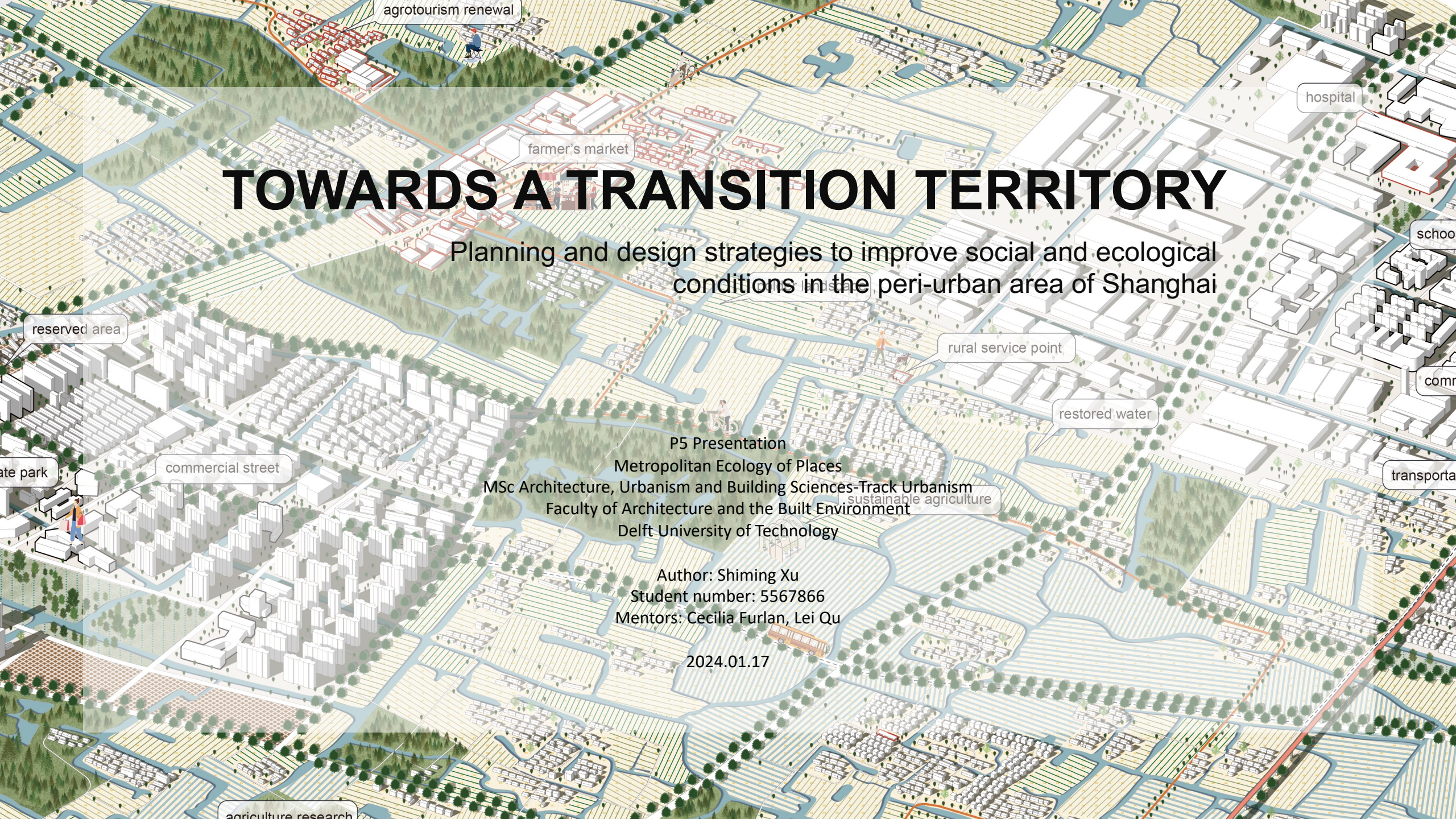


TOWARDS A TRANSITION TERRITORY

Planning and design strategies to improve social and ecological conditions in the peri-urban area of Shanghai

P5 Presentation
Metropolitan Ecology of Places
MSc Architecture, Urbanism and Building Sciences-Track Urbanism
Faculty of Architecture and the Built Environment
Delft University of Technology

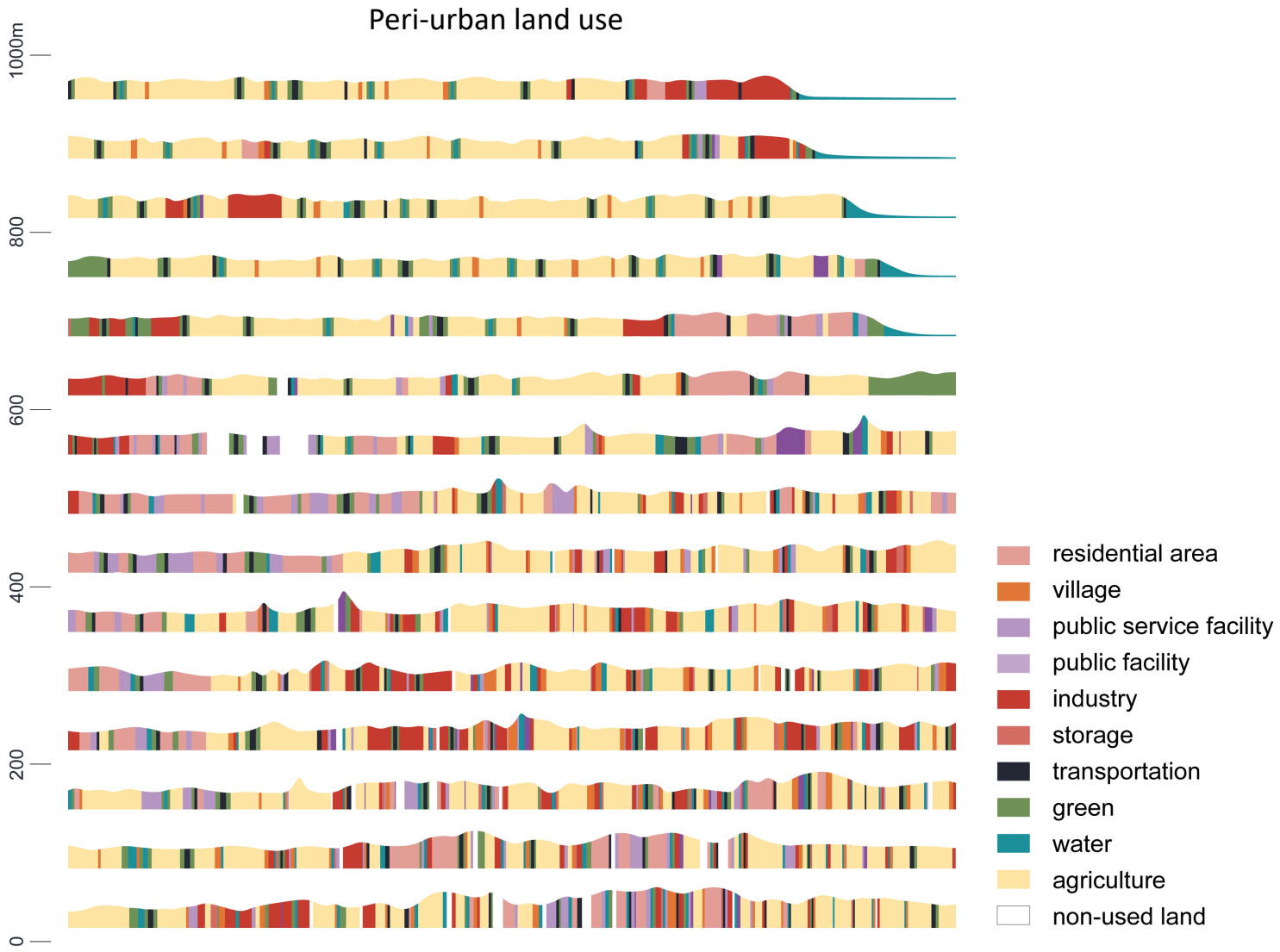
Author: Shiming Xu
Student number: 5567866
Mentors: Cecilia Furlan, Lei Qu

2024.01.17

Motivation

Overview of the Shanghai's peri-urban territory

Motivation



Definition

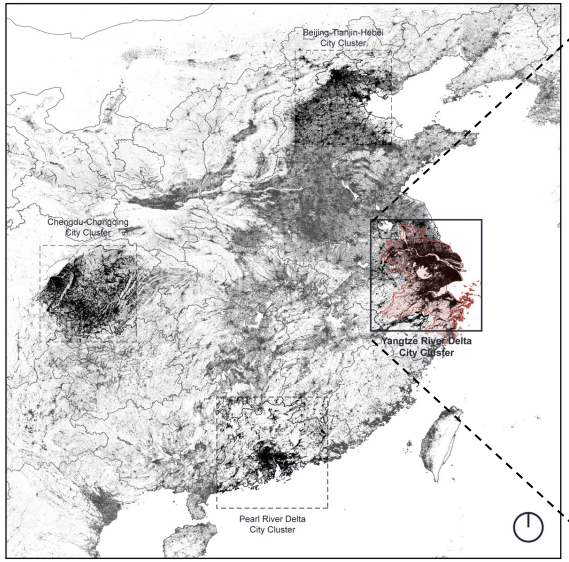
'Peri-urbanization' can be defined as a decentralized, progressive process of rapid and strong growth of labor-intensive industries, services, and other non-agricultural industries in the former rural areas and the *gradual economic, social, and spatial transformation of the former rural areas into cities*, with a strong interaction with the cities.

Characteristics

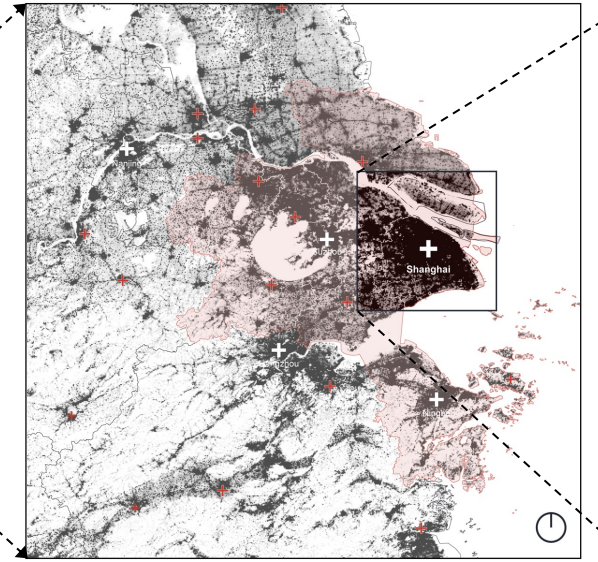
The peri-urban interface can be characterized as *a heterogeneous mosaic* of

- **'Urban'** ecosystems
- **'Productive'** or 'agro-' ecosystems
- **'Natural'** ecosystems

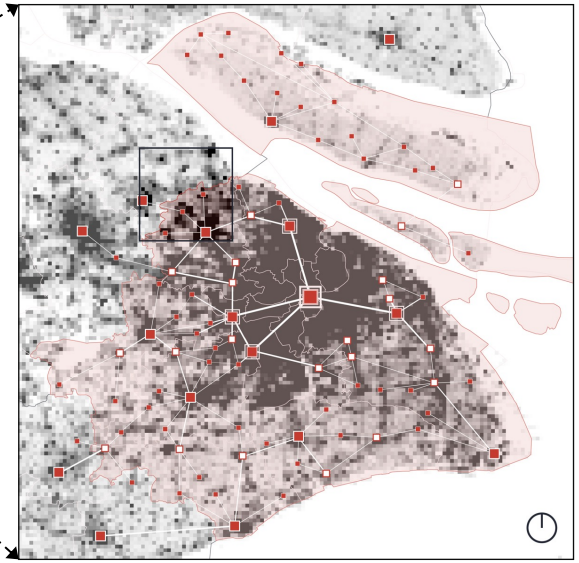
Location



China



Yangtze River Delta



Shanghai

primary roads
railway
province boundry
city boundry
district boundry
built area
population density
high low
by settlement

first tier city
second tier city
third tier city

main core
sub core
local center
main town
town
cluster link

History

State led town-down development: Shanghai master plan

1946 | 1950s | 1959 | 1979 | 1980s | 1986 | late1980s | 1990s | 1999 | 2017

township enterprise started

land reform

housing reform

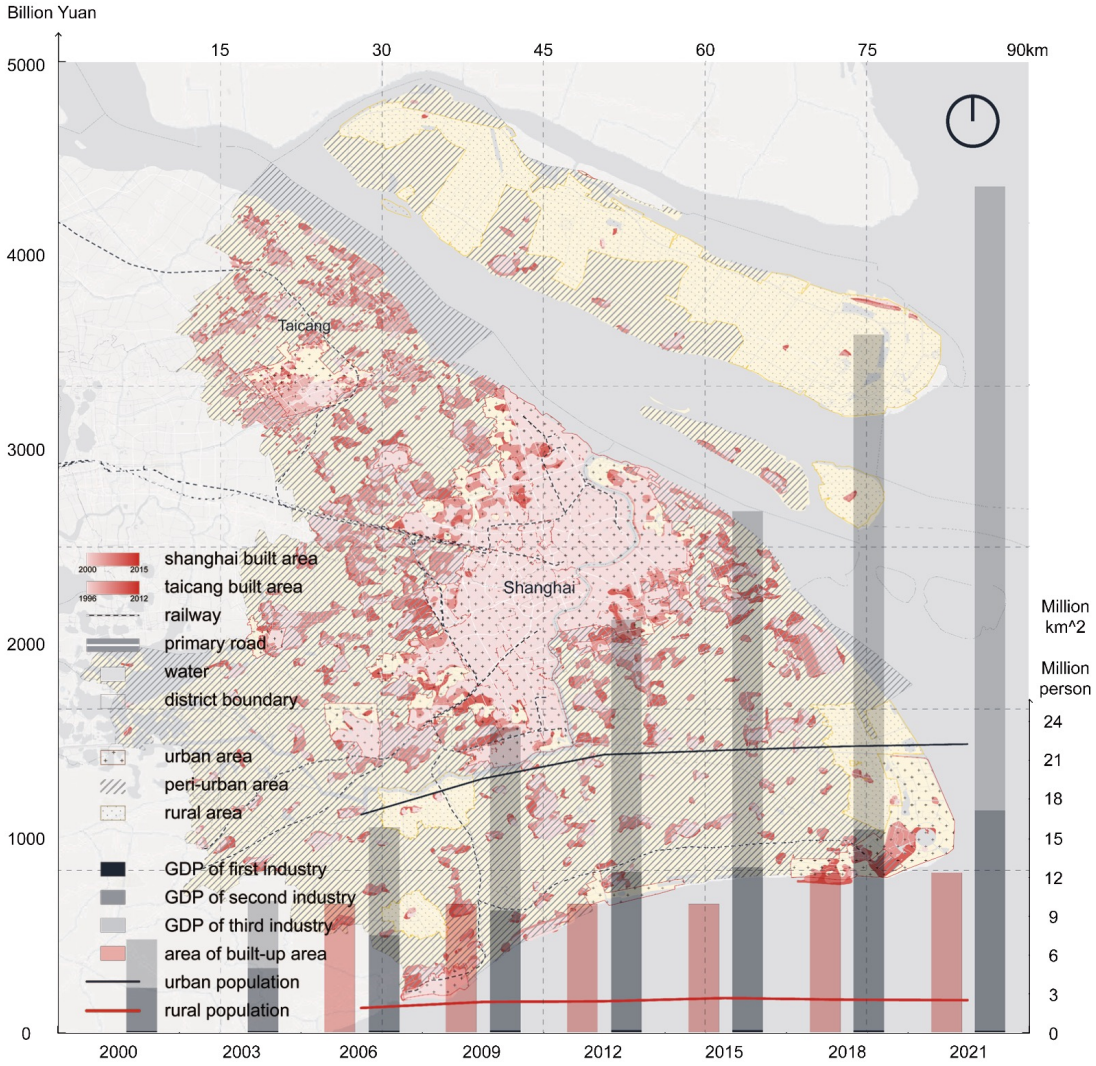
township enterprise flourished

radical housing reform

Market force

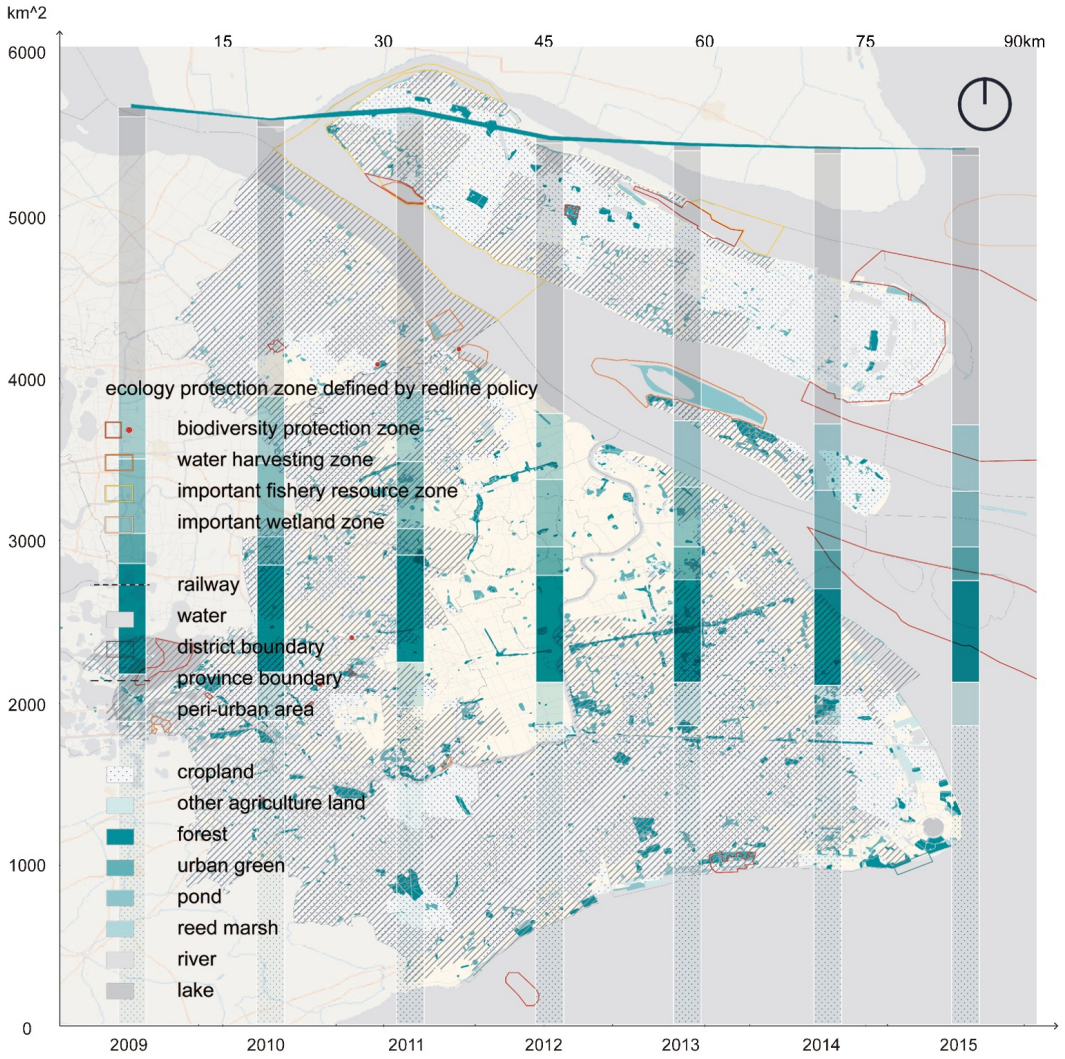
Bottom-up rural industrialization

Problem



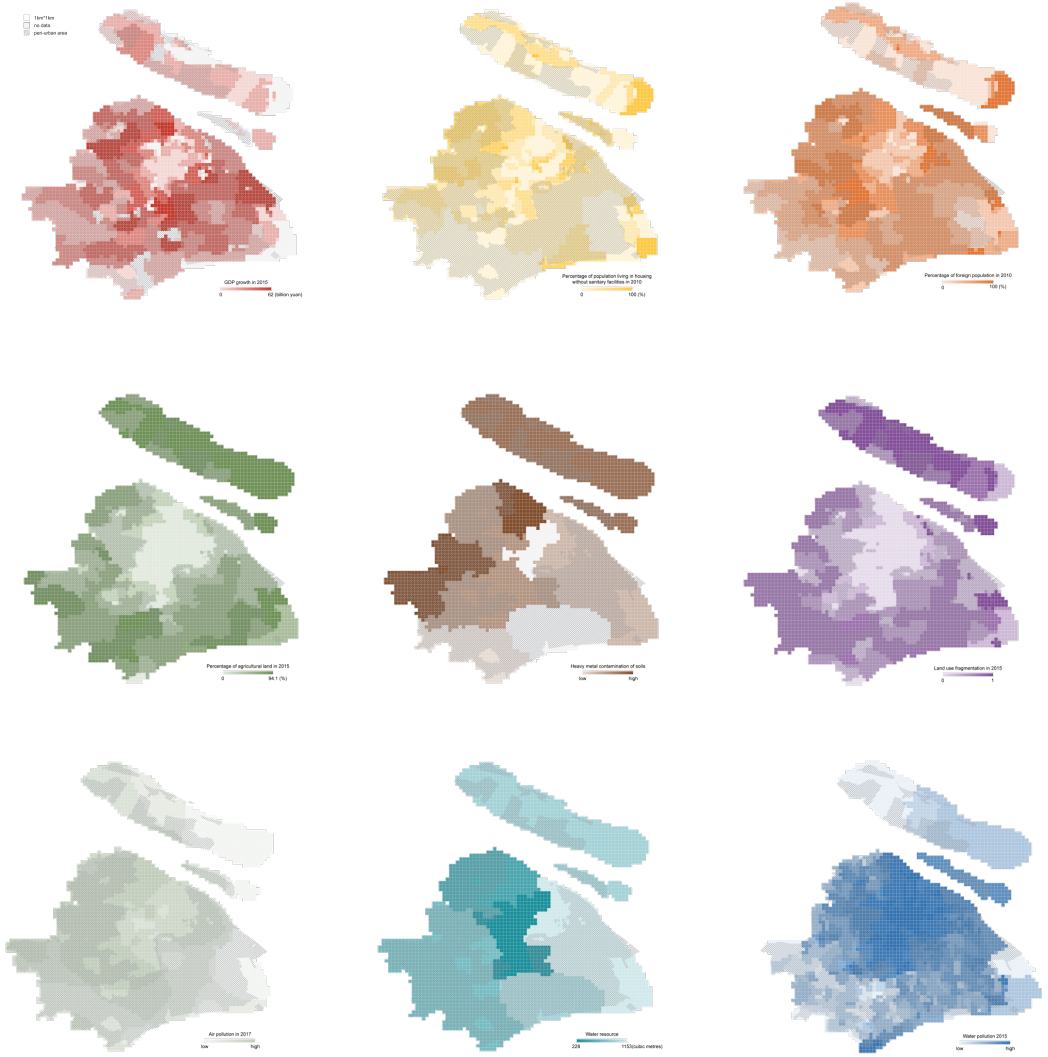
Social condition

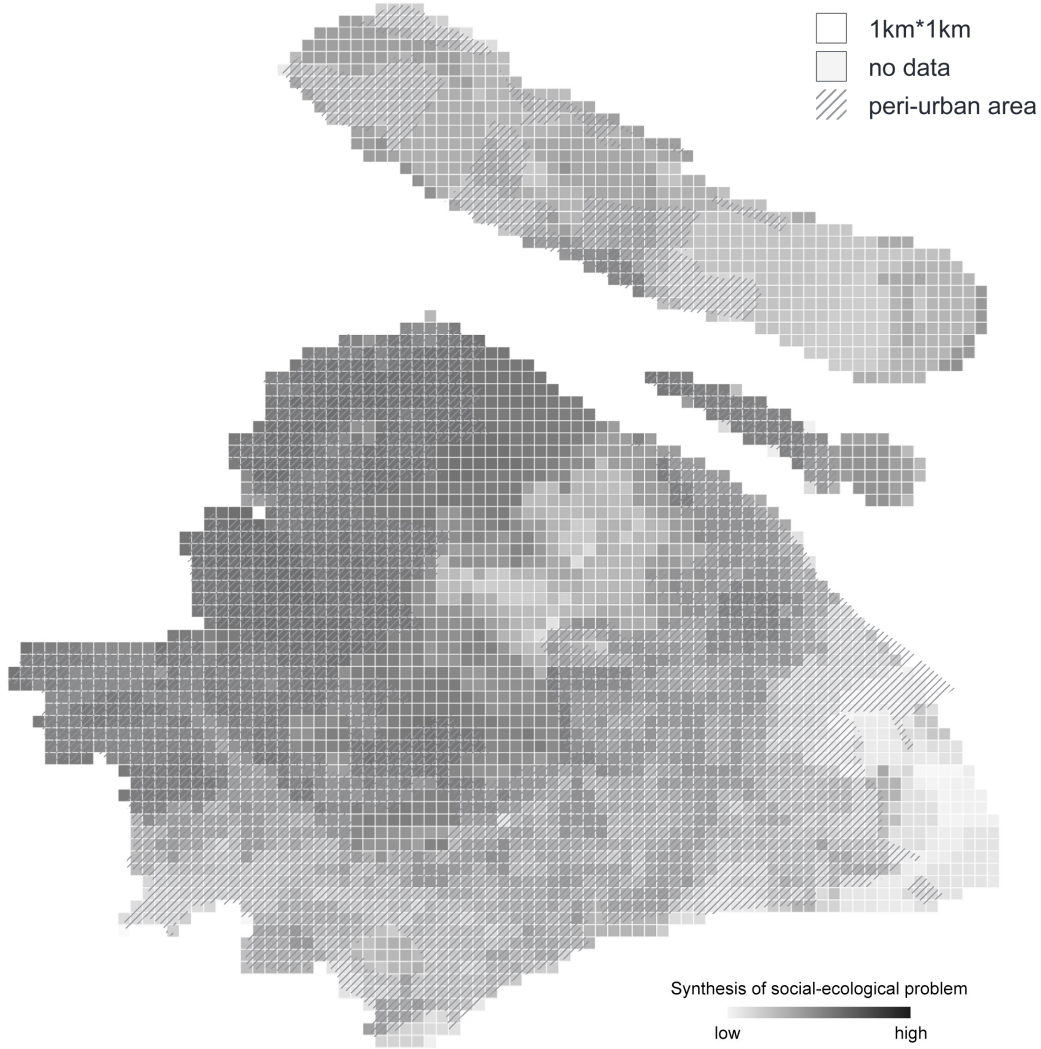
Problem



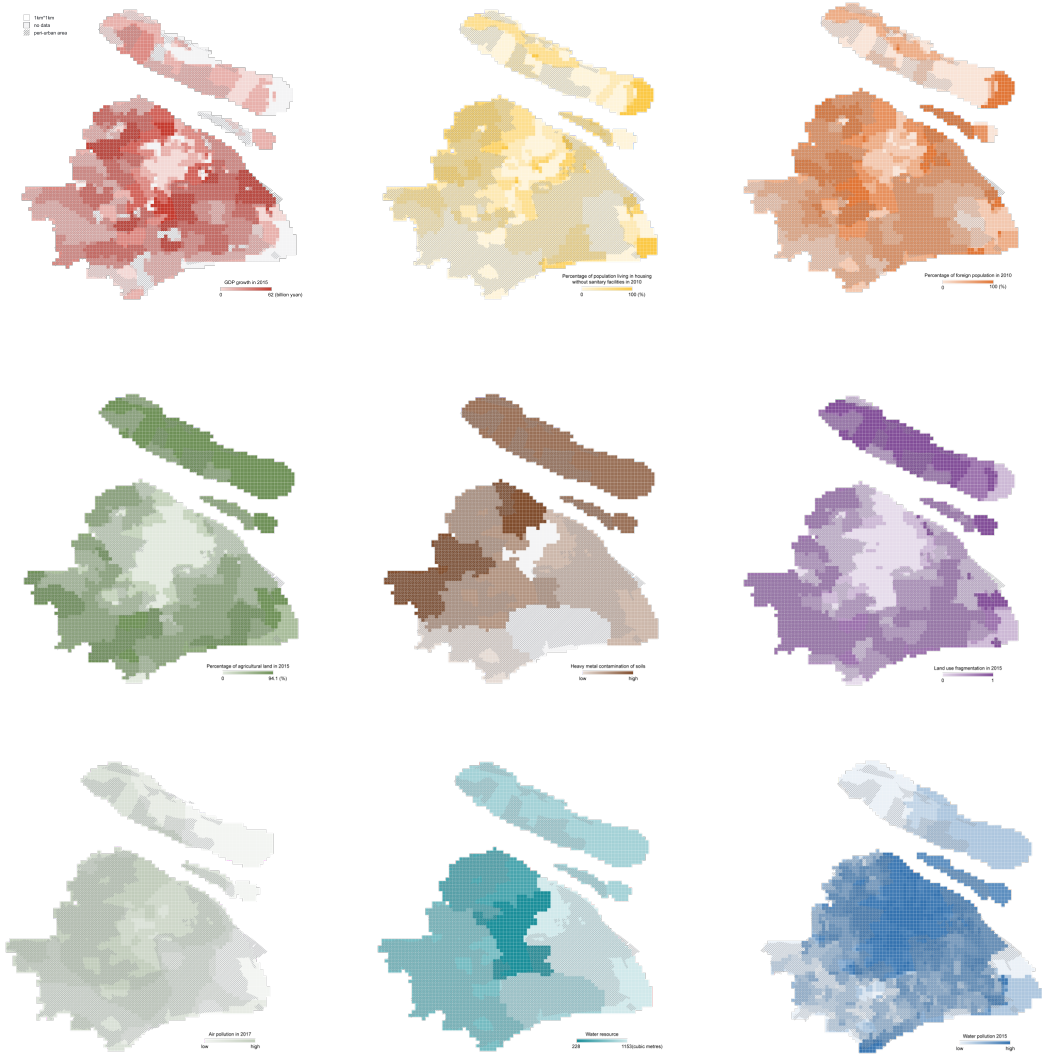
Ecological condition

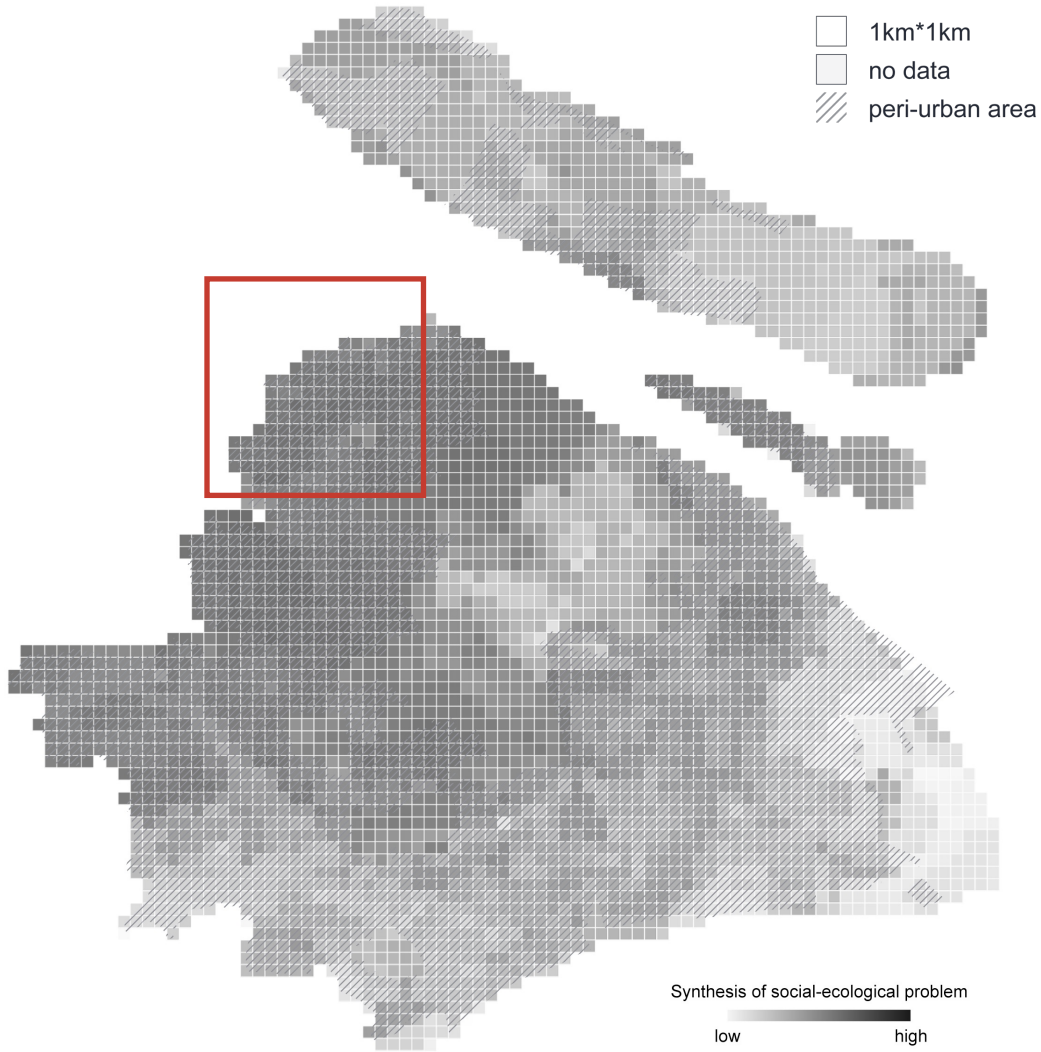
Synthesis of the Problems





Synthesis of the Problems





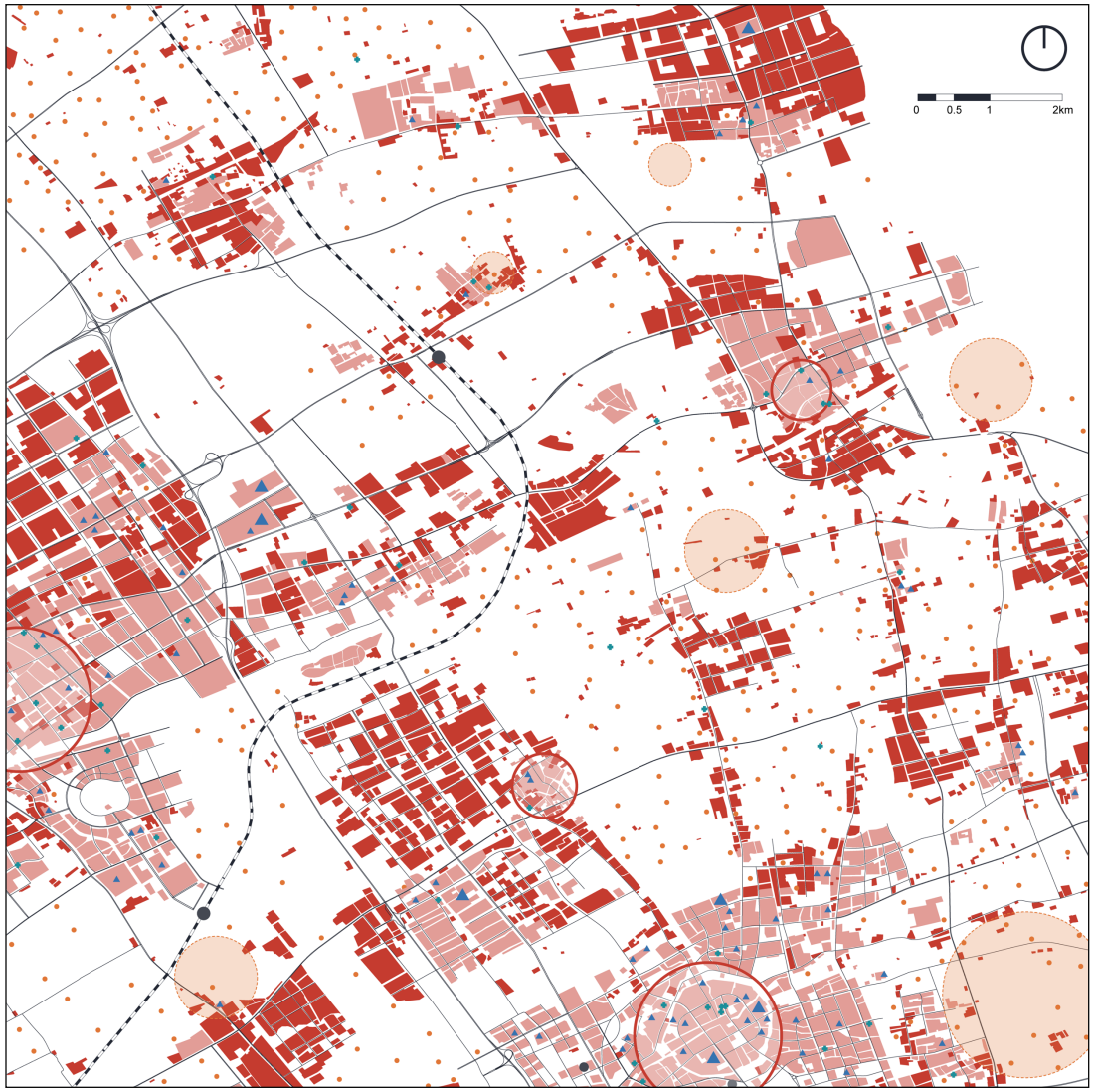
Research Question

How and to what extent can spatial planning and spatial design improve the socio-ecological conditions of Shanghai's peri-urban territory?

