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Land Consolidation

as a Tool for Promoting

Rural Restructuring in China

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Contents

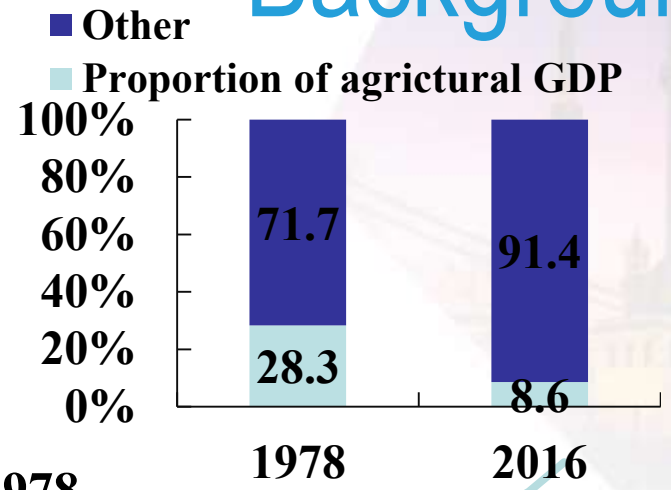
Background

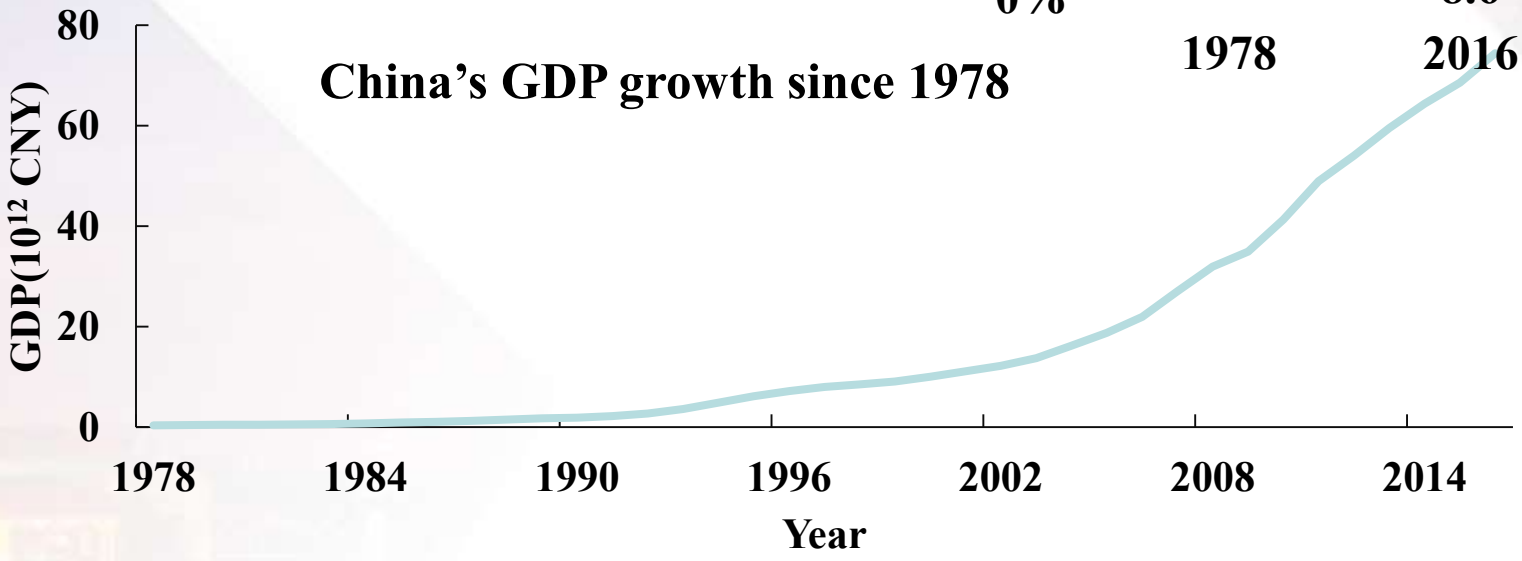
The Reality

Two different rural landscapes in nearby and remote areas of Nanjing City

Background

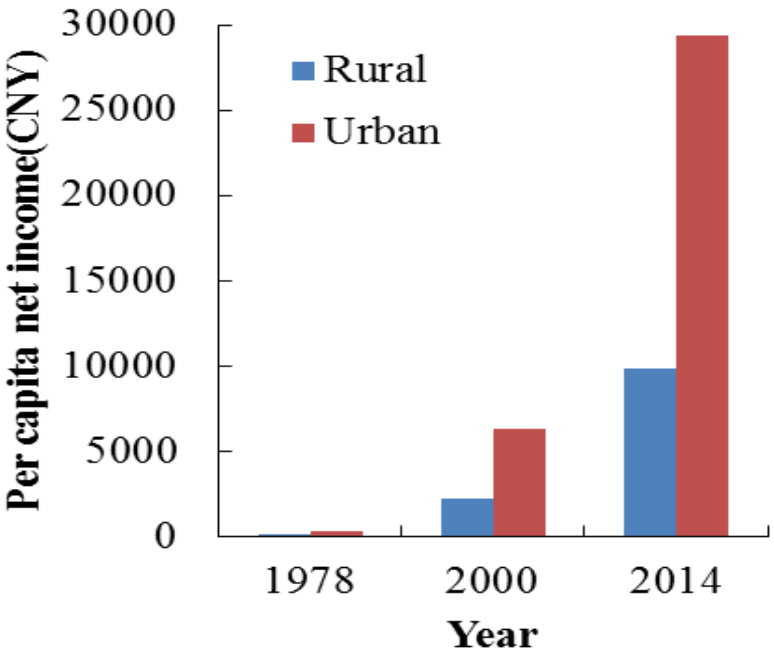
- Rapid Economic Growth
- Associated with rapid decrease in agricultural GDP





