

From Arrival City to Circular City:

The Circular Development Approach to Incorporating Migrant Workers into the Urban Village Regeneration



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IMPLEMENTATION

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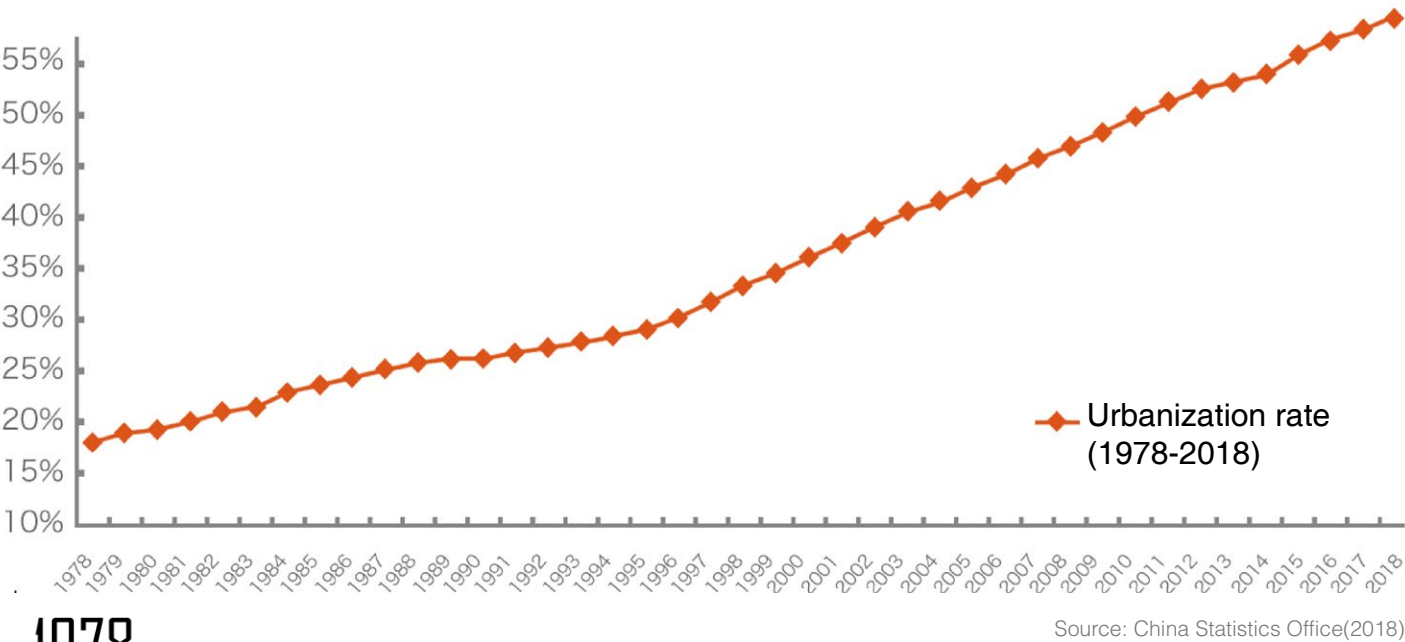
01 INTRODUCTION



Figure 1: Vegetable store in an urban village
Source: © BERYL_SNW

INTRODUCTION

Informal Settlement in China



1978 Deng Xiaoping's policies
Rapid Urbanization



Source: Yangzi News(2018)

1990s-2000s
Urban expansion occupies the countryside



2000s-Present
Urban villages as informal settlements for migrant workers



There are up to **4,000 urban villages** in China's eight first-tier cities, inhabited by more than **35 million migrant workers**.

Source: Chen(2022)

NOTICE

Dear Tenant:

This building is in a government-led redevelopment project. In accordance with the Civil Code of the People's Republic of China, we are legally canceling the rental contract and notifying you to move out by June 30, 2023, so please find your own housing.

landlord
May 18,
2023



Figure 2: Women making

Disappearing Urban Villages Hiding Widely Recommended Cheap Vegetables and Delicious Tastes

Source: Wangyi News(2018)

"These delicacies we've enjoyed since childhood are disappearing."



Figure 3: Man working at a vegeta-



Figure 4: A bustling night market in an urban village

02 PROBLEM FOCUS



Figure 5: Bicycle fruit shop
Source: © Claudio Zaccherini

The definition of well-being

"Sustainable condition that allows the individual or population to develop and thrive"

Fulfillment of needs for well-being

Max-Neef, M. (1989). Human scale development conception application and further reflections. <http://ci.nii.ac.jp/ncid/BA17184047>

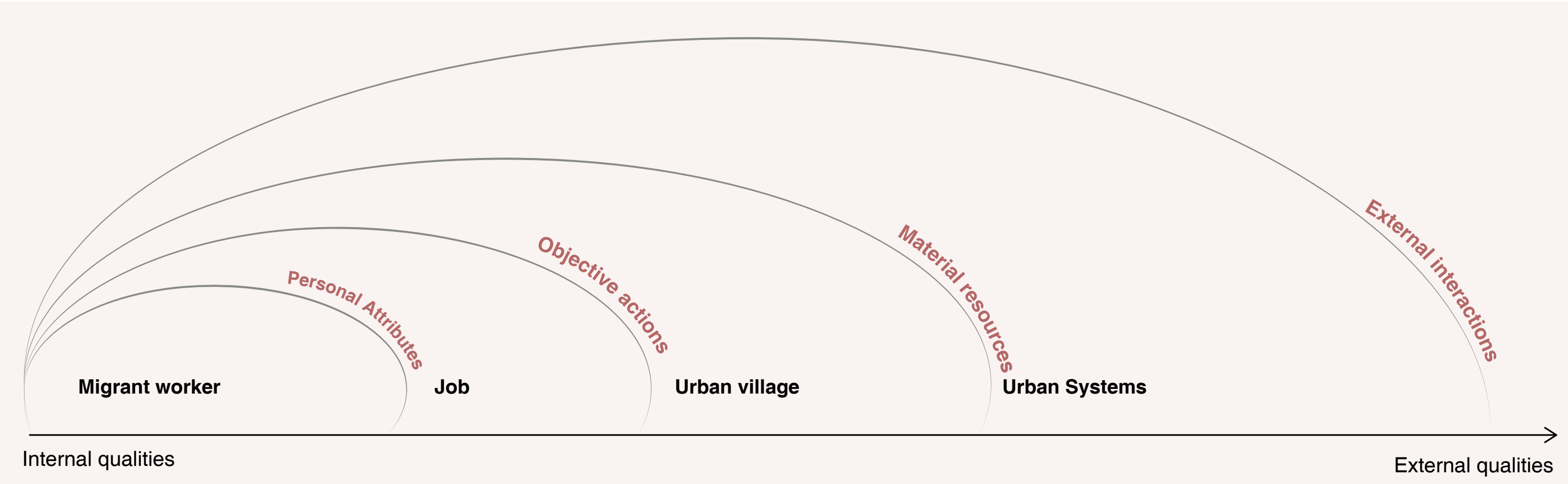


Figure 6: Well-being Framework
Adapted from Max-Neef (1989)

PROBLEM FOCUS

Problem Field

Personal Attributes---Educational disadvantages

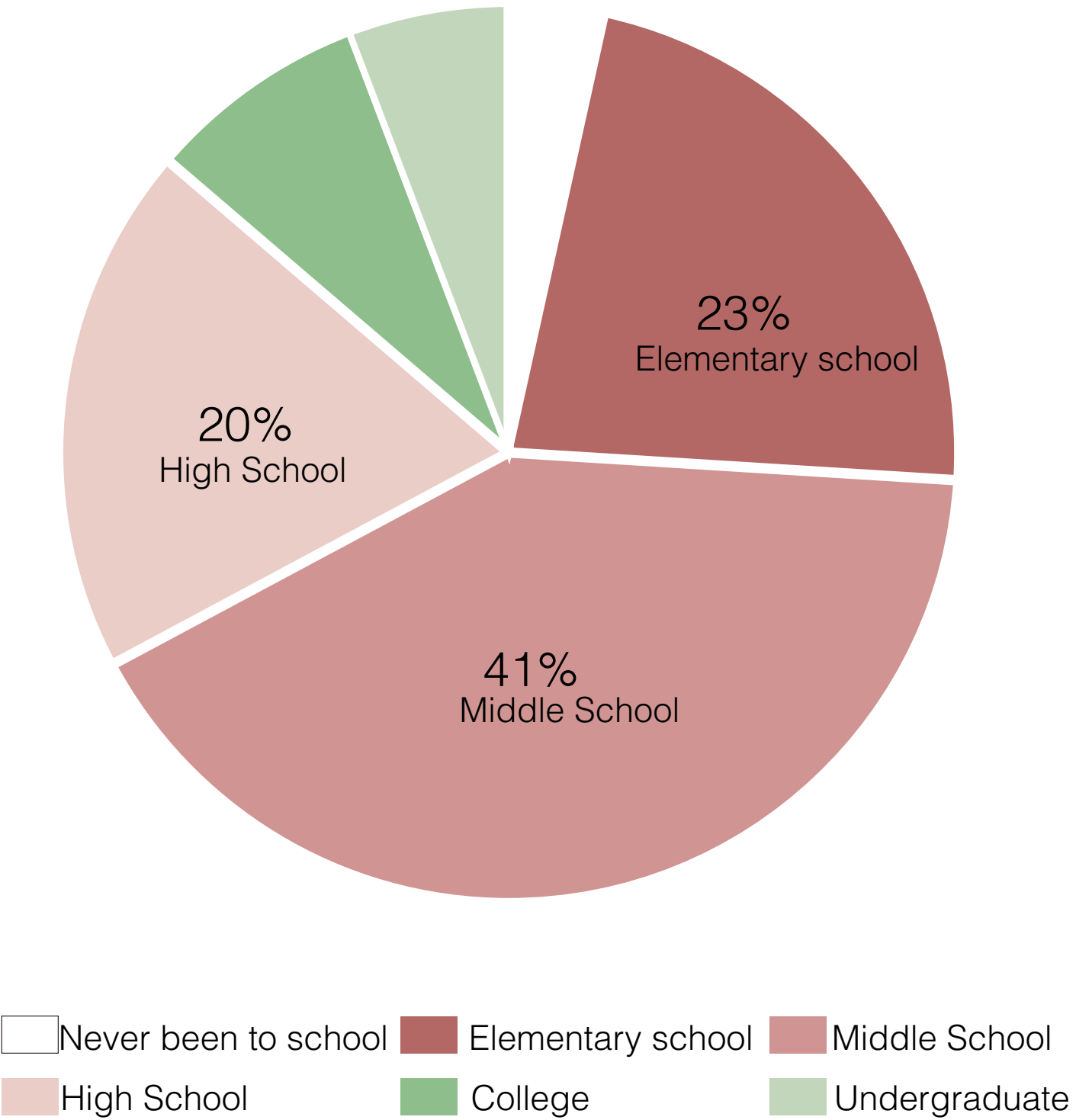
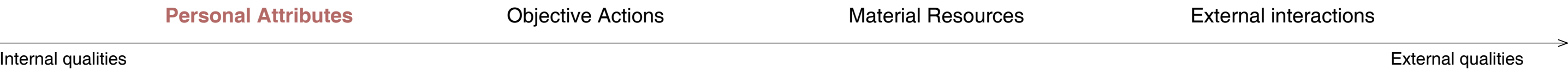
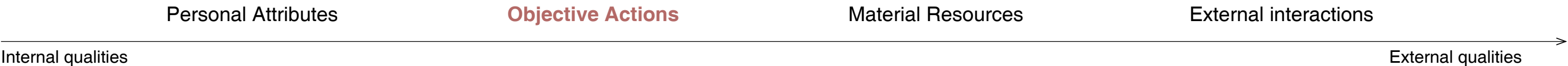


Figure 7: Educational level of migrant workers
Source: Mobile Population Data Platform(2017)

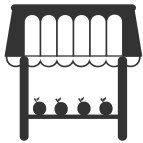
PROBLEM FOCUS

Problem Field

Objective Actions---Economic disadvantages



Migrant workers are working as



The average salary of a migrant worker is
4,500 rmb **1/2** average salary in Chengdu
Source: Chengdu Municipal Bureau of Statistics(2022)

Problem Field

10/103

PROBLEM FOCUS

Problem Field

External interactions---Food System Exclusion



Figure 9: Land pressure from long-distance
Made by author

PROBLEM FOCUS

Problem Field

External interactions---Policy and planning system nonrecognition

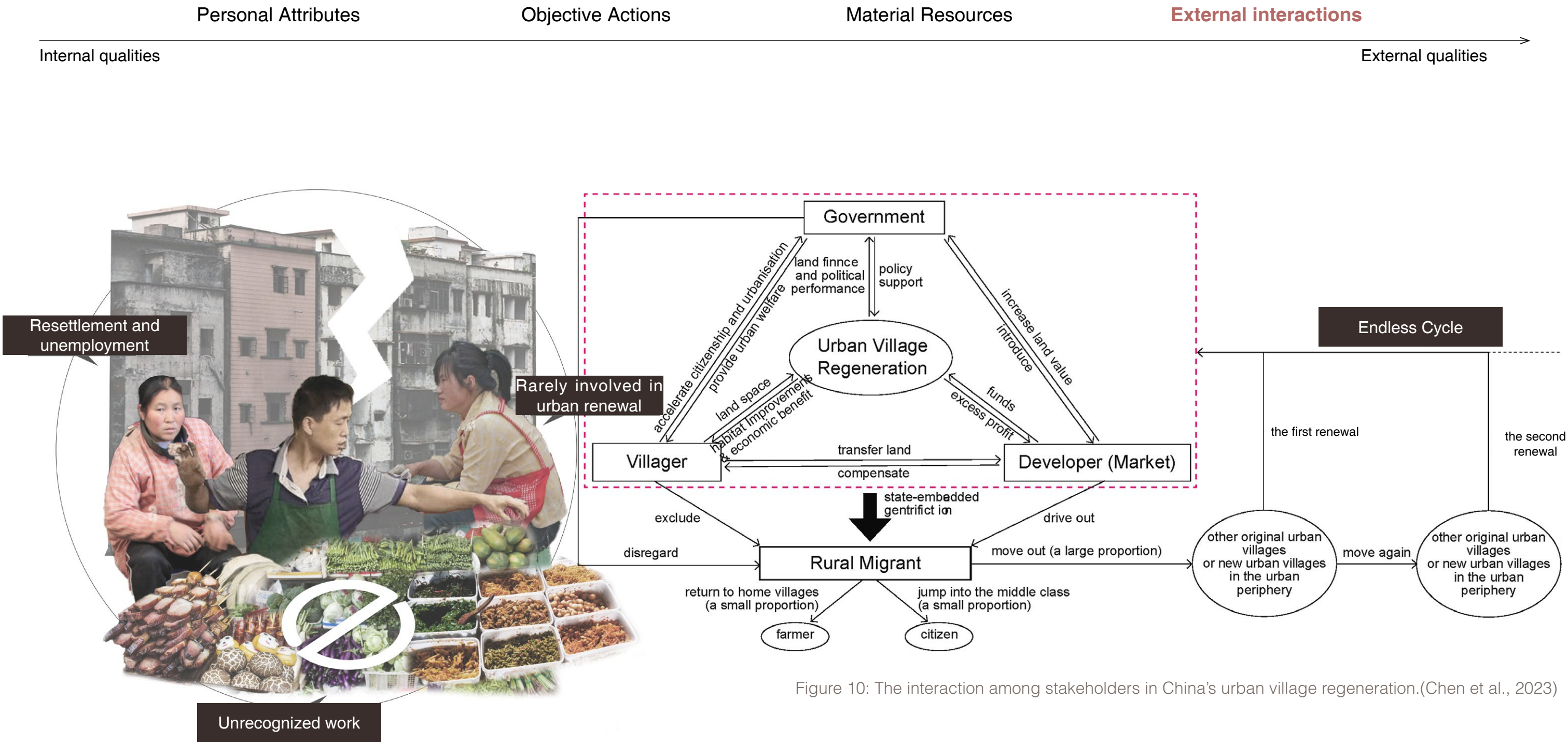


Figure 10: The interaction among stakeholders in China's urban village regeneration.(Chen et al., 2023)

PROBLEM FOCUS

2.2 Problem Statement

Limited fulfillment of needs for well-being

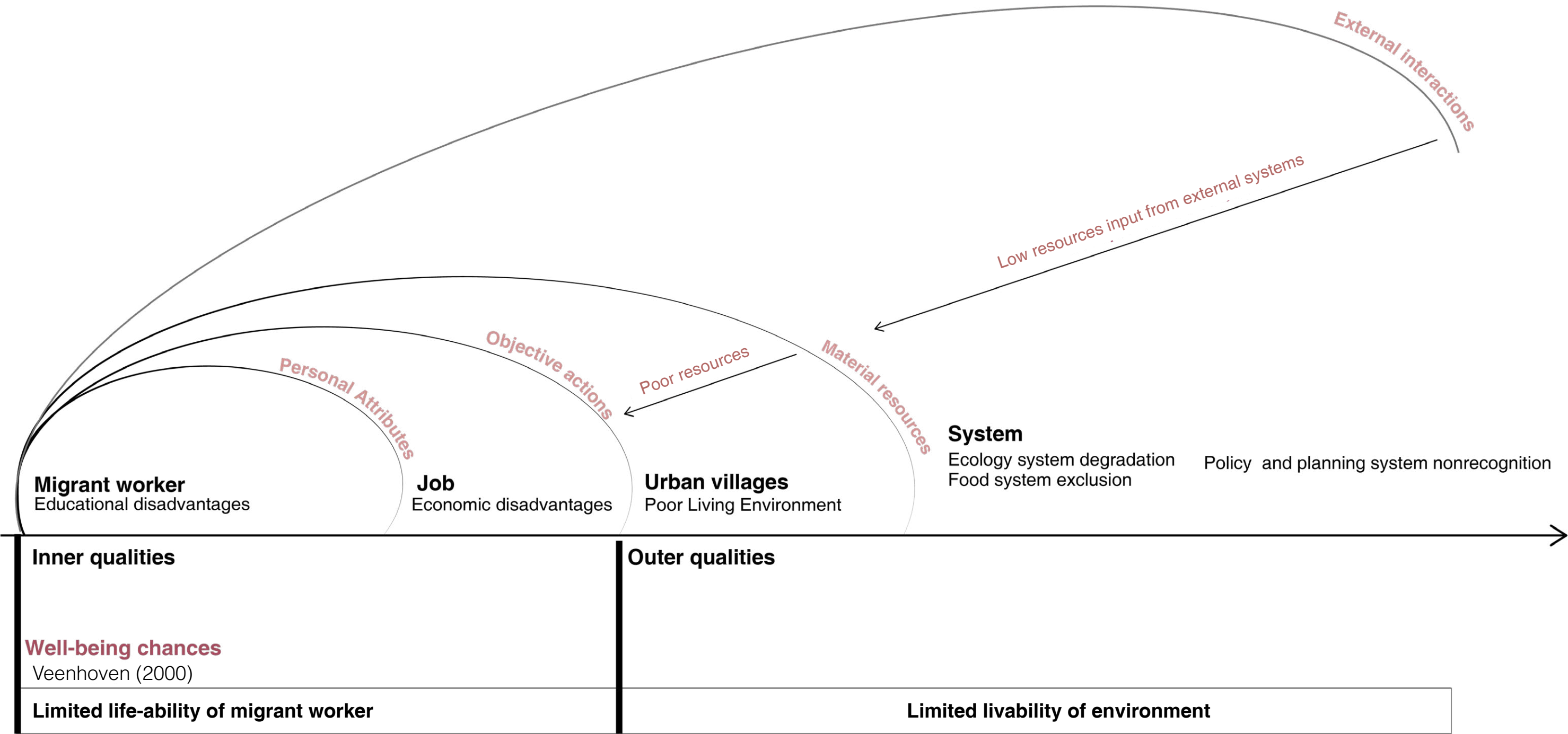
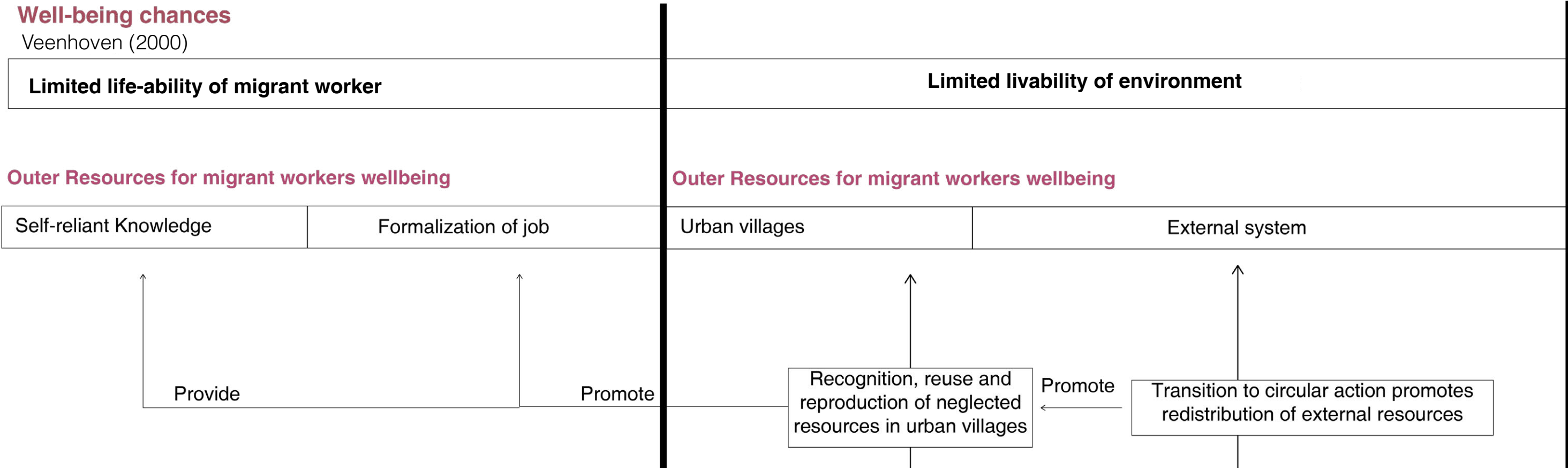


Figure 11: Problem Framework of Non-fulfillment of Needs for Well-being
Adapted from Veenhoven (2000)

03 METHODOLOGY



Figure 12: Noodle making on a tricycle in the snake street
Source: Stockphoto Mania



The research aim of this project are:

To explore a new urban village regeneration strategy framework with migrant workers as the main stakeholders.

Sub-aims include:

Examining the barriers set by urban renewal planning and policy systems for migrant workers’ participation in decision-making processes.

Establishing insights into the current informal food sector in which migrant workers are engaged.

How to lead the urban village regeneration based on the policy and strategic framework of spatial justice and human-scale circular development, to achieve the well-being of migrant workers?

SQ1: What procedural and spatial barriers do urban planning systems create that affect the inequalities of migrant workers?

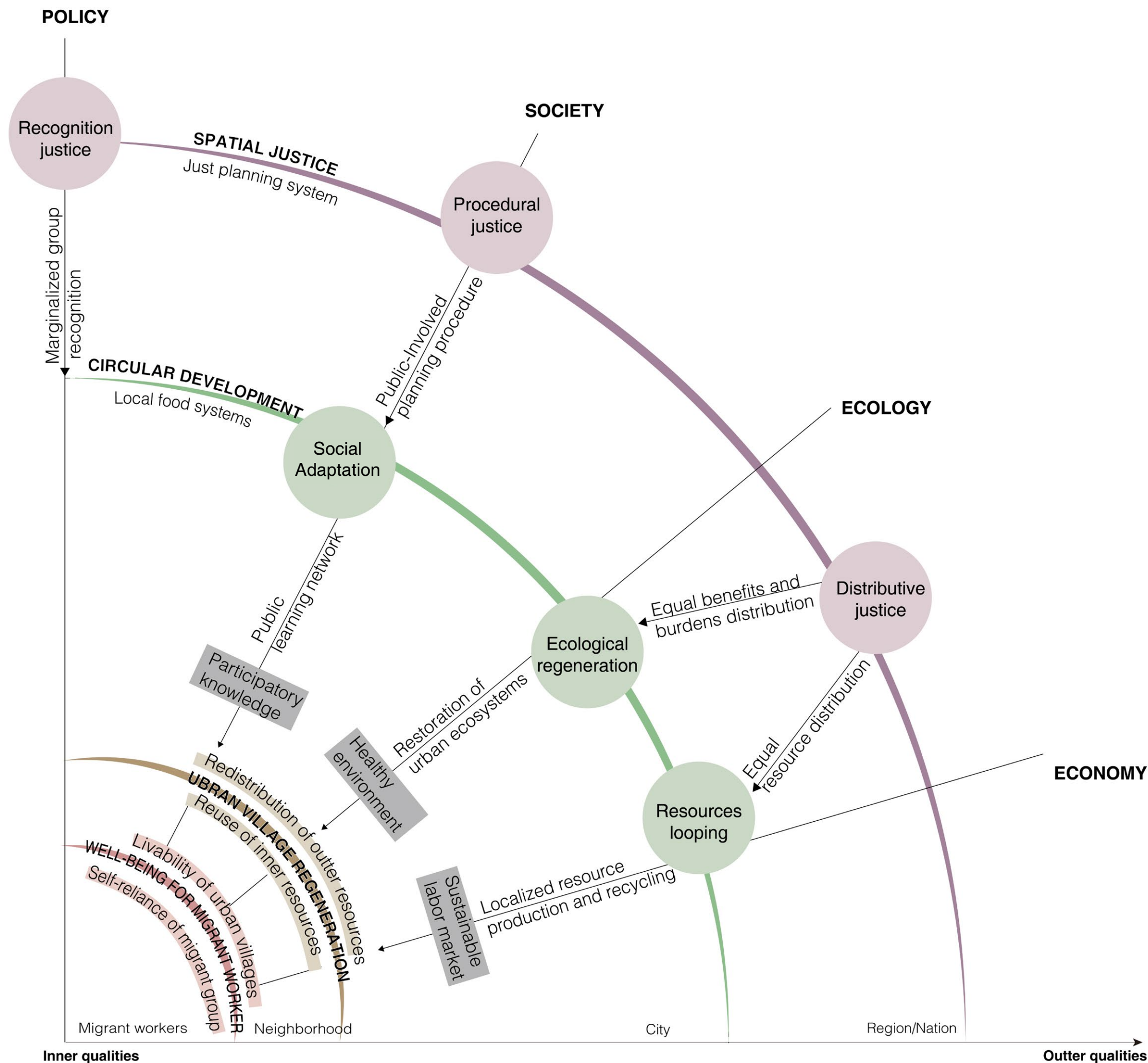
SQ2: What are the foodscapes of the short-distance food flows that migrant workers engage in?

SQ3: What intervention can transform the food system in Chengdu's green buffer zone into a circular model that addresses the degradation of urban ecosystems and effectively integrates marginalized communities?

SQ4: How can urban villages utilize resources from circular local food systems for internal resource reuse in order to regenerate at the social, ecological, and economic perspective?

SQ5: How can the gap between grassroots initiatives and policy-making systems be bridged to ensure the participation of migrant workers?

METHODOLOGY
Conceptual Framework



04 ANALYSIS

- 4.1 Introduction to Chengdu
- 4.2 Research location---the Green Belt
- 4.3 Landscape analysis
- 4.4 Food system analysis
- 4.5 Stakeholder analysis



Figure 13: Farm and Vegetable Fields with garbage in foreground. Apartment buildings in distance.
Source: Stan Rohrer(2010)

INTRODUCTION TO CHENGDU

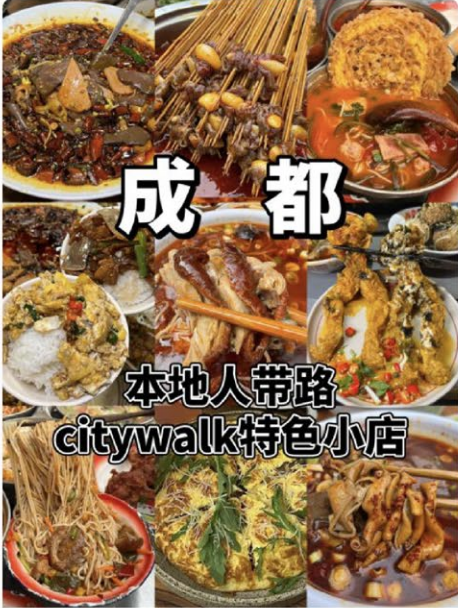
Chengdu---The Ancient Agricultural Region and the Capital of Gastronomy



Figure 14: Traditional Rural Settlement and Production Units in Sichuan

Top

A must-eat list from the locals



成都
本地人带路
citywalk特色小店

(Restaurants (Chengdu) I'll go back to again and again

温迪不会肥 2023-12-25 945



成都

Sharing my favorite local Chengdu milk tea

obibi蜀色茶颜 2023-10-20 1752

食（特色小吃篇）全篇无...

脆皮曲奇 2023-04-27 4658



Taikuli area in Chengdu!!! So much good food!!!

啊哈哈哈哈哈 2023-11-16 2932

大家都在搜

- Chengdu's must-eat list
- Chengdu Specialties
- Chengdu Chunxi Road Food
- Chengdu Food

Figure 15: Screenshot of searching “Chengdu” in Xiaohongshu

INTRODUCTION TO CHENGDU

100% Food Self-sufficient City

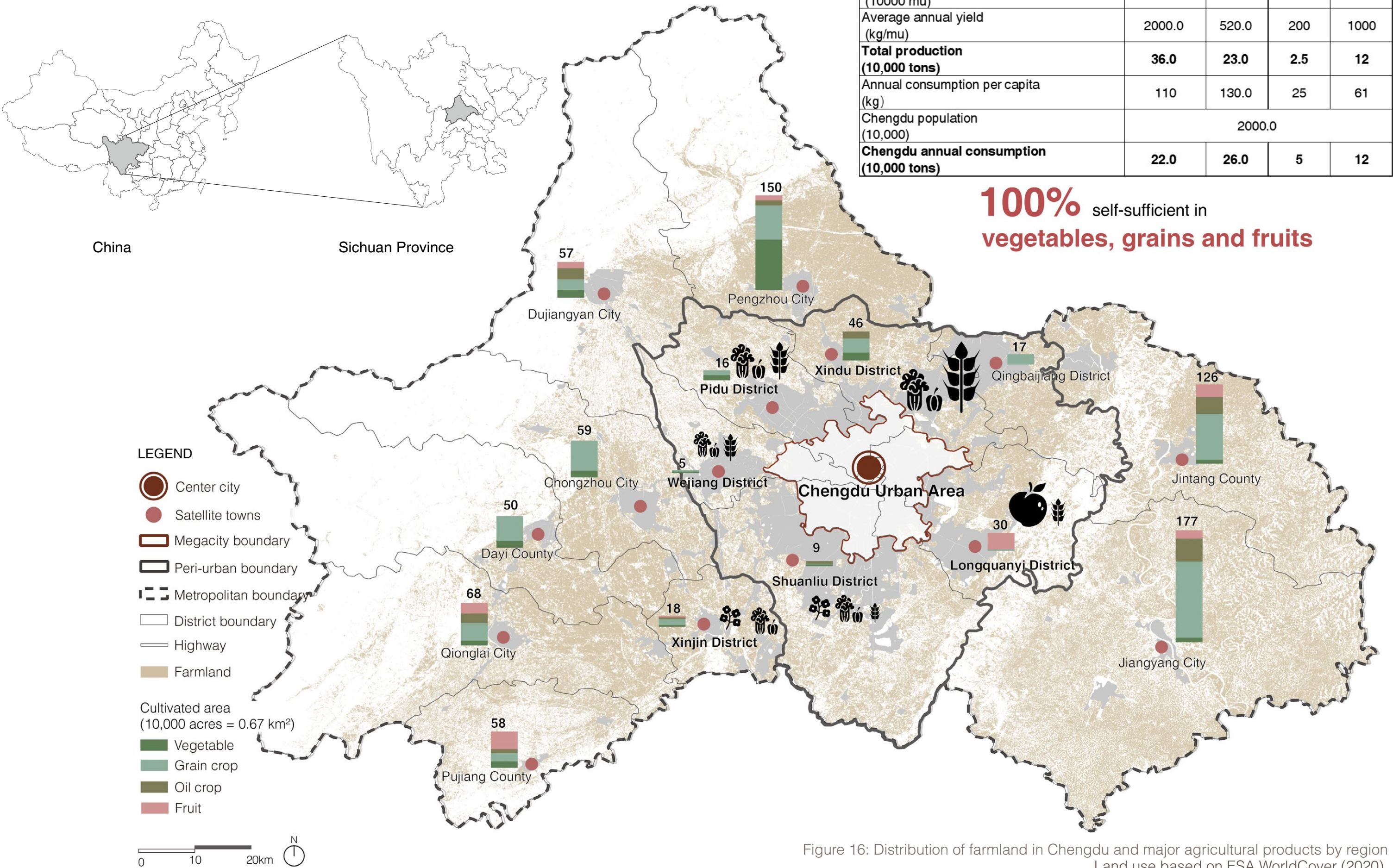


Figure 16: Distribution of farmland in Chengdu and major agricultural products by region
Land use based on ESA WorldCover (2020),
Statistical data based on Statistical Bulletin on National Economic and Social Development of Chengdu(2022)

RESEARCH LOCATION---THE GREEN BELT

Reasons for Location - Threats and Opportunities

The green belt is an **urban expansion control area** consisting of **500 meters along each side of the urban ring road** and **7 wedge-shaped sites**.
The total area is **187 km²**.

54 km² Planned build-up land mainly consists of new residential and commercial land



133 km² Planned ecological land, consisting of
33 km² Existing farmland
65 km² Tourist Agriculture
35 km² Greenery

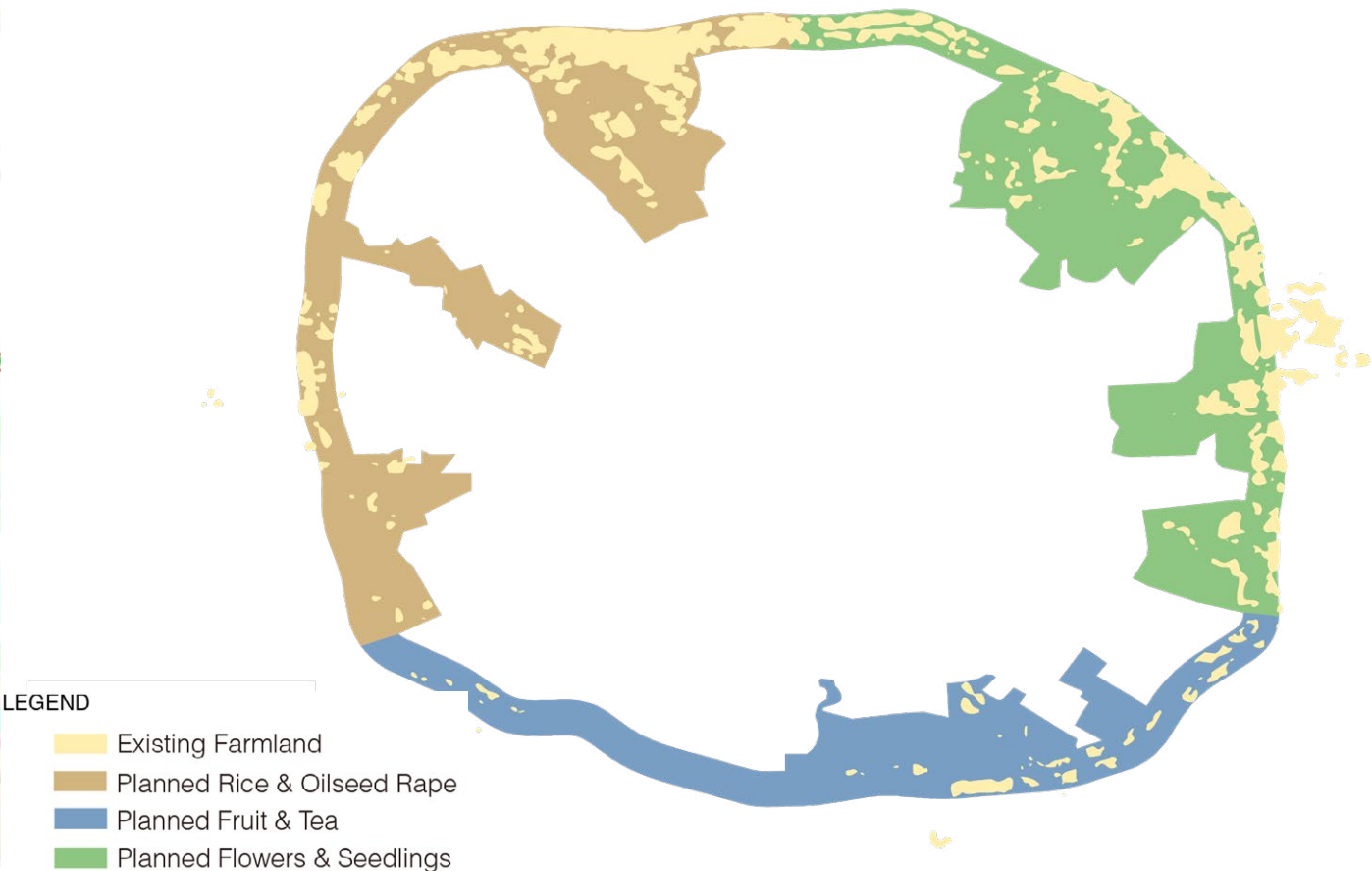


Figure 17: Chengdu Ecological Zone Land Use Planning and Agricultural Planning
Source: Master Plan for Chengdu's Ecological Zone(2020)

LANDSCAPE ANALYSIS

Mix Rural-urban Landscape

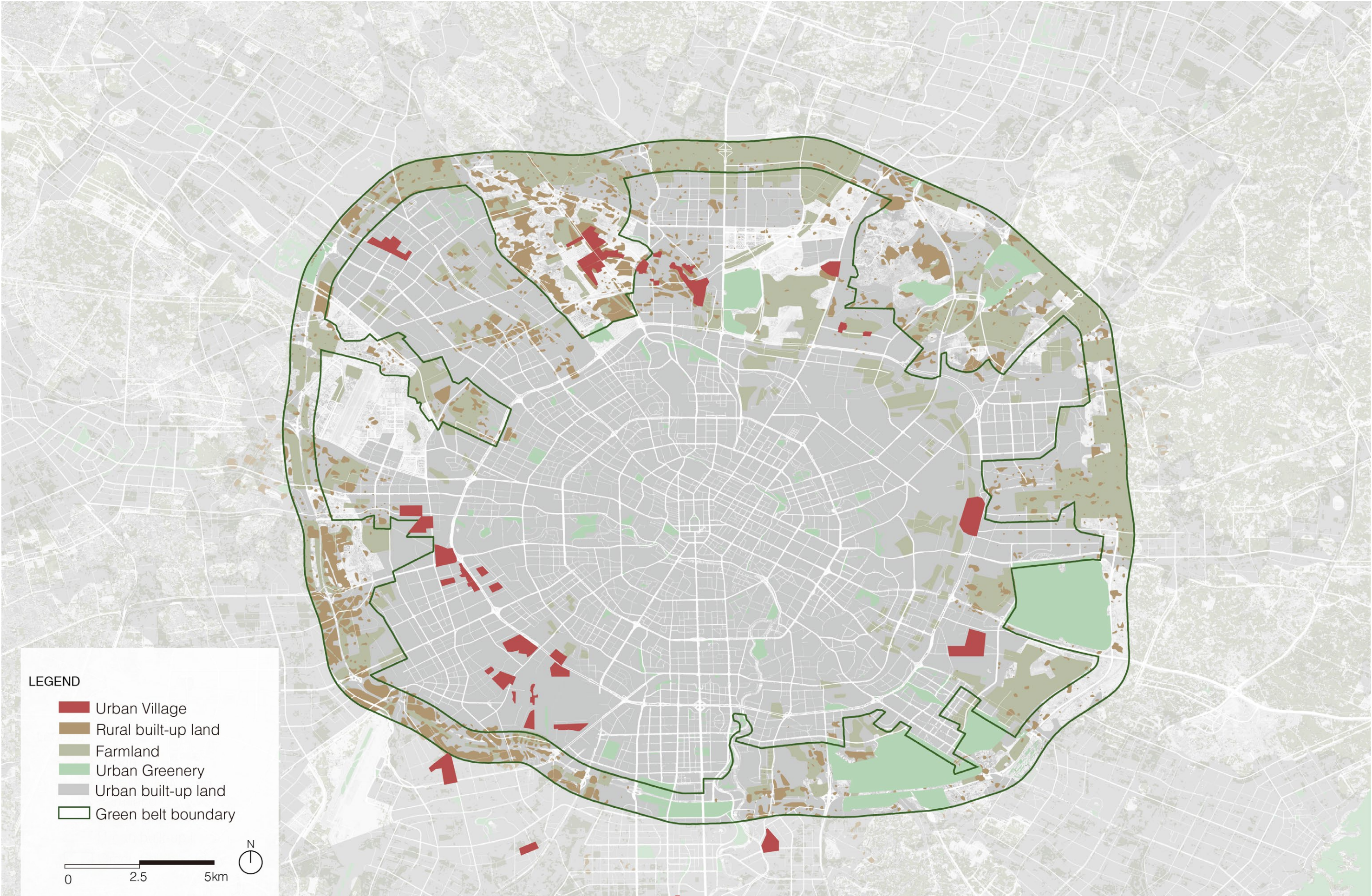


Figure 18: Green Belt and Urban Village Distribution
Land use based on ESA WorldCover (2020)

LANDSCAPE ANALYSIS

Rural-urban landscape gradient lead by urban master plan

1954
Transition from agriculture to industry, defining the city as a "socialist industrial city focused on precision machinery, mechanical manufacturing, and light industry."(Tao & Wang, 2000)

1982
Emphasis on military and heavy manufacturing bases, state-owned military factories.

1994
Industry relocation from the city center, trends in housing commodification and land market formation.

2011
Development of substantial infrastructure and new residential areas along six major corridors, catering to high-end services and quality housing.



