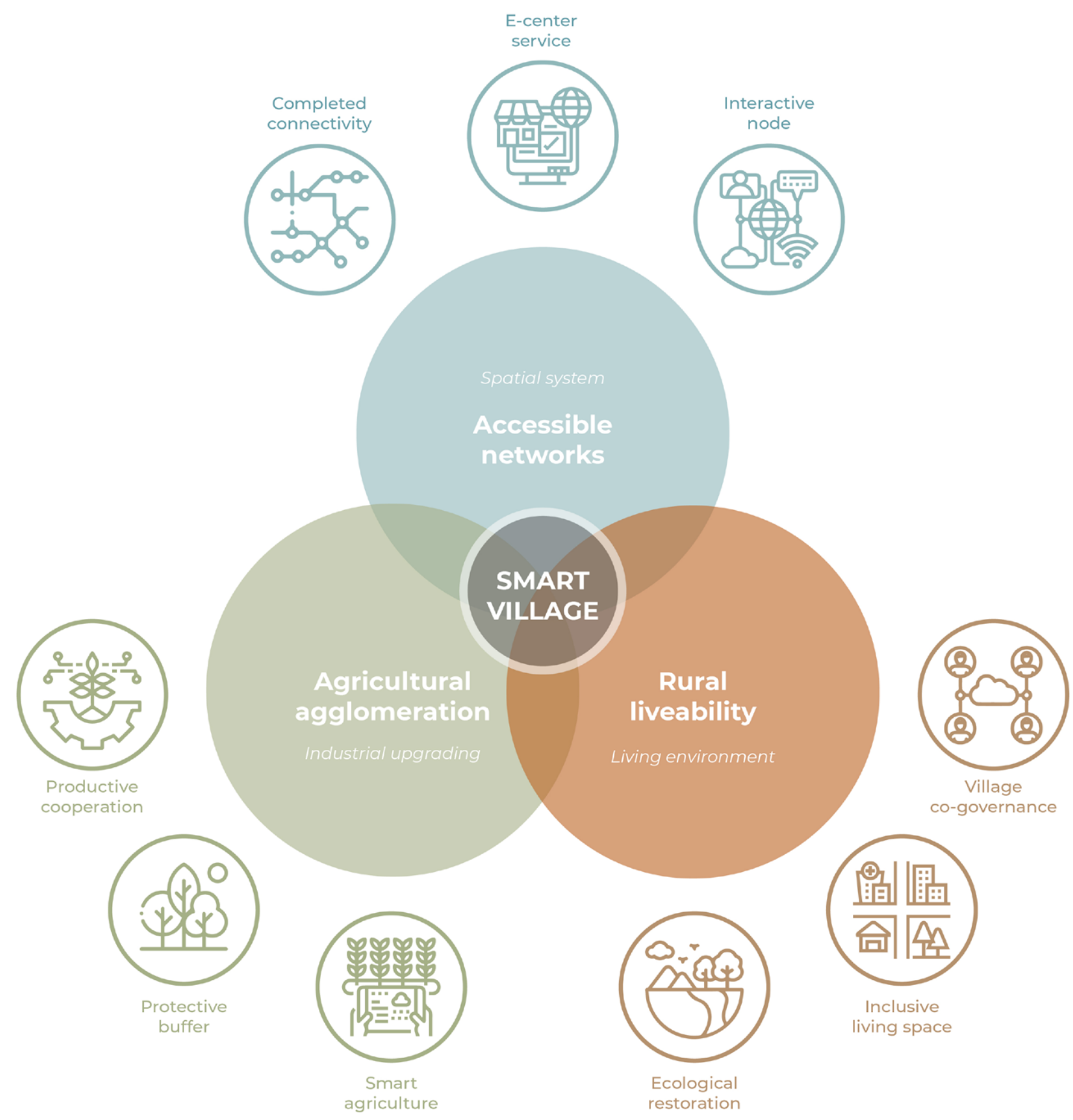
SPATIAL RELATIONSHIPS  
空间关系





DESIGN PRINCIPLE

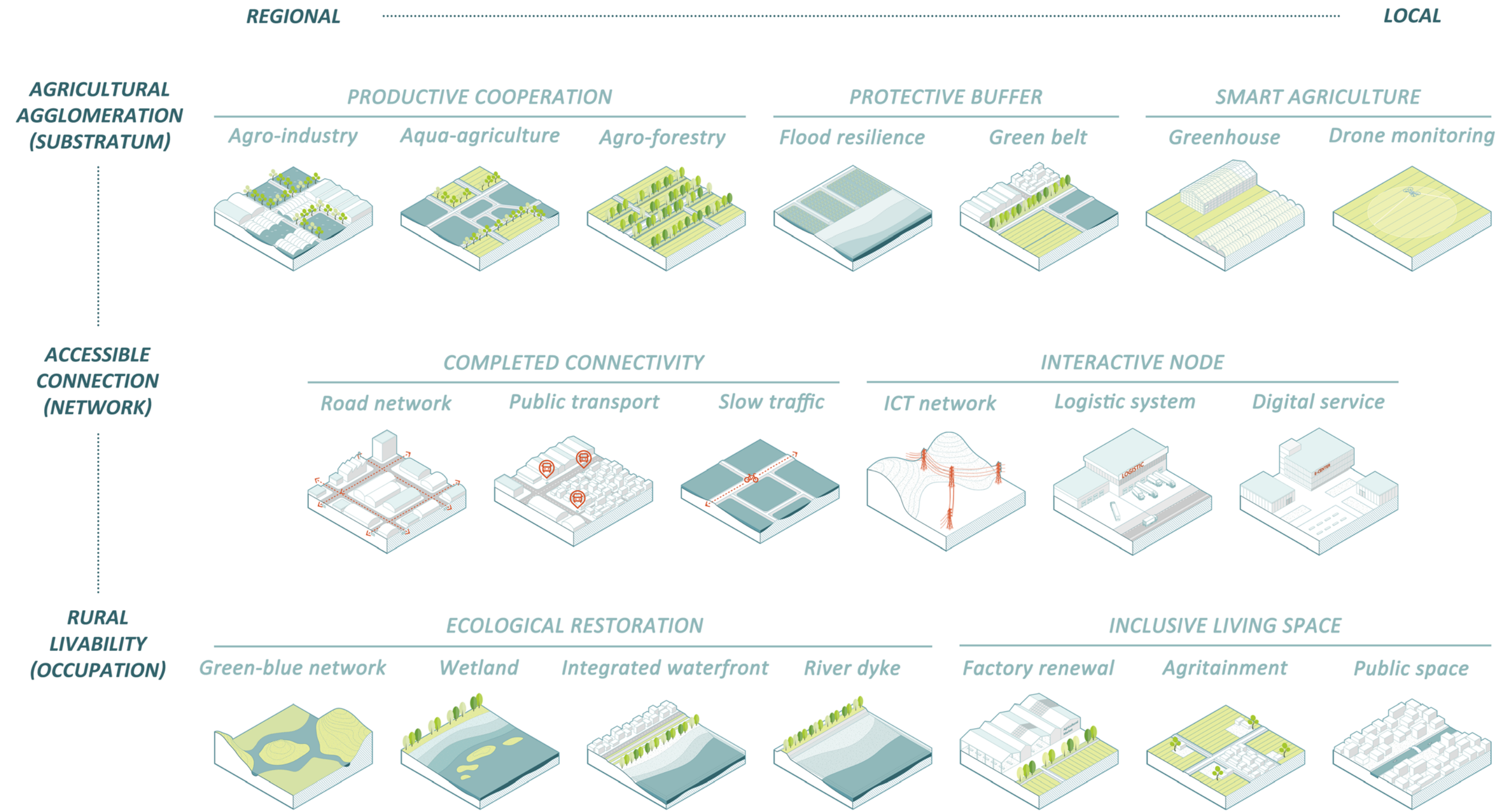
设计原则





# TOOLKITS OF DESIGN PRINCIPLES

设计原则工具箱





# SMART VILLAGE DEVELOPMENT FRAMEWORK

智慧乡村发展框架

**Accessible network**

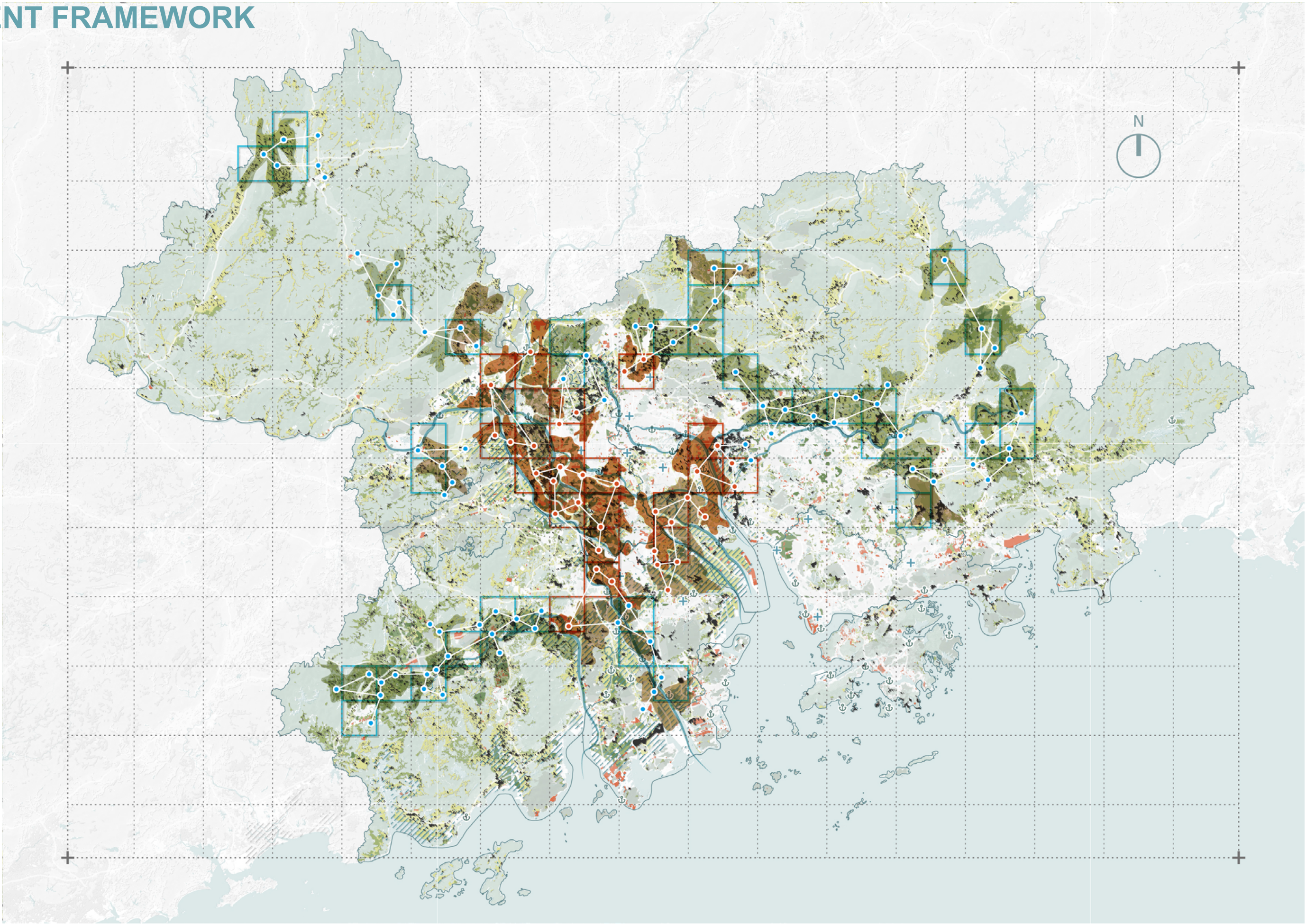
- + Logistic park
- ⚓ Port
- Highway

**Agricultural agglomeration**

- Agro-industrial area
- Aquacultural area
- Eco-agricultural area

**Rural livability**

- Agro-industrial developing village
- Agricultural upgrading village
- Agro-industrial developoing area
- Eco-agricultural developing area
- Green-blue network
- Mountain
- Water





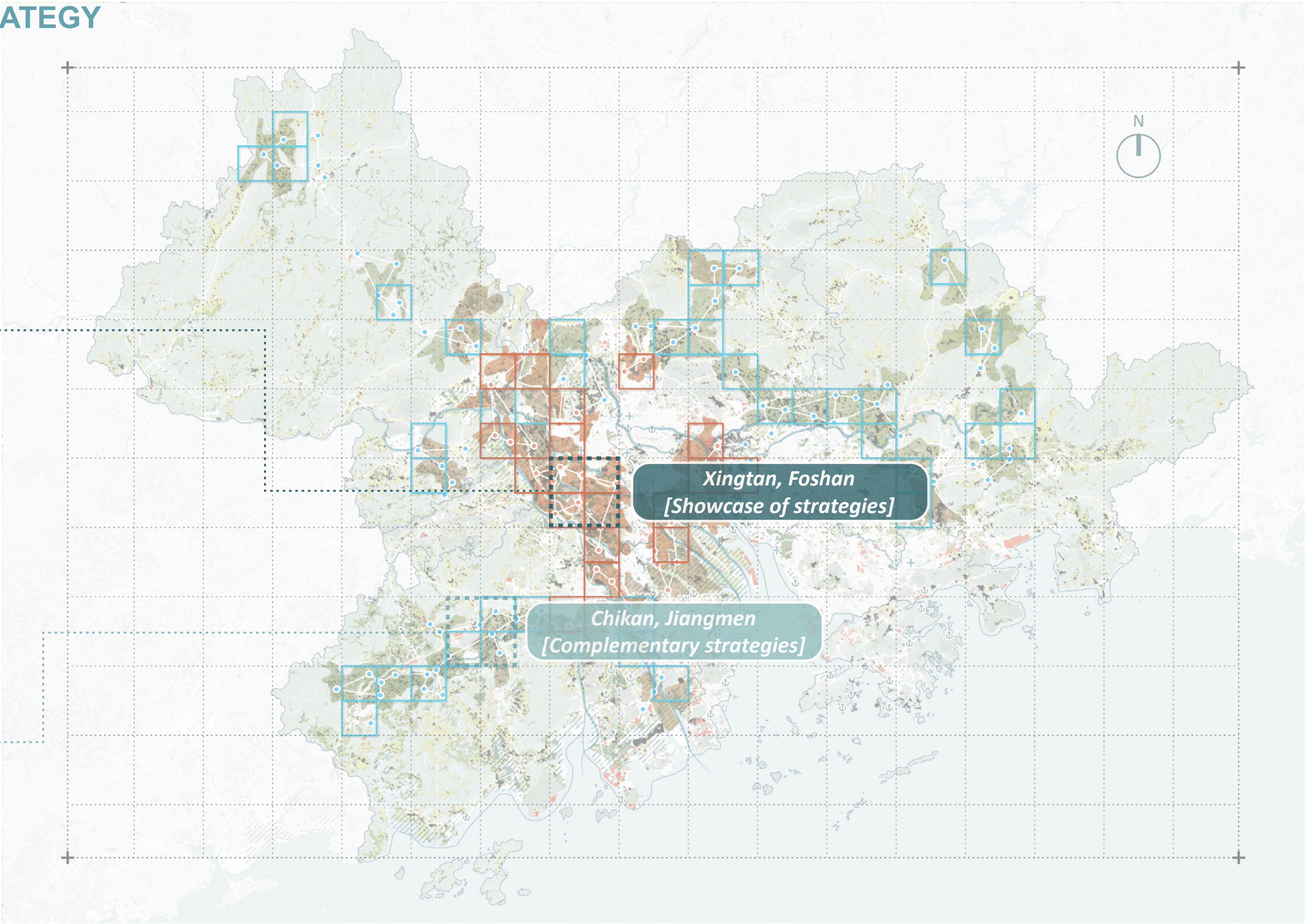
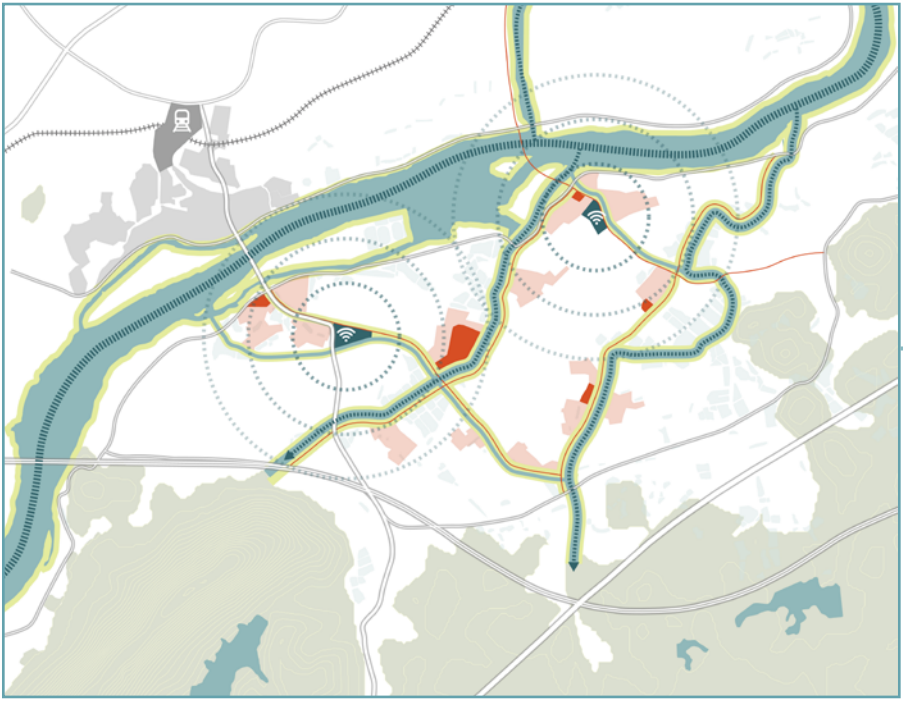
# SHOWCASES OF DESIGN STRATEGY

设计区域

- Addressing historical remaining problems



- Promoting future developing potential





# *XINGTAN, FOSHAN* **AGRO-INDUSTRIAL DEVELOPMENT**



- Highway
- Rural area
- ▨ Industrial area
- ░ Urbanized area
- River

0 5 10 15 20km



# VILLAGES DEVELOPED ON WATER SYSTEM

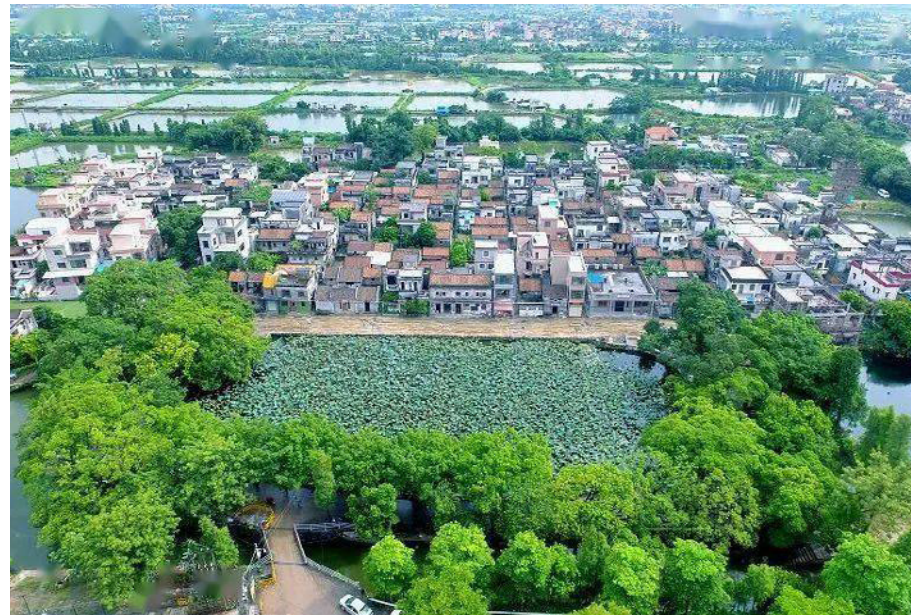
基于水系发展的村庄



*Dyke pond*



*Village*



*Taobao village*





# VILLAGES DEVELOPED ON WATER SYSTEM

基于水系发展的村庄





# INDUSTRIALISED RURAL AREAS

工业化的乡村地区

*Road construction*



*Industrial area*



*Rural factory*





# INDUSTRIALISED RURAL AREAS

工业化的乡村地区



- Industrial area
- Metal industry
- Plastic industry
- Aquatic product industry
- Building material industry
- Food processing industry
- Road network