Background

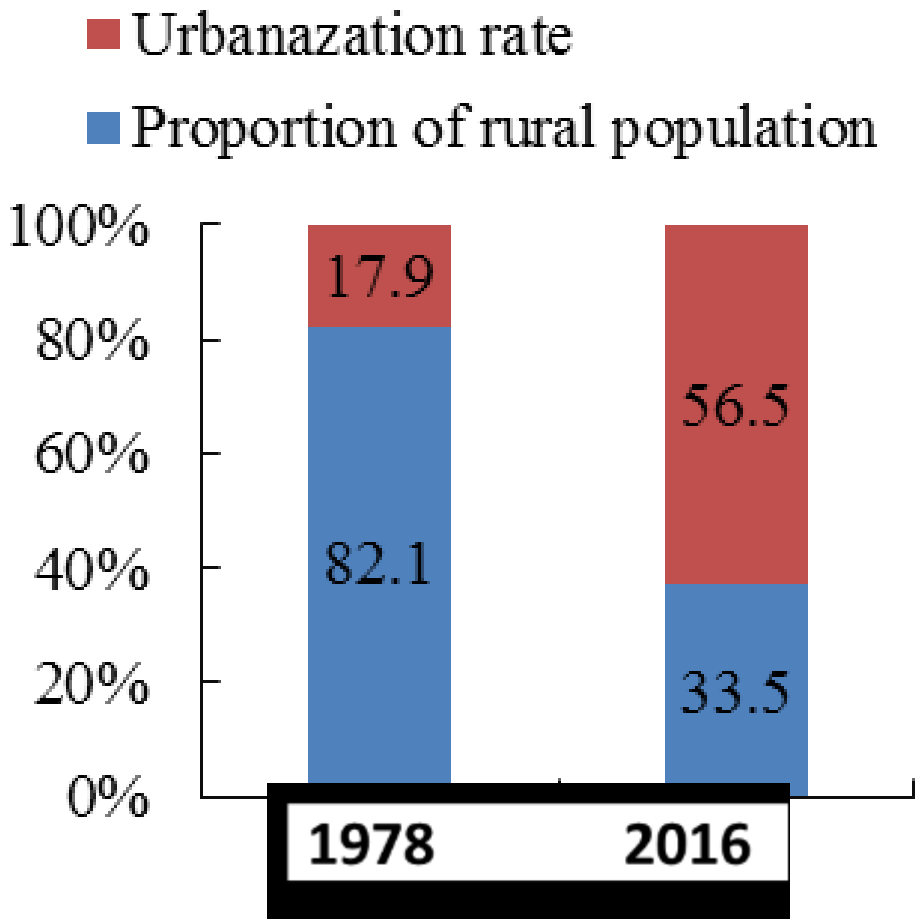
- **The per capita net income gap between urban and rural areas is fast widening**



Beautiful night view in Nanjing City

Decaying landscape in remote rural areas

Background

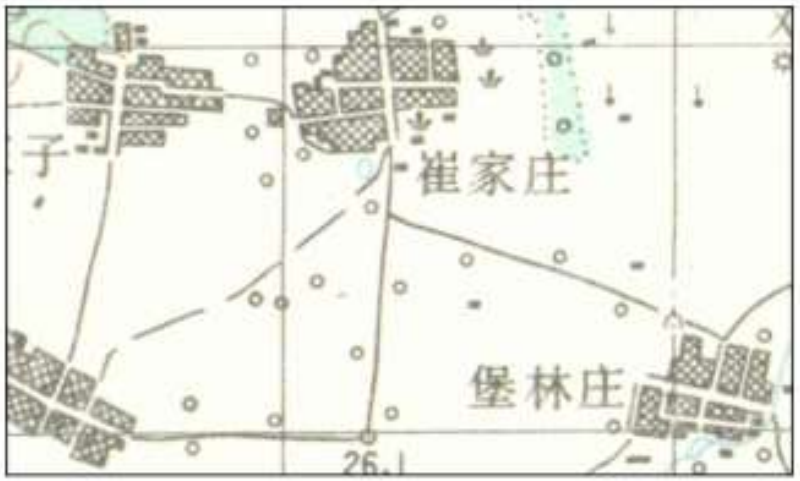


Rapid urbanization associated with decreasing but still large rural population

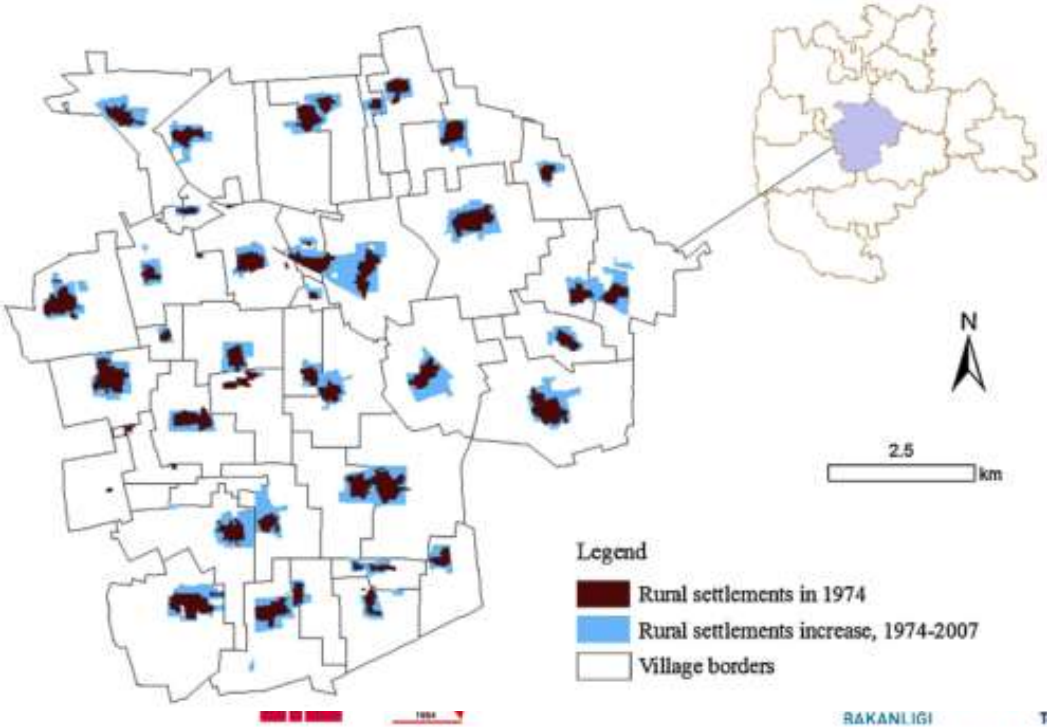
- Urban (**rural**) population has increased (**decreased**) from 17.9% (**82.1%**) in 1978 to 56.5% (**33.5%**) in 2016
- Still has over 435 million people living in rural areas, and 200 million rural surplus labor working in urban areas