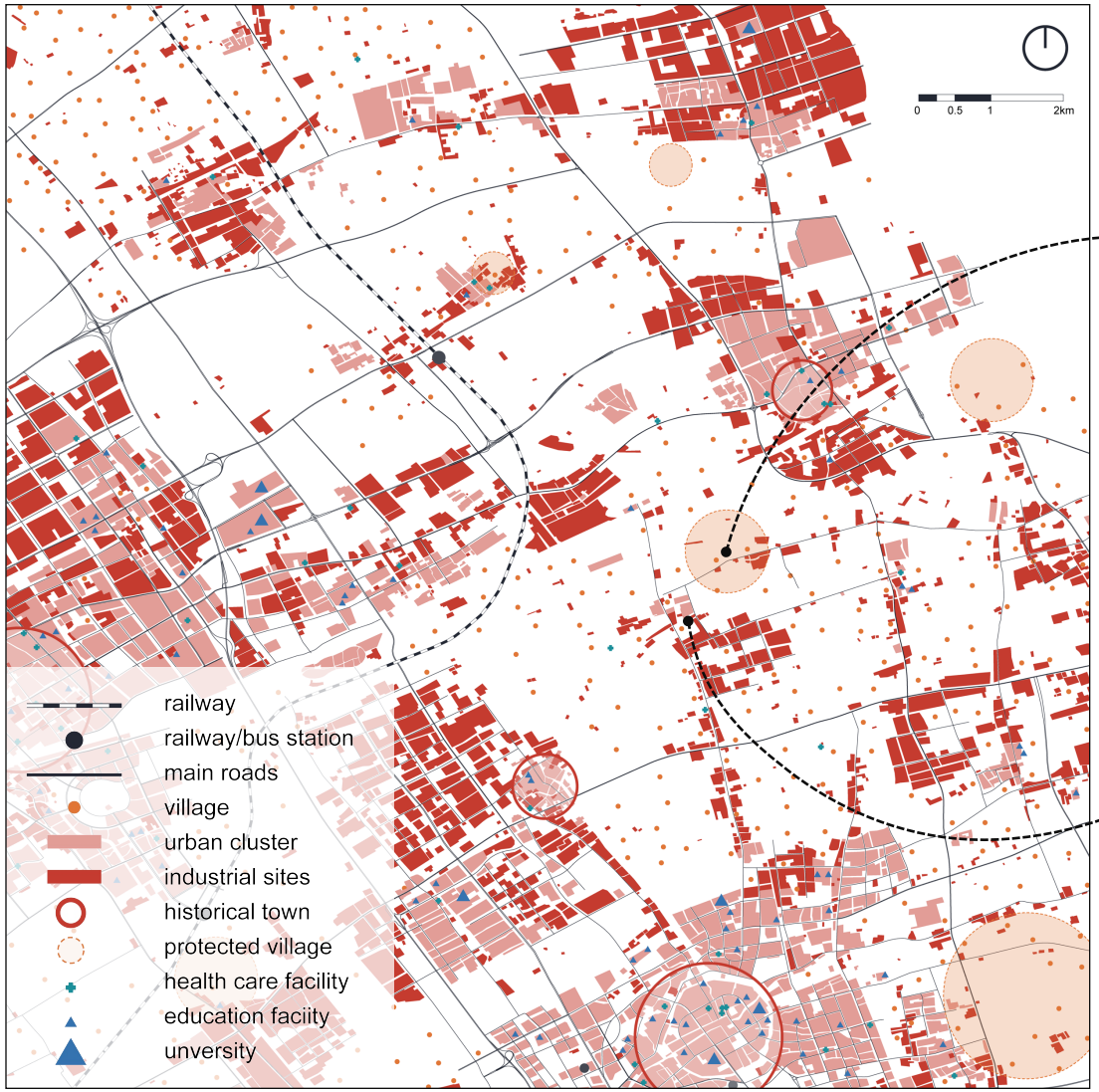
Context

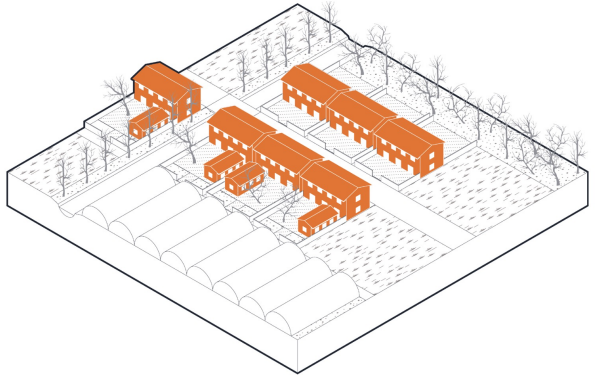
Urban Ecosystem

Urban Ecosystem

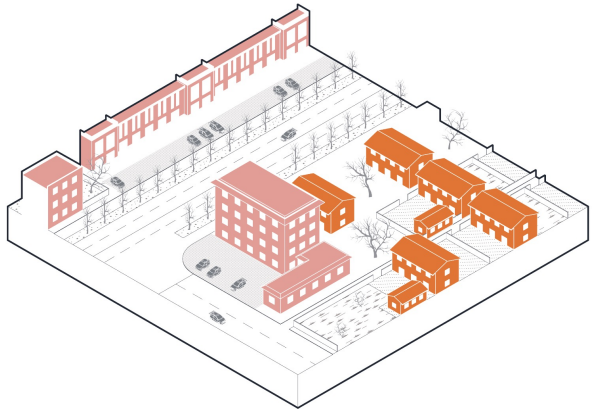


Urban Ecosystem



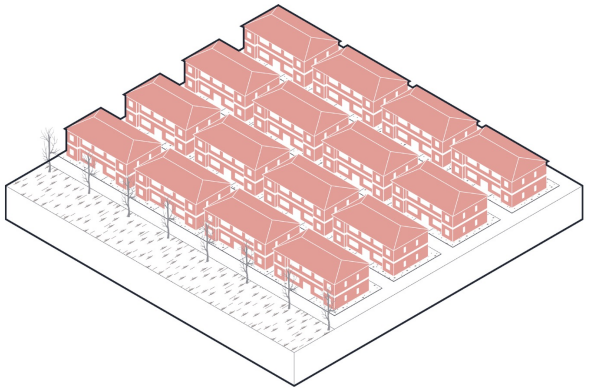


Natural village

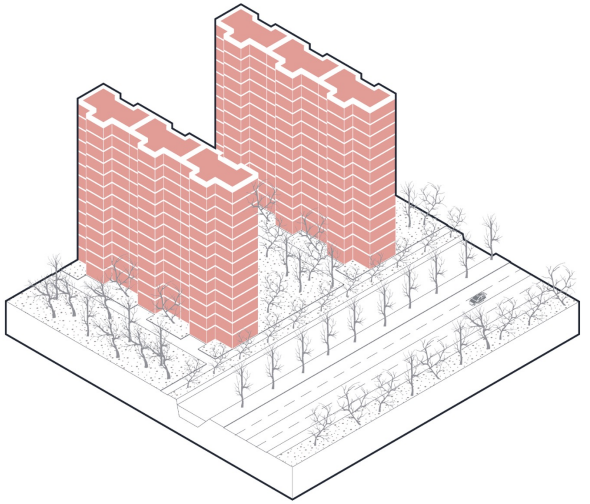


Proximity urbanization

Urban Ecosystem



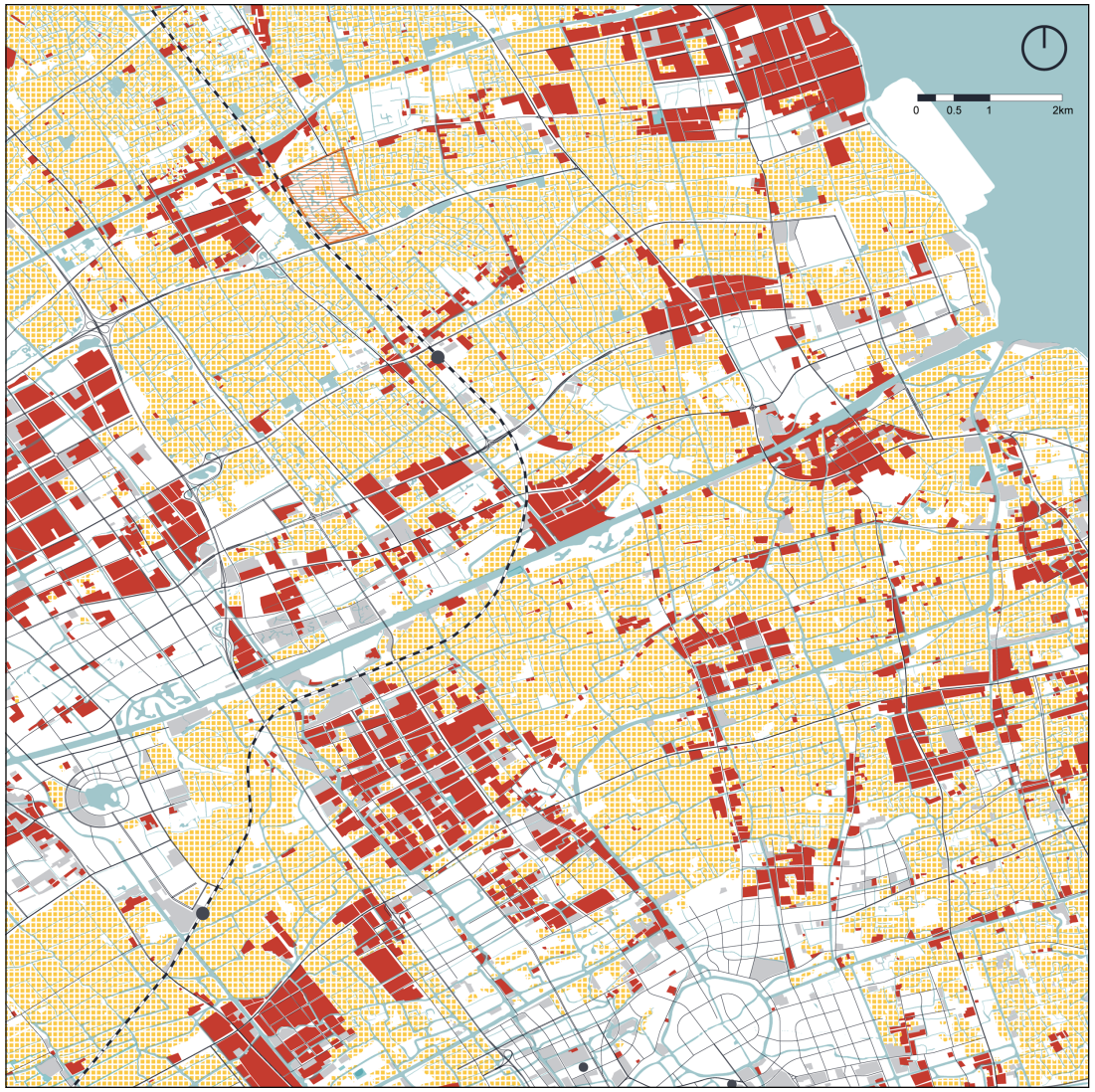
Centralized settlement-
single family villa



Centralized settlement-
high rise apartment

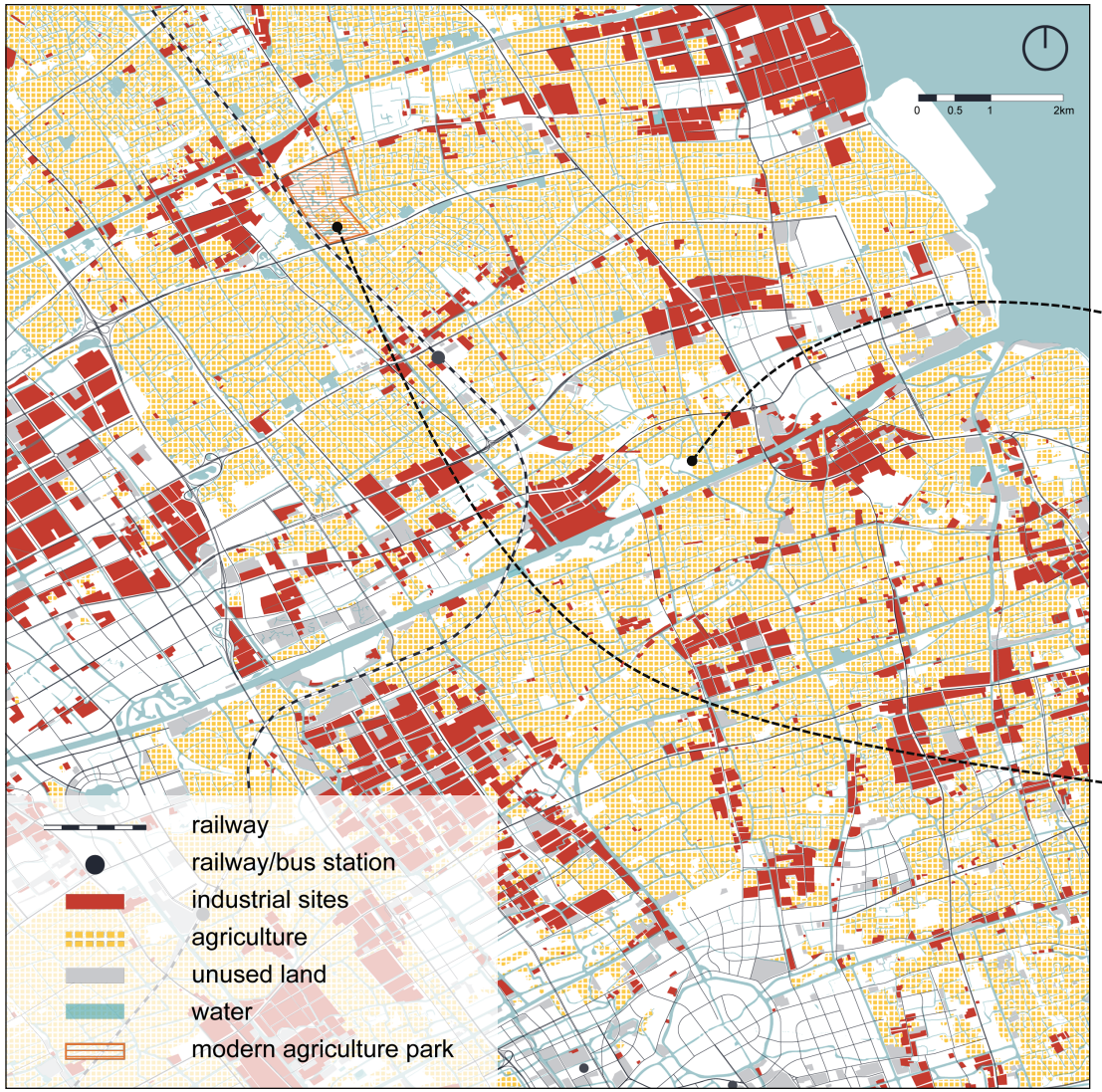
Productive Ecosystem

Productive Ecosystem



railway
railway/bus station
industrial sites
agriculture
unused land
water
modern agriculture park

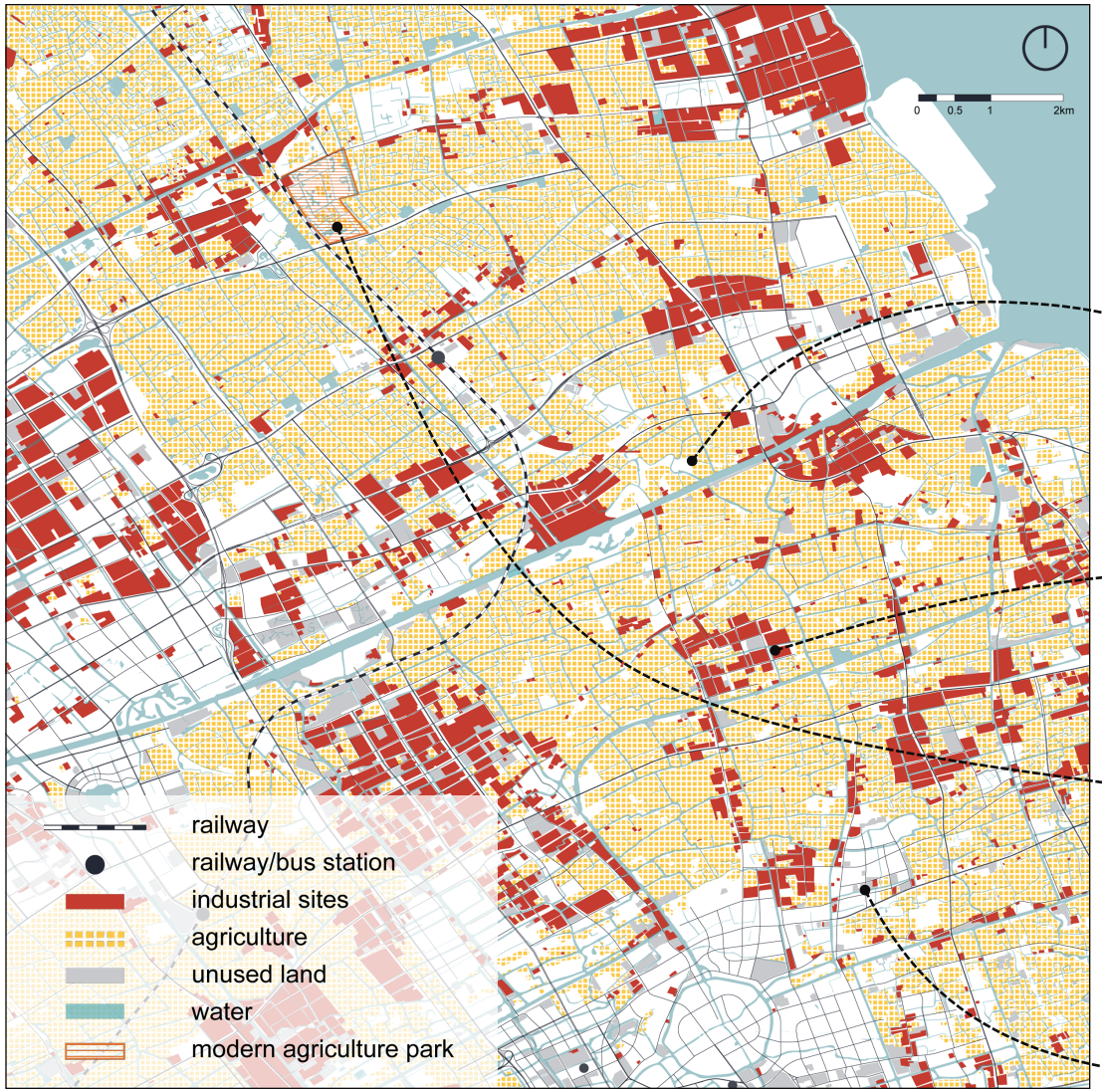
Productive Ecosystem



Paddy field

Modern agriculture park

Productive Ecosystem



Paddy field

Industrial park

Modern agriculture park

Unused land

Productive Ecosystem

Rural market

Historical town

Wetland park

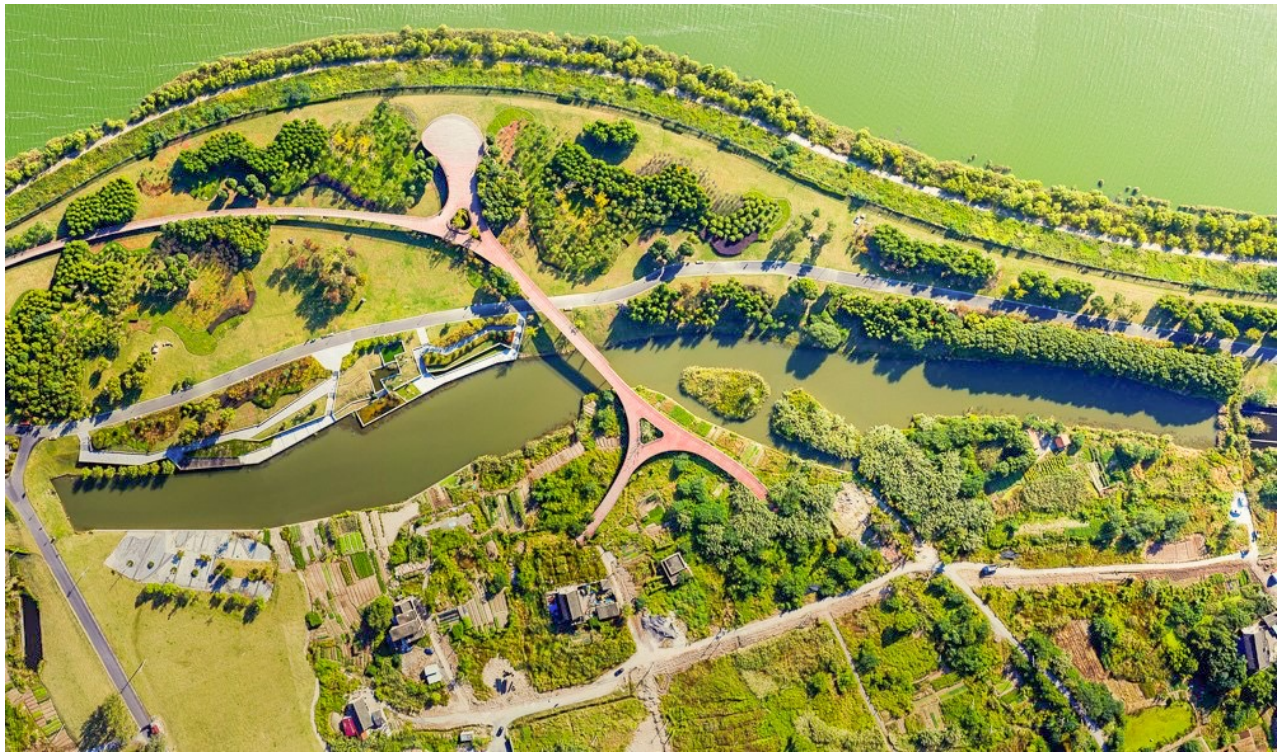
Productive Ecosystem

Reality show

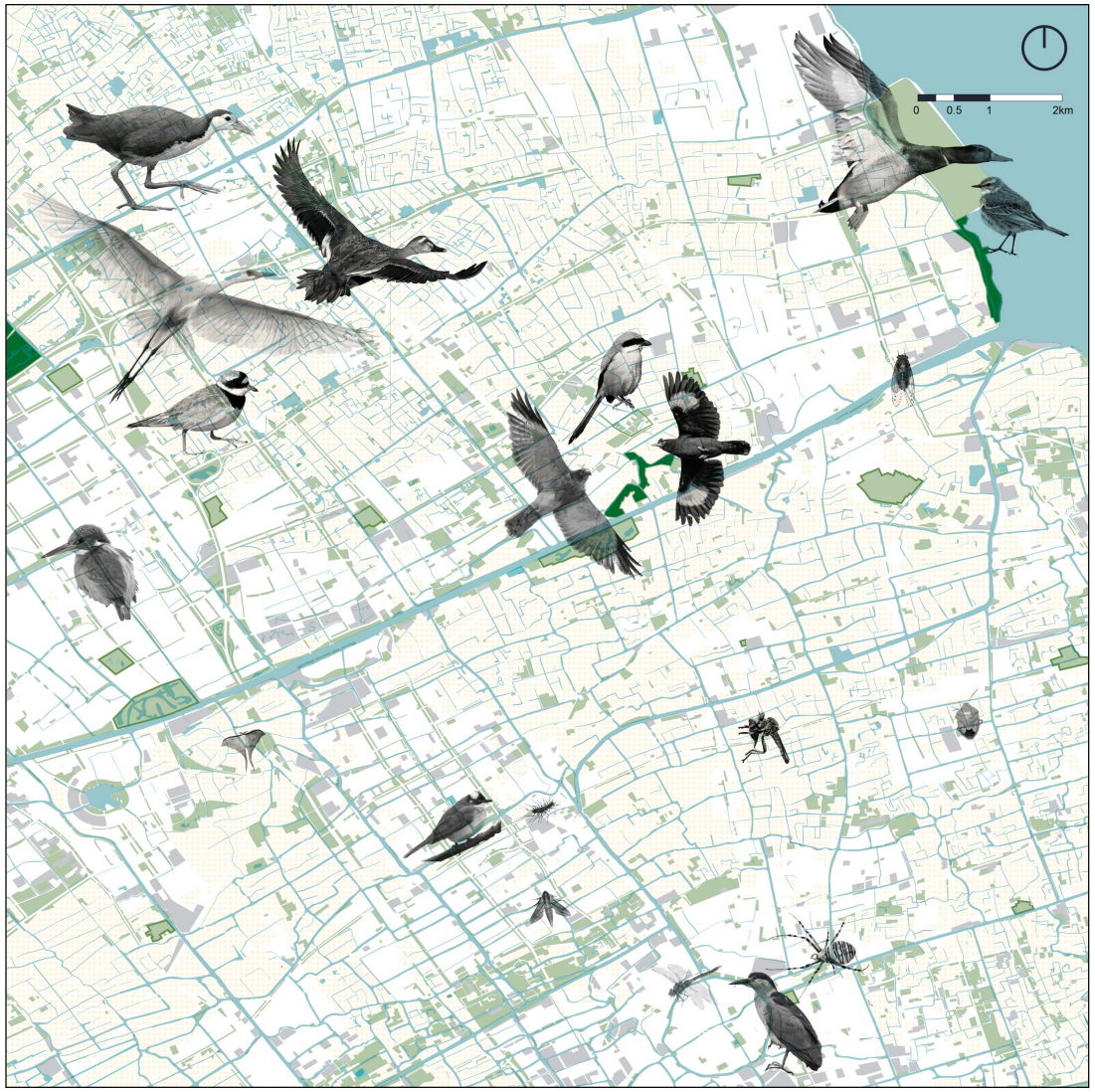
Video

National policy

Natural Ecosystem

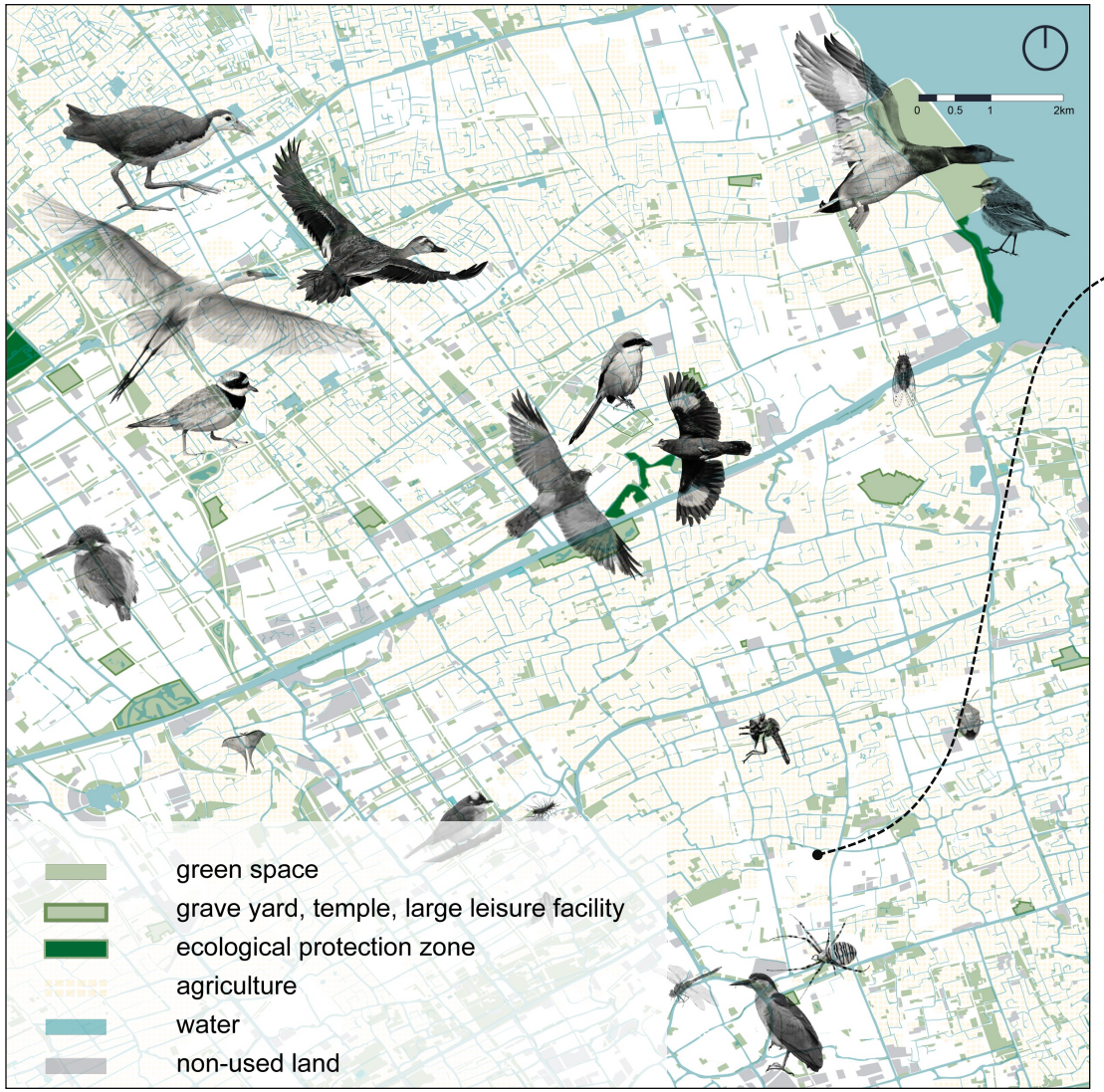


Natural Ecosystem



- green space
- grave yard, temple, large leisure facility
- ecological protection zone
- agriculture
- water
- non-used land

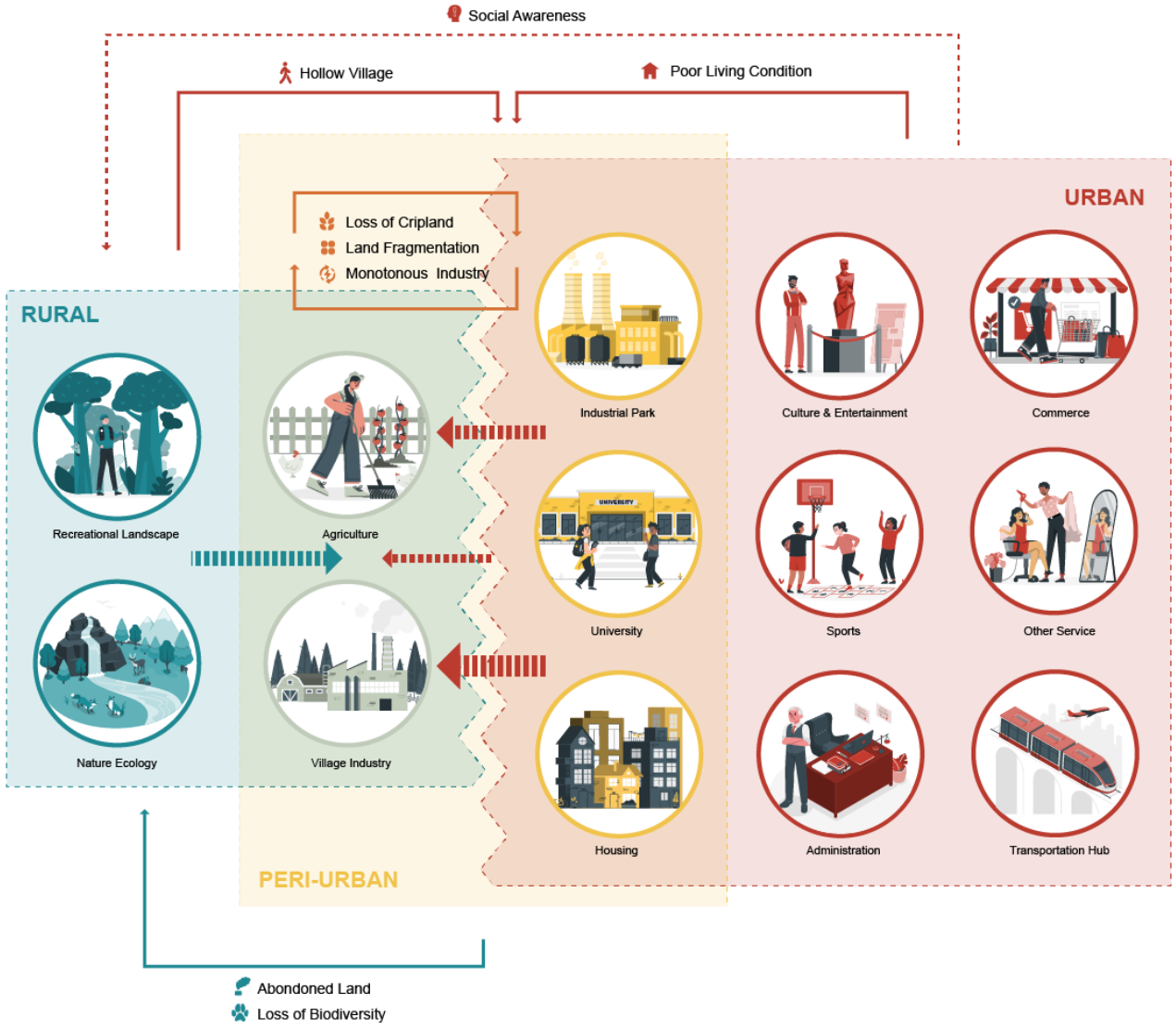
Natural Ecosystem



Water structure in 2009

Water structure in 2022

Conclusions-Problems



Conclusions-SWOT

Strength

- Ecological and historical resource
- Infrastructure
- Geographic position

Weakness

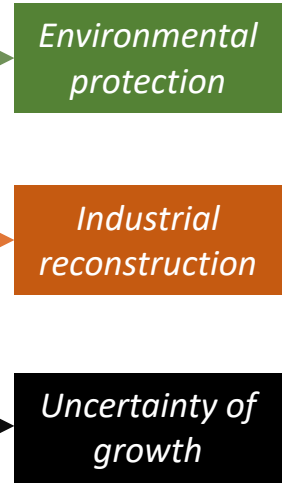
- Fragmented and abandoned land
- Monotonous industry
- Lack of awareness of the environment