## REPLACE

- Metal industry
- Plastic industry

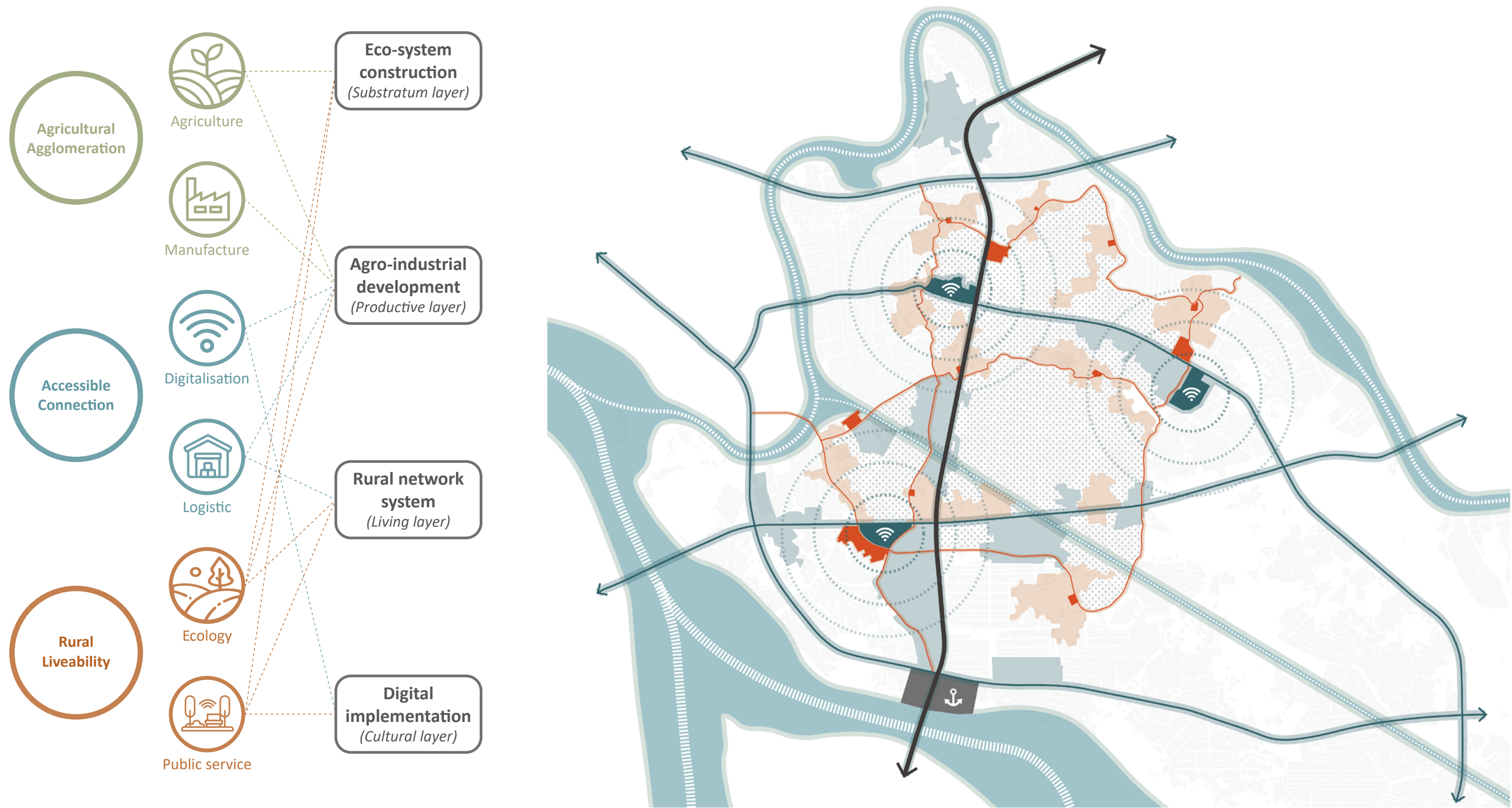
## UPGRADE

- Aquatic products
- Building material
- Food processing



# INTEGRAL DESIGN AGENDA TOWARDS SMART VILLAGES DEVELOPMENT

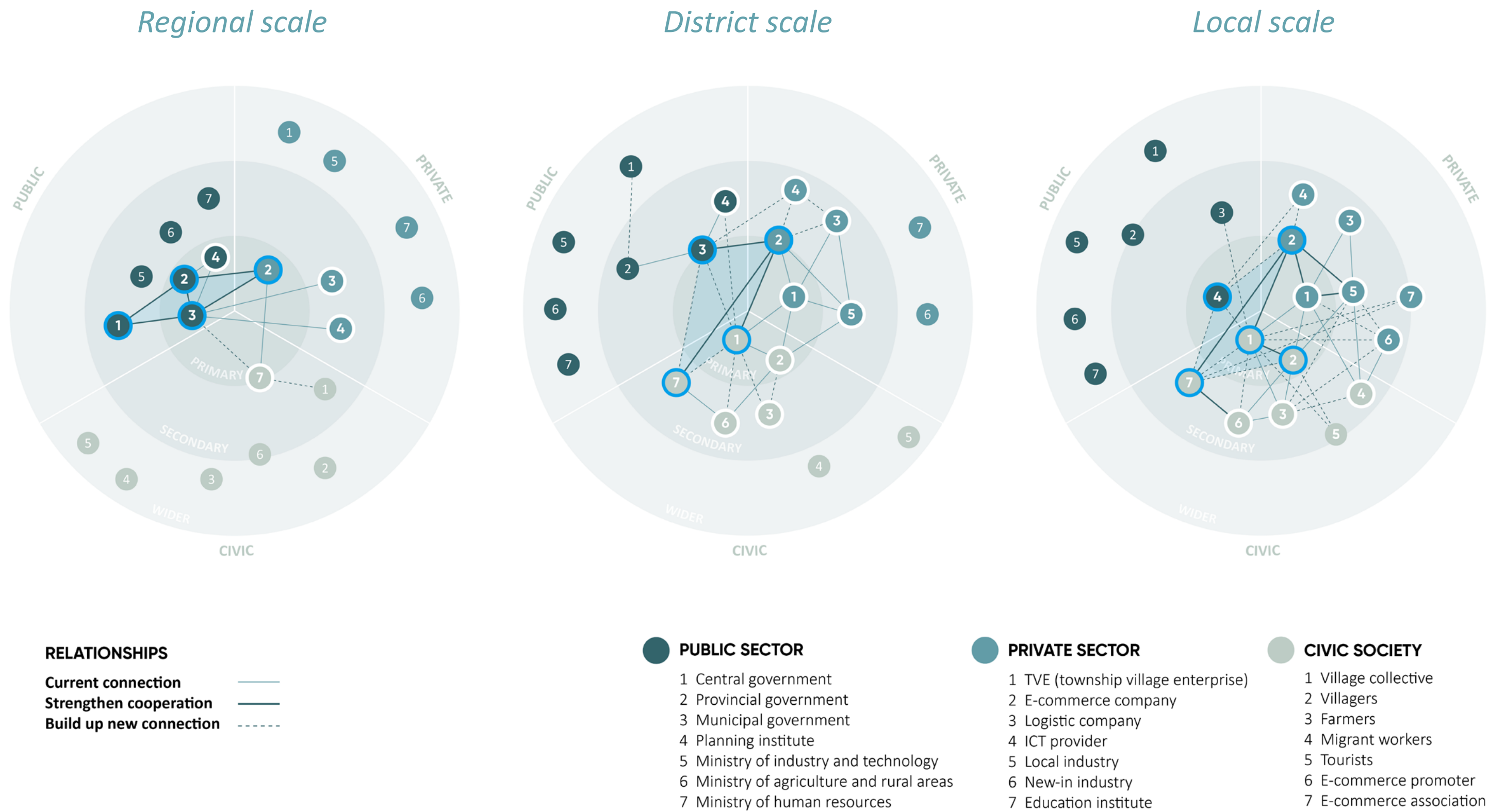
智慧乡村指引下的设计策略





# STAKEHOLDER ANALYSIS

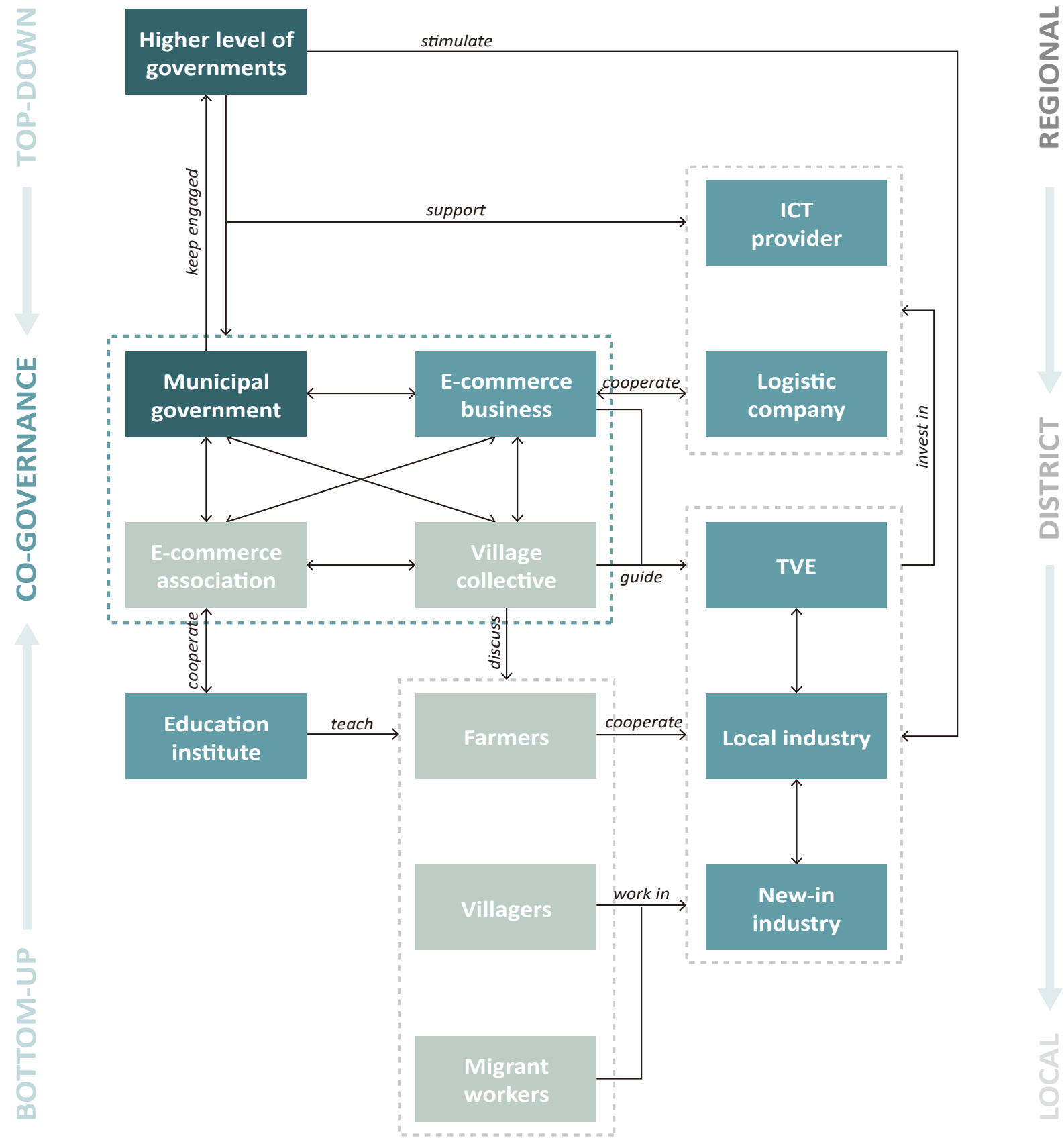
利益相关者分析





# CO-GOVERNANCE STRATEGY

共同治理战略



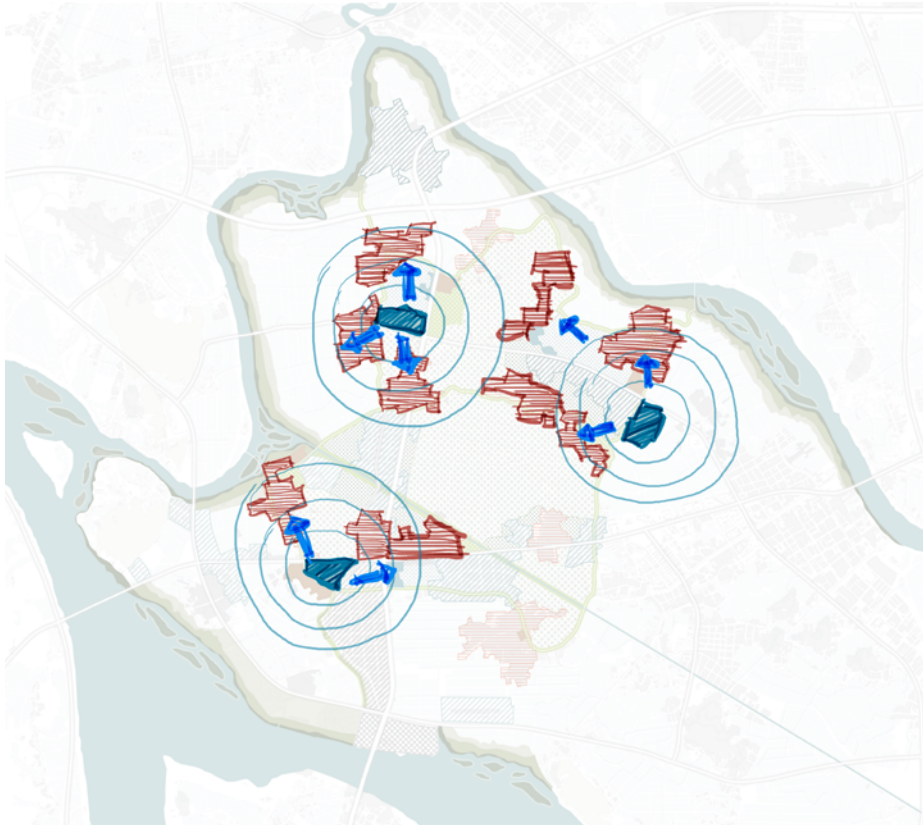


PHASING DEVELOPMENT  
阶段性发展

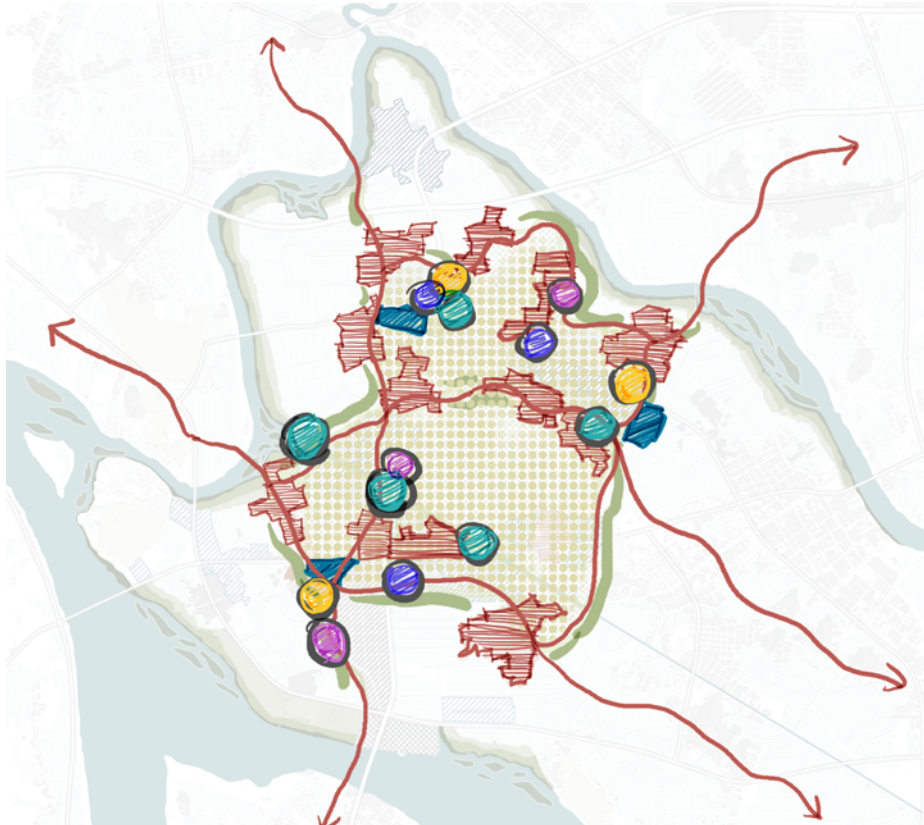
PHASE I: STIMULATING



PHASE II: INFLUENCING

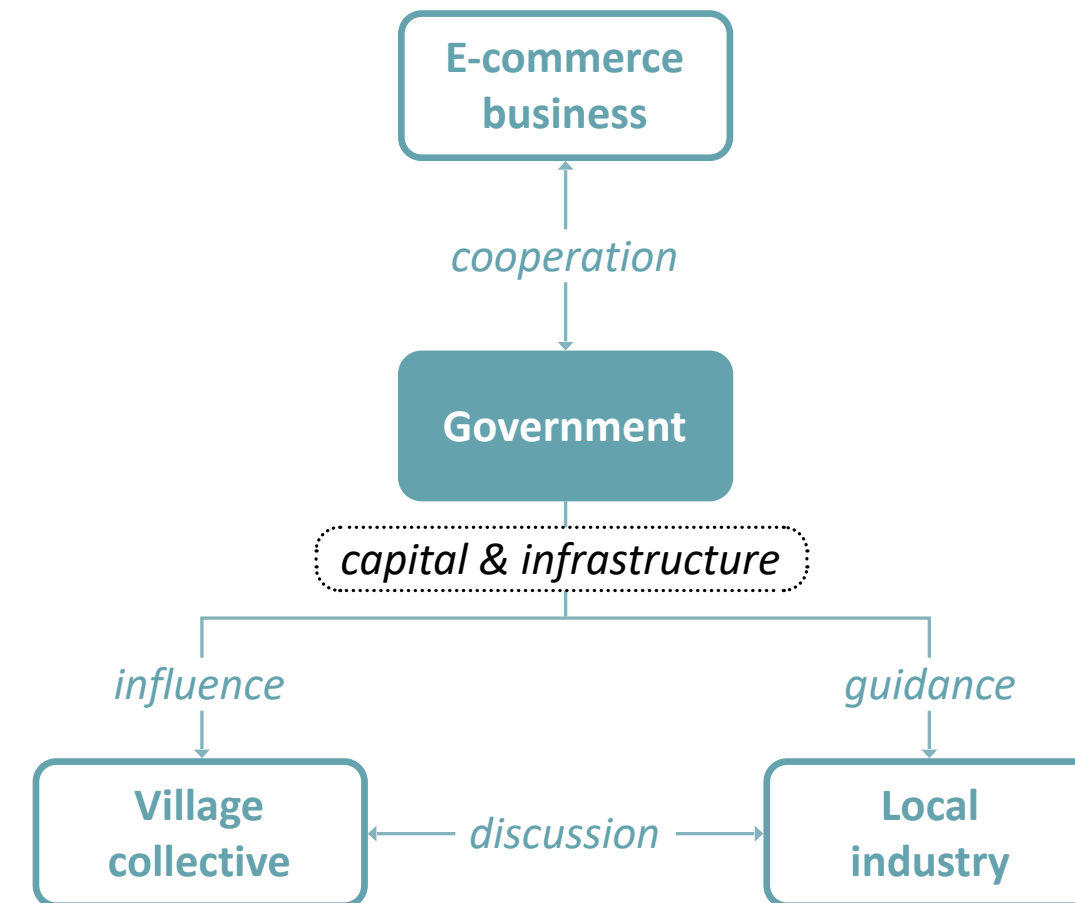
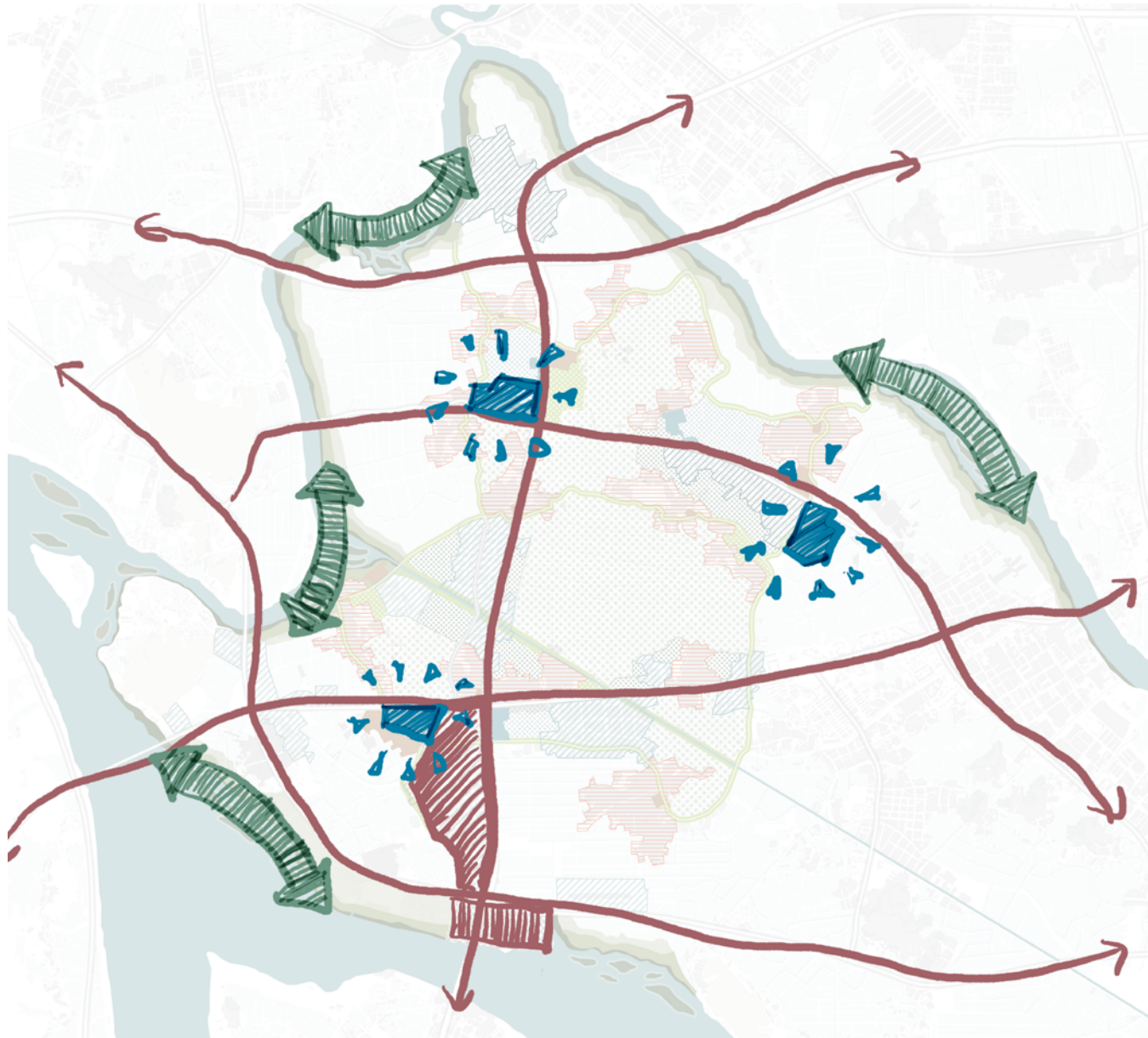


PHASE III: DEVELOPING



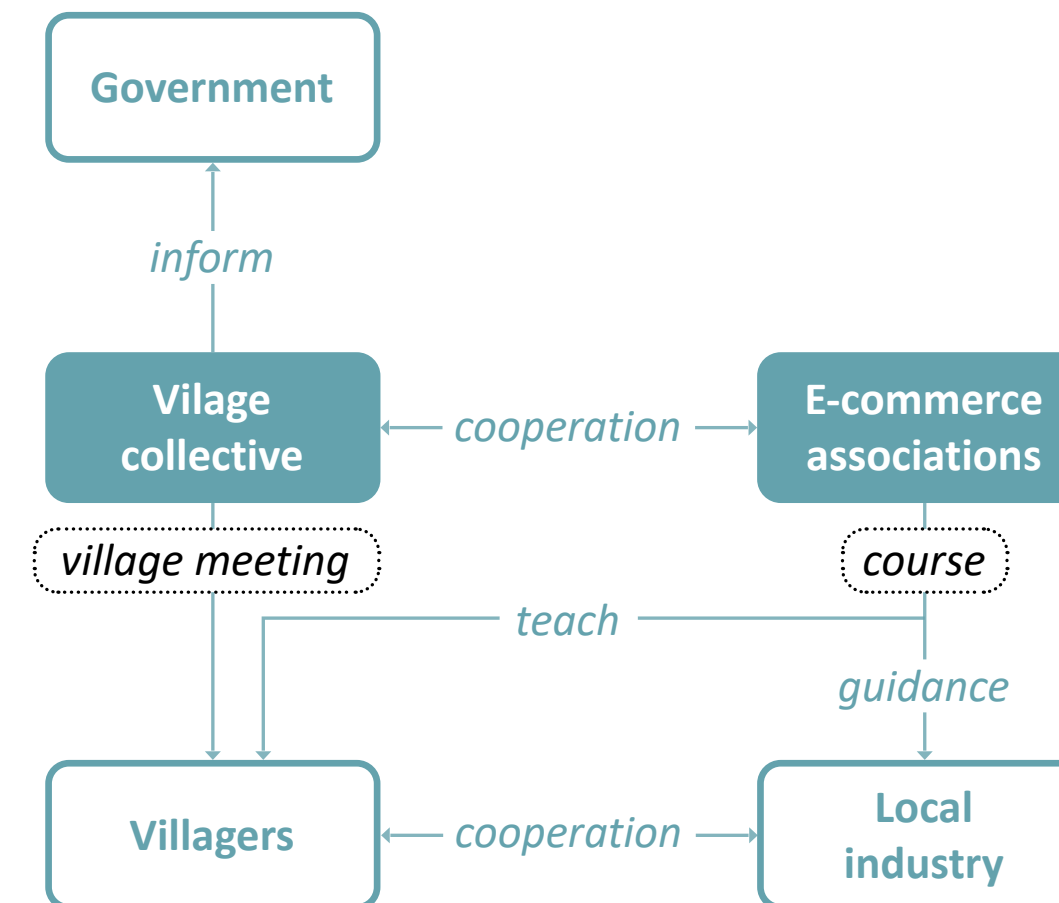
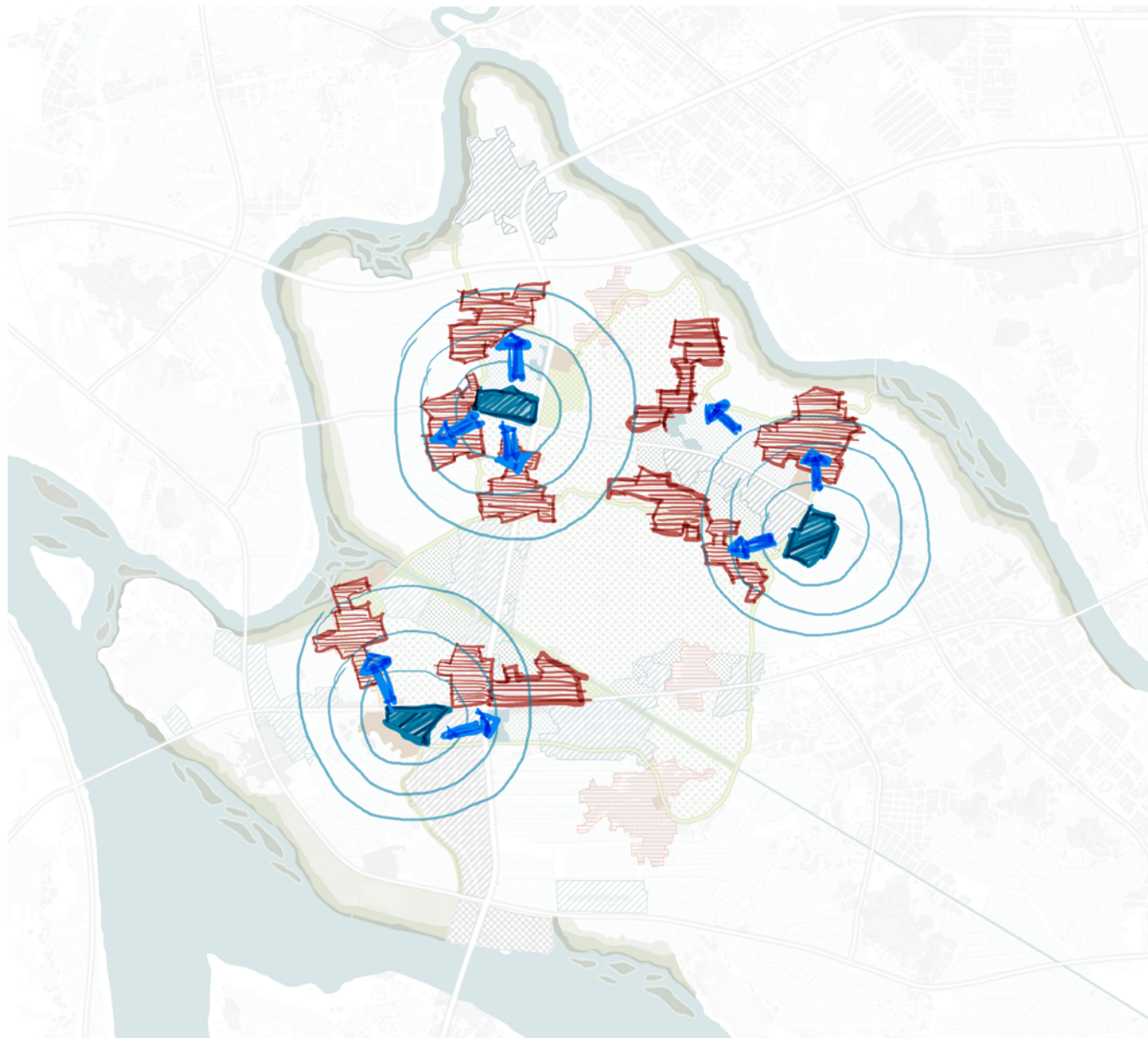


## PHASE I: STIMULATING



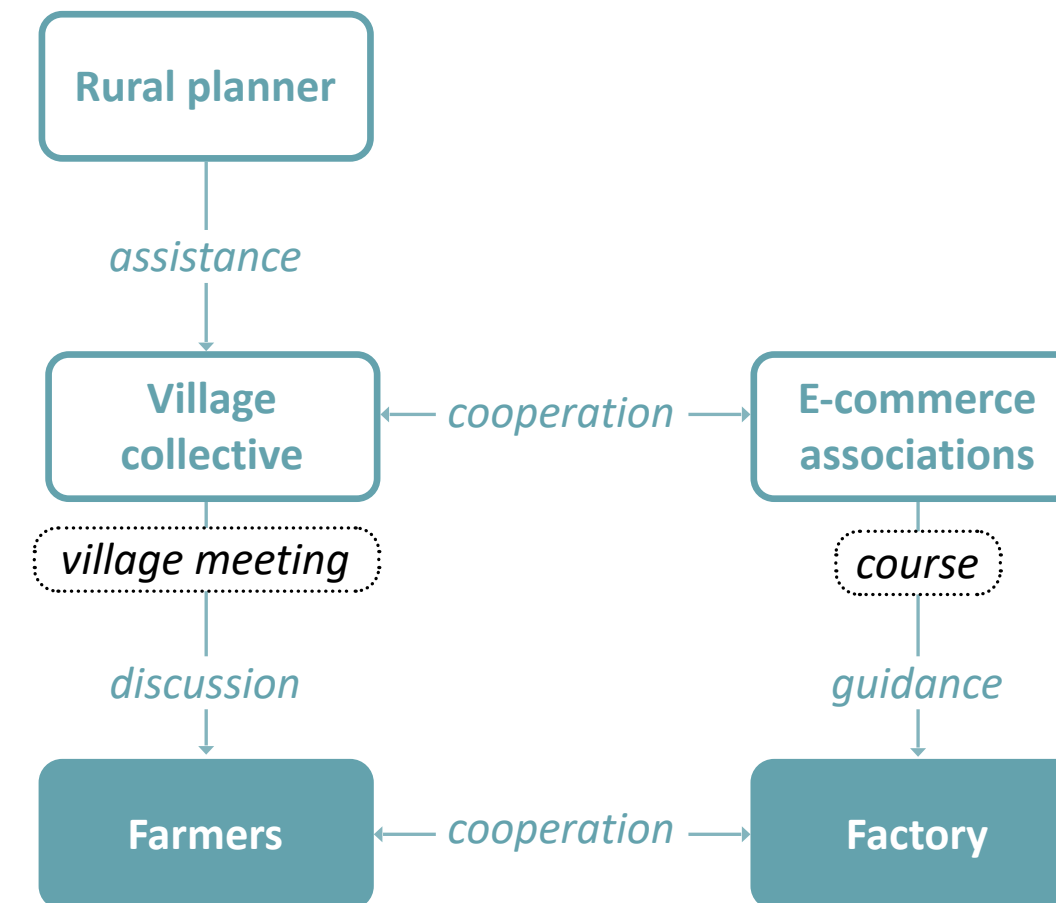
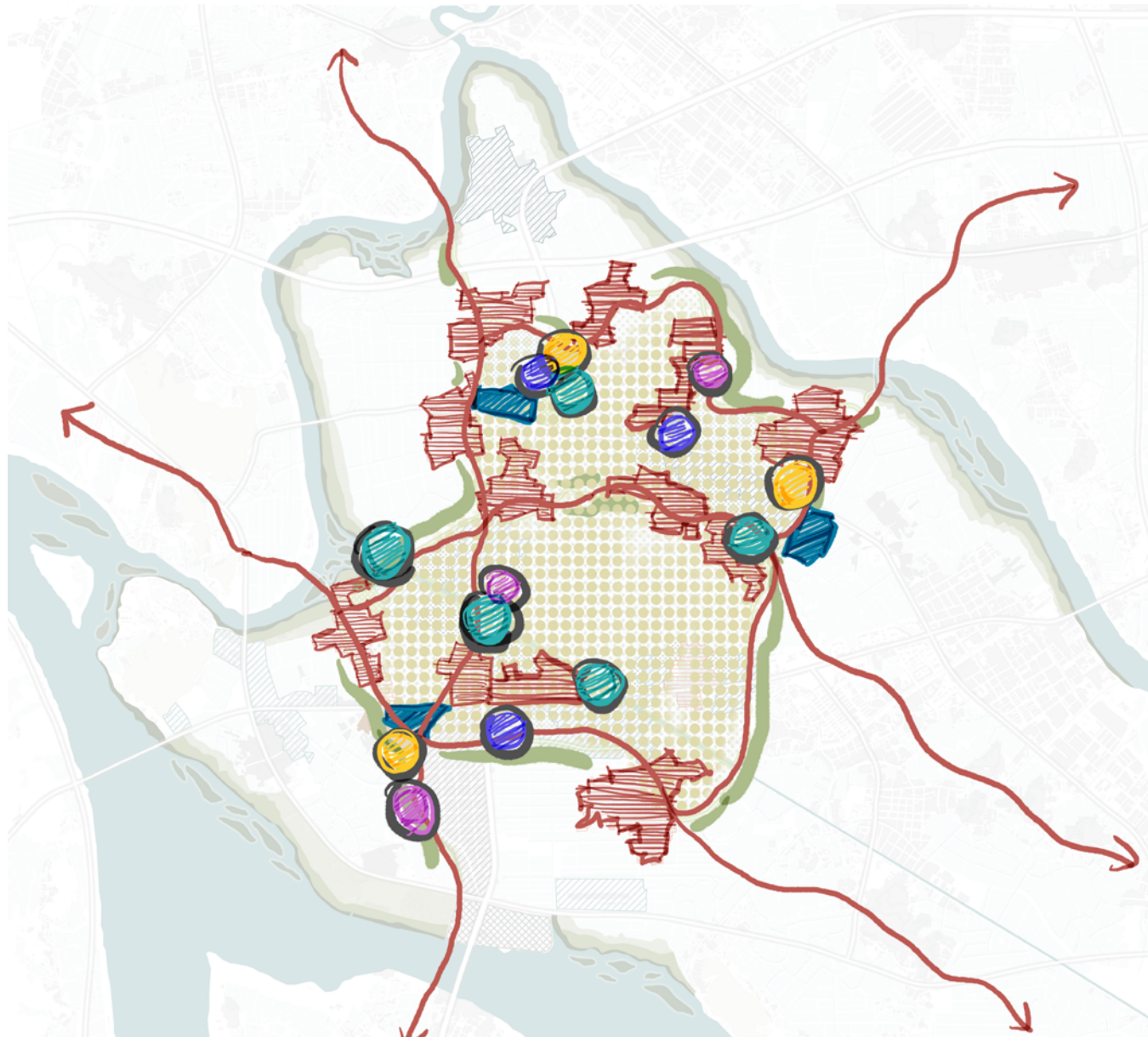