Background

- **Rapid urbanization associated with continued non-optimized expansion of rural settlements**



Expansion of villages in Yaojie Town



Background

Urbanization ratio exceeding 70%, economic growth keeping at 6-8% per year, until 2030, **200 million people need new house and living facilities**

A lot of idle rural settlements

Hollowed, "scattered, small, and messy" villages in remote rural areas not conducive to the layout of infrastructure

Unbalanced Man-Land Interrelation

Background

Field investigating in Zhixi Village: Most owner-peasants only plowed a plot of 0.5 ha or less, compared to the average farm size of 4331 ha in Australia in 2015-2016.

Land Consolidation as a New Driver for Rural Restructuring in China

- Unless **current small per capita farmland allotment** was changed **through land transfer**, it is unreasonable to expect **rural residents** to earn **higher income**.

- **Land consolidation** (LC) can promote **land tenure transfer**, improve **agricultural productivity**.

Background

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Govt approve plan

Updated: Dec 29,2016 11:35 AM english.gc

The State Council has approve
2020), jointly released and imp
National Development and Ref

The plan is aimed at strictly pr
optimizing land utilization, and

It also urges more policy and fu
areas, and enhance efforts to re

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China to spend 1.7 trillion yuan on land consolidation

Updated: Feb 15,2017 9:32 PM Xinhua

BEIJING — China will spend about 1.7 trillion yuan ($247 billion) to increase the quality of arable land and to promote urbanization.

The country will divide its land into nine zones for land consolidation over the 13th Five-year Plan period (2016-2020), according to a plan released on Feb 15.

Land consolidation refers to the rational use of land. In the case of farming, parcels of land are consolidated to provide larger holdings.

A new policy was established in 2008 for increasing urban development land quota linked with decreasing rural residential land by LC projects in developed regions, China.

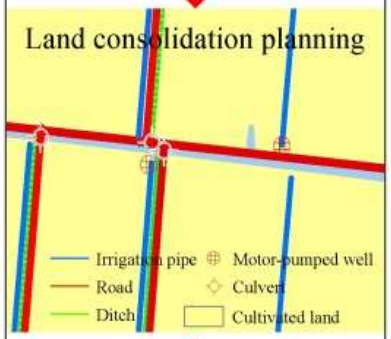
Rural restructuring needs a lot of money, but idle settlements are the only resources.

Urban rapid development needs more construction land quota. Why not buy land quota from rural?