Opportunity

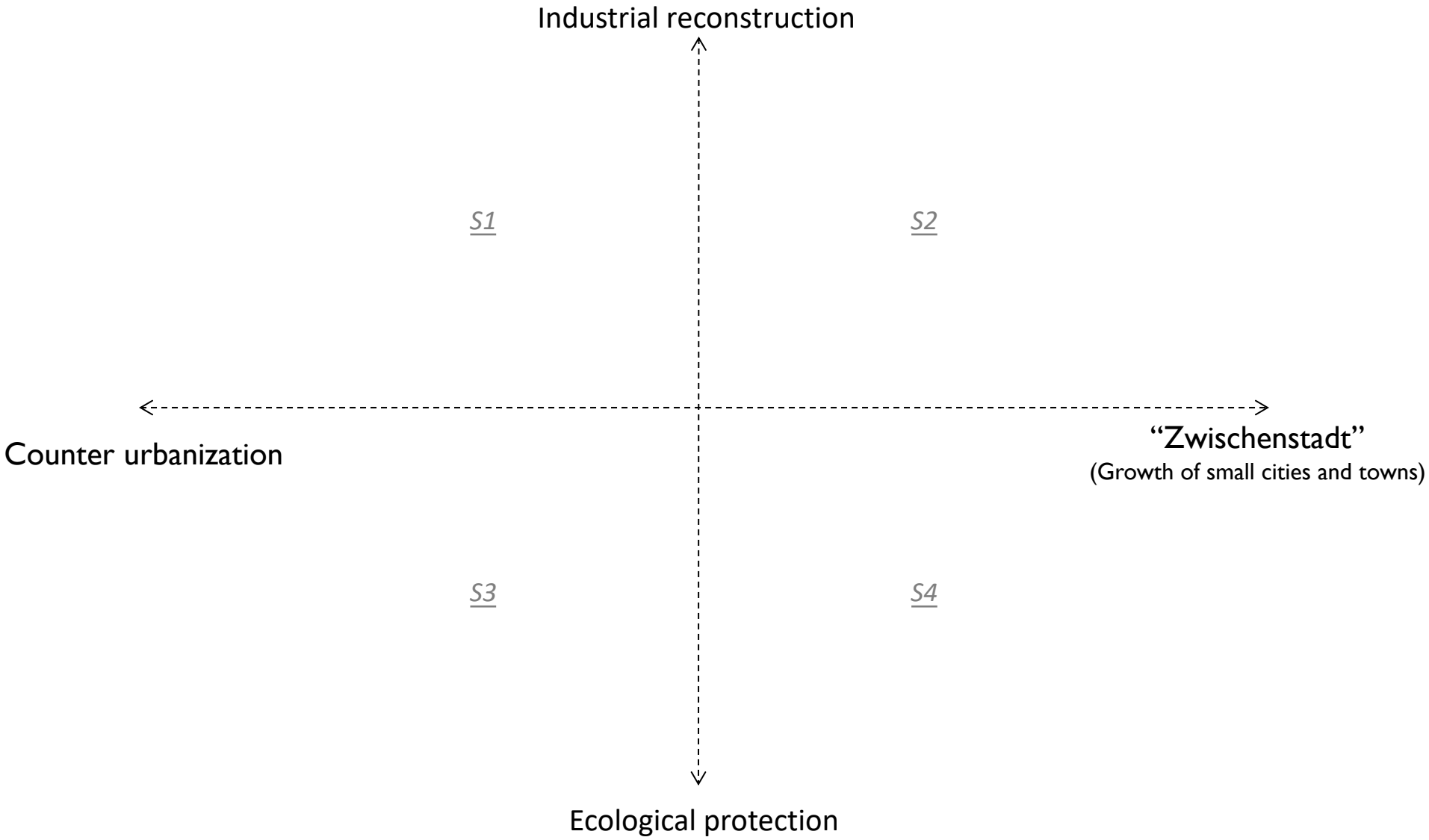
- Emerging concepts of backflow population
- Population saturated from large cities
- Unused land for possibilities

Threat

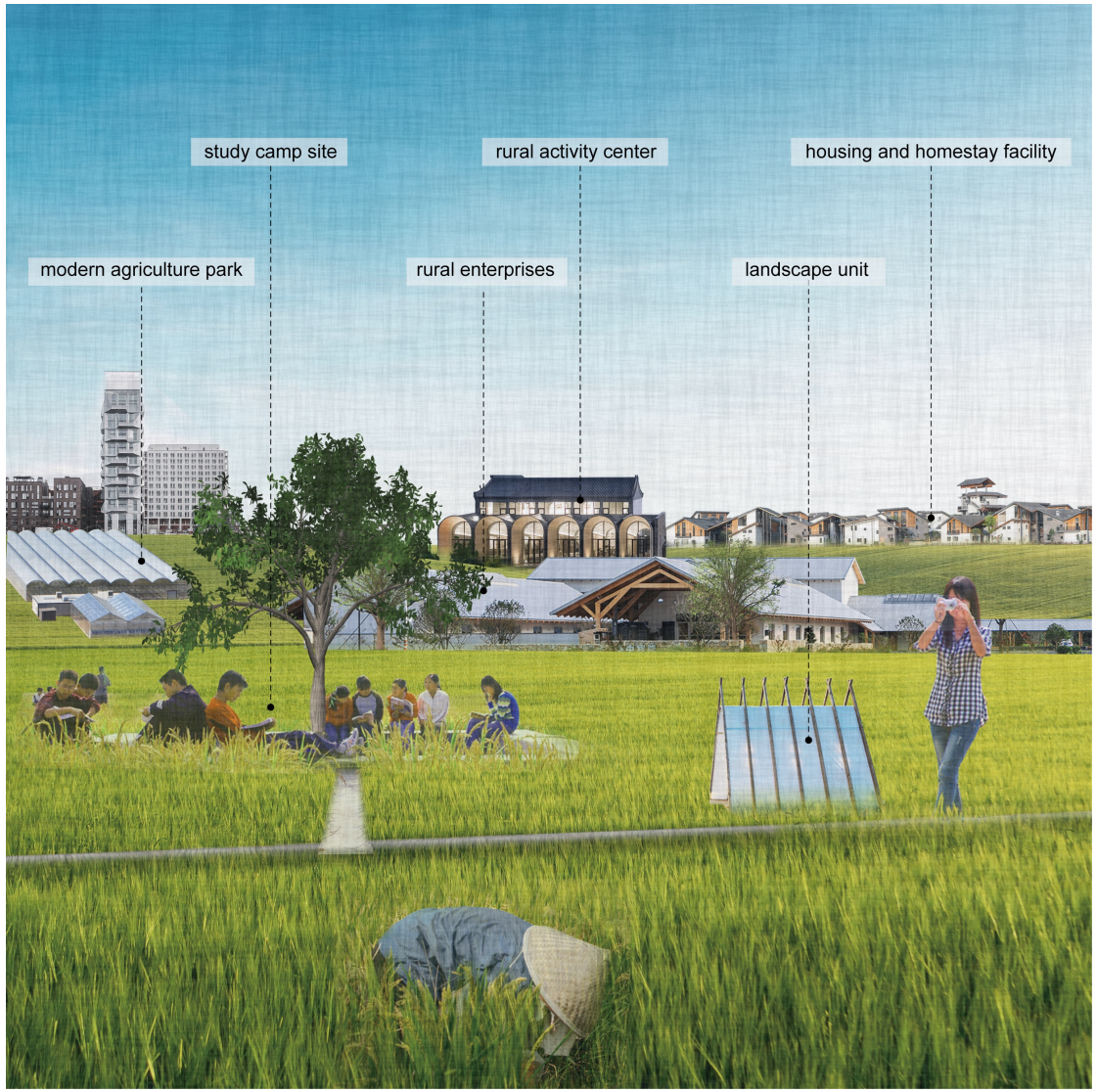
- Biodiversity loss
- Unemployment



Scenario Building



Scenario1: Revived Village

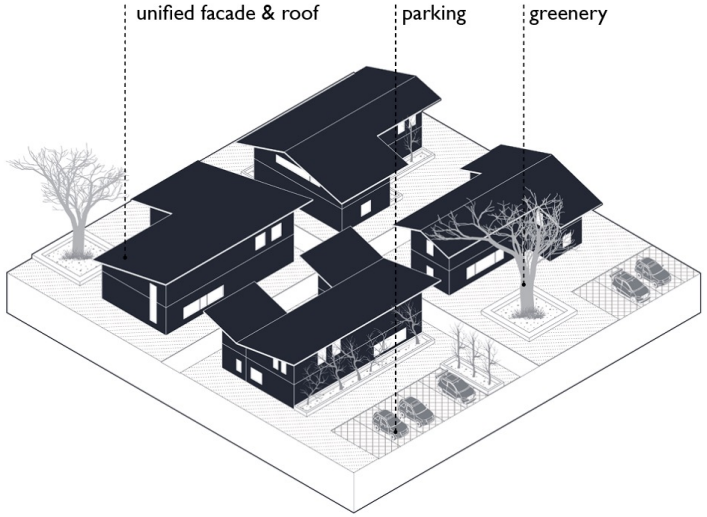


Industrial reconstruction

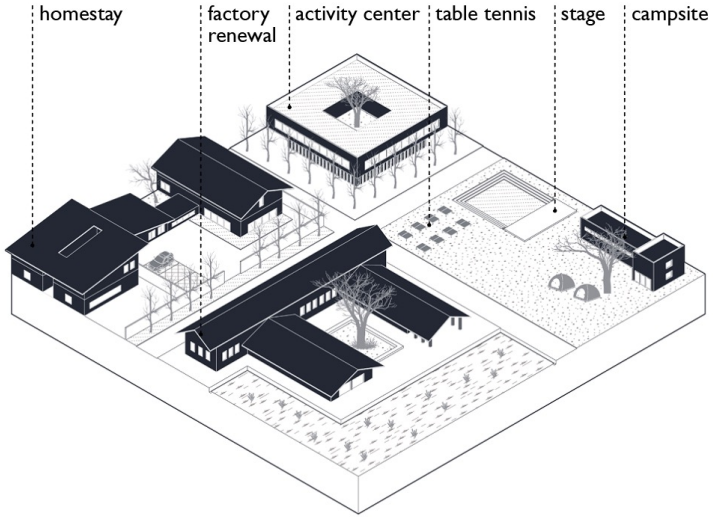
Counter urbanization

Scenario I : Revived Village

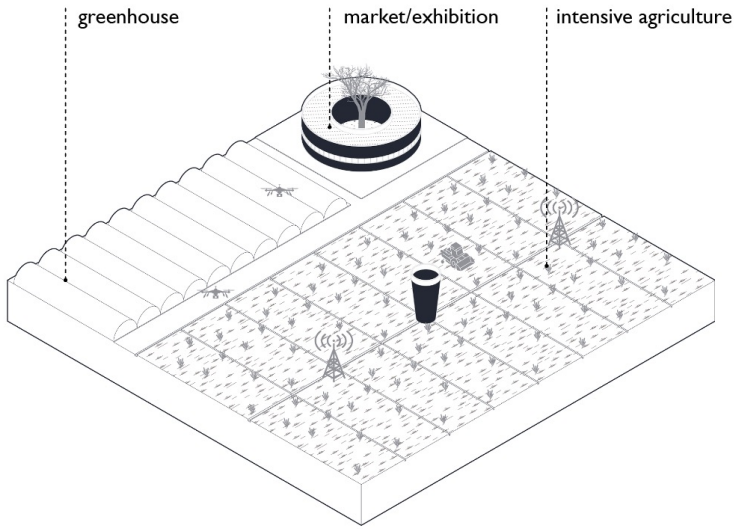
Urban Ecosystem
Productive Ecosystem
Natural Ecosystem



Housing renewal

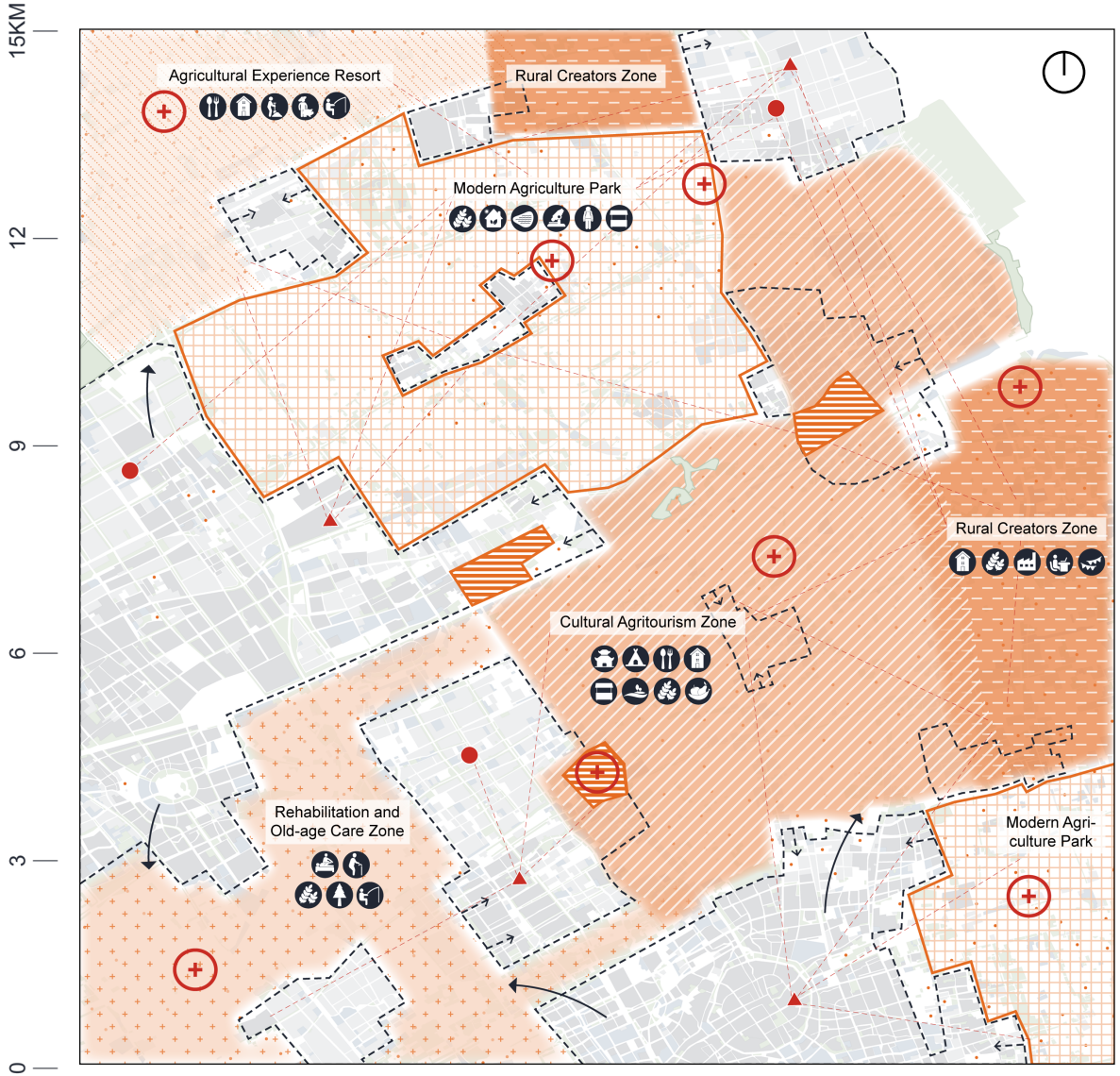


Diversified industry



Modern agriculture

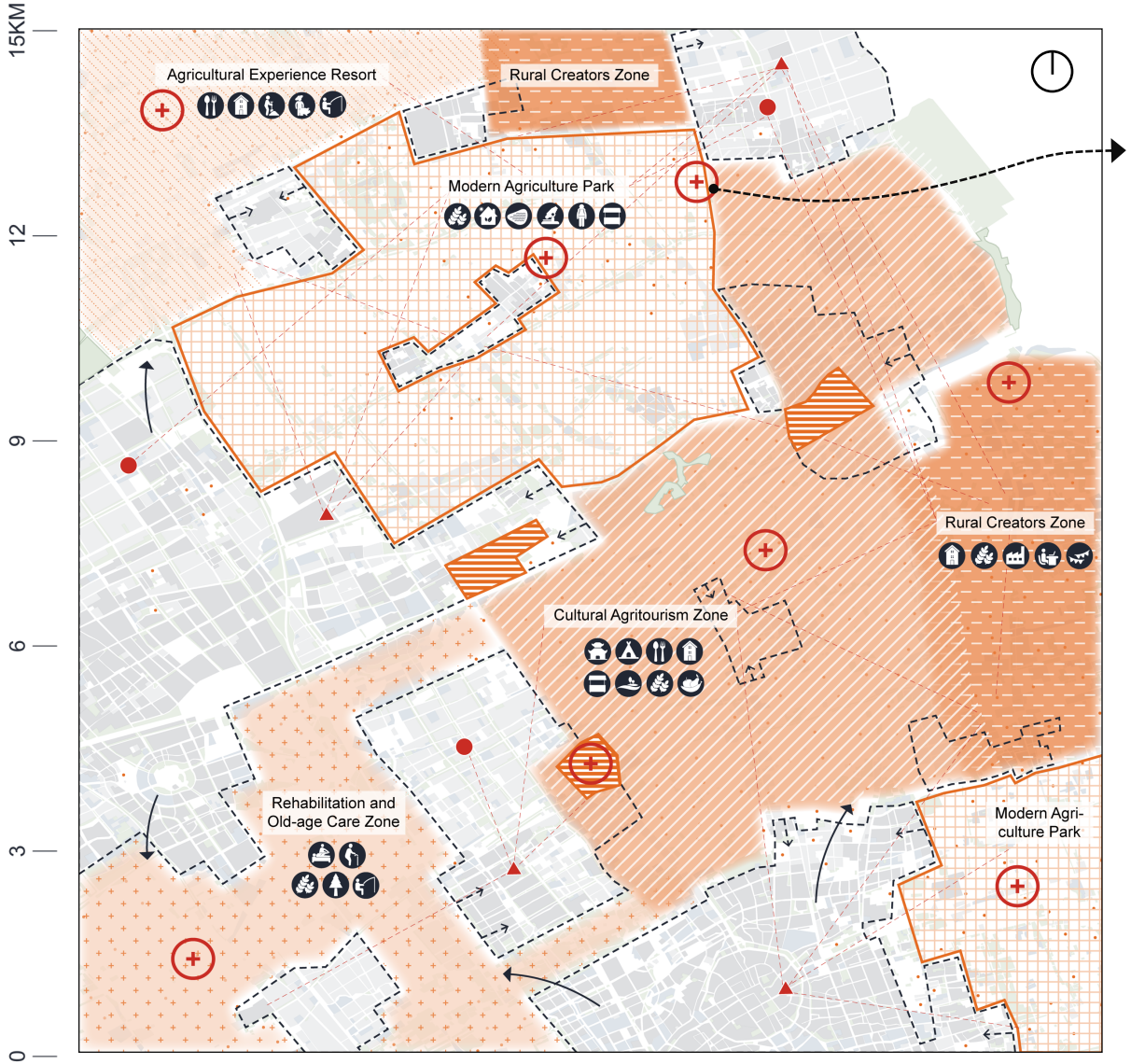
Scenario 1 : Revived Village

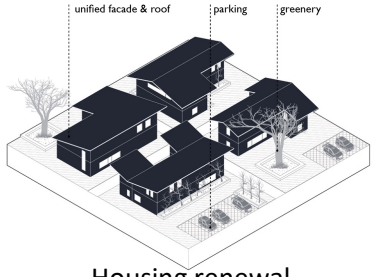


- paddy field
- greenhouse
- aquaculture
- fishing
- fruit picking
- planting experience
- breeding experience
- homestay
- restaurant
- market
- tourism landscape
- greenery
- camping
- festival
- historical town
- old care
- rehabilitation
- office
- factory
- research
- study

- urban development boundry
- shrinkage direction
- population flow
- priority housing renewal area
- agriculture experience resort
- modern agriculture park
- rehabilitation and old-age care zone
- cultural agritourism zone
- rural creator zone
- creative commerical block
- wetland park
- industrial park
- university
- cooperation
- village

Scenario 1 : Revived Village





Housing renewal

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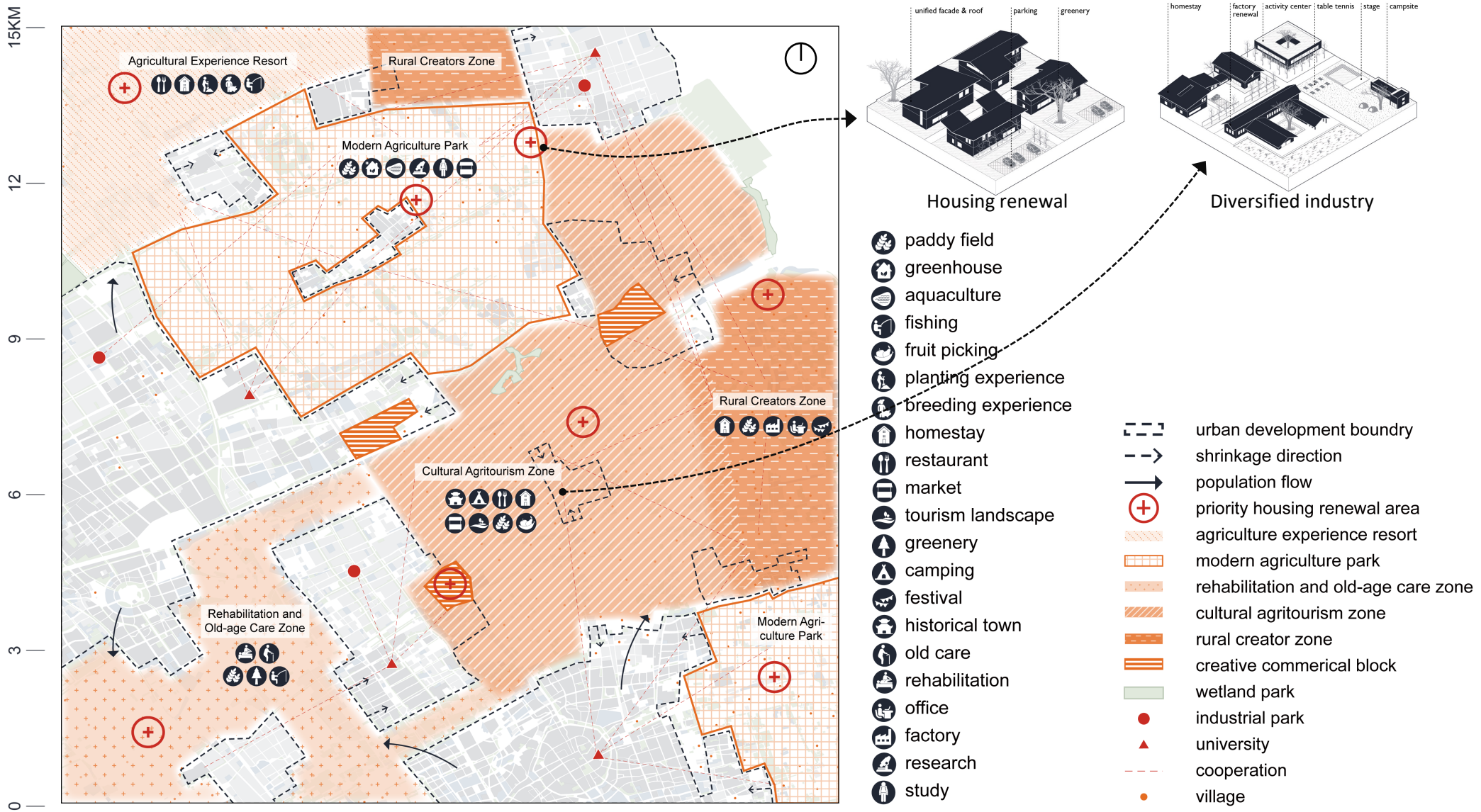

Housing renewal

Diversified industry

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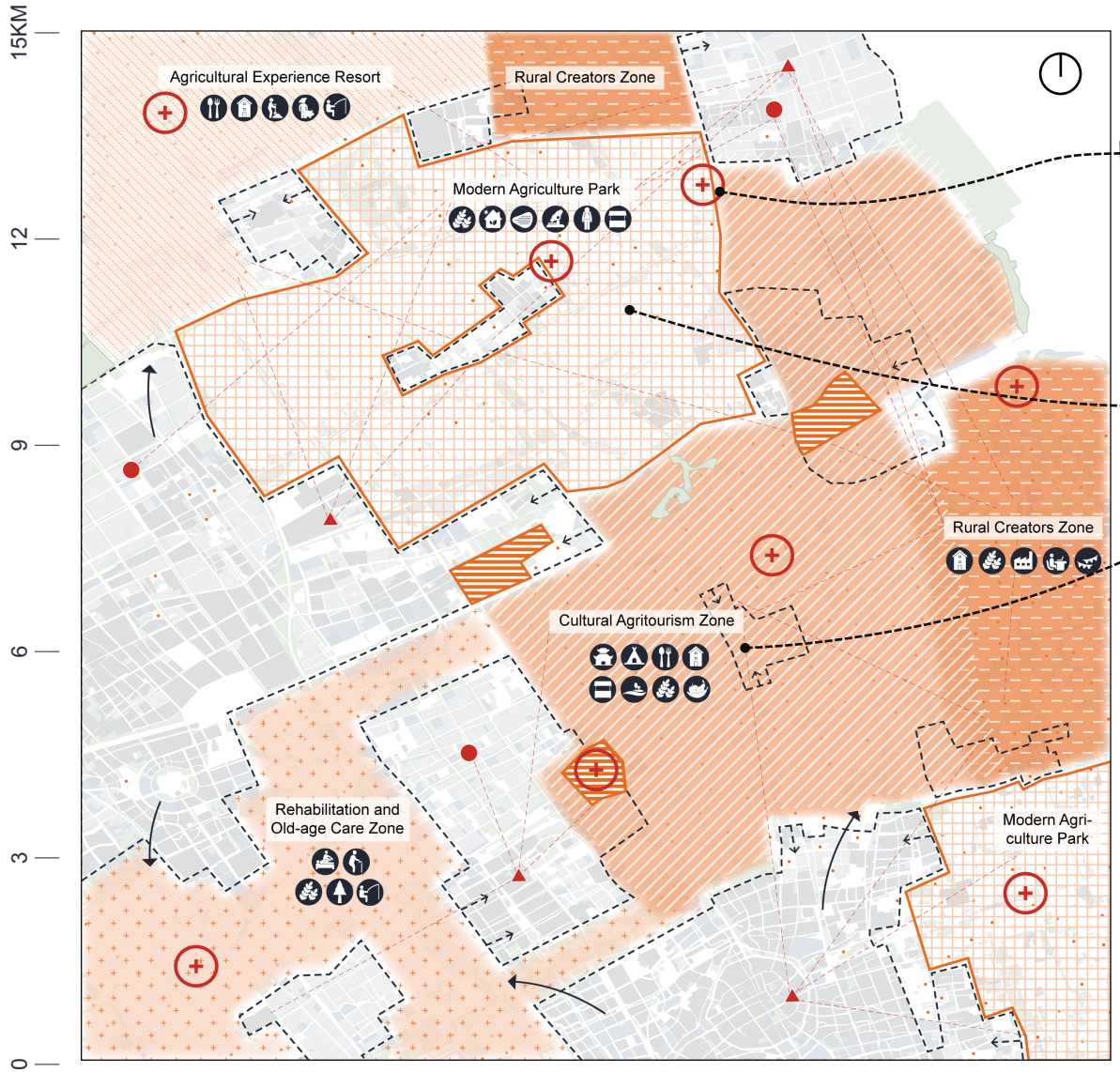
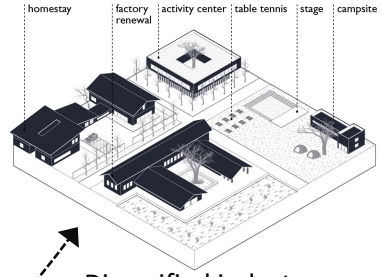
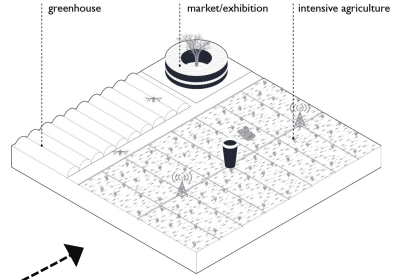


Housing renewal



Diversified industry



Modern agriculture

- paddy field
- greenhouse
- aquaculture
- fishing
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- planting experience
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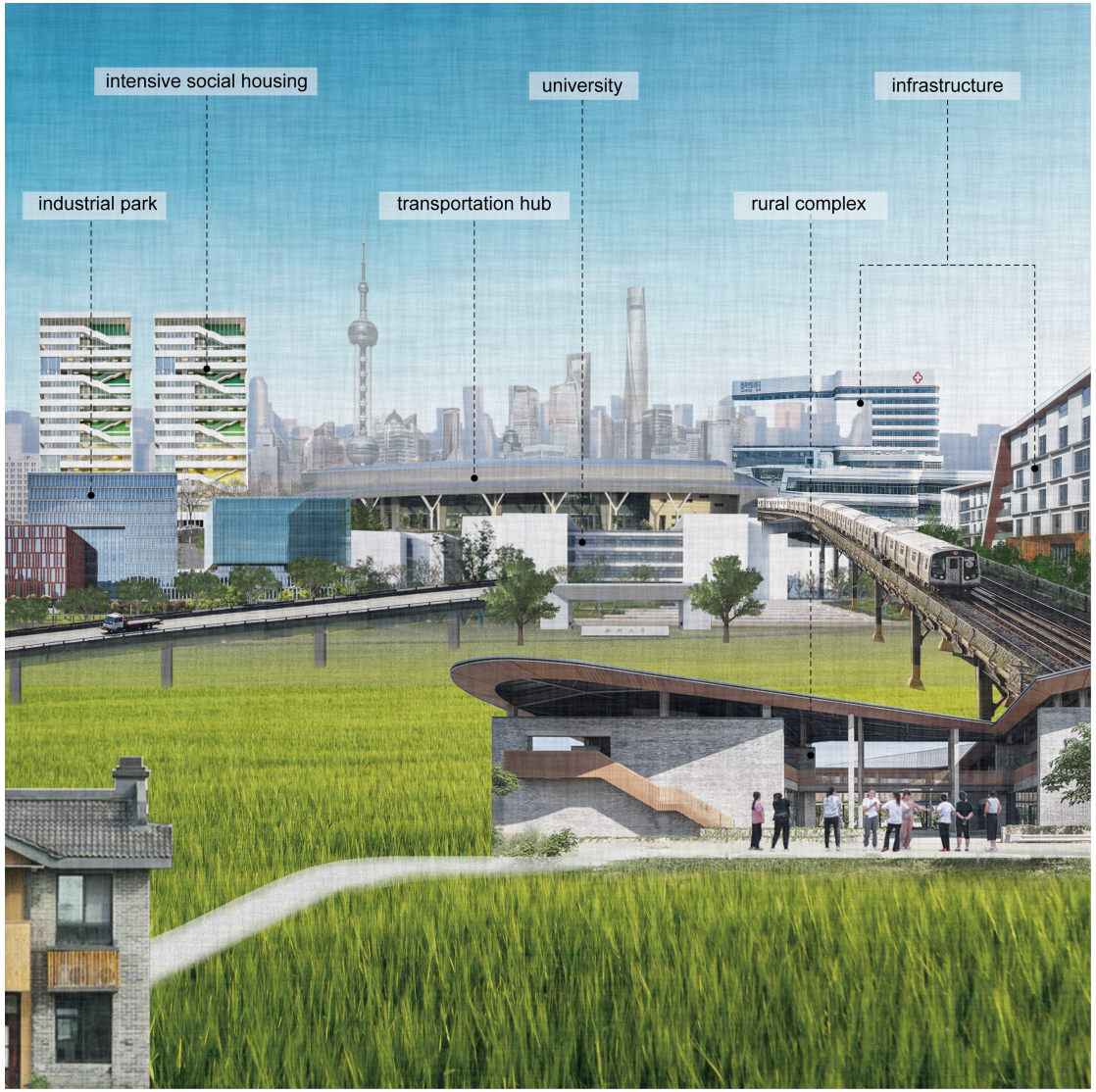
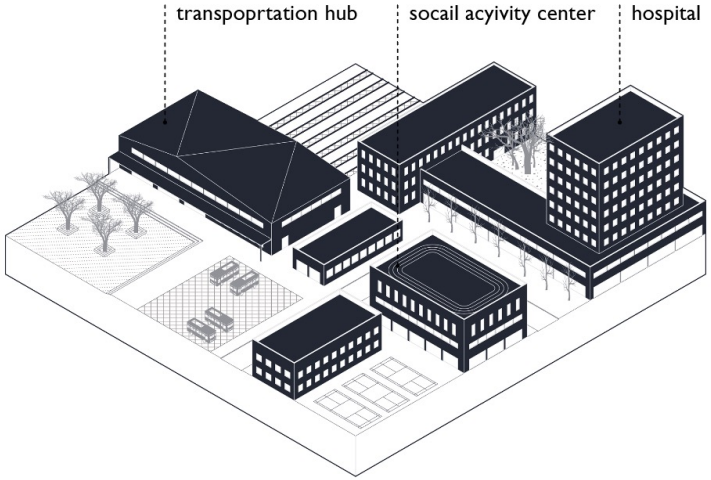
Industrial reconstruction

Scenario2: Creative Complex

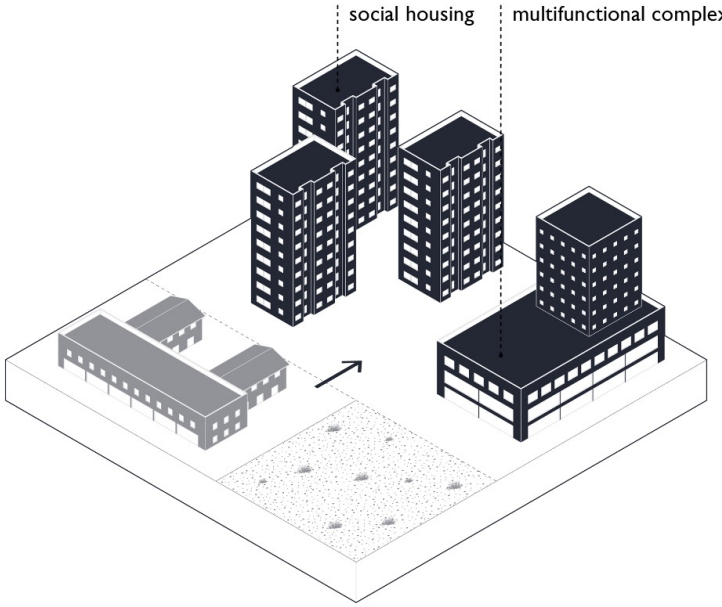


"Zwischenstadt"
(Growth of small cities and towns)