## PHASE II: INFLUENCING





### PHASE III: DEVELOPING

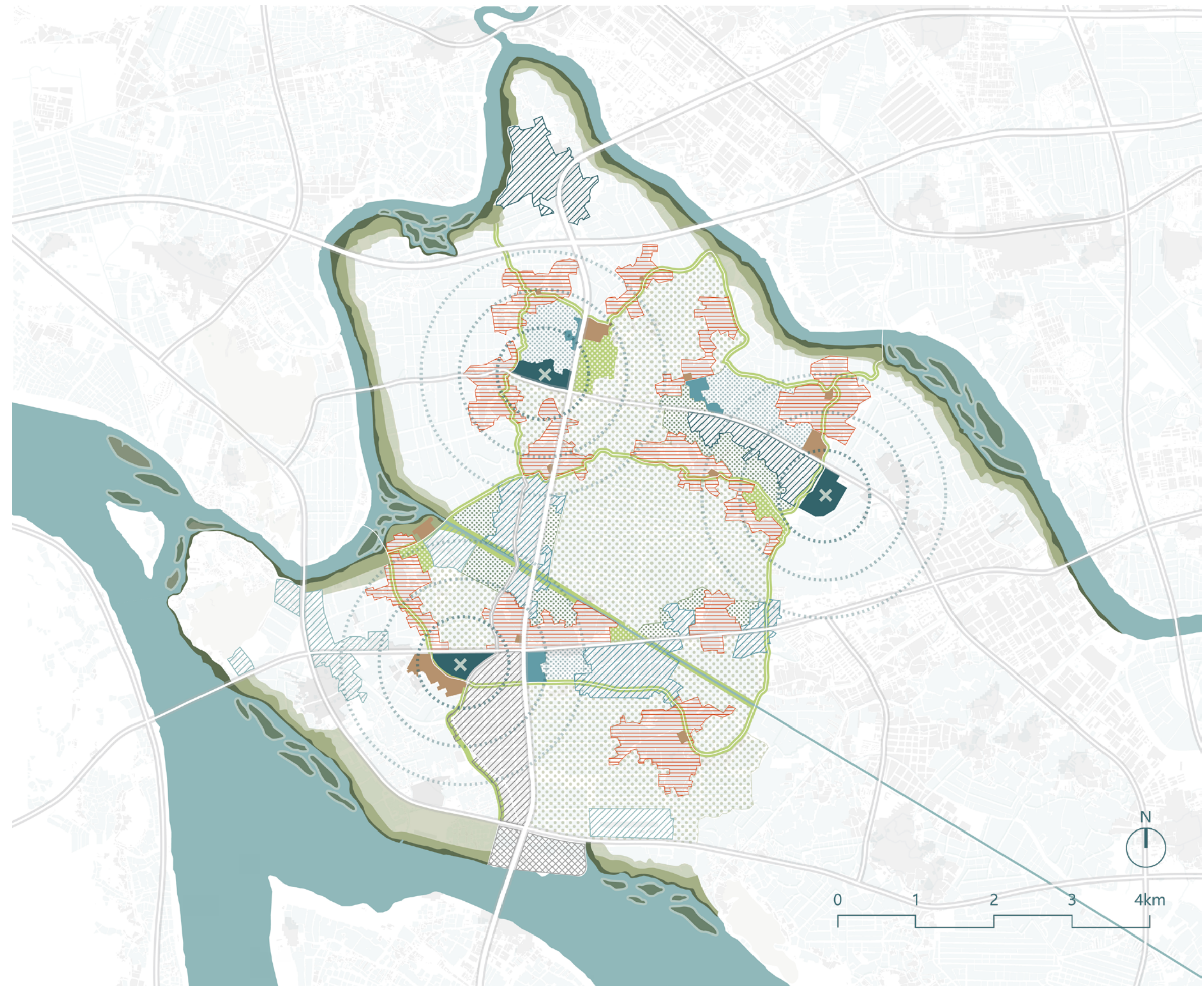




# FUTURE OF CHIKAN

赤坎的未来

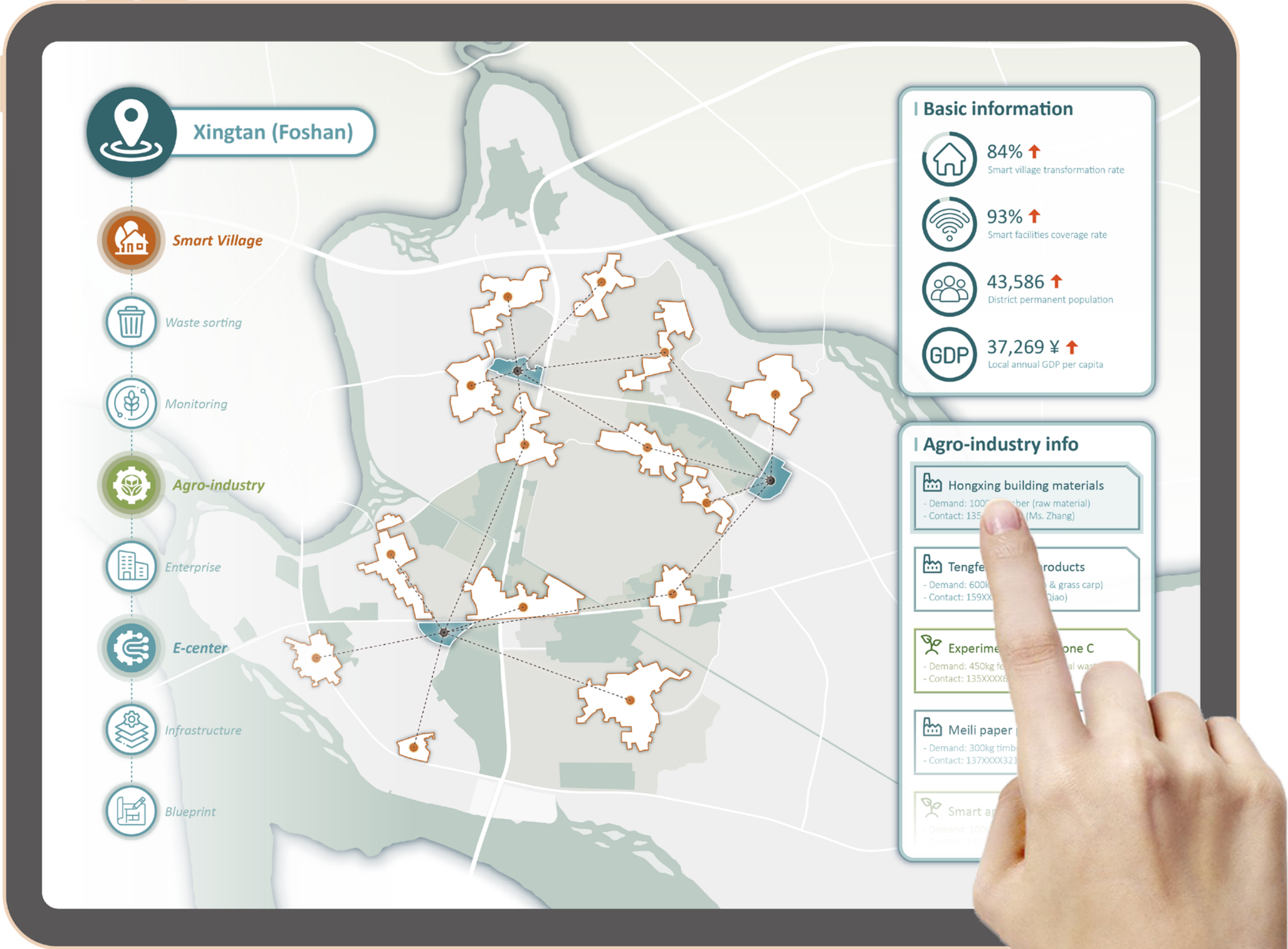
- Accessible connection**
- Expressway
  - Highway
  - Logistic park
  - Port area
- Agricultural agglomeration**
- E-center
  - Agricultural market
  - The living labs
  - Smart village
  - Aquatic products industry
  - Food processing industry
  - Green building materials industry
  - Traditional dyke pond
  - Smart dyke pond
  - Recliamed polder
  - Experimental field
- Rural liveability**
- Rural track (Green corridor)
  - Higher green buffer
  - Lower green buffer
  - Water dyke
  - Wetland
  - Waterway





DIGITALISATION SUPPORTS SMART VILLAGE DEVELOPMENT

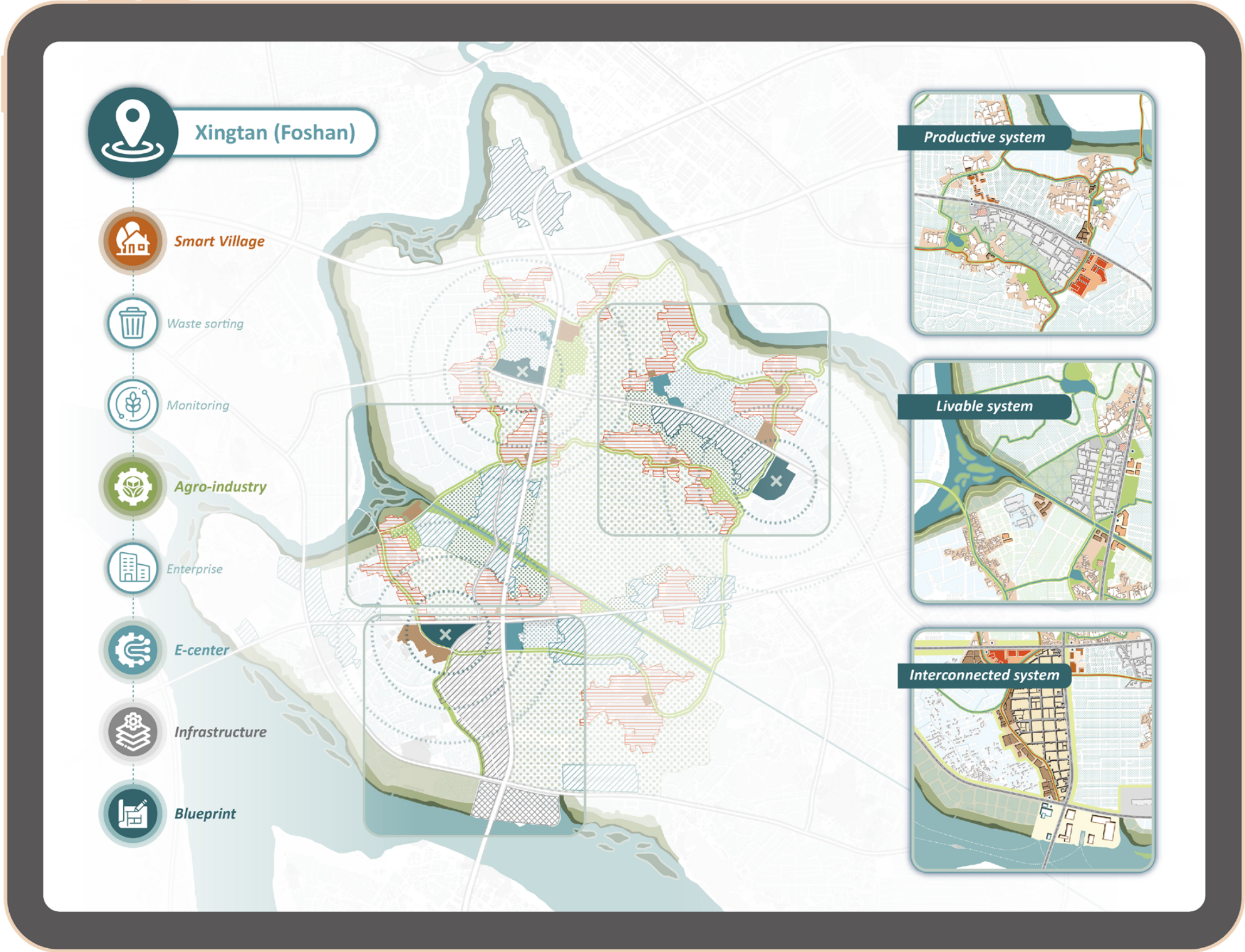
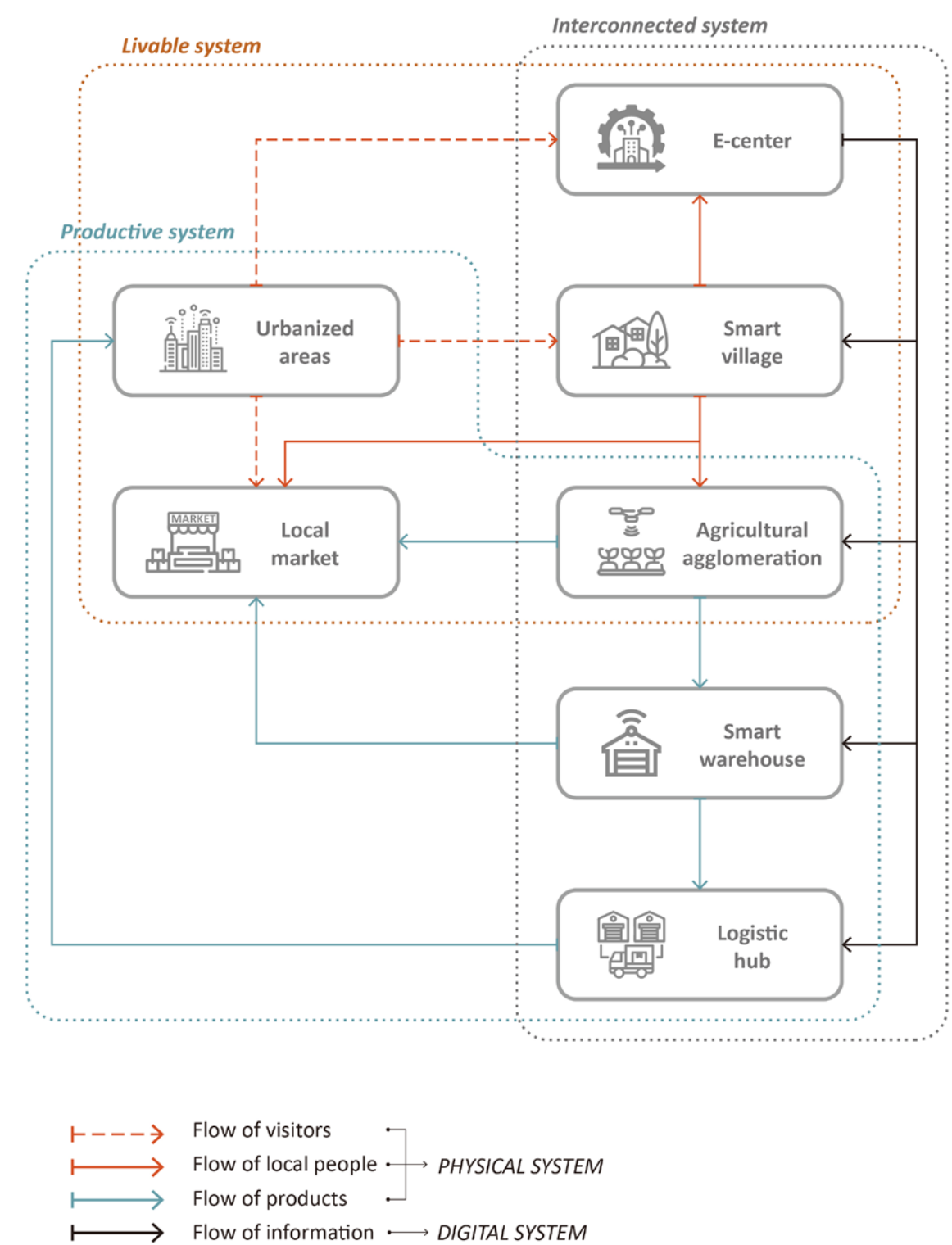
数字化支持智慧乡村发展





# INTEGRATED SMART VILLAGE SYSTEMS

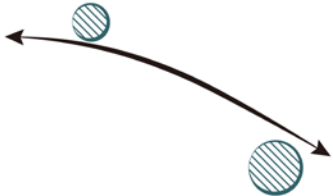
智慧乡村发展系统



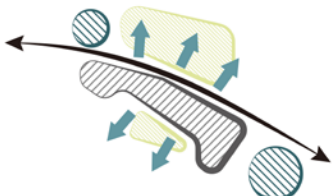


AGENDA I: PRODUCTIVE SYSTEM

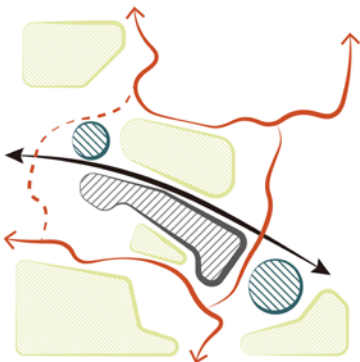
生产系统



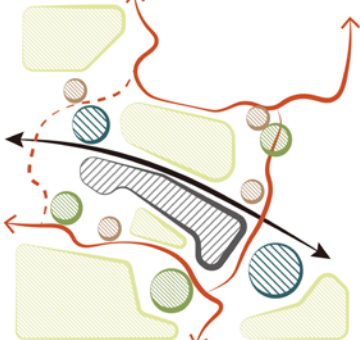
Implementation of e-center and the living lab



Upgrading of local industry to work with farmland



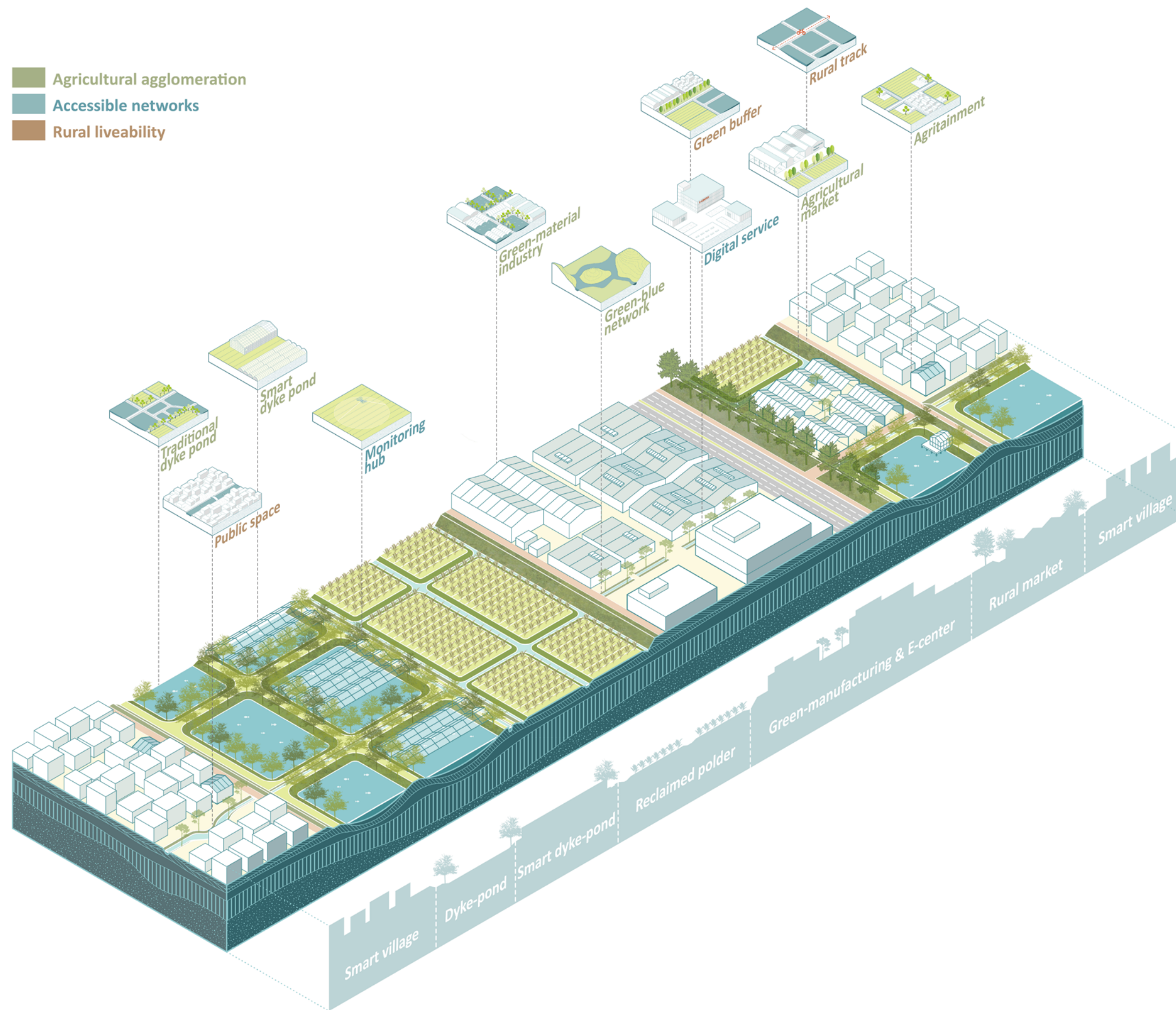
Construction of rural track to enhance cooperation



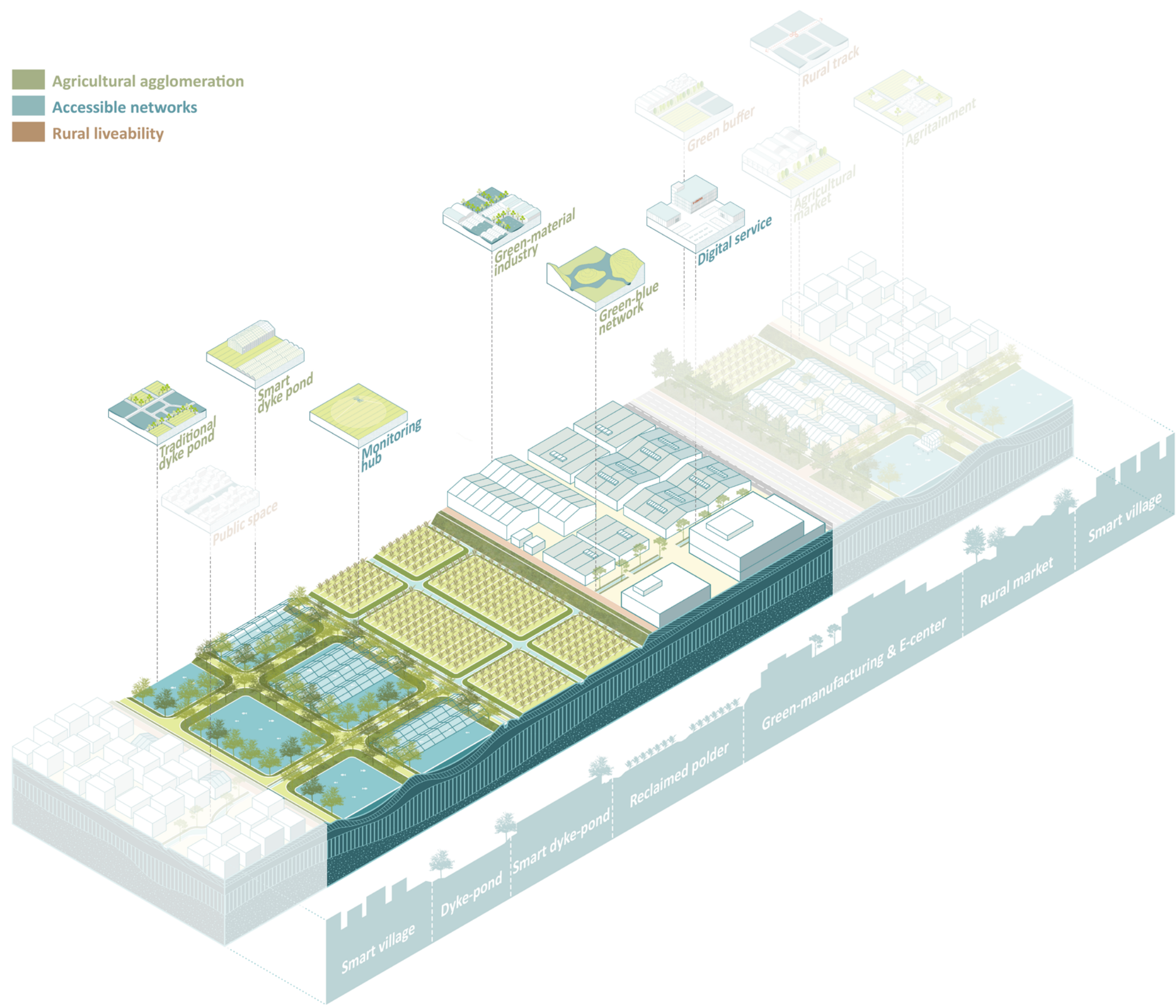
Emergence of rural activity related to agro-industry

●	Bus station
—	Road
—	Rural track
—	Waterway
—	Dyke system
■	Lake
■	Agricultural park
■	Traditional pond
■	Smart dyke pond
■	Experimental pond
■	Reclaimed polder
■	E-center
■	Market
■	The living lab
■	Courier station
■	Green manufacturing
■	Smart village