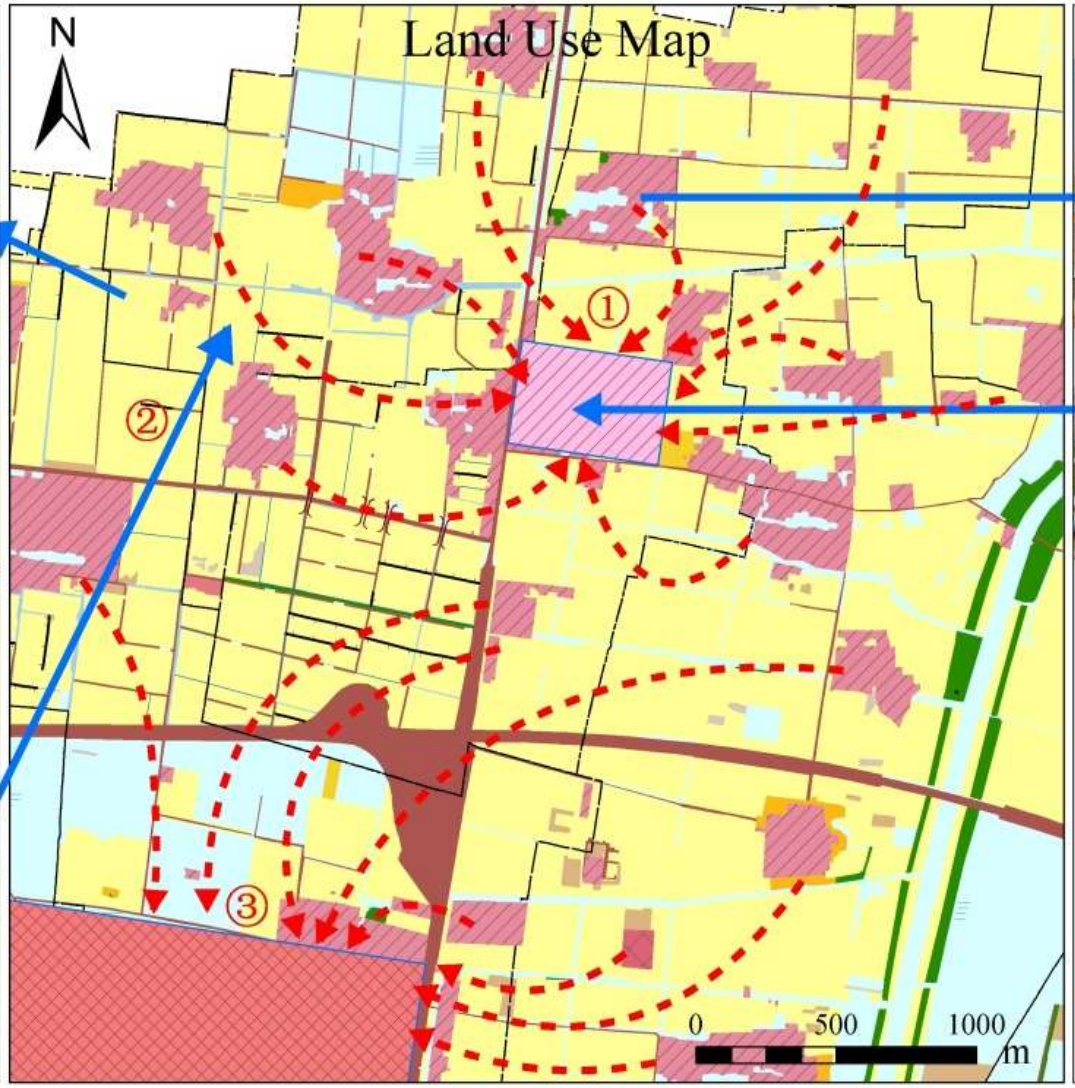
Background

Before land consolidation

Land consolidation planning



After land consolidation



Before village renewal

After village renewal

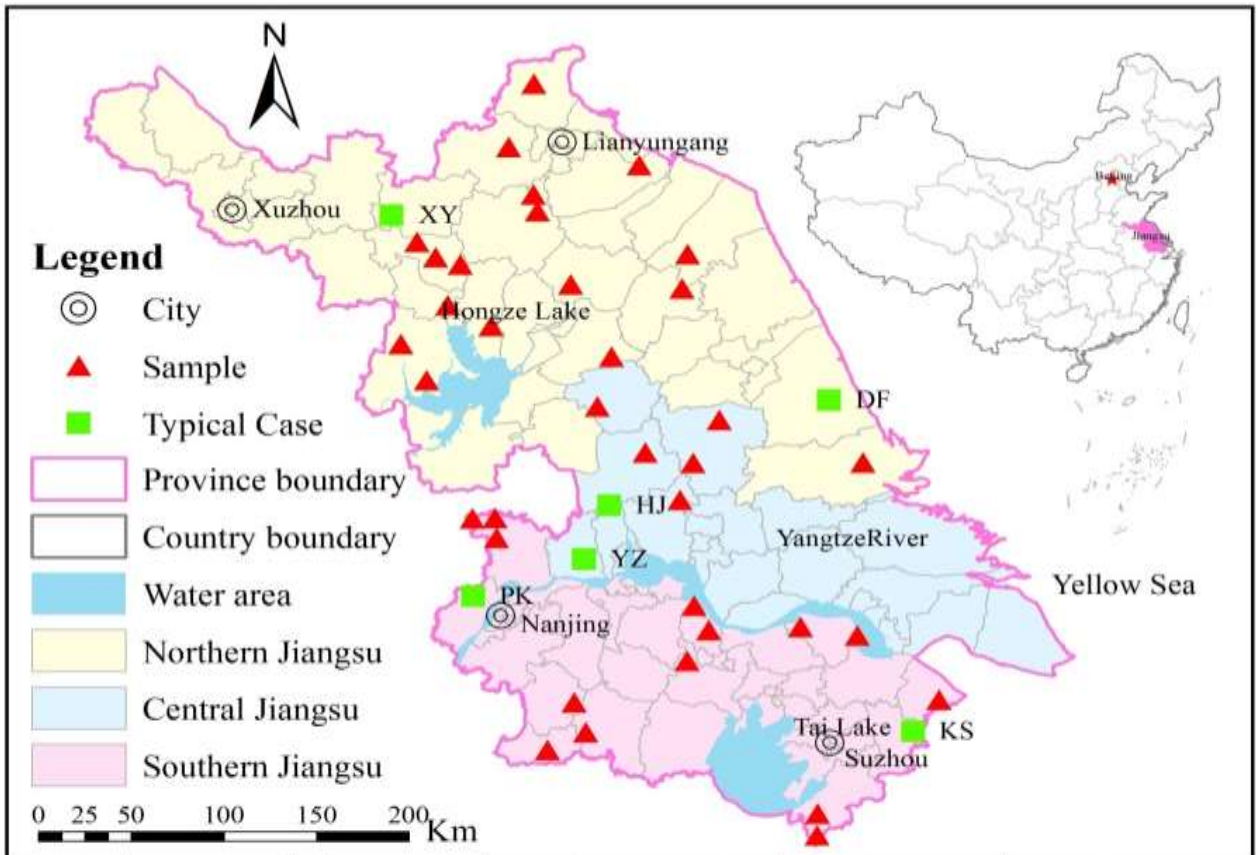
Legend

- Road
- Village boundary
- Resettlement area
- Town
- Reclaimed village
- Water area
- Cultivated land
- Forest land

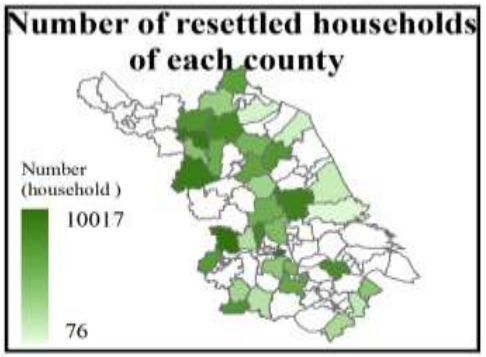
Objectives

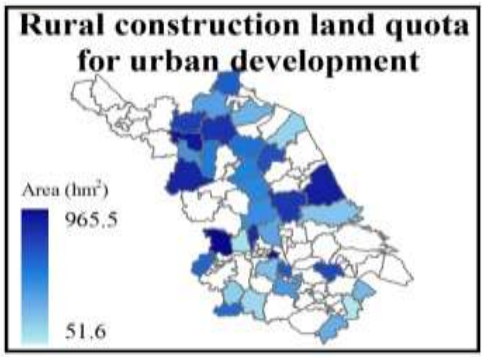
- To evaluate the actual impacts of LC projects on rural restructuring in Jiangsu province, China
- To identify the main factors that influence rural restructuring in Jiangsu province, China
- To establish the mechanisms and pathways of LC projects for rural restructuring in China
- To build an executive framework for the new LC policy to better promote rural restructuring in China