Figure 19: Primary industries described in the four editions of Chengdu's urban
Made by the author

LANDSCAPE ANALYSIS

A Landscape Gradually Transformed from Rural to Urban

Traditional Chengdu Village---Linpan Residential units+Farmland



Made by the author



Source: Bing Satellite Map(2024)

LANDSCAPE ANALYSIS

A Landscape Gradually Transformed from Rural to Urban

Urban Village Type 1---Village + large-scale factory + farmland



Made by the author



Source: Bing Satellite Map(2024)

LANDSCAPE ANALYSIS

A Landscape Gradually Transformed from Rural to Urban

Urban Village Type 2---Urban village + large-scale factories + fragmented farmland



Made by the author



Source: Bing Satellite Map(2024)

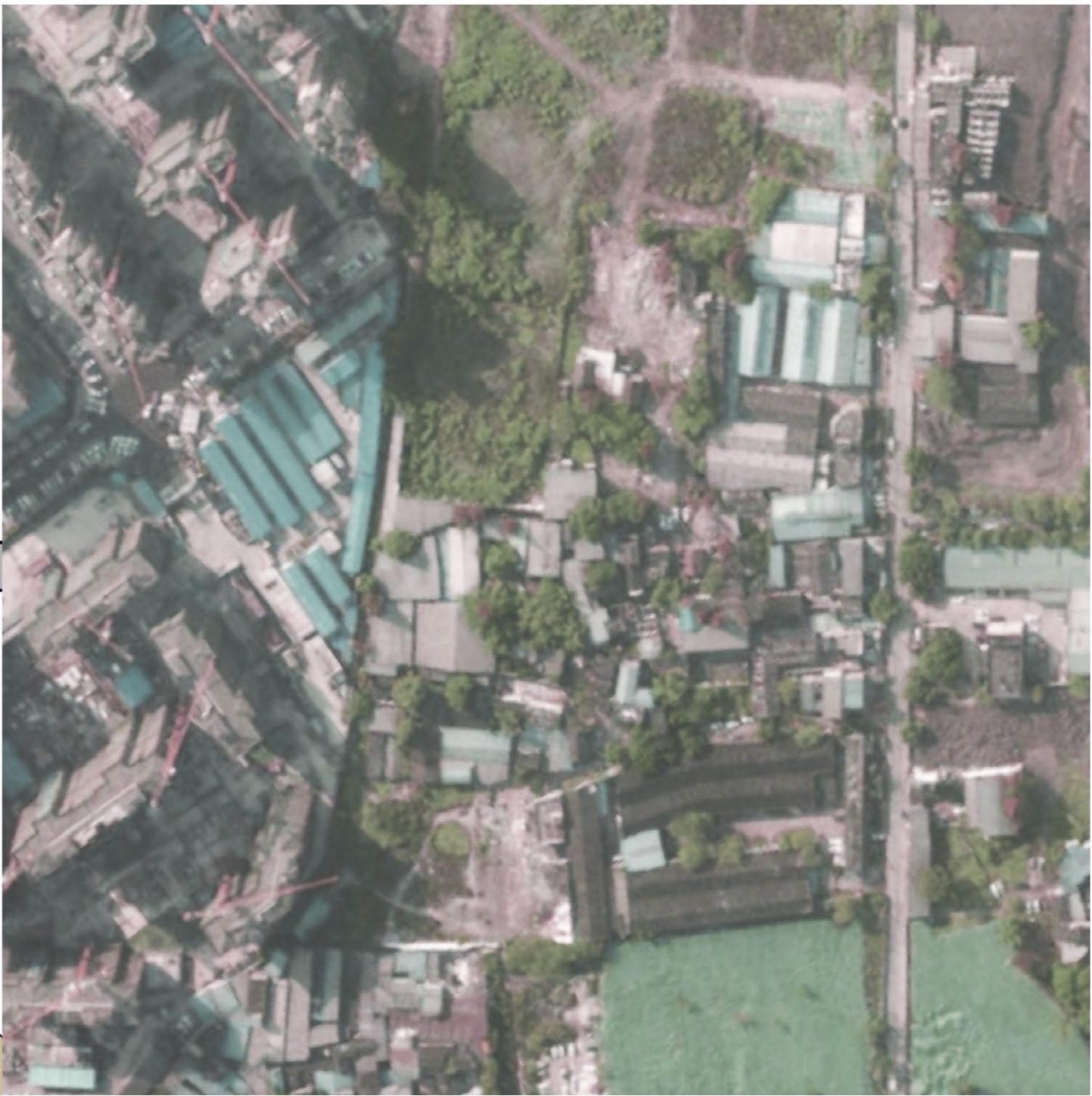
LANDSCAPE ANALYSIS

A Landscape Gradually Transformed from Rural to Urban

Urban Village Type 3---Urban village + land under construction + residential land



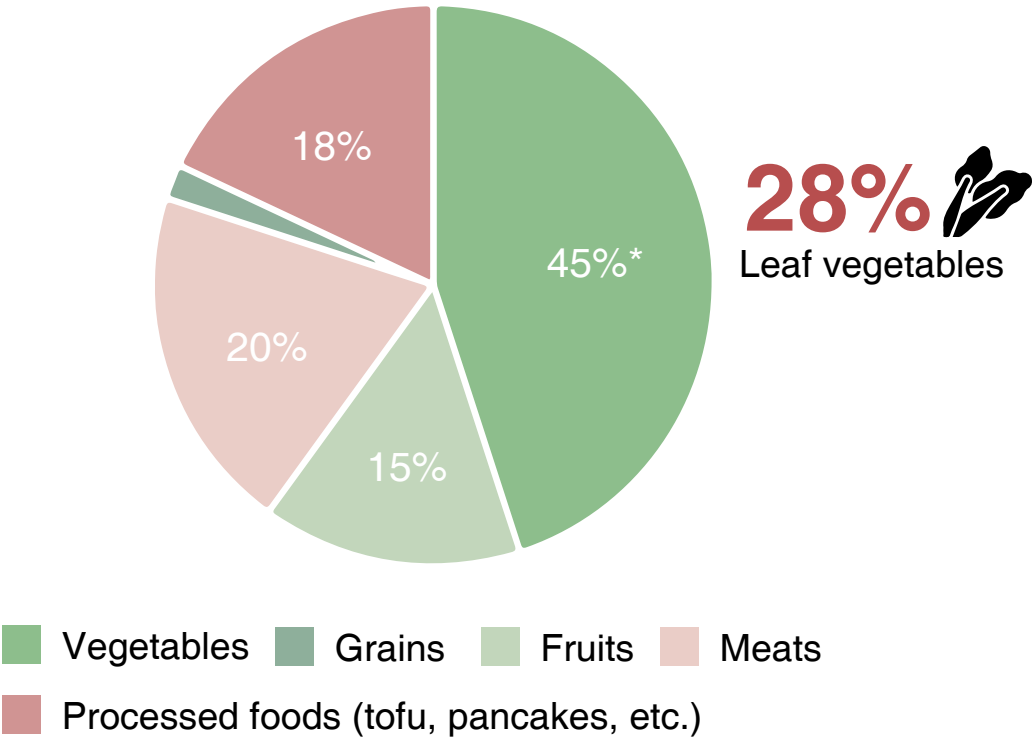
Made by the author



Source: Bing Satellite Map(2024)

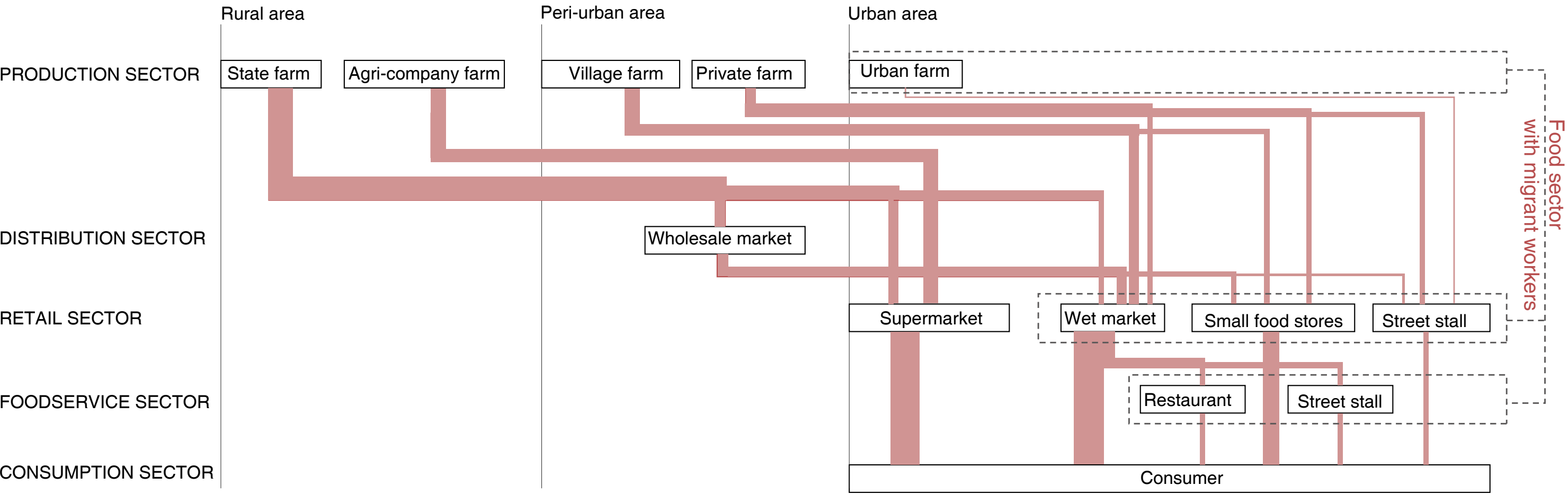
FOOD SYSTEM ANALYSIS

Overview



Data source: Si et al. (2016)

*Percentage of vendors selling this type of food



Supply chain diagram based on Si et al. (2016)
Sales volume data source: Statistical Bulletin on National Economic and Social Development of Chengdu(2022)

FOOD SYSTEM ANALYSIS

Two contrasting food systems

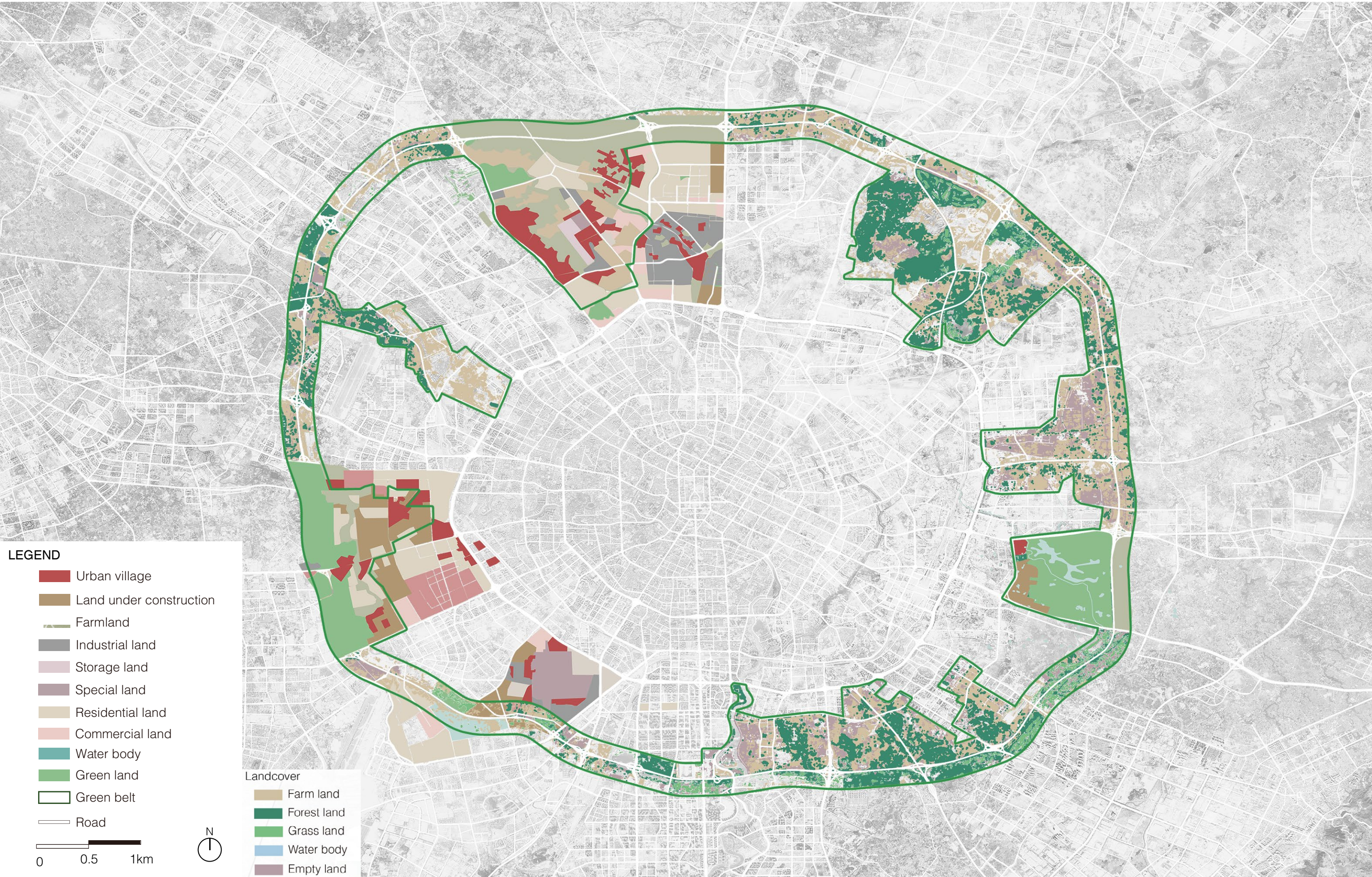
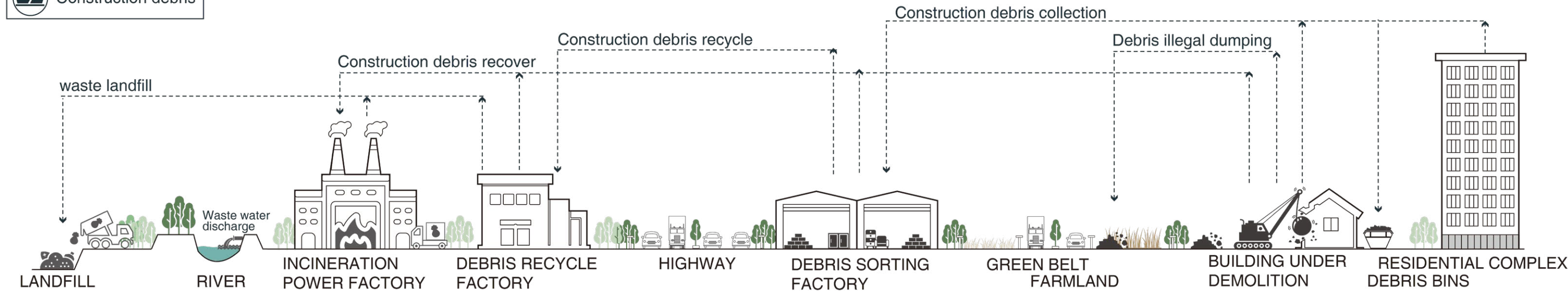


Figure 20: Land use of western zone and land cover of eastern zone
Based on: ESA WorldCover (2020), Bing satellite map(2024)

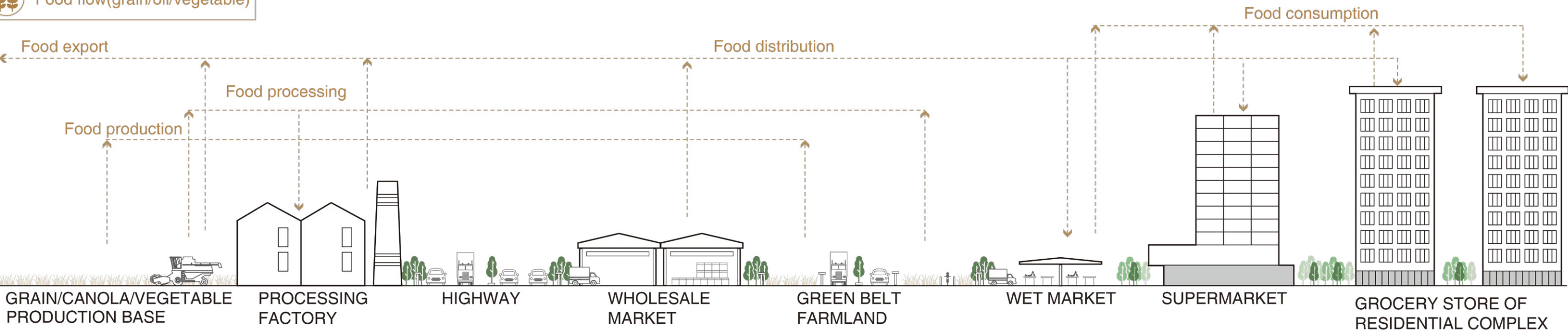
FOOD SYSTEM ANALYSIS

Resources Flow---Green Belt Farmland System

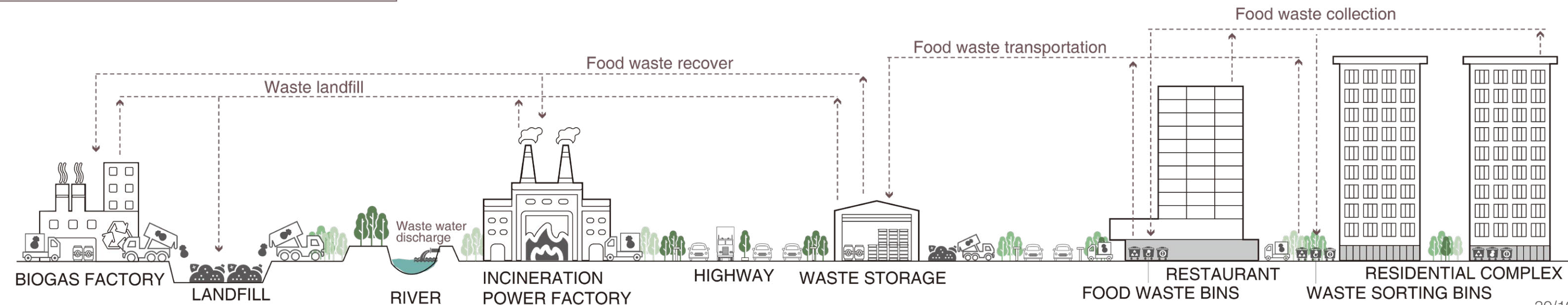
 Construction debris



 Food flow(grain/oil/vegetable)

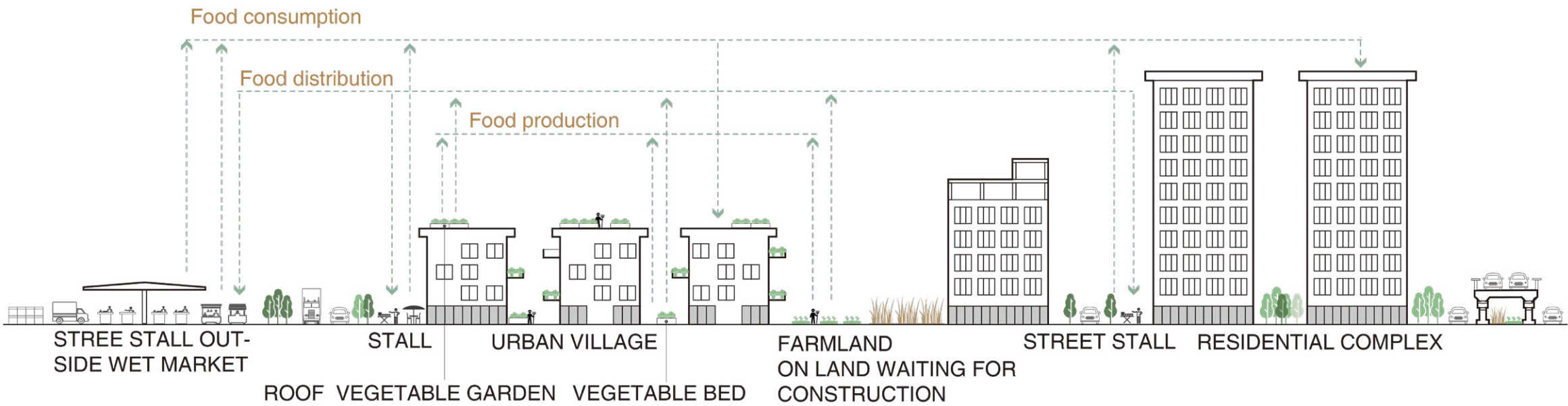
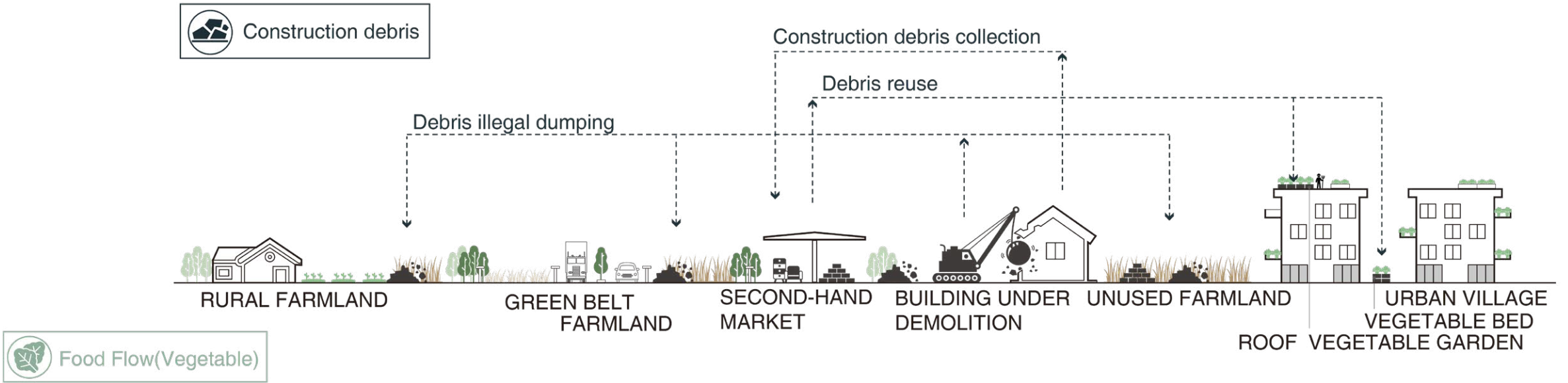


 Food waste flow(Surplus food&Kitchen waste)



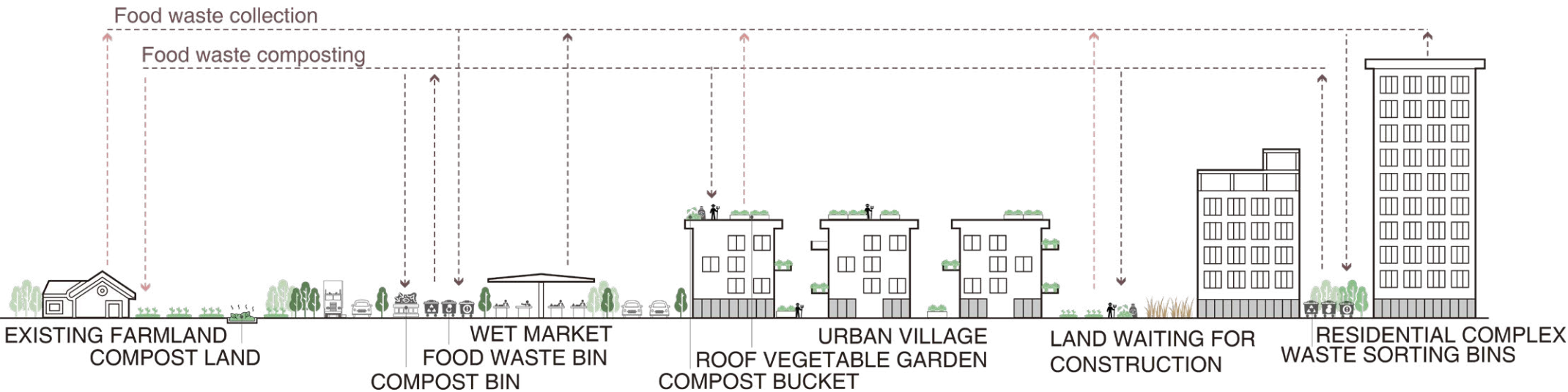
FOOD SYSTEM ANALYSIS

Resources Flow---Urban Village System



Food waste flow(Surplus food&Kitchen waste)

Food waste flow(Agricultural waste)



FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 1

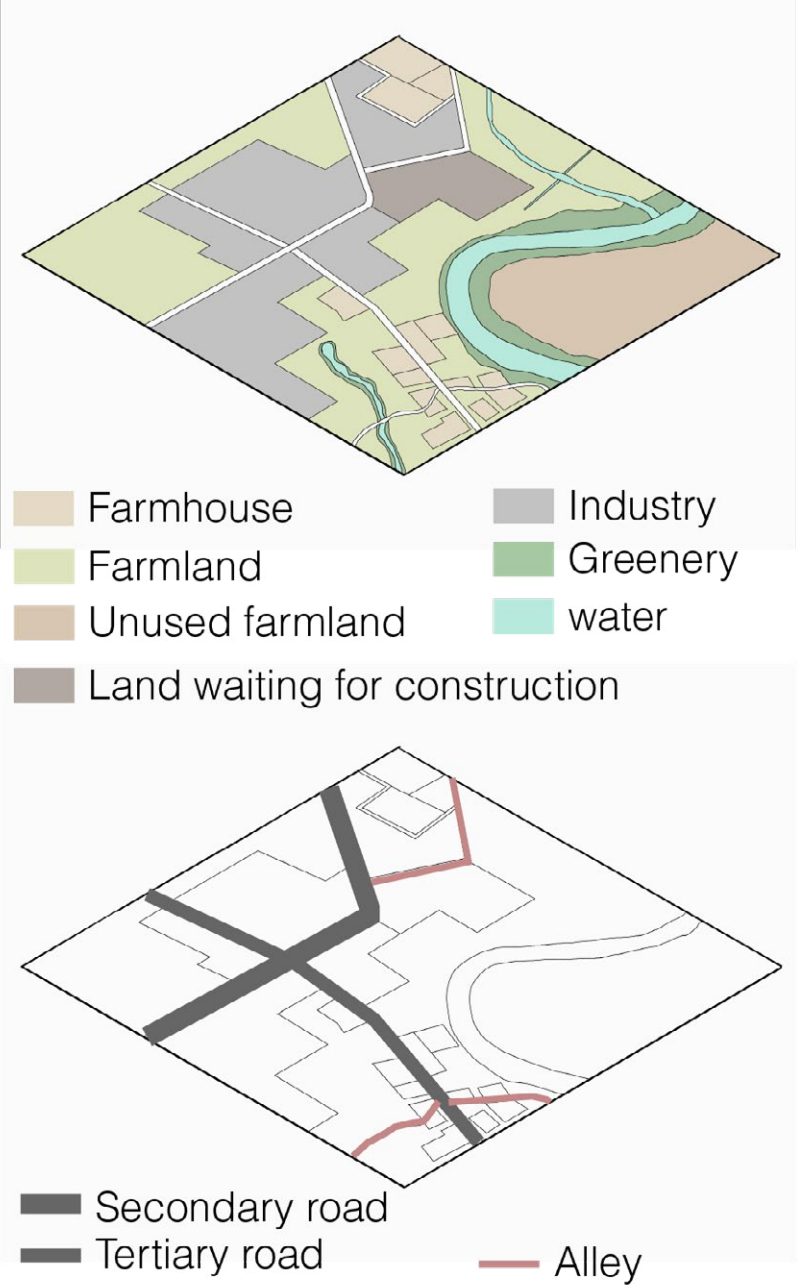
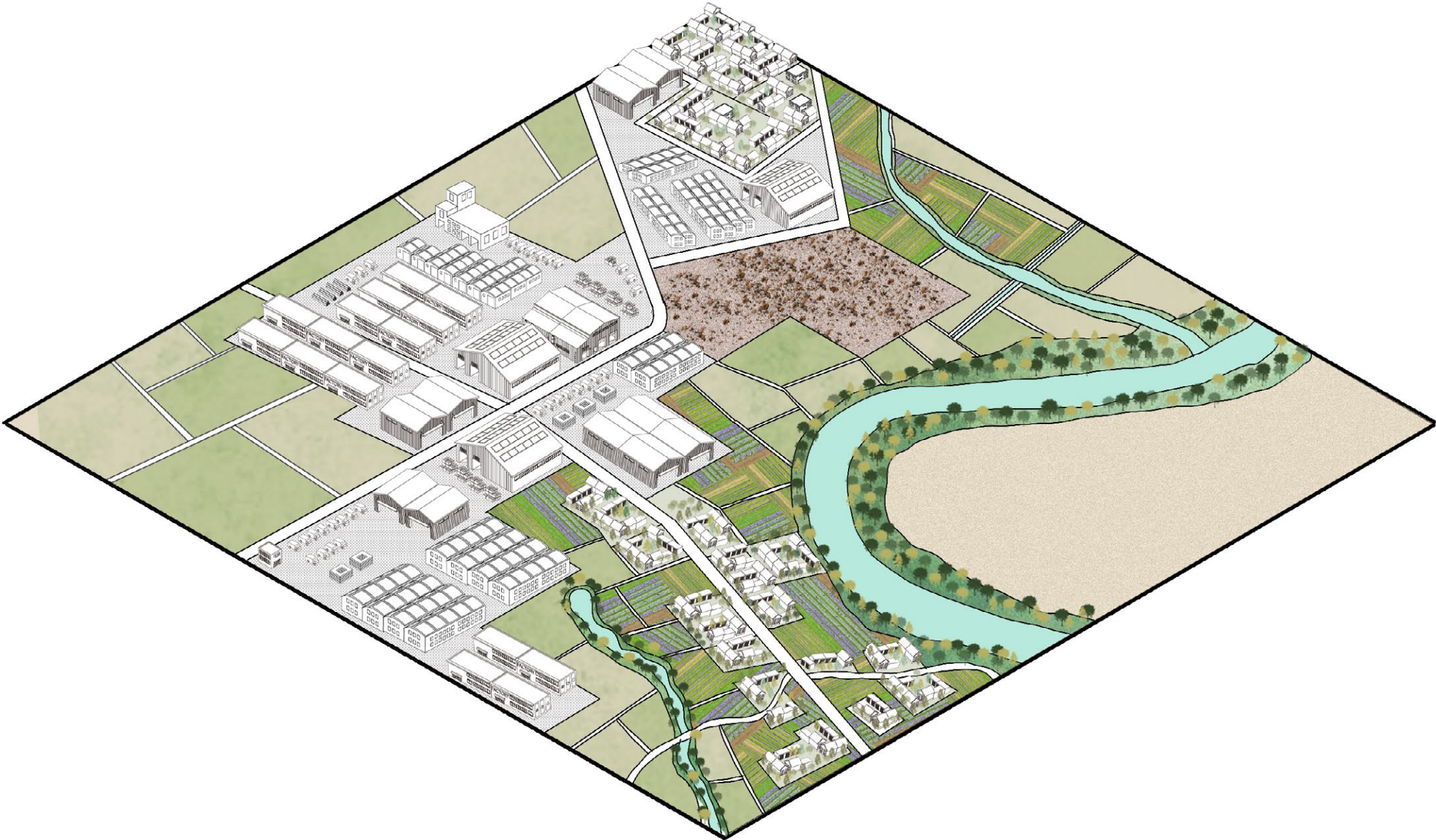


Figure 21: Landuse and Transportation Analysis
Made by author

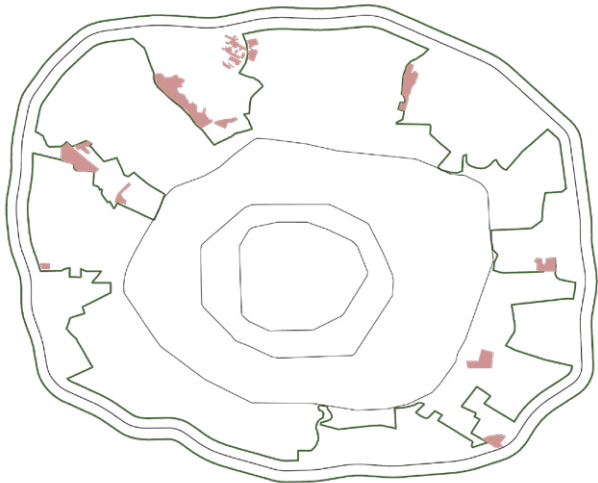


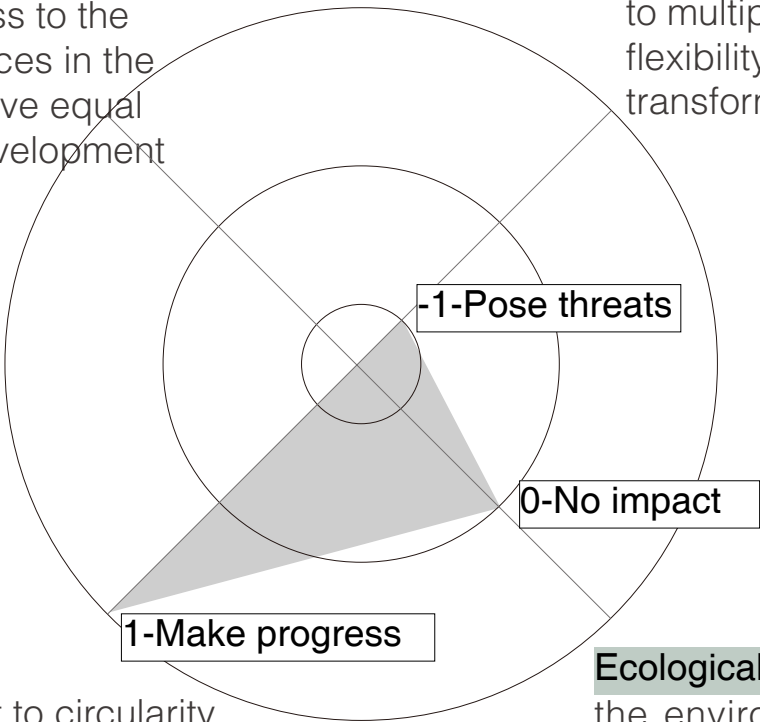
Figure 22: Location

FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 1

Spatial Justice

Whether the space is accessible to all, ensuring individual has access to the resources and services in the space in order to have equal opportunities for development



Resources Looping

Space's commitment to circularity by examining the extent to which material resources within the space are recyclable and reused

Socio-spatial Adaptation

As the physical form of social adaptation, it emphasizes the ability of physical space to adapt to multiple functions to ensure the flexibility of society in the face of transformational needs.