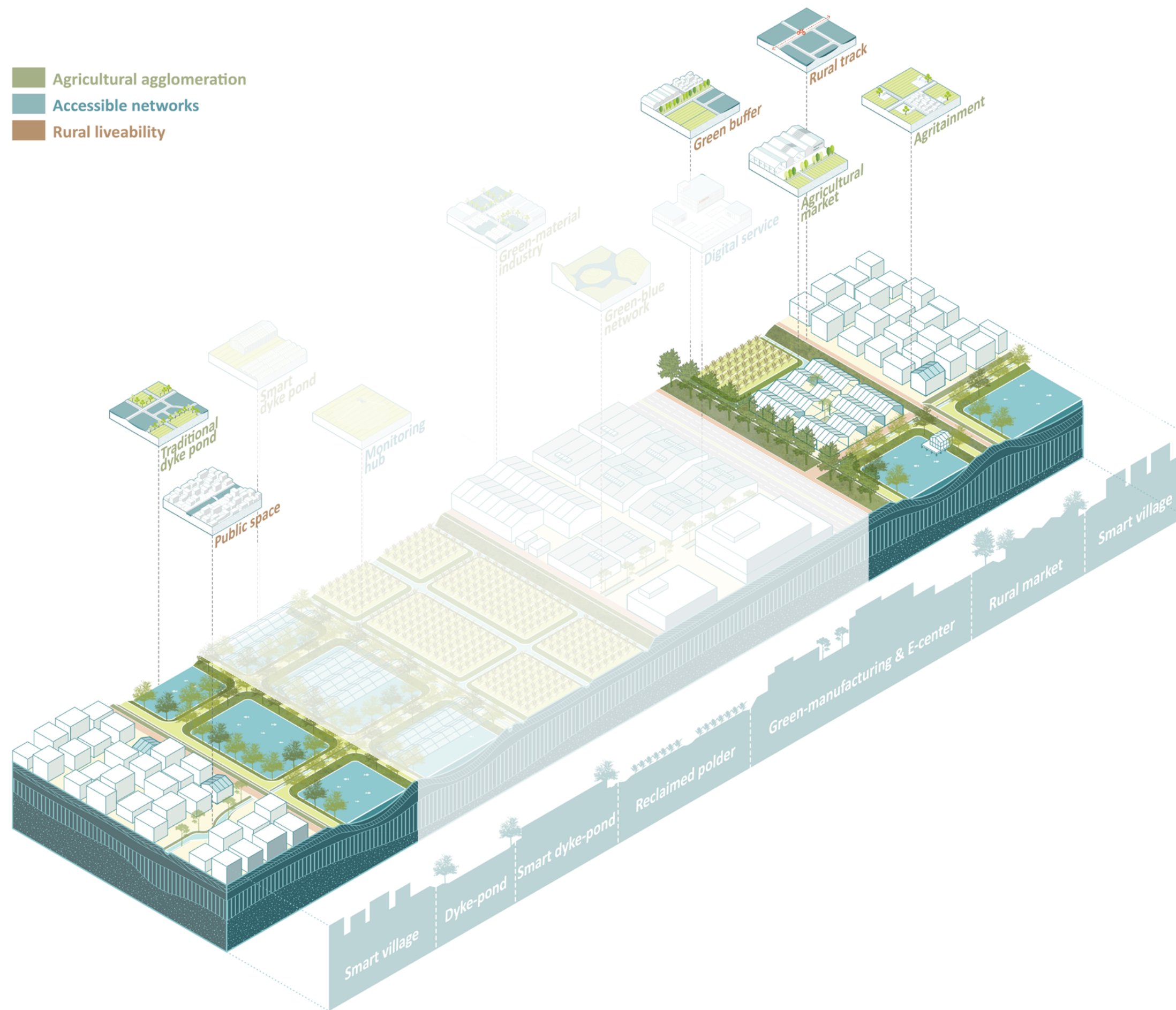






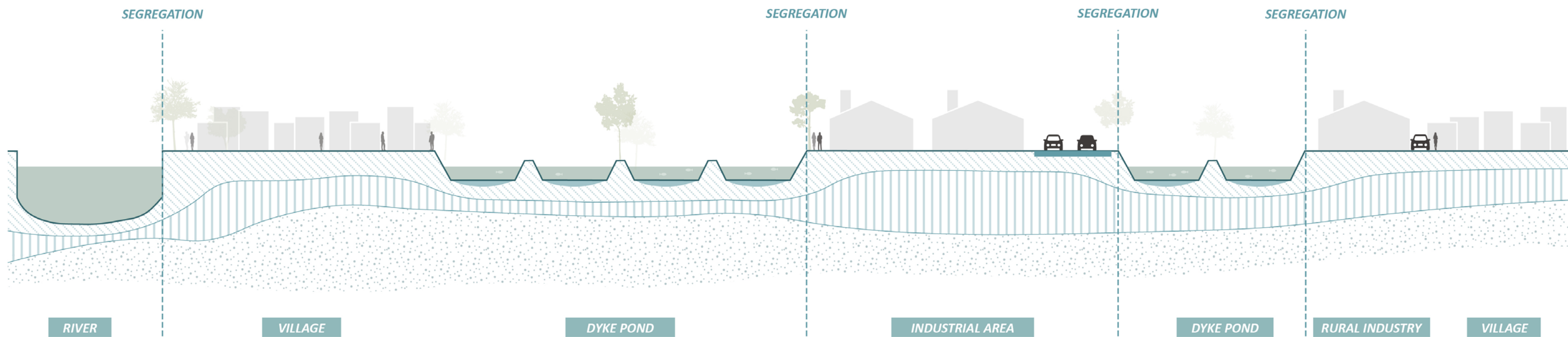






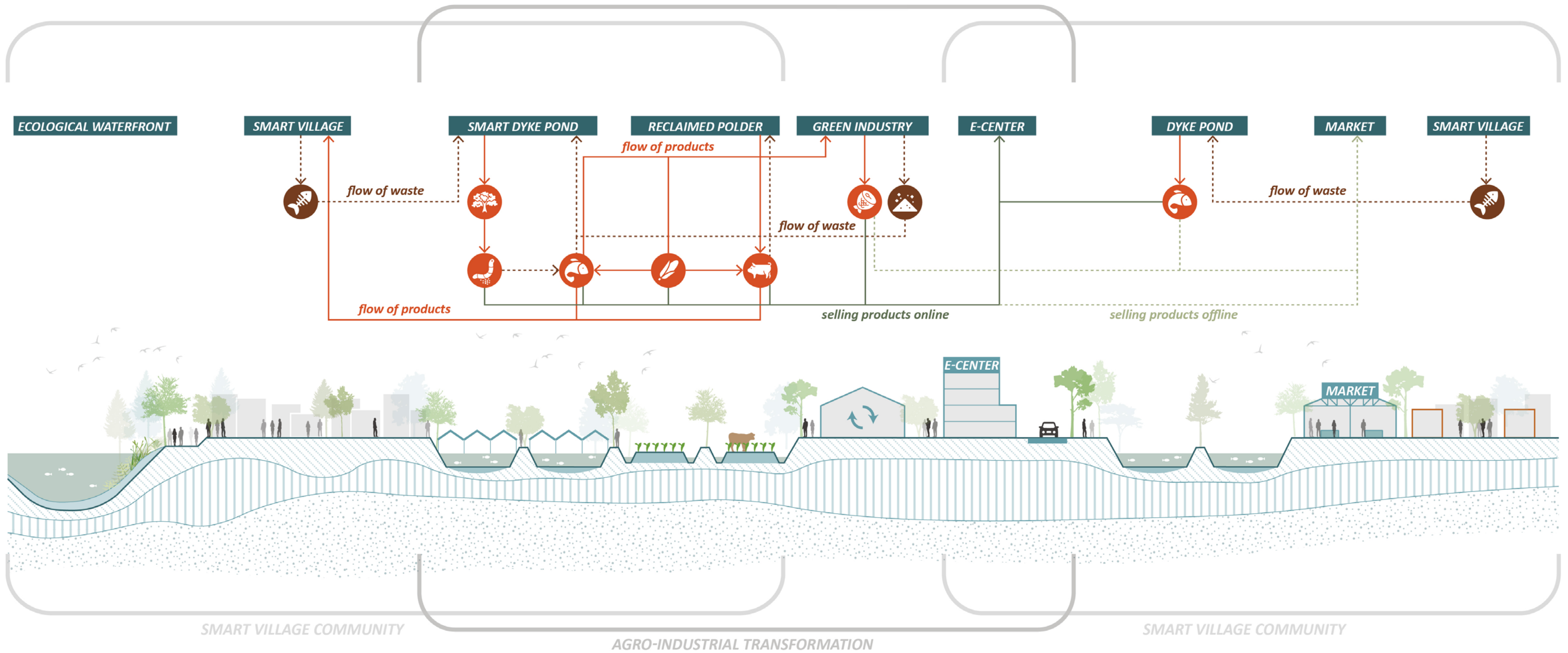


*BEFORE*





AFTER







Reed chicken  
(weight - 1.4 kg)  
(height - 25 cm)  
(food - grass/corn)

Large black-white pig  
(weight - 110 kg)  
(height - 50 cm)  
(food - corn/cane)

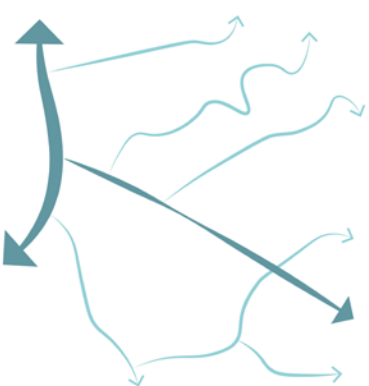
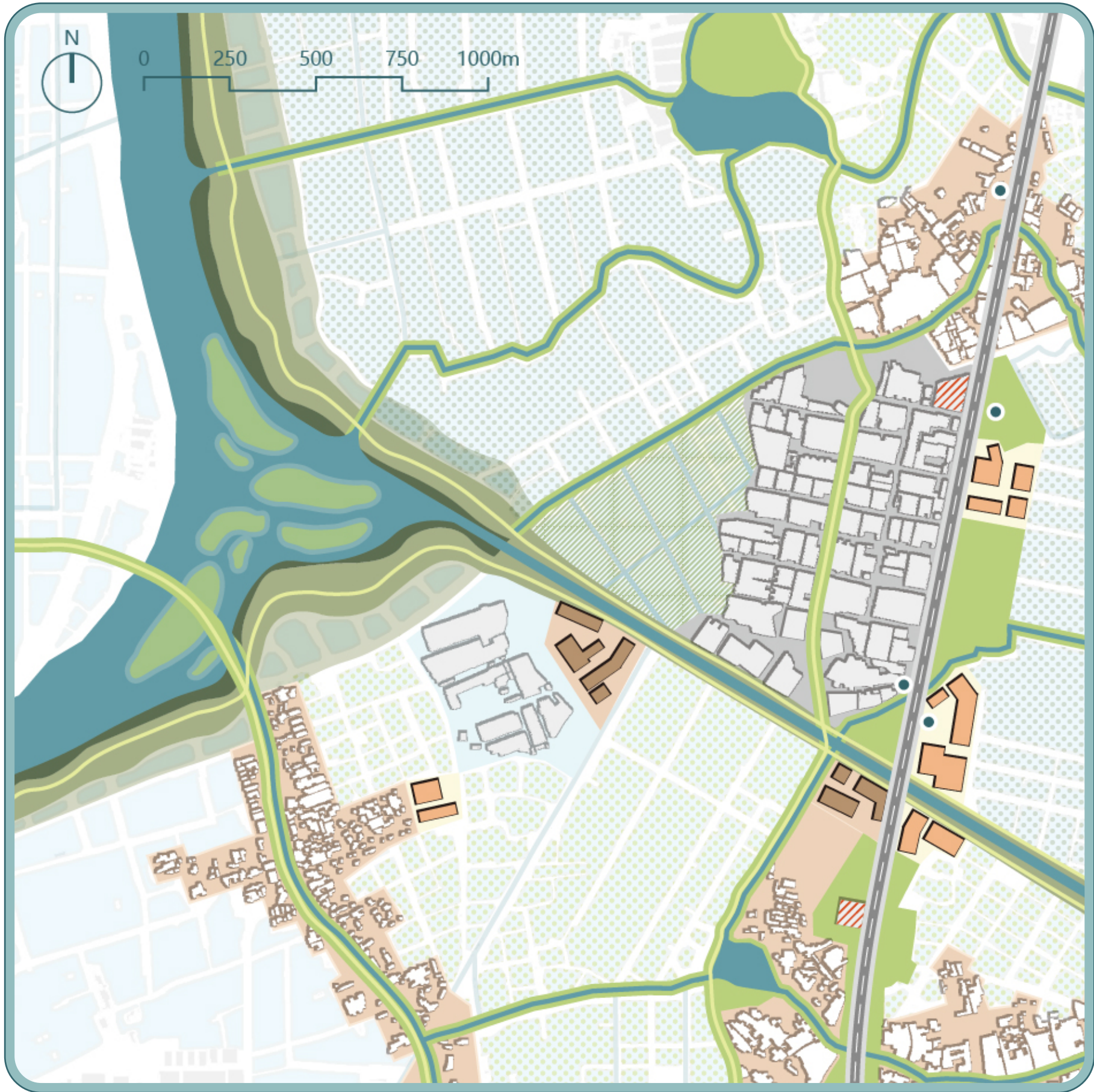
Crucian  
(weight - 0.6 kg)  
(length - 32 cm)

Grass carp  
(weight - 0.8 kg)  
(length - 38 cm)

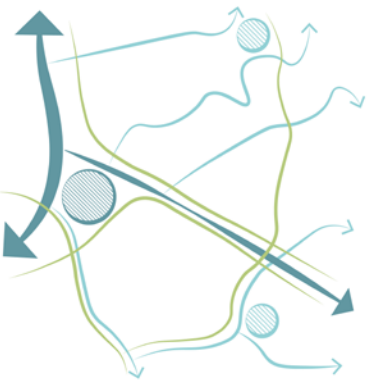


# AGENDA II: LIVABLE SYSTEM

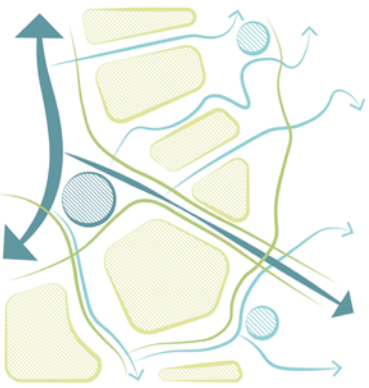
## 生活系统



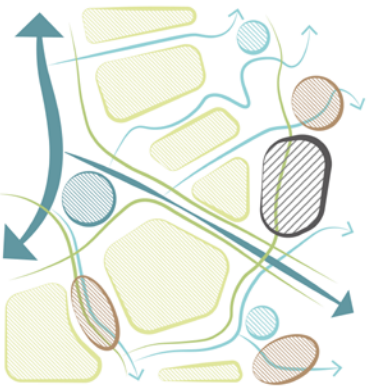
Connection between the river and dyke system



Development of greenways and landscape views



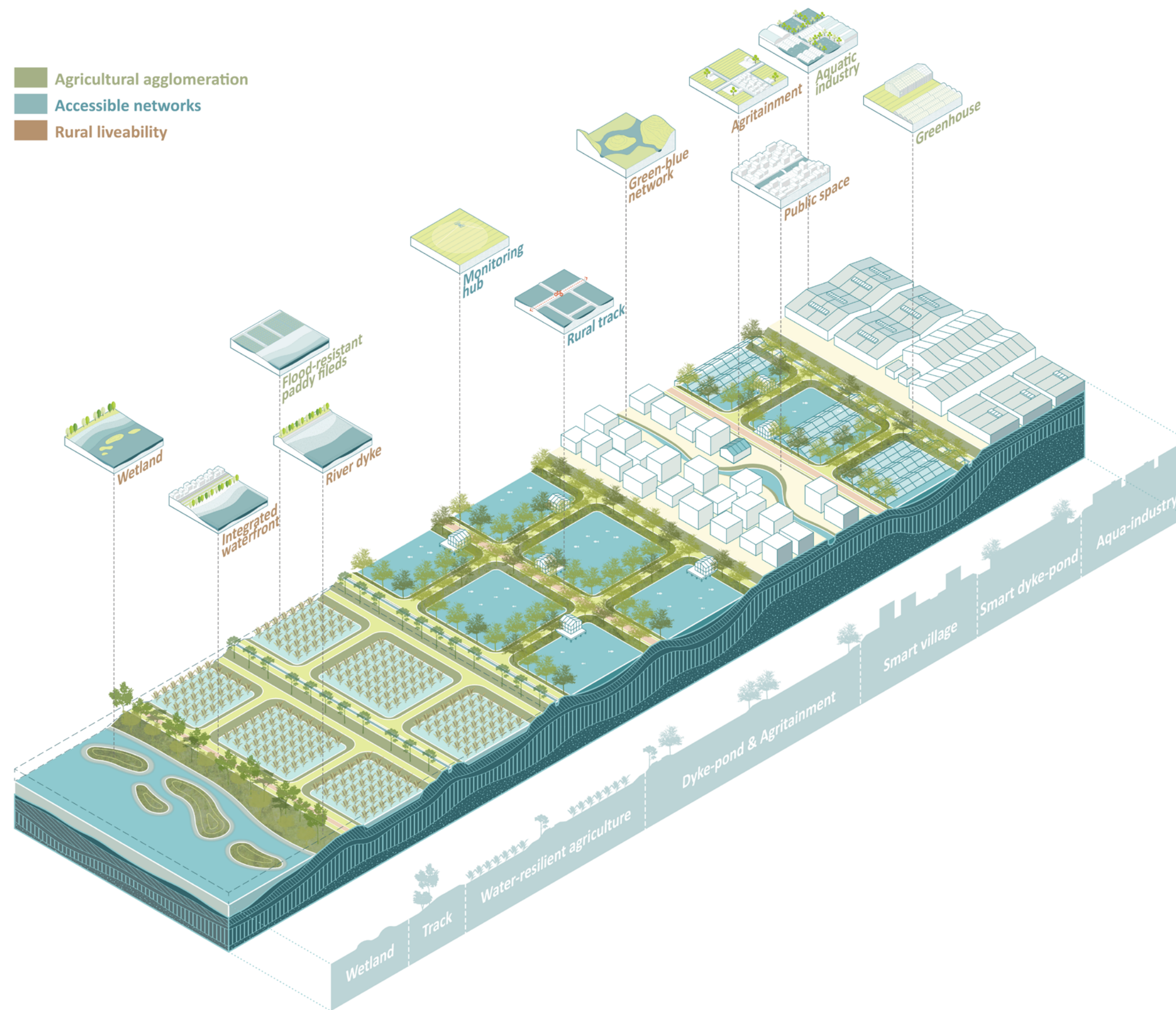
Classification and management of farmland



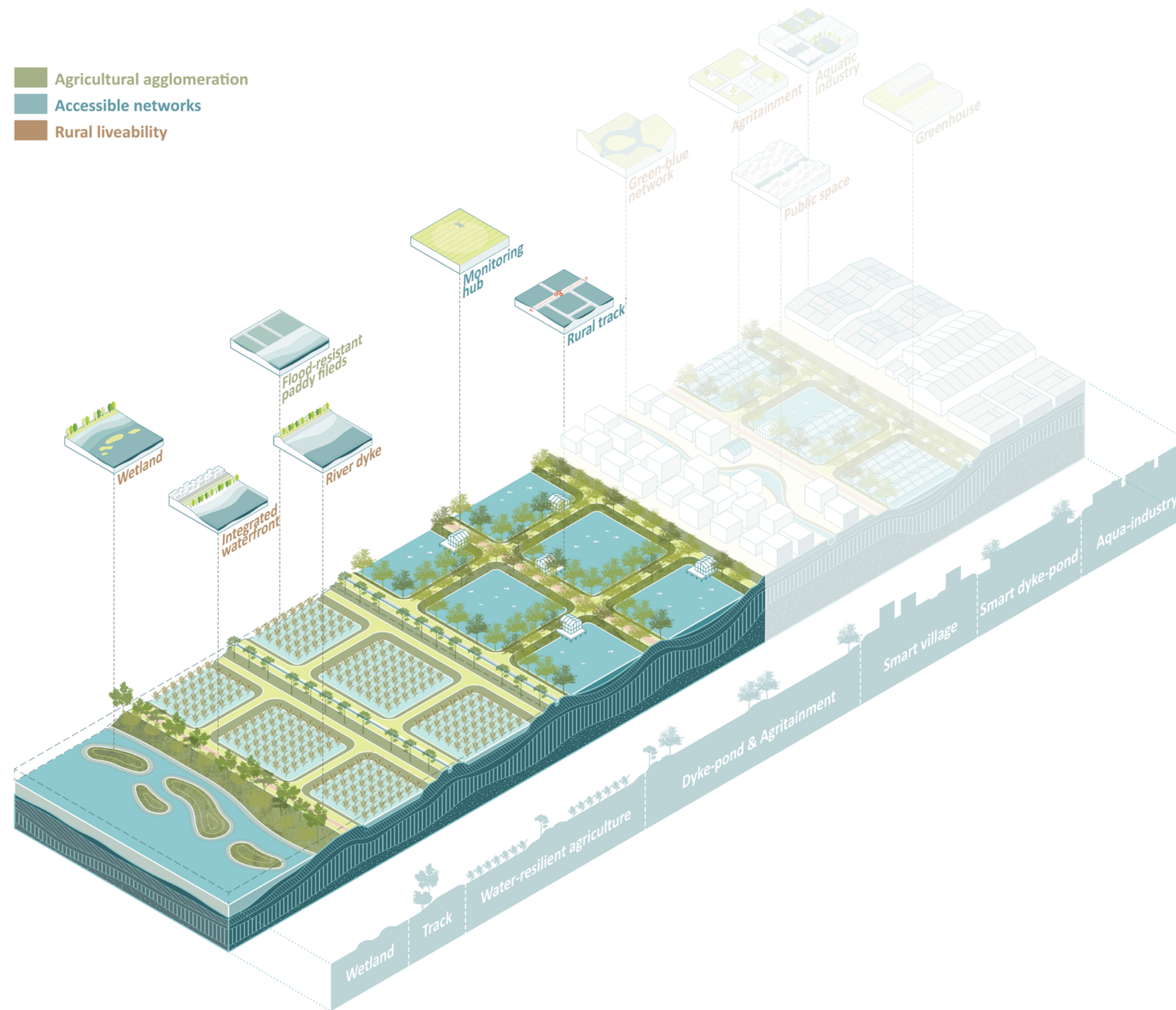
Improvement of the quality of rural spaces

●	Bus station
—	Road
—	Rural track
—	River
—	Dyke system
—	Agricultural park
—	Wetland
—	Flood-resistant area
—	Traditional pond
—	Smart dyke pond
—	Agritainment pond
—	Reclaimed polder
—	Market
—	Agritainment house
—	Aquatic industry
—	Food industry
—	Smart village