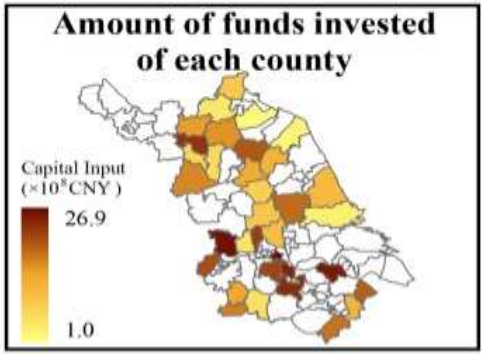
Study Area



Period	Number of projects	Construction scale (hm^2)	Newly-increased cultivate land area (hm^2)	Village reclamation area (hm^2)	Total investment amount ($\times 10^8$ CNY)
2009	17	18068.4	3088.3	2512.9	68.3
2010	5	5901.8	1031.2	843.0	38.0
2011	12	42460.4	3449.0	1661.4	87.5
2012	8	9646.6	1469.2	1272.1	42.8
Total	42	76077.2	9037.7	6289.4	236.6







Data Collection

- Between March to June 2016, the following datasets were collected from local statistics department, local bureau of land resources, police station, administrative villages, and field investigation:
- 42 local socio-economic sampling datasets
- newly-added farmland area
- Population
- reclamation village area
- Households
- housing size
- location of LC projects
- The **administrative village** is the basic unit of socio-economic statistics in China.
- **LC projects** do not break these administrative boundaries but can consist of several administrative villages.

Category	Environmental variable
Location	Economic zone
	Distance to town
	Distance to city
Income	Per capita income
	Nonfarm income
	Farm income
Economic level	Per capita GDP
	Gross industrial output
Demographics	Number of households
	Total Population
	Farm laborers
	Nonfarm laborers
Education	% Less than 6 years
	% 6-9 years
	% More than 9 years
Land resources	Per capita farmland area
	% Land tenure transfer
	Average construction land area per households

Data Processing

- Collected raw datasets were processed to facilitate **redundancy analysis**, e.g. to divide income into agricultural and non-agricultural income, and construct the following 4 **indices**:
  - **Income change index**: which measures the changing income of rural residents before and after LC within the project areas.
  - **Employment change index**: which reflects changes in the employment structure within the project area.
  - **Land quota index**: which is defined as the ratio of the area of rural resident land quota for urban development to the total reclaimed area of the village.
  - **Welfare change index**: which reflects the changing situation of welfare benefits available for rural residents within the project area before and after LC project.

Data Analysis

- **Redundancy analysis was performed** to find main influence factors from complex socioeconomic system described by multiple factors, which are crucial to understand the changes after land consolidation.
- **Redundancy analysis** is a method to extract and summarise the variation in a set of response variables that can be explained by a set of explanatory variables.
- In this study, **redundancy analysis** was performed by using
- CANOCO version 4.5,
- the 4 indices, as listed in the previous slide, were denoted as the response variables to depict the progress of rural development transformation, and
- the 18 indicators, as listed in the table on the right, were treated as explanatory variables for rural development transformation.

Category	Environmental variable
Location	Economic zone
	Distance to town
	Distance to city
Income	Per capita income
	Nonfarm income
	Farm income
Economic level	Per capita GDP
	Gross industrial output
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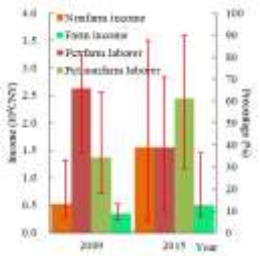
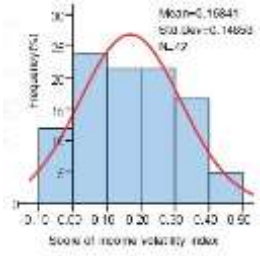
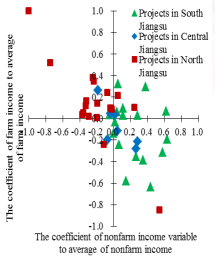
	Nonfarm laborers
Education	% Less than 6 years
	% 6-9 years
	% More than 9 years
Land resources	Per capita farmland area
	% Land tenure transfer
	Average construction land area per households

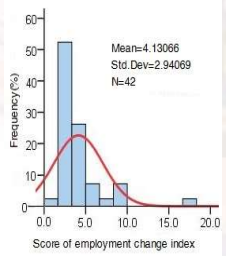
Results

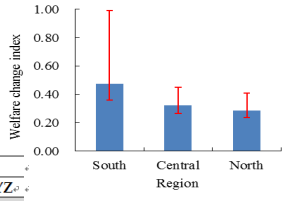
- **Impacts of LC on rural restructuring** were measured in terms of **changes resulted from the 42 LC projects** in
  - **Incomes**
  - **Employment**
  - **Welfare**
  - **Land quota**