Ecological Regeneration

the environmental impact of the space, evaluating whether its design and use contribute to or detract from the health of the ecosystem

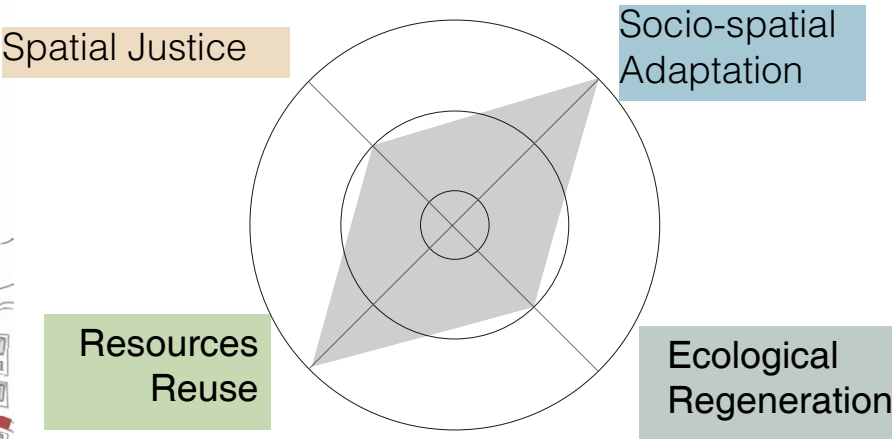
Production space: Vegetable Growing Boxes Made from Reused Debris



Location:



Assessment



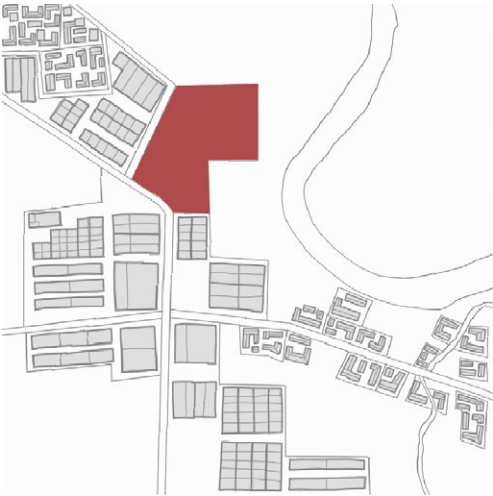
FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 1

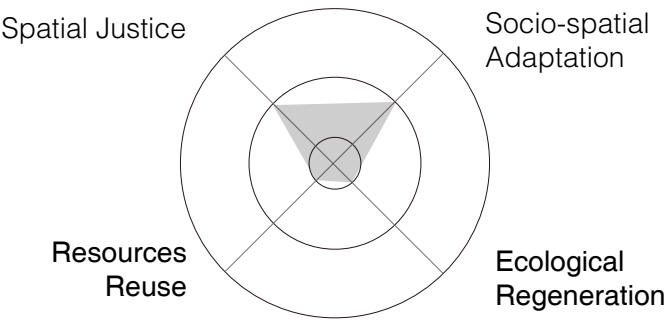
Production space: Unused Farmland



Location:



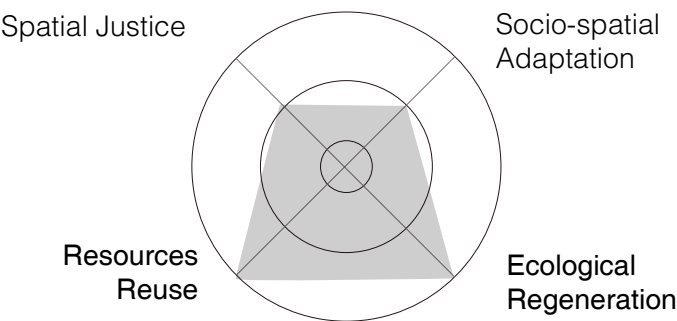
Assessment



Production space: Existing farmland



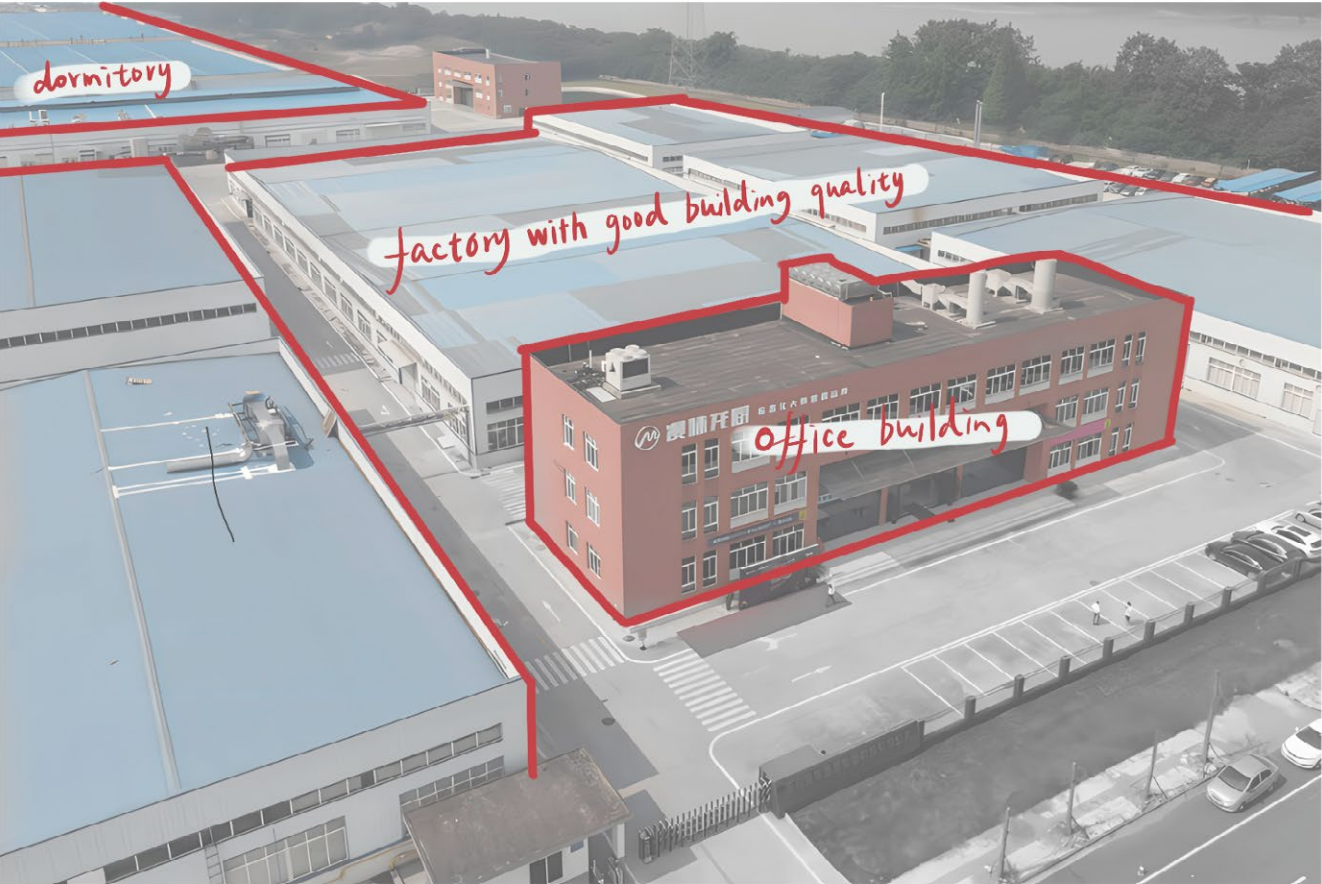
Location:



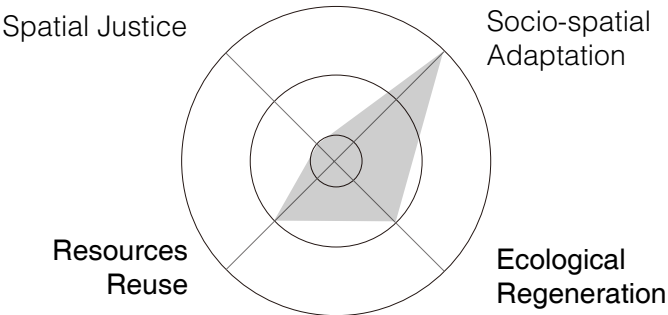
FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 1

Processing space: large-scale factory with good building quality



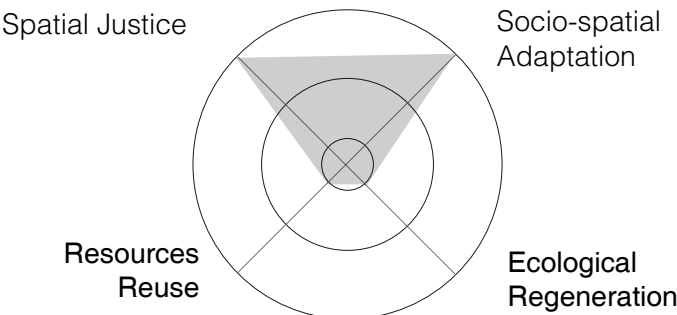
Location:



Processing space: middle-scale factory with poor building quality



Location:



STRENGTHS

OPPORTUNITIES

Spatial Adaptability:

Numerous large and medium-sized industrial buildings of good quality are vacant.

Spatial Adaptability:

The demand for construction debris and food waste processing, combined with government requirements for high-tech industrial zone and the availability of numerous buildable and idle industrial buildings, provides space for future circular industrial zone development.

Resource Reuse:

The construction of future circular industrial parks offers opportunities, knowledge, and methods for the recycling and reuse of construction debris.

Ecological Regeneration:

A small portion of demolished industrial debris is piled up on nearby vacant farmland.

Non-Exclusion:

New factories producing circular products may require workers with higher education levels, limiting job opportunities for migrant workers.

Ecological Regeneration:

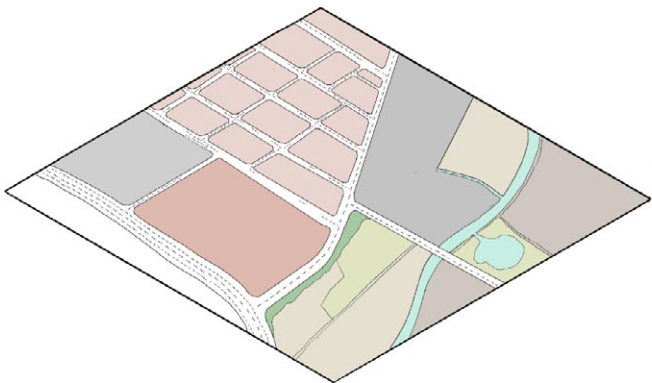
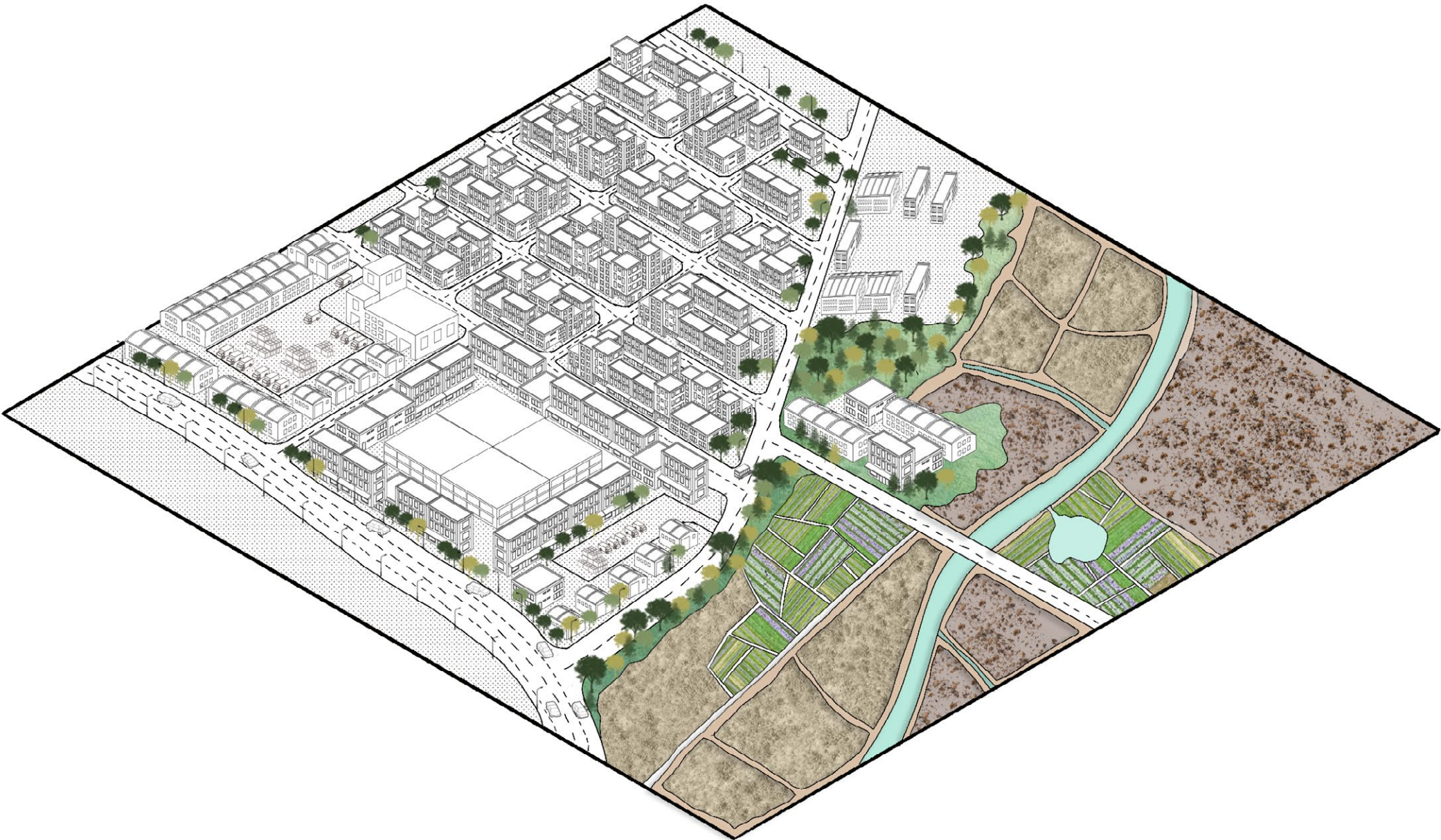
Industrial areas within the city may pollute surrounding farmland and water systems.

WEAKNESSES

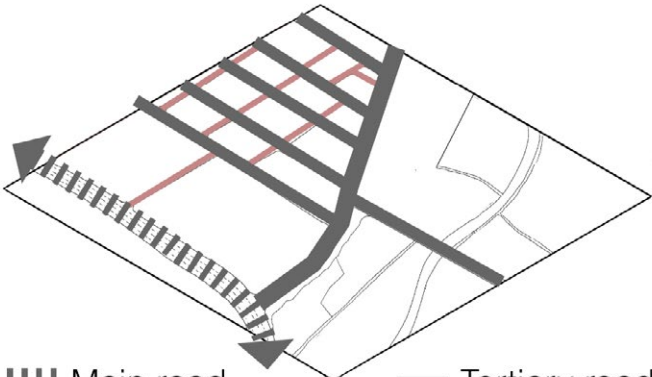
THREATS

FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 2



- | | |
|----------------------|----------|
| Farmland with debris | Market |
| Informal farmland | Industry |
| Unused farmland | Greenery |
| Urban village | water |



- | | |
|----------------|---------------|
| Main road | Tertiary road |
| Secondary road | Alley |

Figure 24: Landuse and Transportation Analysis
Made by author

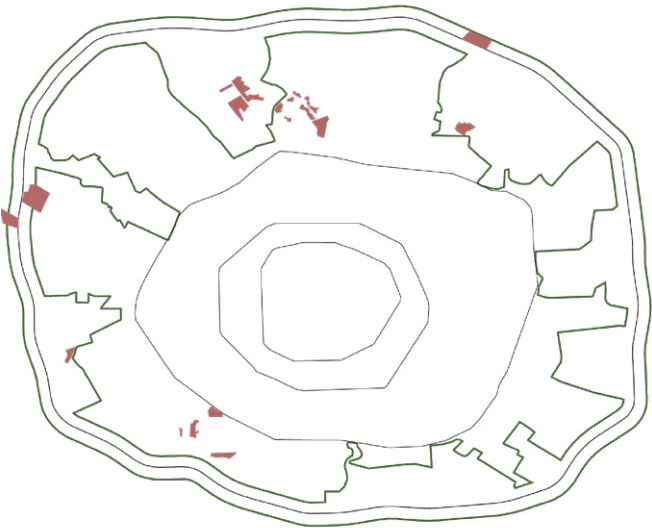


Figure 23: Location

FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 2

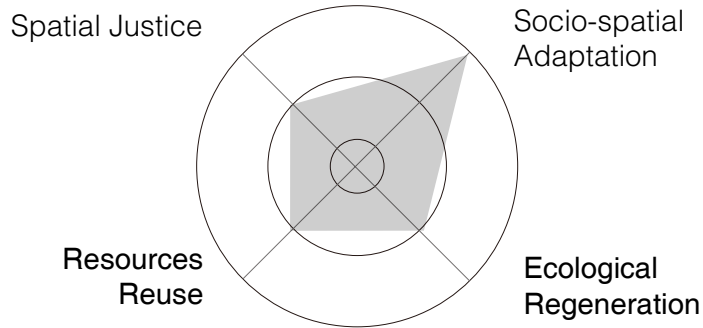
Production space: Vegetable Plots on Unused Flower Bed



Location:



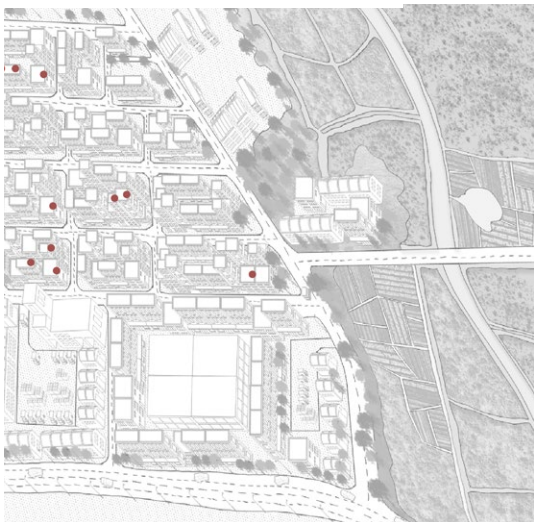
Assessment



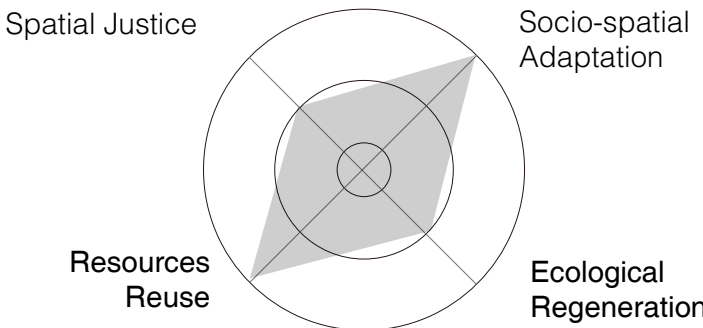
Production space: Roof Vegetable Garden



Location:



Assessment



FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 2

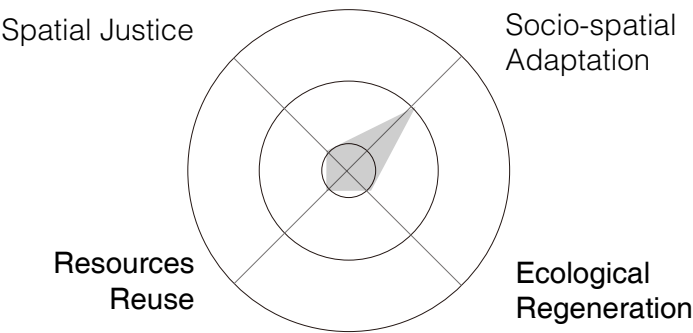
Distribution space: Permanent stalls inside the market



Location:



Assessment



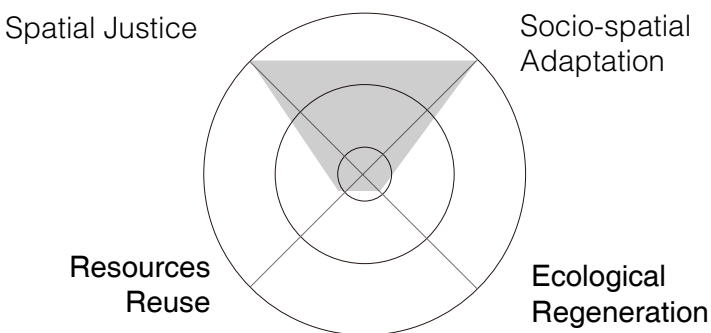
Distribution space: Temporary stalls outside the market



Location:



Assessment



FOOD SYSTEM ANALYSIS

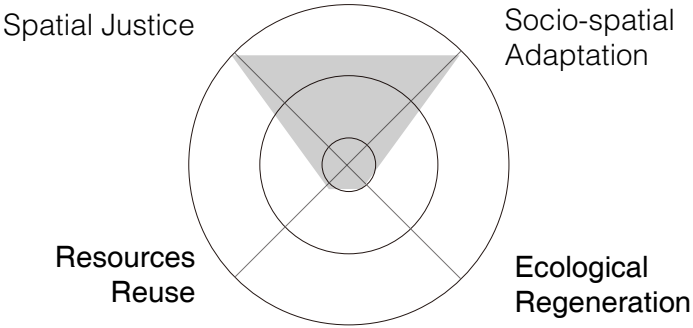
Short-distance Foodscapes in Urban Village Type 2

Consumption space: Street food vendors



Location:

Assessment

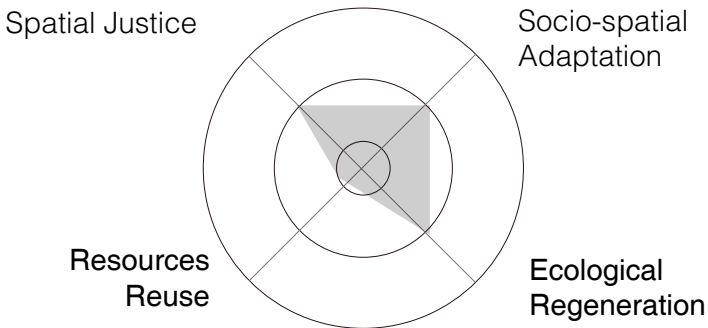
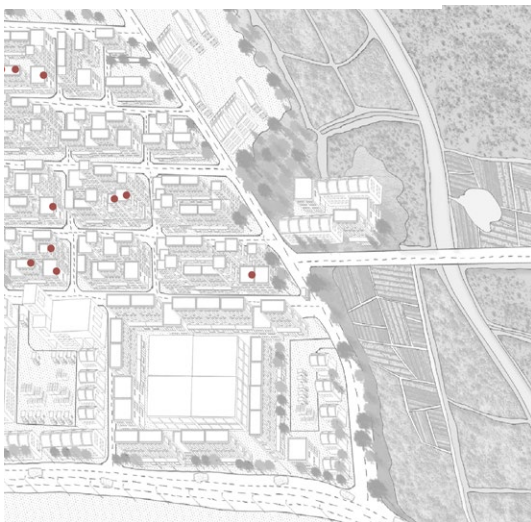


Consumption space: Vegetable store



Location:

Assessment



FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 2

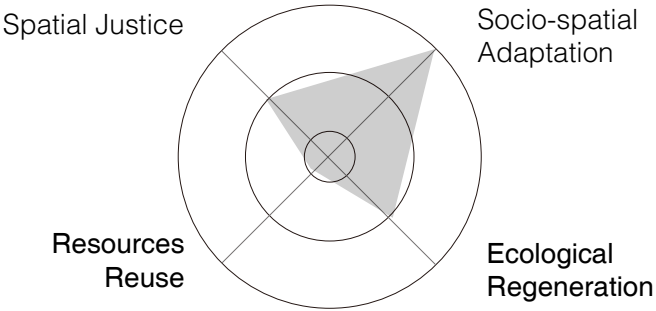
Consumption space: Fast Food Restaurants



Location:



Assessment



FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 2

SWOT analysis

STRENGTHS

Non-Exclusion: Urban village self-construction and lax urban governance grant equitable spatial access to all, fostering robust social networks and a local labor market among tenants. Spatial Adaptability: Expansive pedestrian pathways and secondary roads, commandeered by street vendors, establish a dynamic and mature culinary commerce environment. Resource Recycling: Economic imperatives encourage migrant workers to adopt resource reuse practices, evidenced by a rich culture of construction waste recycling, secondary market trading, and a preference for localized food supply chains over distant supermarket dependencies. Ecological Regeneration: Migrant workers' agricultural inclinations drive spontaneous cultivation on idle lands, counteracting land vacancy and supplementing domestic economies.
--

Non-Exclusion: The area's demographic, dominated by migrant workers, deters urban residents' engagement with the space and its culinary offerings. Spatial Adaptability: Inferior quality of informal housing stock challenges potential upgrades or renovations. Resource Recycling: The informal management framework facilitates the unlawful accumulation of kitchen refuse and construction debris. Ecological Regeneration: Informal agricultural practices, constrained by synthetic fertilizer use and irrigation scarcity, limit productivity and sustainability, compounded by substantial kitchen waste from unauthorized street commerce.

OPPORTUNITIES

Non-Exclusion: Government policies favoring inclusive renewal underscore a commitment to preserving urban village socio-cultural integrity. Spatial Adaptability: Local governance exhibits tolerance towards street vending, suggesting potential for adaptive commercial use. Ecological Regeneration: Municipal directives advocate for stringent farmland conservation and ecological restoration efforts.
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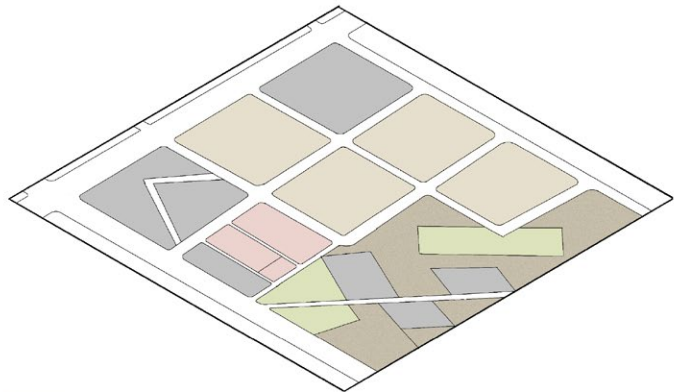
Non-Exclusion: Centralized land management by corporate entities impedes the continuation of informal urban agricultural activities. Ecological Regeneration: Predominantly demolition-focused urban renewal poses risks to the peripheral agricultural land through mismanaged construction waste.

WEAKNESSES

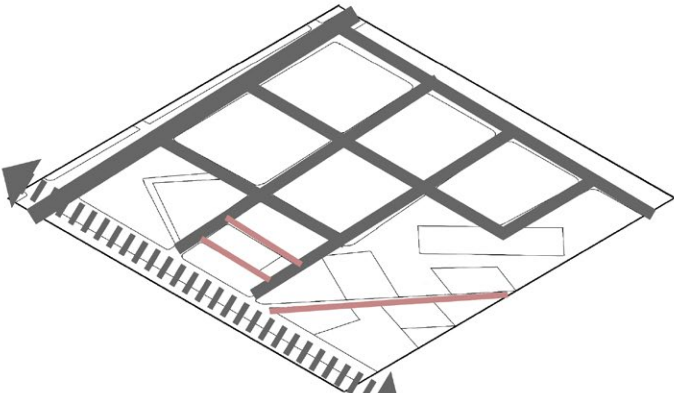
THREATS

FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 3



- Land waiting construction
- Informal farmland
- Residential land
- Industry
- Urban village



- Main road
- Secondary road
- Tertiary road
- Alley

Figure 26: Landuse and Transportation Analysis
Made by author

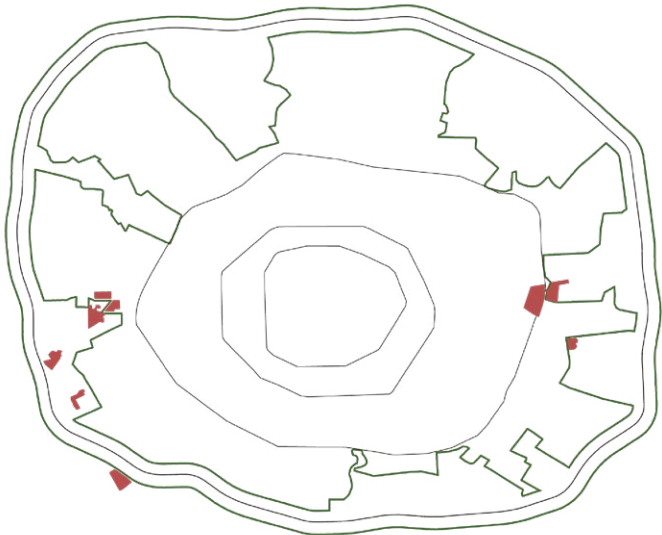
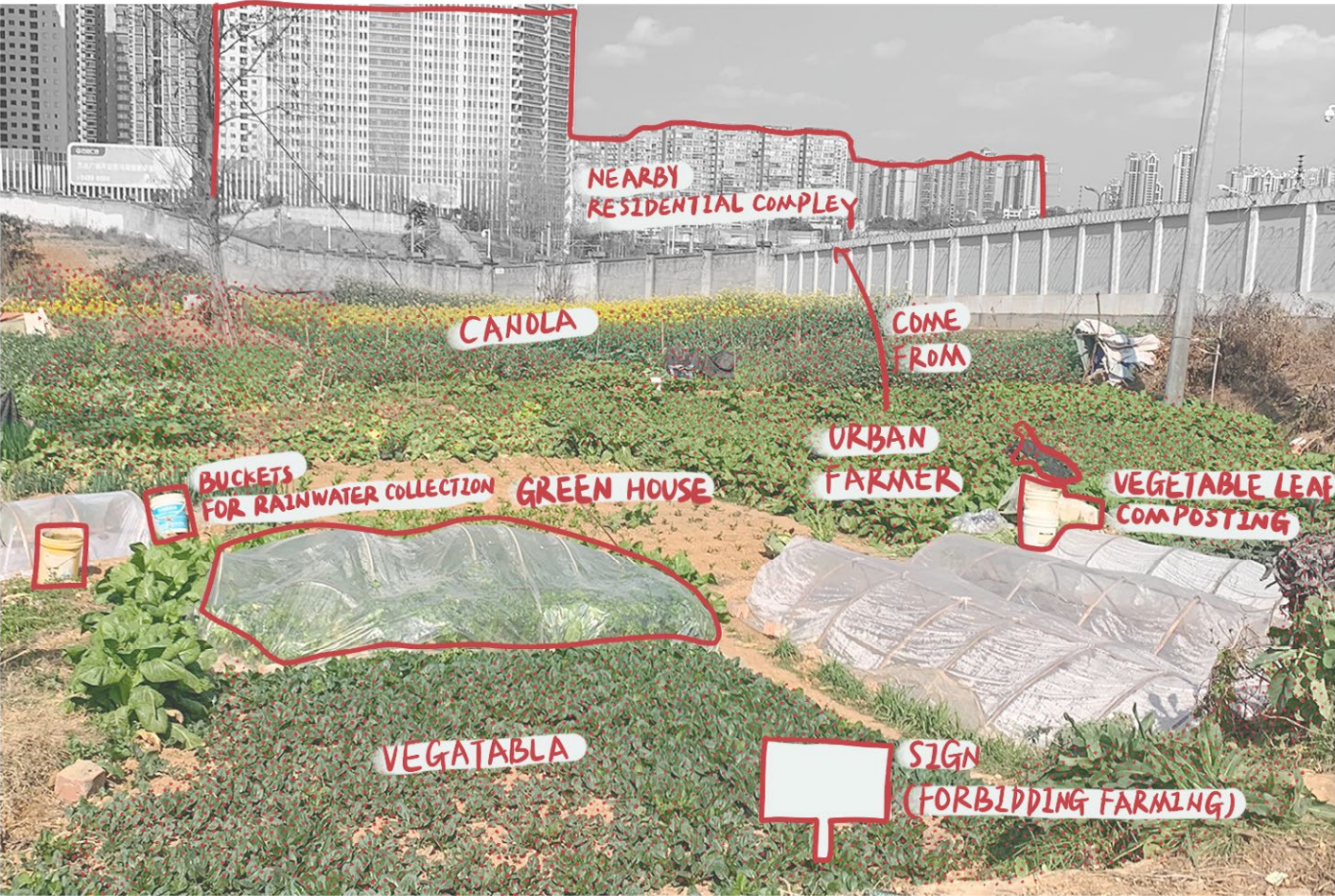


Figure 25: Location

FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 3

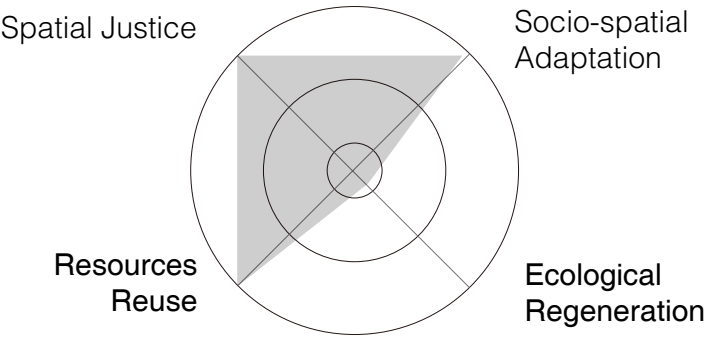
Production space: Community-sponsored farmland on land waiting for construction



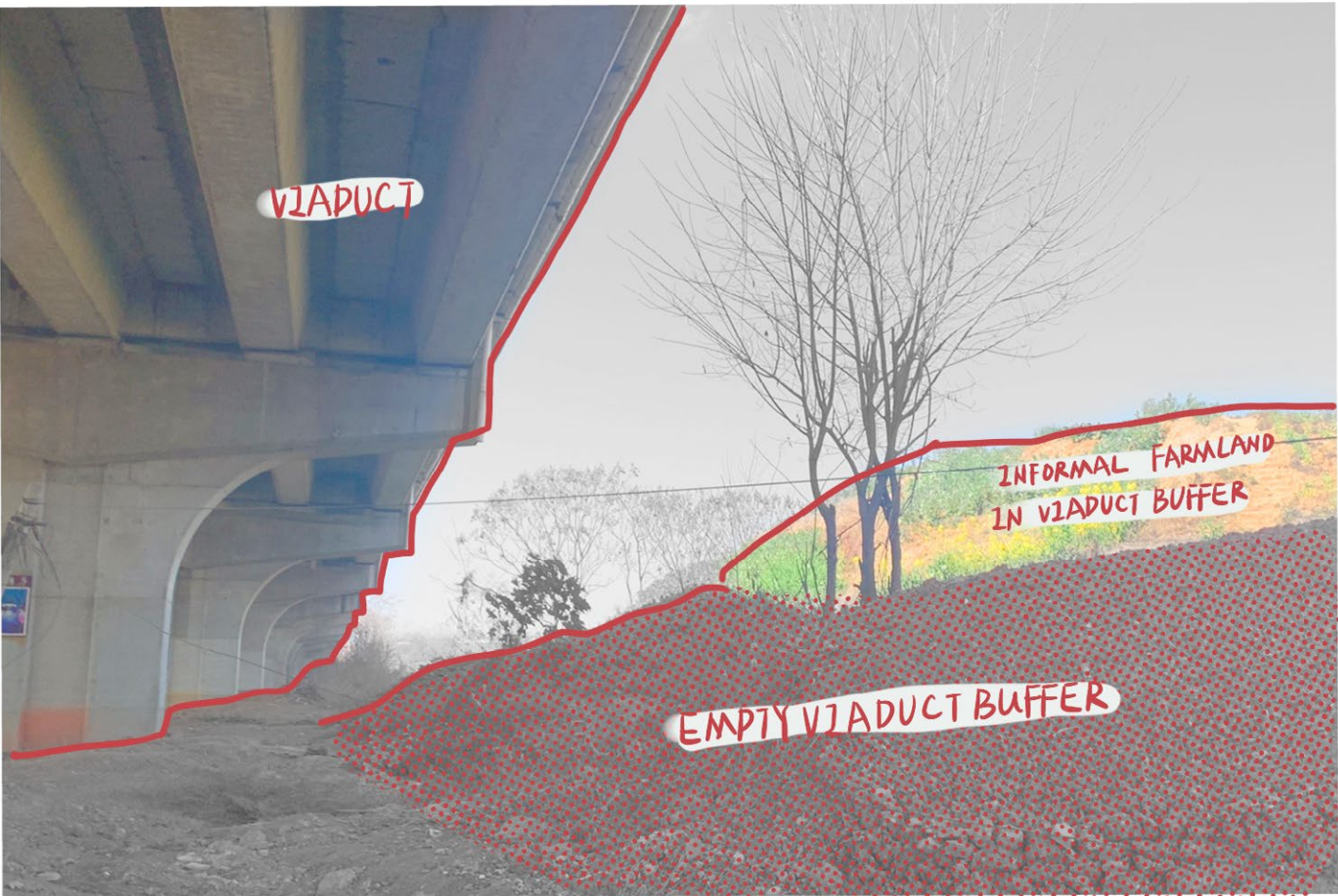
Location:



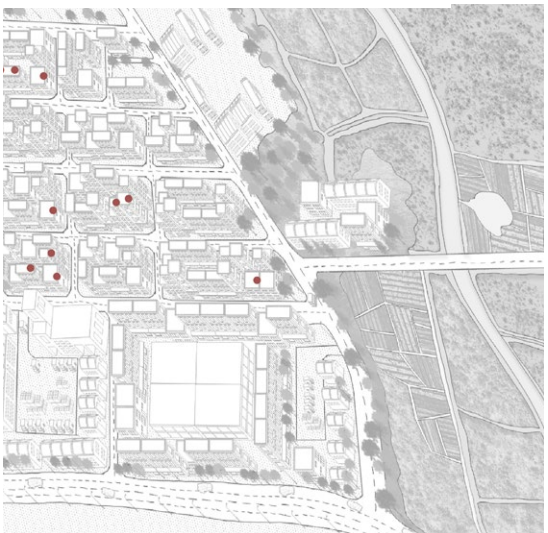
Assessment



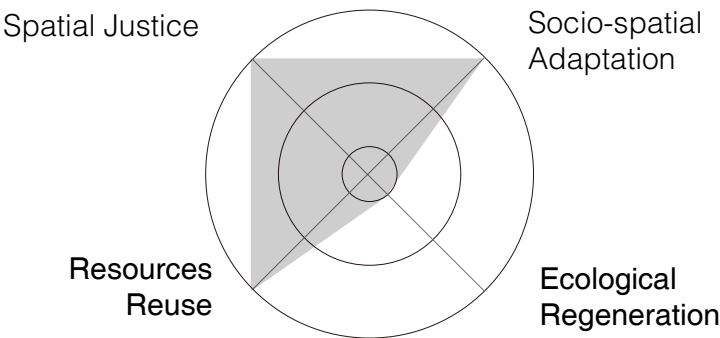
Consumption space: Community-sponsored farmland on transportation buffer zone



Location:



Assessment



FOOD SYSTEM ANALYSIS

Short-distance Foodscapes in Urban Village Type 3

SWOT analysis

STRENGTHS

OPPORTUNITIES

Spatial Adaptability:

A subset of industrial buildings of commendable quality and abundant vacant spaces surrounding undeveloped residential areas (under-bridge spaces, railway buffer zones, and undeveloped lots) present significant potential for adaptive use.