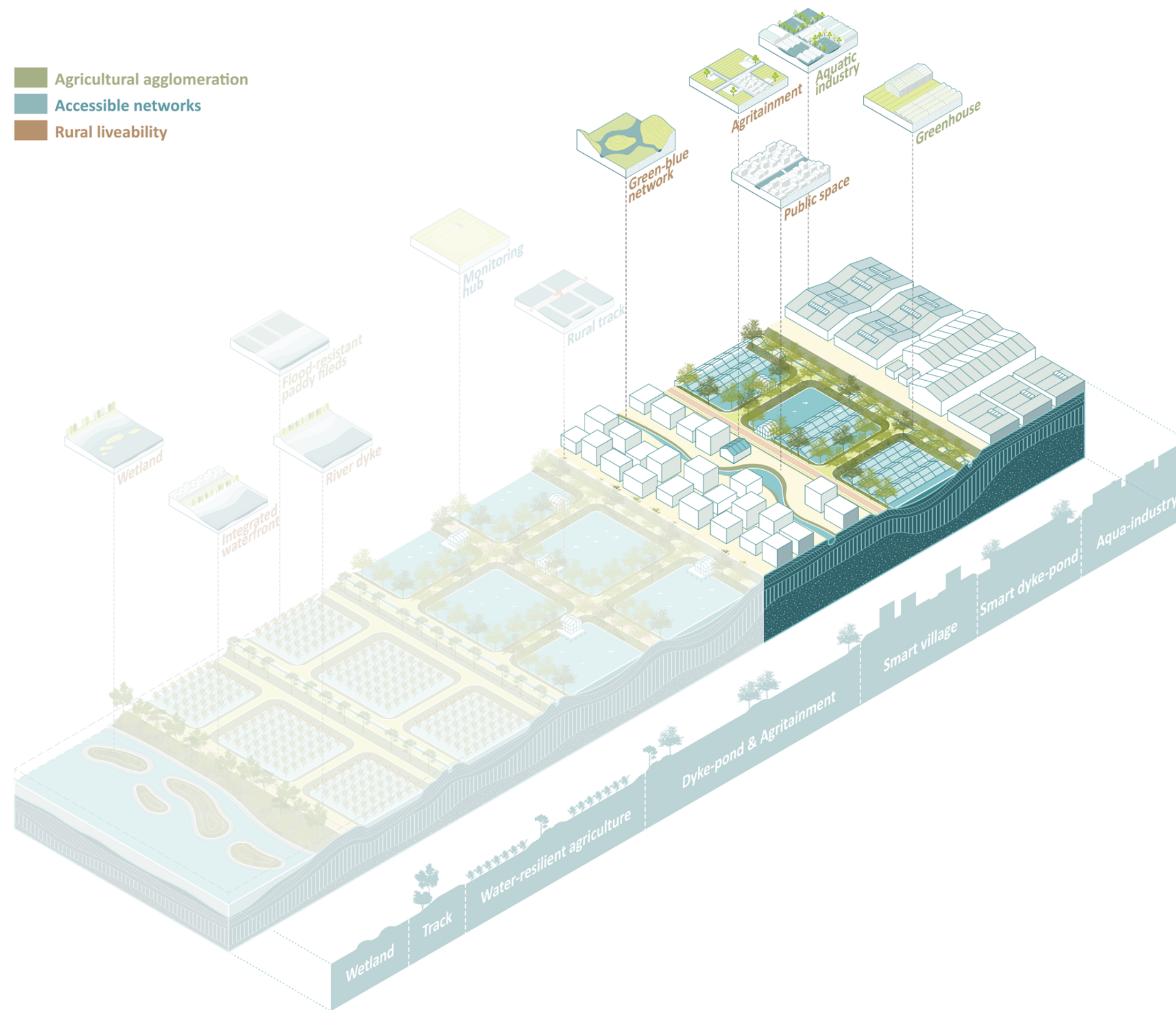






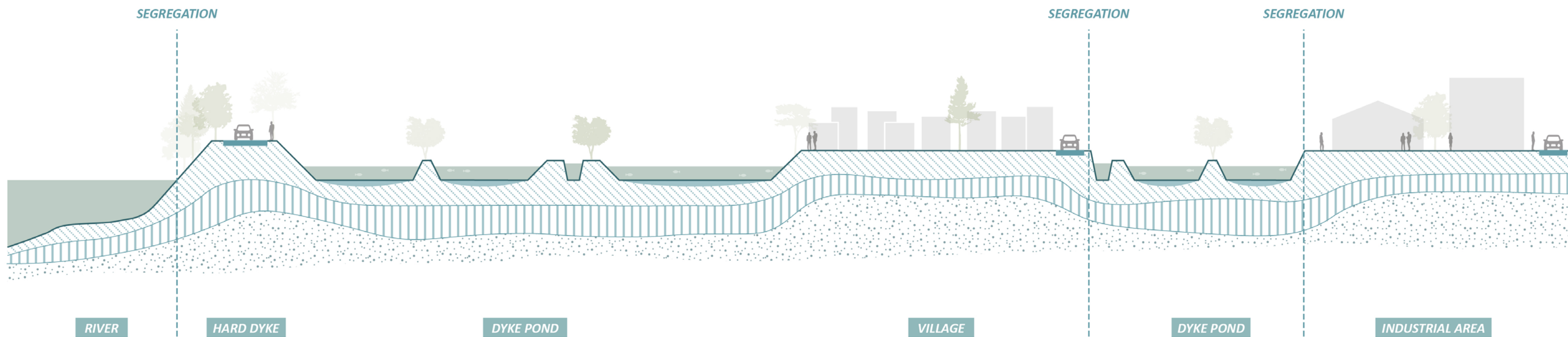






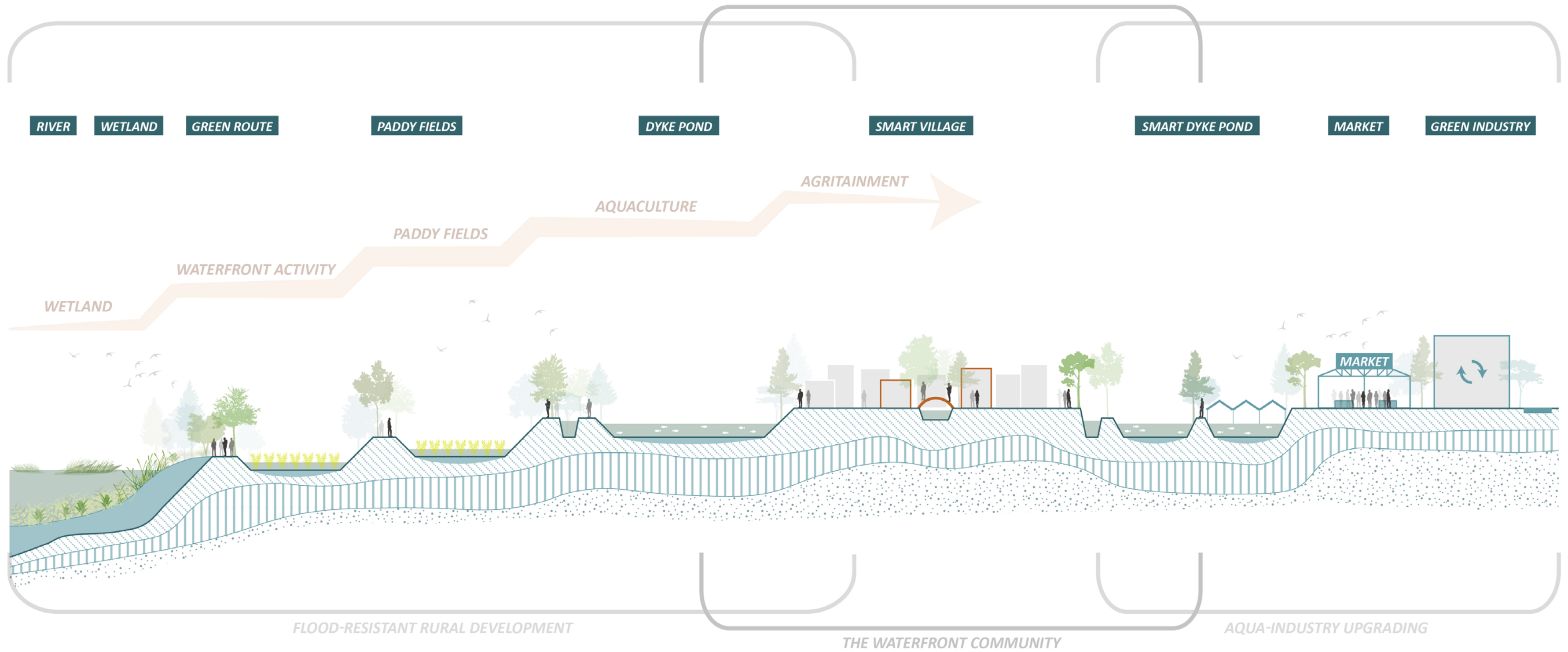


*BEFORE*





AFTER







Yueqi Zhang  
- Painter  
- 60 years old

Maohan Zhang  
- Villager  
- 30 years old

Xiaoge Huang  
- Teacher  
- 25 years old

Mohan Qiao  
- Agri-expert  
- 25 years old

Kemeng Zhao  
- Farmer  
- 24 years old

PEICAN

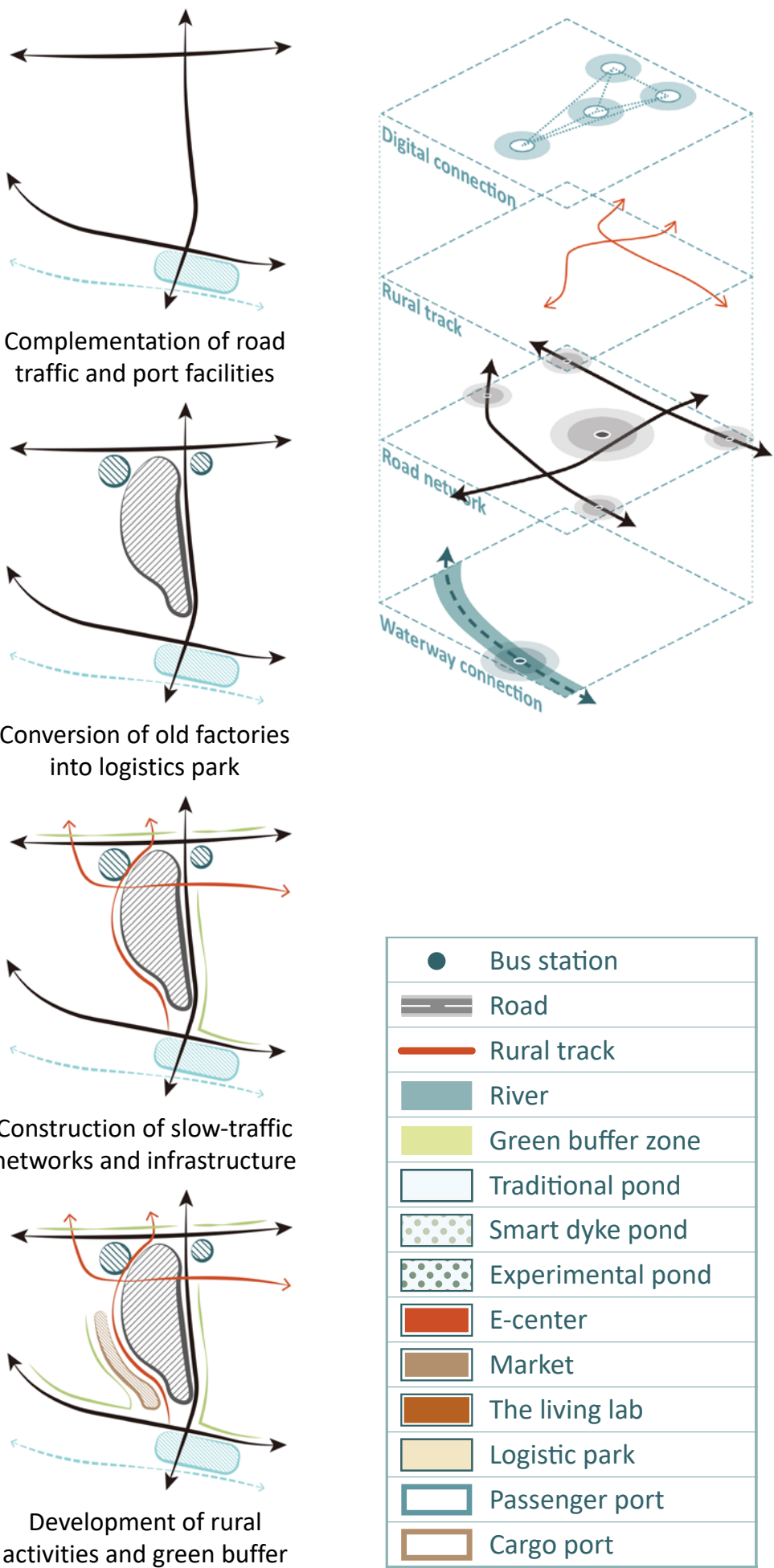
EGRETTA

SAFE WATER LEVEL

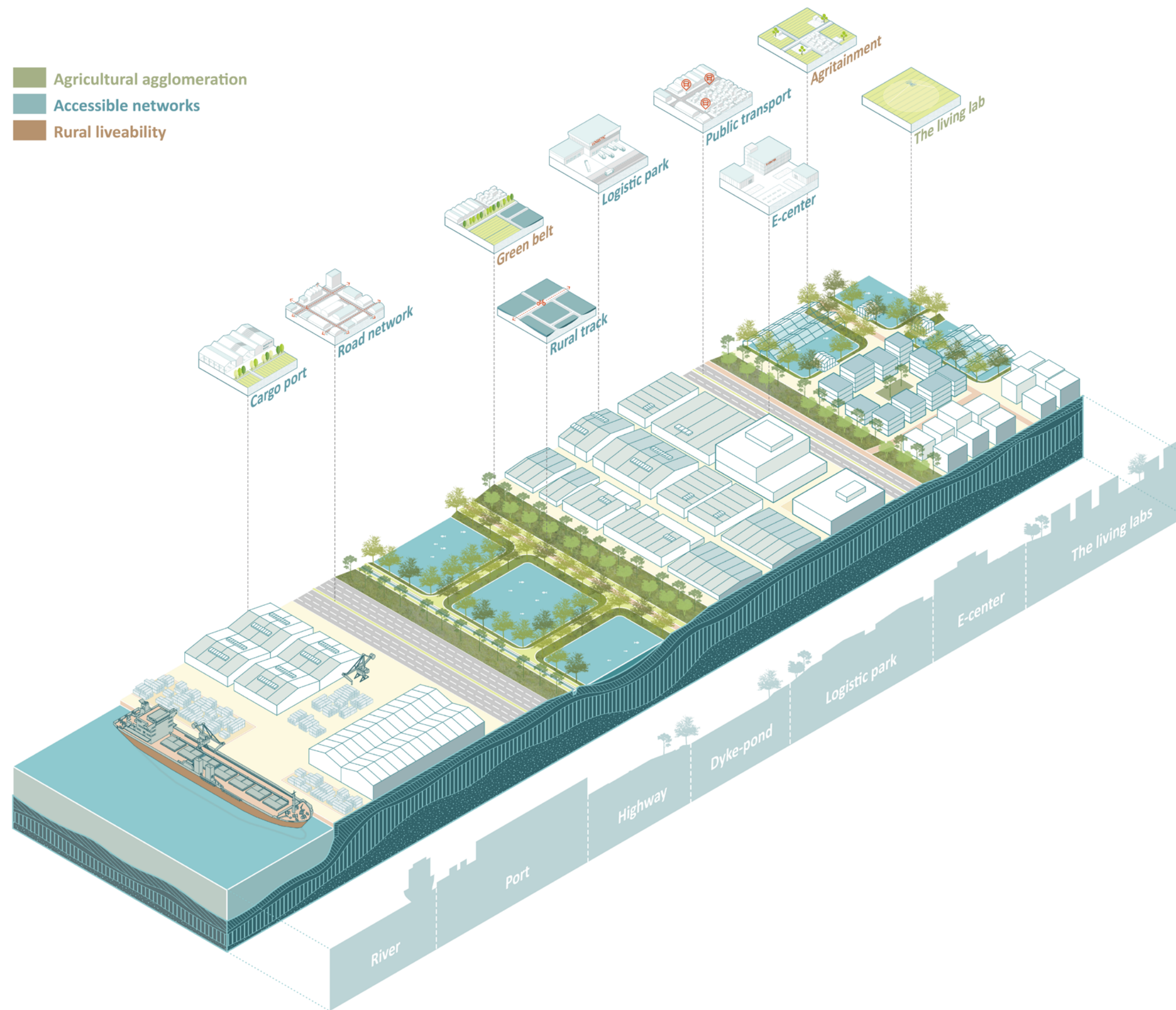


# AGENDA III: INTERCONNECTED SYSTEM

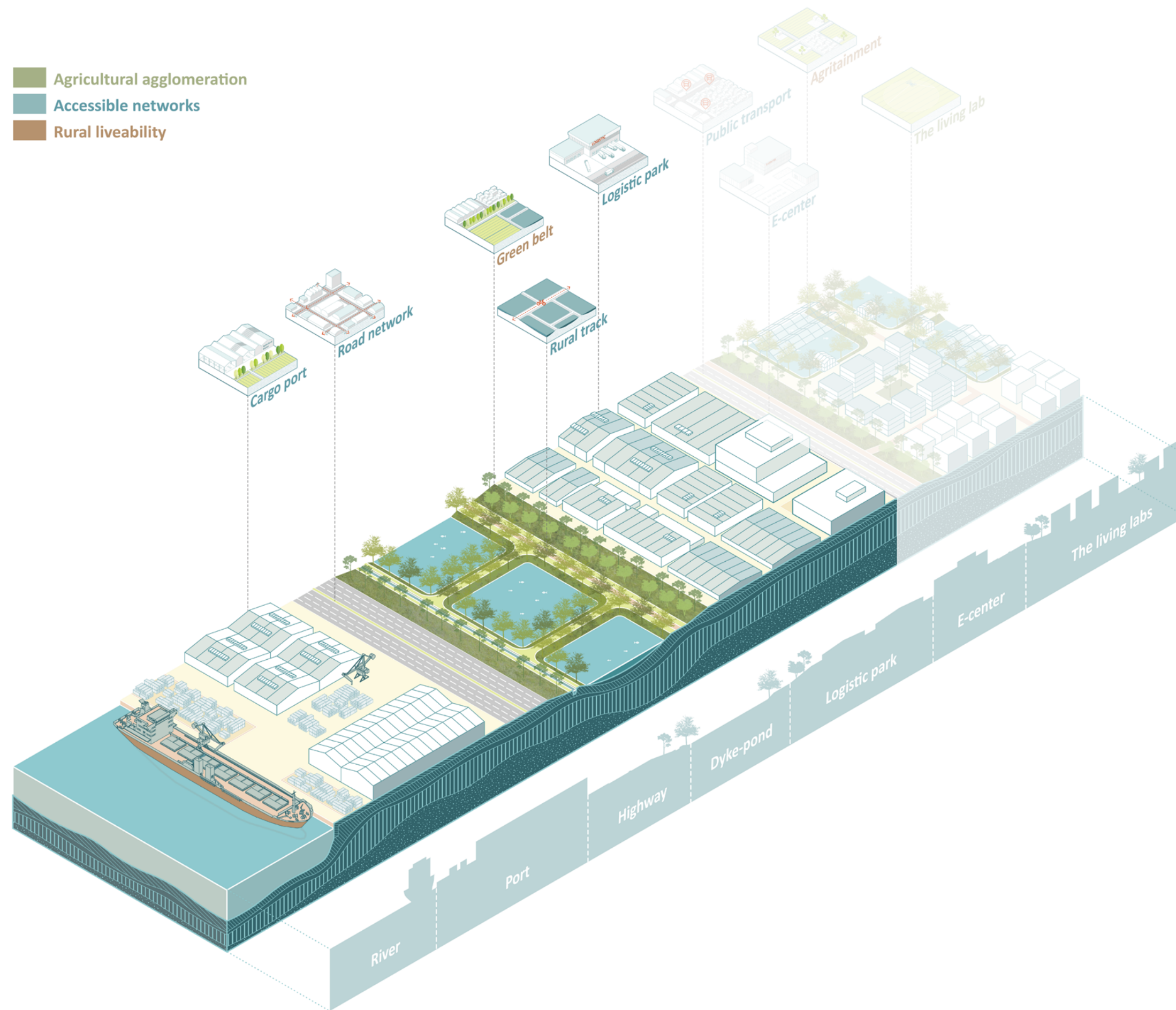
互联系统



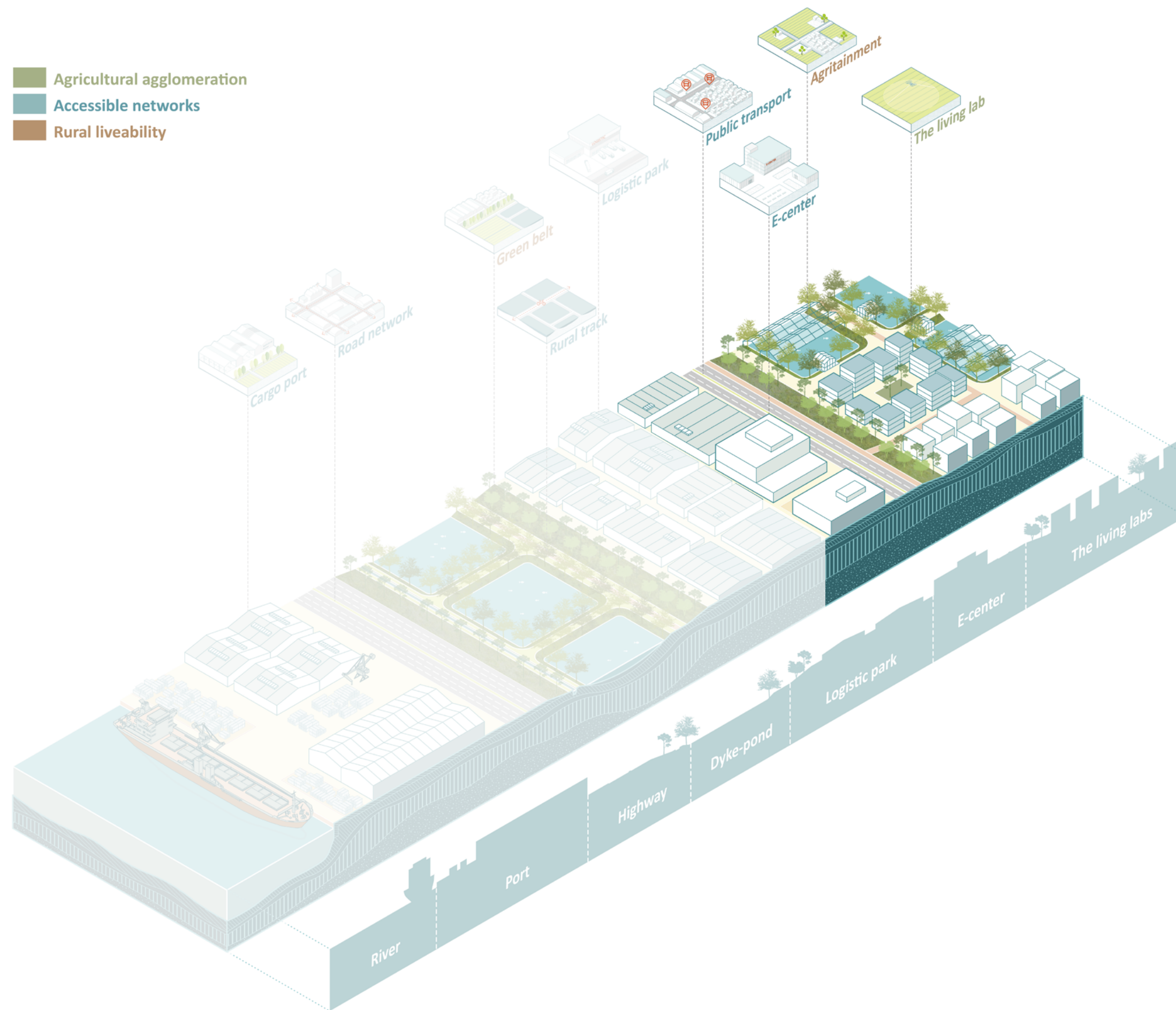




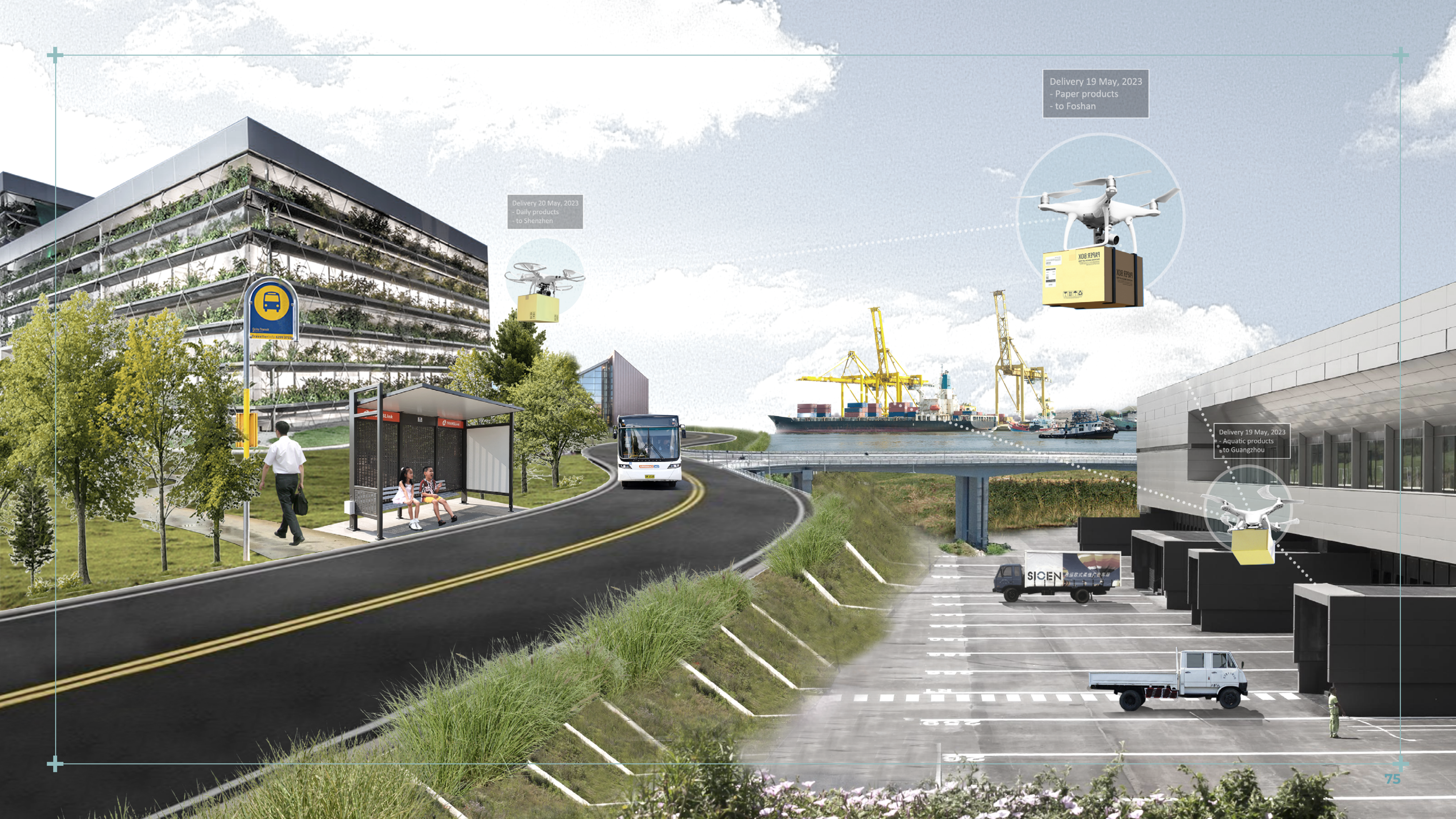










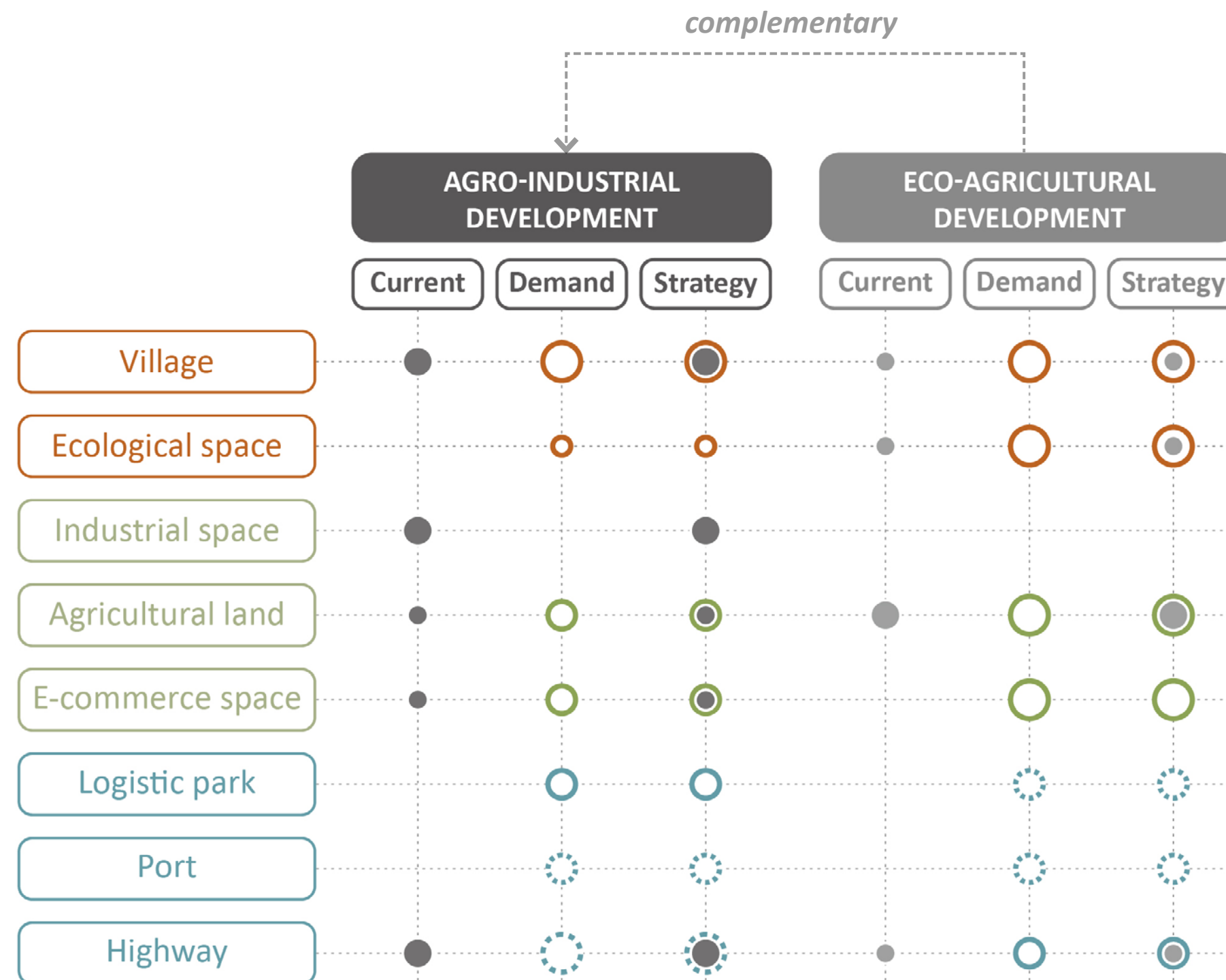


Delivery 20 May, 2023  
- Daily products  
- to Shenzhen

Delivery 19 May, 2023  
- Paper products  
- to Foshan

Delivery 19 May, 2023  
- Aquatic products  
- to Guangzhou

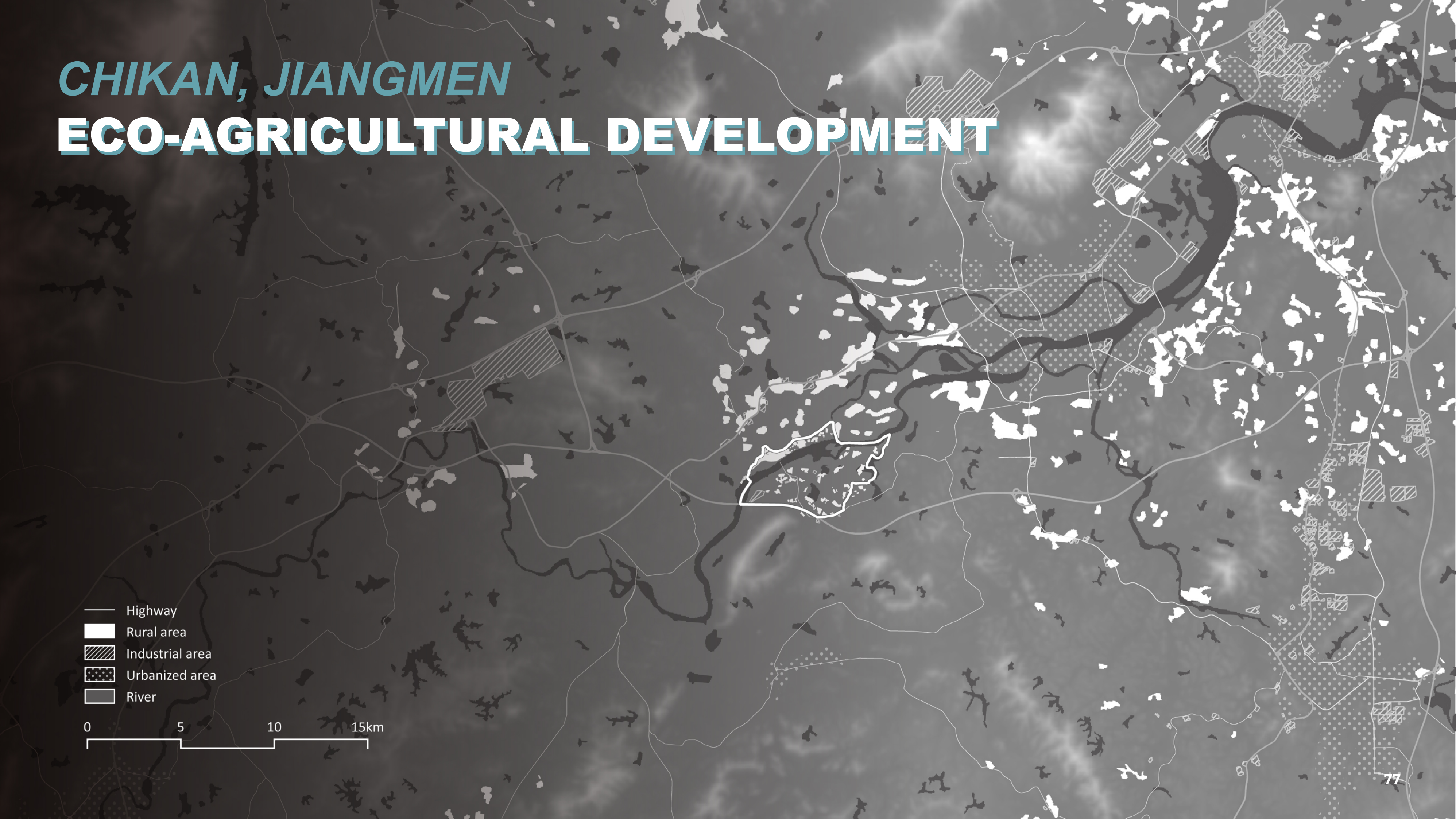






# CHIKAN, JIANGMEN

## ECO-AGRICULTURAL DEVELOPMENT



- Highway
- Rural area