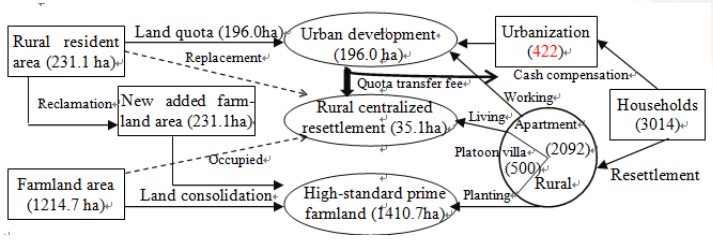




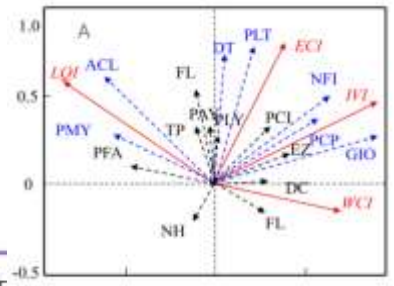


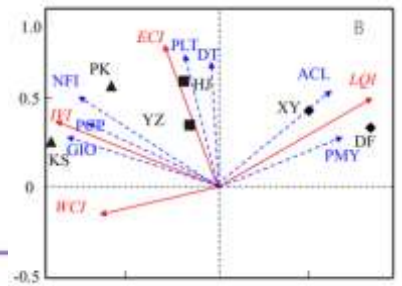






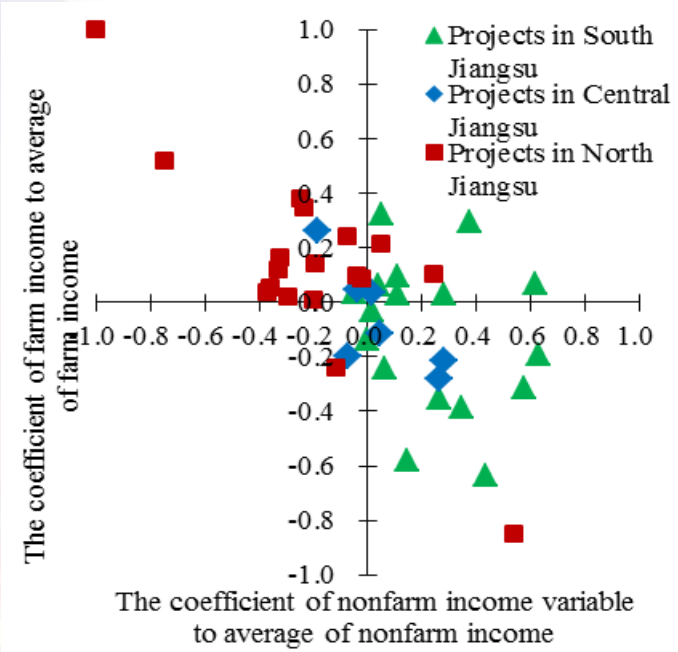
Category	variable	Total	Typical project ID					
			DF	HJ	KS	PK	XY	YZ
Household	Number of households demolished	88412	532	3744	776	2906	3014	1133
	Townhouse resettlement households	11410	50	450	0	480	500	250
	Apartment resettlement households	58894	423	2883	395	1699	2092	645
	Cash compensation households	18108	59	411	381	727	422	238
Land (ha)	Village reclamation area	6289.4	35.9	267.1	74.1	195.7	231.1	45.0
	Resettlement area	934.9	6.1	38.2	12.7	30.0	35.1	4.7
	Rural-urban land quota area	5354.5	29.8	228.9	61.3	165.7	196.0	40.3
Funds (10^8CNY)	Cost of relocation and resettlement	187.0	1.2	6.7	3.6	7.0	4.5	1.9
	Cash compensation expense	27.4	0.1	1.0	1.0	1.3	0.3	0.3
	Land quota transfer income	266.3	1.2	13.1	6.6	17.0	6.8	2.8
Financial balance of rural restructuring		+/-	-/-	+/-	+/-	+/-	+/-	+/-

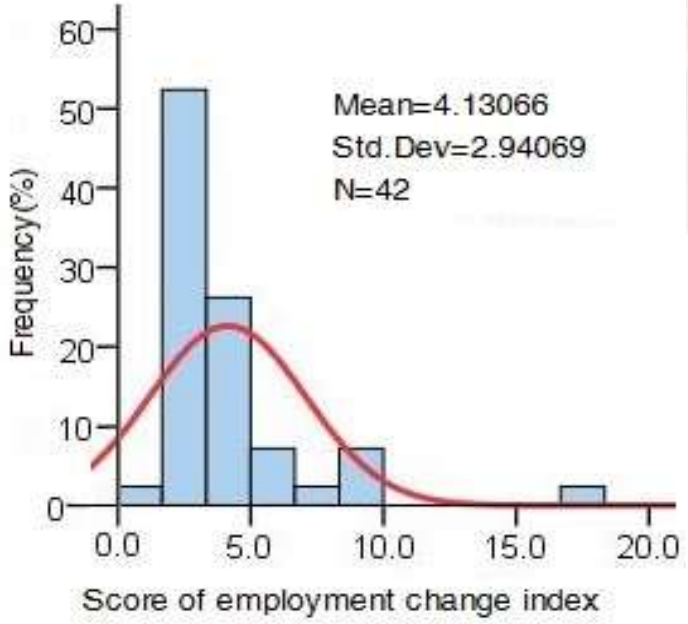




Results

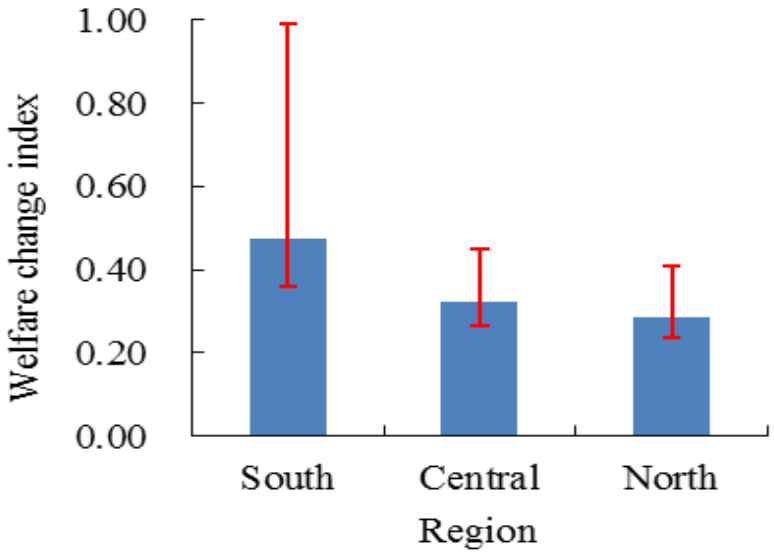
- **The income promoting effects of LC projects differed significantly between economic regions.**
  - **ECI** were above 0 for all projects, indicating a positive role in promoting non-agricultural employment. Non-agricultural employment increased by 26 percentage points, which is the main reason for the dramatic increase of non-agricultural income