Ecological Regeneration:

Residents of nearby modern residential complexes engage in spontaneous urban agriculture activities with urban village inhabitants, driven by interests in leisure and recreation. Initiatives like community-organized kitchen waste composting and shared gardens offer models for sustainable practices.

Resource Reuse:

The construction of new residential areas provides an opportunity for the increased use of recyclable materials and the reuse of construction debris, supported by governmental regulations and advocacy for kitchen waste recycling.

Non-Exclusion:

The strict management protocols of surrounding modern residential complexes necessitate homeowner association approval for the reuse of communal spaces, such as rooftops.

Resource Reuse:

Chengdu's household kitchen waste segregation awareness and practice remain suboptimal.

Spatial Adaptability:

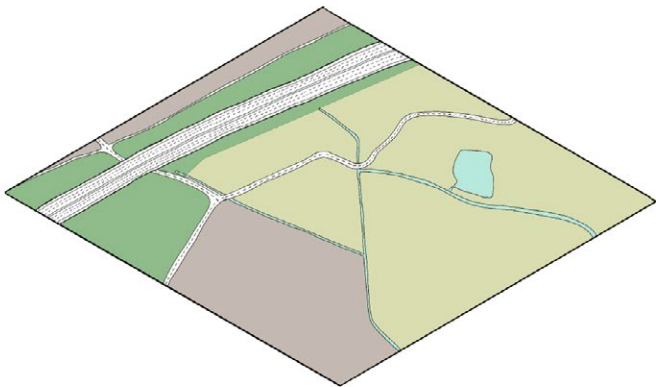
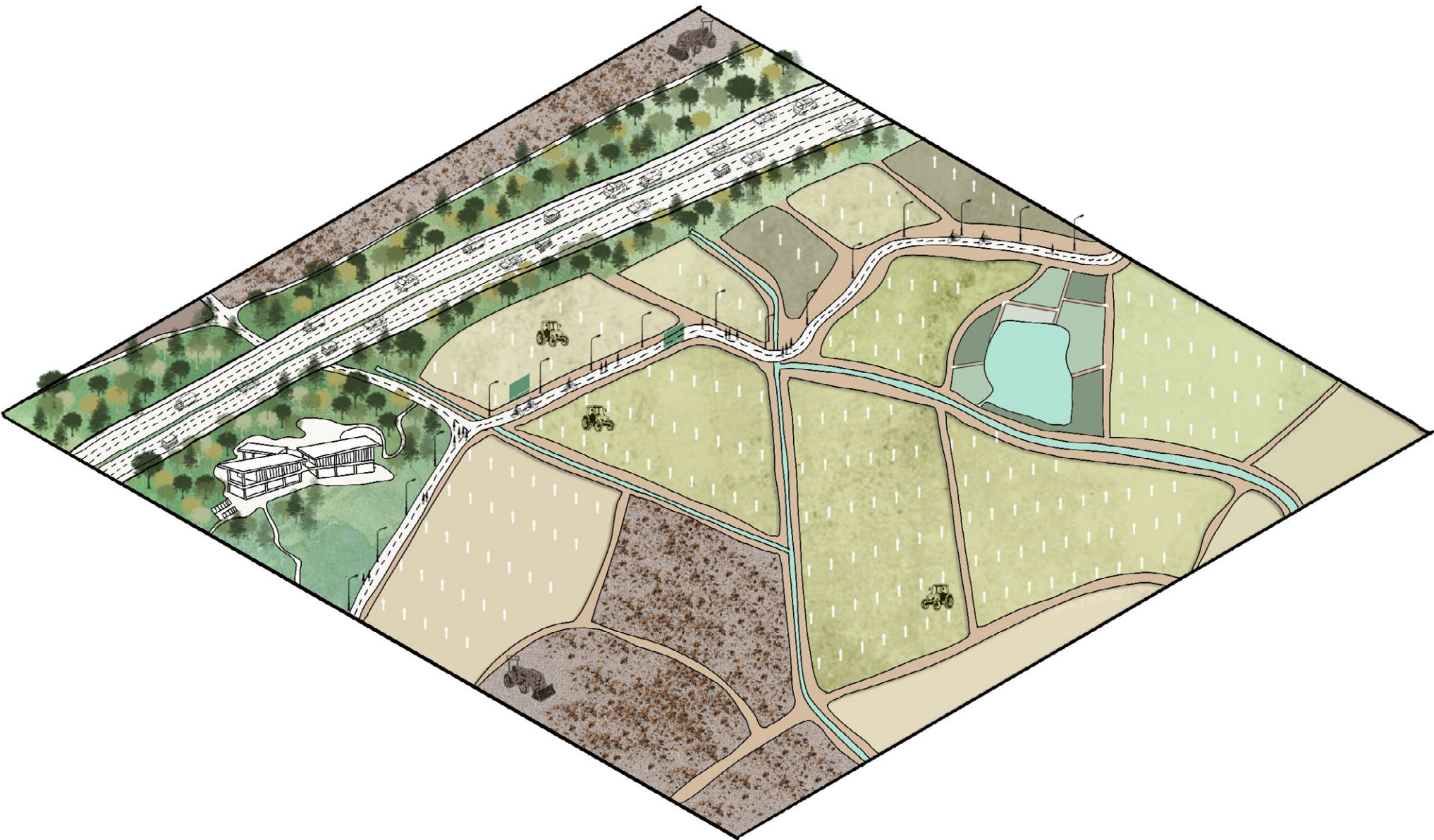
Governmental plans to demolish industrial buildings close to residential areas lack consideration for their potential transformation.

WEAKNESSES

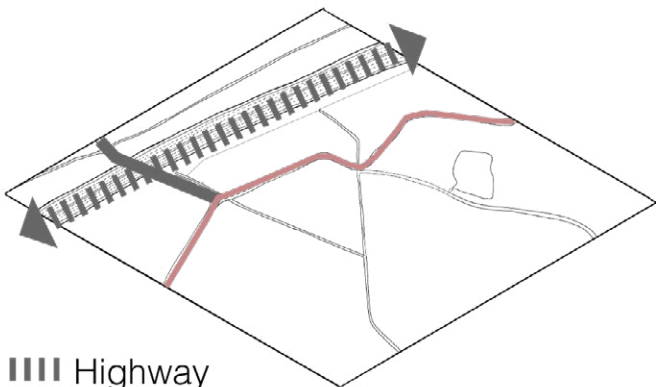
THREATS

FOOD SYSTEM ANALYSIS

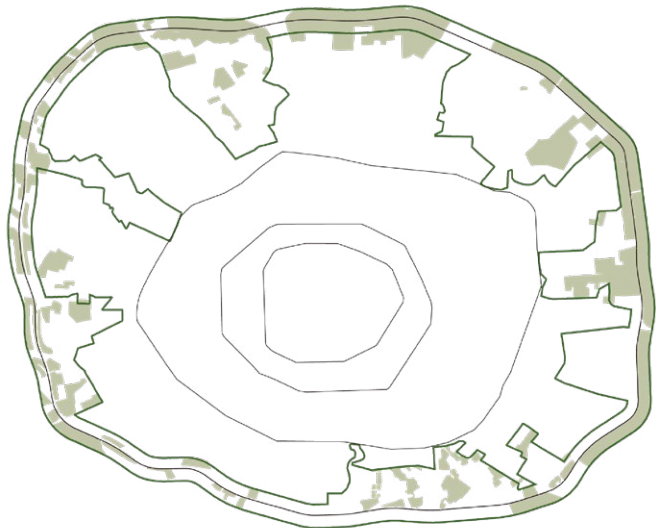
Long-distance Foodscapes in Green Belt Farmland



- Field undergoing soil restoration
- Grain field
- Greenery
- water



- Highway
- Tertiary road
- Excursion path



FOOD SYSTEM ANALYSIS

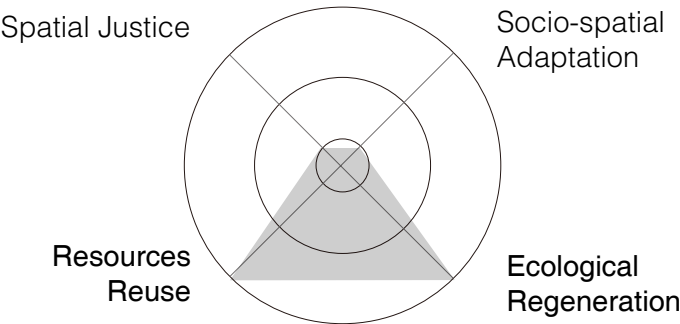
Long-distance Foodscapes in Green Belt Farmland

Production space: Modernized farmland centrally managed by the company



Location:

Assessment

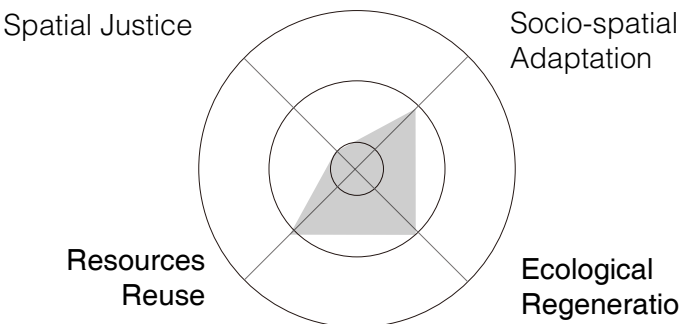
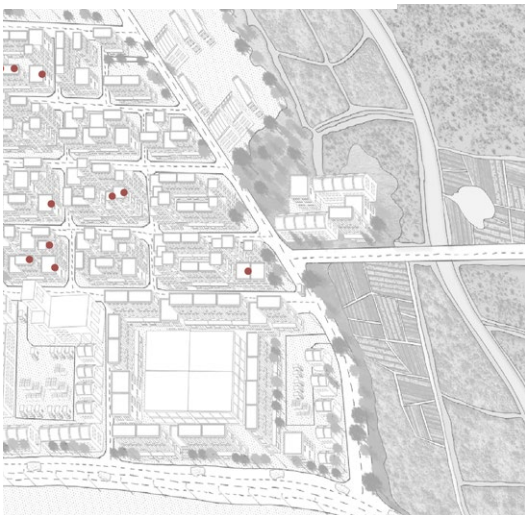


Education Space: Green belt museum



Location:

Assessment



ANALYSIS-5.5 FOOD SYSTEM

Long-distance Foodscapes in belt

SWOT analysis

STRENGTHS

OPPORTUNITIES

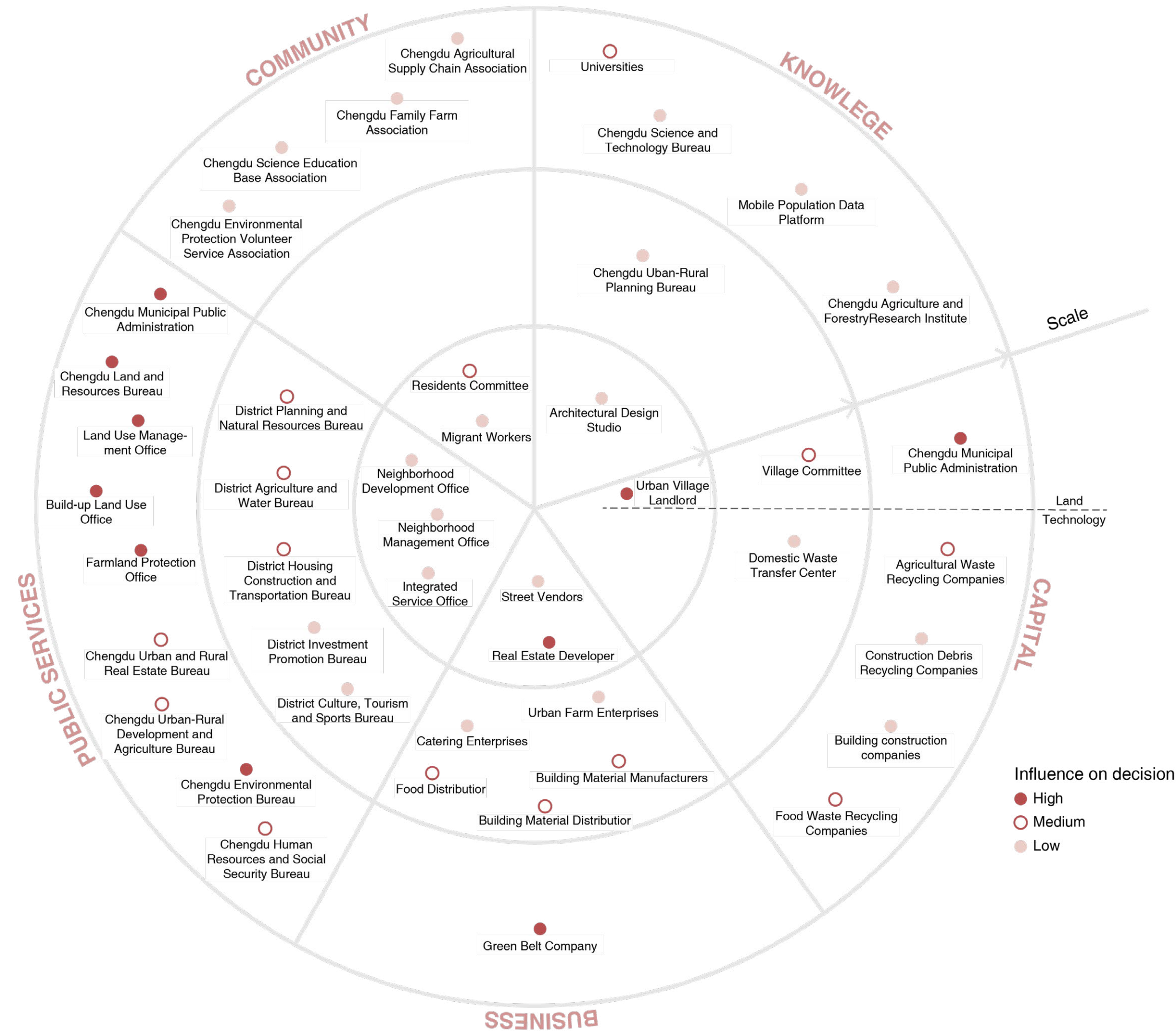
Resource Reuse: Practices on greenways utilize wheat and rice straw for soil fertility enhancement, demonstrating effective agricultural waste management. Ecological Regeneration: Previously barren or debris-filled lands have been rehabilitated to productive farmlands through subsoil inversion and debris removal.	Ecological Regeneration: Strong municipal policy for farmland conservation and ecological restoration offer a supportive backdrop for further regenerative initiatives.
Non-Exclusion: Large-scale modern agricultural projects have marginalized individual farmers' practices and reduced public engagement with agriculture, leading to a diminished understanding of food security and farmland conservation. Ecological Regeneration: Persisting low soil fertility despite two years of efforts, with many areas still in early stages of rehabilitation. Original irrigation systems are largely inoperative.	Ecological Regeneration: Imminent urban renewal focused on demolition could pose risks to surrounding farmland via construction debris.

WEAKNESSES

THREATS

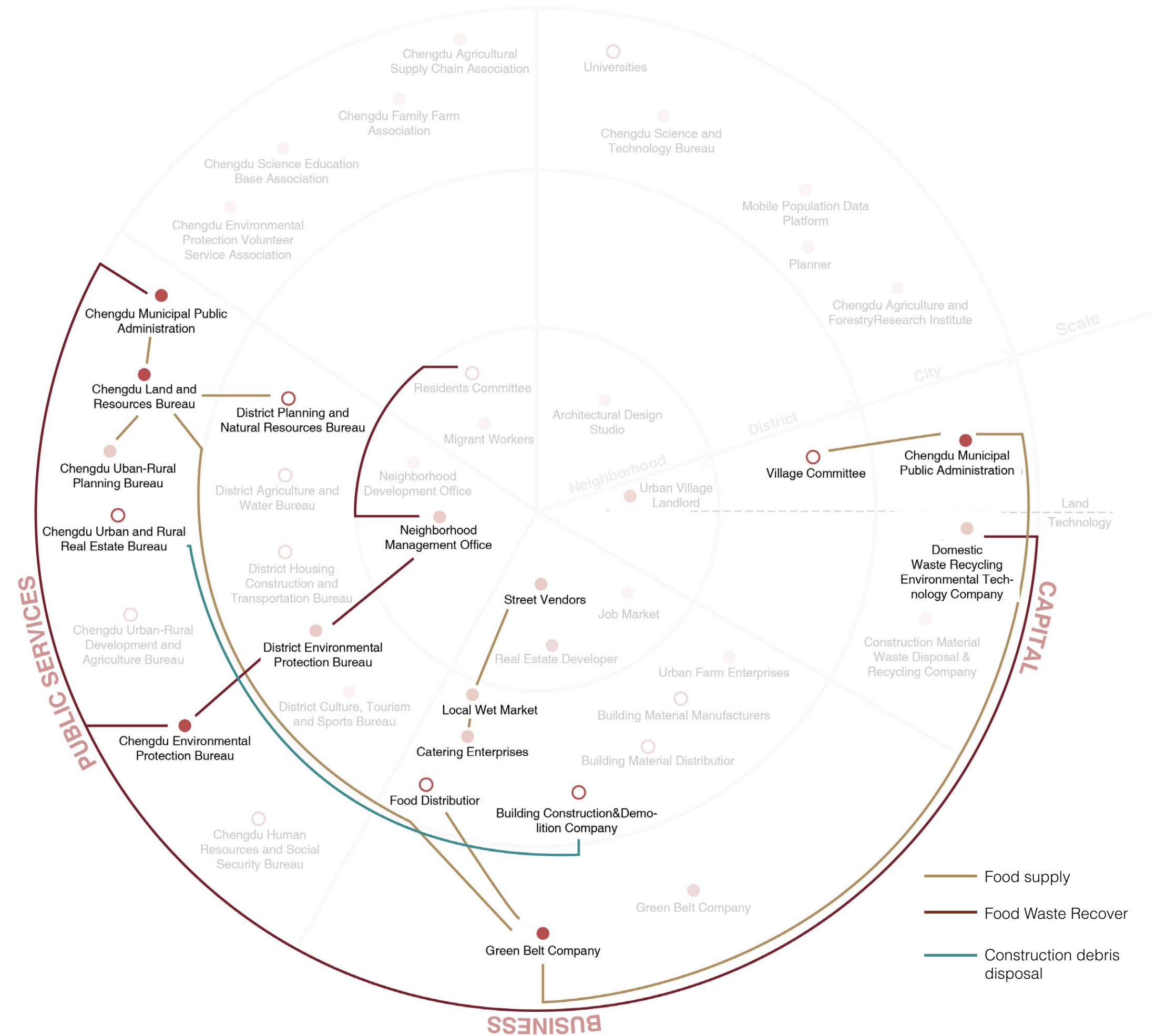
STAKEHOLDER ANALYSE

Actors



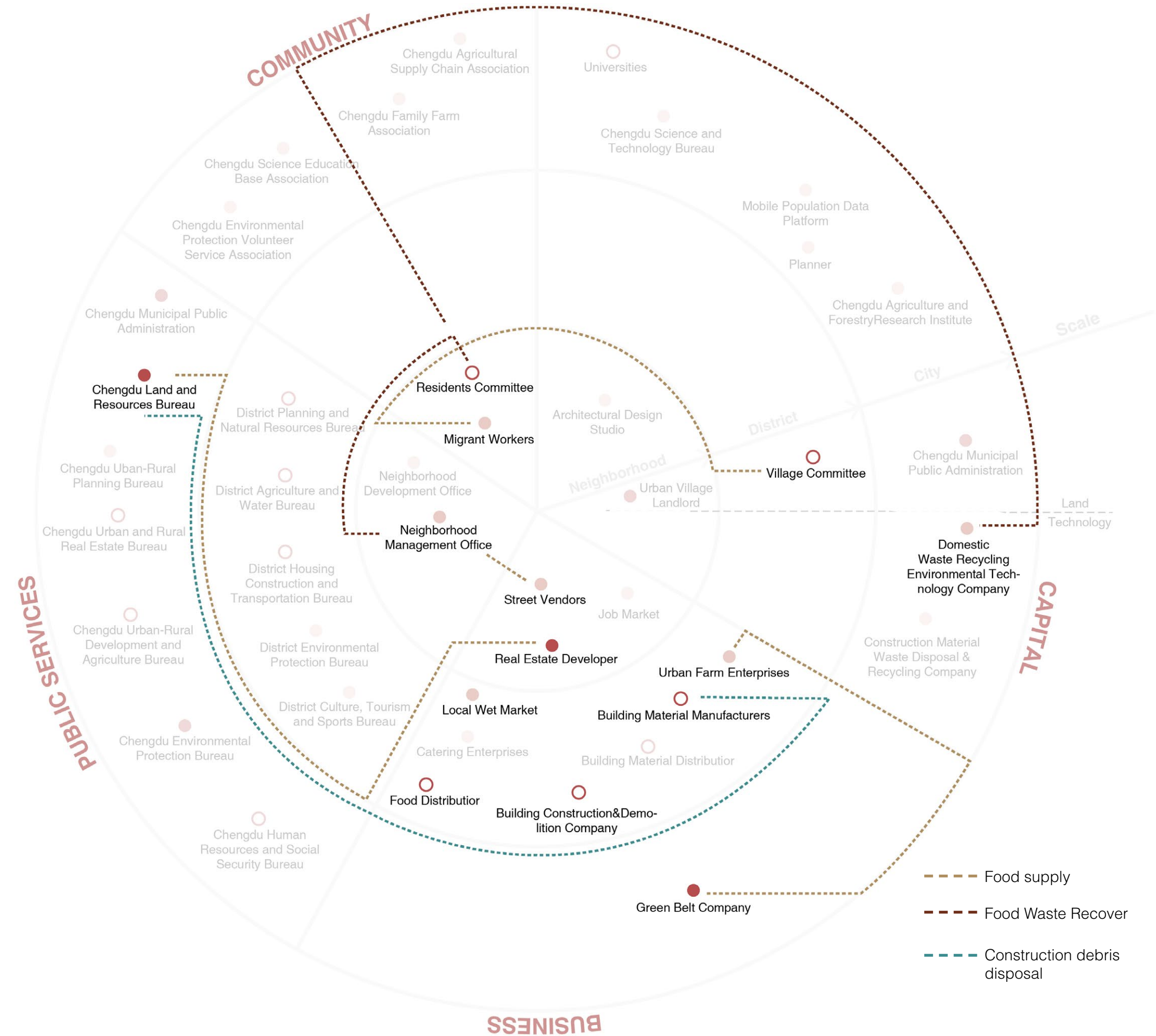
STAKEHOLDER ANALYSE

Collaboration



STAKEHOLDER ANALYSE

Conflict



05 VISION



Figure 27: An urban farmer harvests winter squash from his rooftop vegetable garden.
Source: Cavan Images

VISION

From SWOT to Goal

Socio-spatial Adaptation

S: Abundant industrial buildings of good quality and vacant land.
S: Active street food businesses occupying roads.
W: Inferior quality of informal residential buildings.
W: Strict management in modern residential complexes hinders communal space reuse.
O: Relaxed street vending policies.
T: Demolishment of industrial buildings without considering transformation potential.

Resource Looping

S: Community-driven circular practices and initiatives.
W: Illegal dumping of kitchen waste and construction debris.
W: Suboptimal household waste segregation awareness and practices.
O: Government regulations and advocacy for kitchen waste recycling.
O: Potential for extensive use of recyclable materials in new constructions

Ecological Regeneration

S: Community-driven urban agriculture practices.
W: Pollution risks to surrounding farmland and water systems from industrial areas.
O: Strong municipal mandates for ecological restoration and farmland conservation .
T: Debris from demolition-focused urban renewal.

Spatial Justice

S: Special social networks within local labor markets enhance communal support.
W: Marginalization of individual farmers' practices
W: Centralized land management leads to reduction in public agricultural engagement.
O: Governmental emphasis on inclusive urban village renewal policies.
T: Centralized land management hinders local informal urban agriculture.

Socio-spatial Adaptation

Circular Knowledge Learning Network

Creation of Adaptable Space

Resource Looping

No food waste & links residual flows to promote a closed balance

Prioritizes to the shortest food loop

Ecological Regeneration

Rich surface water system

Farmland regeneration

Protection of forest diversity

Spatial Justice

Sustainable labor markets

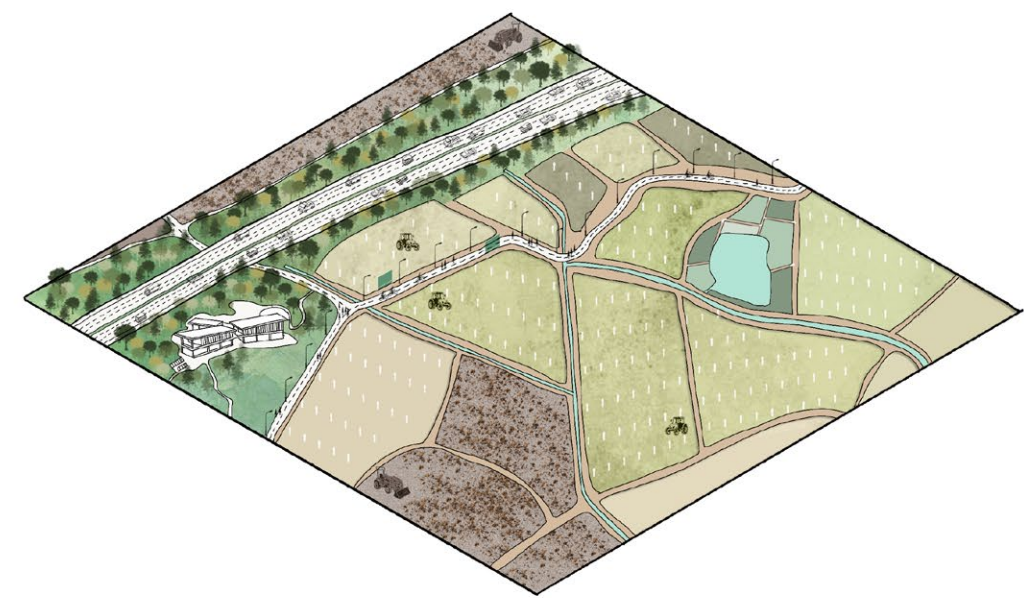
Community empowerment

VISION

From Goal to Vision

Vision of Green Belt Farmland

Existing landscape



Goal

Ecological regeneration

Rich surface water system

Farmland regeneration

Protection of forest diversity

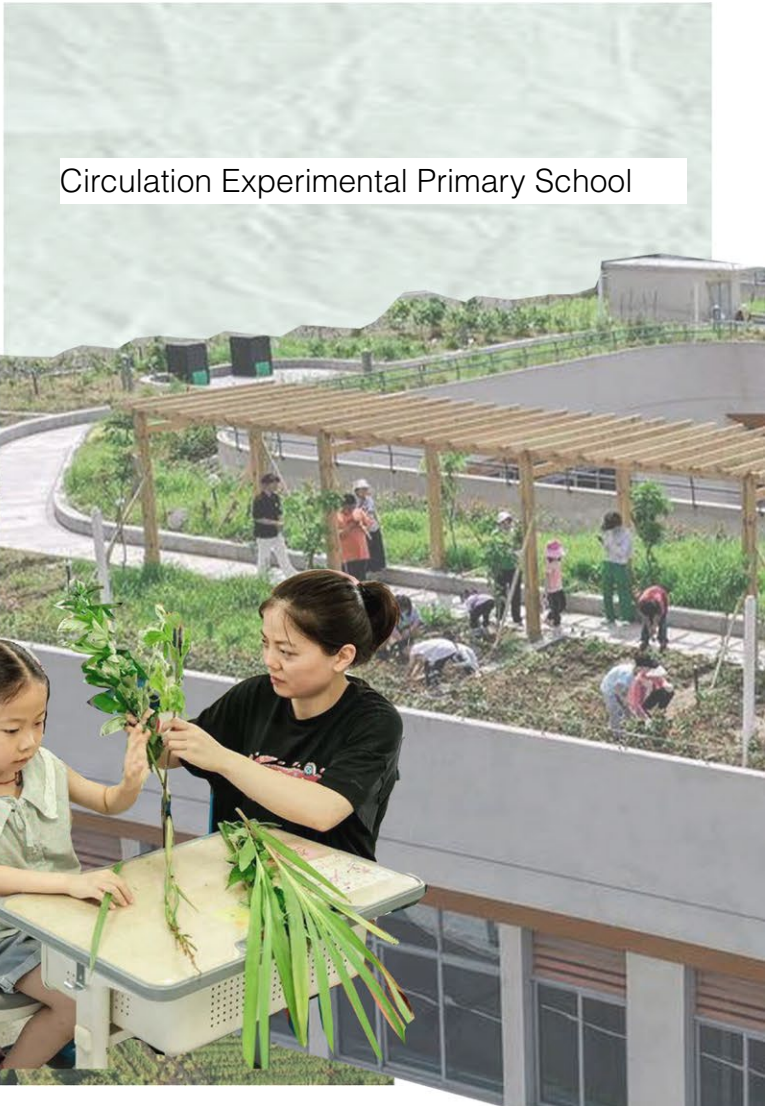
Social adaptation

Circular Belt Learning Lab

Future Zone

Circular Agricultural Park

Design initiatives

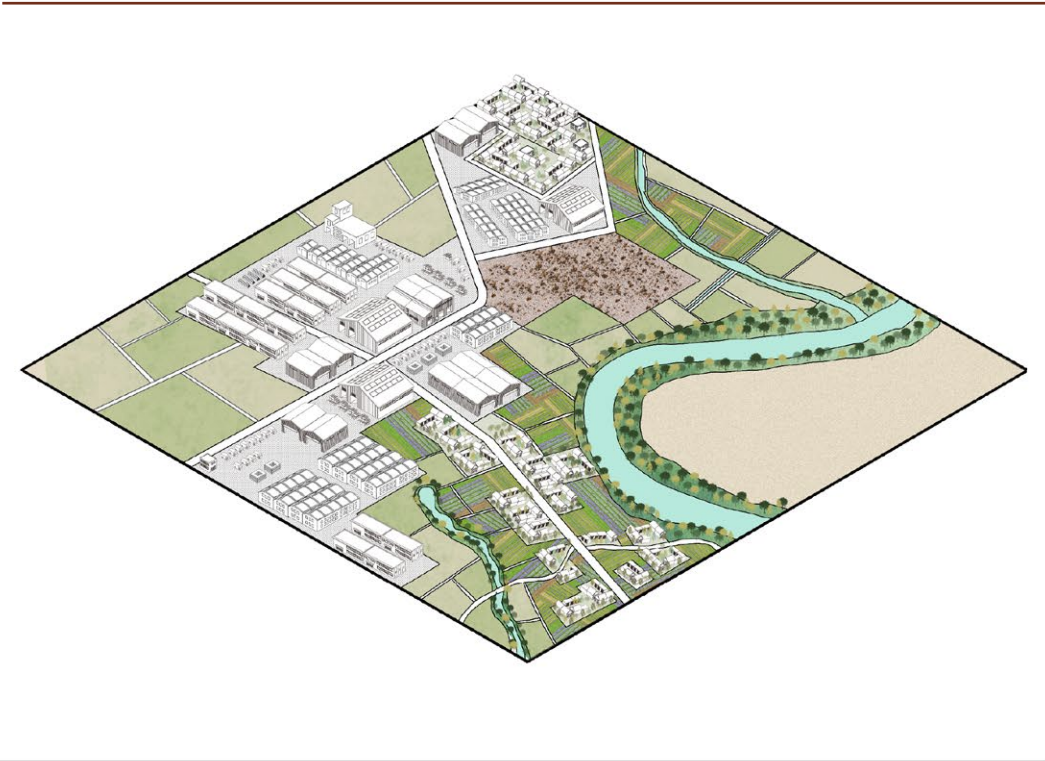


VISION

From Goal to Vision

Vision of Urban Village Type 1

Existing landscape



Goal

Resource looping

No food waste & links residual flows to promote a closed balance

Social adaptation

Circular Belt Learning Lab

Creation of Adaptable Space

Equal opportunities for development

Sustainable labor markets

Future Zone

Circular Technology Park

Design initiatives

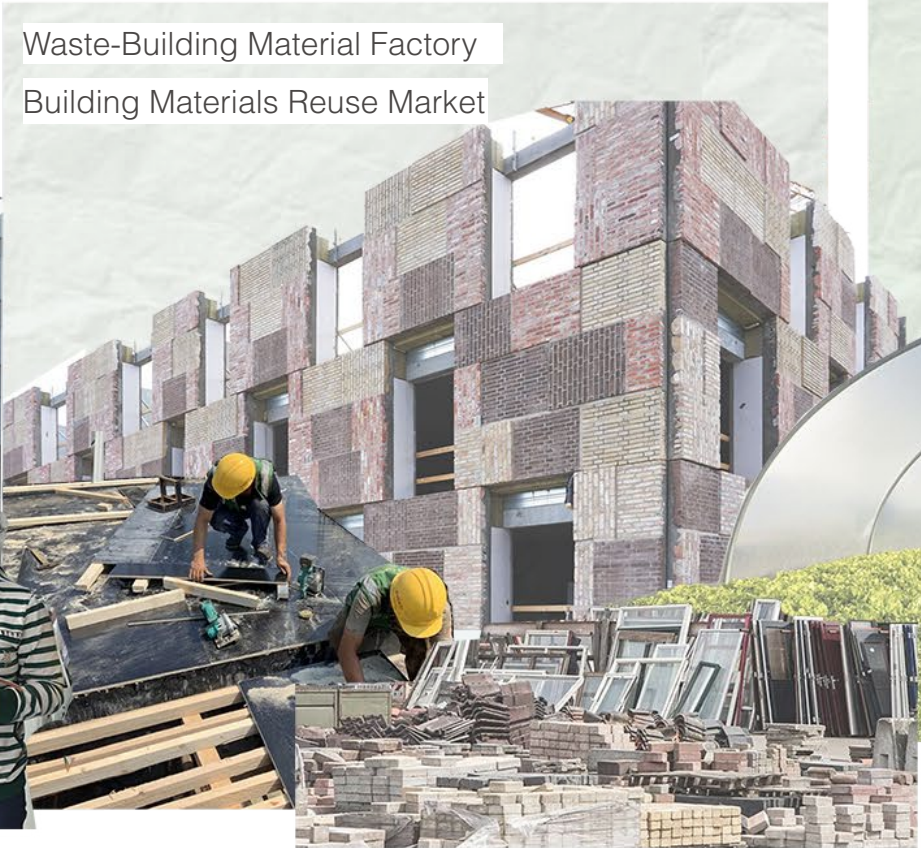
Circular Development Corporation officer enovated from a factory



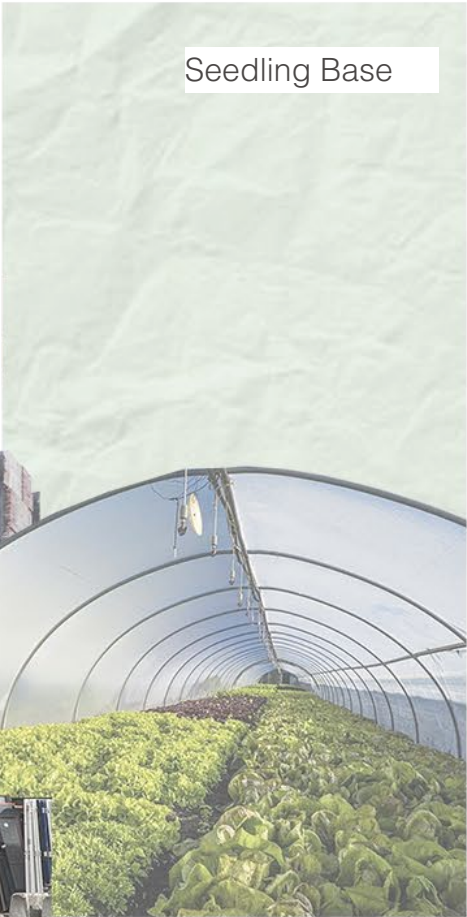
Circular Education Center renovated from a factory