- Industrial area
- Urbanized area
- River

0 5 10 15km



# RURAL AREAS WITH GREAT ECOLOGICAL POTENTIAL

具有生态潜力的乡村地区



*Mountain terrain*



*Cropland*



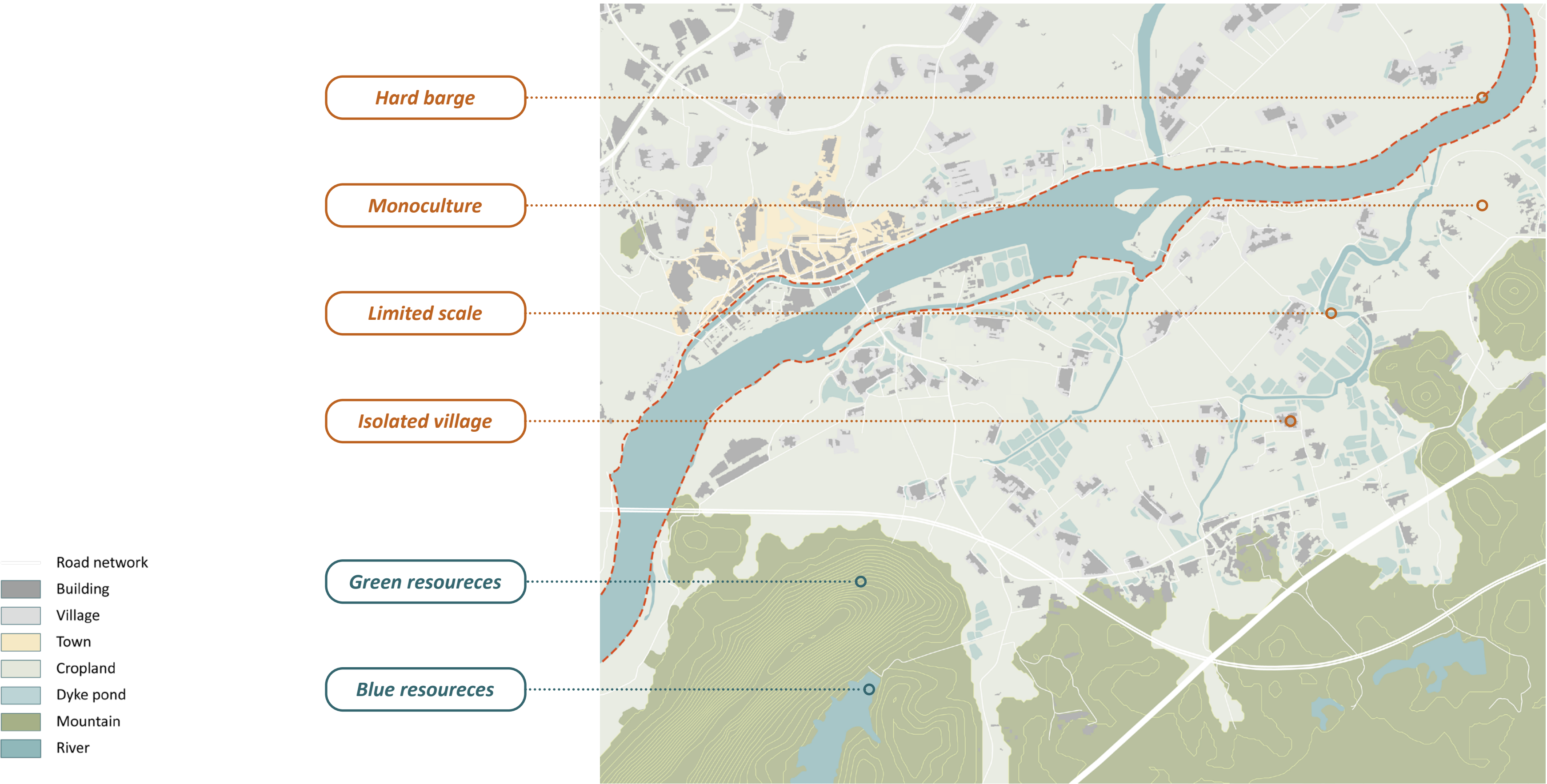
*Villages*





# RURAL AREAS WITH GREAT ECOLOGICAL POTENTIAL

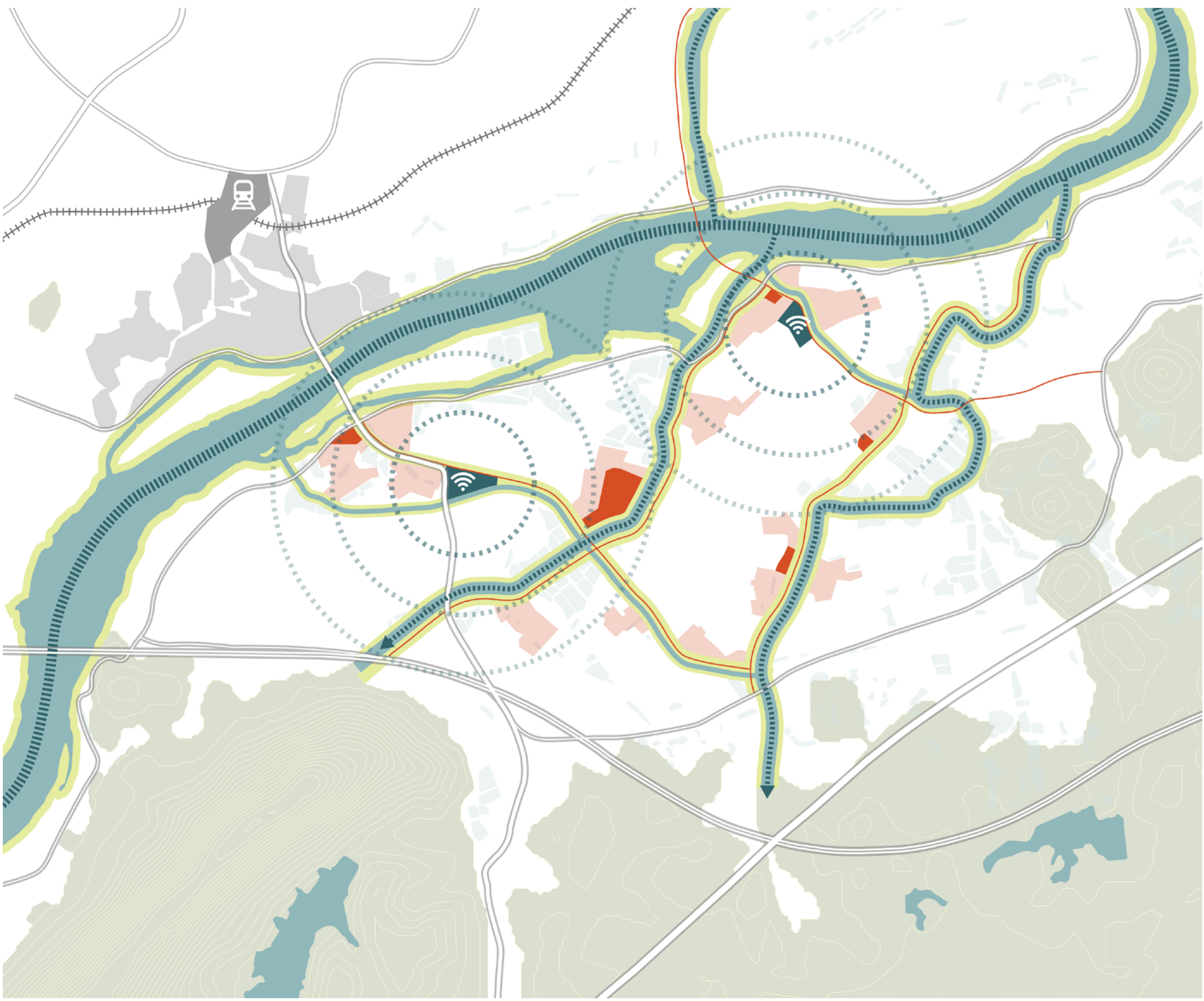
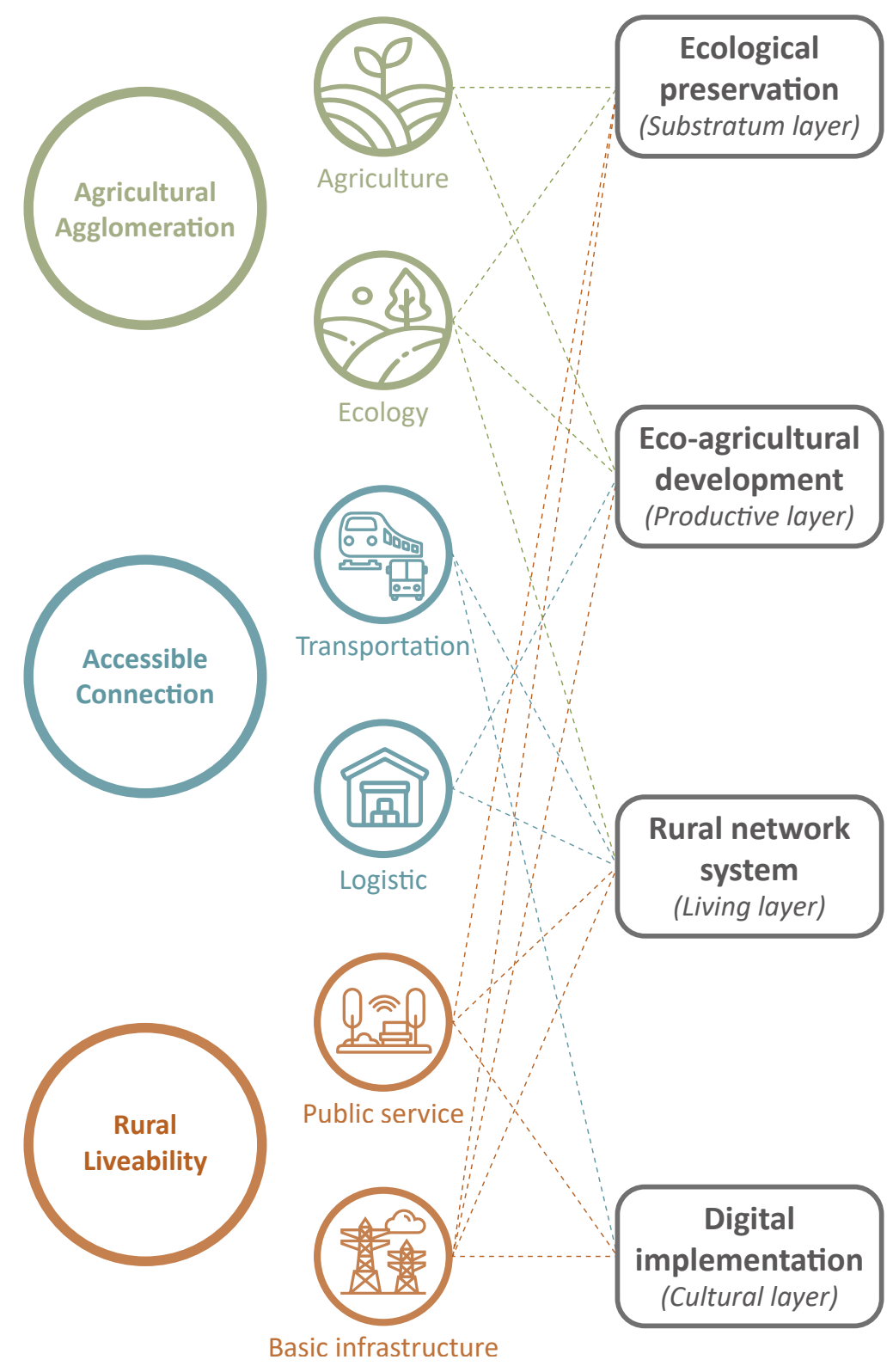
具有生态潜力的乡村地区





# DESIGN STRATEGY OF ECOLOGICAL AGRICULTURE

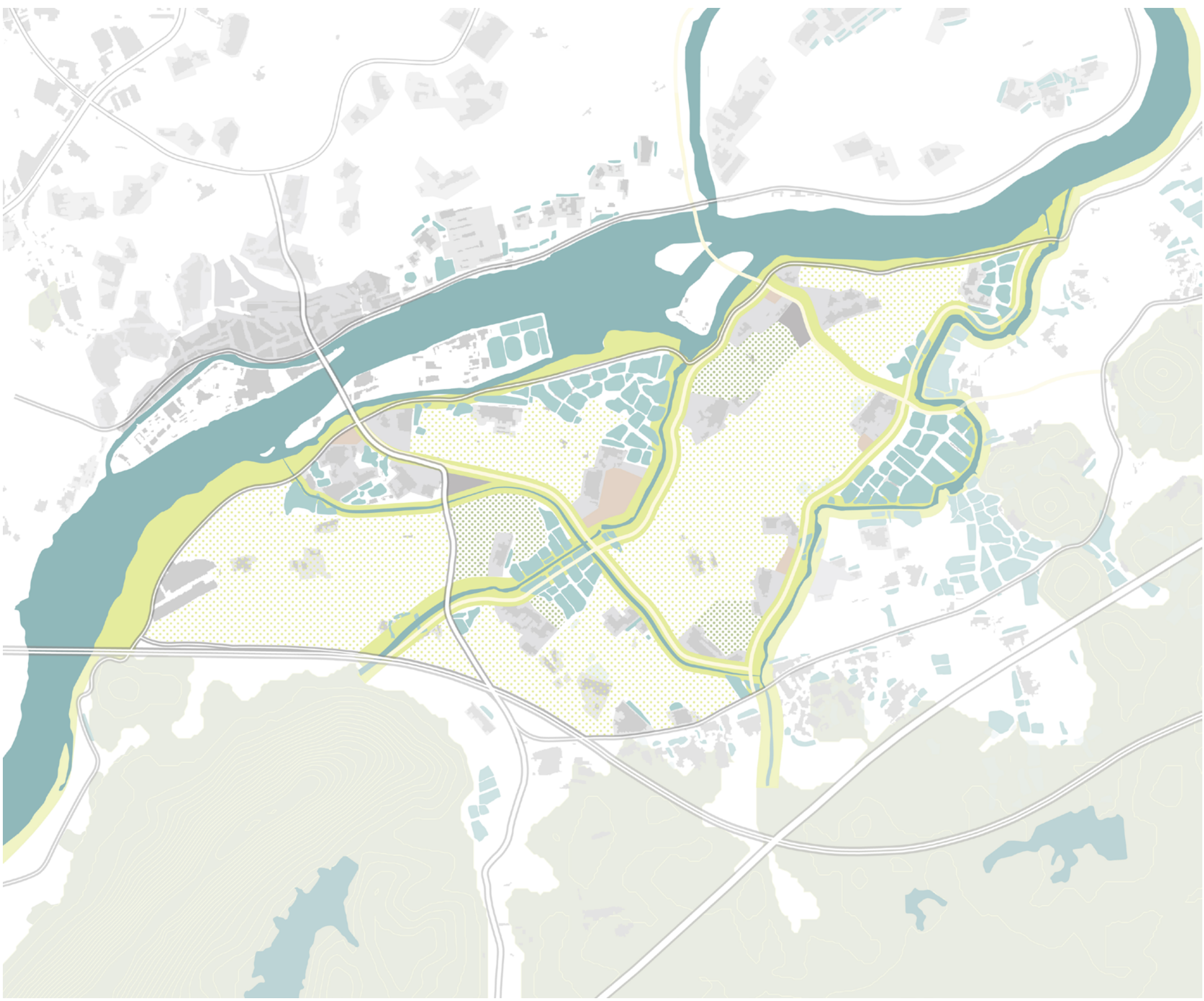
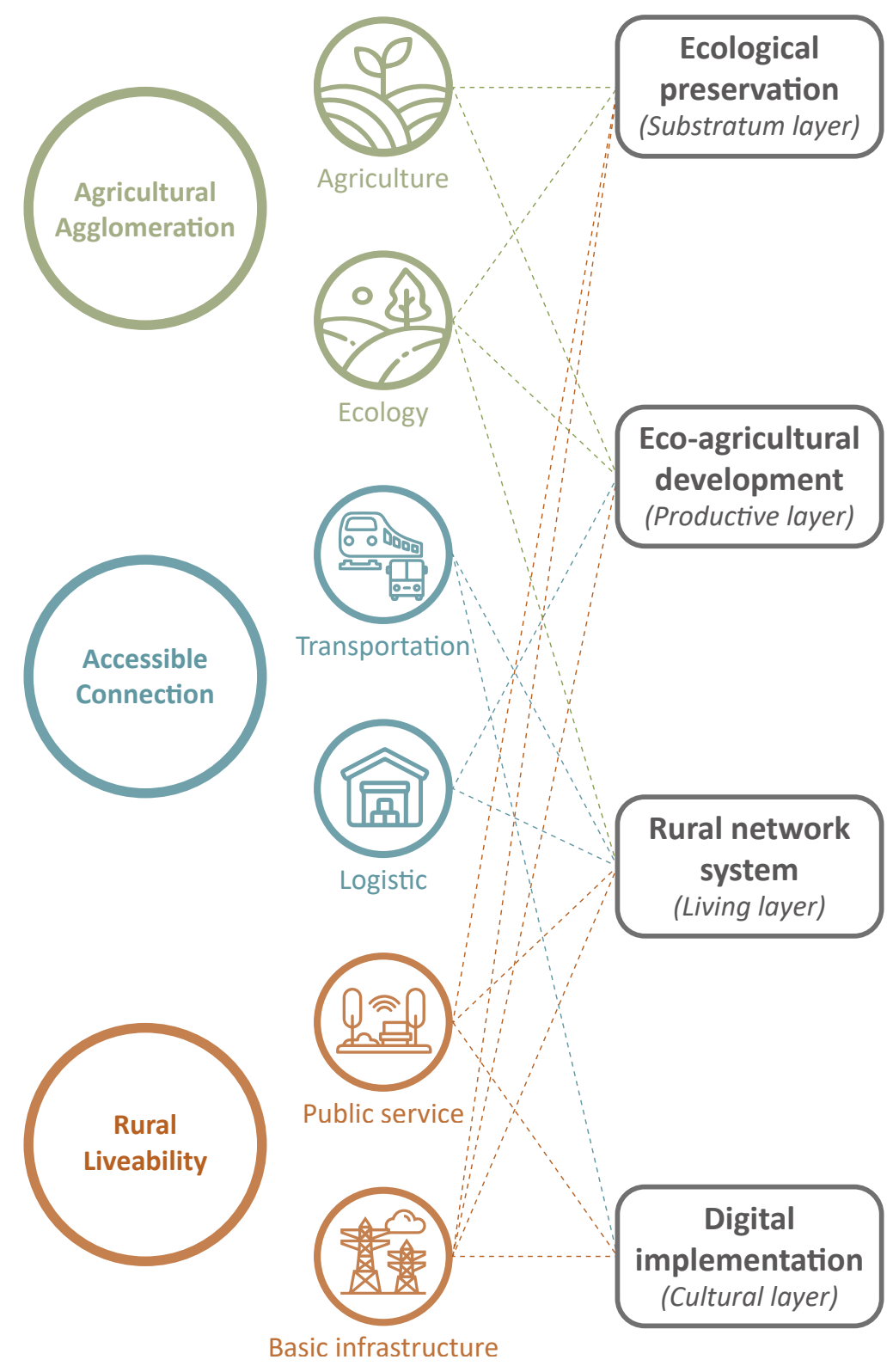
生态农业设计策略





# DESIGN STRATEGY OF ECOLOGICAL AGRICULTURE

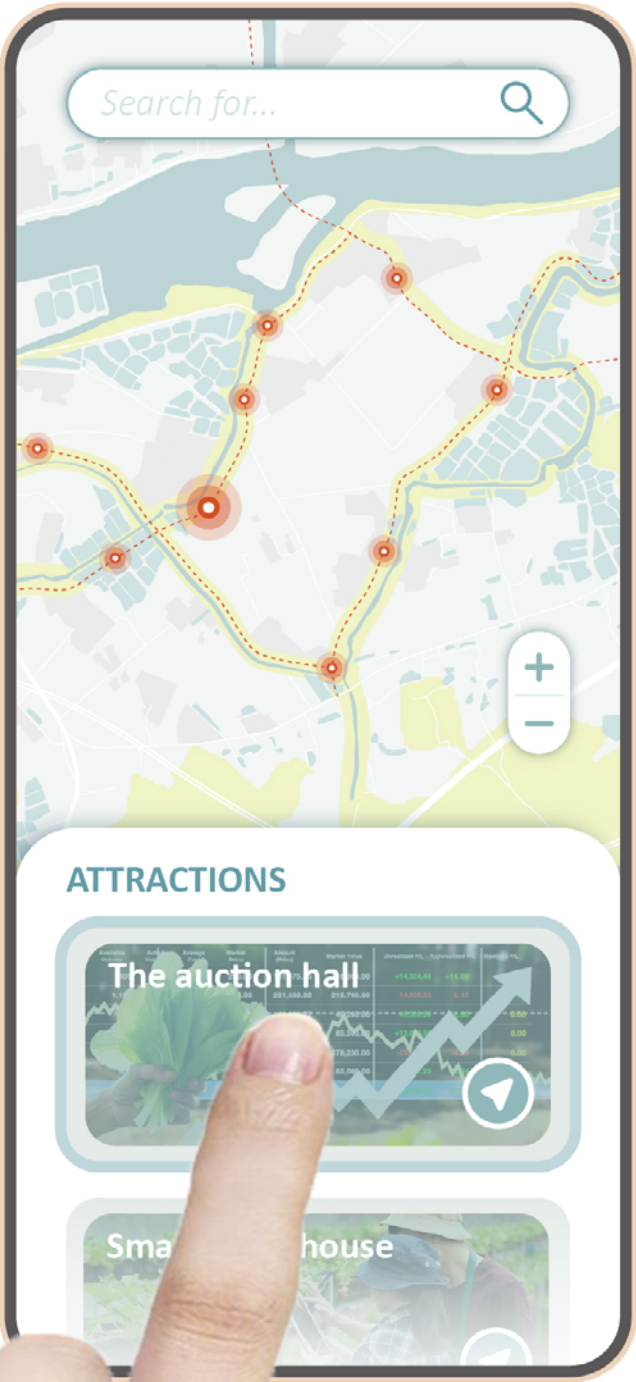
生态农业设计策略





# DIGITAL PLATFORM SUPPORT RURAL DEVELOPMENT

在线平台支持乡村发展

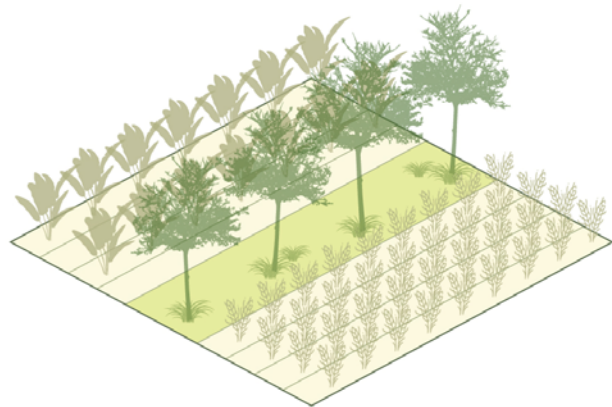




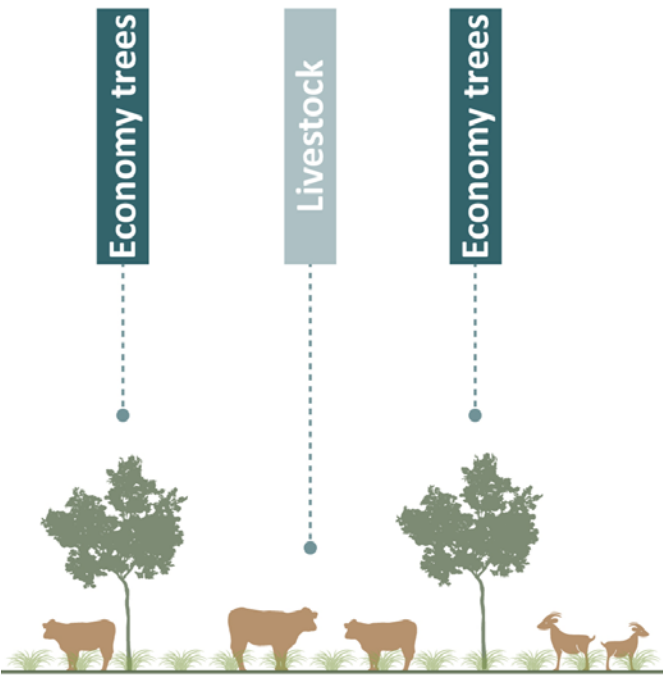
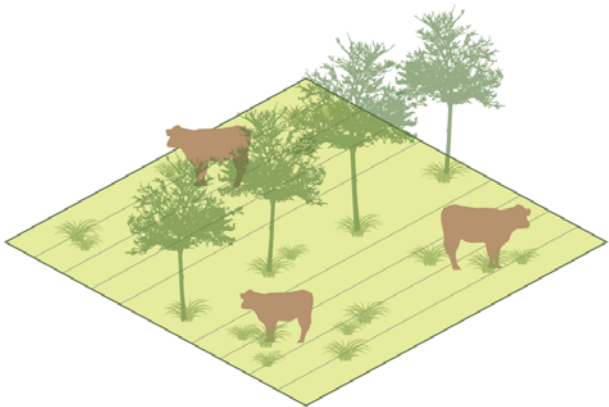
# AGRO-FORESTRY PRACTICES

农林业合作实践

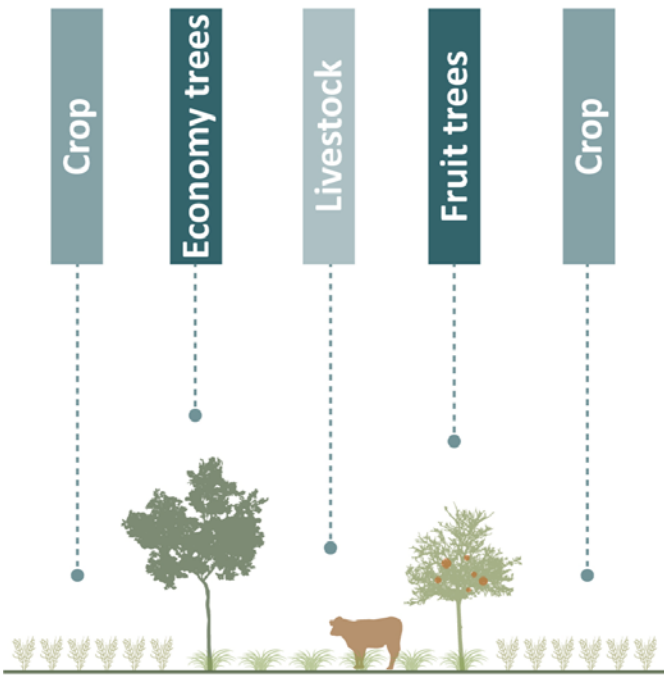
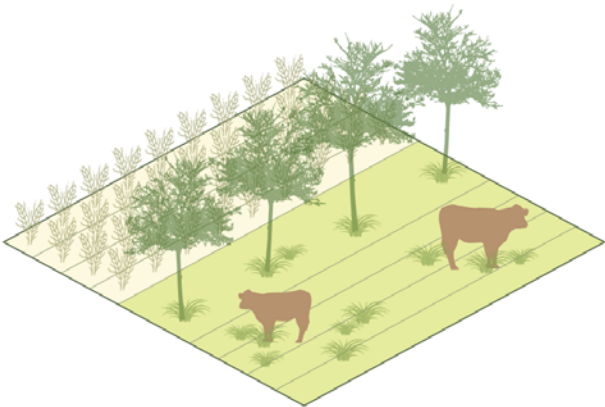
Agriculture - Forestry



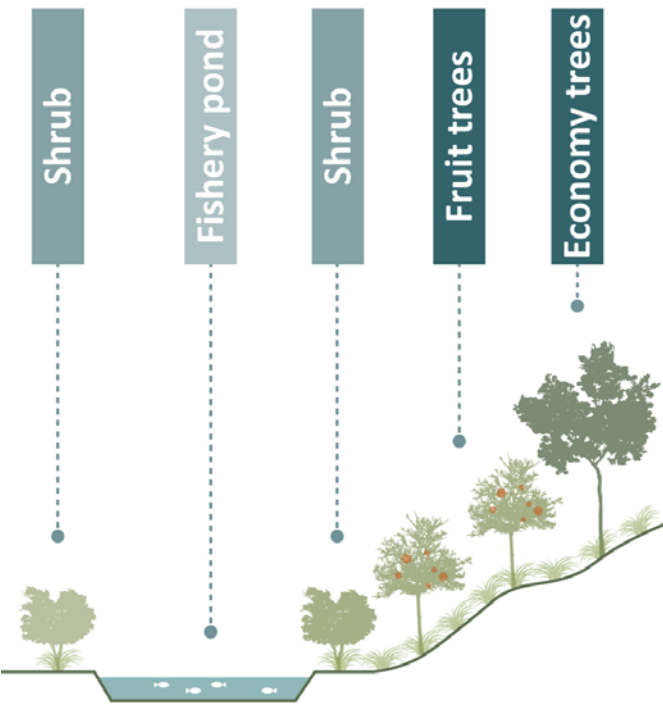
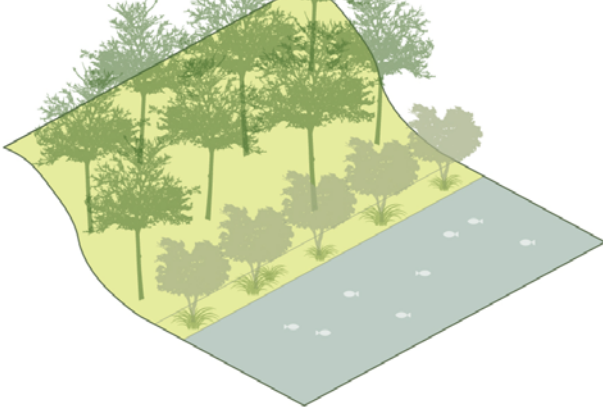
Livestock - Forestry