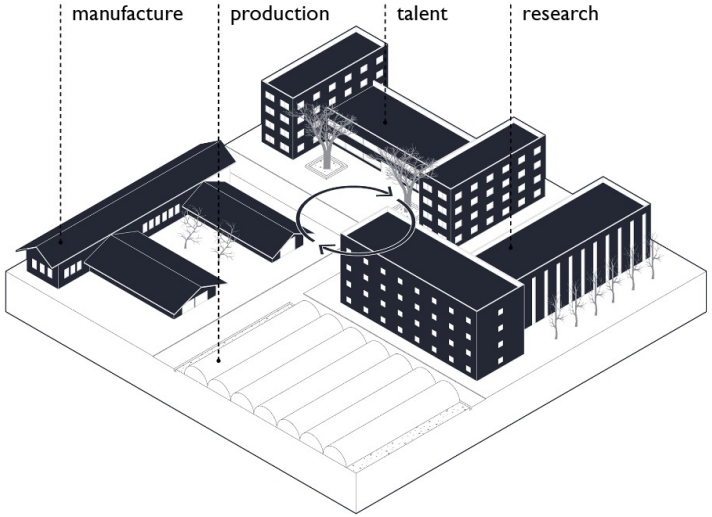
Scenario2: Creative Complex



Accessible infrastructure

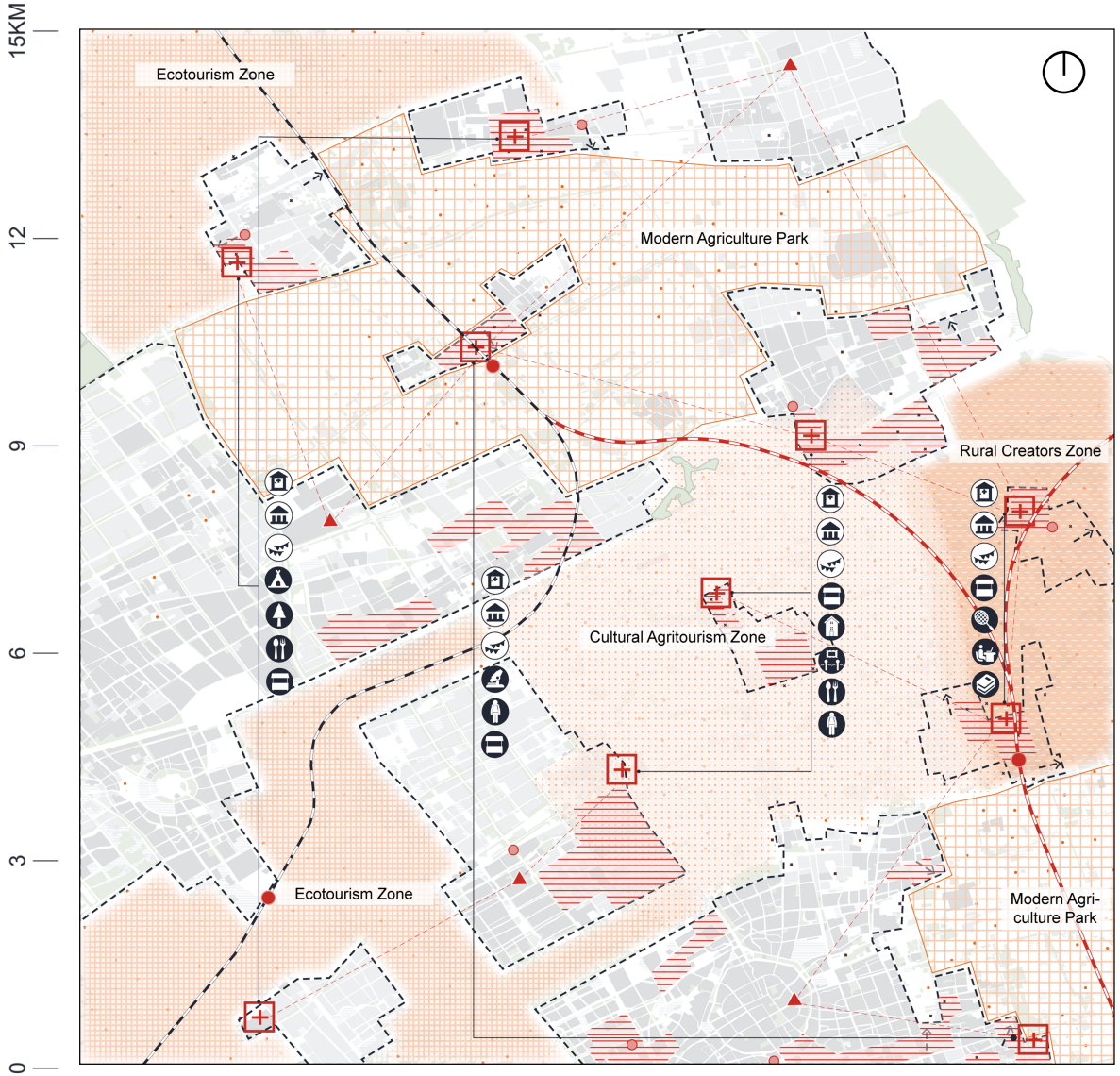


Densification



Industry cooperation

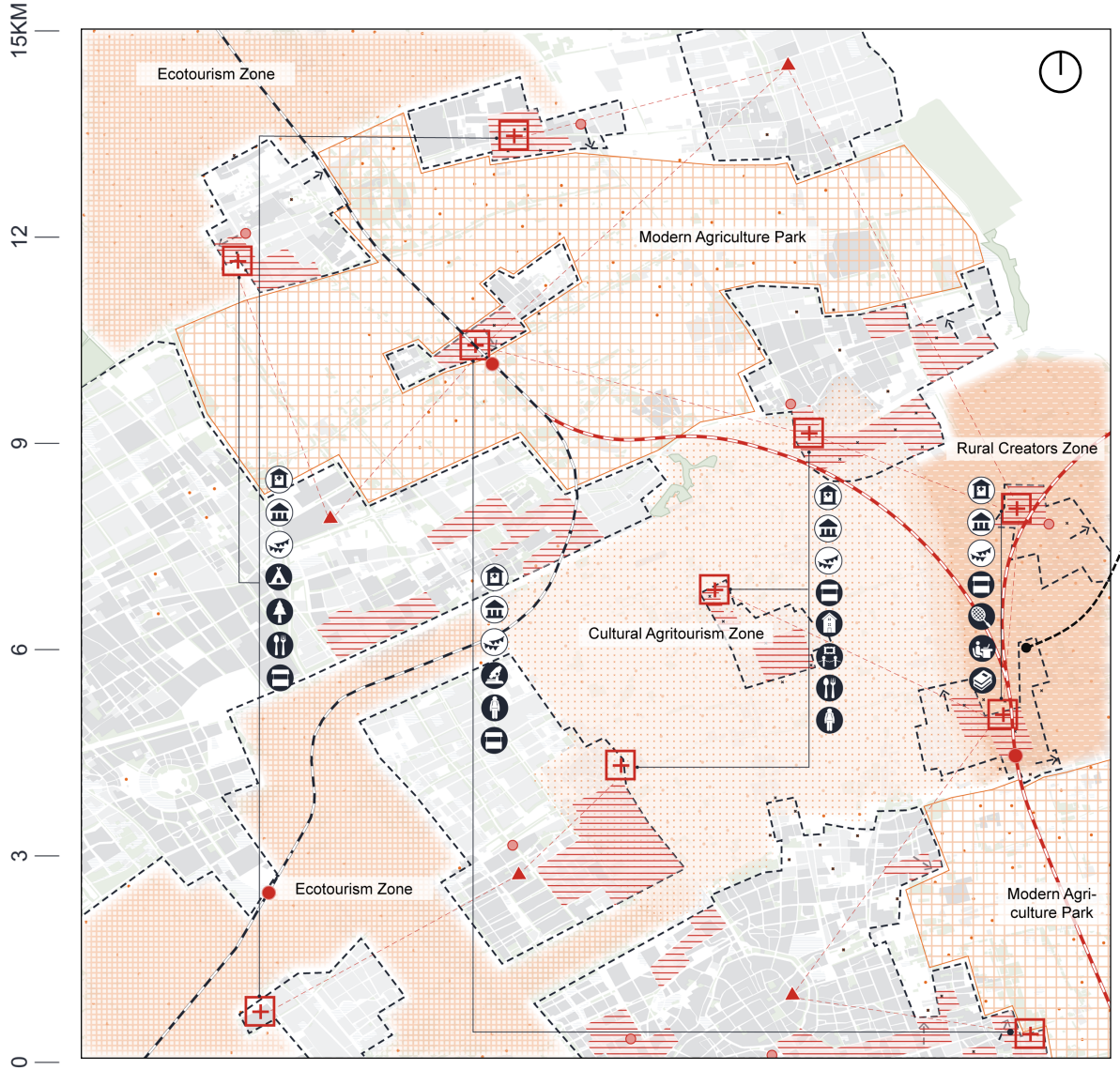
Scenario2: Creative Complex

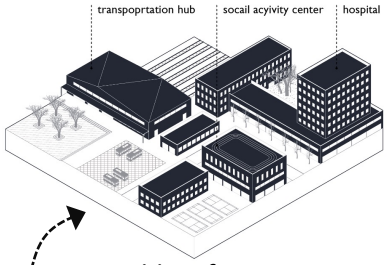


- medical care
- administration
- social meeting
- research
- study
- camping
- greenery
- restaurant
- market
- hotel
- museum
- sports
- office
- library

- urban development boundry
- expansion direction
- densified area
- rural complex
- modern agriculture park
- ecotourism zone
- cultural agritourism zone
- rural creator zone
- wetland park
- university
- cooperation
- village
- diminished village
- new built railway
- railway station
- bus station
- primary road

Scenario2: Creative Complex





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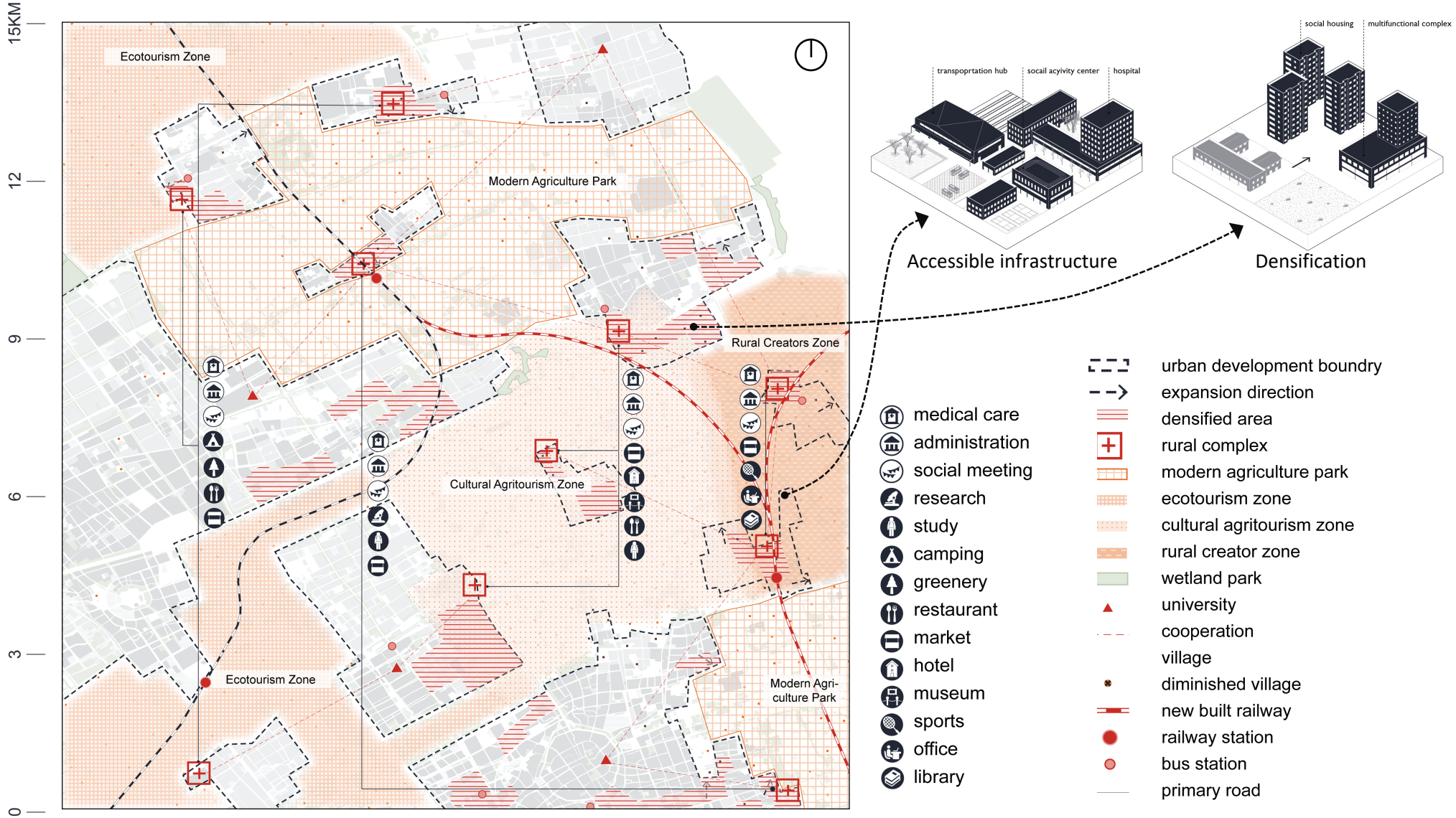

Accessible infrastructure

Densification

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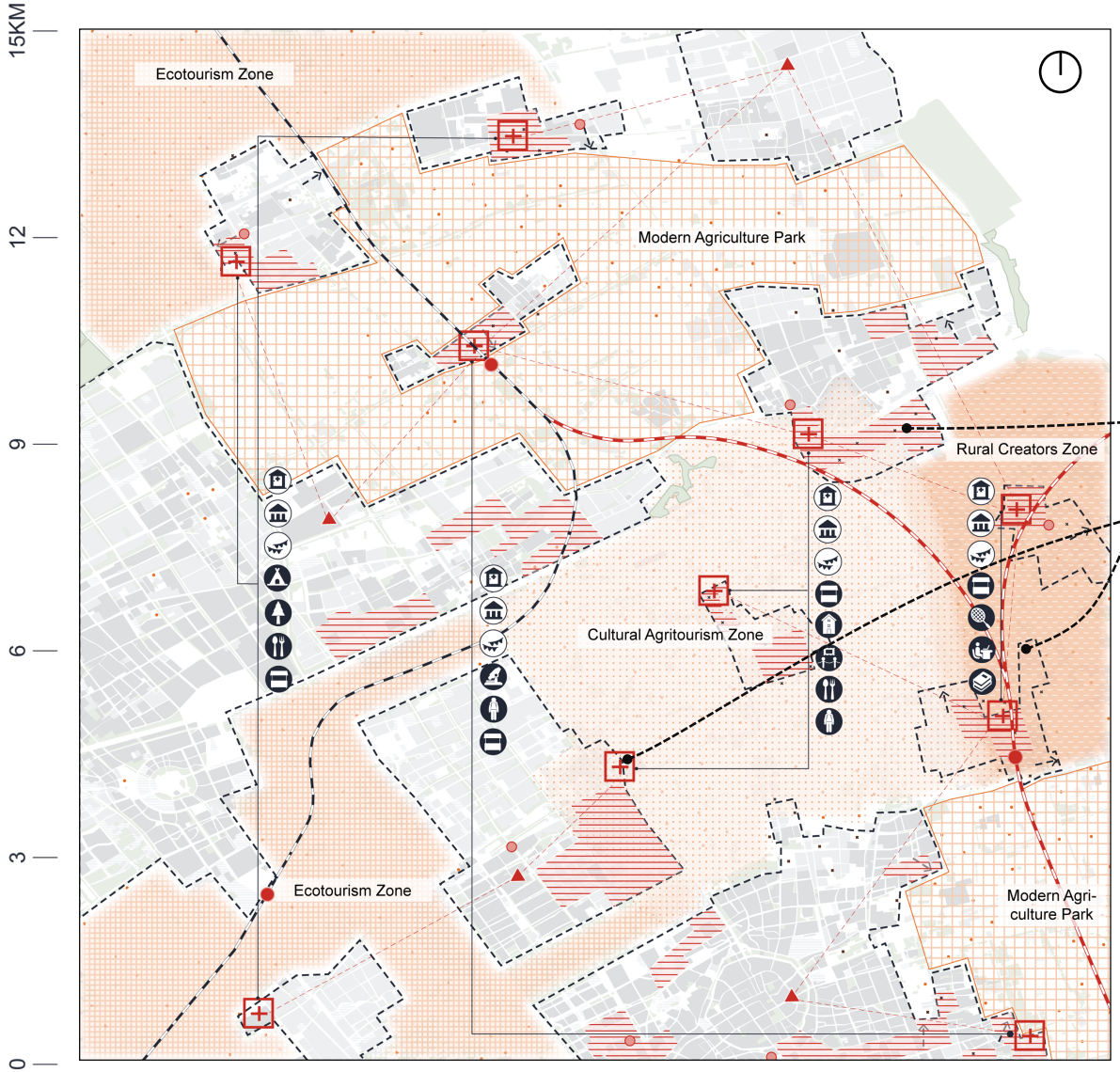
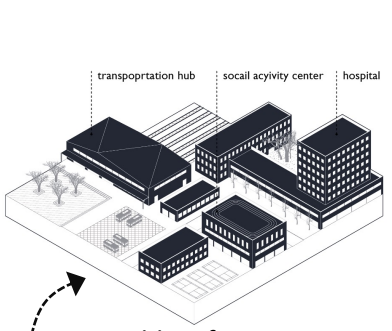
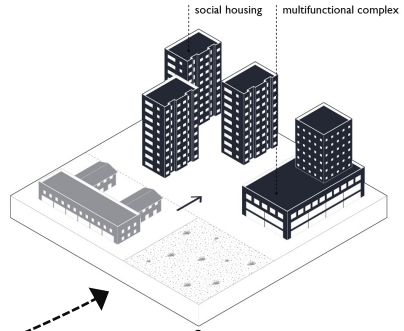
- rural complex
- modern agriculture park
- ecotourism zone
- cultural agritourism zone
- rural creator zone
- wetland park
- university
- cooperation
- village
- diminished village
- new built railway
- railway station
- bus station
- primary road

Scenario2: Creative Complex

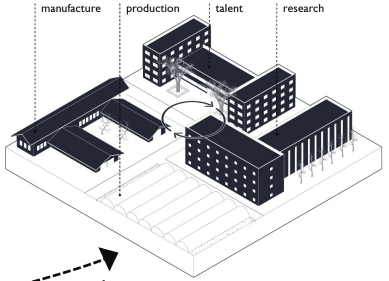




Accessible infrastructure



Densification



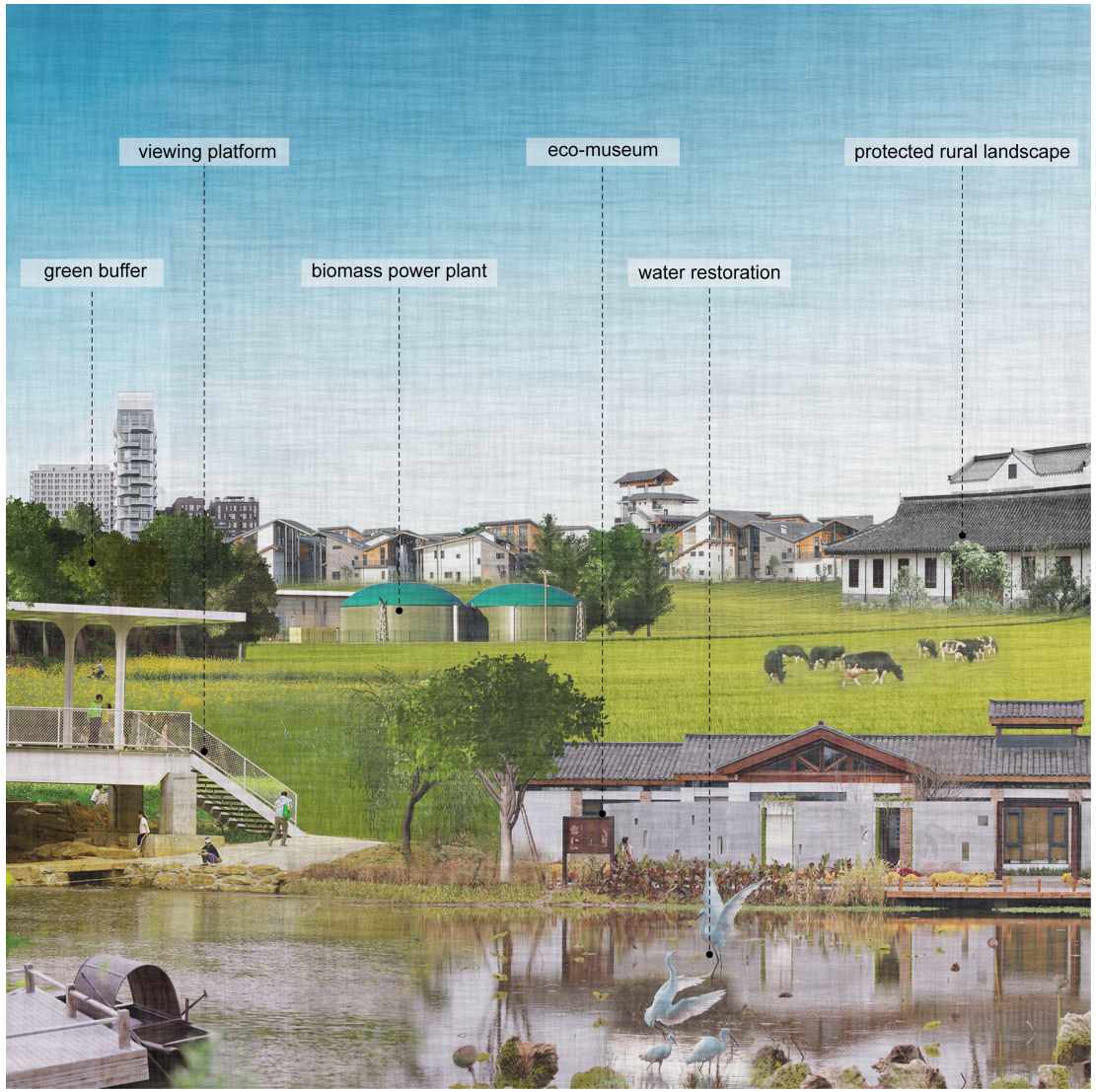
Industry cooperation

- medical care
- administration
- social meeting
- research
- study
- camping
- greenery
- restaurant
- market
- hotel
- museum
- sports
- office
- library

- urban development boundry
- expansion direction
- densified area
- rural complex
- modern agriculture park
- ecotourism zone
- cultural agritourism zone
- rural creator zone
- wetland park
- university
- cooperation
- village
- diminished village
- new built railway
- railway station
- bus station
- primary road

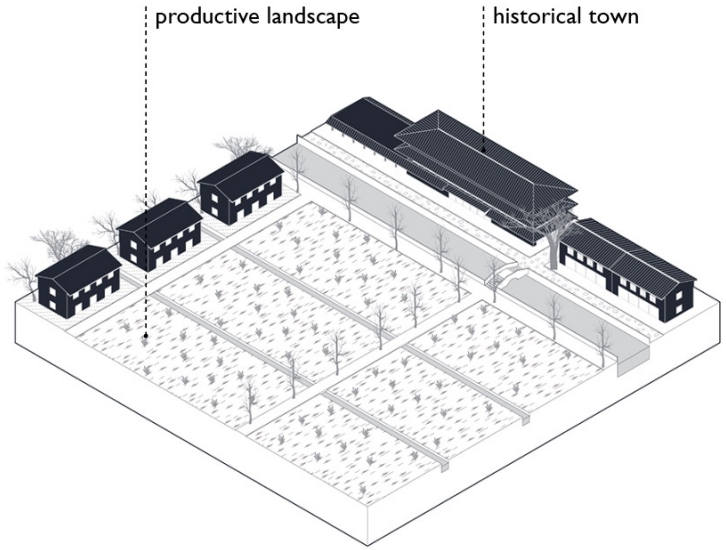
Counter urbanization

Scenario3: Eco Village

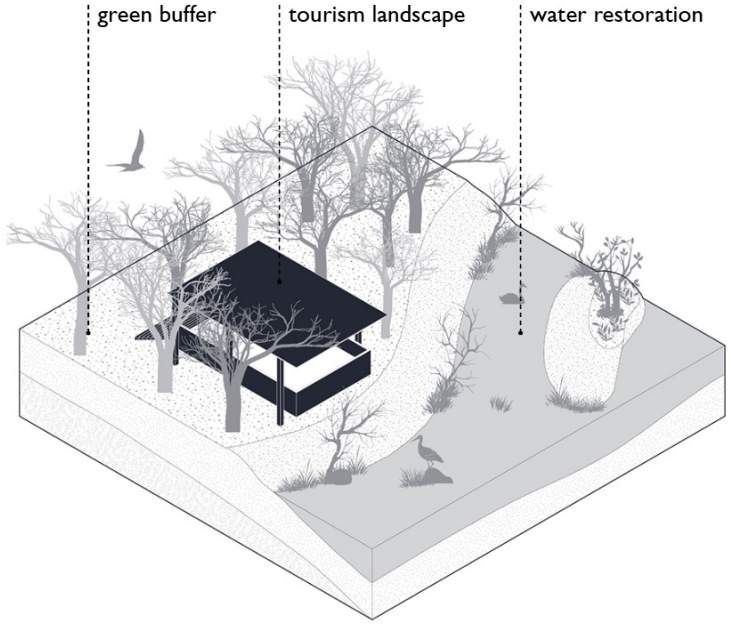


Environmental protection

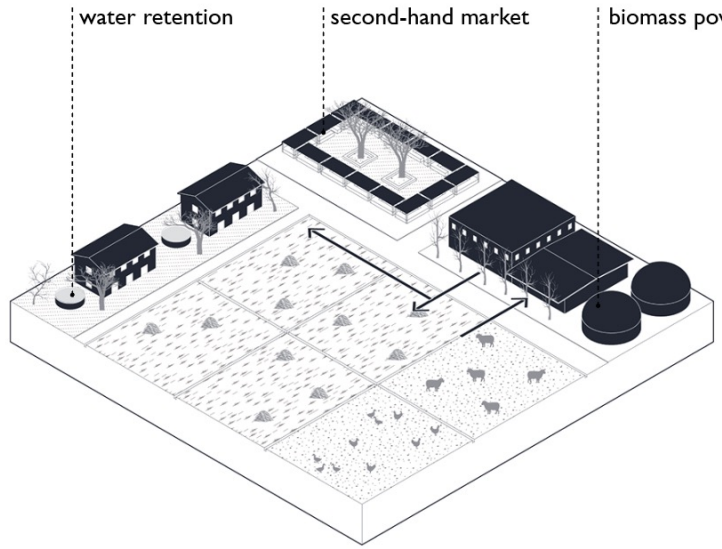
Scenario3: Eco Village



Rural landscape preservation



Ecosystem restoration

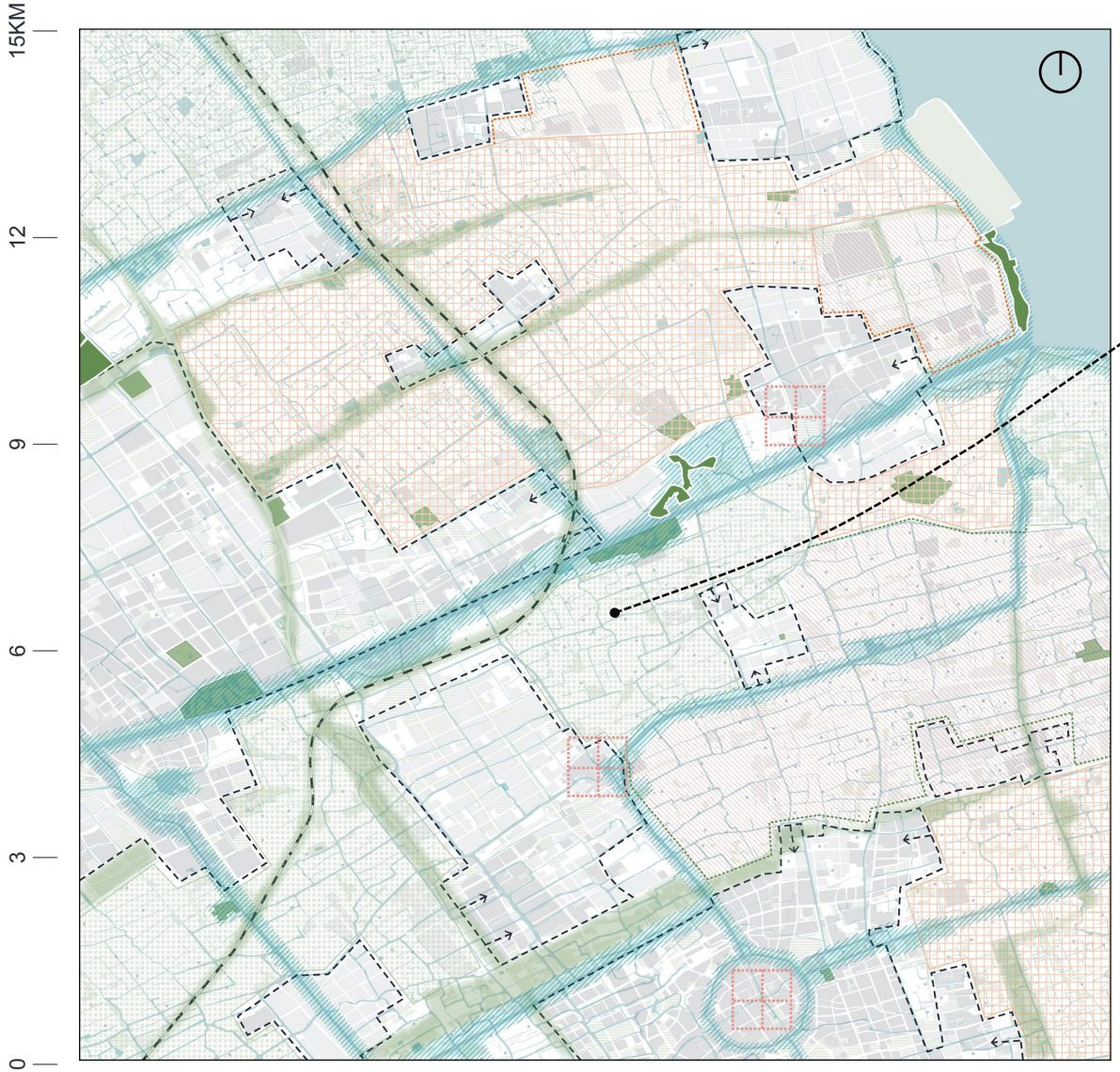


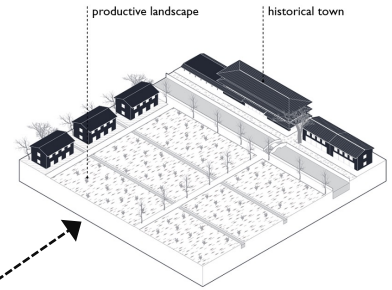
Resource recycling

Scenario3: Eco Village

- urban development boundry
- shrinkage direction
- historical protected area
- sustainable agriculture
- polder landscape protected area
- land management area
- water buffer
- green corridor
- wetland park
- greenery
- water
- railway
- village

Scenario3: Eco Village





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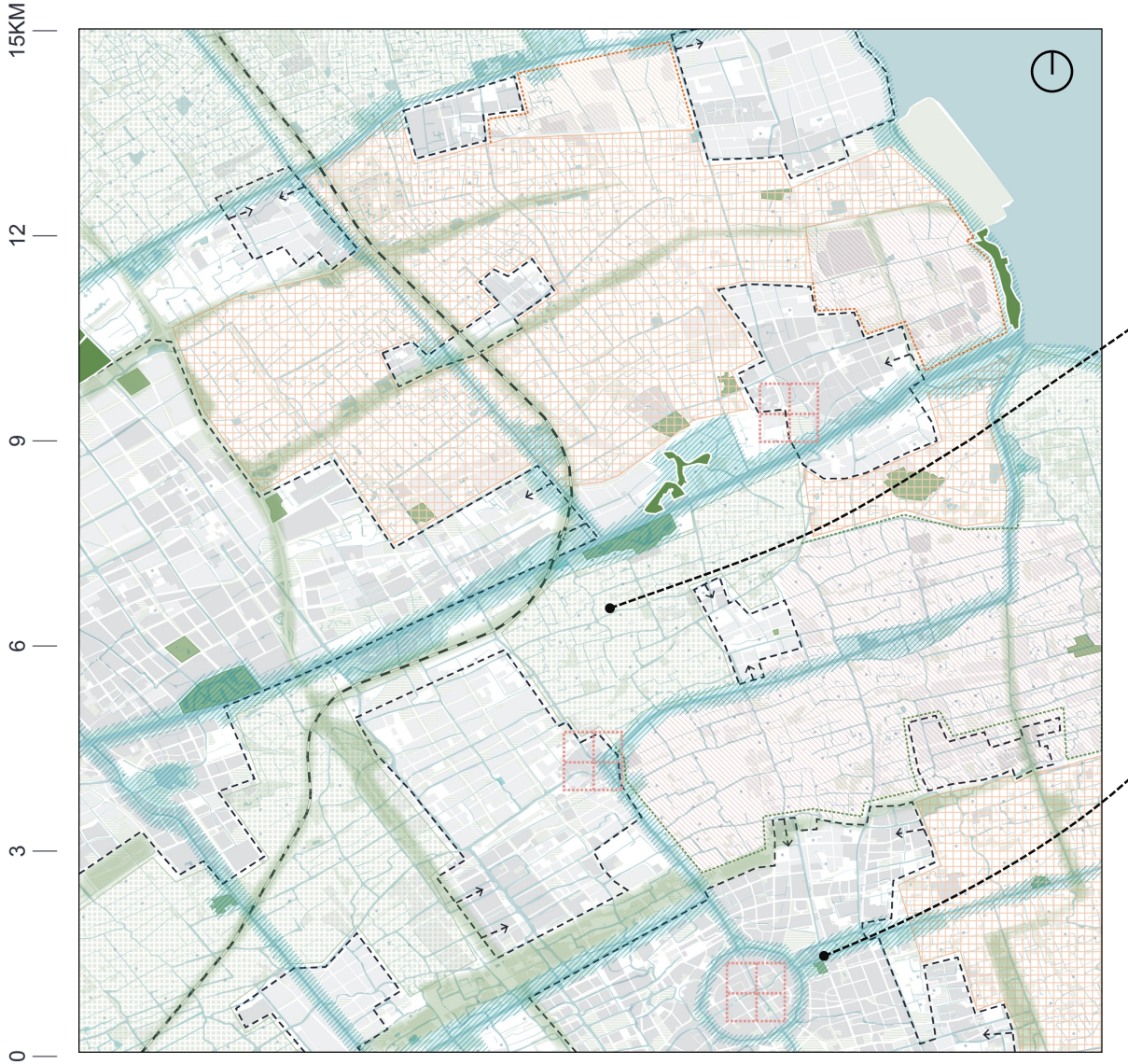