Waste-Building Material Factory
Building Materials Reuse Market



Seedling Base

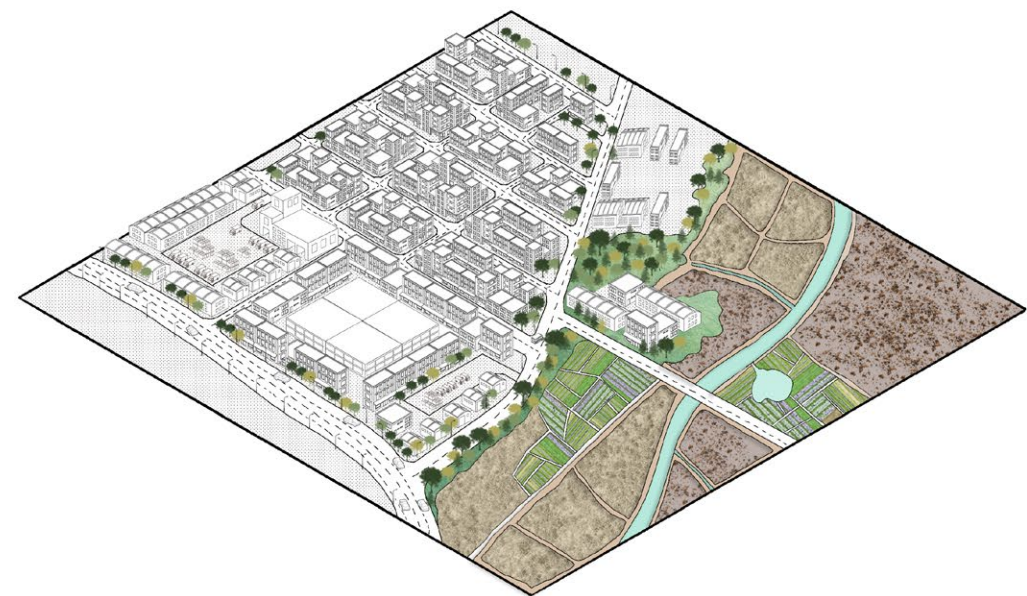


VISION

From Goal to Vision

Vision of Urban Village Type 2

Existing landscape



Goal

Future Zone

Equal opportunities for development

Sustainable labor markets

Community empowerment

Social adaptation

Creation of Adaptable Space

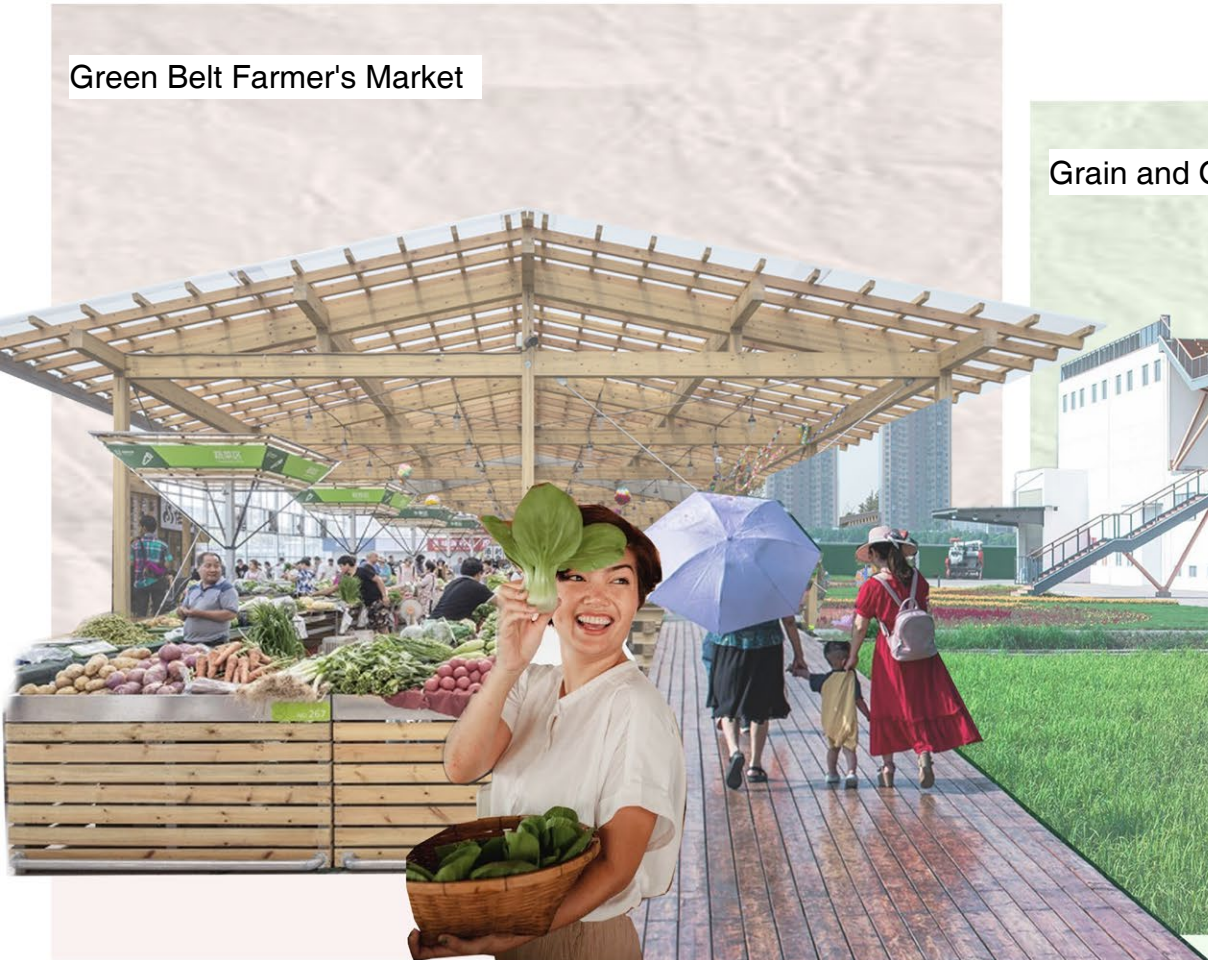
Resource looping

No food waste & links residual flows to promote a closed balance

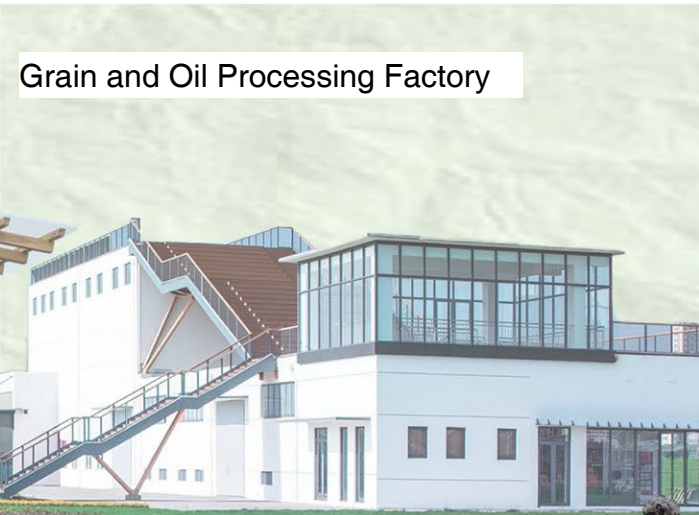
Circular Production and Consumption Town

Design initiatives

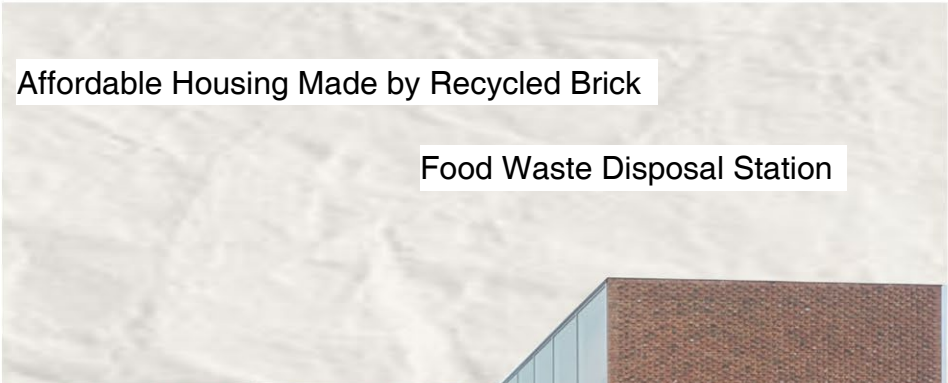
Green Belt Farmer's Market



Grain and Oil Processing Factory



Affordable Housing Made by Recycled Brick



Food Waste Disposal Station



VISION
From Goal to Vision
Vision of Urban Village Type 3

Existing landscape



Goal

Social adaptation

Circular Belt Learning Lab

Creation of Adaptable Space

Resource looping

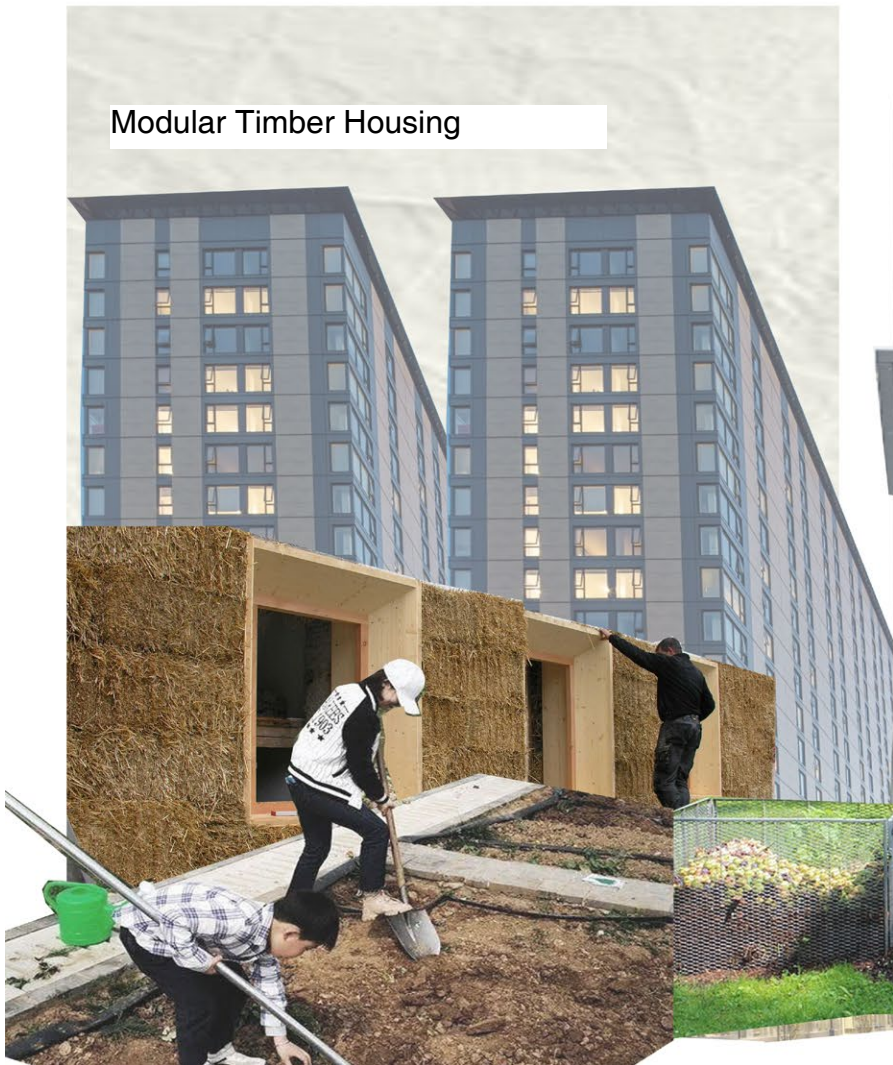
No food waste & links residual flows to promote a closed balance

Future Zone

Circular Living Neighborhood

Design initiatives

Modular Timber Housing



Local Waste Disposal Station



Uncertainty space renovated from old factory
Used Market/Repair Studio/Community Center



VISION
Vision Map

LEGEND

Furture Foodscapes

- Circular Agricultural Park
- Grain and oil farmland
- Primary/Middle Schools
- Parks
- Conservation Forest

- Circular Technology Park
- Industrial Land

- Circular Production&Consumption Town
- Affordable Residential Land
- Economic Crops Farmland

- Circular Living Neighborhood
- Circular Residential Land
- Residential Land
- Uncertain Land

Design Initiative

Resource Looping

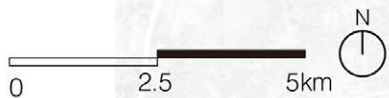
- Used Building Materials Market
- Food Street
- Uncertainty Cafe/Vegetable garden
- Green Belt Farmer's Market
- Grain and Oil Processing Factory
- Food Waste Disposal Station
- Waste-Fertilizer Factory
- Straw-Building Material Factory

Ecological Regeneration

- Grain and Oil farmland
- Irrigation Canals
- Seedling Base
- Urban Picking Farms
- Green Belt Forest

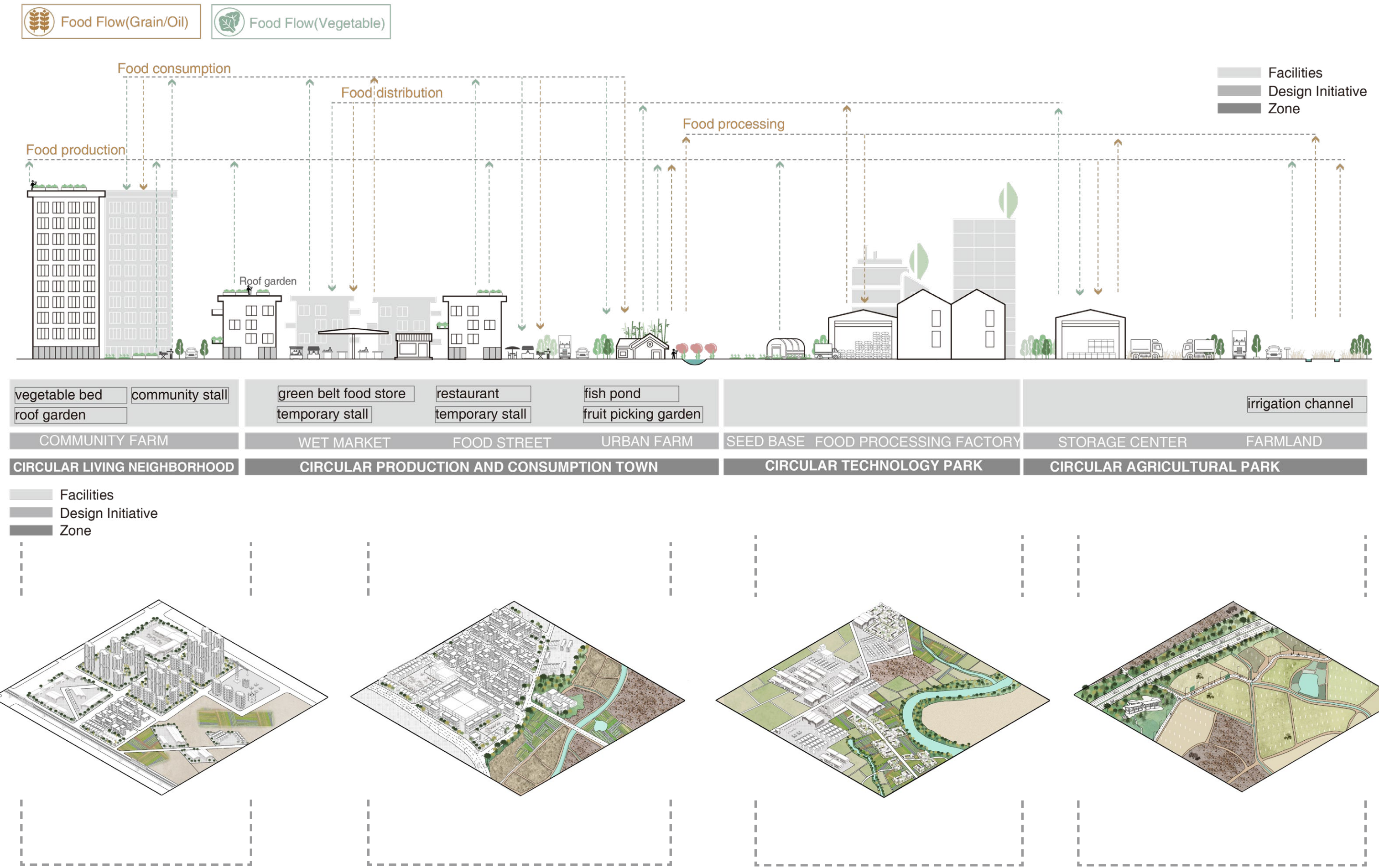
Social Adaptation

- Adoptable Farmland
- Circular Experimental Primary School
- Green Belt Museum



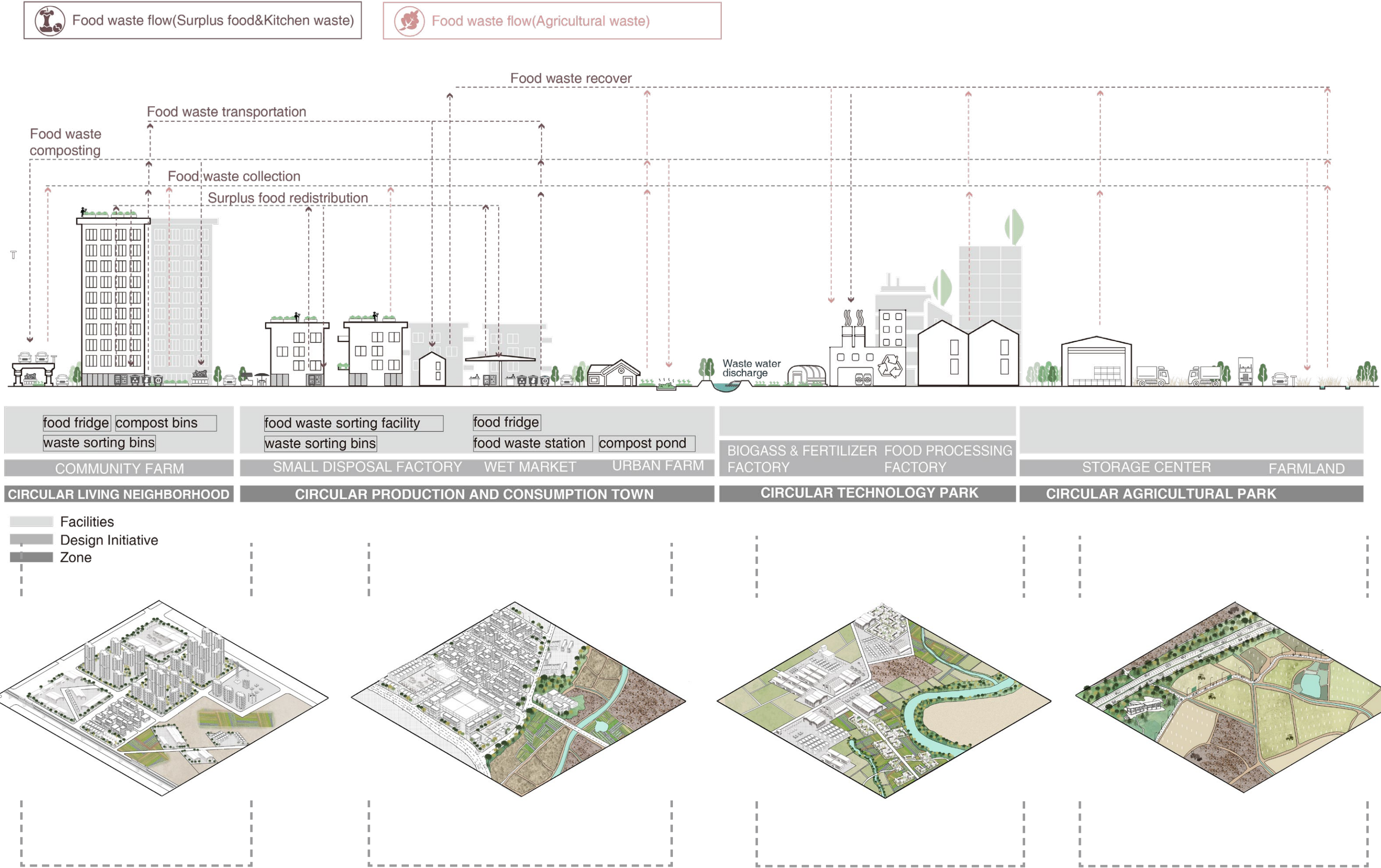
VISION

Material Flows Between the Four Zones



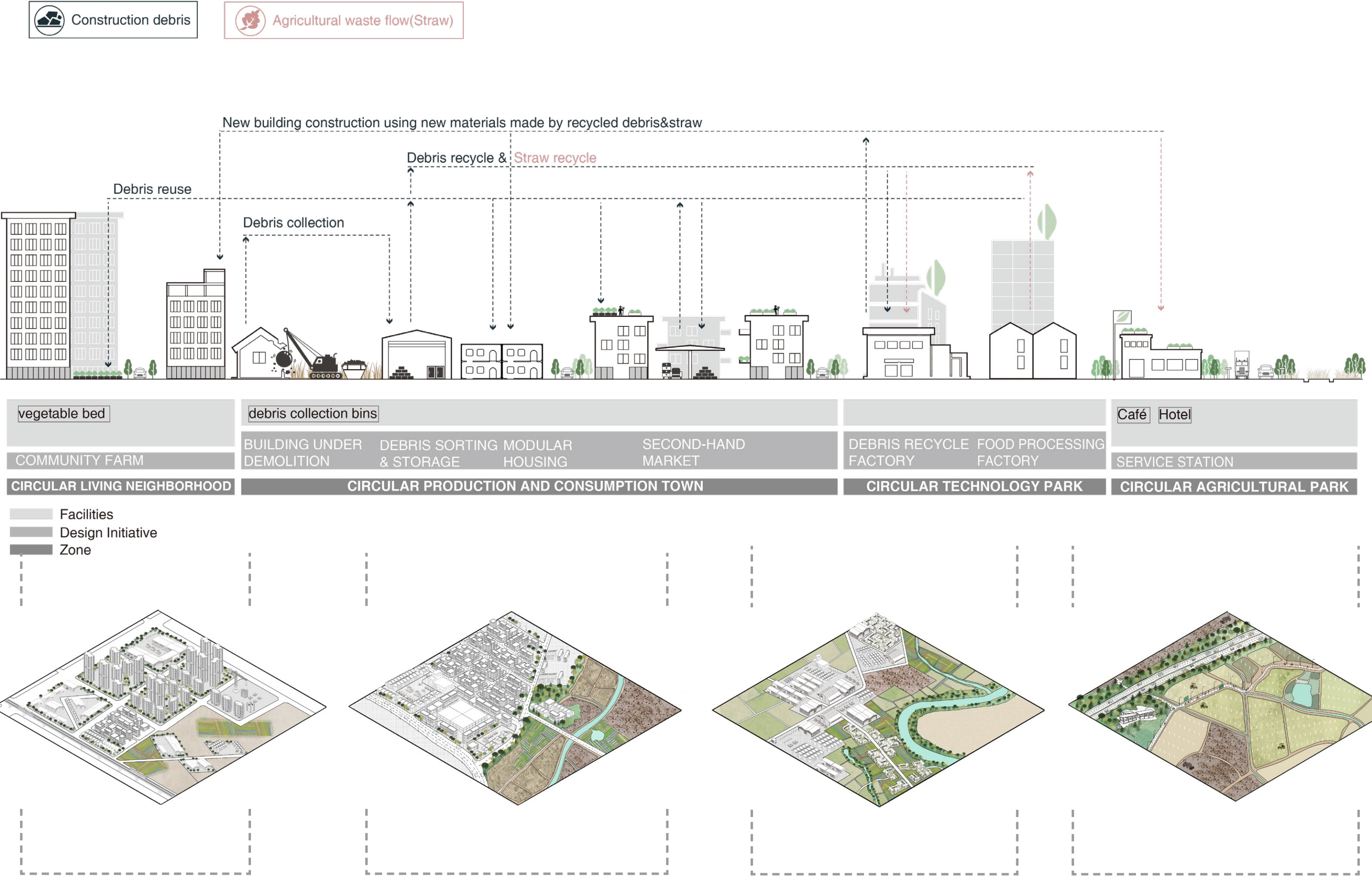
VISION

Material Flows Between the Four Zones



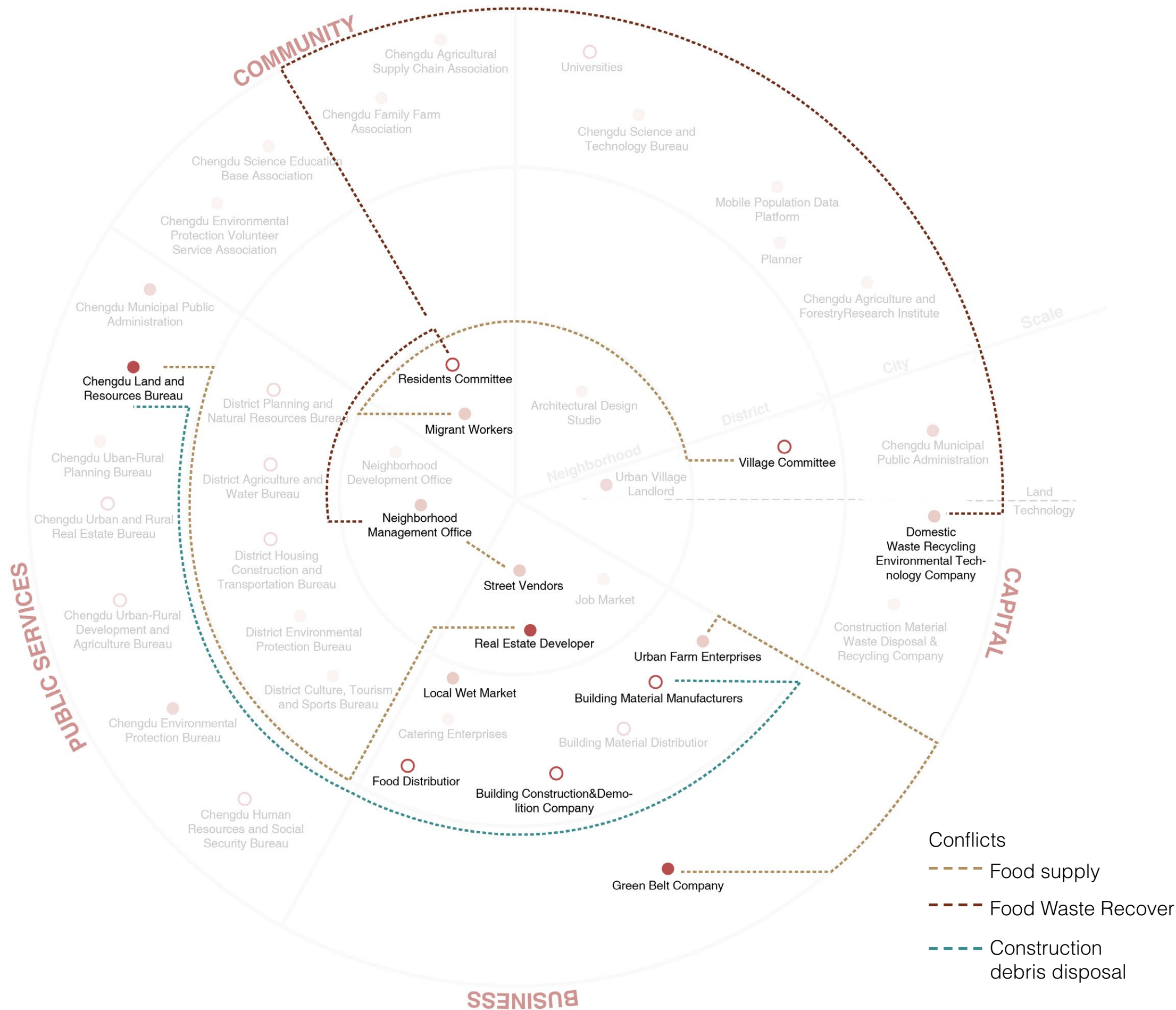
VISION

Material Flows Between the Four Zones



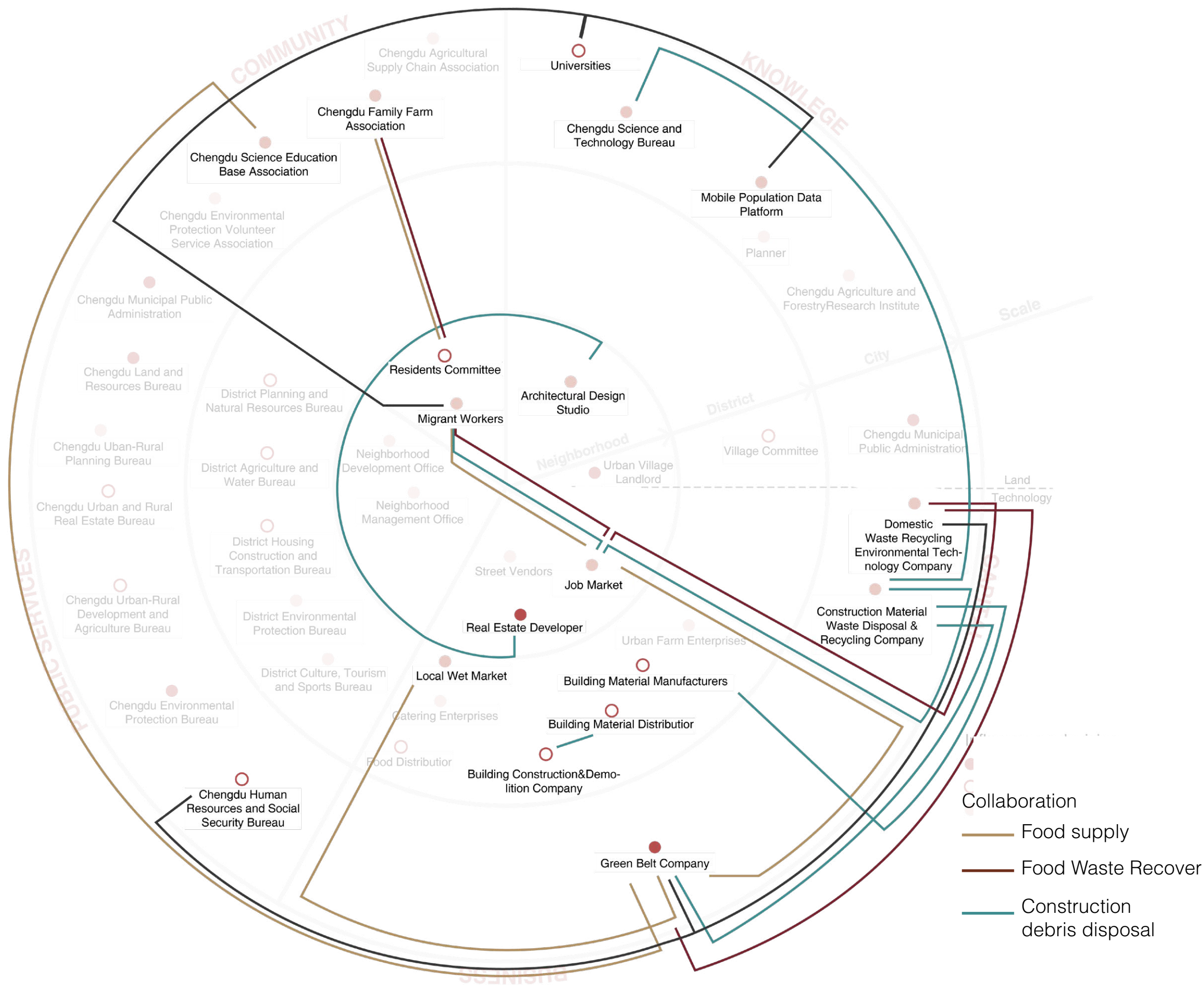
VISION

Solve the current conflicts among stakeholders



VISION

Future Stakeholder Interests and Vision for Collaborative Circular Actions



06 STRATEGY-PATTERN LANGUAGE



Figure 28: Traditional bamboo and timber building materials market in
Source: Jiao and Tang (2019)

R1 PATTERNS

1 Category

2 Type

3

4 Description

5 Related to

6 Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

- 1 4 Categories of patterns

(R=Resources Looping
S=Social Adaption
E=Ecological Regeneration
EO=Equal Opportunities for Development)
- 2 3 Types of patterns

(Urban/Spatial Design
Circular Practice
Policy and people network)
- 3 Case photos of existing circular practices from Chengdu/China
- 4 A concise description of what this pattern represents
- 5 Relation to other patterns
- 6 Circular development assessment of this pattern

R5

MULTI-SCALE CIRCULAR INFRASTRUCTURE

Resources Looping

Circular Practice



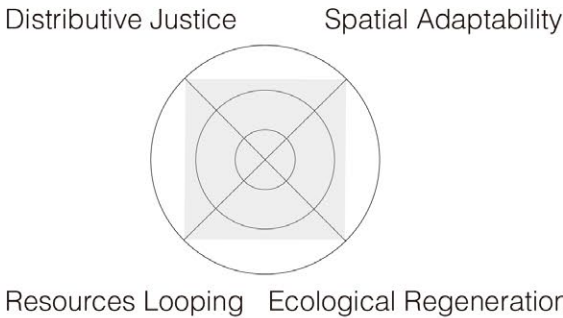
Guangzhou Biomass Integrated Treatment Plant, the first comprehensive organic waste treatment project integrating food waste, animal solid waste, fecal waste treatment, biodiesel preparation and biogas power generation

Source: Ministry of Ecology and Environment of the People's Republic of China(2021)

Description
Integrated infrastructure systems at the neighborhood, regional, and city scales to help manage material flows (food, food waste, and construction debris) and promote more efficient reuse of resources.

Relation

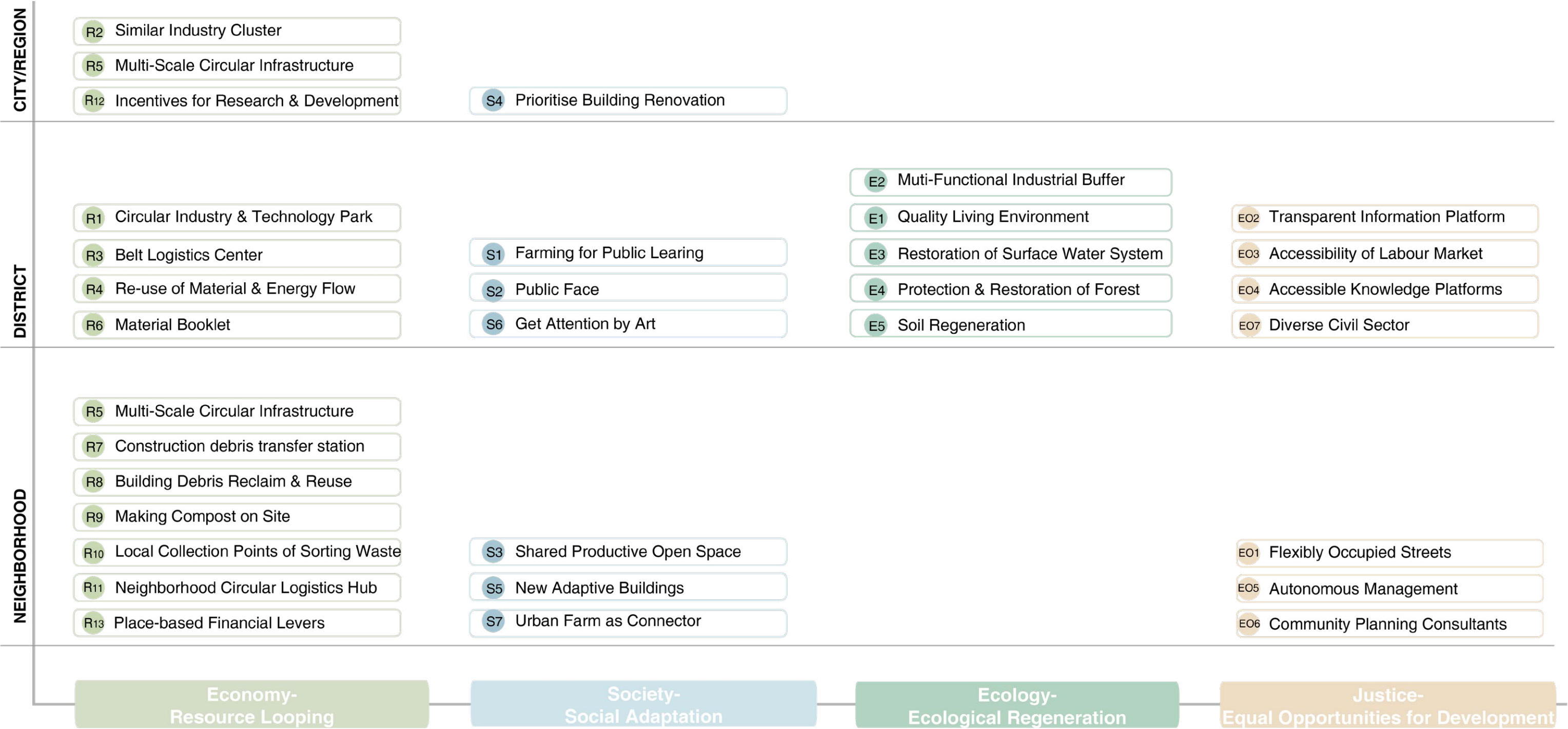
Assessment



Based on Hill, A. V. (Ed.). (2020). Foundries of the future: A guide to 21st century cities of making.