Agriculture - Livestock - Forestry

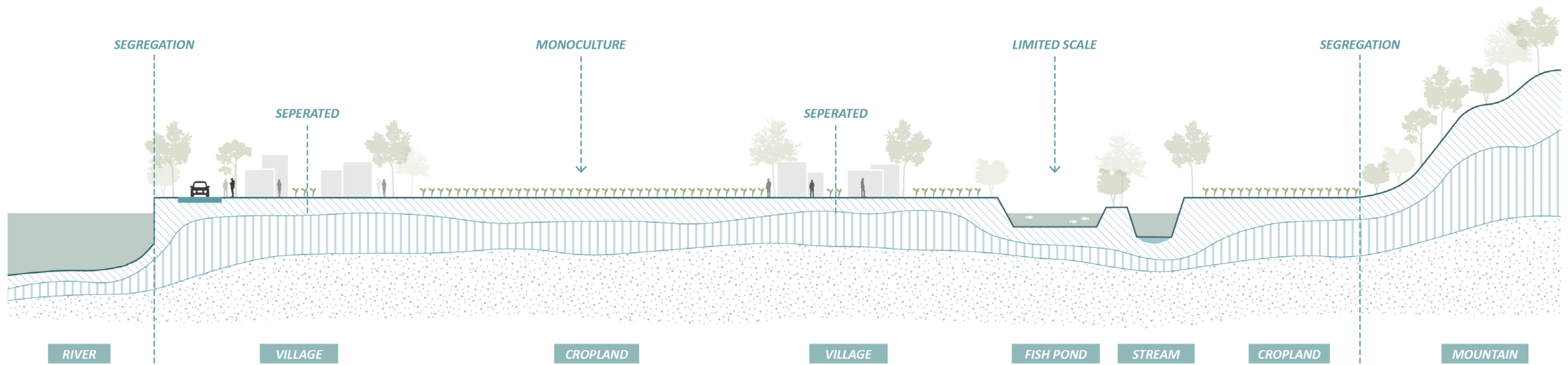


Fishery - Forestry



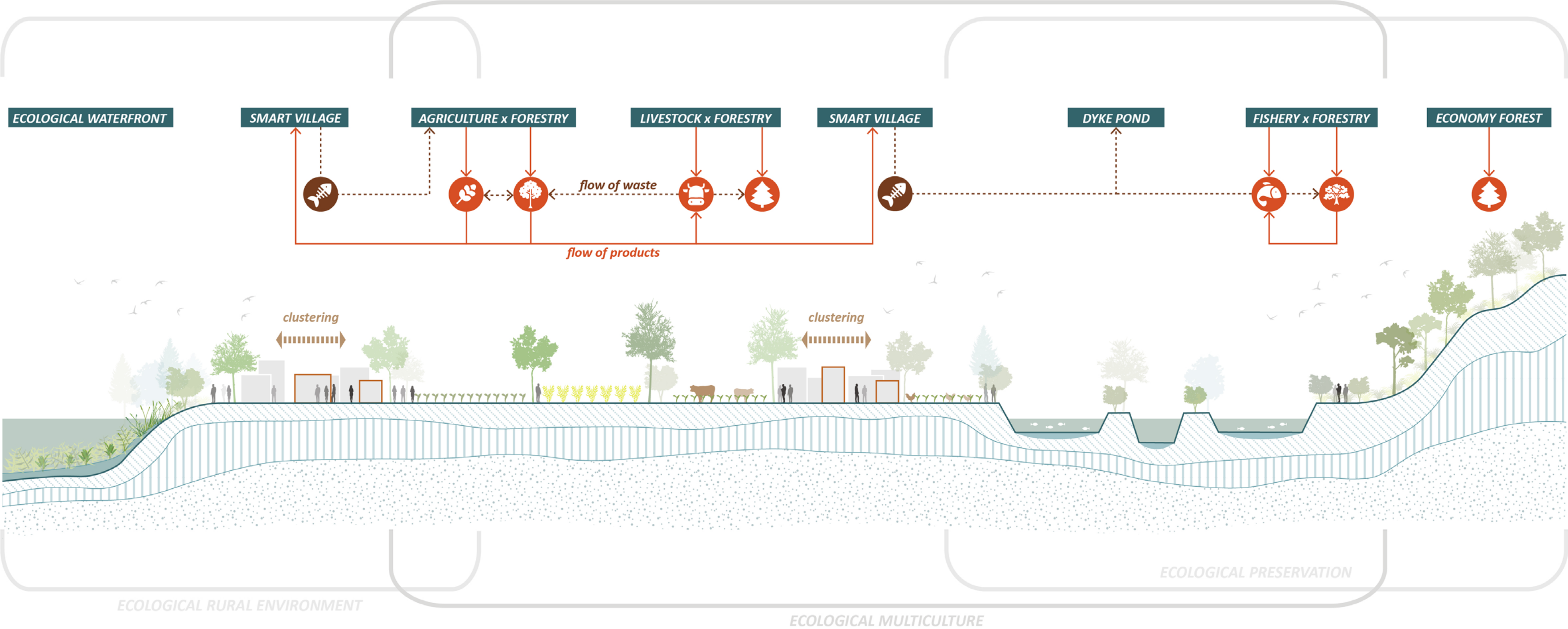


**BEFORE**

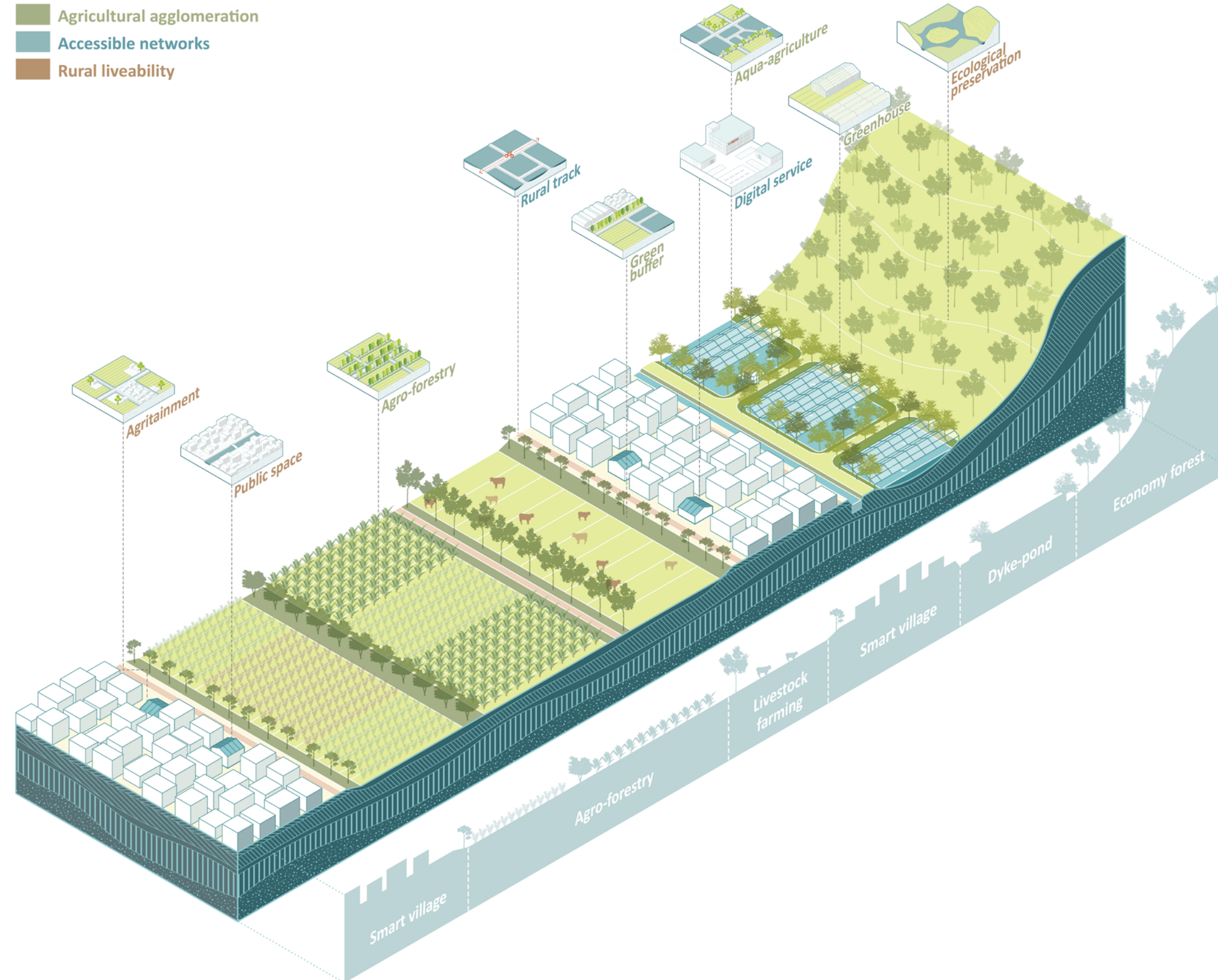




AFTER









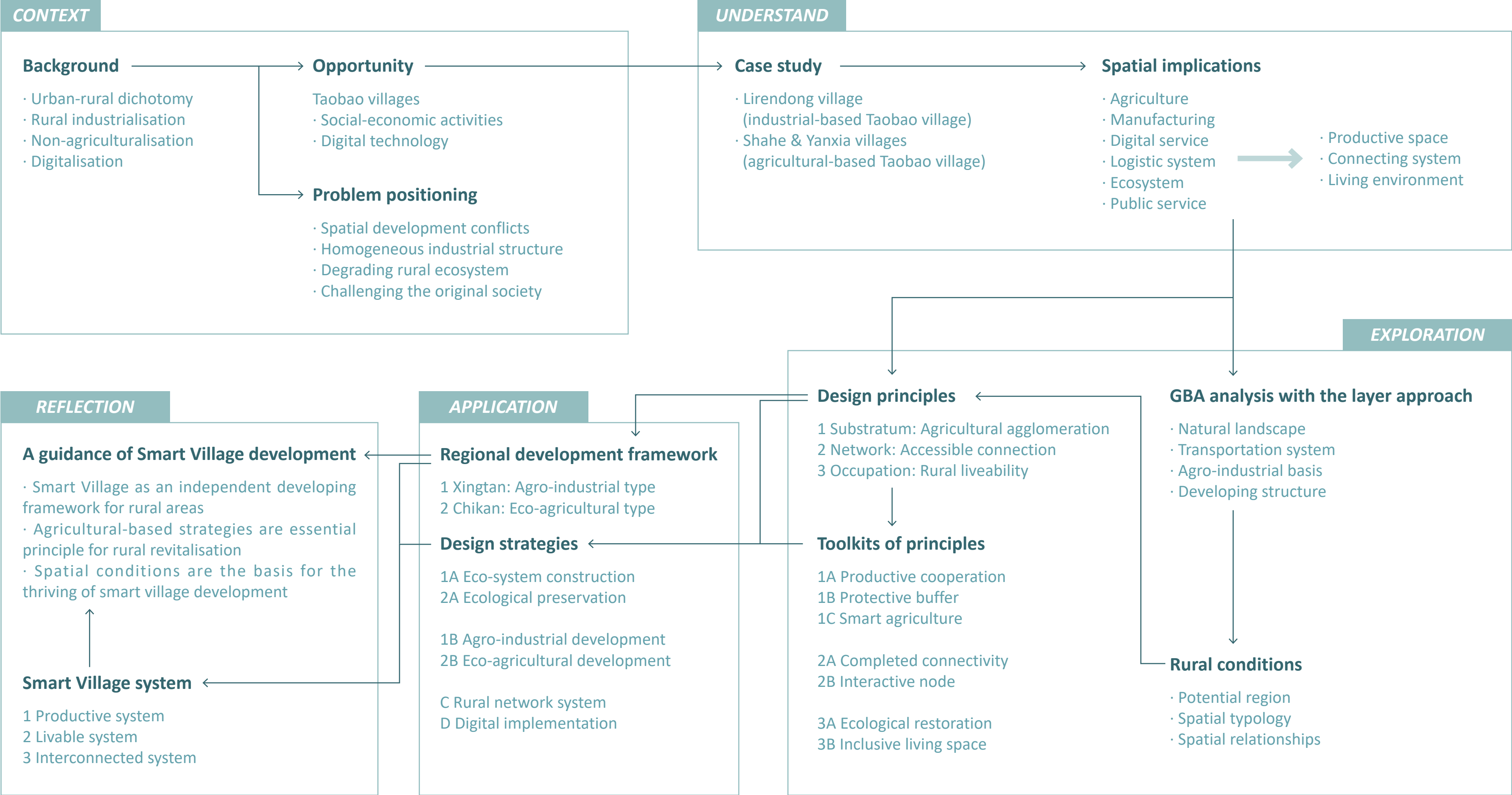


Mohan Qiao  
- Agri-expert  
- 30 years old

Yueqi Zhang  
- Farmer  
- 30 years old

Minshi Zhang  
- Tourist  
- 27 years old







# UNDERSTAND

How to understand the spatial impact of the digital economy on rural areas and optimise the Taobao Village mechanism for rural development?

## Industrial-based Taobao Village



- Industrial pollution
- Destroy the natural landscape
- Complement public services
- Densify the village

## Agricultural-based Taobao Village



- Ecological benefit
- E-commerce development
- Logistic system construction
- Low living quality



# UNDERSTAND

How to understand the spatial impact of the digital economy on rural areas and optimise the Taobao Village mechanism for rural development?

Industrial-based Taobao Village

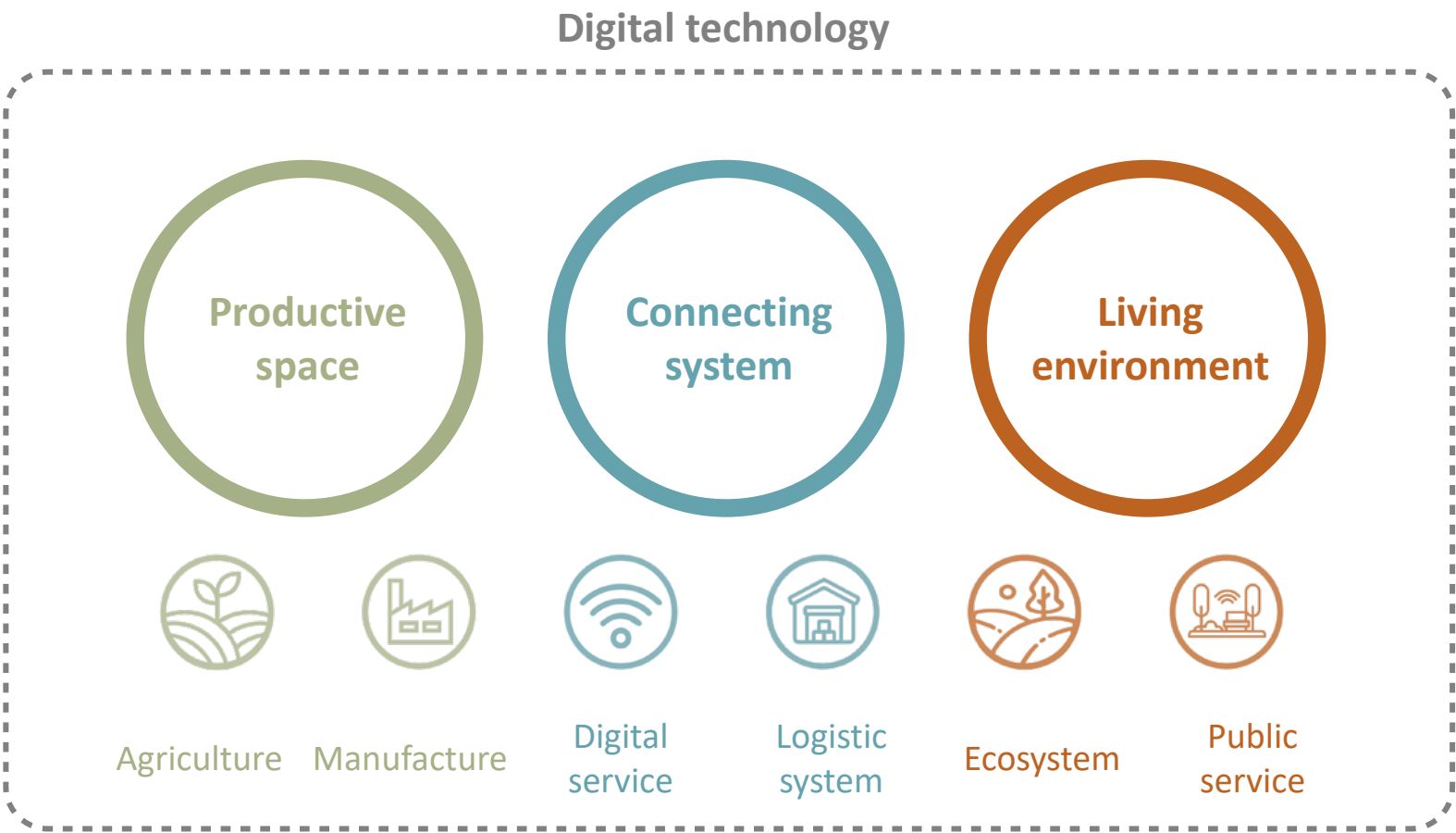


- Industrial pollution
- Destroy the natural landscape
- Complement public services
- Densify the village

Agricultural-based Taobao Village



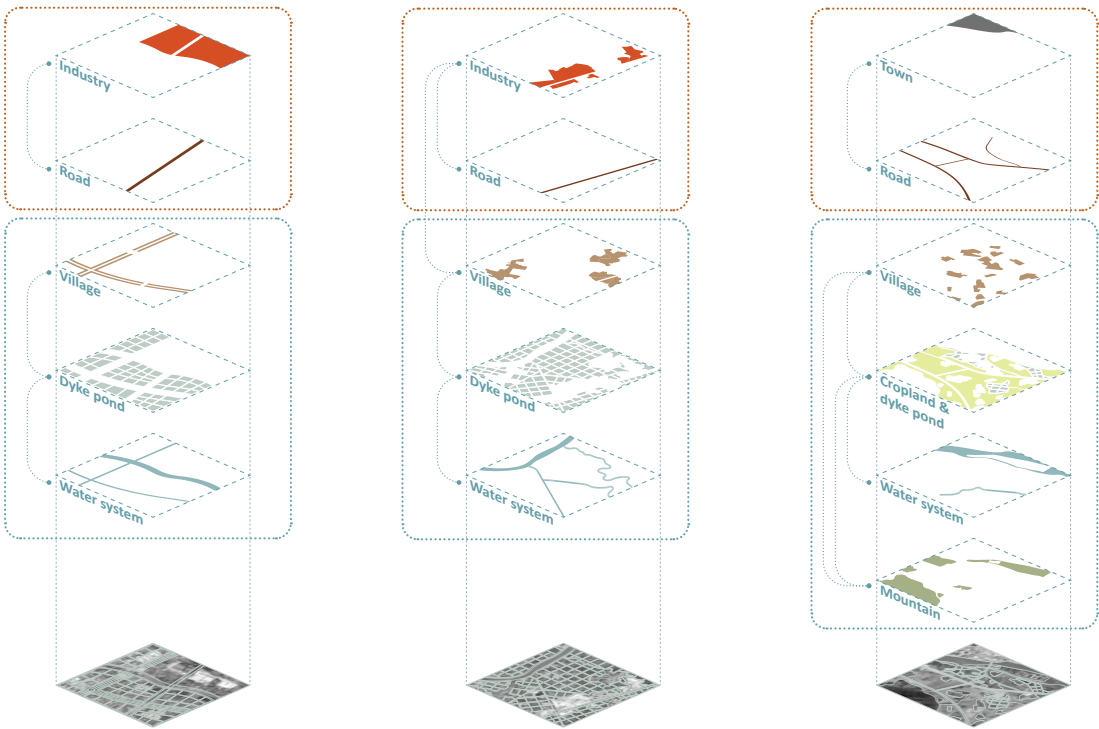
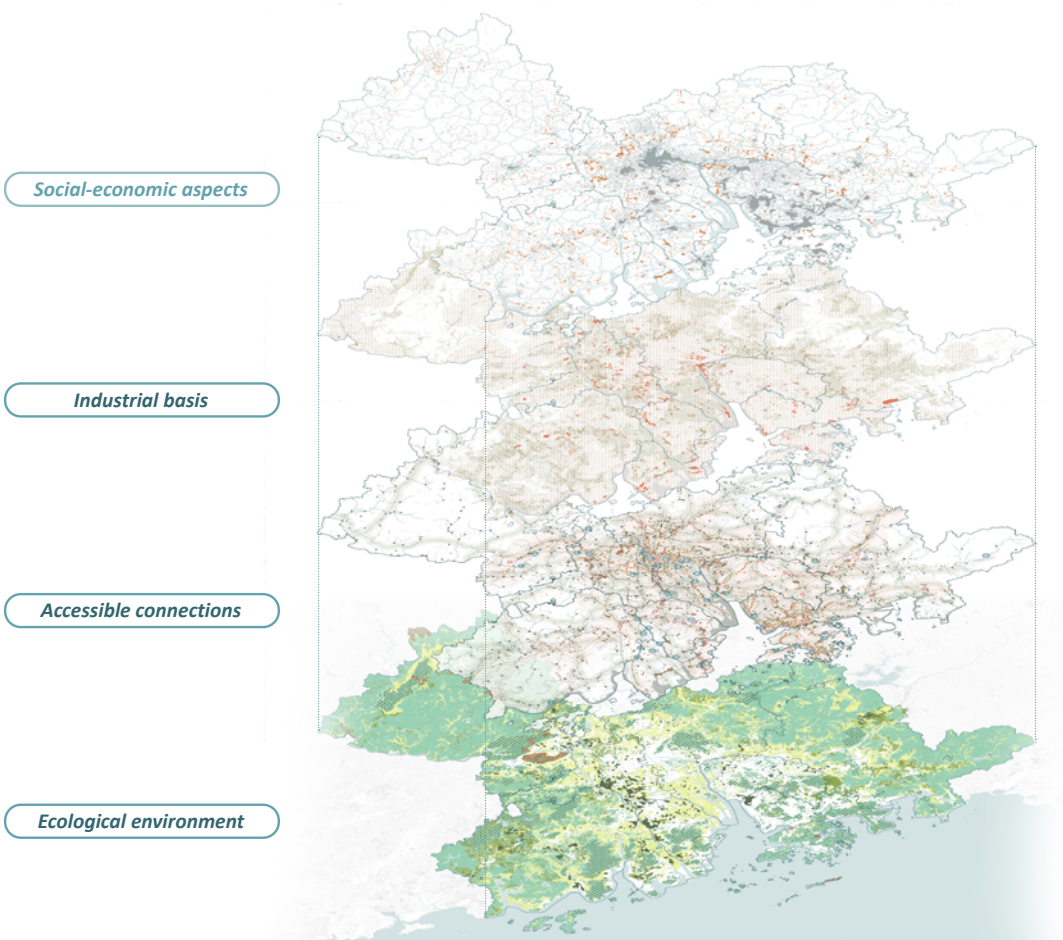
- Ecological benefit
- E-commerce development
- Logistic system construction
- Low living quality





# EXPLORATION

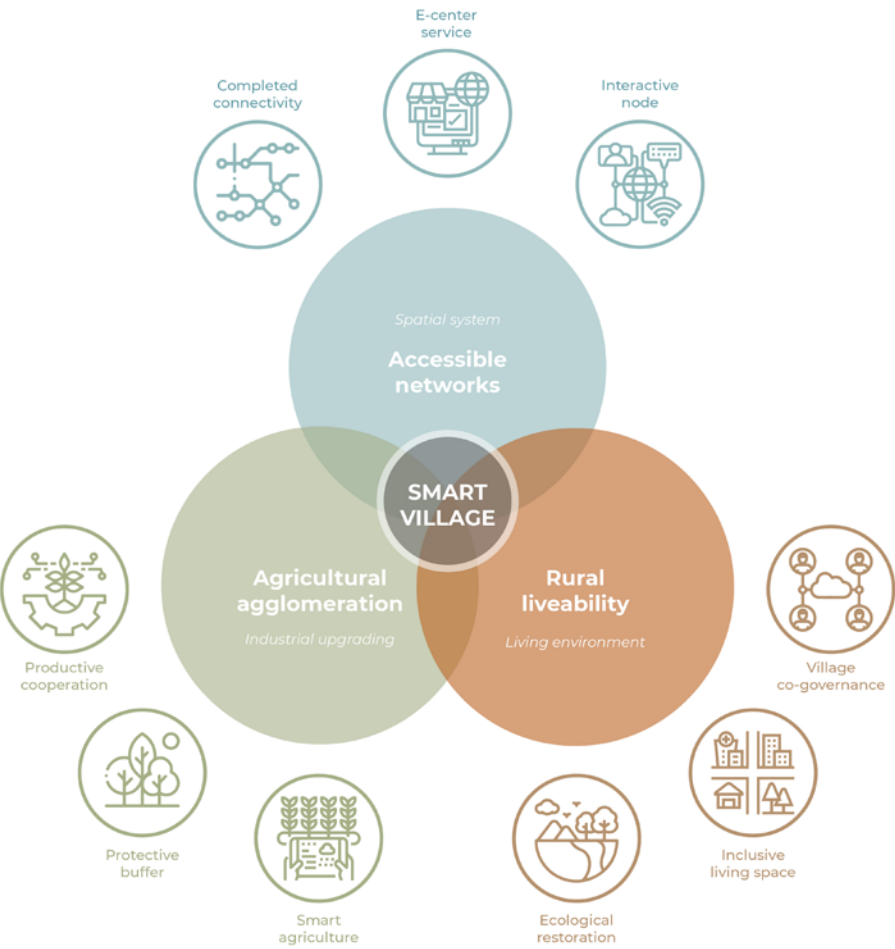
What spatial approaches need to be implemented to improve the quality of life and protect ecosystems in rural areas?



Regional scale

Local scale

## Design principles

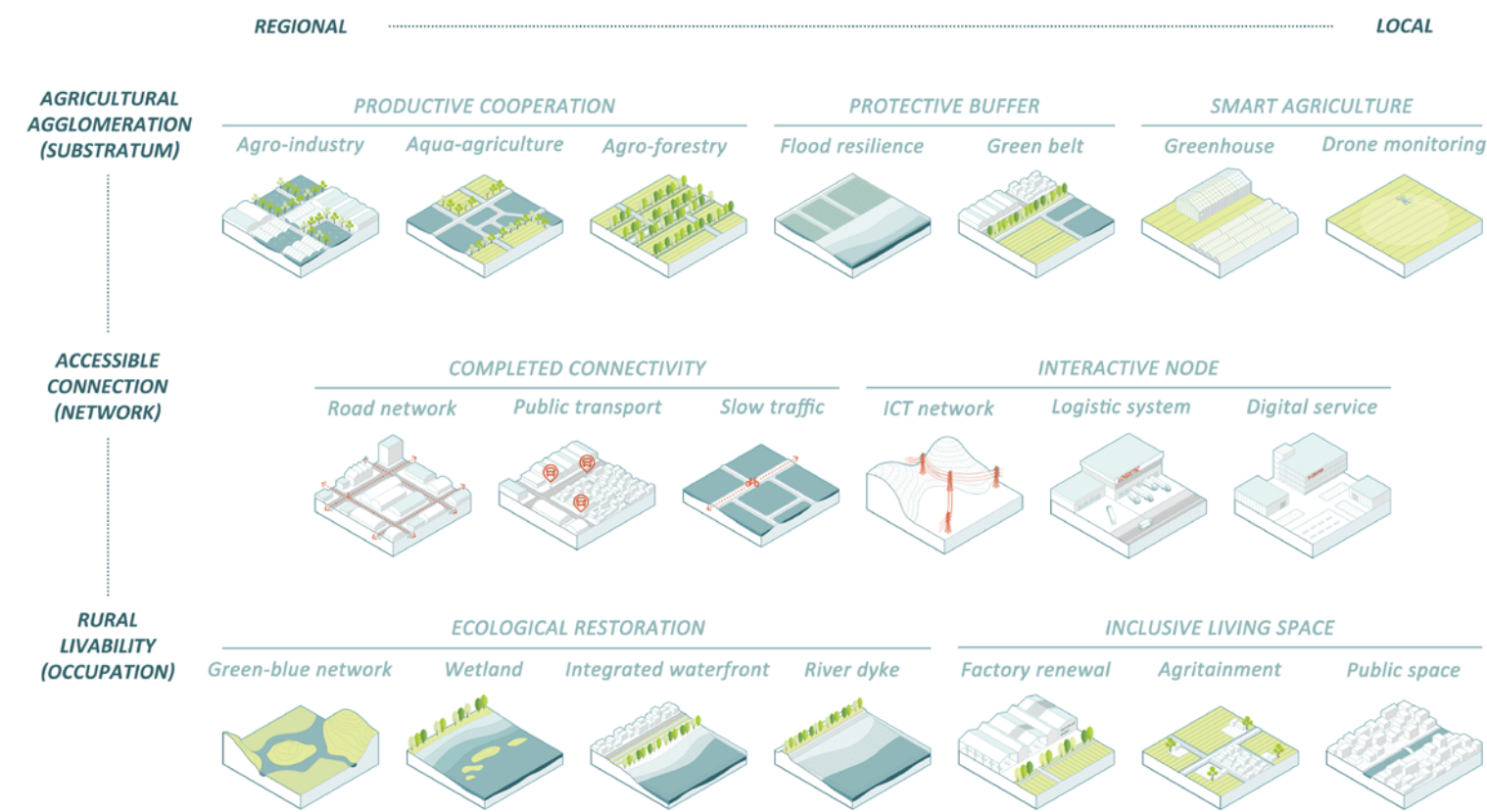




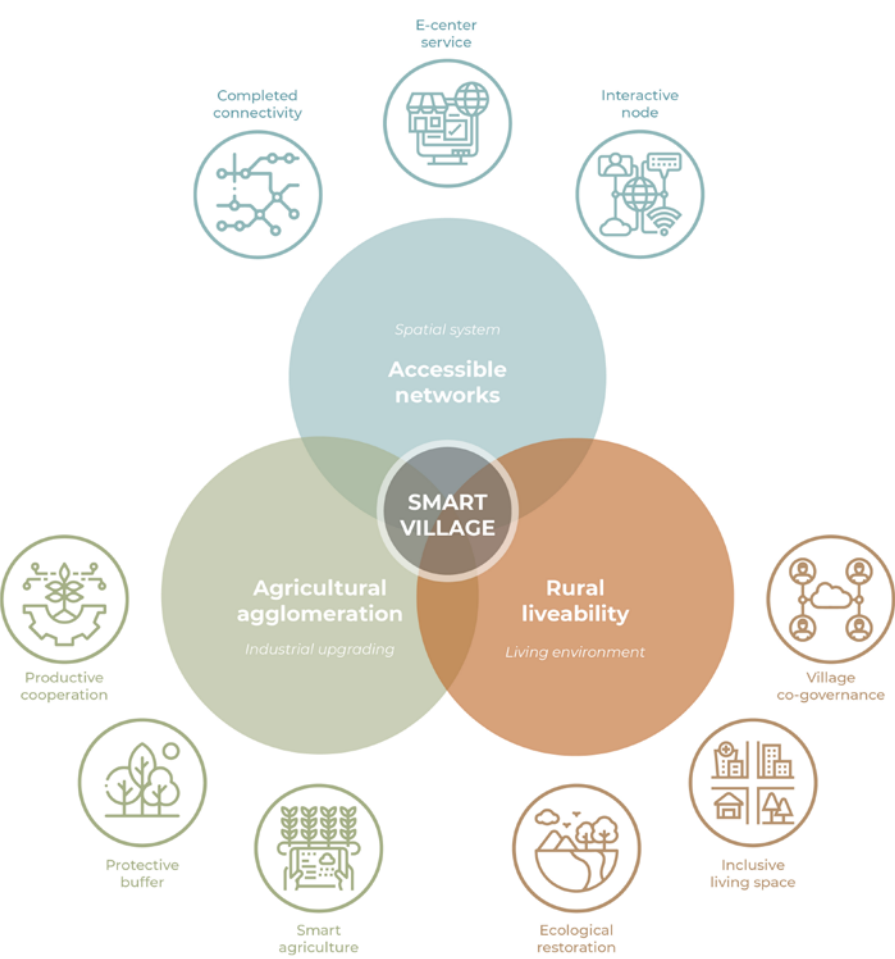
# EXPLORATION

What spatial approaches need to be implemented to improve the quality of life and protect ecosystems in rural areas?