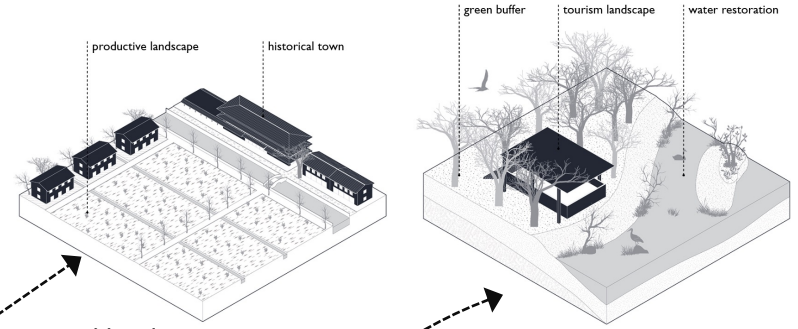

Rural landscape preservation

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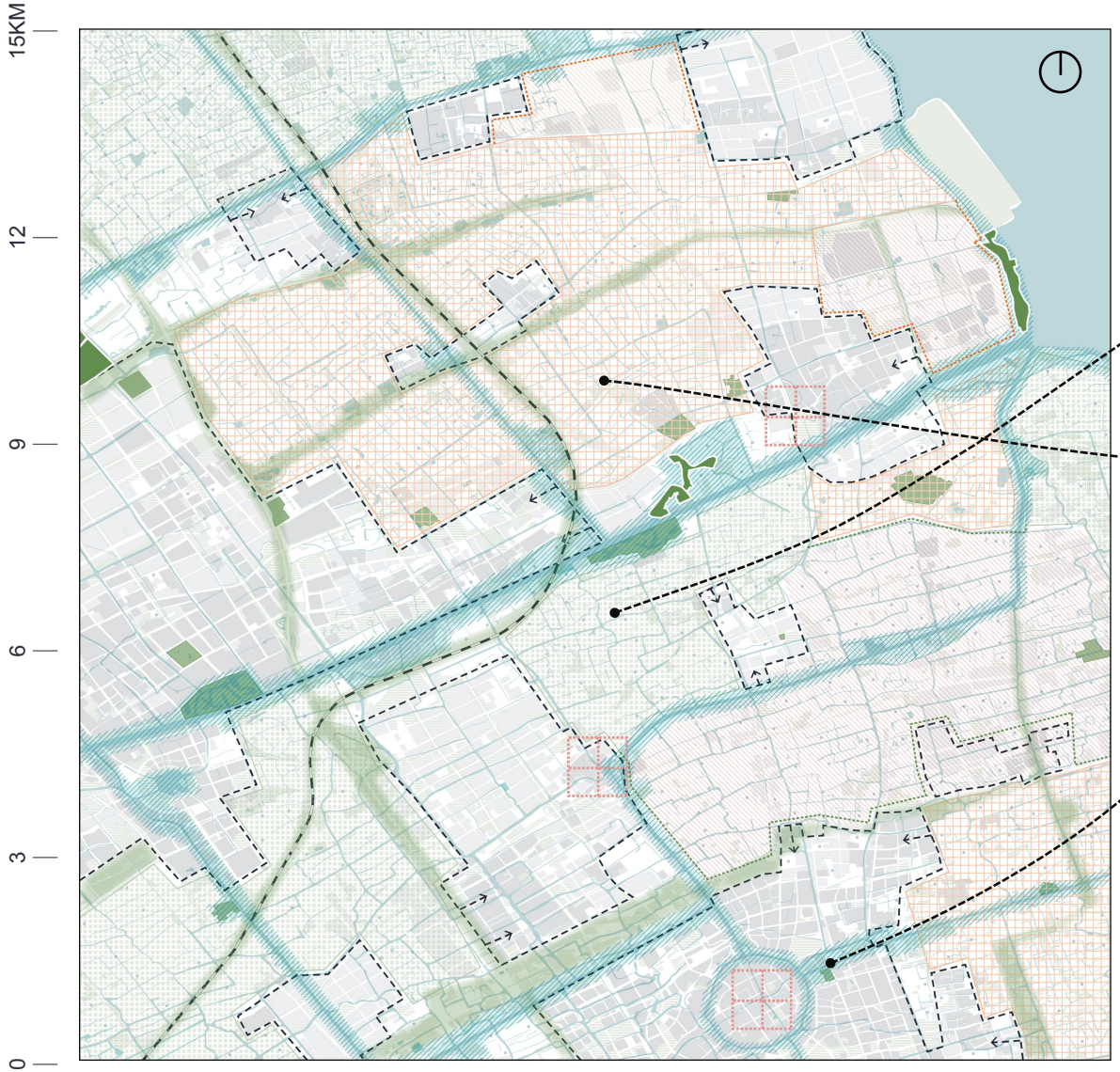
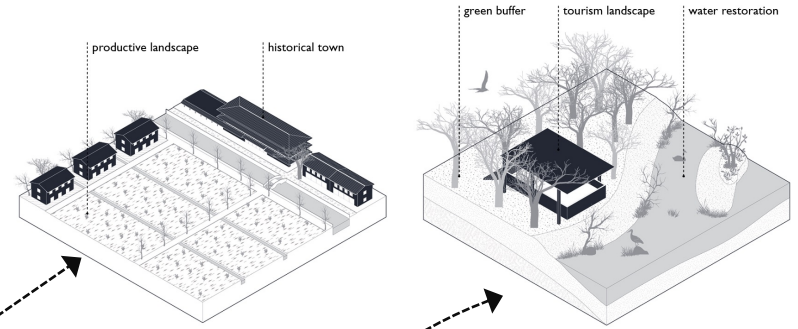
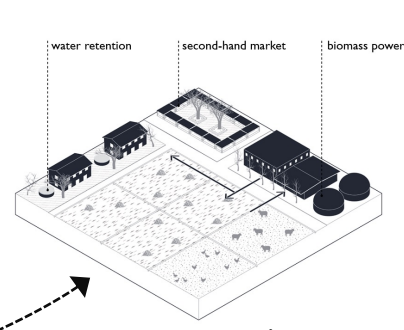




Rural landscape preservation

Ecosystem restoration



Resource recycling

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- shrinkage direction
- historical protected area
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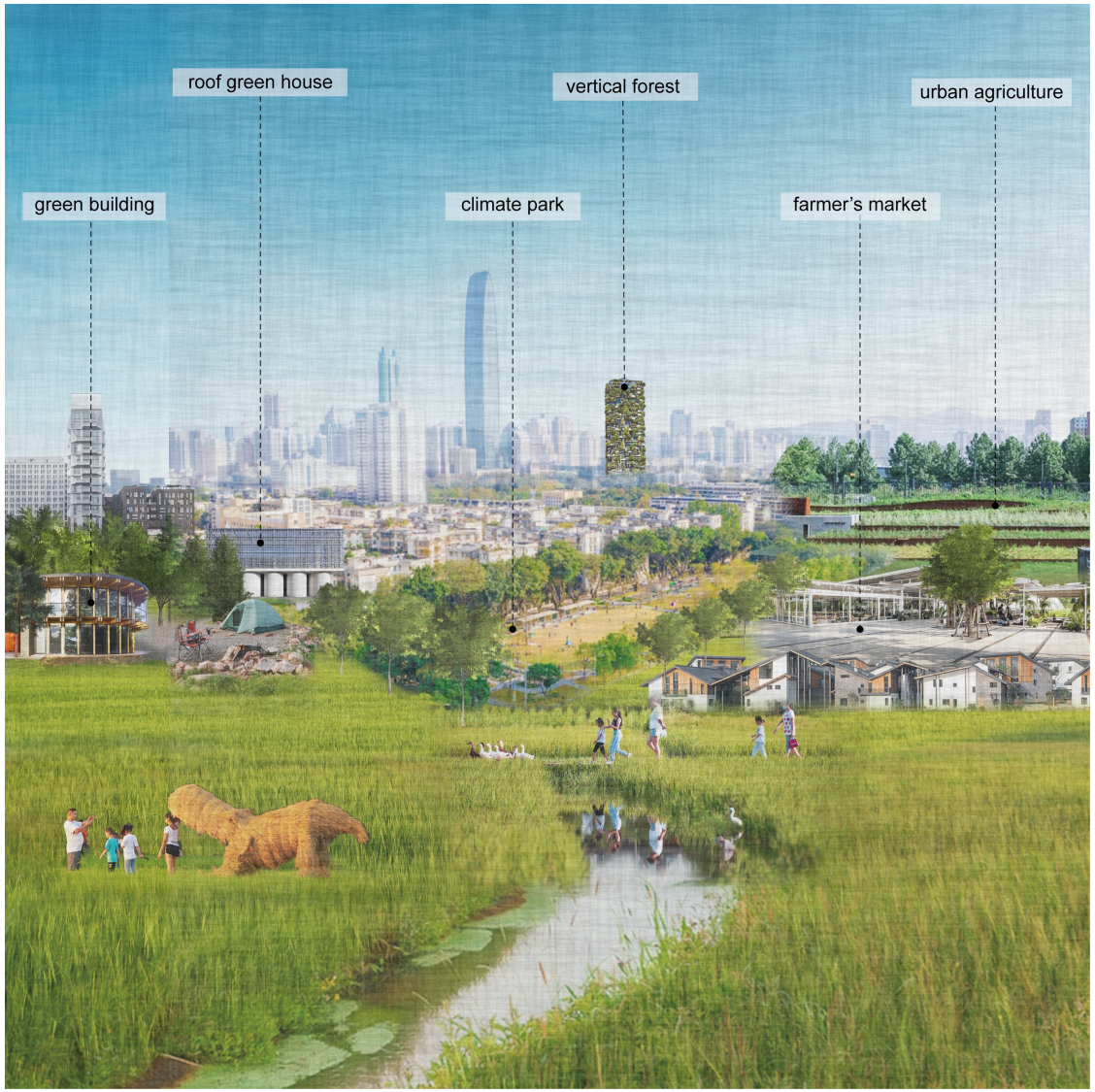
- greenery
- water
- railway
- village

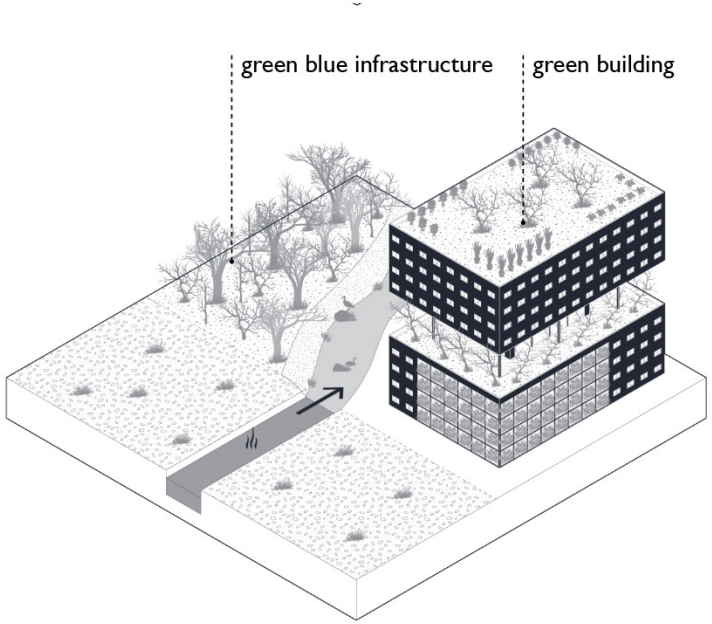
"Zwischenstadt"
(Growth of small cities and towns)

Environmental protection

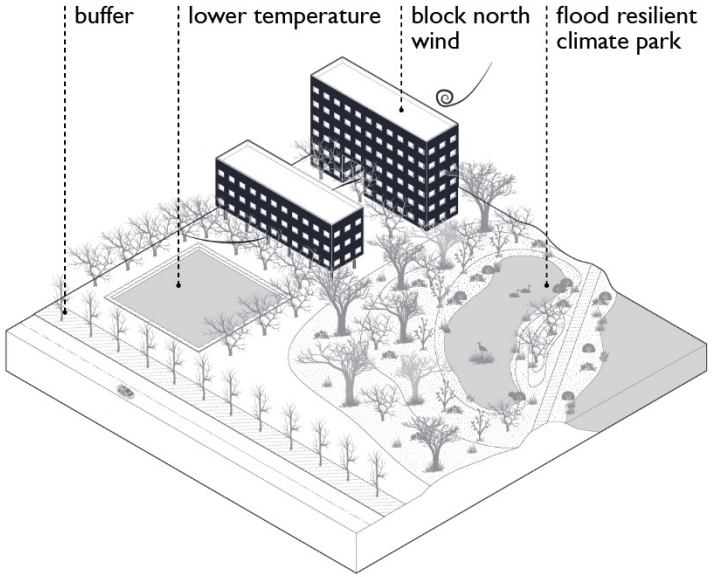
Scenario4: Garden City



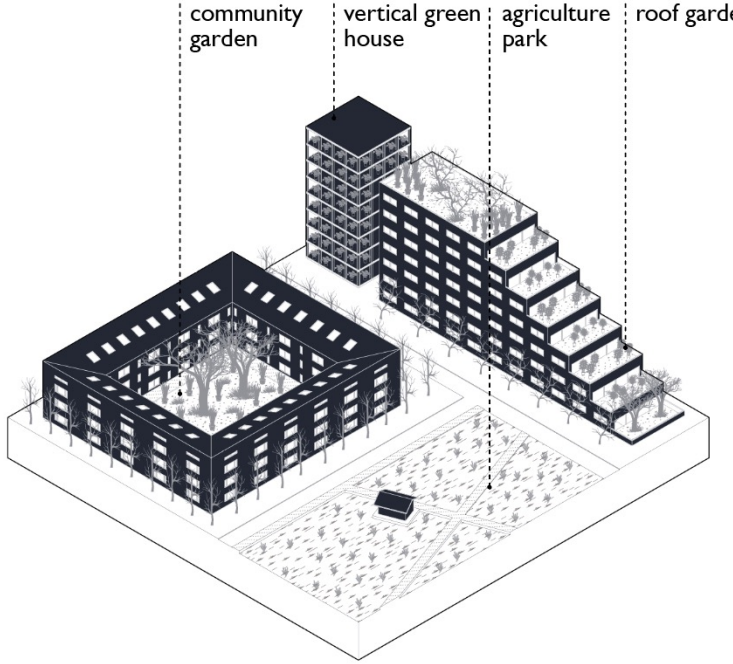
Scenario4: Garden City



Brownfield regeneration



Microclimate regulation

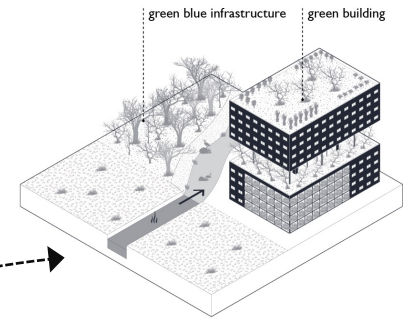


Urban agriculture

Scenario4: Garden City

- urban development boundry
- expansion direction
- farmer's market
- regeneration area
- urban agriculture
- climate park
- water buffer
- green corridor
- wetland park
- greenery
- water
- railway
- polder landscape protected area

Scenario4: Garden City



Brownfield regeneration

- urban development boundry
- expansion direction
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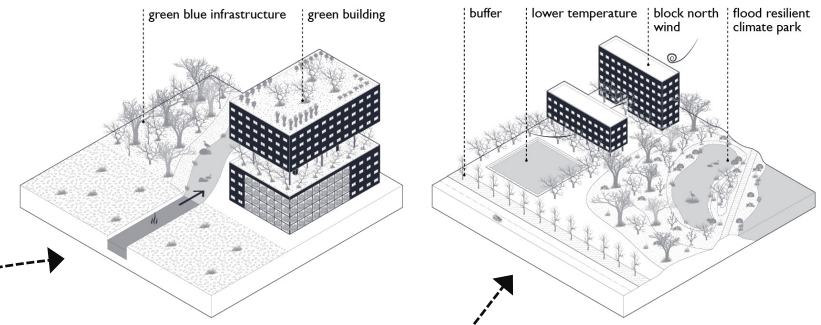

Brownfield regeneration

Microclimate regulation

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- expansion direction
- farmer's market
- regeneration area
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- climate park
- water buffer
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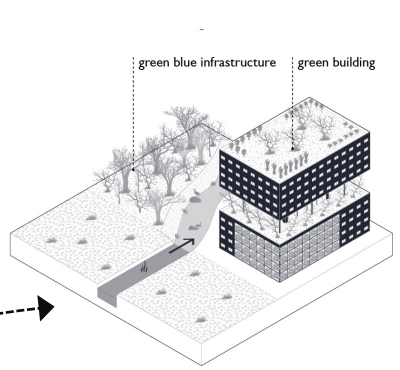
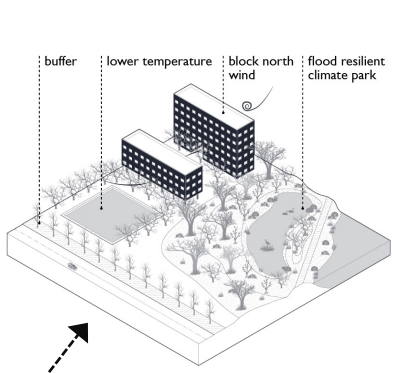
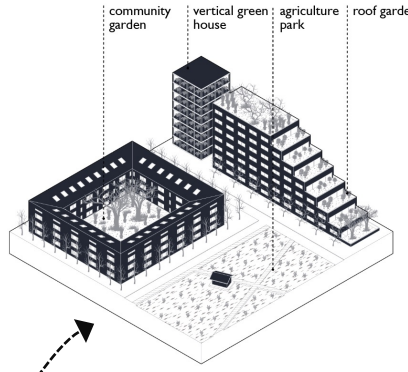


Brownfield regeneration



Microclimate regulation



Urban agriculture

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- green corridor
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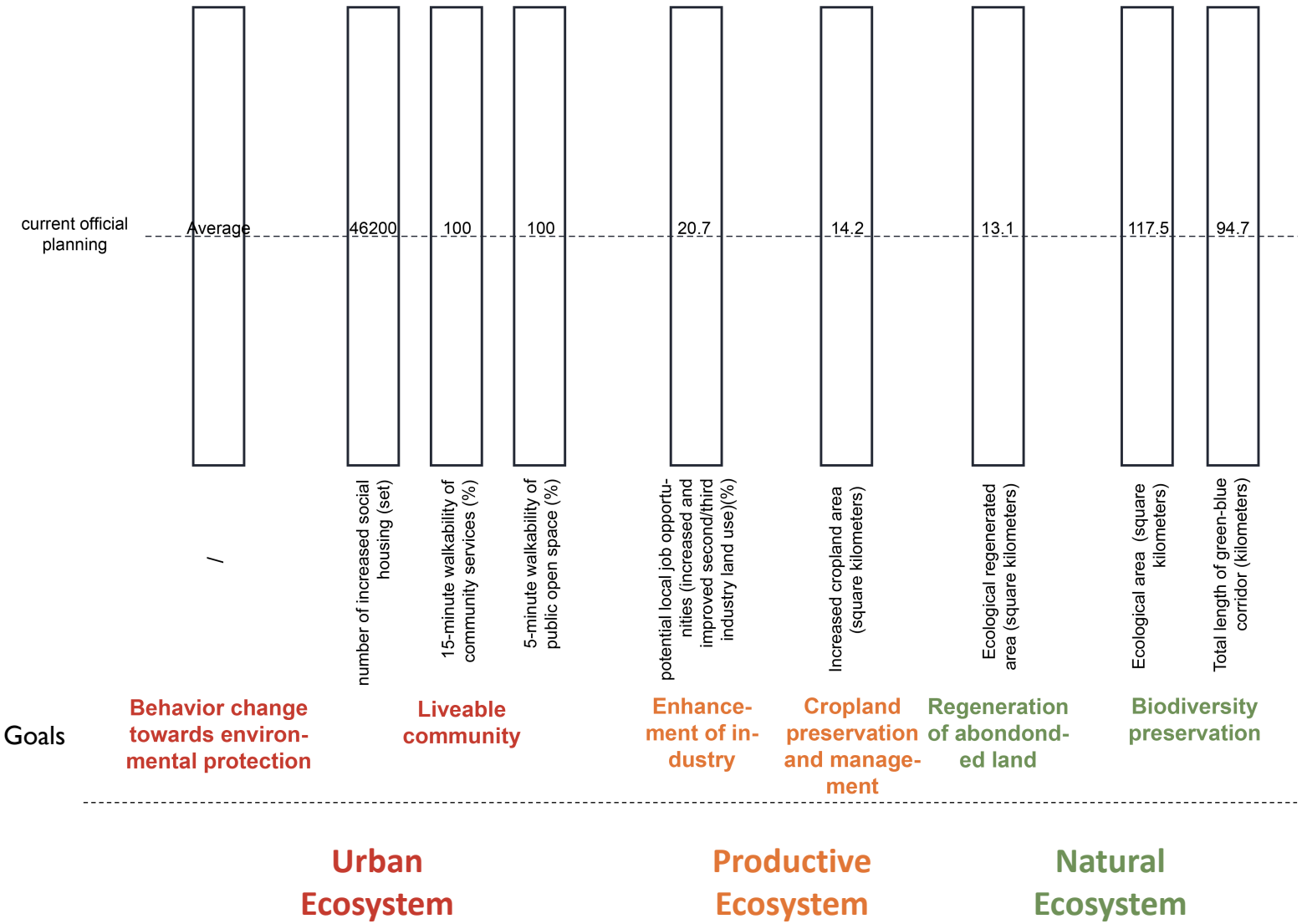
Assessment



The values of these core indicators in the official plan only represent the vision of the official plan, which has its pros and cons and cannot be used as a judgmental standard.

Goal	Indicator	Current Offi-cial Planning	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Behavior change towards environ-mental protection	/	Average	Good	Average	Excellent	Excellent
Liveable community	number of increased social housing (set)	46200	35000	88200	10160	60480
	15-minute walkabili-ty of community ser-vices (%)	100	98	100	98	100
	5-minute walkabil-ity of public open space (%)	100	100	100	100	100
Enhancement of industry	potential local job opportunities (in-creased and im-proved second/third industry land use)(%)	20.7	23.4	25.2	12.3	17.7
Cropland pres-ervation and management	Increased crop-land area (square kilometers)	14.2	15.3	6.1	20.7	13.0
Regeneration of abondonded land	Ecological regener-ated area (square kilometers)	13.1	12.5	5.5	21.3	12.3
Biodiversity preservation	Ecological area (square kilometers)	117.5	130.0	123.1	138.9	129.9
	Total length of green-blue corridor (kilometers)	94.7	107.5	107.5	142.4	/

Reflection on Official Planning

Urban Ecosystem

- Number of social housing based on large population influx
- Lack of policy and incentives on behavior changes toward environmental protection

Productive Ecosystem

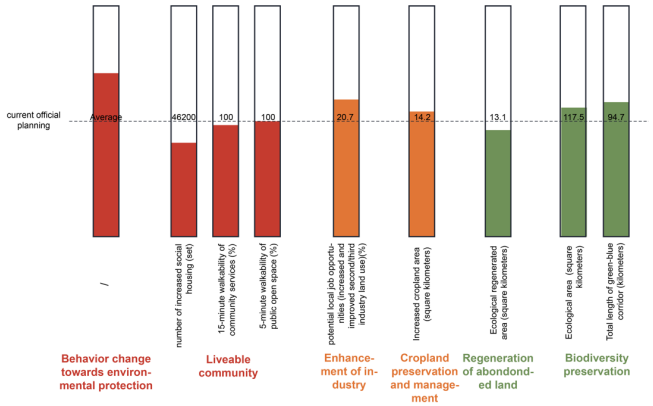
- Less emphasis on the agriculture sector

Natural Ecosystem

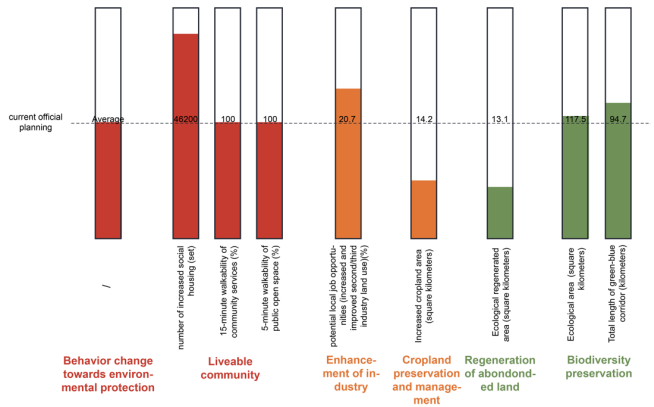
- Economic development remains the main purpose of planning

Assessment

Industrial reconstruction



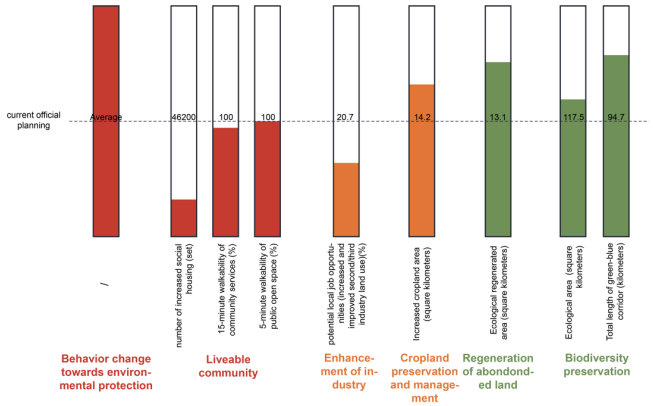
S1



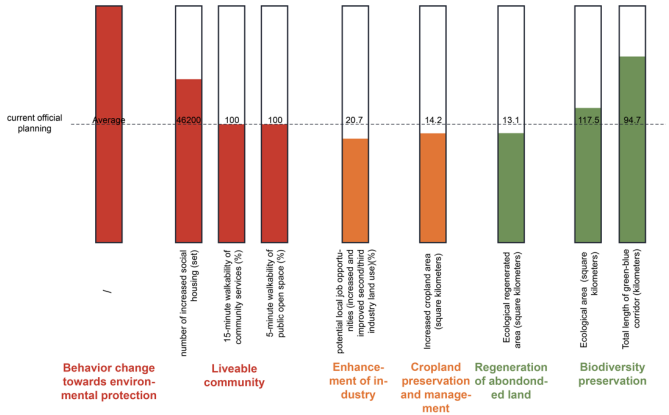
S2

Counter urbanization

"Zwischenstadt"
(Growth of small cities and towns)



S3

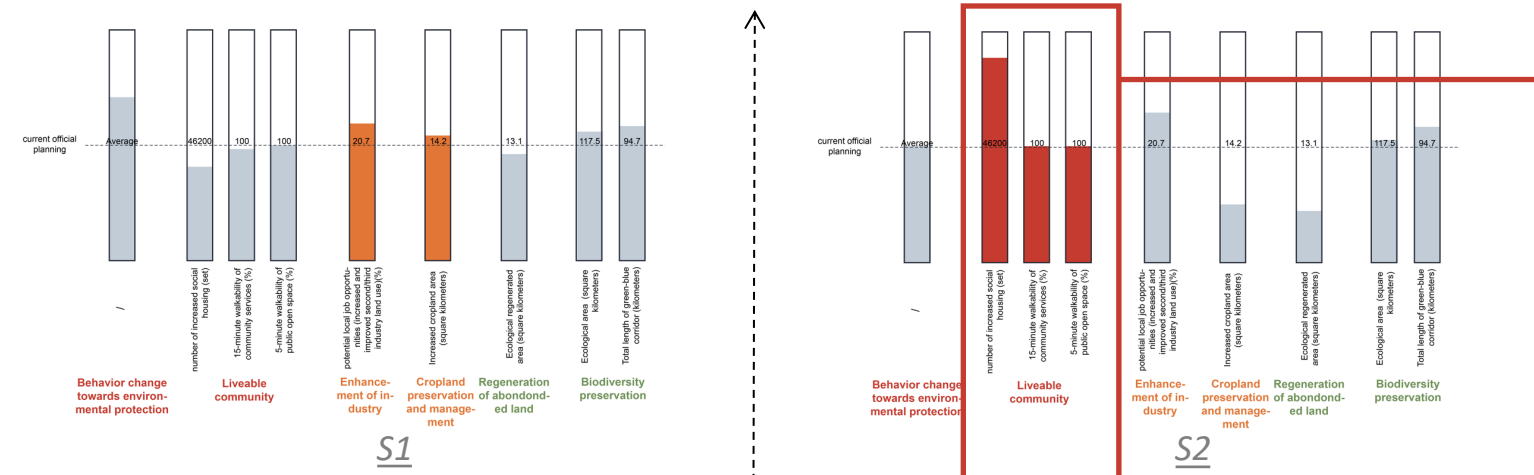


S4

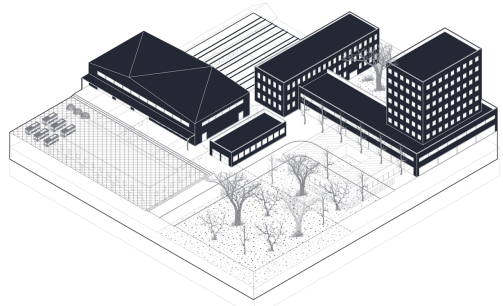
Ecological protection

Principle

Industrial reconstruction



Reliable Settlement

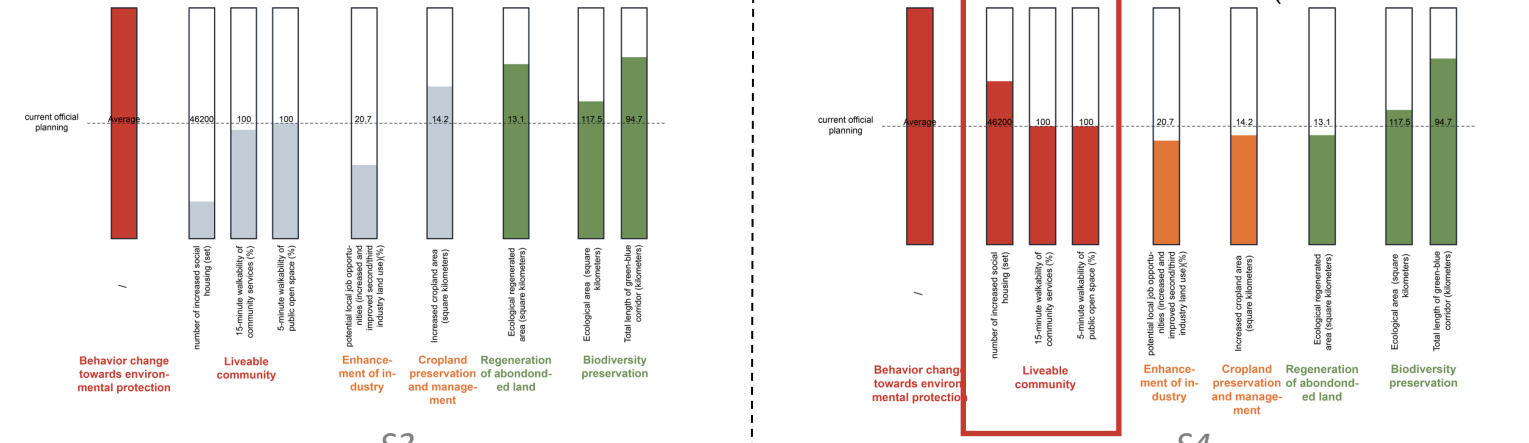


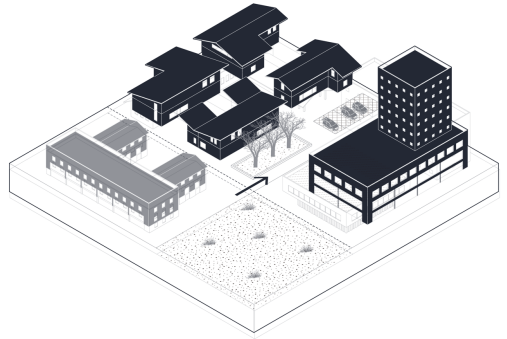
Accessible infrastructure

Counter urbanization

”Zwischenstadt”

(Growth of small cities and towns)