STRATEGY-PATTERN LANGUAGE

Pattern Field



STRATEGY-PATTERN LANGUAGE

Pattern Assessment

PATTERN \ CRITERIA		Scale			Location				Origin					Type			Goal	Goal									
		City/Region	District	Neighborhood												Shortest Resource Loop		A Closed Balance	Circular Knowledge Learning	Adaptable Space	Farmland Regeneration	Clean & Rich Water system	Protection of forest	Sustainable Labor Markets	Community Empowerment		
Circular Industry & Technology Park	R1		●		■				▲							●	●	●	●	●	●	●	●	○			
	R2		●		■					▲		▲				○	●	○	○	○	○	○	○	○			
	R3		●		■				▲							○	●	○	○	○	○	○	●	○			
	R4		●		■	■	■	■				▲			●	○	○	○	○	○	○	○	○	○			
	R5		●		■	■	■	■	▲			▲			●	○	○	○	○	○	○	○	○	○			
	R6		●		■		■					▲				○	○	○	○	○	○	○	○	○			
	R7		●		■		■	■	▲			▲		●		○	○	○	○	○	○	○	○	○			
	R8		●		■	■	■	■	▲	▲	▲			●	●	○	○	○	○	○	○	○	○	○			
	R9		●			■	■	■	▲	▲	▲			●	●	○	○	○	○	○	○	○	○	○			
	R10		●			■	■		▲					●		○	○	○	○	○	○	○	○	○			
	R11		●			■	■		▲			▲		●		○	○	○	○	○	○	○	○	○			
	R12		●			■		■	▲			▲			●	○	○	○	○	○	○	○	○	○			
	R13		●			■						▲				○	○	○	○	○	○	○	○	○			
Local Collection Points of Sorting Waste	S1		●			■		■	▲	▲						○	○	○	○	○	○	○	○	○			
	S2		●		■	■						▲		●		○	○	○	○	○	○	○	○	○			
	S3		●			■	■			▲	▲			●		○	○	○	○	○	○	○	○	○			
	S4		●		■	■					▲	▲		●		○	○	○	○	○	○	○	○	○			
	S5		●		■	■	■	■	▲		▲	▲		●		○	○	○	○	○	○	○	○	○			
	S6		●			■		■			▲				●	○	○	○	○	○	○	○	○	○			
	S7		●			■	■			▲	▲					○	○	○	○	○	○	○	○	○			
Neighborhood Circular Logistics Hub	E1		●			■	■		▲					●		○	○	○	○	○	○	○	○	○			
	E2		●			■	■					▲		●		○	○	○	○	○	○	○	○	○			
	E3		●		■	■	■		▲	▲				●	●	○	○	○	○	○	○	○	○	○			
	E4		●					■	▲	▲				●	●	○	○	○	○	○	○	○	○	○			
	E5		●			■		■	▲	▲					●	○	○	○	○	○	○	○	○	○			
Incentives for Research & Development	EO1		●			■	■			▲	▲			●		○	○	○	○	○	○	○	○	○			
	EO2		●		■	■		■				▲				○	○	○	○	○	○	○	○	○			
	EO3		●		■	■		■		▲	▲					○	○	○	○	○	○	○	○	○			
	EO4		●		■			■	▲							○	○	○	○	○	○	○	○	○			
	EO5		●			■				▲	▲					○	○	○	○	○	○	○	○	○			
	EO6		●			■	■					▲				○	○	○	○	○	○	○	○	○			
	EO7		●			■	■					▲				○	○	○	○	○	○	○	○	○			

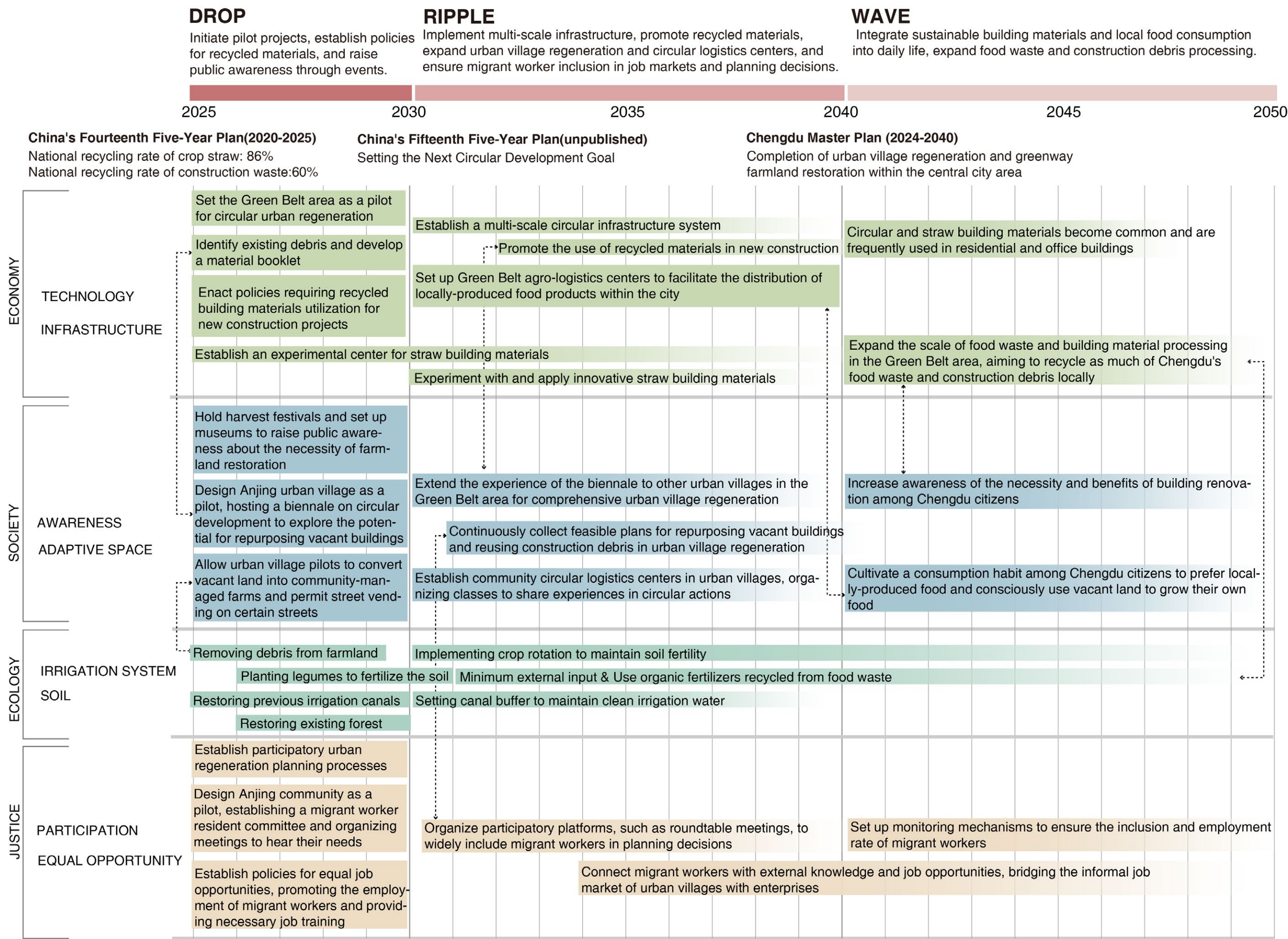
STRATEGY-PATTERN LANGUAGE

Pattern Assessment

Assessment		PATTERN		CRITERIA																										
		Scale	City/Region District Neighborhood	Location	Circular Industry Zone Circular Consumption Town Circular-Life Neighborhood Circular Agro Park	Origin	Vision Field Trip Case Study Literature Research by Design	Type	Urban/Spatial design	Circular Practice	Policy and people network	Goal	Shortest Resource Loop A Closed Balance Circular Knowledge Learning Adaptable Space	Farmland Regeneration Clean & Rich Water system Protection of forest Sustainable Labor Markets Community Empowerment																
Circular Industry & Technology Park		R1											Positive																	
Similar Industry Cluster		R2																												
Belt Logistics Center		R3																												
Re-use of Material & Energy Flow		R4																												
Multi-Scale Circular Infrastructure		R5																												
Material Passports		R6																												
Space for Storage		R7																												
Building Debris Reclaim & Reuse		R8																												
Making Compost on Site		R9																												
Local Collection Points of Sorting Waste		R10																												
Neighborhood Circular Logistics Hub		R11																												
Incentives for Research & Development		R12																												
Place-based Financial Levers		R13																												
Farming for Public Learning		S1																												
Public Face		S2																												
Shared Productive Open Space		S3																												
Prioritise Building Renovation		S4																												
New Adaptive Buildings		S5																												
Get Attention by Art		S6																												
Urban Farm as Connector		S7																												
Quality Living Environment		E1																												
Muti-Functional Industrial Buffer		E2																												
Restoration of Surface Water System		E3																												
Protection & Restoration of Forest		E4																												
Soil Regeneration		E5																												
Flexibly Occupied Streets		EO1																												
Transparent Information Platform		EO2																												
Accessibility of Labour Market		EO3																												
Accessible Knowledge Platforms		EO4																												
Autonomous Management		EO5																												
Community Planning Consultants		EO6																												
Diverse Civil Sector		EO7																												

STRATEGY-PATTERN LANGUAGE

Timeline for strategy implementation



07 MESO-SCALE DESIGN IMPLEMENTATION

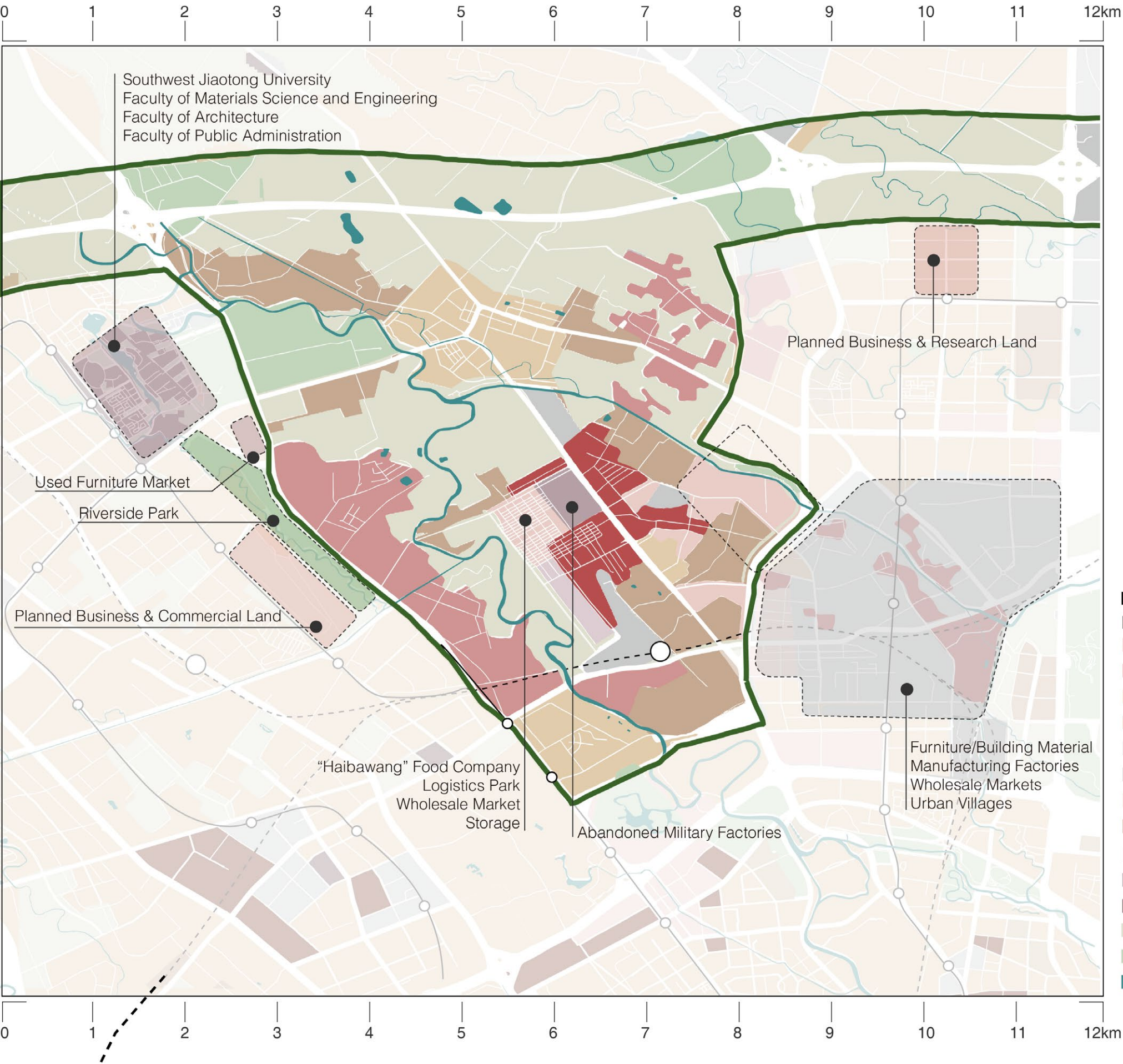


Figure 29: Walkers in the rapeseed flower fields on the Chengdu Greenway during the Spring Festival of 2024

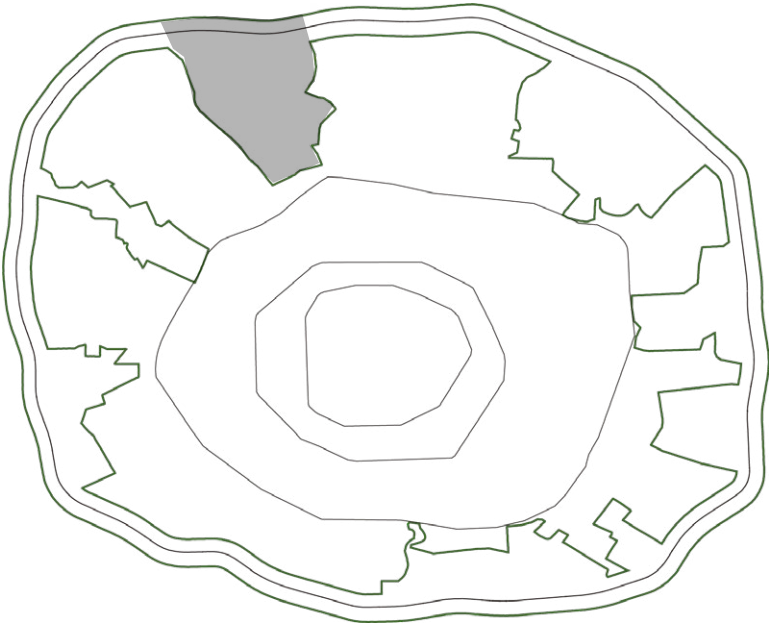
Source: Little Red Book, The Cat Slipped Shoulder,
Authorized by the Author

MESO-SCALE DESIGN IMPLEMENTATION

Site Analysis



Location in the Green Belt



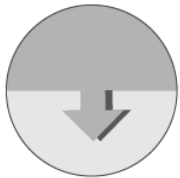
LEGEND

Land use

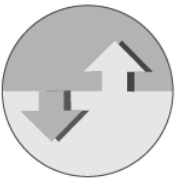
- Urban village type1
- Urban village type2
- Residential land
- Empty land
- Industry
- Railway station
- Commercial land
- Business land
- Logistic land
- Old military land
- University
- Greenery
- Farmland
- Water

MESO-SCALE DESIGN IMPLEMENTATION

Action



Expanding: One type of land use engulfs another.



Interacting: Two existing types of land use intertwine and influence each other, give and receive from one another, forming mixed-use land.



Upgrading: Retaining the existing land use types but upgrading and transforming them.

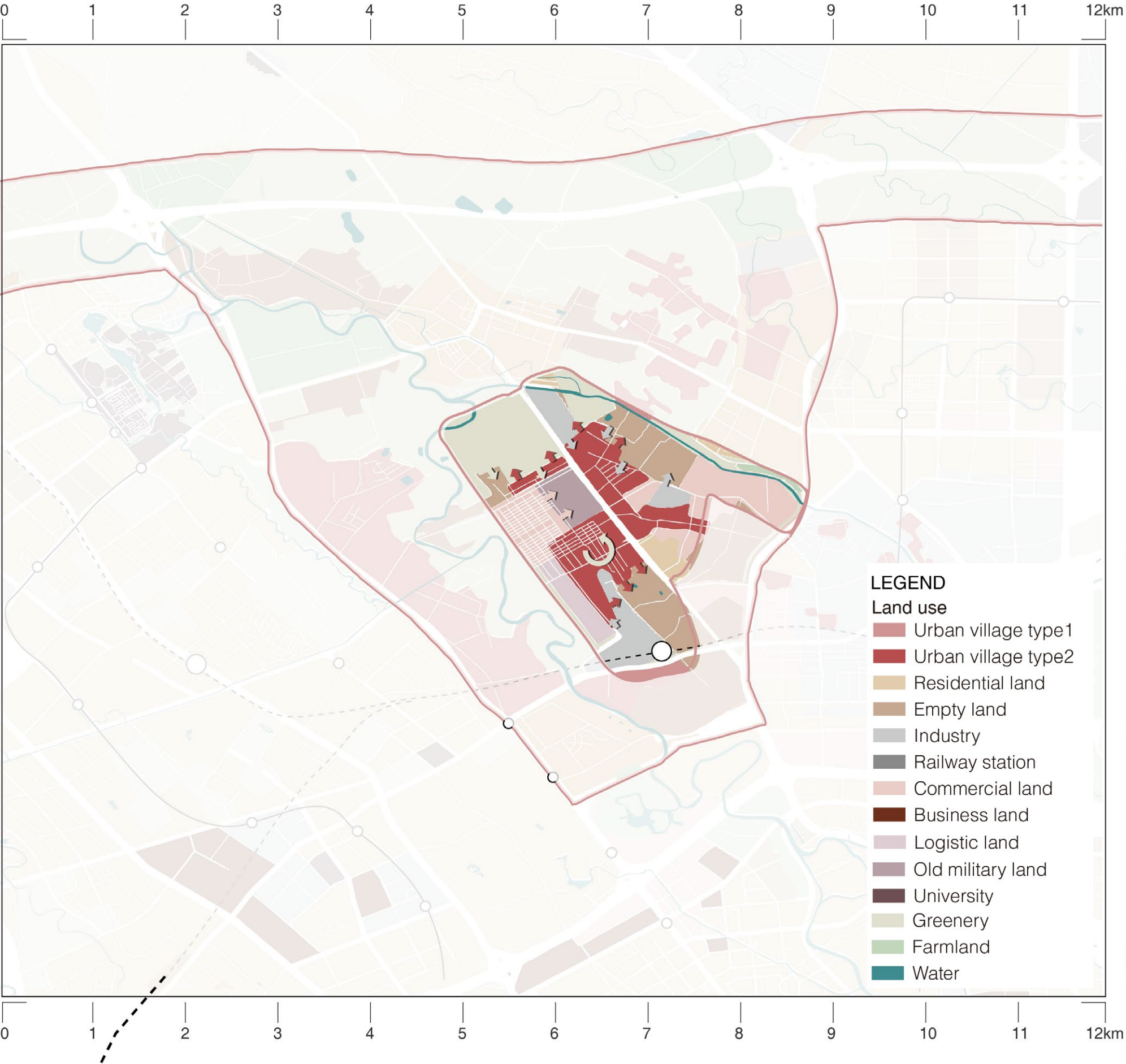
LEGEND

Land use

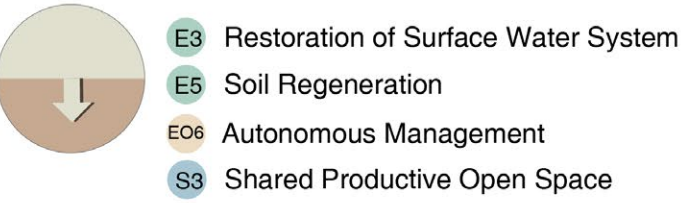
- Urban village type1
- Urban village type2
- Residential land
- Empty land
- Industry
- Railway station
- Commercial land
- Business land
- Logistic land
- Old military land
- University
- Greenery
- Farmland
- Water

MESO-SCALE DESIGN IMPLEMENTATION

Action



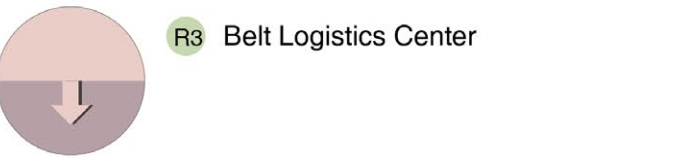
Agricultural land expands to fragmented and unused land



Industrial land engaged in circular practices expands to nearby unused lands



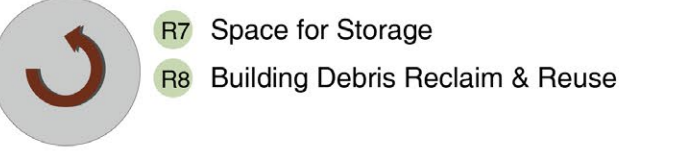
Commercial areas expand to unused military land



Dense informal housing is upgraded



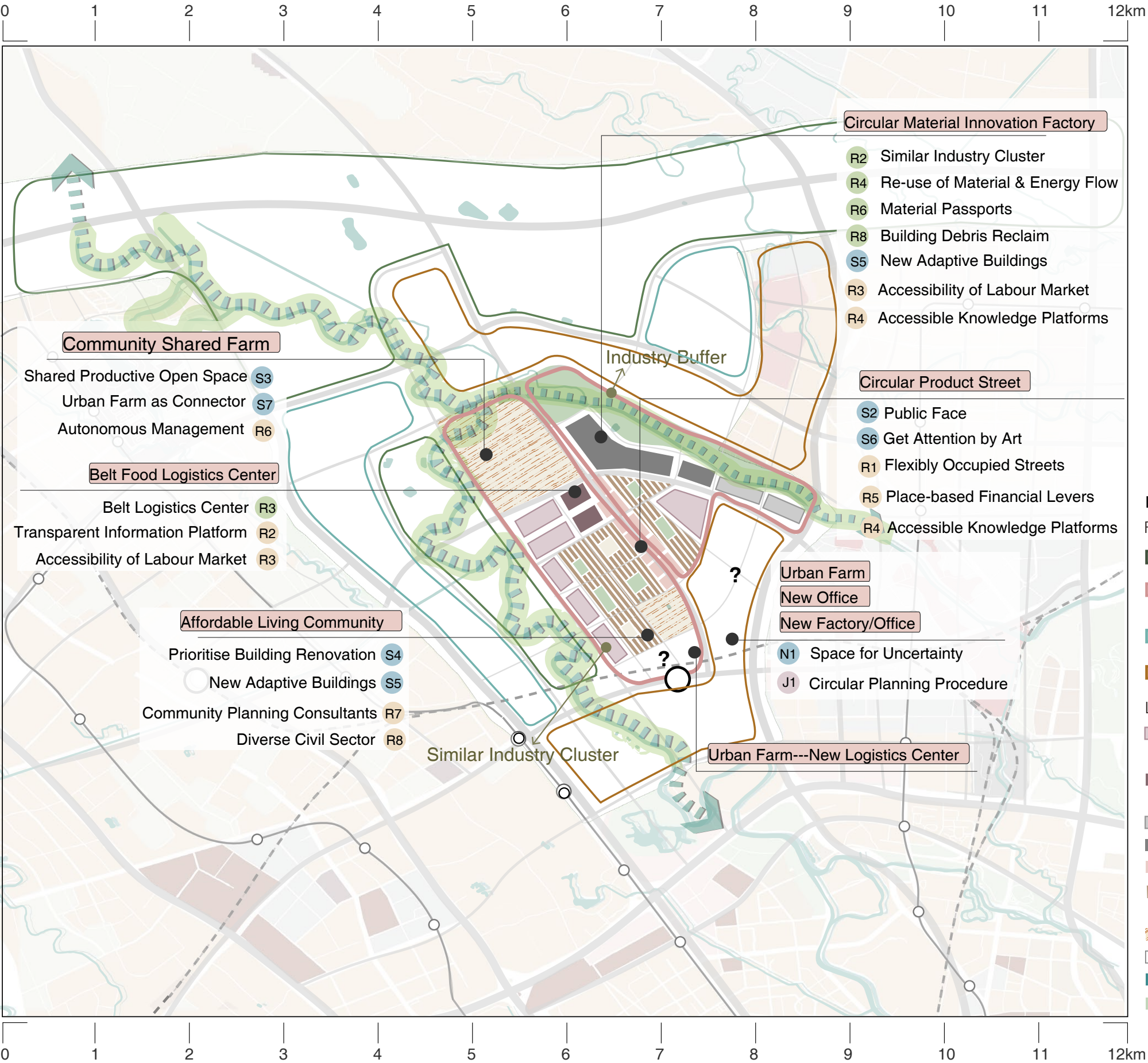
Unused industrial land is upgraded



MESO-SCALE DESIGN IMPLEMENTATION

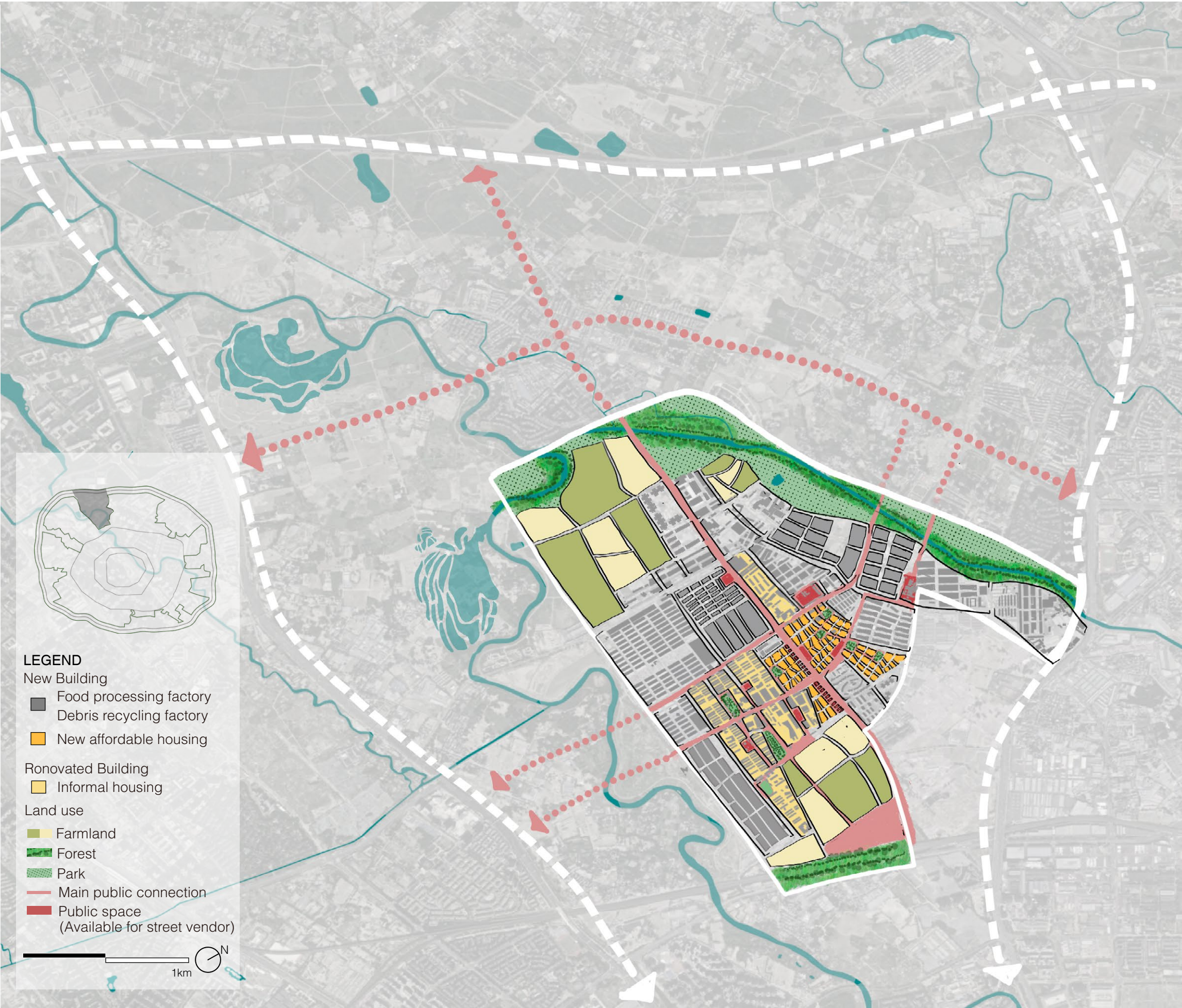
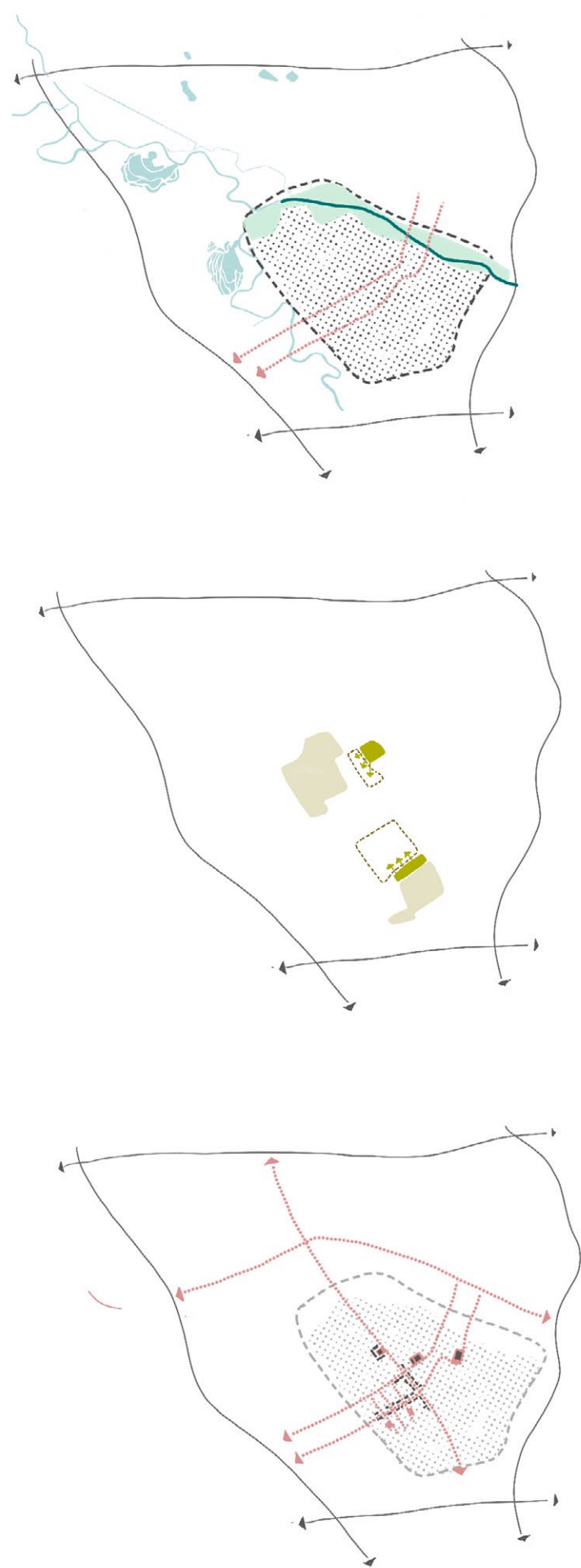
Circular Production and Consumption Town

Land use



MESO-SCALE DESIGN IMPLEMENTATION

Circular Production and Consumption Town
Spatial Structure



MESO-SCALE DESIGN IMPLEMENTATION

Circular Production and Consumption Town
Perspective Map

LEGEND

- New Building
- New Factory
 - Residential Building
- Renovated Building
- Residential Building
 - Public Service Building
 - Commercial Buildings
 - Community Service Buildings

- Land use
- Grain Farmland
 - Vegetable Farmland
 - Greenery
 - Water
 - Public Space

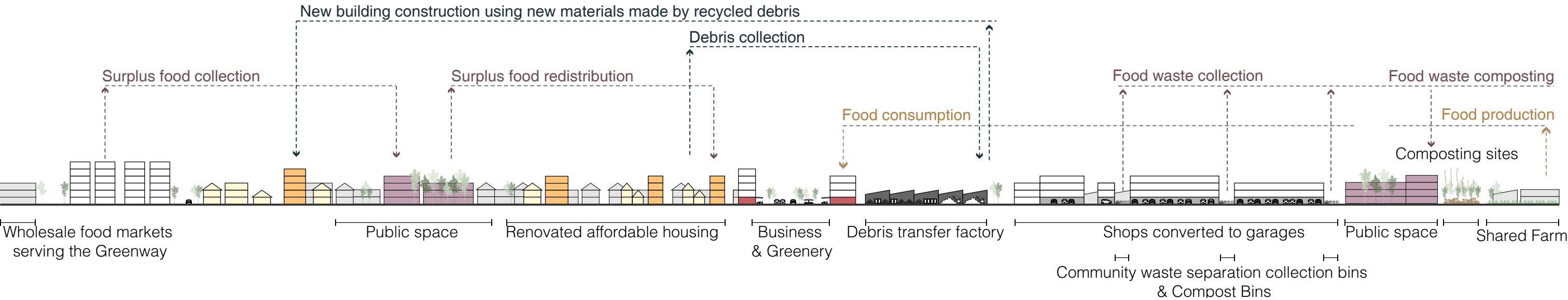
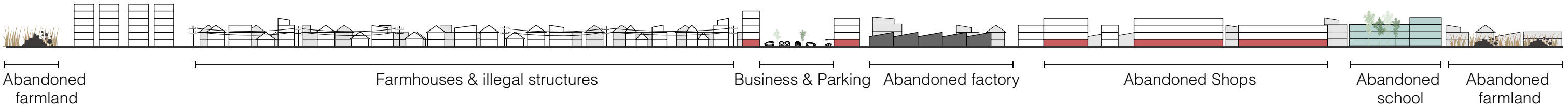
- 1 Undertrack compost
- 2 Anjing station
- 3 EcoArt plaza
- 4 Community shared farmland
- 5 Family harvest plots
- 6 Community reclaim factory
- 7 Circular showcase avenue
- 8 Farmgate feast avenue
- 9 Local flavors lane
- 10 Community circular logistics center
- 11 Wet Market
- 12 Circular rebuild community
- 13 Reclaim manufacturing factory
- 14 Greenbelt food logistics center
- 15 Farmer market
- 16 Restored irrigation canal

- Existing buildings
- 17 Informal settlement
 - 18 Modern residential community
 - 19 Food Storage Factory
 - 20 Food Wholesale Market
 - 21 Building materials manufacturing factory
 - 22 Building materials wholesale market

- Attractive entrance to the axis of commercial public space
- Vibrant commercial atmosphere with food + building materials second hand market
- Liveable and affordable residential community

MESO-SCALE DESIGN IMPLEMENTATION

Circular Production and Consumption Town
Resources Flow



08 MICRO-SCALE DESIGN IMPLEMENTATION



Figure 30: Prefab straw wall panels
Source: EcoCocon

ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Location



- LEGEND**
- Functional zone
- Circular Agricultural Park
 - Circular Production and Consumption Town
 - Circular Technology Park
 - Circular Living Neighborhood

Site Analysis

Site Analysis

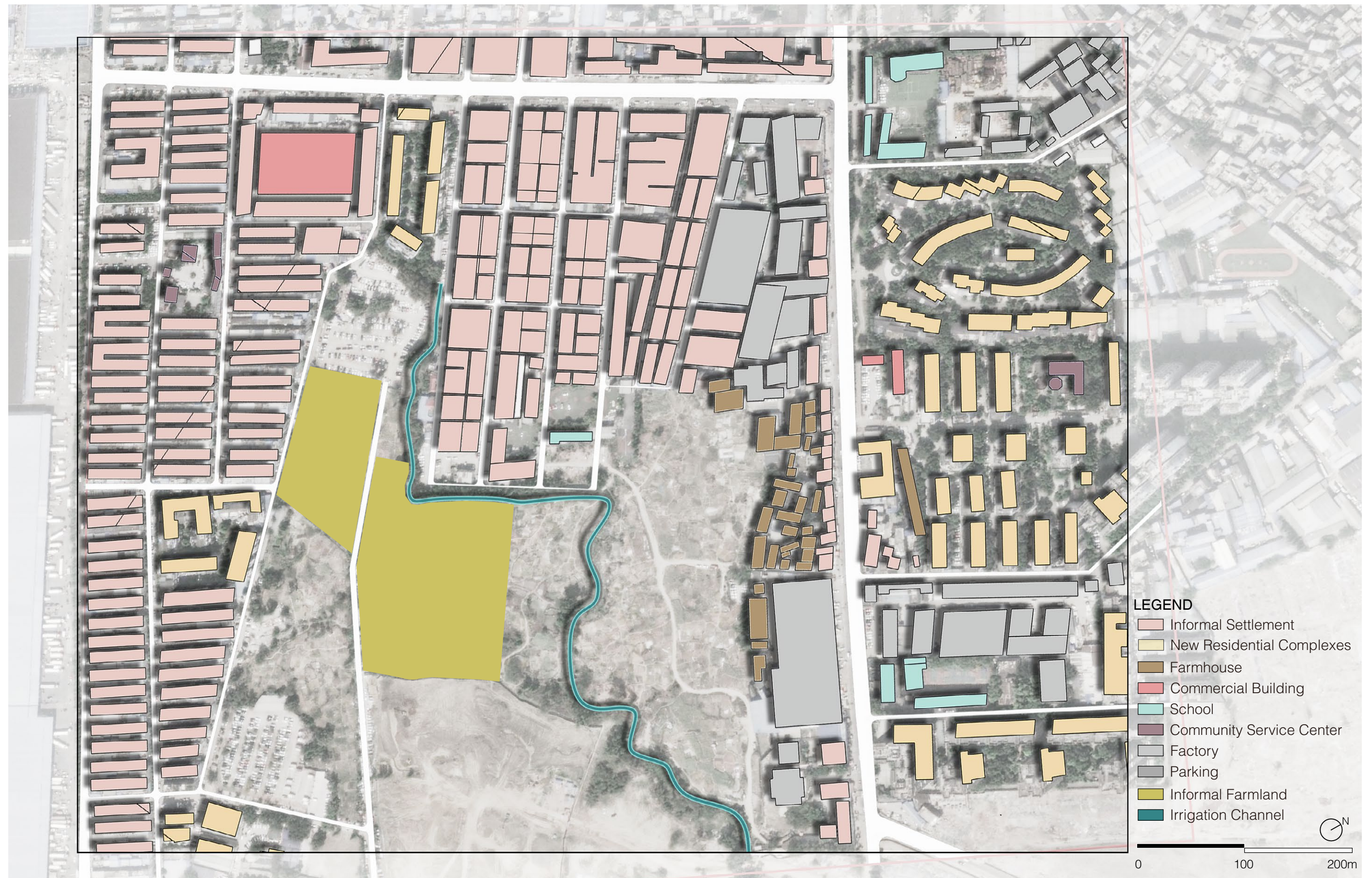


Figure 31: Based on Bing satellite map(2024)
Made by author

ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Co-design Workshop

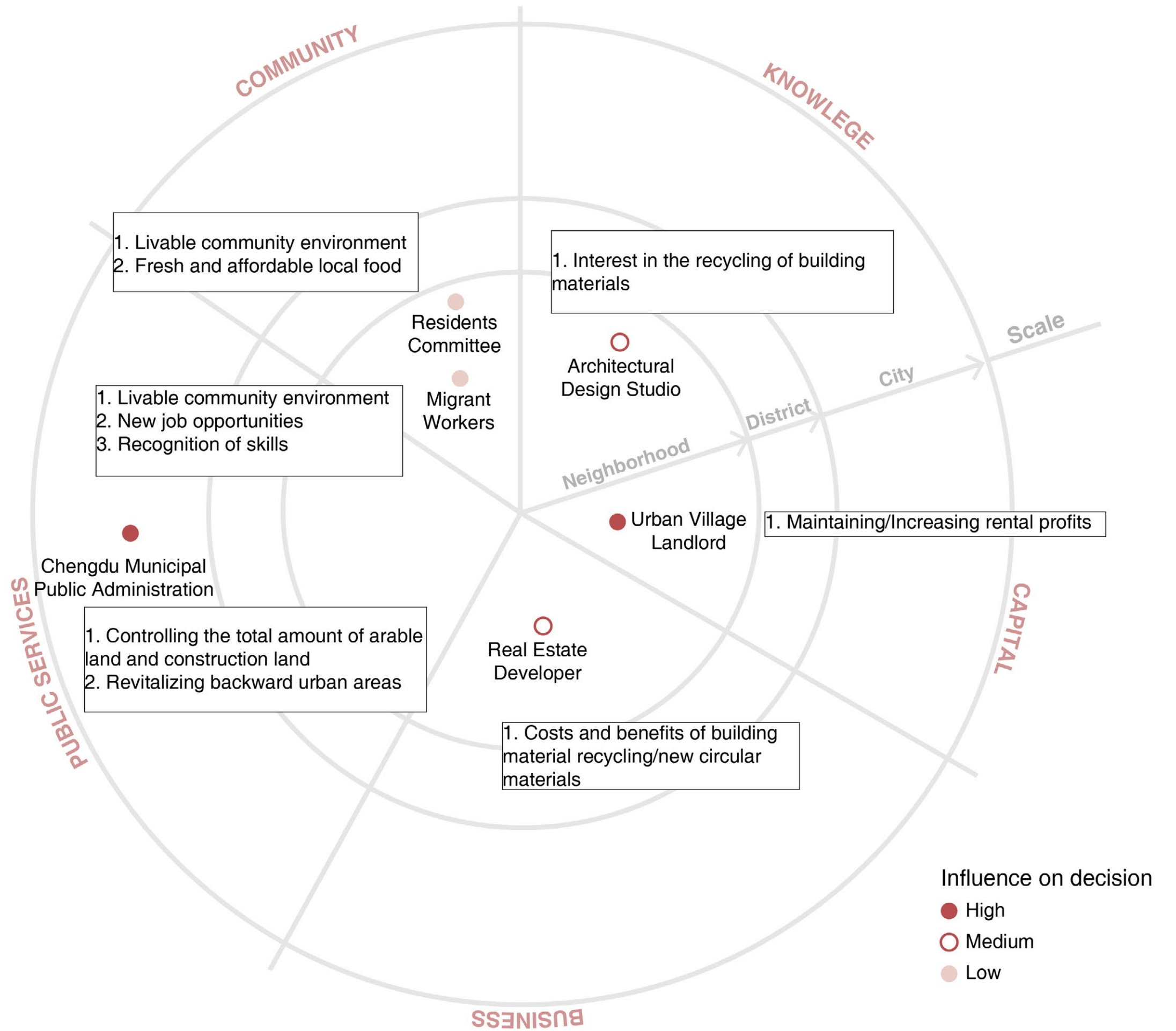


Figure 32: Simulated stakeholders with their interests
Made by author

ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Outcomes-power-interest analysis