## Toolkits



## Design principles

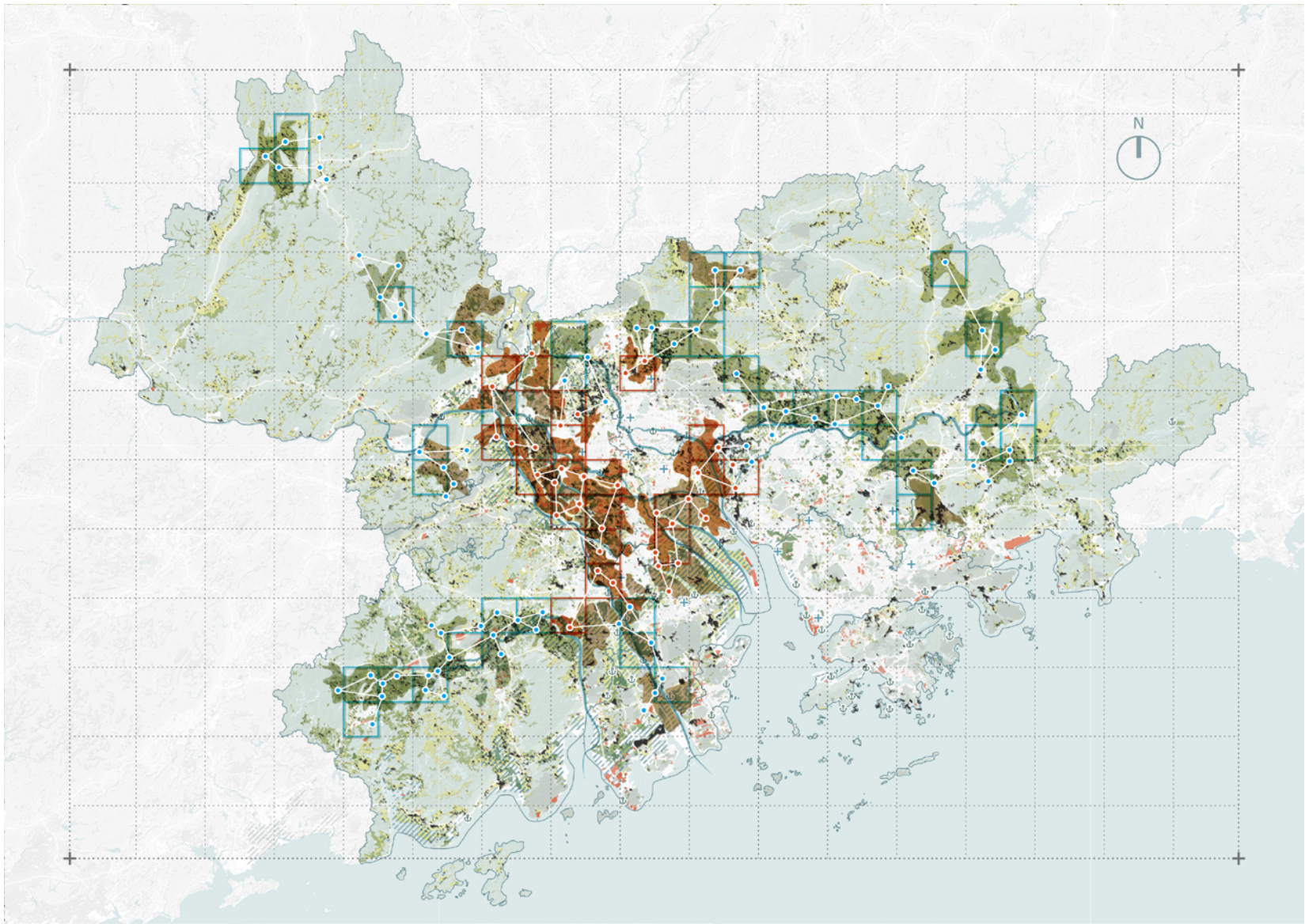




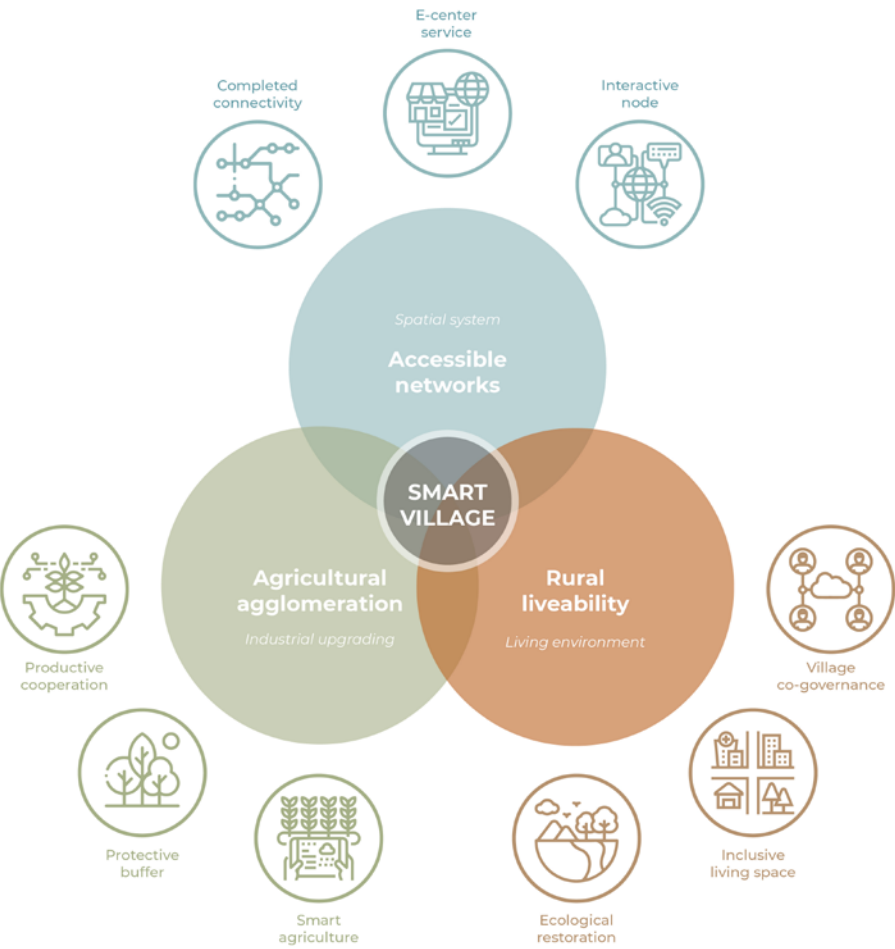
# EXPLORATION

What spatial approaches need to be implemented to improve the quality of life and protect ecosystems in rural areas?

Potential development framework



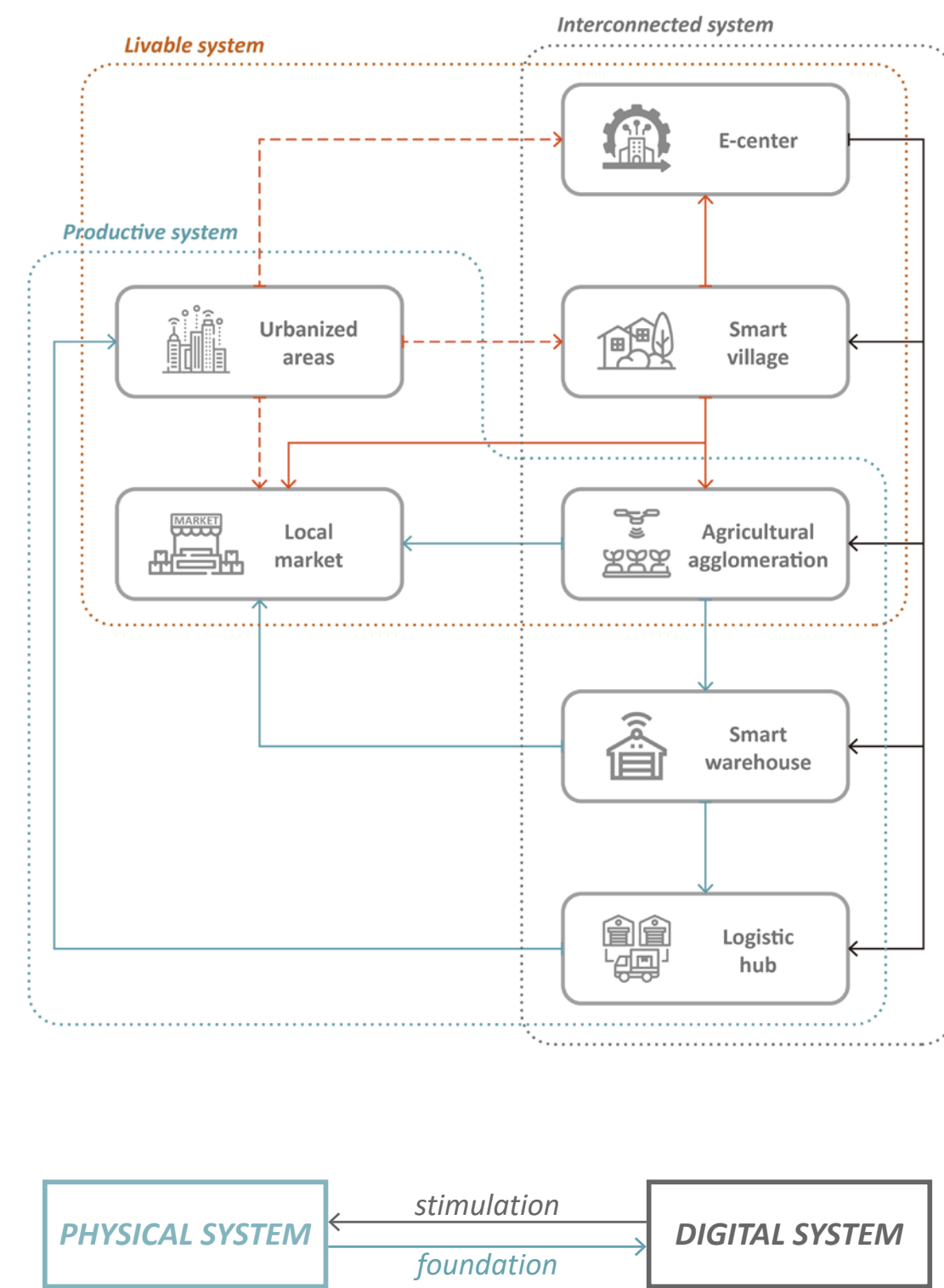
Design principles



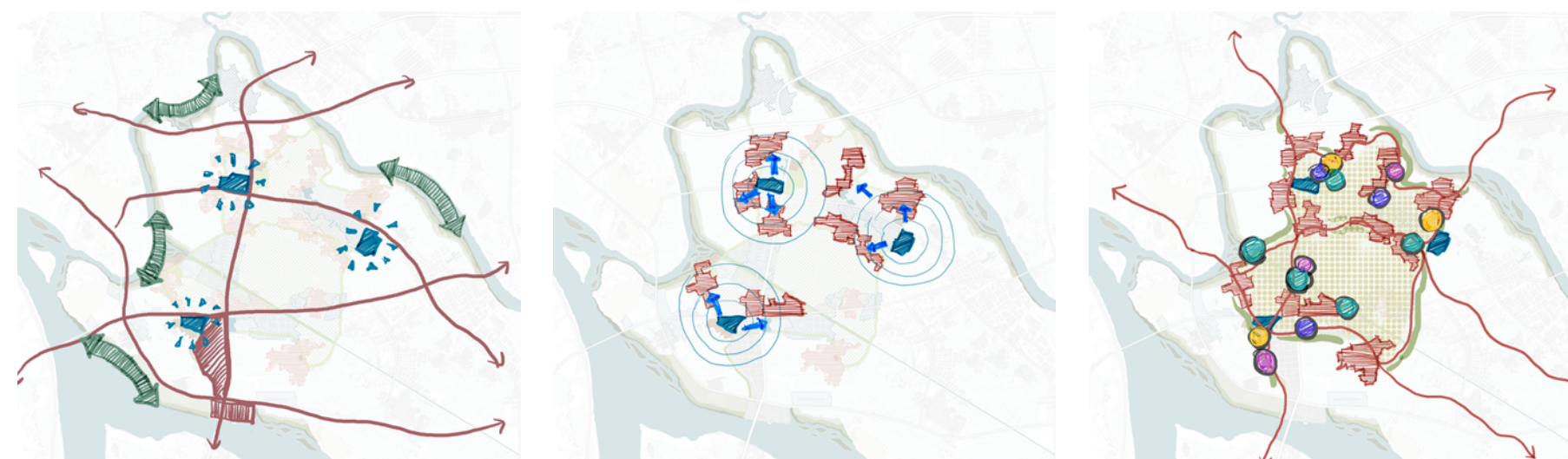


# APPLICATION

How can the network system positively impact the development of localised industrial structures and sustainable agriculture?



*The physical network enable villages cooperate with each other to connect a solid bond*



*The Internet network supports village development with an integrated system*

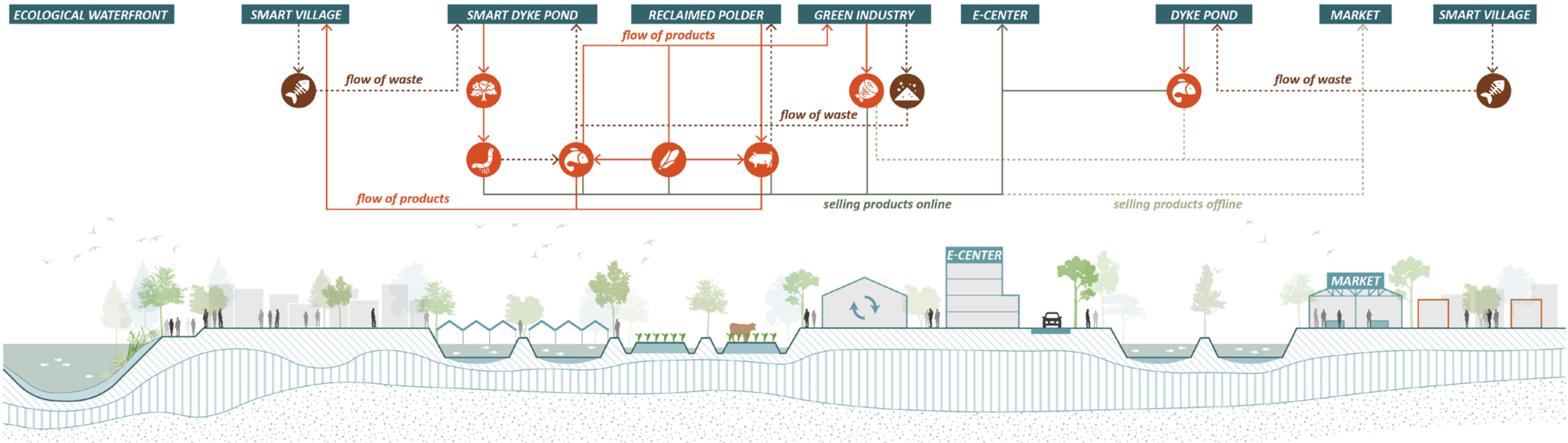




# APPLICATION

How can the network system positively impact the development of localised industrial structures and sustainable agriculture?

The creation of a circulation system for cooperation between agricultural-based industry



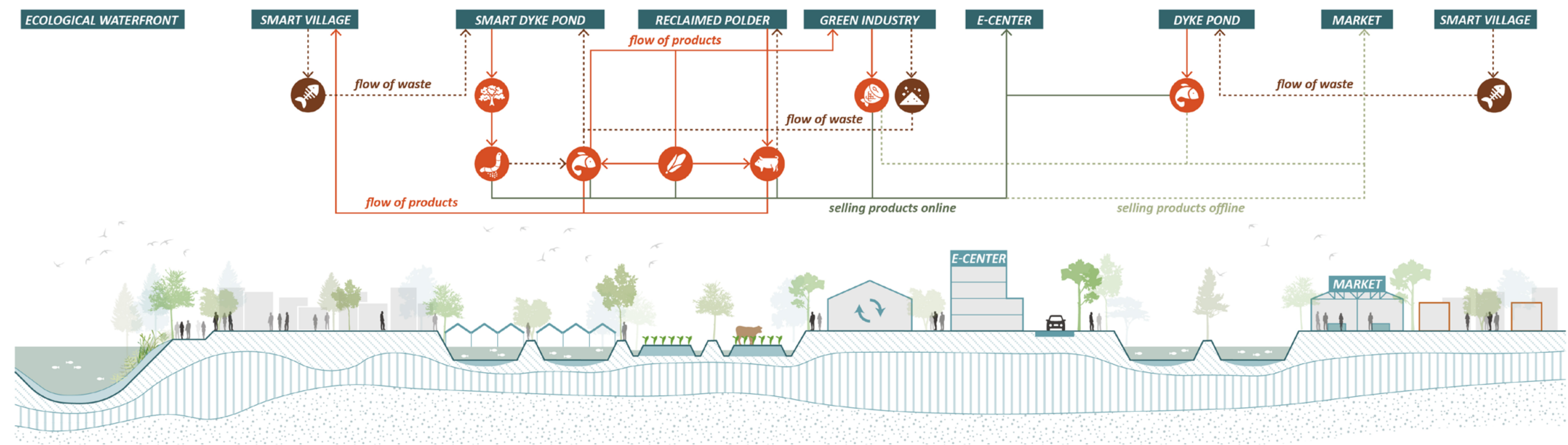


# APPLICATION

How can the network system positively impact the development of localised industrial structures and sustainable agriculture?



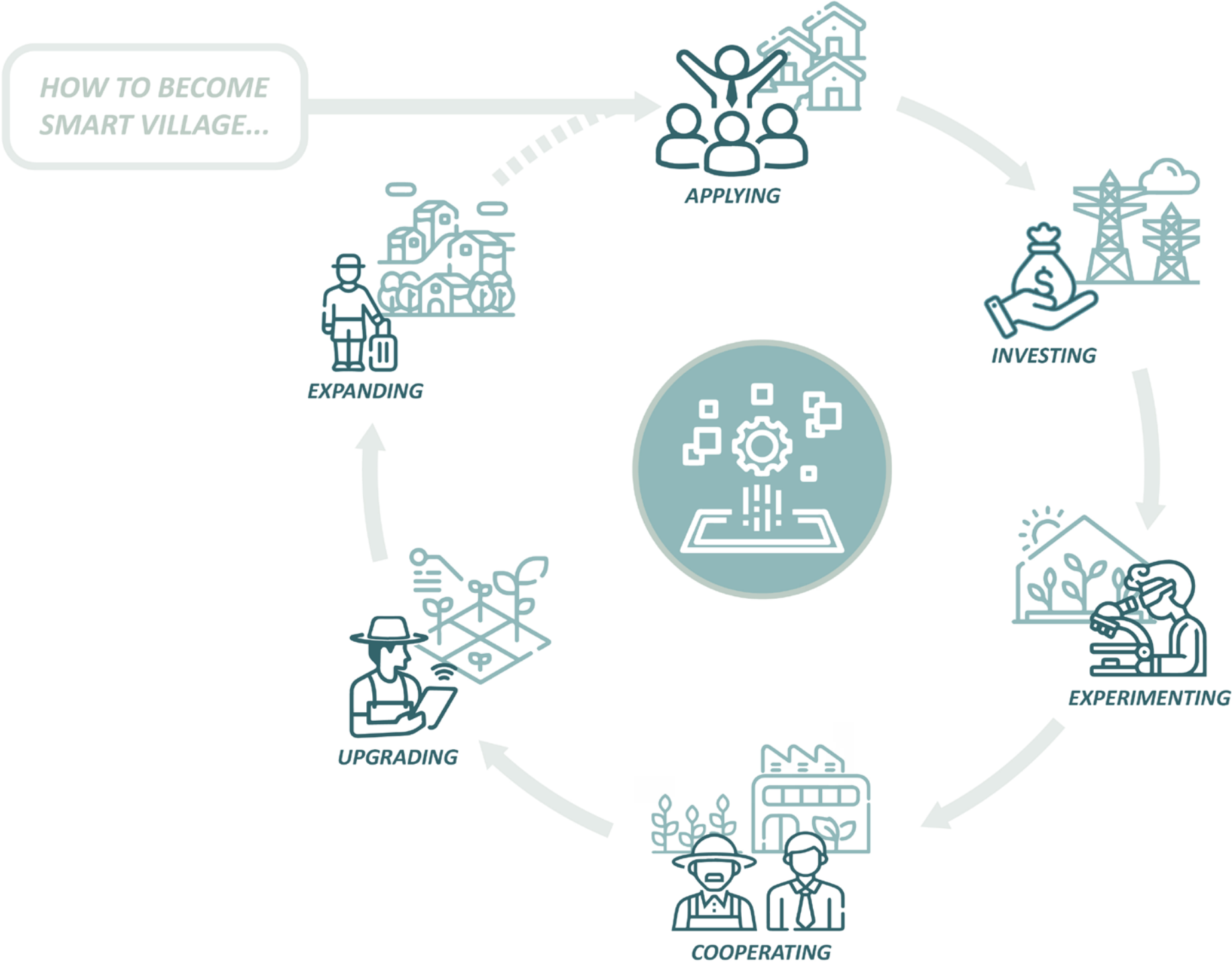
The creation of a circulation system for cooperation between agricultural-based industry





REFLECTION

A guidance of Smart Village development  
智慧乡村发展指引



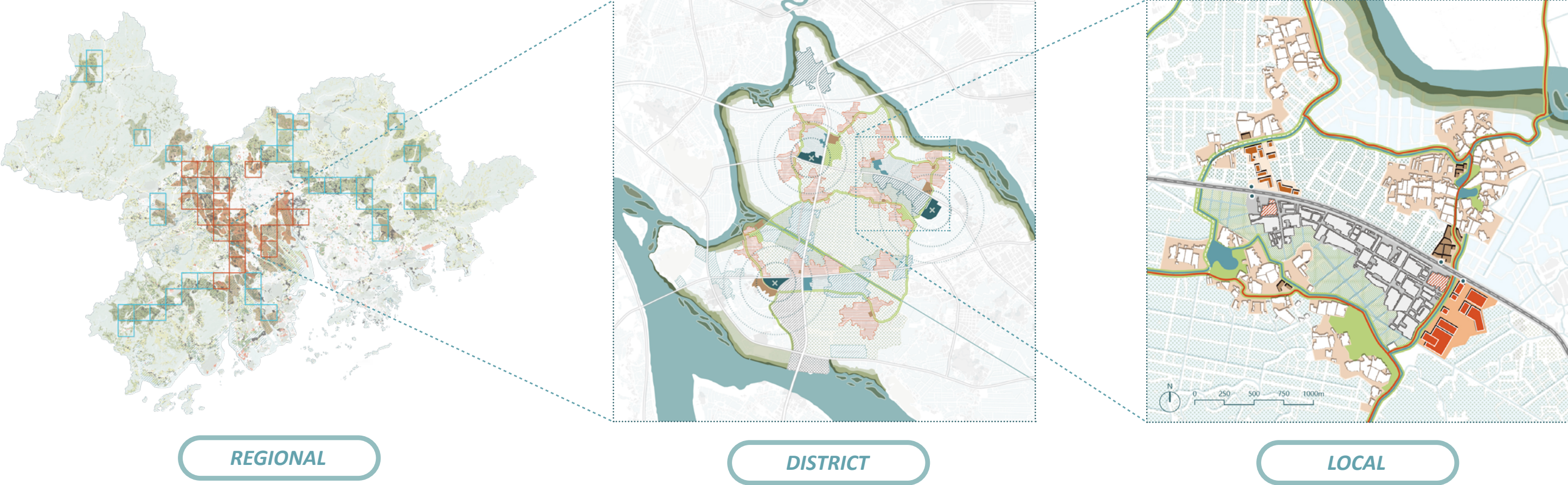
*Smart village as an independent developing framework for rural areas*

*Agricultural-based strategies are essential principle for rural revitalisation*

*Spatial conditions are the basis for the thriving of smart village development*



Smart village as an independent developing framework for rural areas  
智慧乡村是乡村区域的独立发展框架





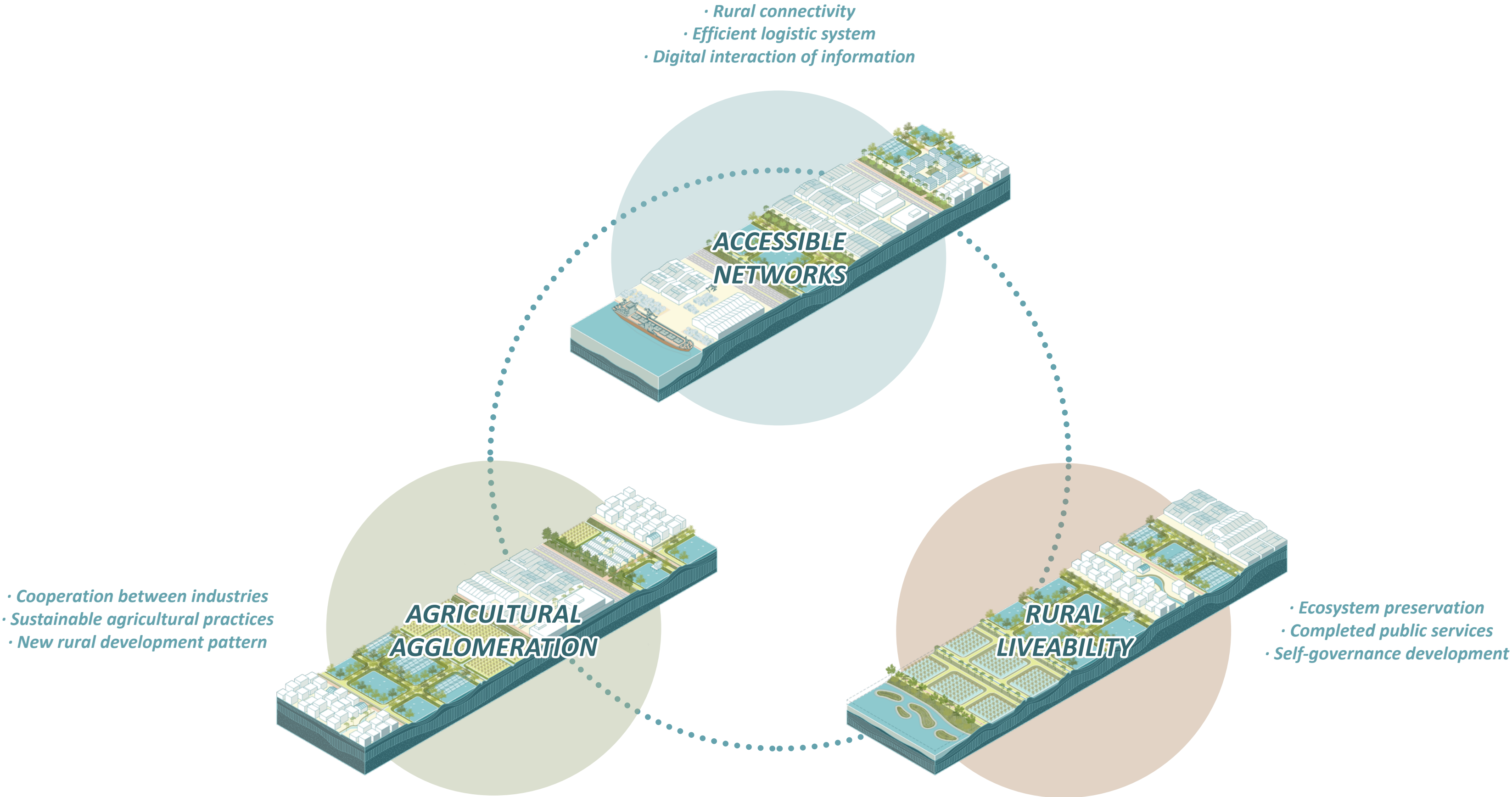
*Agricultural-based strategies are essential principle for rural revitalisation*  
农业策略是乡村振兴的基本原则





*Spatial conditions are the basis for thriving smart village development*

空间条件是智慧乡村发展的基础





**Let's look forward to a smart future!**