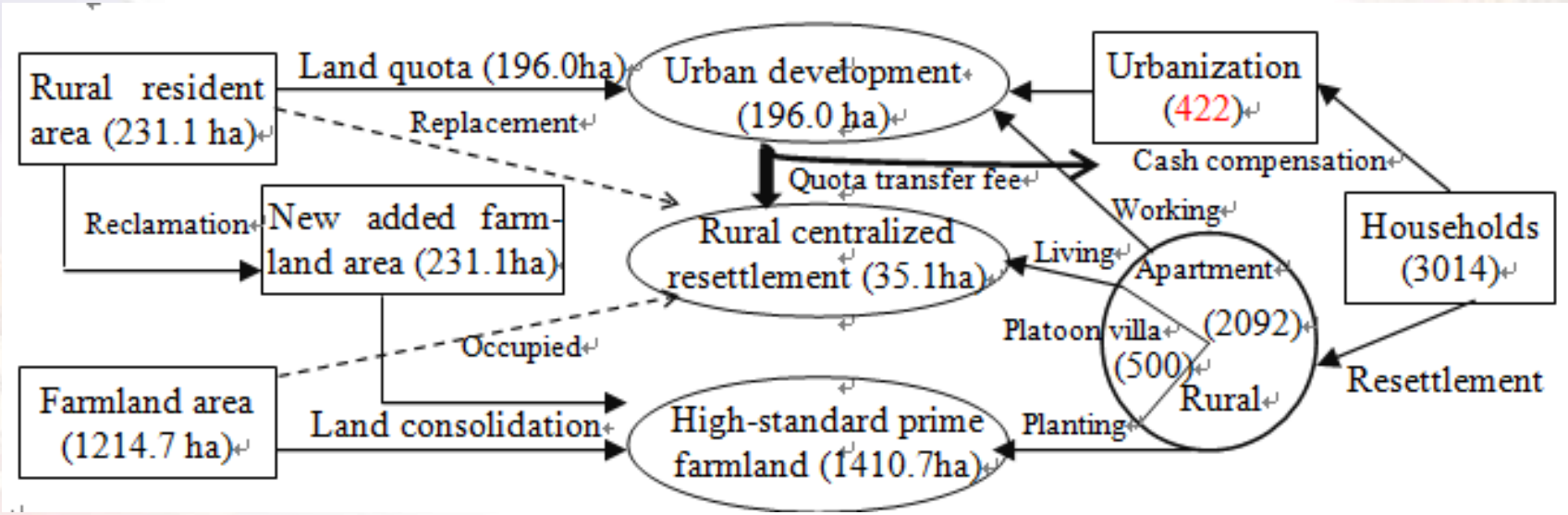
Results

- **The welfare reality is not so optimistic**
  - Welfare change indices for most projects are about 0.3, as critical illness insurance under new rural cooperative medical insurance became mandatory in Jiangsu Province in recent 5 years.
  - Only the welfare change index of the project ID KS was 1 because the local government incorporated all villagers into the social security system.



Results

- **Financial balance of rural restructuring between land quota transfer fee and capital demanded**
  - **2592 households** opt for **centralized resettlement** with a **centralized community area** of **35.1 ha**. So, **rural resident land area** of about **196.0 ha** can be saved to the **land quota for urban development** . **Local government** can ***transfer*** these **unplanned construction land use right** to obtain **land quota transfer fees** for **rural restructuring**.



Man-land interrelations of typical project ID Xinyi

Results

- Over **80%** of **rural settlement reclaimed land** was traded to acquire the **land quota transfer fee** for **rural restructuring**. **economic benefits** of this policy provided **local governments** with **economic incentives** for **resettlement centralization**.

Category	variable	Total	Typical project ID					
			DF	HJ	KS	PK	XY	YZ
Household	Number of households demolished	88412	532	3744	776	2906	3014	1133
	Townhouse resettlement households	11410	50	450	0	480	500	250
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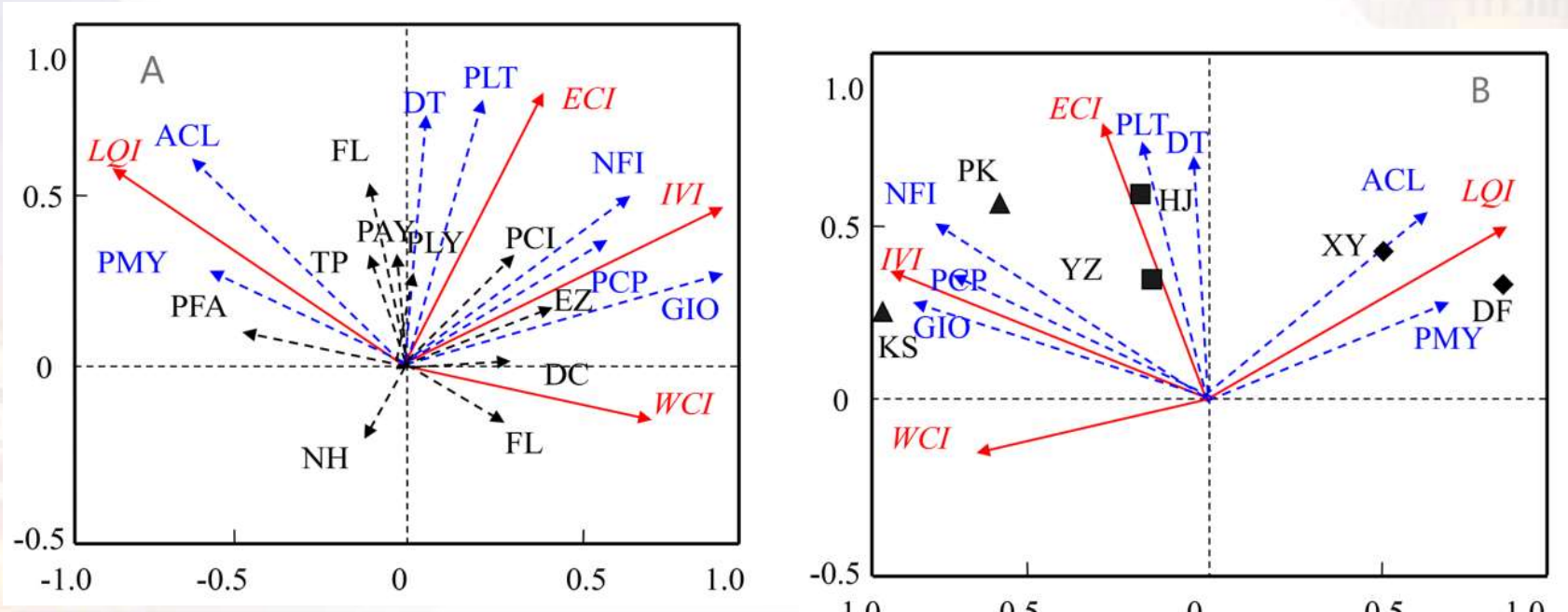
	Land quota transfer income	266.3	1.2	13.1	6.6	17.0	6.8	2.8
Financial balance of rural restructuring		+	-	+	+	+	+	+