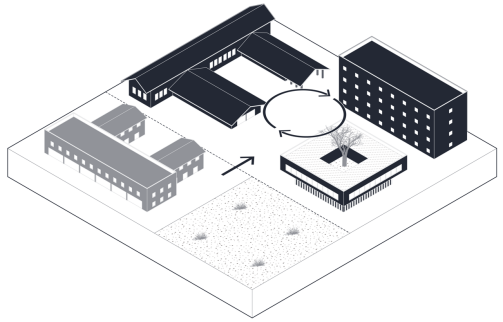
Densification and renewal

Ecological protection

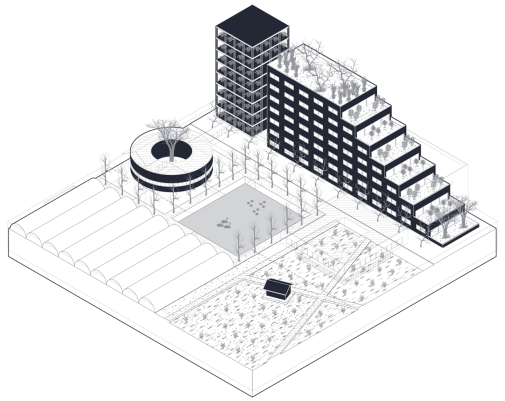
Principle

Industrial reconstruction

Resilient Industry



Brownfield regeneration for diversified industry

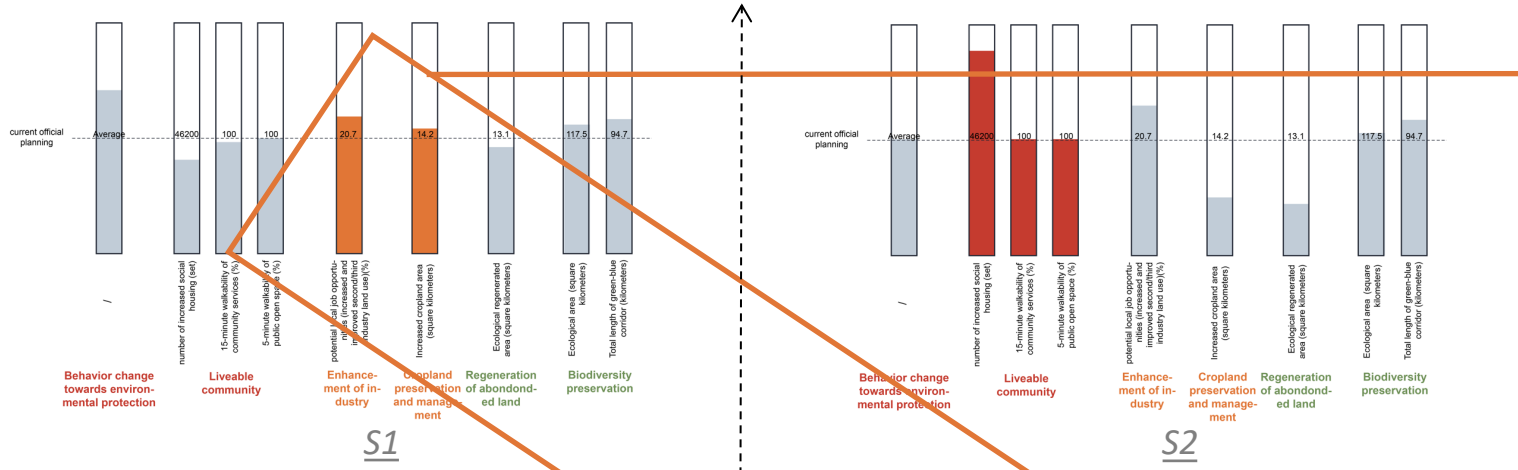


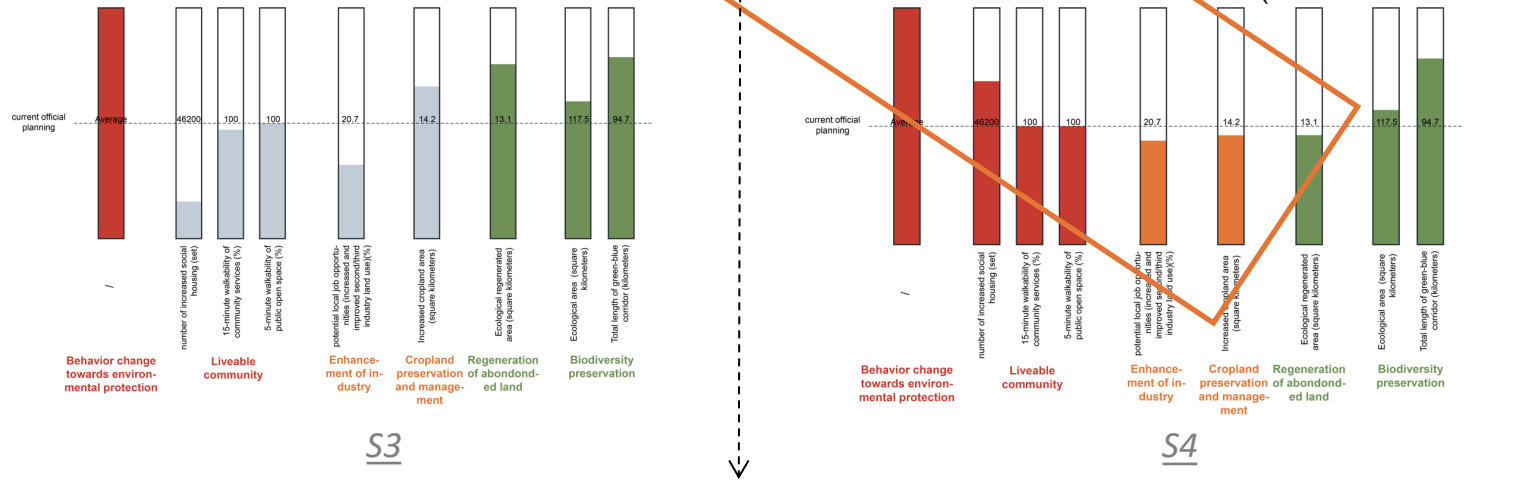
Modern and urban agriculture

Counter urbanization

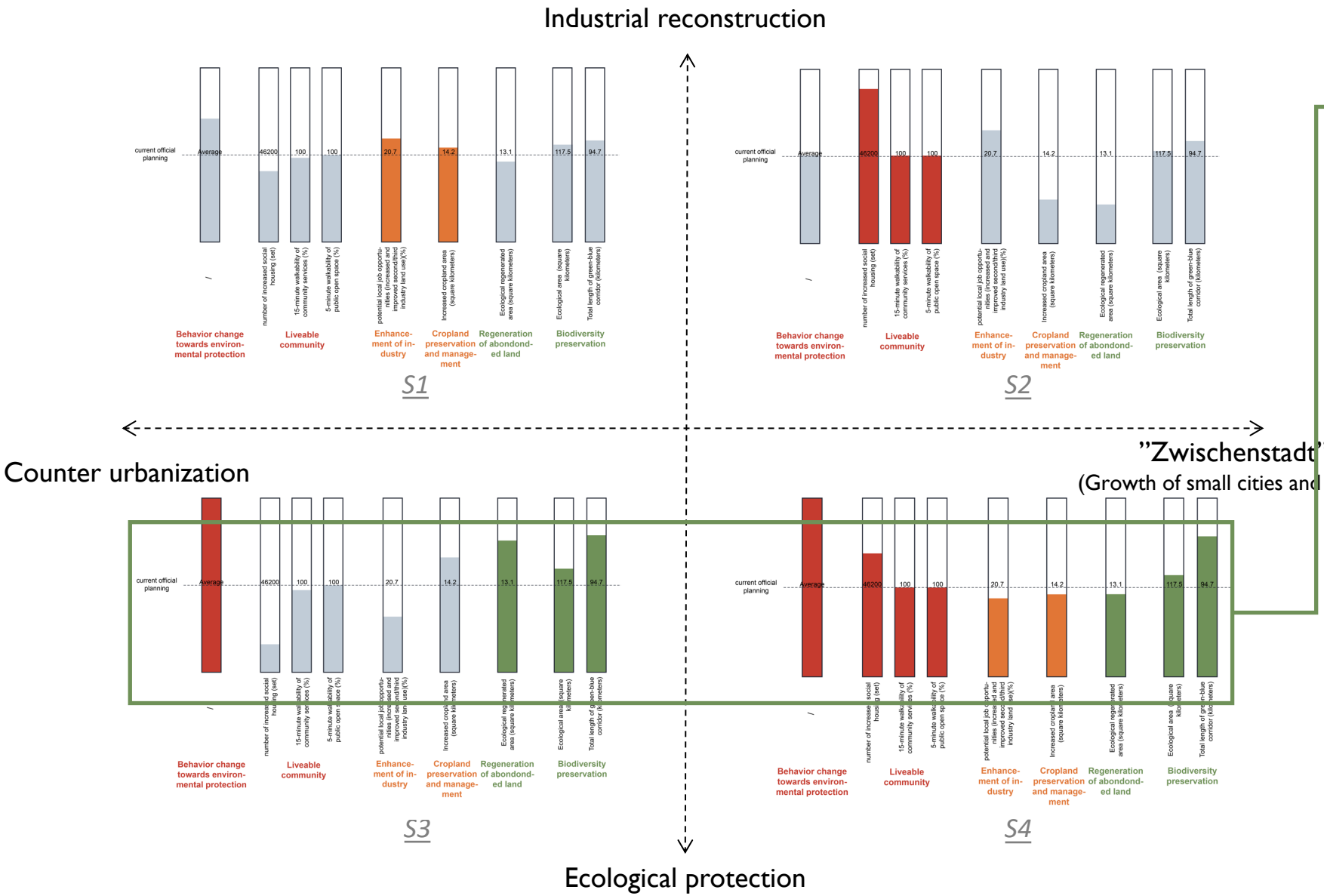
"Zwischenstadt"
(Growth of small cities and towns)

Ecological protection

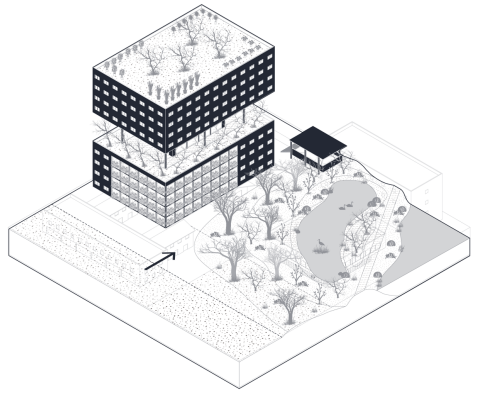




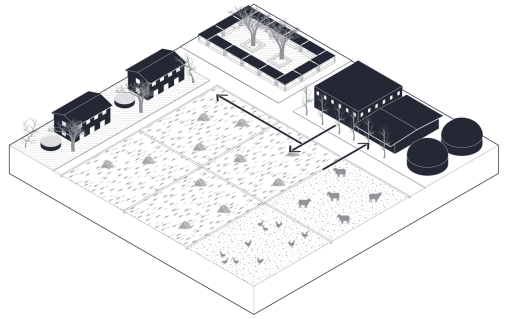
Principle



Revitalized Environment

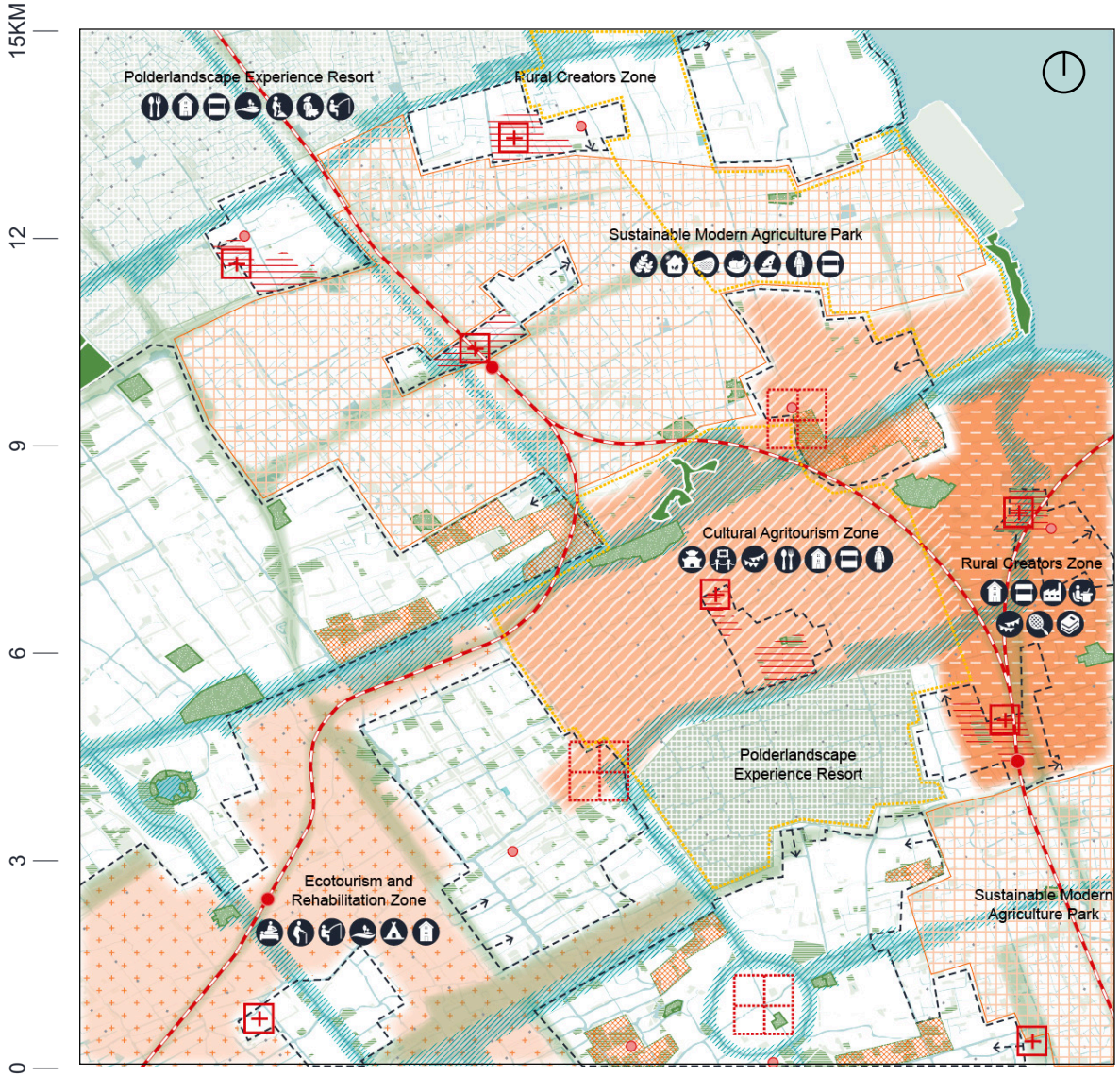


Ecosystem restoration



Resource recycling

Strategic Plan Towards 2050



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- sustainable modern agriculture park
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- cultural agritourism zone
- rural creator zone
- polder landscape experience resort
- densification area
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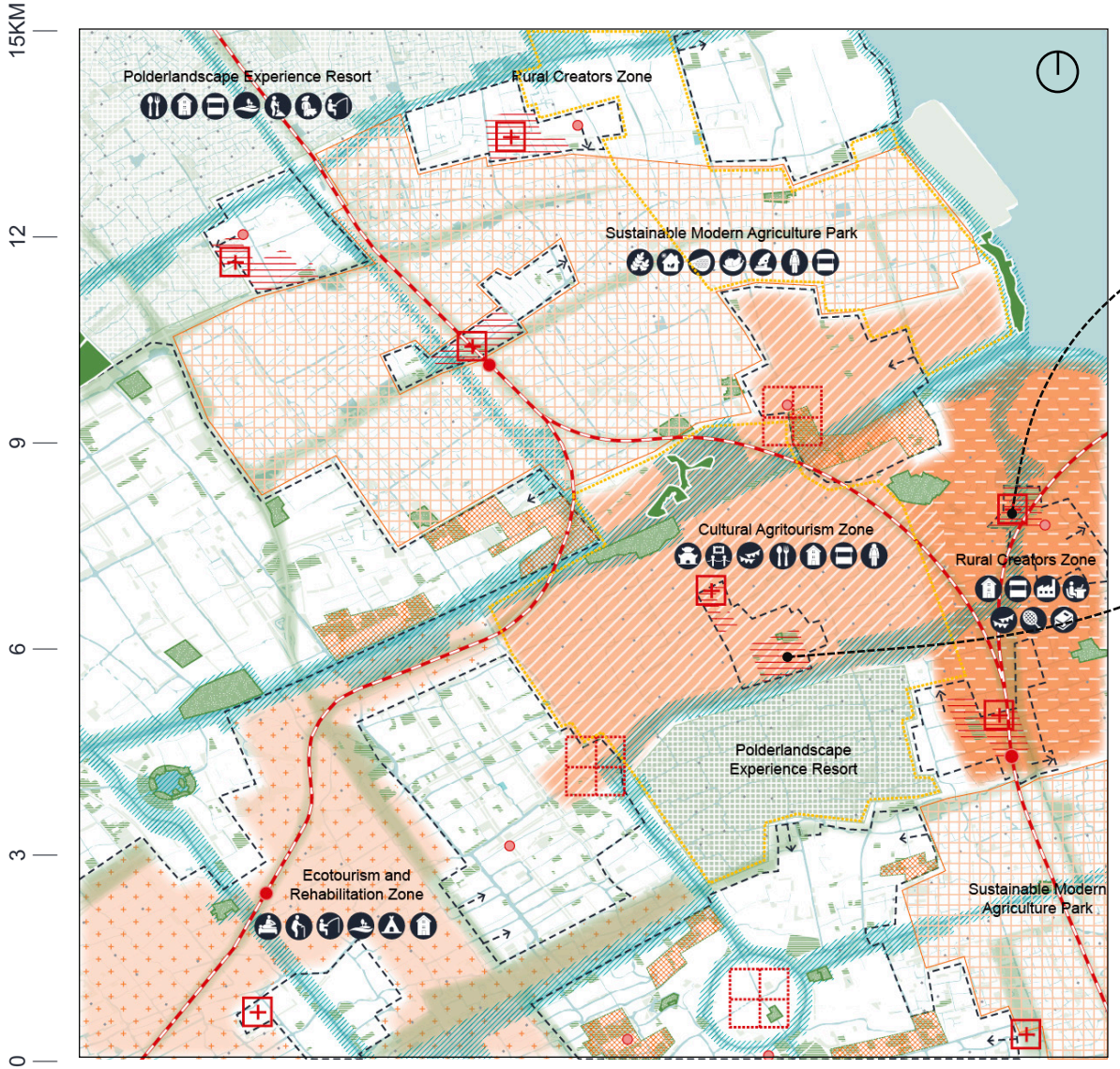
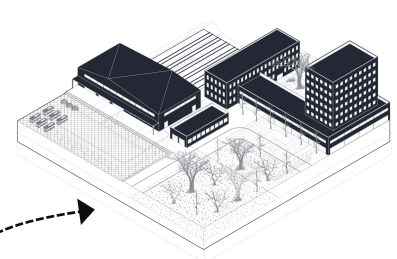
- climate park
- wetland park
- water buffer
- green corridor
- water
- historical town
- rural complex project
- railway
- railway station
- bus station
- village
- flexible zone for future possibilities

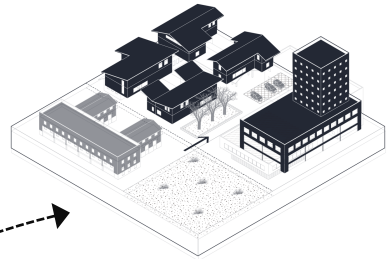
- agriculture production
- greenhouse
- aquaculture
- fishing
- fruit picking
- planting experience
- breeding experience
- homestay
- restaurant
- market
- tourism landscape
- camping
- festival
- historical town
- museum
- old care
- rehabilitation
- office
- sports
- library
- factory
- research
- study

Strategic Plan Towards 2050





Accessible infrastructure



Densification and renewal

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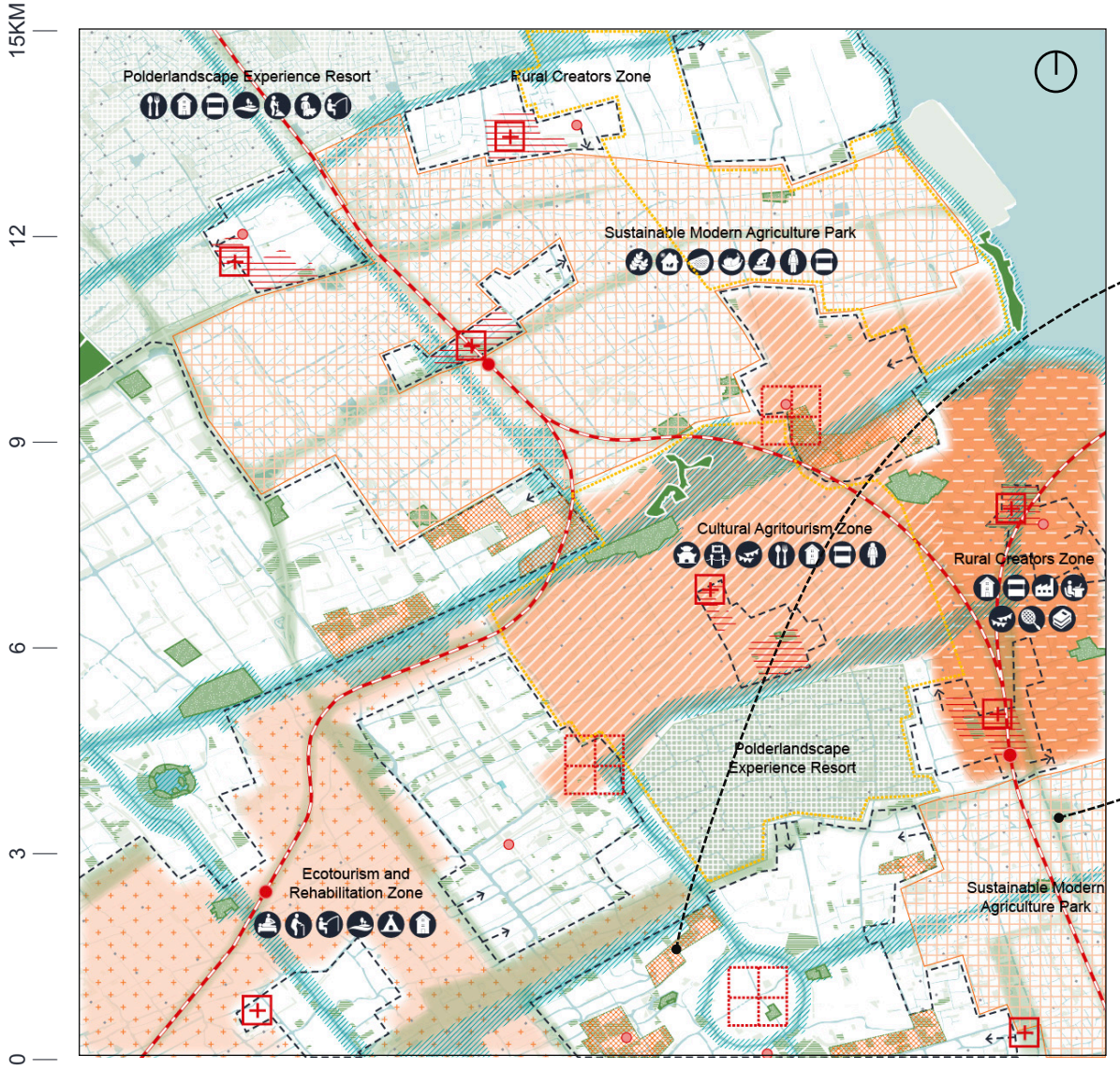
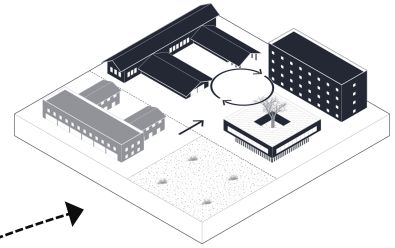
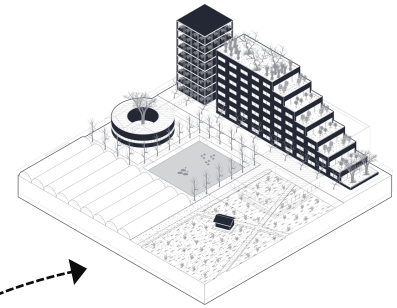
Strategic Plan Towards 2050





Brownfield regeneration for diversified industry

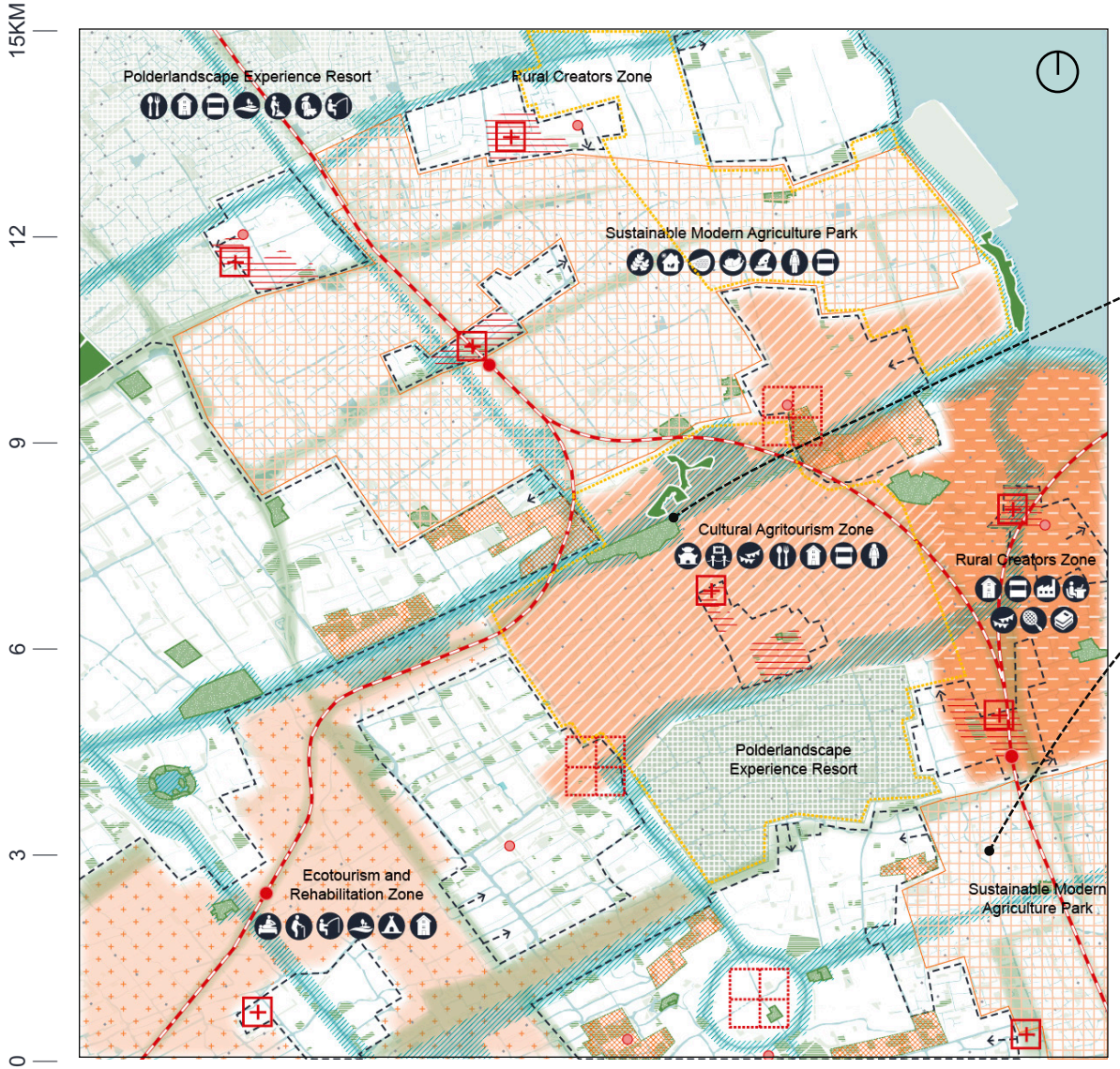


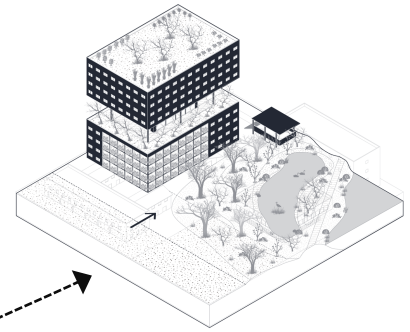
Modern and urban agriculture

- urban development boundry
- expansion/shrinkage direction
- sustainable modern agriculture park
- ecotourism and rehabilitation zone
- cultural agritourism zone
- rural creator zone
- polder landscape experience resort
- densification area
- regeneration area
- urban agriculture
- climate park
- wetland park
- water buffer
- green corridor
- water
- historical town
- rural complex project
- railway
- railway station
- bus station
- village
- flexible zone for future possibilities

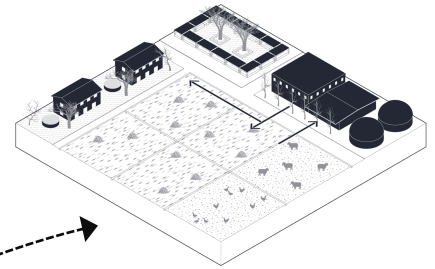
- agriculture production
- greenhouse
- aquaculture
- fishing
- fruit picking
- planting experience
- breeding experience
- homestay
- restaurant
- market
- tourism landscape
- camping
- festival
- historical town
- museum
- old care
- rehabilitation
- office
- sports
- library
- factory
- research
- study

Strategic Plan Towards 2050





Ecosystem restoration



Resource recycling

- urban development boundry
- expansion/shrinkage direction
- sustainable modern agriculture park
- ecotourism and rehabilitation zone
- cultural agritourism zone
- rural creator zone
- polder landscape experience resort
- densification area
- regeneration area
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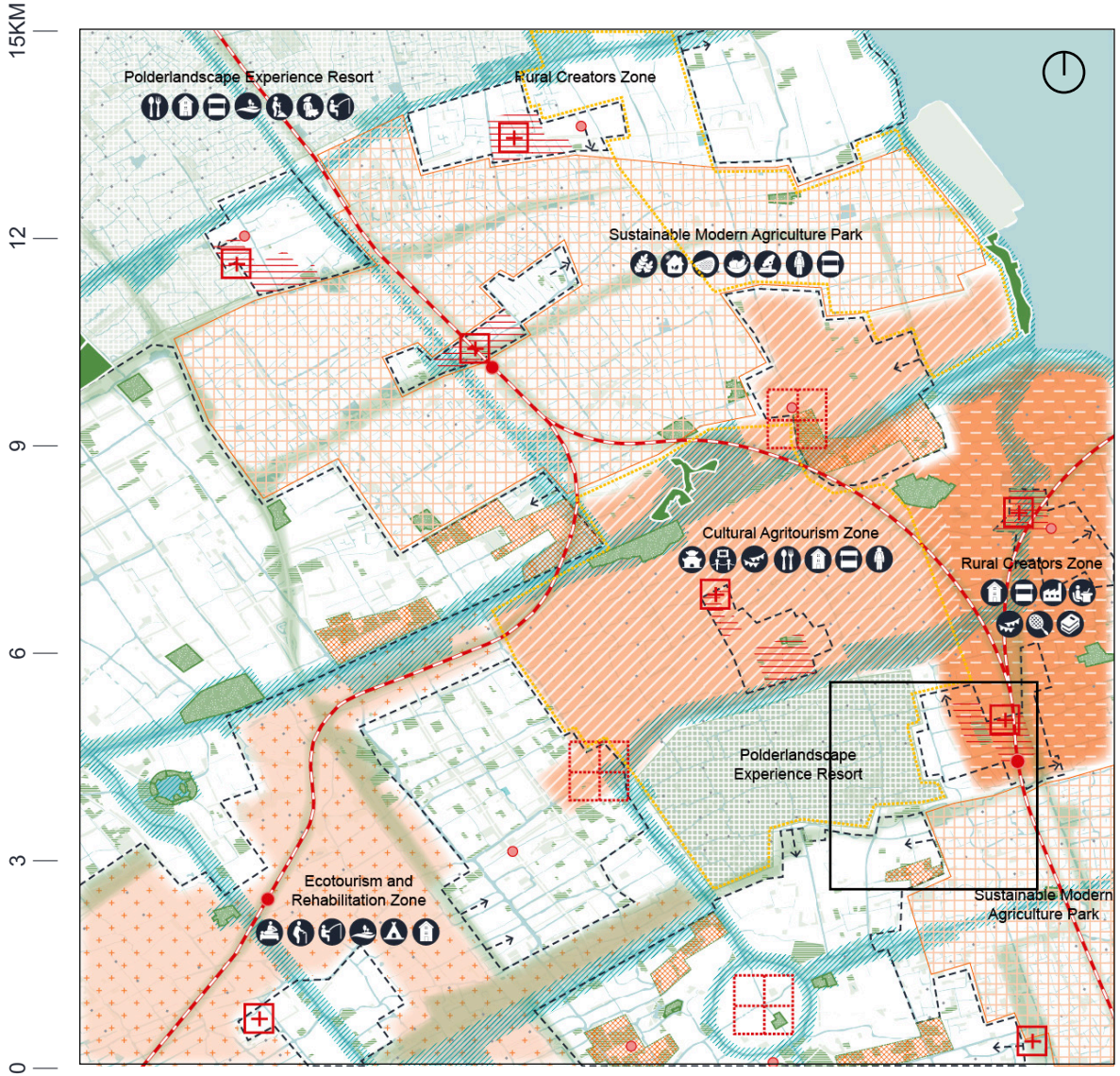
Strategic Plan Towards 2050



- urban development boundry
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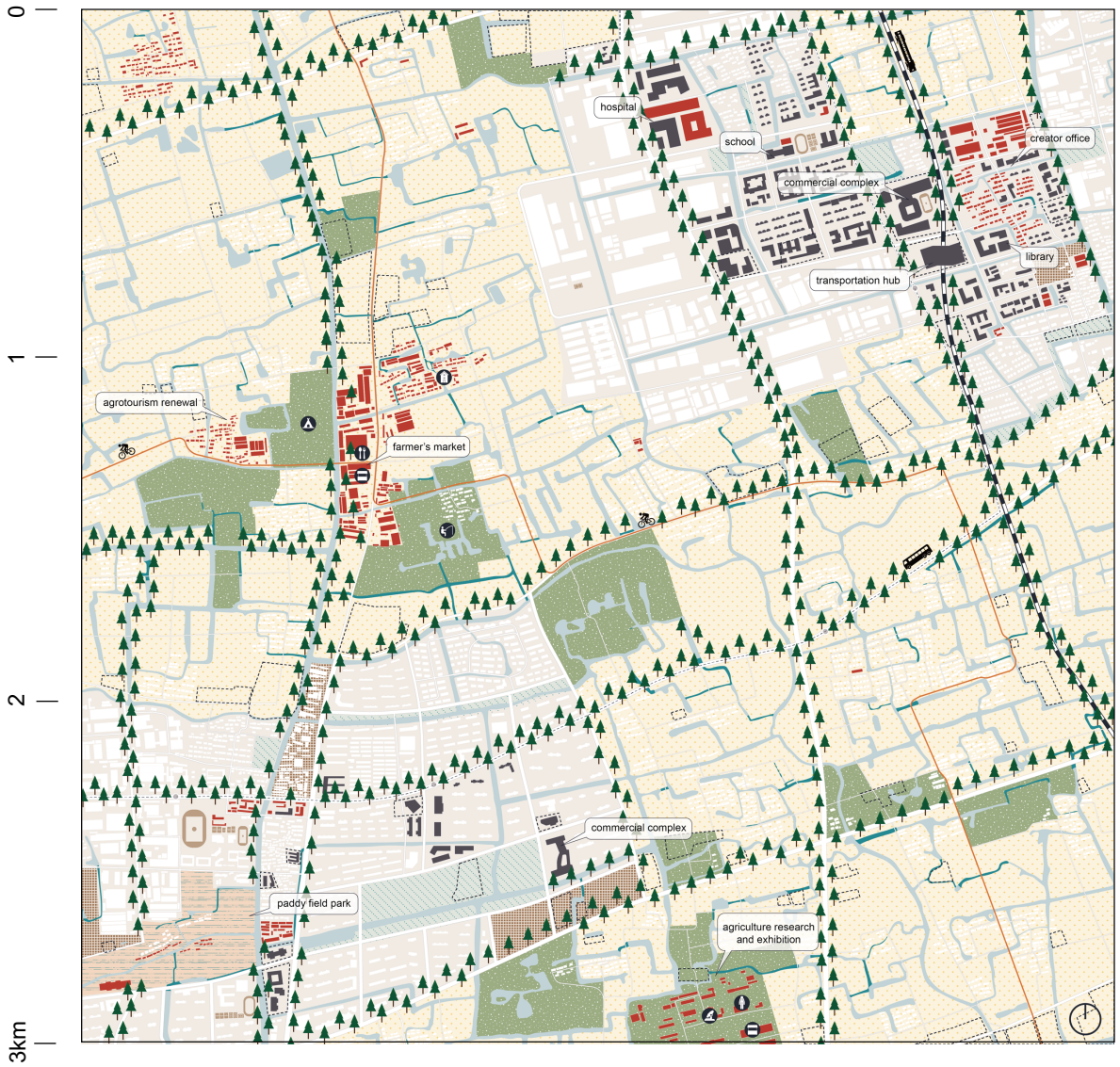
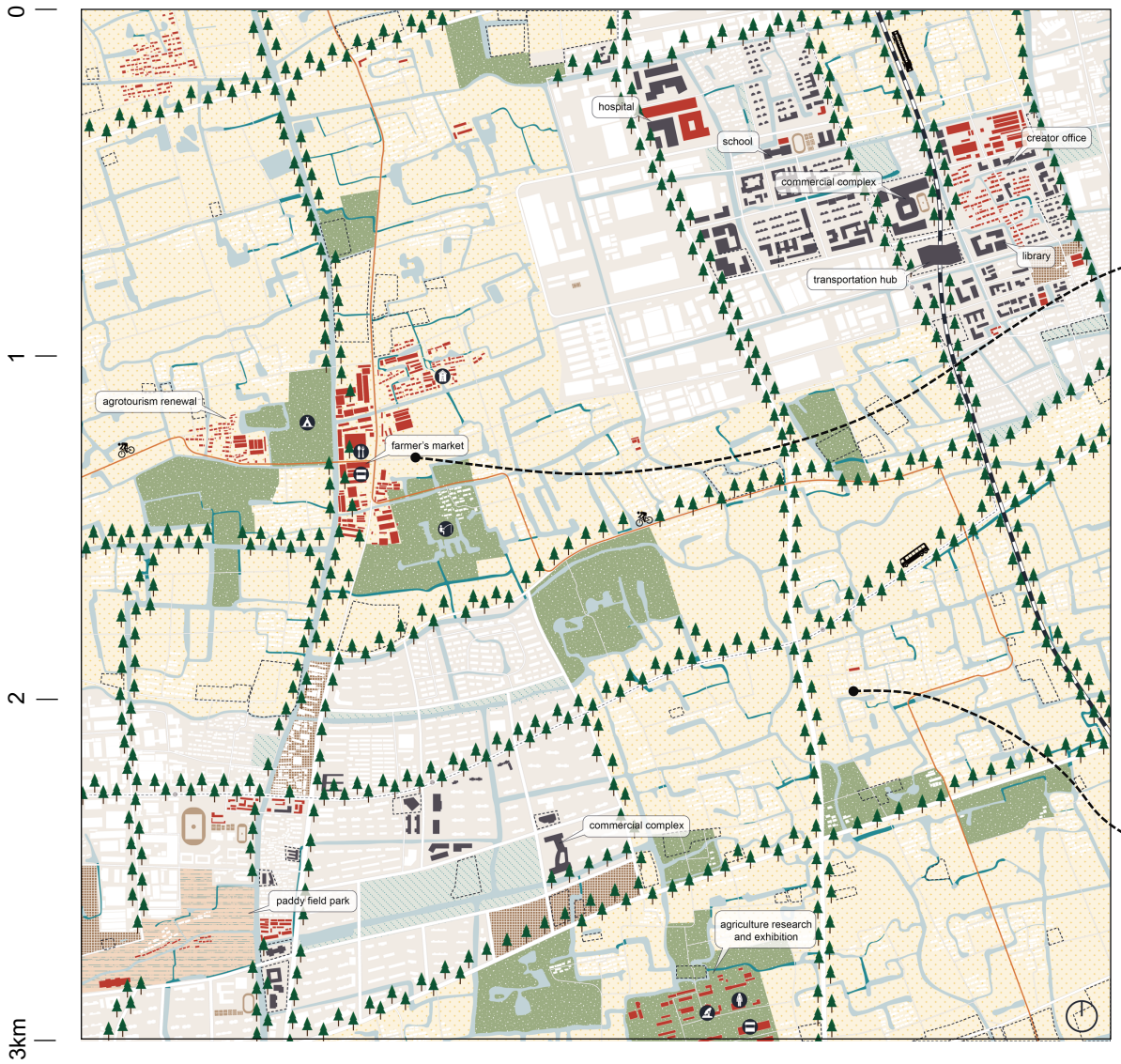
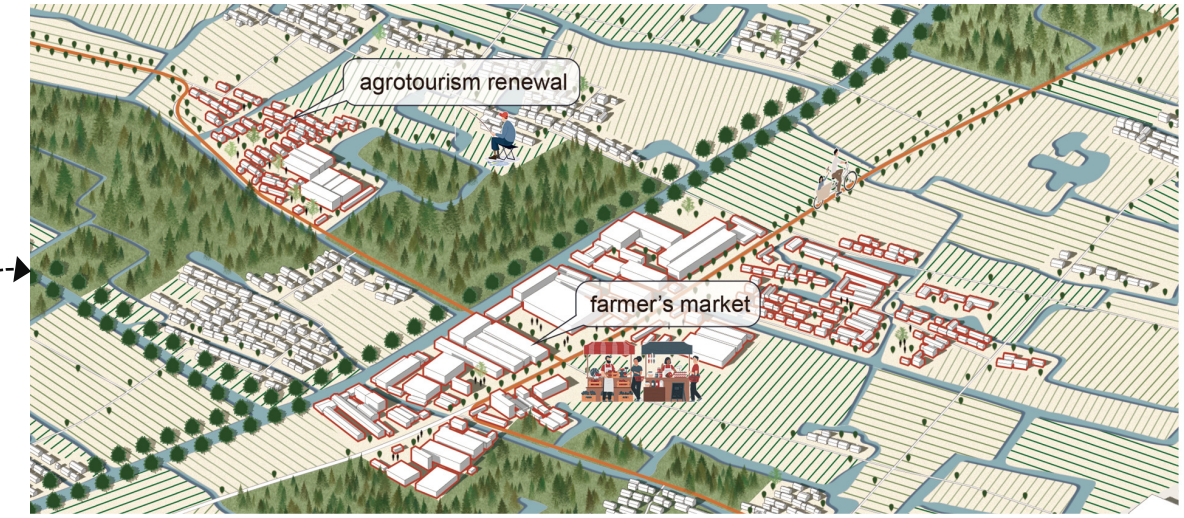
- factory
- research
- study