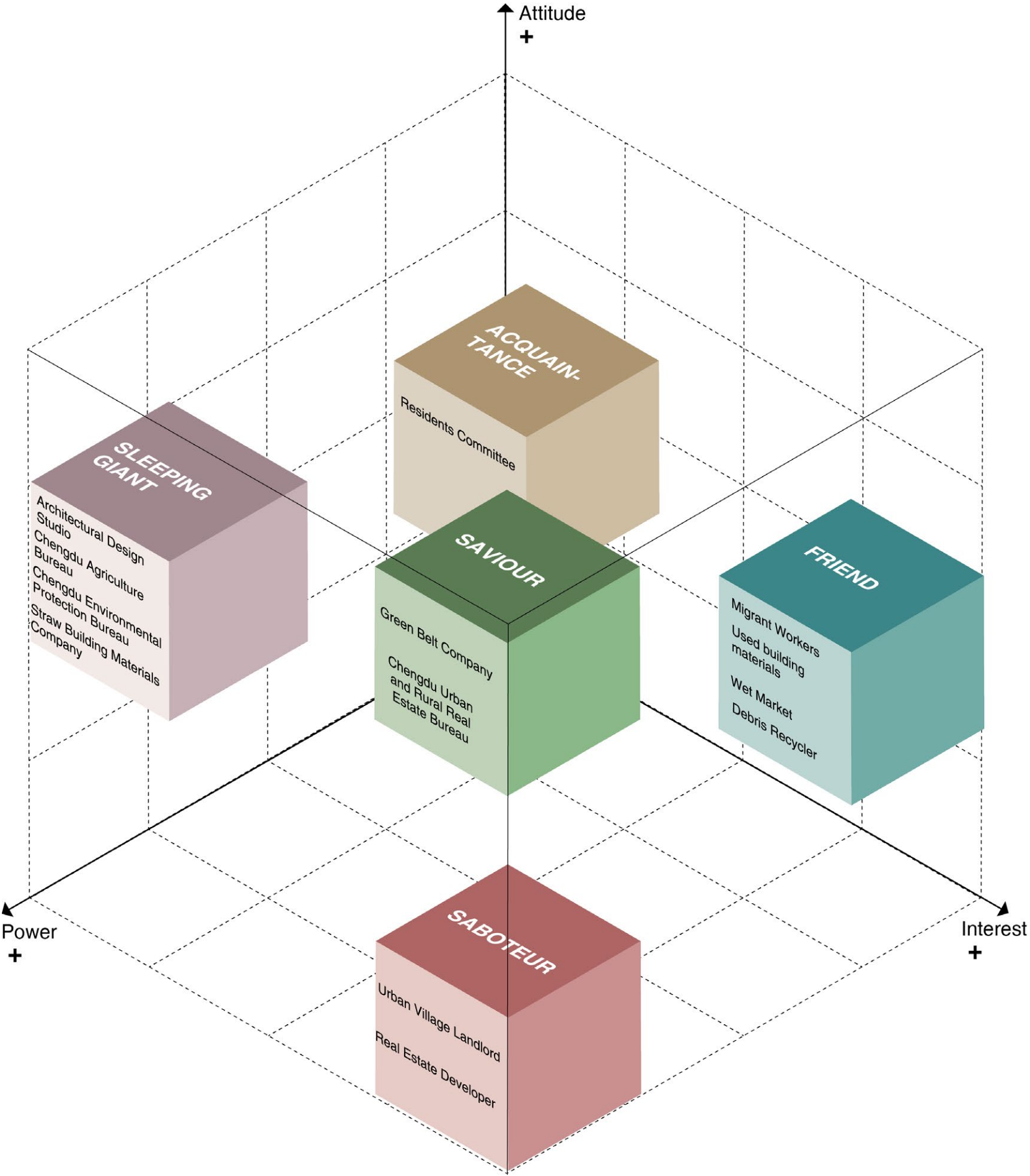


Figure 34: Curret power-interest grid
Made by author 82/103

ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Outcomes-power-interest analysis

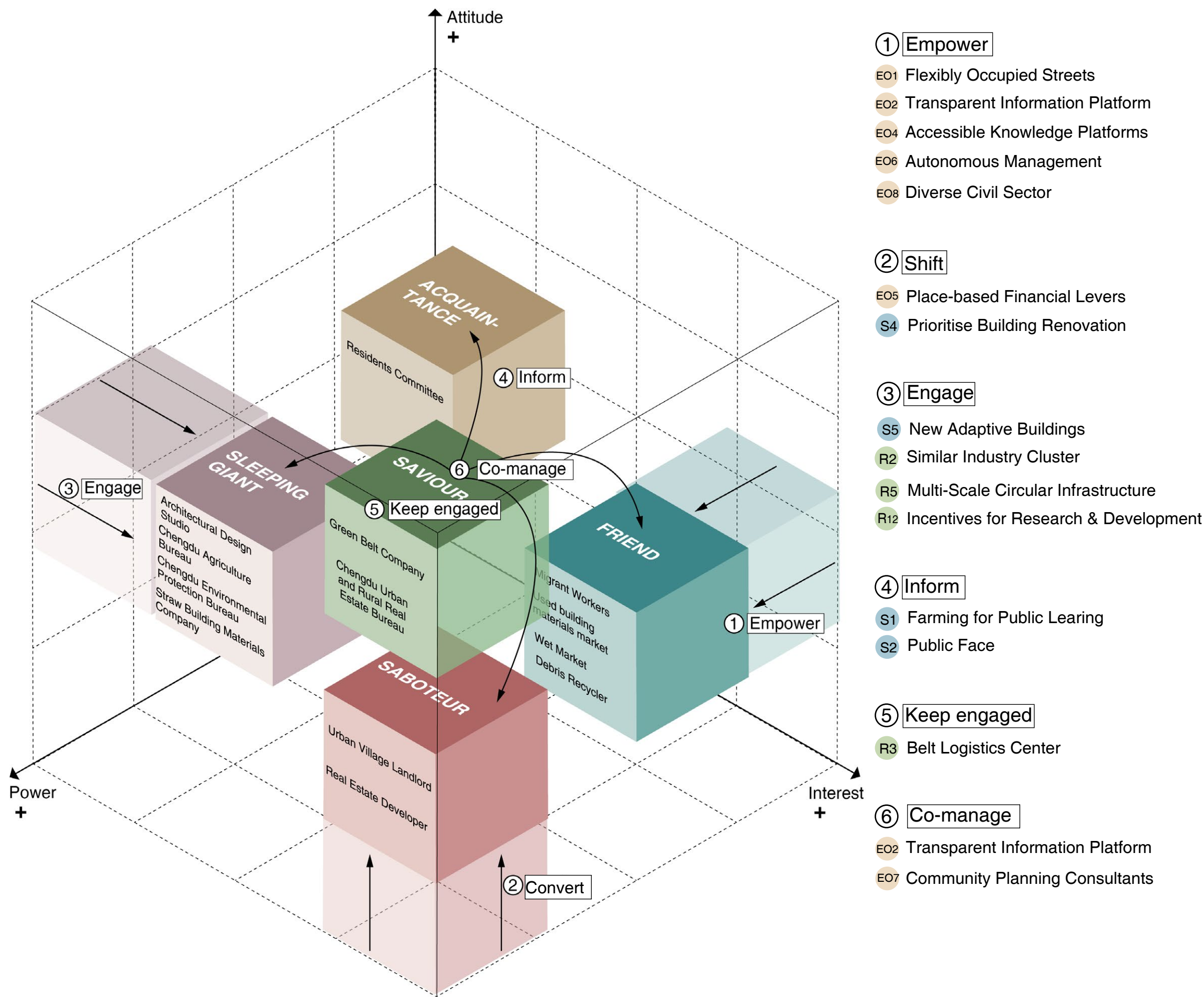


Figure 35: Future power-interest grid
Made by author 83/103

Open Discussion One: Prioritization of Establishing Circularity for Three Material Types

SHORTEST FOOD SUPPLY CHAIN

- Grains
- Vegetables
- Lightly processed foods (tofu, noodles)
- Agricultural waste to building materials (straw)

NO FOOD WASTE

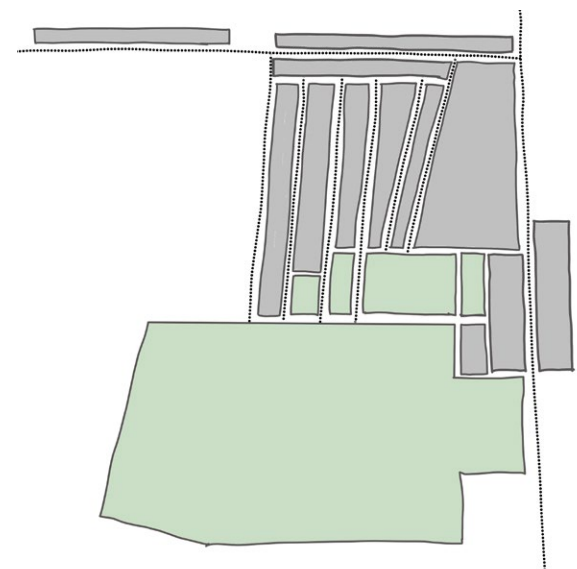
- No leftover food
- Composting with food waste (Peel, Eggshells)

NO CONSTRUCTION WASTE

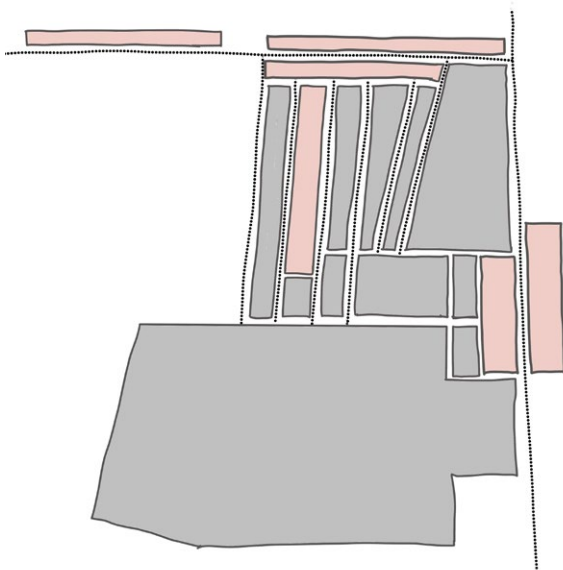
- Recycle of bricks & concrete
- Repurpose of glass & timber
- New circular materials(straw brick/column/panel)

ANJING URBAN VILLAGE REGENERATION CO-DESIGN

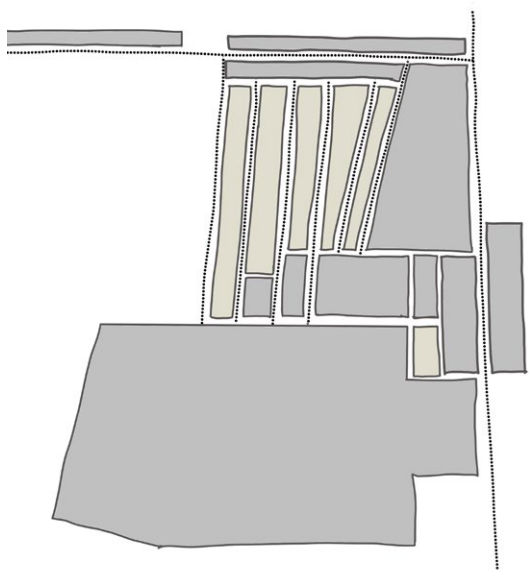
Outcomes-Timeline



Farmland & Irrigation Canal Restoration.



Develop a commercial atmosphere on main streets.



Incorporate food production and waste recycling within residential areas.

Get Attention by Art & Biennial	S6	Invitation to architects for urban village renovation and exhibition	Attracting the attention of residents, architects and artists nationwide to circular regeneration
Public Face	S2	Train station plaza and circular showcase avenue created to attract tourists	
Restoration of Surface Water System	E3	Restoration of old irrigation canals	Establishment of buffer zones for canals
Building Debris Reclaim & Reuse	R8	Reuse of construction debris in renovation and new construction	Promote future new construction for reuse of debris
Community Planning Consultants	EO7	Arranging for a planner in each village to provide planning advice and identify local cultural characteristics.	
Diverse Civil Sector	EO8	Establishment of migrant worker resident committees	
		Organize residents' meetings to listen to local views	
			Meso scale
Shared Productive Open Space	S3	Conversion of some abandoned ground floor stores into garages	
		Set up community vegetable gardens in alleys	
Construction debris transfer station	R7	Sorting and temporary storage of necessary demolition operations and existing construction debris	Promote future demolition projects for collecting recyclable materials
Making Compost on Site	R9	Set up composting bins and small composting sites in the community	Influence nearby communities to set up similar composting facilities
		Encourage residents to segregate food waste	
Local Collection Points of Sorting Waste	R10	Set up composting bins and small composting sites in the community	
Neighborhood Circular Logistics Hub	R11	Set up committee offices in each urban village	
		Food sharing refrigerators	Material repair studio
Place-based Financial Levers	R12	Incentives and punishment for waste separation	Incentives for the use of circular materials in new construction
Flexibly Occupied Streets	EO1	Release suitable locations on streets to allow street vendors	Vibrant Food Alley Attracts Tourists
Autonomous Management	EO6	Opening up some of the agricultural land around urban villages to allow private contracting	Pick-your-own farms, providing visitors with access to agriculture
			Micro scale

Open Discussion Two: Evaluation of Patterns



ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Outcomes-Patterns

SHORTEST FOOD SUPPLY CHAIN
Grains
Vegetables
Lightly processed foods (tofu, noodles)
Agricultural waste to building materials (straw)

NO CONSTRUCTION WASTE
Recycle of bricks & concrete
Repurpose of glass & timber
New circular materials(straw brick/column/panel)

NO FOOD WASTE
No leftover food
Composting with food waste (Peel, Eggshells)

S3

SHARED PRODUCTIVE OPEN SPACE

Social Adaptation

Urban/Spatial Design

Description
On vacant streets within the community, utilize construction debris to create food planting beds. This strategy enhances the utilization of overlooked spaces, formally integrates informal planting practices, and increases opportunities for local food access, thereby shortening the food supply chain.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

S2

PUBLIC FACE

Social Adaptation

Urban/Spatial Design

Description
To give recycling activities a public interface, such as entrances on main streets, increases community residents' understanding and interest in participation. Additionally, an attractive and vibrant public interface can also attract curiosity from outside residents and potential commercial investment.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

E3

RESTORATION OF SURFACE WATER SYSTEM

Ecological Regeneration

Urban/Spatial Design

Description
Restore the previously existing but now idle and dried irrigation channels from the original village within the urban village community. This restoration provides irrigation water for the community-shared farms and vegetable gardens. Around the water channels, a green belt of a certain width will be designed as a river buffer to protect the water source while simultaneously enhancing the living environment of the urban village.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

E5

SOIL REGENERATION

Ecological Regeneration

Urban/Spatial Design

Description
Regenerate the soil in the idle agricultural fields surrounding informal residential areas. This includes removing weeds and clearing illegally dumped construction debris from the soil. Plant leguminous plants to enrich the soil, providing a healthy foundation for community farm development. Subsequent planting activities in the community farm should minimize external inputs, using organic fertilizers to continuously protect soil health.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

E01

FLEXIBLY OCCUPIED STREETS

Equal Opportunity for Development

Policy and people network

Description
In Chengdu, unlike other regions, urban village streets within informal residential areas are relatively wide, especially the main streets. Allowing street food vendors to set up stalls in these idle spaces facilitates the direct local sale of vegetables grown in community farms. This helps establish a local food supply chain, enhancing the accessibility of freshly grown produce within the community.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R6

MATERIAL BOOKLET

Resources Looping

Circular Practice

Description
A collaborative booklet developed by architectural firms, construction companies, and migrant workers. It catalogs potential construction debris in urban villages to assess their recyclability and potential reuse options. Additionally, the booklet includes information on innovative recyclable materials made from agricultural waste, such as straw bricks. This helps to simplify the identification and effective use of reusable materials while enhancing understanding of innovative materials.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R7

CONSTRUCTION DEBRIS TRANSFER STATION

Resources Looping

Urban/Spatial Design

Description
Local community spaces are crucial for the onsite reuse of building debris, allowing for temporary storage and preliminary sorting of materials. Highly reusable items, such as glass and windows, are likely to be swiftly collected by local second-hand recyclers and experienced residents, facilitating efficient recycling practices.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R8

BUILDING DEBRIS RECLAIM & REUSE

Resources Looping

Circular Practice

Description
maximizing the reuse of materials from demolished or structurally unsound buildings. Priority is given to directly reusing materials such as repurposing bricks for constructing planting beds. Where direct reuse is not feasible, materials like cement or bricks are crushed and repurposed for constructing roads, enhancing resource efficiency and reducing waste.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

S4

PRIORITISE BUILDING RENOVATION

Social Adaptation

Urban/Spatial Design

Description
Renovating and repurposing existing buildings over constructing new ones to conserve resources. For instance, transforming abandoned factories into housing or office spaces supports sustainable development by utilizing existing structures and reducing environmental impact.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

S6

GET ATTENTION BY ART & BIENNIAL

Social Adaptation

Urban/Spatial Design

Description
Engaging architectural firms in design exhibitions focused on urban village revitalization can explore innovative architectural transformations. These artistic and exploratory activities not only broaden the possibilities for urban village transformation but also attract external attention and potential investment, fostering community development and cultural enrichment.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R5

MULTI-SCALE CIRCULAR INFRASTRUCTURE

Resources Looping

Circular Practice

Description
Integrated infrastructure systems at the neighborhood, regional, and city scales to help manage material flows (food, food waste, and construction debris) and promote more efficient reuse of resources.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R9

MAKING COMPOST ON SITE

Resources Looping

Circular Practice

Description
setting up designated areas within the community to compost organic waste. By composting food scraps and other biodegradable materials on site, the community can significantly reduce food waste. The resulting compost can be used to enrich the soil in local community gardens and farms, promoting sustainable agricultural practices and reducing the need for external fertilizers.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R10

LOCAL COLLECTION POINTS OF SORTING WASTE

Resources Looping

Urban/Spatial Design

Description
Implementing local collection points for sorting and recycling waste supports the direct local reuse of materials. These stations enable residents to sort their waste into categories such as plastics, metals, and food waste. This separation helps streamline recycling processes and ensures that food waste is specifically processed for composting, further reducing the community's environmental footprint and enhancing local waste management efficiency.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R11

NEIGHBORHOOD CIRCULAR LOGISTICS HUB

Resources Looping

Circular Practice

Description
Each community will establish a circular logistics hub to prevent food waste by housing a community refrigerator. This hub facilitates the redistribution of surplus food, reducing waste. Additionally, it will be equipped with various repair tools and workshops to assist local residents in handling and repurposing collected recyclable building materials.

Relation

Assessment

Distributive Justice

Spatial Adaptability

Resources Looping

Ecological Regeneration

R13

PLACE-BASED FINANCIAL LEVERS

Resources Looping

Policy and people network

Description
A mix of incentives and disincentives to influence behavior. Incentives, also known as 'carrots,' include tax breaks, low-threshold financing options, and stimulus funds. These are designed to attract real estate developers who may not initially prioritize using recyclable building materials. On the other hand, our disincentives or 'sticks,' aim to penalize developers who illegally dump building material waste. Additionally, this strategy encourages farmworkers to engage in waste separation.

Relation

Assessment

Distributive Justice

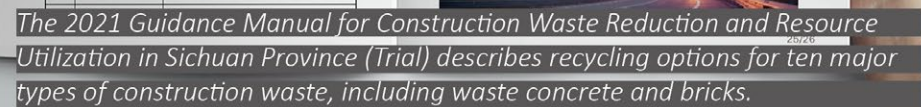
Spatial Adaptability

Resources Looping

Ecological Regeneration

R6 MATERIAL BOOKLET

Circular Practice

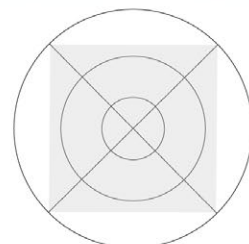


Description

Relation

Assessment

Spatial Adaptability



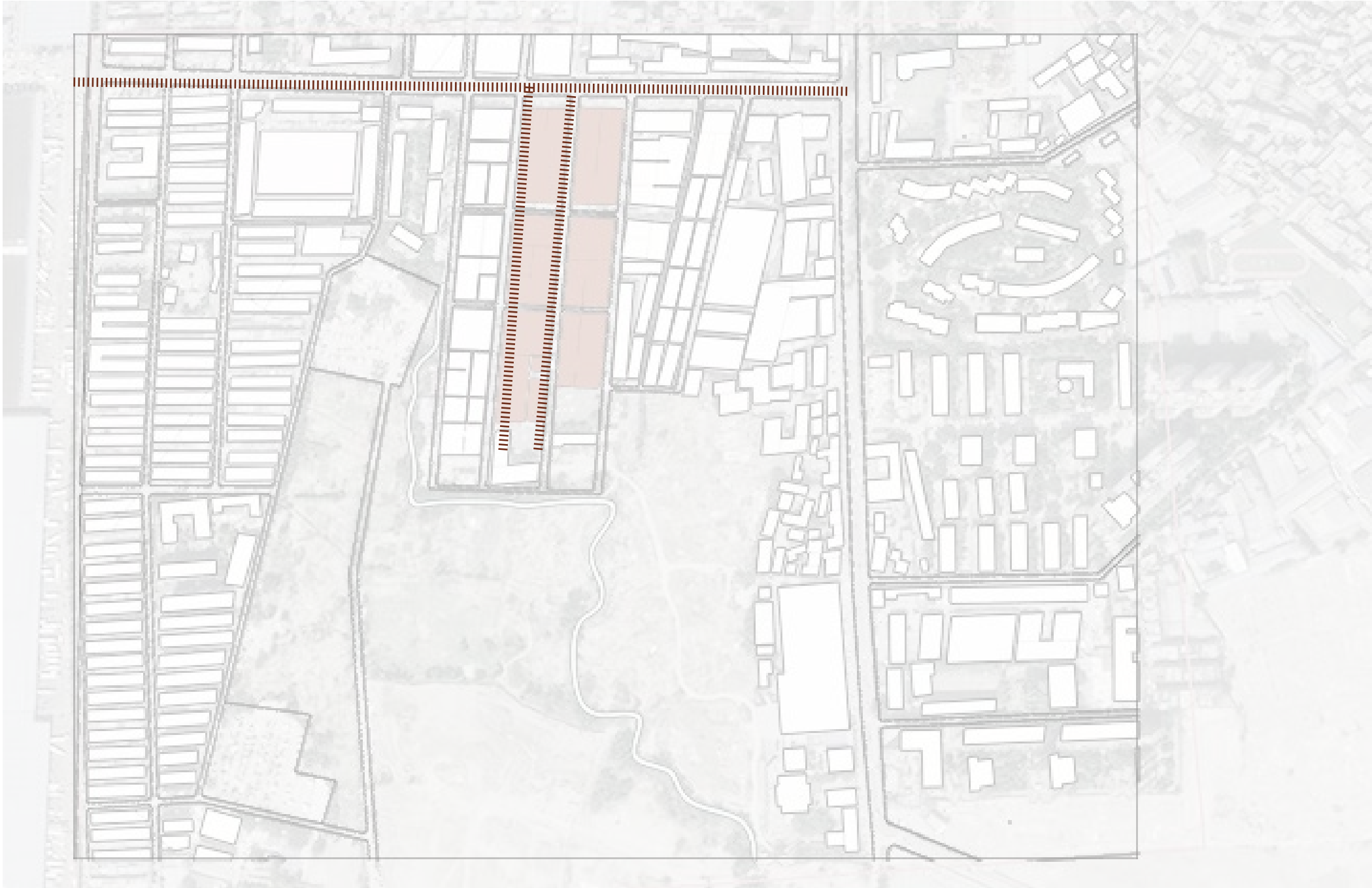
Resources Looping Ecological Regeneration

Co-Design Session Three: Potential Applications and Spatial Forms for Patterns



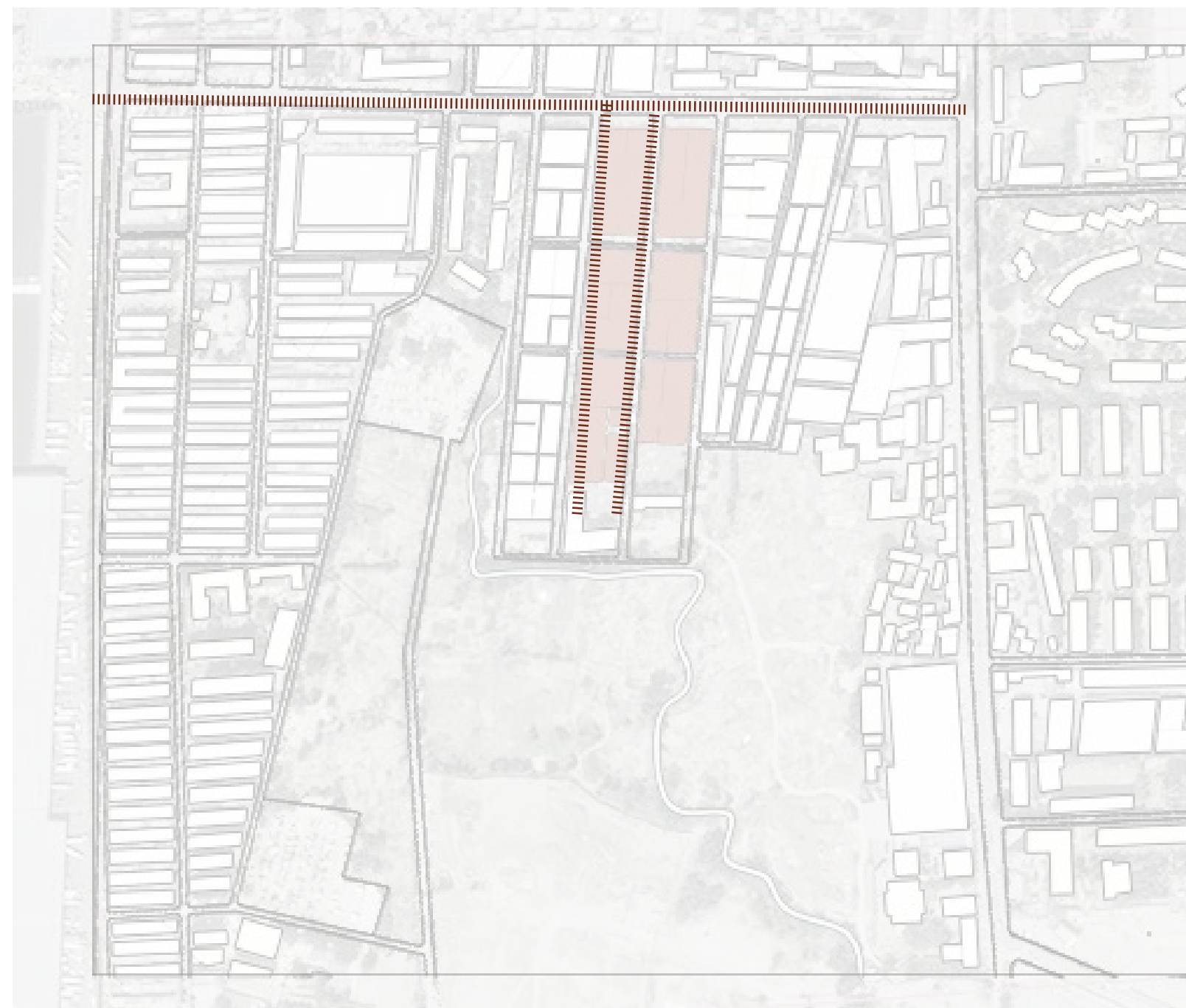
APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step1: Identification of potential space

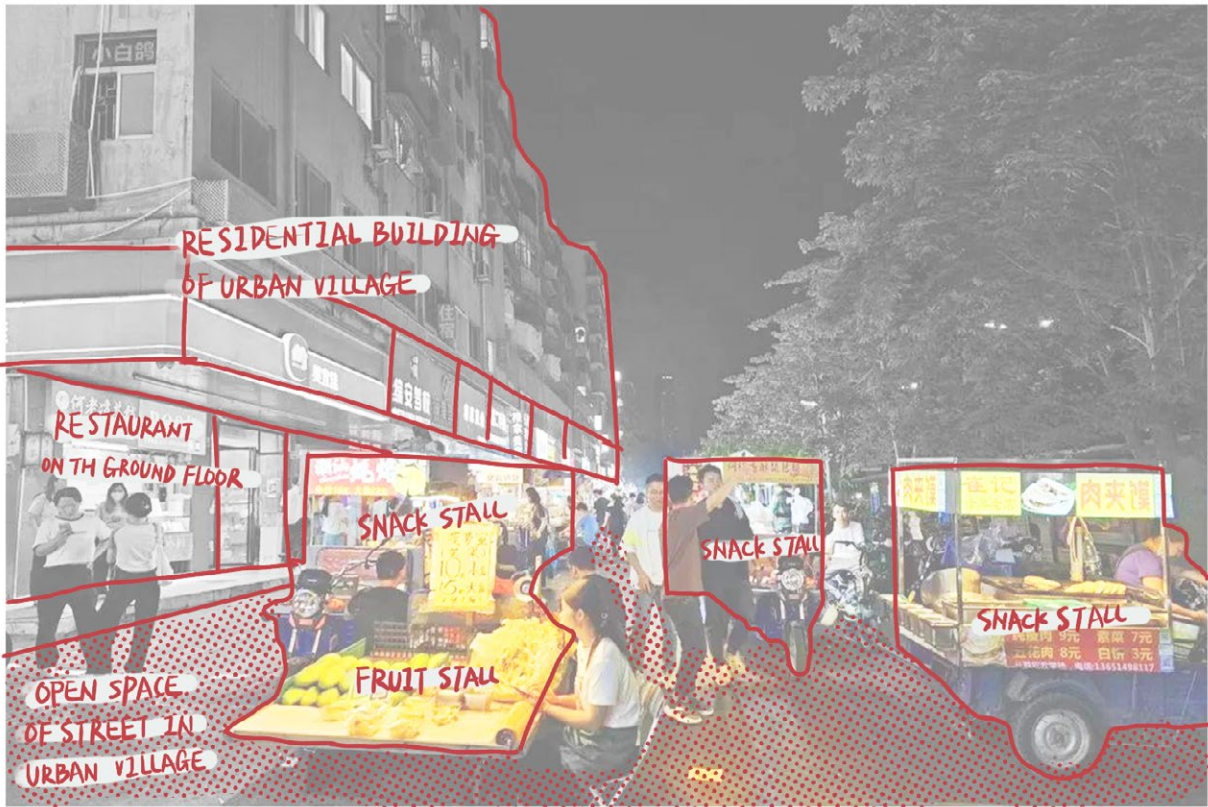


APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step1: Identification of potential space



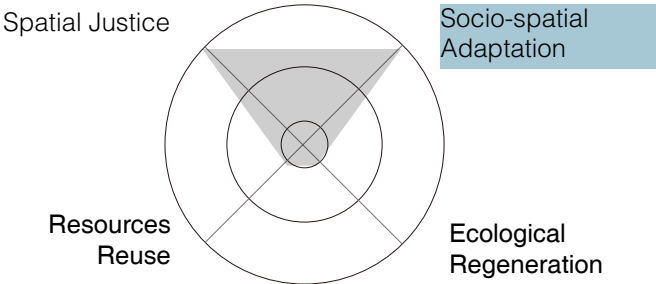
Consumption space: Street food vendors



Location:

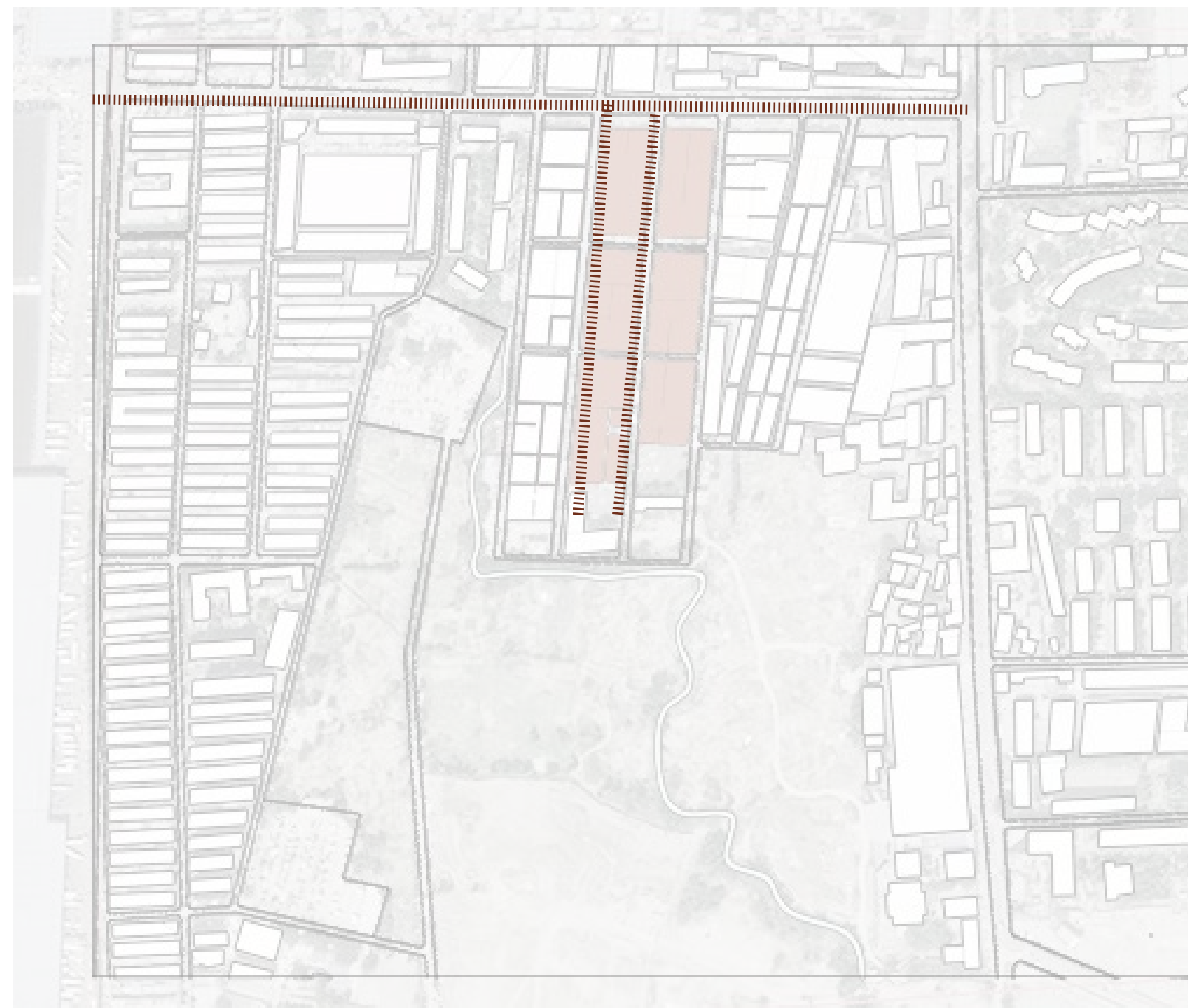


Assessment



APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step1: Identification of potential space



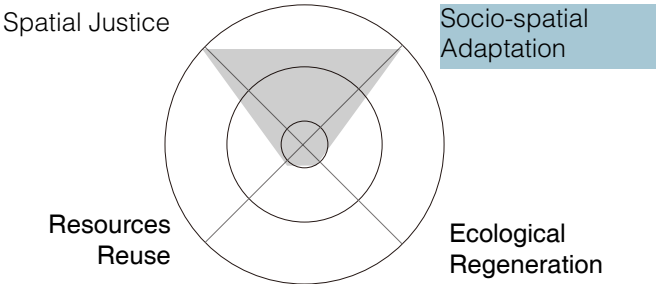
Consumption space: Street food vendors



Location:



Assessment



SWOT Conclusion

Socio-spatial Adaptation

Strengths: a vibrant commercial atmosphere.
Opportunities: Existing policies permitting street vendors

Goal

Socio-spatial Adaptation

Creation of Adaptable Sapce

APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step2: Find the right pattern in pattern field

PATTERN \ CRITERIA																														
		Location												Type				Goal		Goal										
		Scale	City/Region	District	Neighborhood		Circular Industry Zone	Circular Consumption Town	Circular-Life Neighborhood	Circular Agro Park	Origin	Vision	Field Trip	Case Study	Literature	Research by Design		Urban/Spatial design	Circular Practice	Policy and people network		Shortest Resource Loop	A Closed Balance	Circular Knowledge Learning	Adaptable Space	Farmland Regeneration	Clean & Rich Water system	Protection of forest	Sustainable Labor Markets	Community Empowerment
Circular Industry & Technology Park	R1																													
Similar Industry Cluster	R2																													
Belt Logistics Center	R3																													
Re-use of Material & Energy Flow	R4																													
Multi-Scale Circular Infrastructure	R5																													
Material Passports	R6																													
Space for Storage	R7																													
Building Debris Reclaim & Reuse	R8																													
Making Compost on Site	R9																													
Local Collection Points of Sorting Waste	R10																													
Neighborhood Circular Logistics Hub	R11																													
Incentives for Research & Development	R12																													
Place-based Financial Levers	R13																													
Farming for Public Learning	S1																													
Public Face	S2																													
Shared Productive Open Space	S3																													
Prioritise Building Renovation	S4																													
New Adaptive Buildings	S5																													
Get Attention by Art	S6																													
Urban Farm as Connector	S7																													
Quality Living Environment	E1																													
Muti-Functional Industrial Buffer	E2																													
Restoration of Surface Water System	E3																													
Protection & Restoration of Forest	E4																													
Soil Regeneration	E5																													
Flexibly Occupied Streets	EO1																													
Transparent Information Platform	EO2																													
Accessibility of Labour Market	EO3																													
Accessible Knowledge Platforms	EO4																													
Autonomous Management	EO5																													
Community Planning Consultants	EO6																													
Diverse Civil Sector	EO7																													

APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step2: Find the right pattern in pattern field

Criteria		Pattern															
		Scale			Location				Origin				Vision			Field Trip	
		City/Region	District	Neighborhood		Circular Industry Zone	Circular Consumption Town	Circular-Life Neighborhood	Circular Agro Park								
						CI	CC	CN	CA								
Circular Industry & Technology Park	R1																
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Accessible Knowledge Platforms	EO4																
Autonomous Management	EO5																
Community Planning Consultants	EO6																
Diverse Civil Sector	EO7																

EO1 FLEXIBLY OCCUPIED STREETS

Equal Opportunity for DevelopmentPolicy and people network



Street vendors outside a wet market in Chengdu during the Chinese New Year in 2024

Photograph by author

Description

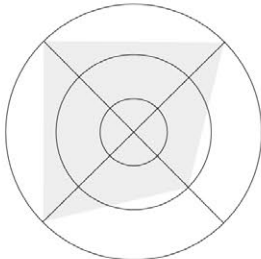
In Chengdu, unlike other regions, urban village streets within informal residential areas are relatively wide, especially the main streets. Allowing street food vendors to set up stalls in these idle spaces facilitates the direct local sale of vegetables grown in community farms. This helps establish a local food supply chain, enhancing the accessibility of freshly grown produce within the community.