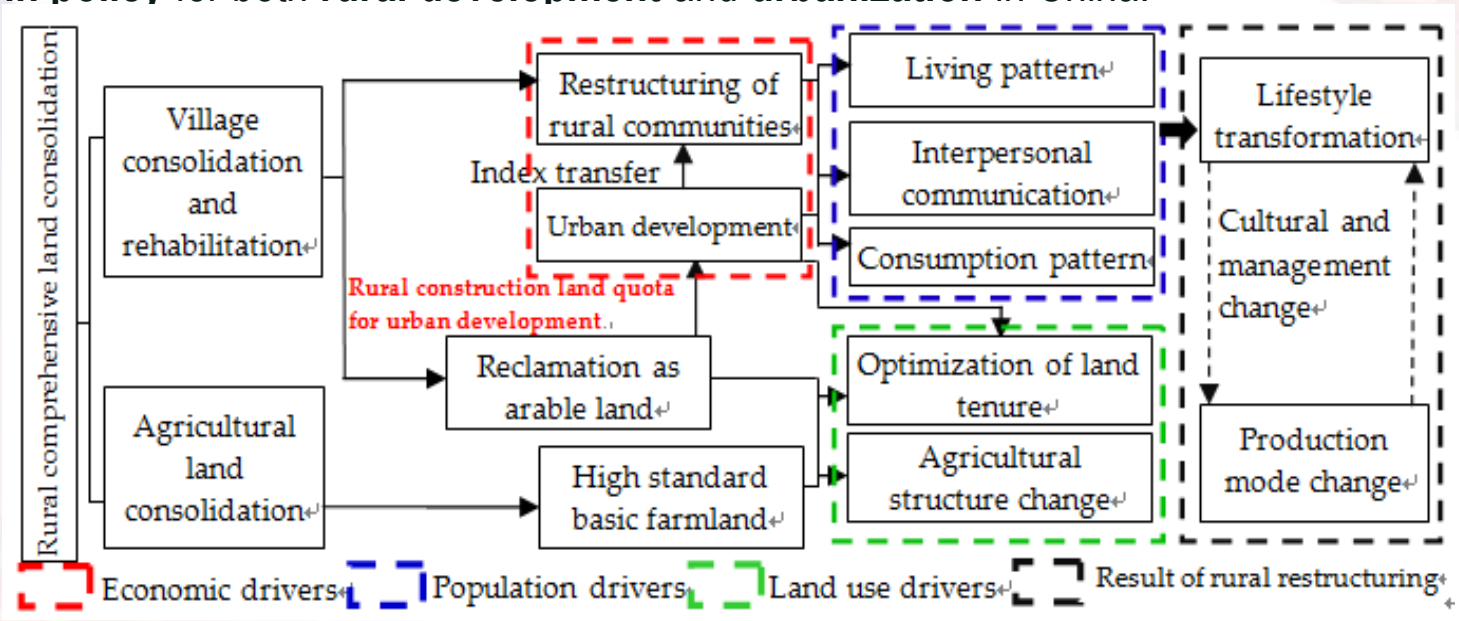
Results

- Environmental factors influencing rural restructuring at the provincial level were mainly related to land use, local economic development level, educational level, and location.
- Environmental variables were ranked accordingly by the degree of correlation as follows:
  - ACL, GIO, NFI, and PLT.
  - The arrow of NFI was the longest, which suggested that NFI was the most important explanatory



Discussion

- Rural restructuring is a powerful economic driver in China to
  - increase agricultural productivity, and
  - promote land transfer and urbanization.
- Results from our field survey based study indicate that **rural restructuring via LC** is a **win-win policy** for both **rural development** and **urbanization** in China!



The feasibility of land quota policy for promoting rural restructuring in China

Conclusions

- A **field survey based study** was conducted on **LC for rural restructuring** from March to June 2016 in Jiangsu Province, China.
- The result shows that LC can serve as a powerful tool for rural restructuring.
- The higher the local economic development level, the greater the effect the **LC projects** have in promoting non-agricultural employment and income.
- Education levels are an important variable affecting the non-agricultural income of rural residents.
- Local township enterprises play an important role in absorbing the surplus rural labour force.
- However, potential risks should not be ignored. A novel framework should be implemented, such as a one-vote veto system for issues relating to ecological protection and public satisfaction of sustainable community development in the future.

Thank you !