Showcase: Xuxing town

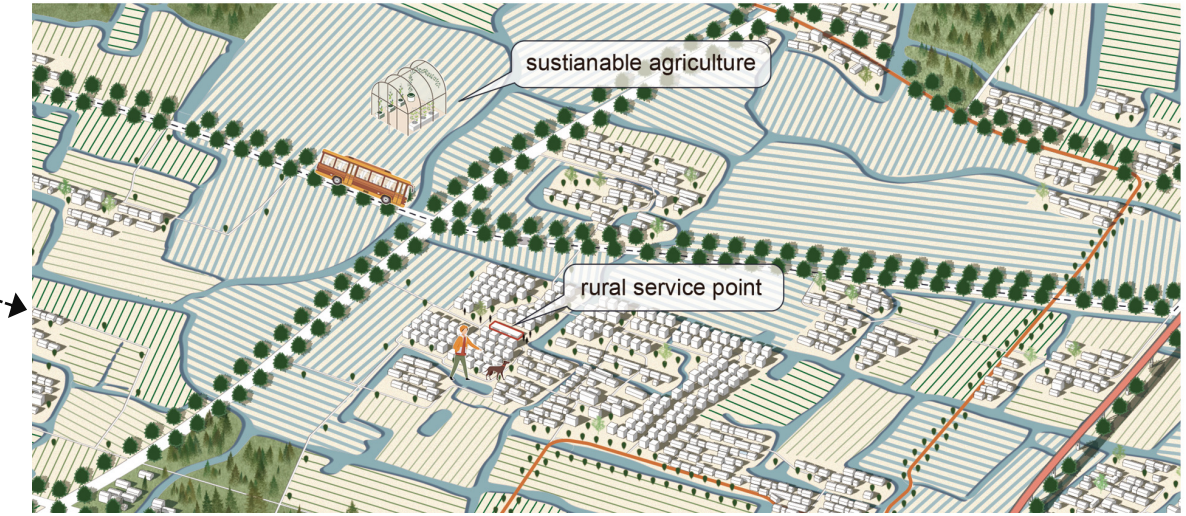


Showcase: Xuxing town



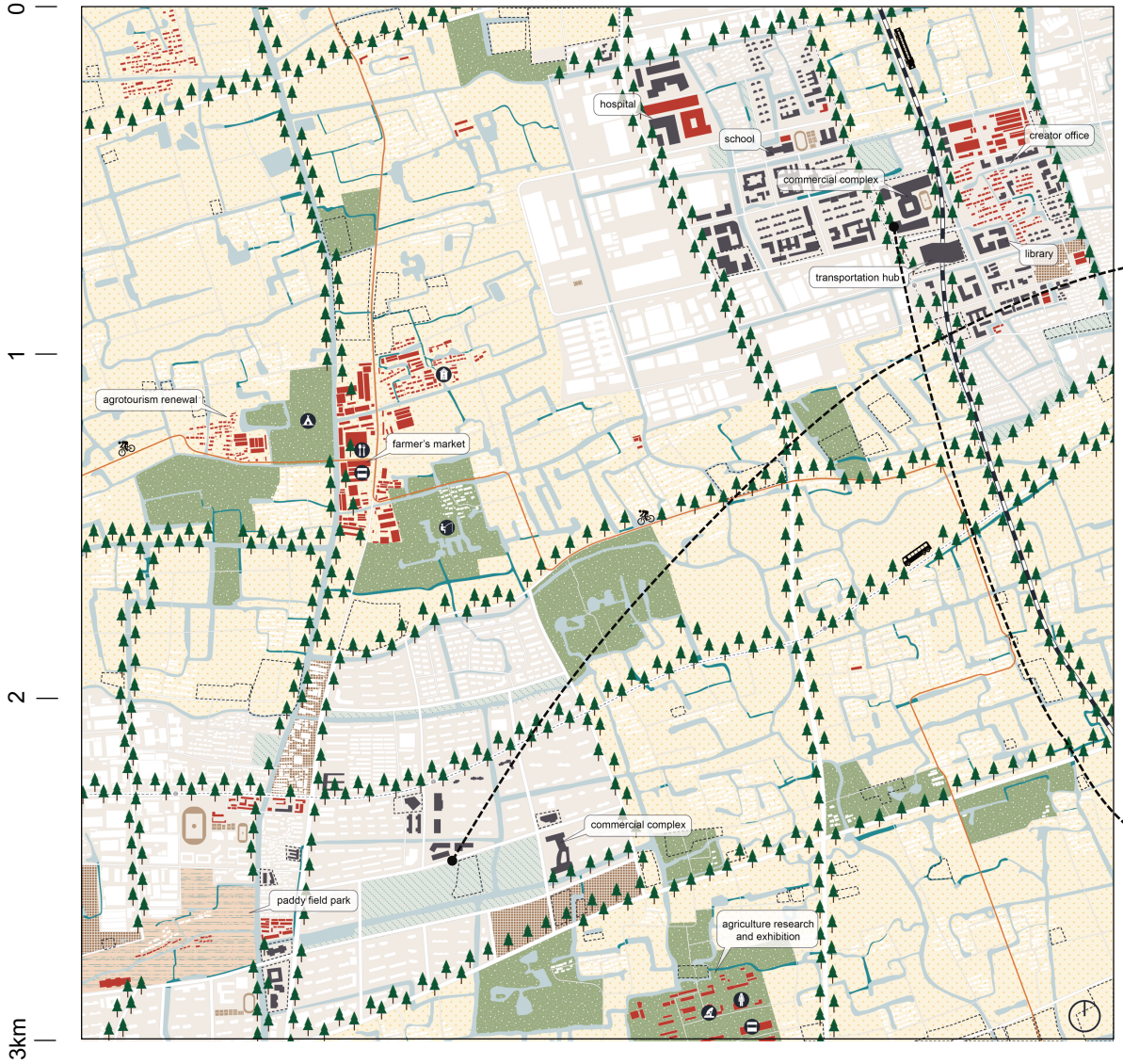


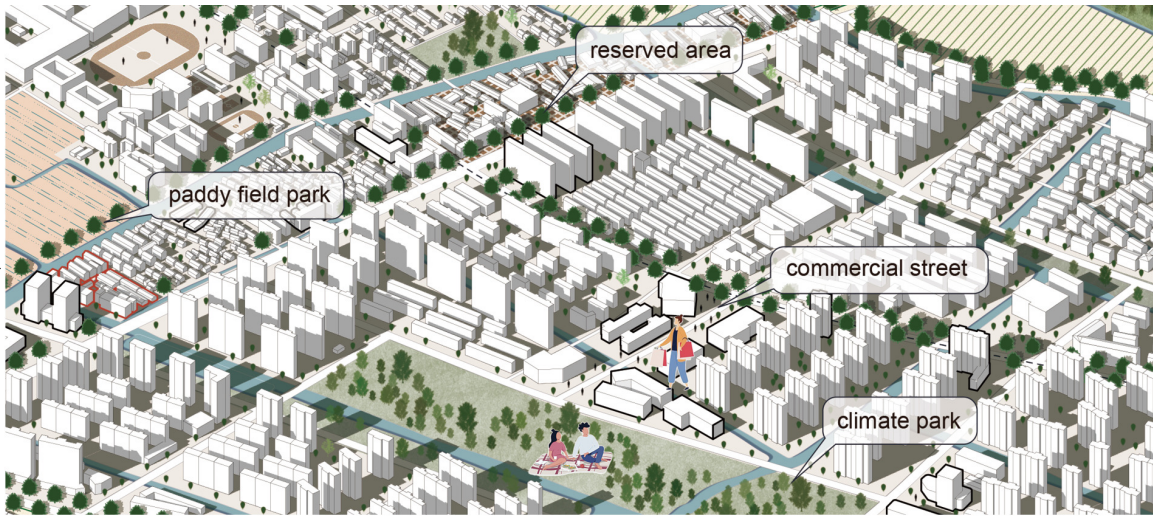
Polder Landscape Experience Resort



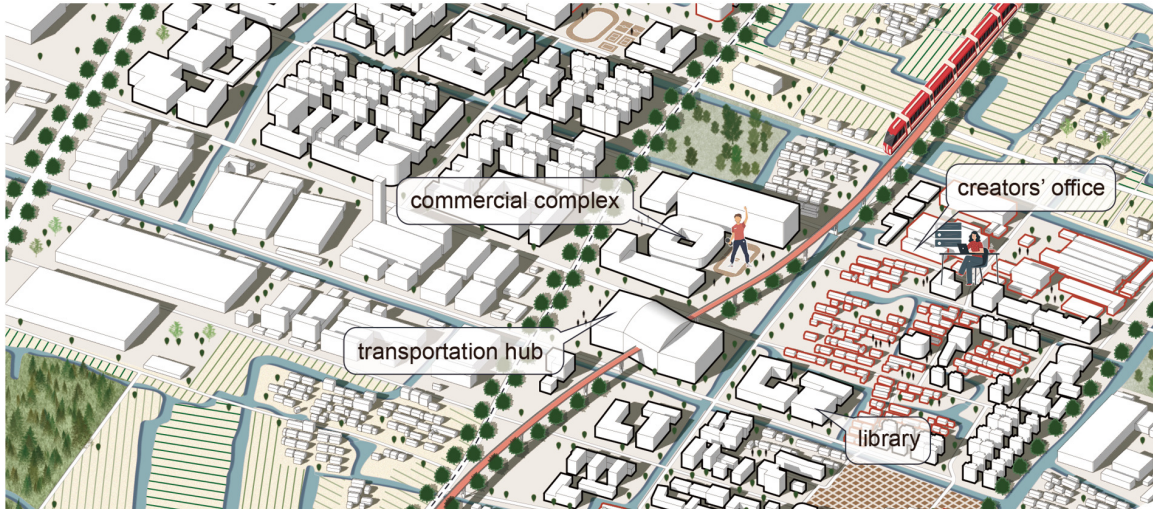
Sustainable Modern Agriculture Zone

Showcase: Xuxing town





Jiading New City



Xuxing Town

Phase1: Demolish and Replenish

Phase1: Demolish and Replenish

Stakeholder power/interest analysis

Phase2: Restore the Ecosystem

Phase2: Restore the Ecosystem

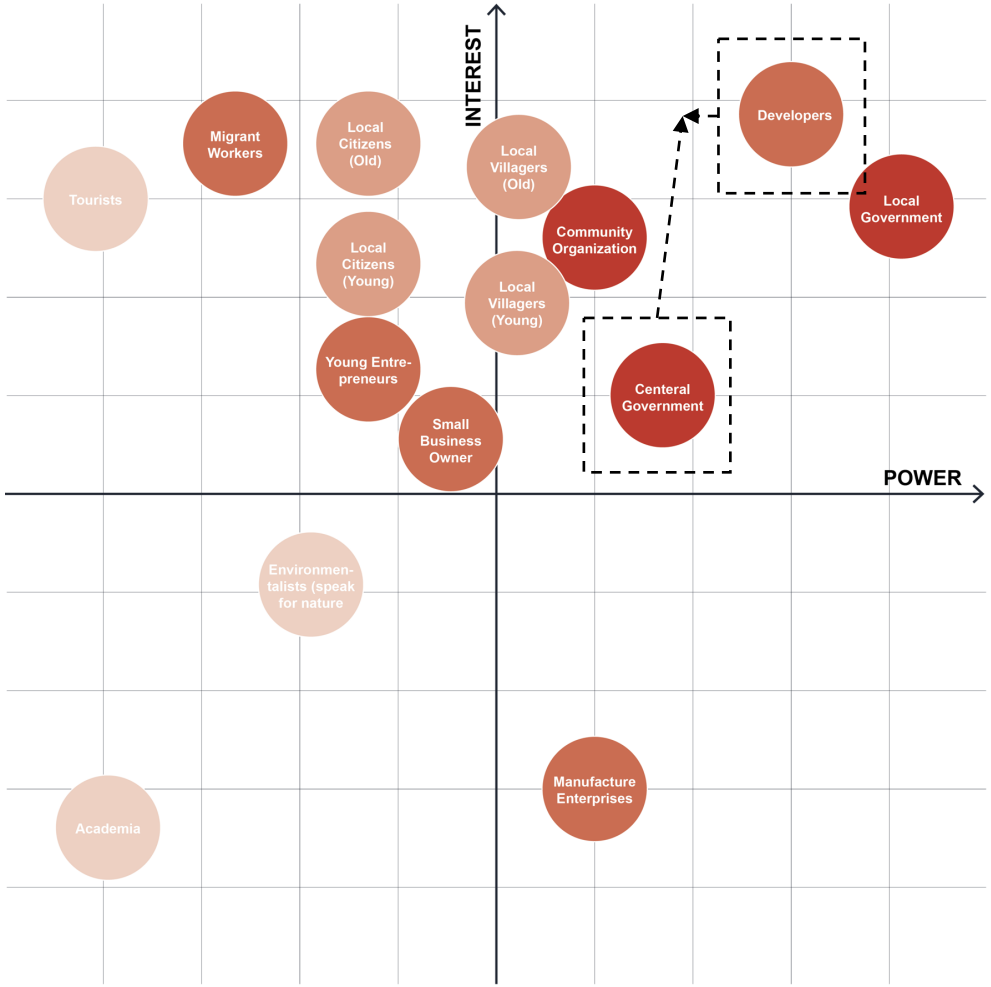
Stakeholder power/interest analysis

current image

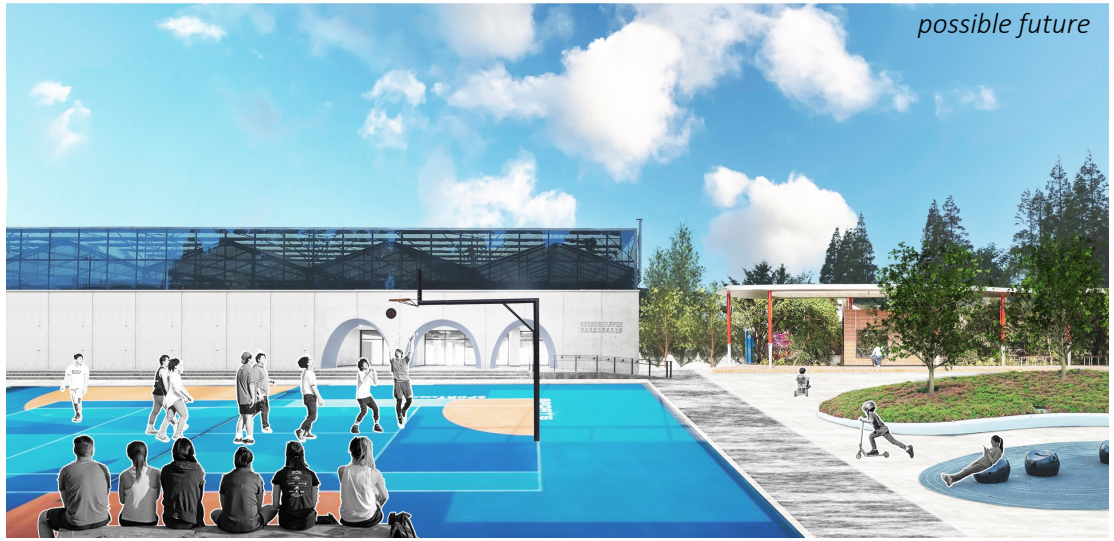
possible future

Phase3: Improve Infrastructure

Phase3: Improve Infrastructure

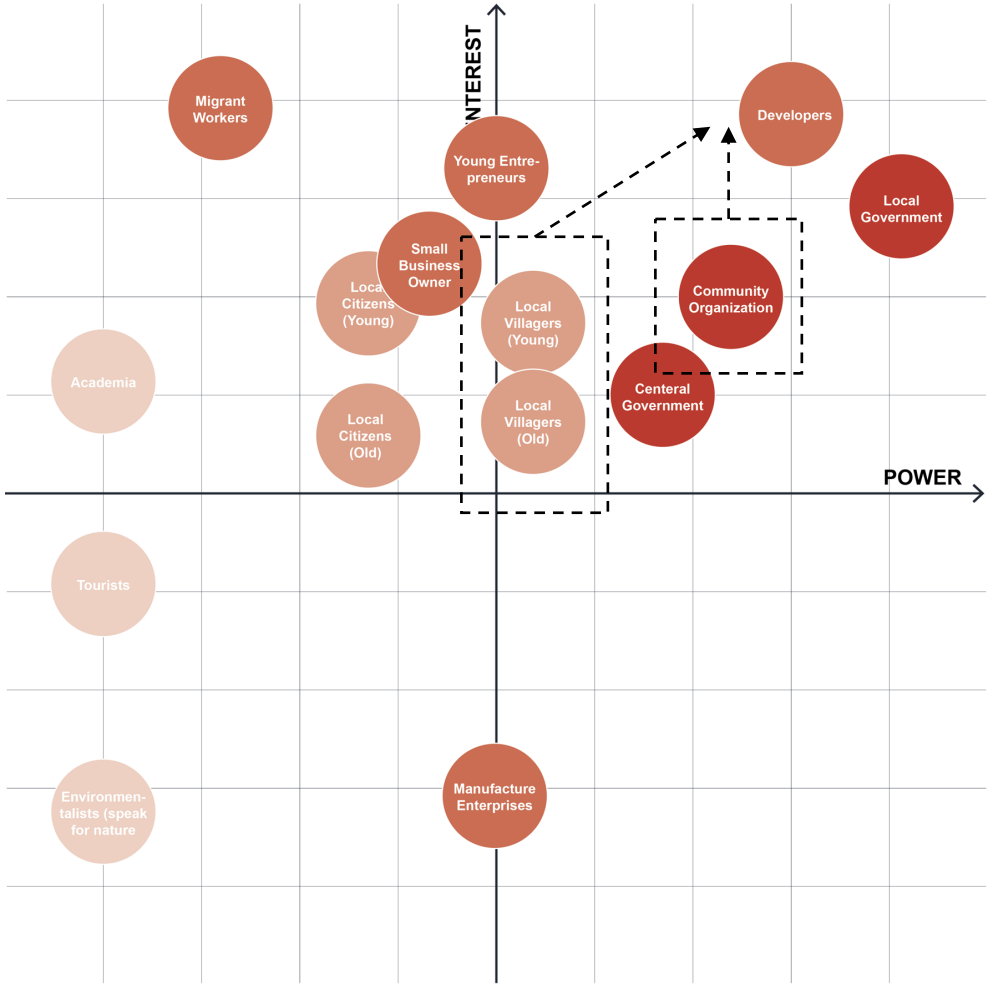


Stakeholder power/interest analysis



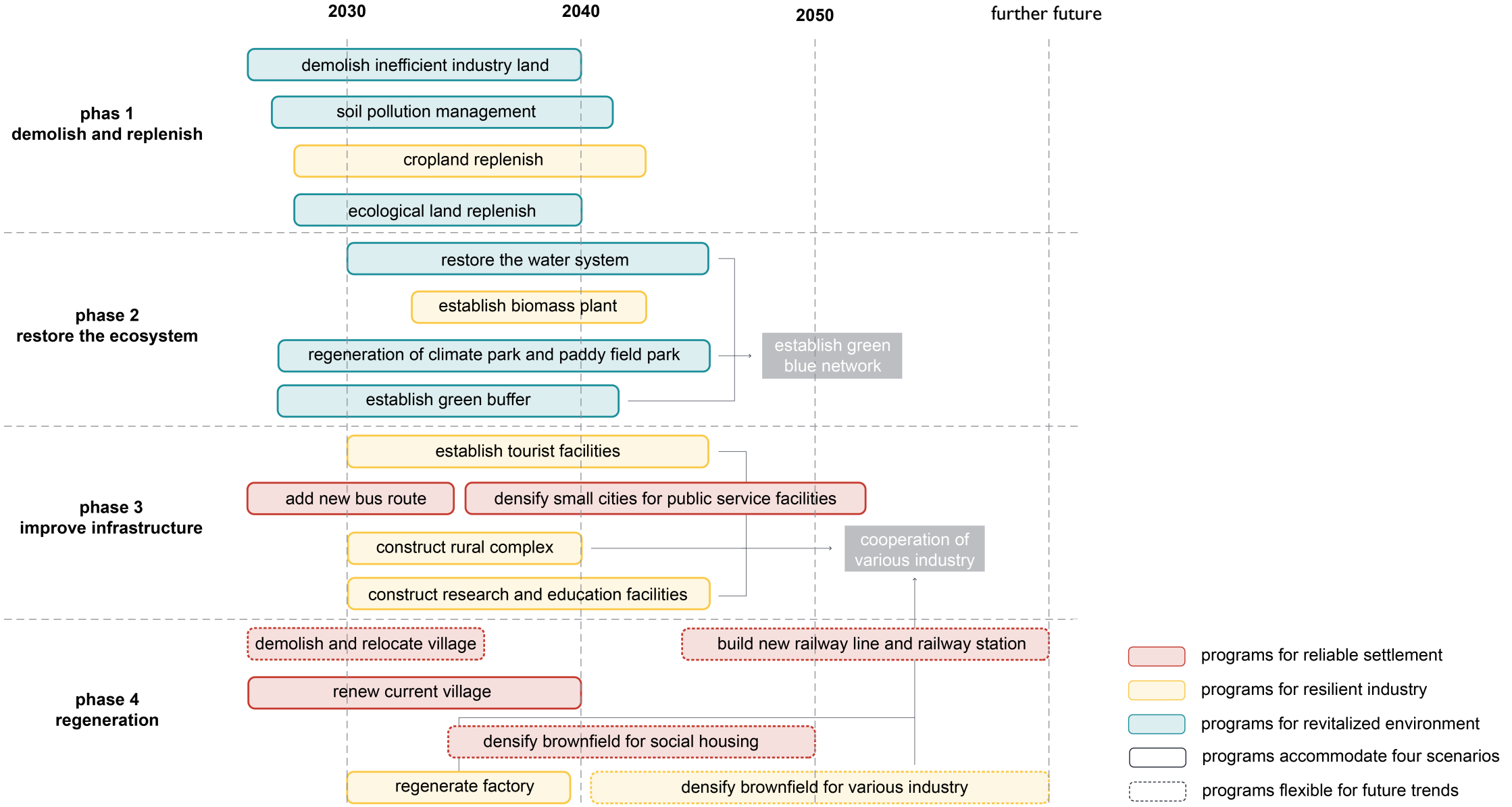
Phase4: Regeneration

Phase4: Regeneration



Stakeholder power/interest analysis

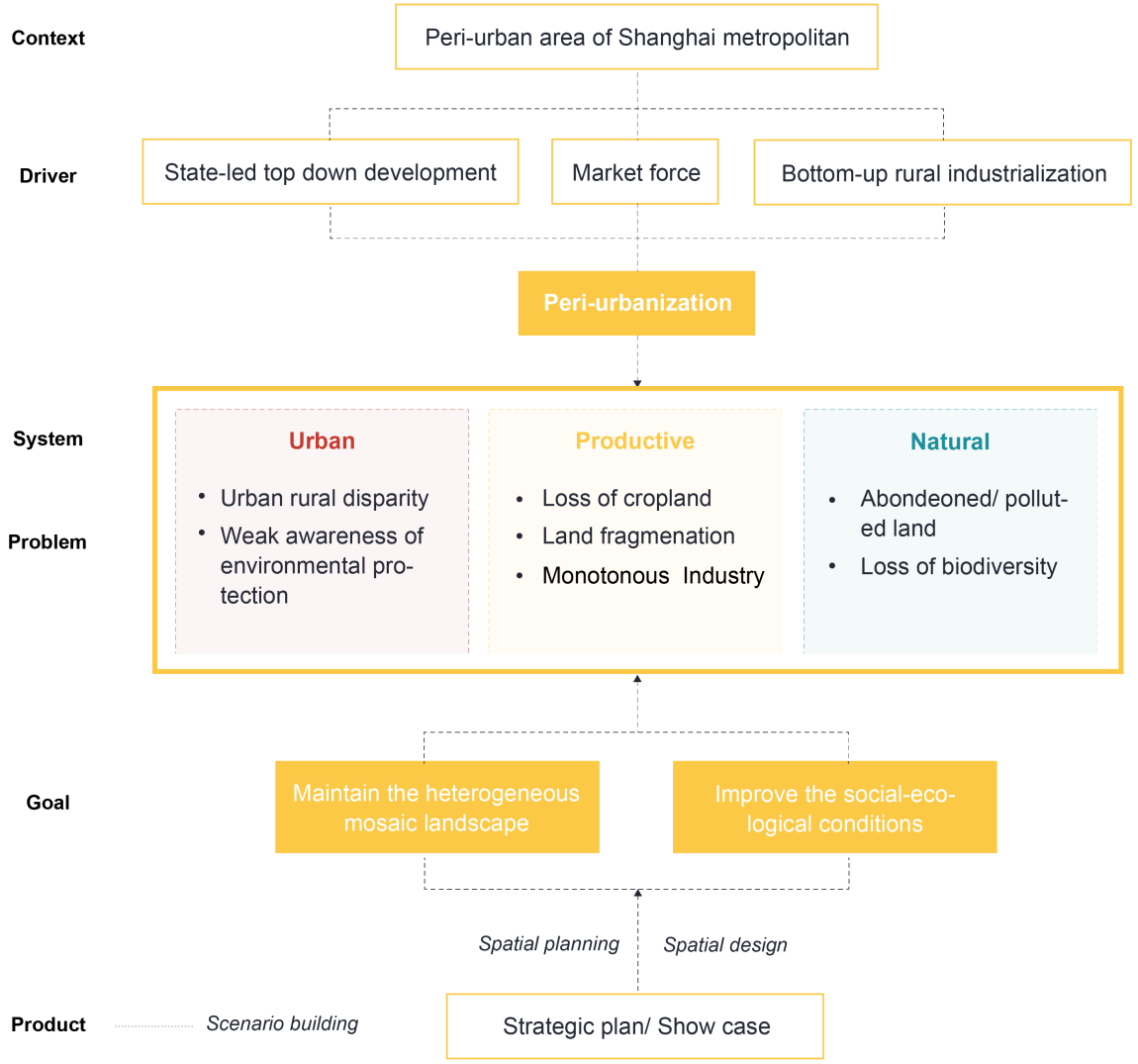
Timeline


2030
2040
2050
further future
phas 1
demolish and replenish
demolish inefficient industry land
soil pollution management
cropland replenish
ecological land replenish
phase 2
restore the ecosystem
restore the water system
establish biomass plant
regeneration of climate park and paddy field park
establish green buffer
establish green blue network
phase 3
improve infrastructure
establish tourist facilities
add new bus route
densify small cities for public service facilities
construct rural complex
cooperation of various industry
construct research and education facilities
phase 4
regeneration
demolish and relocate village
build new railway line and railway station
renew current village
densify brownfield for social housing
regenerate factory
densify brownfield for various industry
programs for reliable settlement
programs for resilient industry
programs for revitalized environment
programs accommodate four scenarios
programs flexible for future trends

Answer the Research Question

1. What is the urbanization process and what are the characteristics of peri-urbanized areas in China?

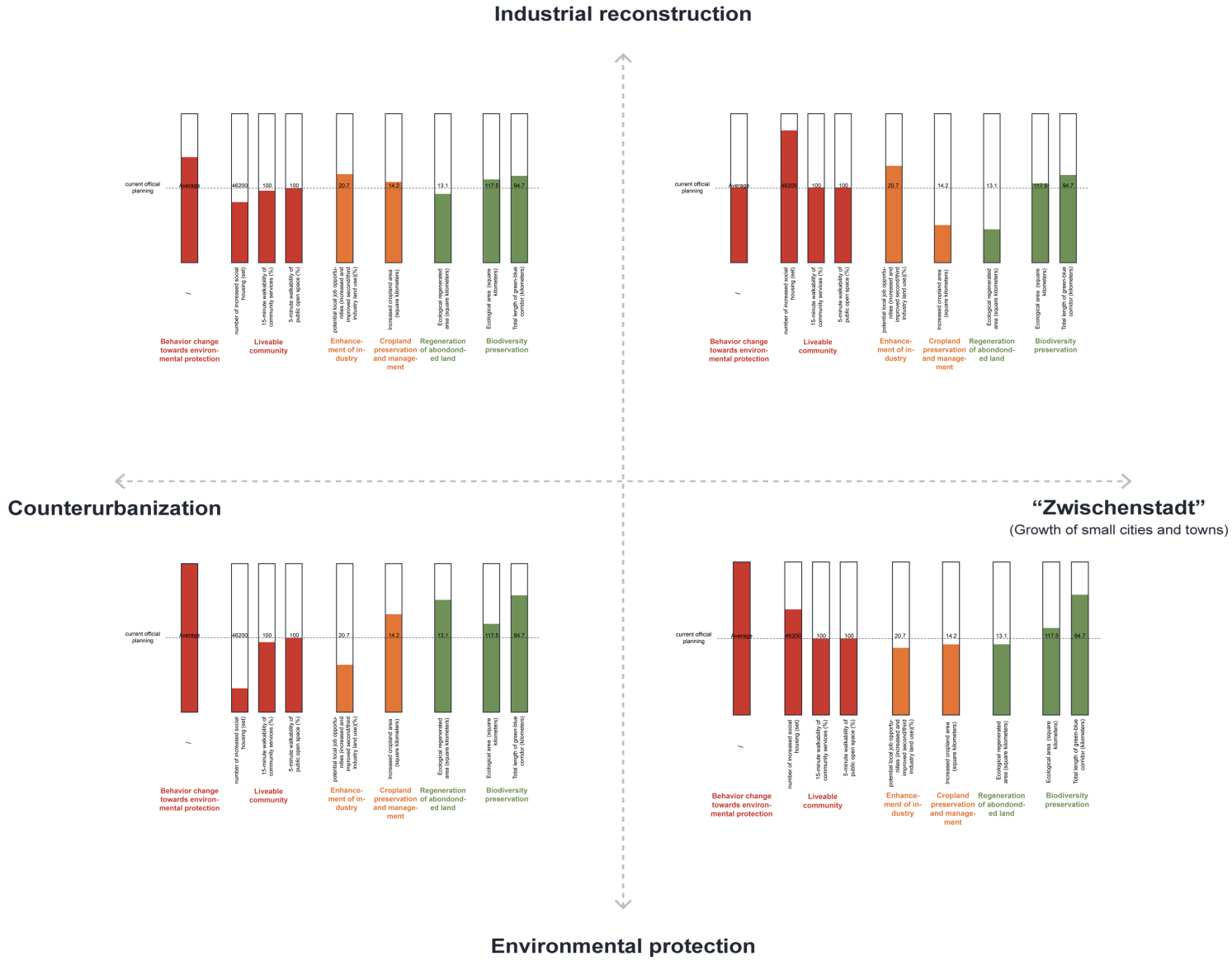
2. How does peri-urbanization affect the local socio-ecological conditions, taking the Jiading-Taicang region as a study area?



Answer the Research Question

3. What alternative design scenarios are possible to improve the socio-ecological conditions of peri-urban areas in China?

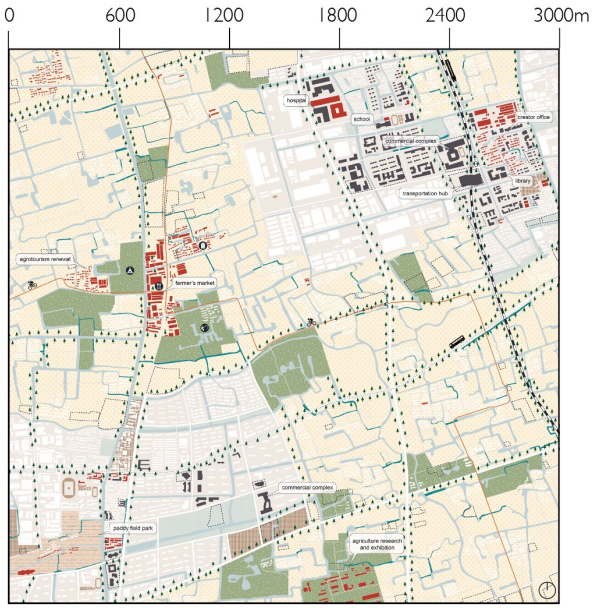
4. How to evaluate different scenarios and extrapolate to a strategic plan?