Relation

EO5, EO7, S3

Assessment

Distributive JusticeSocio-spatial Adaptation



Resources LoopingEcological Regeneration

APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Step3: Spatial design using pattern

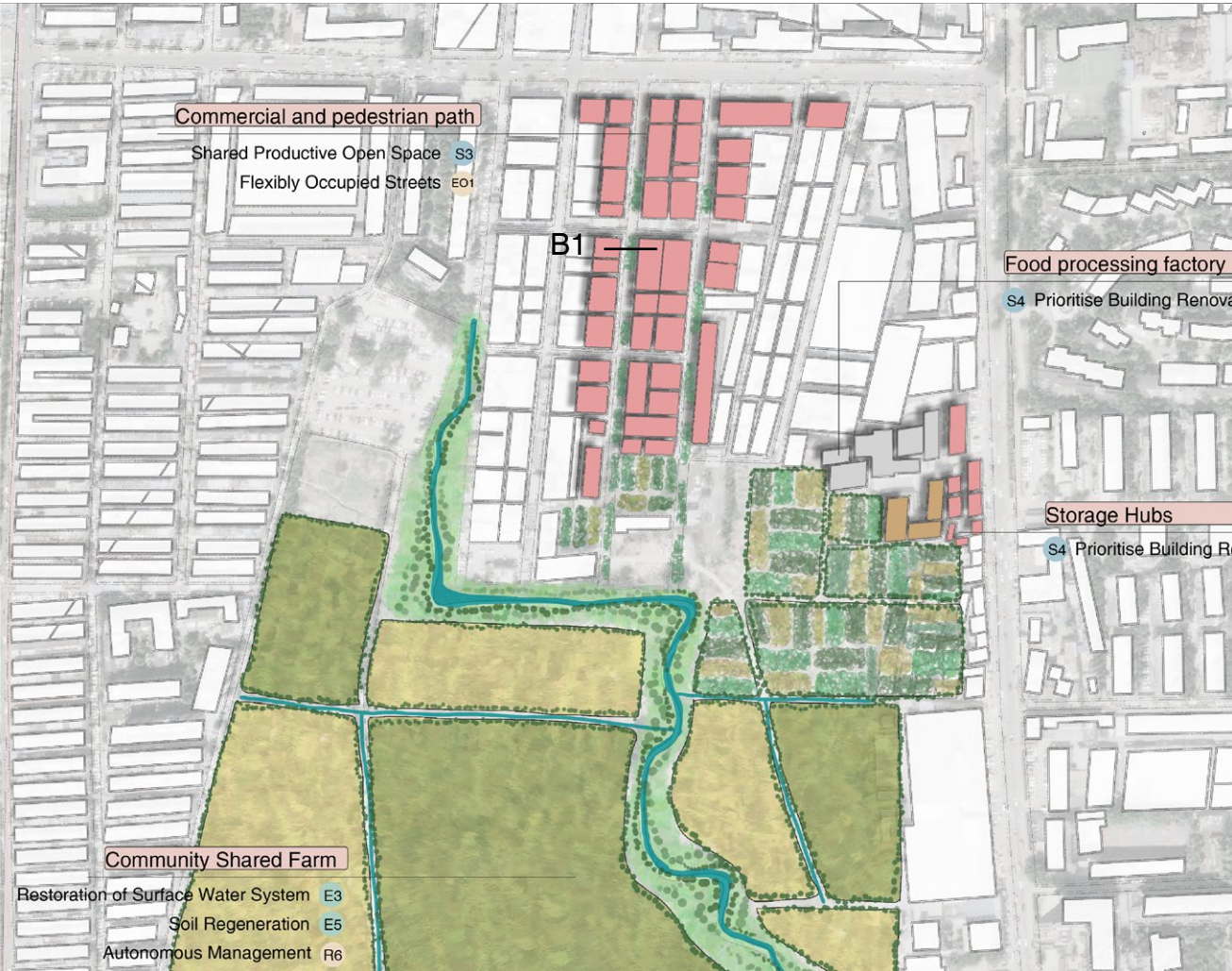
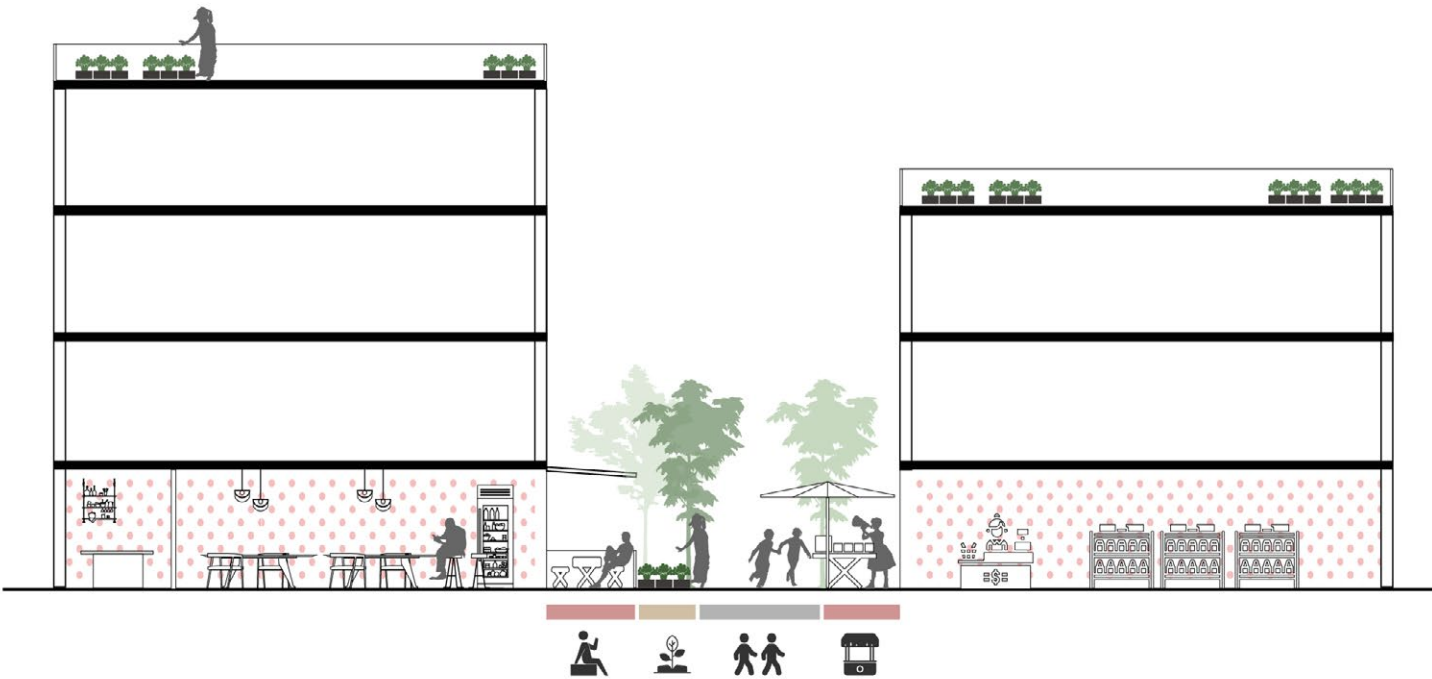
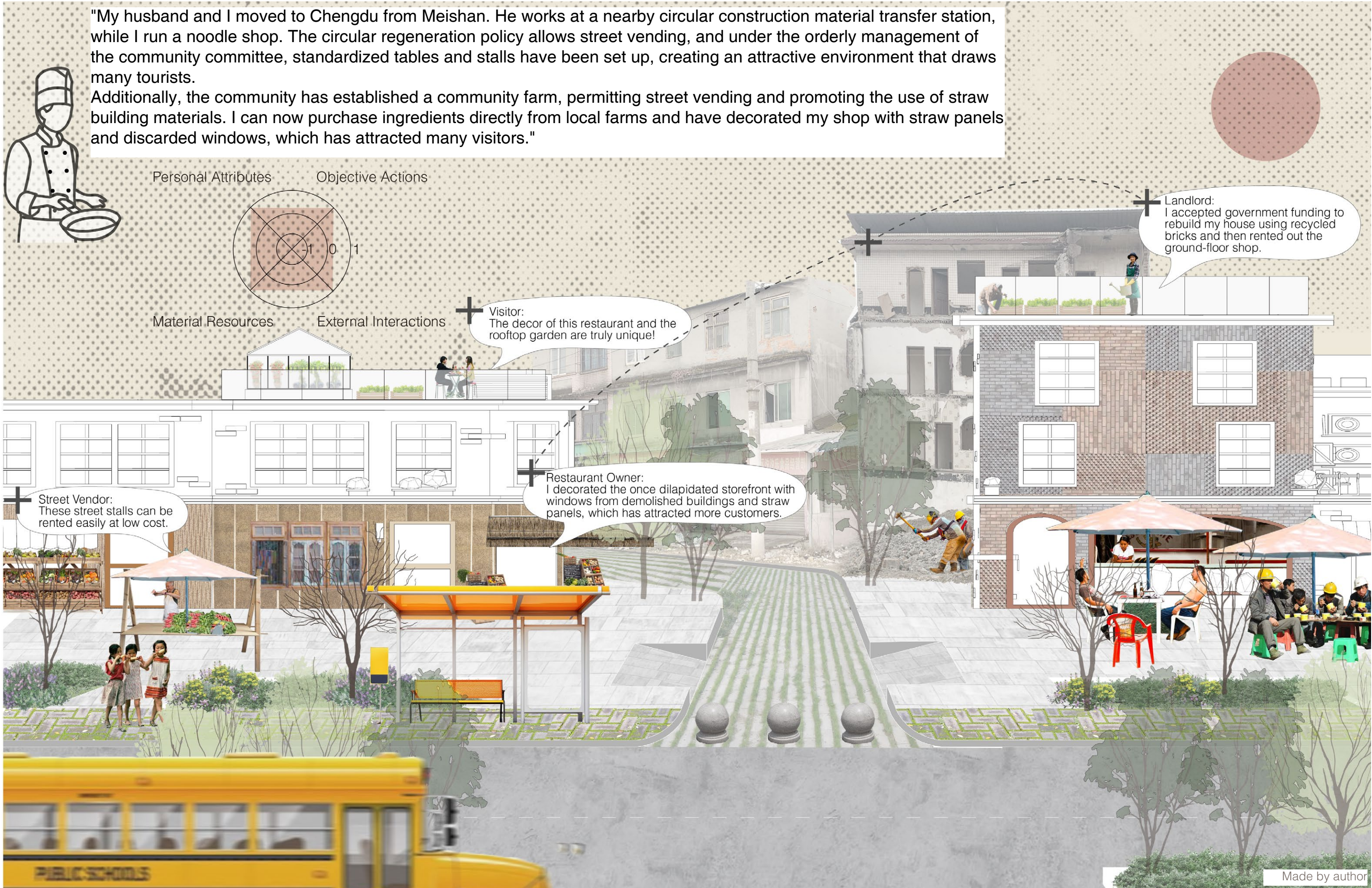


Figure 36: Potential space for food flow
Made by author



APPLICATION OF THE CIRCULAR DEVELOPMENT STRATEGY FRAMEWORK

Circular transformation contributes to the well-being of migrant workers

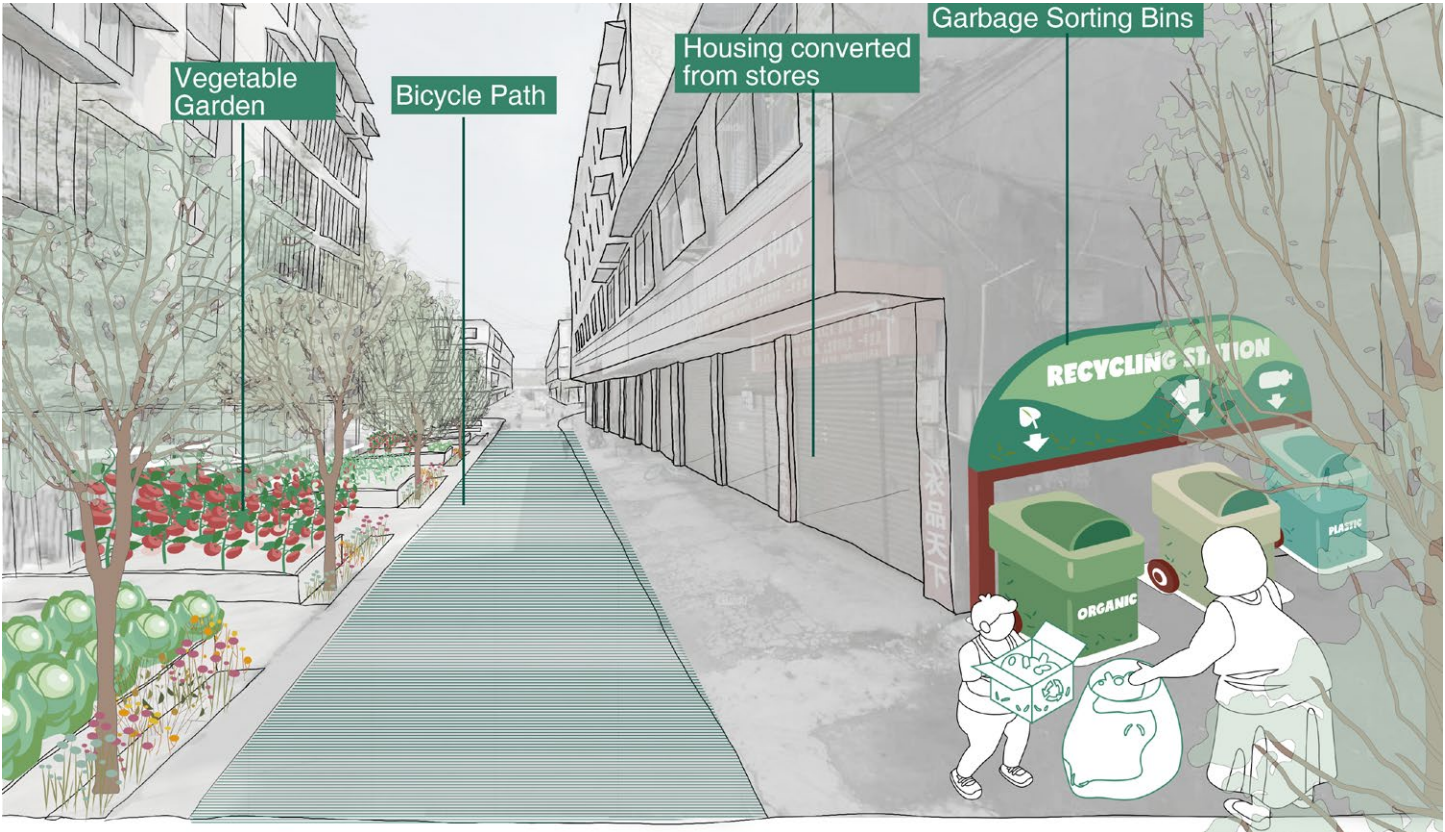


ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Spatial design



Figure 37: Potential space for food waste flow
Made by author

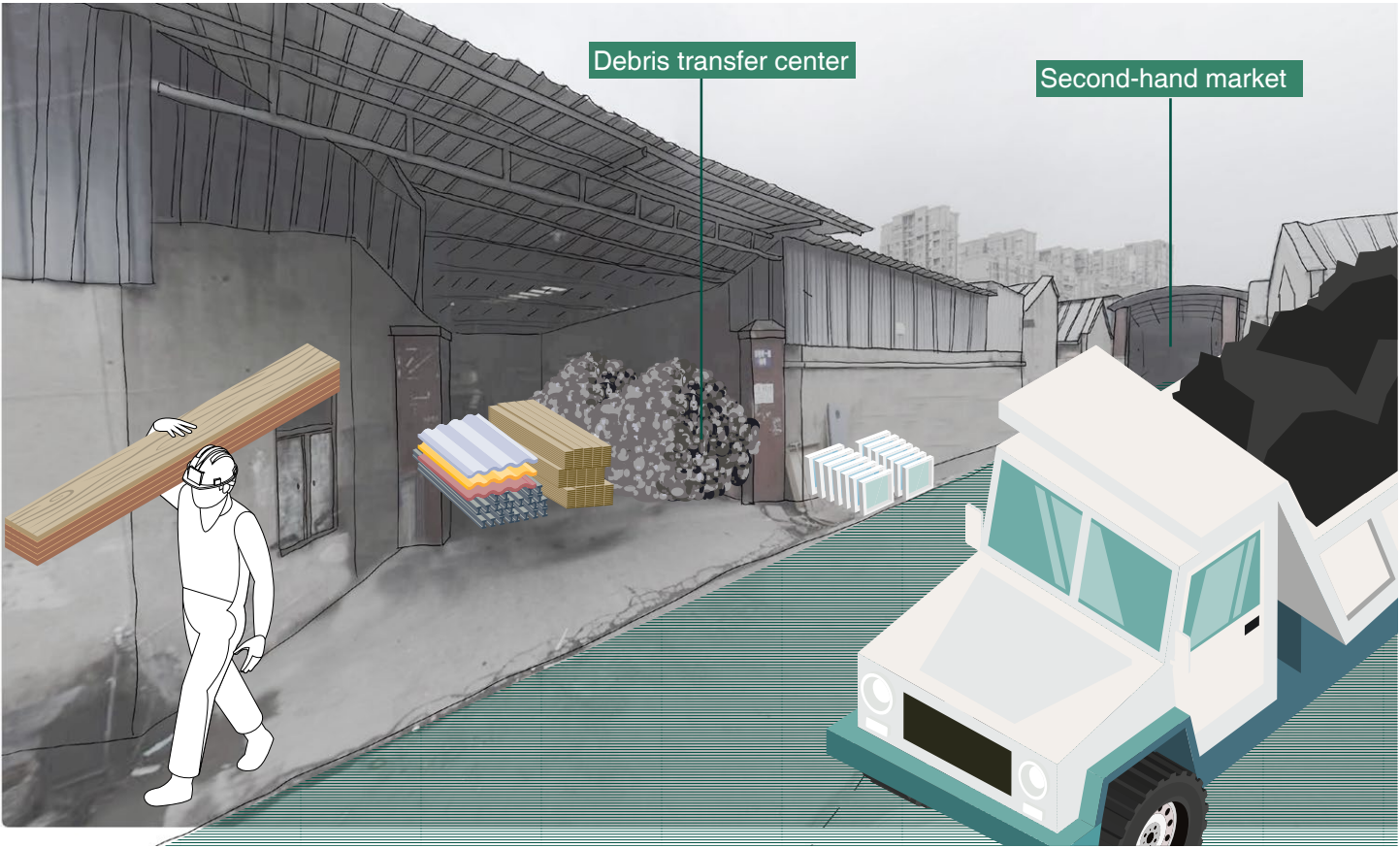


ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Spatial design

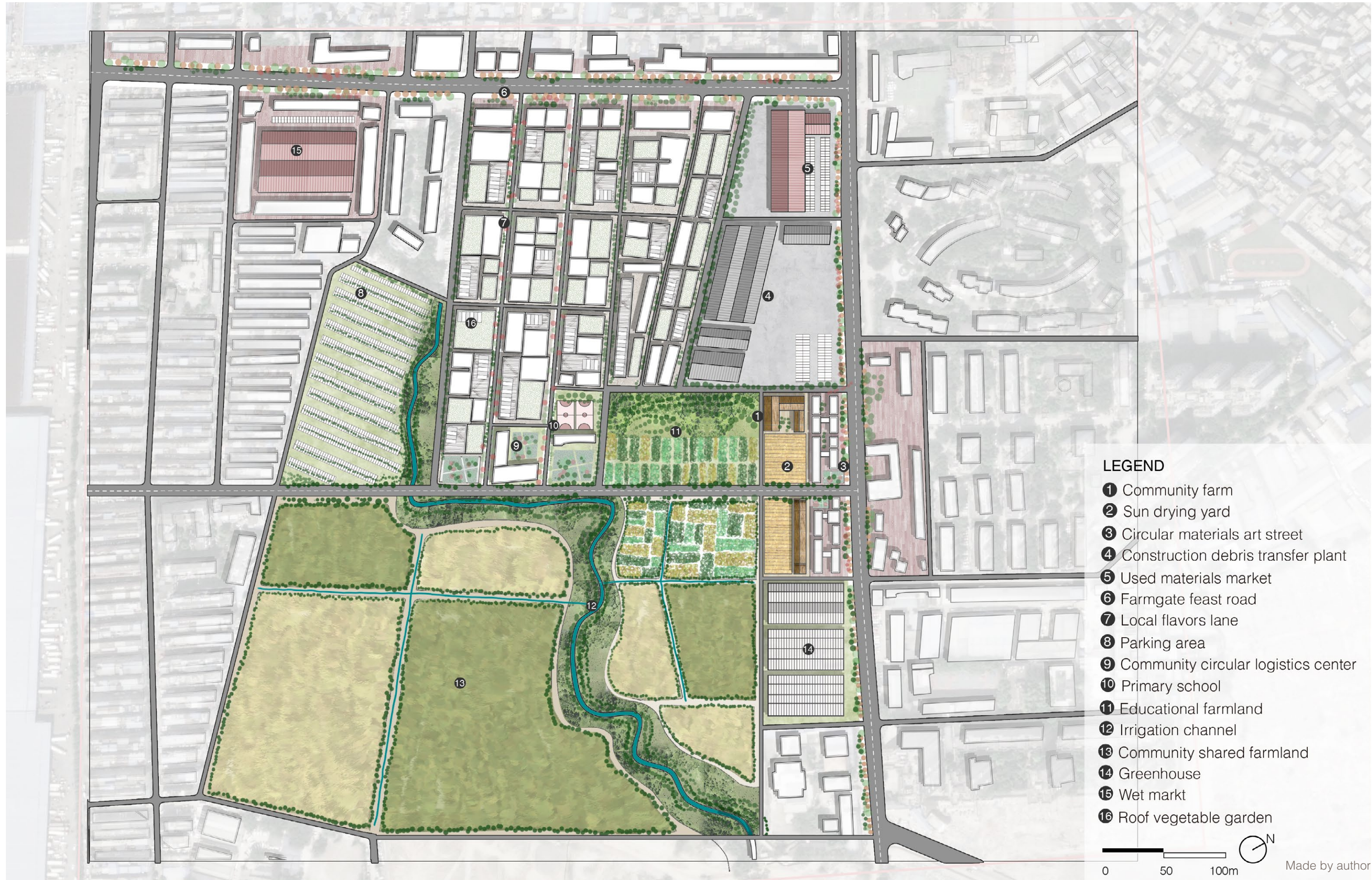


Figure 38: Potential space for construction debris
Made by author



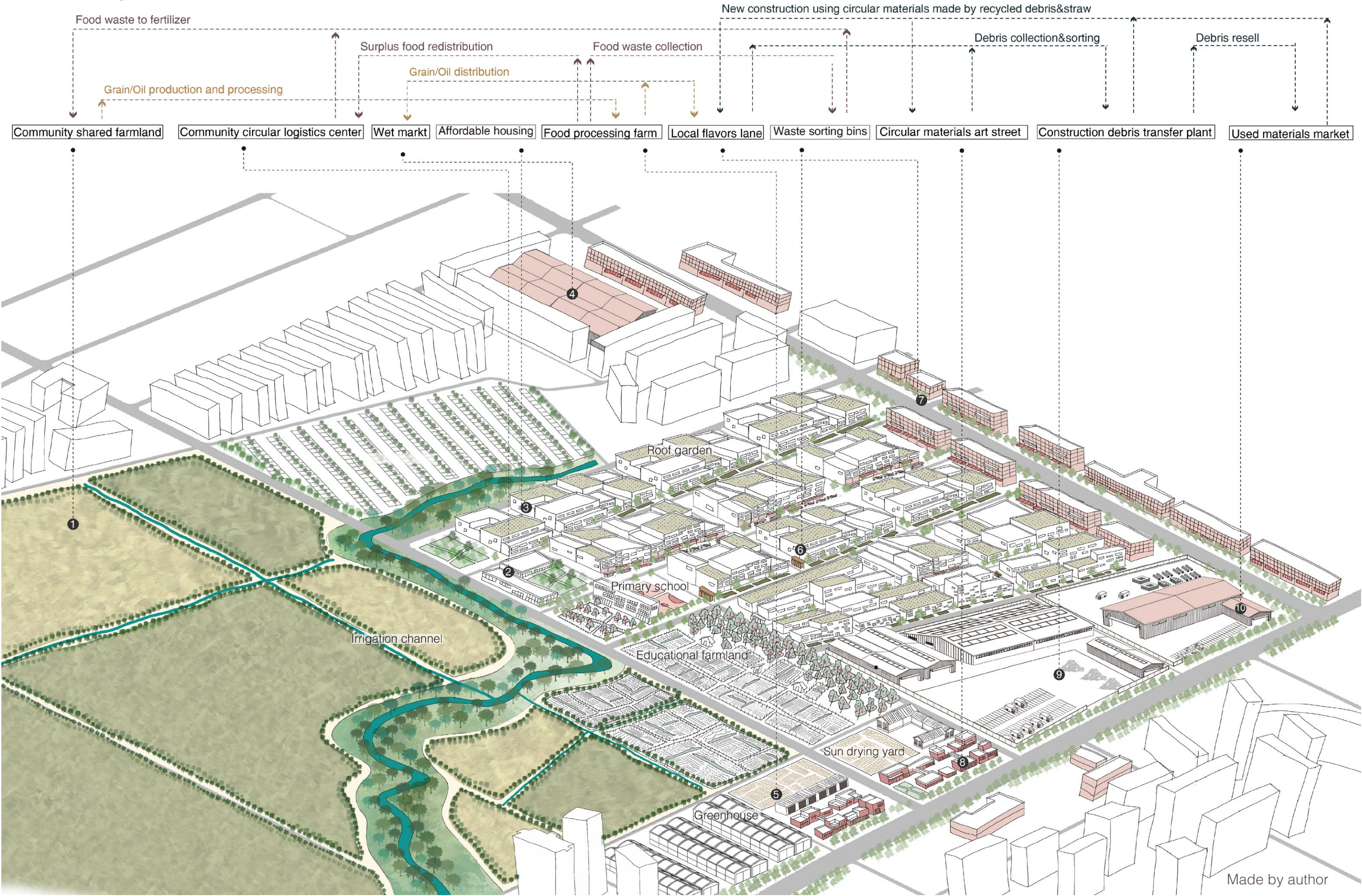
ANJING URBAN VILLAGE REGENERATION CO-DESIGN

Master plan



ANJING URBAN VILLAGE REGENERATION CO-DESIGN

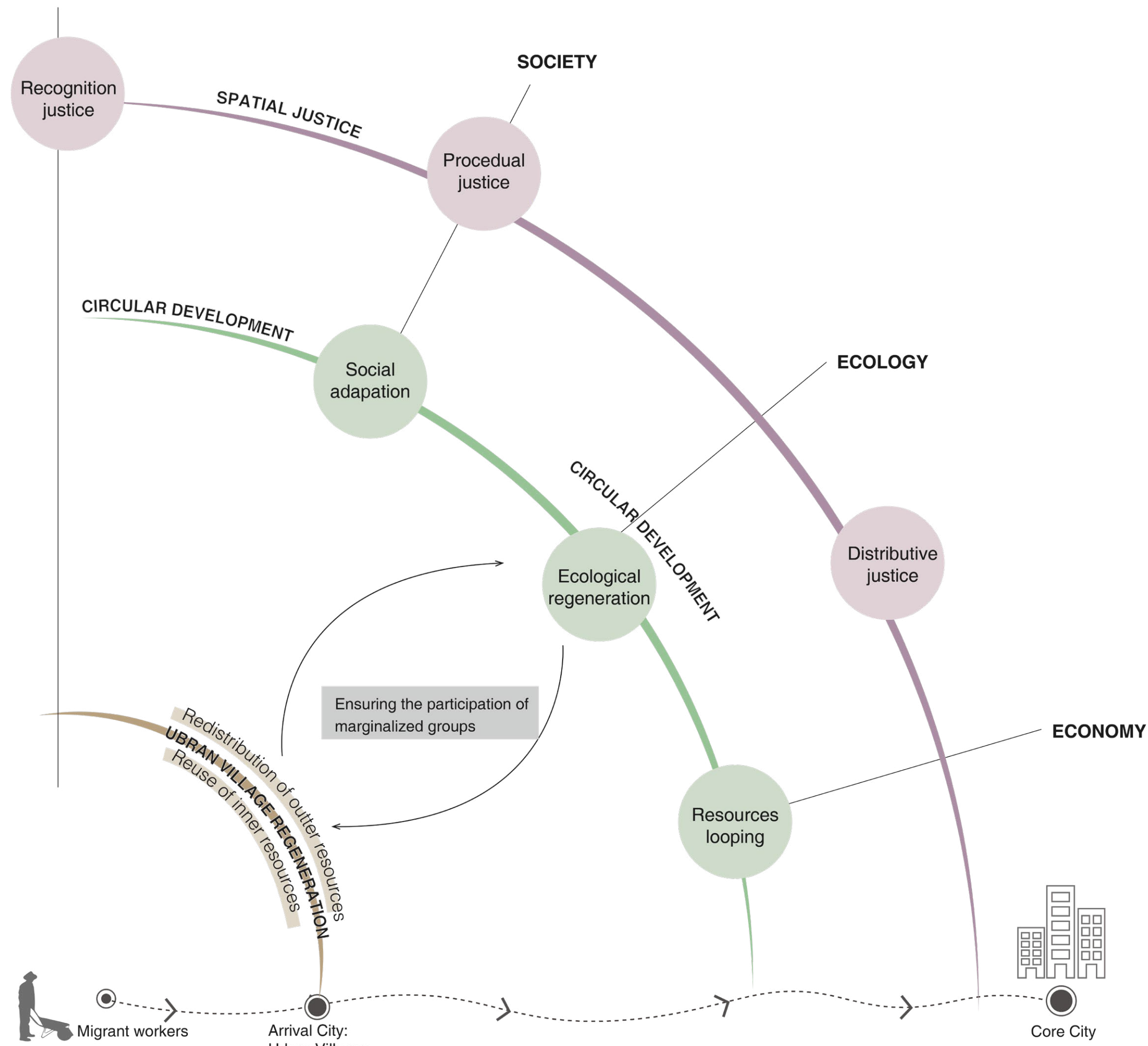
Outcomes-Design initiatives and resource flows



09 REFLECTION



Figure 39: Vegetable garden in front of abandoned shop in Chengdu's urban vil-
Source: Photograph by the author



REFLECTION

Transferability

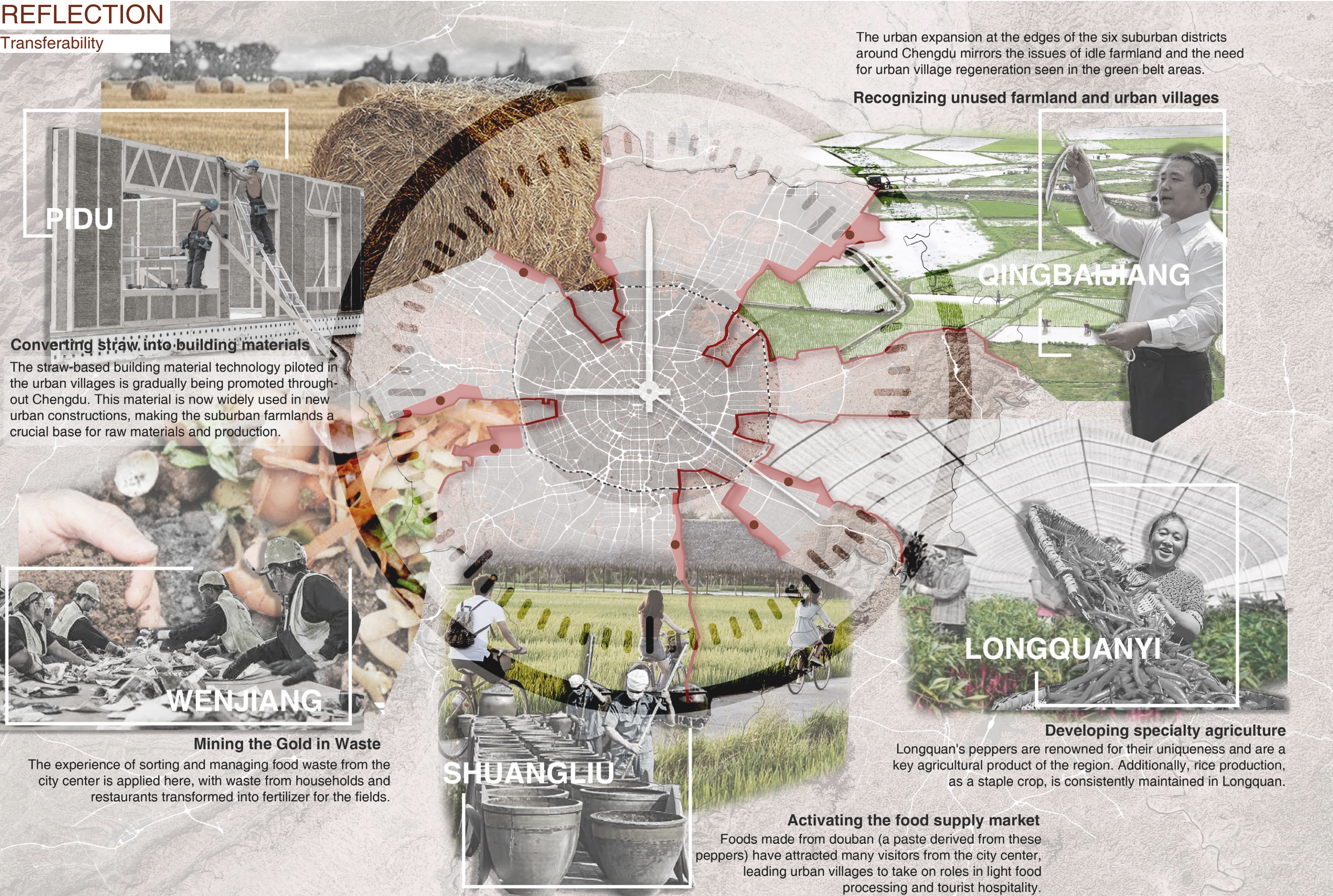


Figure 40: The transferability for Chengdu Metropolitan
Made by author