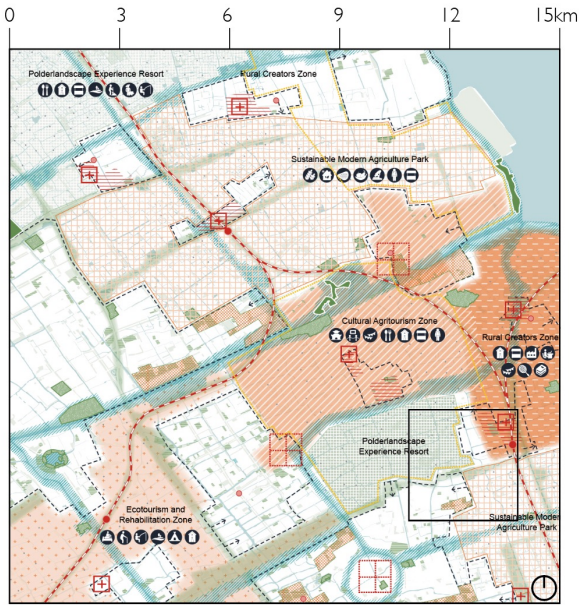
Answer the Research Question

5. How to transfer the knowledge to other peri-urban areas in China?

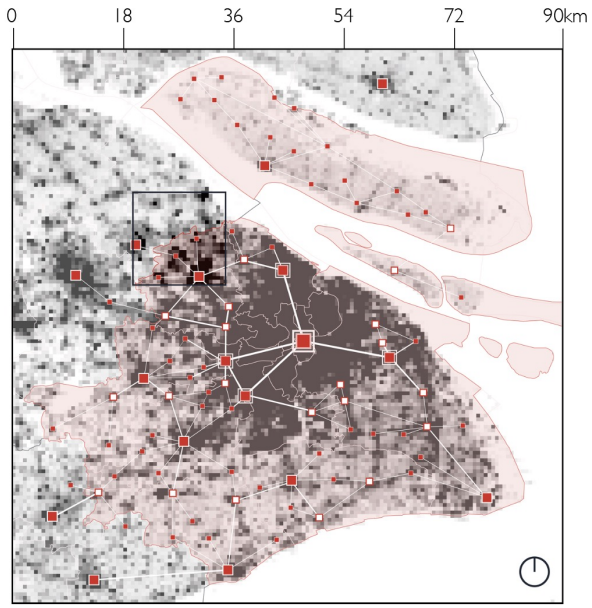
- The methodology of scenario building, assessment, and strategic design
- Strategies and design interventions in phases 1,2, and 3



MICRO SCALE



MESO SCALE



MACRO SCALE


agrotourism renewal
farmer's market
hospital
polder landscape
reserved area
rural service point
Happy Graduation!
restored water
commercial street
sustainable agriculture

Reflection

Scientific relevance

- Supplemented research related to peri-urbanization in Shanghai
- Reflection on current official planning and provide feasible design alternatives

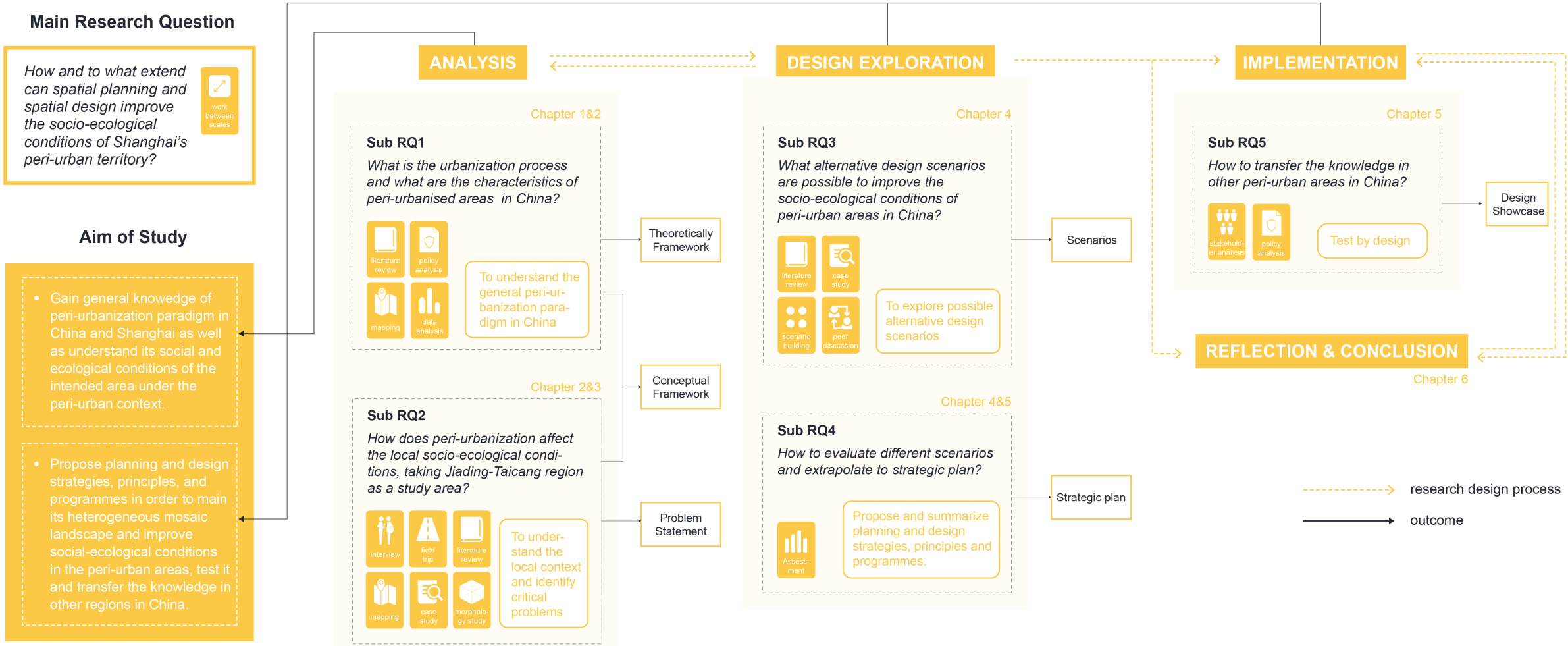
Societal relevance

- Catering to national policies and objective development needs for the population to return to rural areas
- Seeking the balance between humans and nature and leading people towards behavioral change for environmental protection

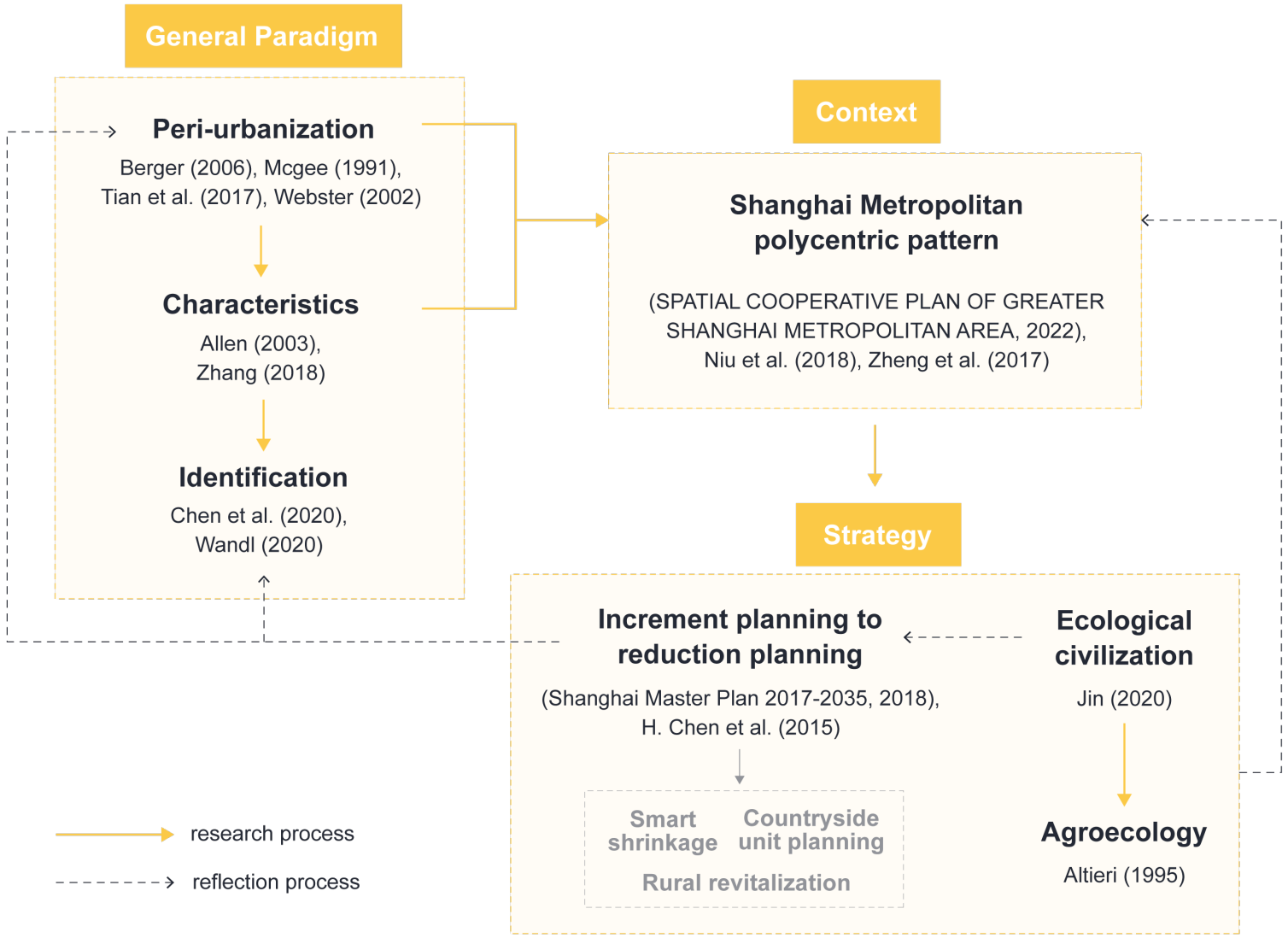
Ethical considerations and Limitations

- Lack of precise and up-to-date data
- More variables can be considered in the scenario-building
- Stakeholder analysis comes from limited interviews, news reports, and existing case studies, and lacks real stakeholder participation in the actual design process

Research Design Framework



Theoretical Framework



Theories

IDENTIFICATION OF SHANGHAI

Chen (2020) used a quantitative approach to identify peri-urban areas in Shanghai in 2015 via two indicators, fragmentation degree and proportion of agricultural land, using township streets as the unit of analysis (e.g. Figure 2.4). The findings were used for the Shanghai-scale mapping in this thesis.

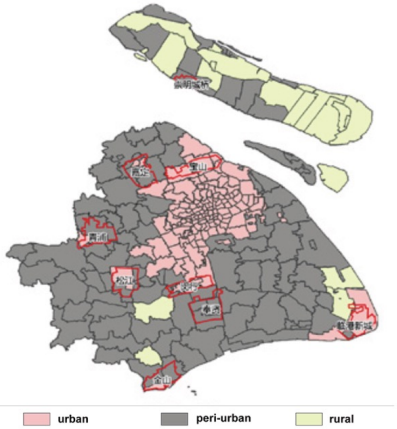


Figure 2.4 Identification of Shanghai's peri-urban in 2015
Source: Chen(2020)

DEFINE PERI-URBAN AREAS IN TAICANG-JIADING REGION

Considering the above two approaches collectively, I defined the peri-urban area of the Jiading-Taicang region through the following steps: (see Figure 2.7): (1). Divide the area of interest into 500m*500m grid cells; (2). classify those grid cells by the proportion of agricultural land as urban < 10% < peri-urban < 80% < rural (3). change rural grids with major transportation infrastructure passing by to peri-urban grids; change urban grids with industry+storage+transportation+unused function area > 80% to peri-urban grids. (The infrastructures and functions were selected based on the discussion in Chapter 1)

Comparing the result with the current situation and the plan, the three are in agreement. It can be seen from the graph that the vast majority of the Jiading-Taicang region is defined as a peri-urban area, with some areas initially defined as suburbs ending up as peri-urban areas due to infrastructure such as railways passing through.

Figure 2.7 Peri-urban area in Taicang-Jiading region
Source: Author's own

2.5.4 From increment planning to reduction planning

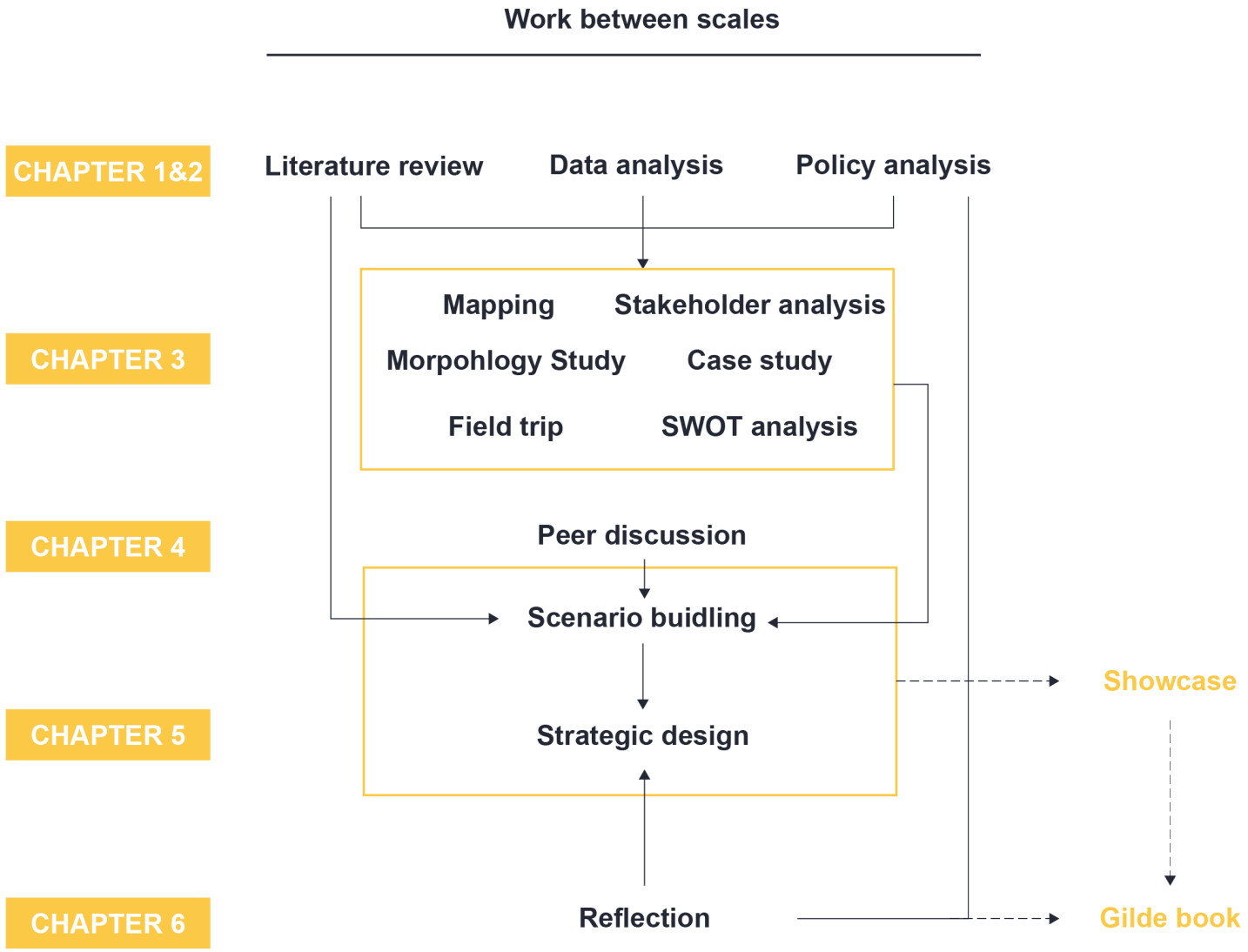
China has experienced rapid urbanization over the last forty years, with incremental planning being the prevailing approach. The process of urbanization in China varies widely and the trend of expansive development will continue in most cities, but in areas with higher levels of urbanization, such as the Yangtze River Delta region, the expansion of population and land use has led to resource constraints and the failure to control construction behavior, forcing the urban planning system to move towards inventory planning and reduction planning. (H. Chen et al., 2015; 'Reduction Development Review and Reflection,' 2021). The principle of "reduction planning" of construction land was first proposed by the Shenzhen government in 2009, and inventory development and reduction planning are also mentioned in the Shanghai Master Plan 2017-2035.

H. Chen et al. (2015) summarized the difference between the three types of planning (see Figure 2.13). Inventory planning is used for the transformation and upgrading of cities and is aimed at the internal exploitation of the potential of existing building sites, such as 'urban regeneration' and 'transformation of old areas', to consolidate land and transform them into high-value-added or socially beneficial functional land. The concept of reduction planning is similar to the Western concept of 'smart shrinkage', in that it reduces the scale of towns and cities and increases the use of infrastructure to achieve agglomeration and improve the development efficiency of towns and cities. The difference is that in China the population and economic decline occurs mainly in small towns and rural areas. In Shanghai, for example, the current reduction planning mostly targets collective construction land outside the planned built-up areas, including inefficient industrial land, inventory of industrial storage land, and rural residential areas. At the same time, an increase/decrease related model is adopted, whereby the increase in urban construction land is associated with a decrease in rural construction land ('Reduction Development Review and Reflection,' 2021).

Planning type	Population	Urban area	Public infrastructure	Economic structure	Environment consideration
Increment planning	Increase	Expand and merge	Territory-wide expansion	Diversified scale effect	Little limitations on industries
Inventory planning	Slowly increase and restructure	Expand on a small scale	Local renovation and maintenance	Industrial upgrading and innovation stimulus	High demands on industry
Reduction planning	Decrease	Shrink	Reduction and optimization of the network	Finding new economic growth points	Emphasis on environmental management

Figure 2.13 Variation in urban development factors for different planning types
Source: H. Chen et al. (2015)

Methodology



Stakeholder's Interview

During the field trip, interviews with six groups of local stakeholders were conducted, mainly including tourists, local residents, local small businessmen, and migrant workers. From the interviews, it was found that these stakeholders generally agreed that the area has a good environment and is suitable for leisure and retirement, but agrotourism as a dominant industry lacks attractiveness and competitiveness, and public transportation and basic service facilities in rural areas still need to be strengthened.

In addition, the author conducted an in-depth interview with a planner experienced in rural regeneration projects to understand some emerging concepts of rural planning in China, prevailing planning practices, and her views on the future development trends of China's rural areas, details of which can be found in Appendix 'interview with an expert on rural planning'.

Type: Group of tourists from Shanghai

Activity: Having lunch

Location: Yunong villa

Comment: 'We learn about this place through social media and come here for lunch. The environment is quite nice as there are fewer people during weekdays. Probably because here is only accessible by car, and difficult to reach by public transportation.'

Type: A tourist couple from Shanghai

Activity: Walk in the park

Location: Liuhe wetland park

Comment: 'The park is very close to home, there are a lot of parking lots nearby, it's very convenient to drive over, and it's nice to take a walk for a rest, especially after the pandemic. as people are locked down inside for so long. However, Liuhe Ancient Town is relatively boring, there is not much to wander. Taicang is very modernized and has a good infrastructure. There are a lot of science and technology companies, relative to the Shanghai people a lot less, and we think settling in Taicang after retirement is a good choice.'

Type: Local citizens---a lady and teenage brothers

Activity: Walking the dog and Cycling for fun

Location: Liuhe historical town

Comment: 'The overall living environment of the ancient town is quite nice and relatively liveable. There are more tourists during weekends, on weekdays it is more quiet, not too much disturbance to the residents here. Most of the people living in the area are local, people that live nearby, sometimes come to the ancient town for fun.'

Type: Waiter at the Yunong villa

Activity: Working in the Yunong villa

Location: Yunong villa

Comment: 'I am not local, I come here to work and I live in a nearby staff quarter. The villa is over 3000 acres and belongs to one owner. The owner started building this villa a decade ago, he leased the land from the government and has good cooperation with it. The activities here include dining, picking fruits and vegetables, lodging, visiting the zoo, fishing, and many people coming on weekends. We also have more than 100 sales outlets, mainly in Jiading District, to sell the food grown in the villa.'

Type: Local residents and small business onwer

Activity: Resting and watching the store

Location: Liuhe historical town

Comment: 'This is my own house, I changed the front into the store, and my family lives in the back, most of the shop owners here are local people. I hope this town can be more prosper, right now the business is not so good. The government aims to develop local tourism, but actual policies and subsidies are not sufficient.'

Type: Local residents and small business onwer

Activity: Resting and watching the store

Location: Liuxin neighbourhood

Comment: 'I used to be a villager, but after the village was merged, everyone stopped farming and contracted their land to the government. The centralized resettlement can be either high-rise apartments in town or country villas. My family chose high-rise apartments in town because my son and daughter have to work. Usually, it is the elderly who live in these centralized villa areas. The villa area has been built for some years and is still expanding, with other village names moving over. The environment of the villa area is good, much better than the previous villages, but it's not very convenient to go to the town to see a doctor or buy things, so I opened a small supermarket here to sell some groceries.'

Interview with an Expert on Rural Planning

Q: What do planners in China see as the main problems in the countryside today? What are the social and environmental considerations for the countryside?

A: At present, China's countryside, especially in the Yangtze River Delta region, is seriously gentrified, and a large number of villages have been transformed into tourist lodgings, losing their original rural appearance. The planner mainly focuses on the industrial restructuring of the countryside and the cooperation mechanism between the government and market forces to make the rural industry more organic. There is less consideration of environmental factors, and in the more developed coastal areas, factories with higher levels of pollution will be relocated, but in most rural projects there is still more focus on economic growth.

Q: Does China currently have any policies for rural revitalization? What are some concrete examples of projects?

A: China has put forward the 'My Hometown, My Construction' policy, which aims to encourage highly educated and talented people to return to their hometowns, i.e., small and medium-sized towns and rural areas, in order to promote the construction and development of the countryside. At present, many rural construction projects in China are "driven by the talented", through which those educated people go back and become 'rural planner", to explore the characteristics of the countryside and create cultural and creative IPs, such as selling special agricultural products, organizing music festivals, and conducting study activities. In addition, there are also market forces, such as the concepts of 'digital nomads', 'Web 3.0', and 'work from home', which aim to attract home-based workers or young entrepreneurs to stay in villages with beautiful environments and rather cheap costs.

Q: Will there be any difference in rural revitalization in different areas?

A: In the Yangtze River Delta region, such as Shanghai, there are strong market forces and usually government-market cooperation; however, in the northern region, rural revitalization mainly relies on government guidance.

Q: Where do land and rural populations go after villages are relocated?

A; The relocation of villages and merging of sites, which was a relatively common practice a decade ago, is now less frequent as the urbanization process slows down. Few people with rural household registration in the YRD region continue to work in agriculture. They have contracted their land to the government or large agricultural companies. However, the income from this is very small, so they usually enter factories or towns to work. There are also some new concepts, such as leasing land to urban residents and managing it on their behalf.

Q: What do you think are the future trends in peri-urbanized areas?

A: The current urbanization process is slowing down, and big cities are becoming saturated, so in the future small and medium-sized towns will play a more and more important role in China's urban construction, he needs to ease the population of big cities, while providing supporting infrastructure for the vast countryside.

Q-Author
A-Shiyun Chen
Date: 2023.09.12

Reference cases

1.Digital Village Construction Guide 1.0

The document proposes a general reference architecture for the construction of digital villages in the context of rural revitalization as well as several referenceable application scenarios. It proposes the development of green agriculture, smart agriculture and new rural businesses. Rural new industries include smart rural tourism, smart adoption agriculture, etc., which are new industrial organization forms under the integrated development of rural agriculture, forestry, animal husbandry and fishery, tourism, culture, education, recreation and health care industries.

Source: http://www.moa.gov.cn/hd/zqyj/202301/P020230104556857814615.pdf

2.8342 Yangtze River Delta Roadshow Center

This is a project to renovate and upgrade an abandoned industrial park. It is located in an ancient town at the junction of Shanghai and Zhejiang, with a cluttered surrounding landscape and a rich water network. Through a repeated demonstration of the overall identity and overall function of the building, it was given a function more conducive to the future - a roadshow center, and also as a start-up project for the development of the entire ancient town. The renovation utilizes local materials, preserves its historical characteristics and fully integrates it into the atmosphere of the ancient town, and 'repairs' the damage and pollution caused by industrial production to the water body through ecological landscaping and green architectural methods, with the appearance of a water town in the south of the Yangtze River.

Source: https://www.gooood.cn/8342-yangtze-river-delta-roadshow-center-and-studio.htm

3.'Tianfu Xinxing – Hesheng Pastoral Oriental' Pastoral Complex

The project is a spatial experiment based on the philosophy of neo-rusticism in the idyllic scene, aiming to create a new ecology of urban-rural integration in the countryside, encompassing a rural community and a rural enterprise cluster. In the residential community part, the designer continues the original spatial base of the project, takes the mechanism adjustment and settlement integration as the expression, organizes more space and area for villagers to use for living and production, and embeds the functions of commercial retailing, business exchange, cultural and art exhibitions through the renovation of the old buildings, to become the communication center for villagers. The Village Enterprise Cluster, on the other hand, attracts new farmers from local cultural, scientific, and agricultural enterprises with idyllic, low-density working and living environments, and provides them with intelligent and shared office environments.

Source: https://www.gooood.cn/common-ground-pastoral-demonstration-area-western-sichuan-china-by-syn-architects.htm

4.Roadside Station - Integrated Service Center

The project is the entrance building to a rural complex project on the site of a residential property to be demolished. In terms of function, it undertakes visitor center, citizen service and juvenile court instruction, and undertakes wedding, study, and salon activities to generate revenue. These complexes are characterized by low-cost and high effectiveness through acupuncture-style point renovation, successfully awakening the vitality and aesthetic enhancement of urban-rural return. Localized rural surrounded by urban become possible, and blurred urban township clusters may become one of the feasible exploration directions.

Source: https://www.gooood.cn/road-corridor-station-by-hangzhou-onedesign-architecture-landscape-design-office.htm

Reference cases

5.Revival of Village Vitality under the Second Activation – Rural Revitalization of Gaohuai Village in Deyang

This rural revitalization project is based on consolidating the natural ecology, upgrading the quality of life of villagers, stabilizing the rooting and residence of new farmers, and resonating with the rustic belonging of tourists. Through the restoration of aquatic systems and the establishment of native plant systems, the ecological resources of the countryside will be enhanced. The villagers' co-construction realizes low-cost landscape creation, such as the regularization of important traffic routes, the construction of village assembly plazas, the restoration of suspension bridges across the river, and the addition of a series of crop market trading points, etc., all of which are designed to serve the villagers' production and life. New waste decomposition technology is introduced to reduce environmental pollution, and high-quality bacterial fertilizer is produced for agricultural use to improve the soil, forming a resource cycle. On this basis, it introduces diversified industries such as fan production, ballad creation and plant dyeing to meet the needs of tourists for food, accommodation, tourism, education and other diversified rural experiences, forming a mutual support of commercial value.

photo taken in 2018

photo taken in 2022

Source: https://www.gooood.cn/8342-yangtze-river-delta-roadshow-center-and-studio.htm

6.Daoxiangyuan, Chang'an Park

The project is located in the urban area of Xi'an City, and most of the site is permanent basic farmland, which needs to maintain its food production attributes and functions. Therefore, it is created as a landscape of interactive experience of urban agriculture, maximizing the retention of the natural spatial pattern of urban development, which not only meets the needs of agricultural production, so that the residents can understand the whole process of agricultural production in the city, but also provides recreational and ecological value, and provides realistic experience in terms of the protection and use of cropland and the functional composite of urban public space.

Source: https://www.gooood.cn/daoxiangyuan-changan-park-china-by-shanghai-chidi-studio.htm

7.Landscape design of Shangbu Green Corridor Park (Rail transit greening restoration project in Futian)

The project is located in Futian District, Shenzhen, and the surrounding area is dominated by residential and amenity service facilities, with a lack of public space. The site is occupied by subway excavation and construction, and the surface habitat has been severely damaged. The design prioritizes ecology and improves the microclimate by restoring the surface habitat and preserving and replanting trees. The meandering ecological dry stream absorbs, purifies and stores rainwater, effectively controlling surface runoff. Based on interviews with neighboring residents, the need for a green ecological environment, public activity space, sports and fitness venues, and child-friendly facilities were established to weave together urban service functions. With an open and inclusive attitude, it creates a vibrant park belt for people to explore their ideal life.

Source: https://www.gooood.cn/landscape-design-of-shangbu-green-corridor-park-sutpc.htm

Calculation

landuse of Jiading district

嘉定区土地使用现状结构表

用地分类	用地规模（公顷）(ha)	占比（%）
居住用地	3753.4	8.1
公共管理与公共服务设施	714.3	1.5
商业服务业设施用地	1439.7	3.1
工业用地	7276.8	15.7
仓储用地	848.7	1.8
道路用地	1237.4	2.7
对外交通用地	3339.4	7.2
市政设施用地	473.3	1.0
特殊用地（含军事）	29.8	0.1
绿地	1926.9	4.2
农用地	21934.6	47.4
在待建用地	3176.1	6.9
不确定用地	164.1	0.4
总计	46314.3	100.0

嘉定区建设用地情况对照表

	建设用地（平方公里）	集建区内建设用地（平方公里）	集建区外建设用地（平方公里）	城镇建设用地（平方公里）	农村居民点用地（平方公里）
2006版总规	225.0	105.0	120.0	216.0	9.0
2009年现状	251.6	159.3	92.3	212.0	39.6
2012年现状	271.8	184.1	87.7	223.4	48.4
2016年现状	280.8	191.8	89.0	241.8	39.0

New table

	Jiading District	Site Current	Scenario 1	Scenario 2	Scenario 3	Scenario 4
population (million)	1.6	1.12	1.134	1.134	1.134	1.134
residential area (km^2)	37.53	16.81				
commercial and service area (km^2)	21.54	9.55				
industry and storage area (km^2)	81.26	27.85				
cropland area (km^2)	219.35	121.82	137.16	127.91	142.55	134.82
ecological area (km^2)	238.6	117.56	130	123.1	138.9	129.9
unused area (km^2)	33.4	8.12	3.81 19*8.12/33.4	4.45	3.81	4.45
total urban construction land (km^2)	241.8	84.25	69.5	81.1	69.5	81.1
total area (km^2)	463.14	225	225	225	225	225

第四节 核心指标

指标类别	序号	指标项	单位	类型	基准年	2035年
发展规模	1	常住人口规模*	万人	预期性	158	160
	2	建设用地总规模*	平方公里	约束性	280.8	266.6
	3	永久基本农田保护任务*	万亩	约束性	16.12	—
	4	耕地保有量*	万亩	约束性	16.12	8.0
空间分区管制	5	生态空间面积	平方公里	约束性	—	238.5
	6	城市开发边界面积	平方公里	约束性	—	224.7
	7	城市开发边界内新增建设用地	平方公里	约束性	—	18.5
	8	新增建设用地占用耕地	万亩	约束性	—	3.1
	9	战略留白空间规模*	平方公里	约束性	约19	约19
土地使用	10	人均城镇建设用地面积	平方米/人	约束性	178.9	156.3
	11	单位建设用地的地区生产总值（GDP）	亿元/平方公里	预期性	6.25	26.00
	12	职住平衡指数*	--	预期性	≥80	≥100
生态环境	13	生态用地占比	%	预期性	—	36.9
	14	河湖水面率*	%	约束性	8.03	10.0
	15	森林覆盖率*	%	约束性	13.3	≥25
	16	水环境功能区达标率	%	约束性	—	100
综合交通	17	公共交通占全方式出行比例	%	预期性	9.7	40左右
	18	轨道交通站点600米常住人口覆盖率*	%	预期性	—	中心城≥60、虹桥主城区≥40左右、嘉定新城≥30、中心镇镇区≥15
	19	全路网密度	公里／平方公里	约束性	3.2	8（主城区、新城和镇区）
产业发展	20	全社会研究与试验发展经费支出（R&D）占地区生产总值的比例	%	预期性	4.6	高于全市平均水平
	21	生产性服务业增加值占地区生产总值比重	%	预期性	41.4	50
住房和公共服务设施	22	新增城镇住房套数*	万套	预期性	—	33
	23	新增中小套型住房比重	%	约束性	—	70
	24	新增住房中政府及机构持有的租赁型住房比重	%	约束性	—	20
	25	社区综合服务设施（养老、文化、体育、医疗设施）15分钟步行可达率	%	约束性	—	100
土地整治和农用地保护	26	土地整治补充耕地面积	万亩	约束性	—	3.83
	27	现状建设用地减量化面积	平方公里	预期性	—	37.7
历史保护和总体城市设计	28	公共开放空间（400平方米以上的绿地和广场）5分钟步行可达率*	%	约束性	—	100
	29	历史文化风貌区面积	平方公里	约束性	8.32	8.32
	30	生态、生活岸线占比*	%	约束性	—	—
	31	骨干绿道总长度*	公里	约束性	—	195
	32	人均公园绿地面积*	%	约束性	8.5	≥15.0
市政公用设施	33	应急避难场所人均避难面积*	平方米/人	约束性	—	≥3
	34	原生垃圾填埋率	%	约束性	—	0
	35	城镇污水处理率	%	约束性	—	100
	36	生活垃圾无害化处理率	%	约束性	—	100

New table

Goal	Indicator	current official planning	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Behavior change towards environmental protection	/	Average	Good	Average	Excellent	Excellent
Liveable community	number of increased social housing (set)	46200 20% * 330000 * 1.12/1.6	35000 7*3*50000*2/60	88200 5040000*0.5*0.35*6/60	10160 1270000*0.4*0.3*4/60	60480 5040000*0.4*0.3*6/60
	15-minute walkability of community services (%)	100	98	100	98	100
	5-minute walkability of public open space (%)	100	100	100	100	100
Enhancement of industry	potential local job opportunities (increased and improved second/third industry land use) (%)	20.7 (50-41.4) /41.4	23.4 ((5.24-3.81)*0.5+13.7*0.3+137.16*0.05-(84.25-69.5)*0.2)/37.4	25.2 ((5.3-4.45)*0.5+10*0.3+127.91*0.05-(84.25-81.1)*0.2+5.04*0.05)/37.4	12.3 ((5.24-3.81)*0.3+142.55*0.05-(84.25-69.5)*0.2)/37.4	17.7 ((5.3-4.45)*0.3+134.82*0.05-(84.25-81.1)*0.2+5.04*0.05)/37.4
Cropland preservation and management	Increased cropland area (square kilometers)	14.2 3.83*6.67*121.82/219.35	15.3 3.54+(84.25-69.5)*0.8	6.1 3.57+(84.25-81.1)*0.8	20.7 11.88+(84.25-69.5)*0.6	13.0 10.05+(84.25-81.1)*0.6+5.3*0.2
Regeneration of abandoned land	Ecological regenerated area (square kilometers)	13.1 37.7*84.25/241.8	12.5 (5.24-3.81)*0.1+(84.25-69.5)*0.6+3.54	5.5 (5.3-4.45)*0.1+(84.25-81.1)*0.6+3.57	21.3 (5.24-3.81)*0.4+(84.25-69.5)*0.6+11.88	12.3 (5.3-4.45)*0.4+(84.25-81.1)*0.6+10.05
Biodiversity preservation	Ecological area (square kilometers)	117.5 238.5/238.6*117.56	130.0	123.1	138.9	129.9
	Total length of green-blue corridor (kilometers)	94.7 195*225/463.14	107.5	107.5	142.4	142.4

5040000: densified area
1270000: current urban area in land management area
60: area per set
0.5/0.4: percentage of residential area
0.35/0.3: building density
6/4: building stoery

5.24/5.3: nonused land in urban development area
37.4: current commercial and industry area
13.7/10: commercial and industry area in rcz & caz & roz
0.5/0.3 percentage of second/third industry area
0.2: percentage of second/third industry area in shrinking area
0.05(first): percentage of increased second/third industry in cropland area
0.05(second): percentage of extra densification of second/third industry in densified area

3.54/3.57: non-used land and industry land in aez & maz
11.88/10.05: non-used land and industry land in p & s
0.8/0.6: percentage of cropland in shrinking area
5.3: urban agriculture
0.2: percentage of cropland area in urban agriculture

0.1/0.4: percentage of ecological area of urban non-used land
0.6: percentage of ecological area of shrinking area