

Metropolitan Agriculture and its implication on China

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Content:

- Concept: metropolitan agriculture
- Trend of urbanisation
- The linkage between urban with agriculture
- Cases in China and in Netherlands
- Challenge questions for China



Concept: Metropolitan Agriculture

Type	Focus	Main actor	Orientation	Scale
Subsistence farming	Subsistence	Rural poor	Own field	Small, rural
Traditional agriculture	Production efficiency	Farmers	Next link in production chain	Medium-large, peri-urban
Urban agriculture	Subsistence/self consumption	Urban poor	<ul style="list-style-type: none"> • Own field • Some integration with urban ecosystem education 	Small Intra-urban
	Hobby gardens multifunctional farming	Urban middle class		
Metropolitan agriculture	Production efficiency	Agricultural entrepreneurs	<ul style="list-style-type: none"> • Market oriented • Full integration in total value chain & food system 	Medium-large, Intra-urban/peri-urban
	Multiple value creation			

Elaboration in subsistence and traditional agriculture

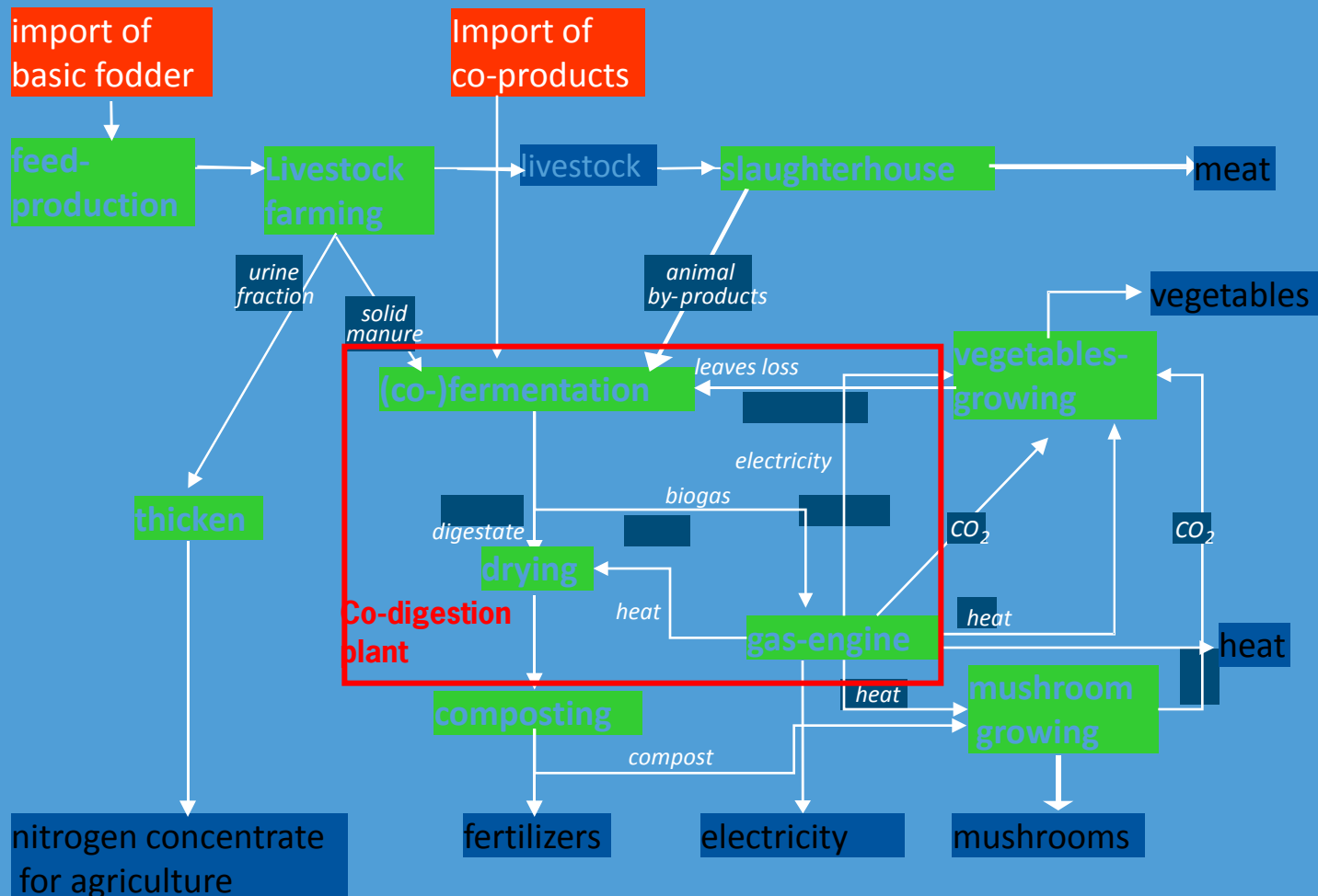
Subsistence farmer:



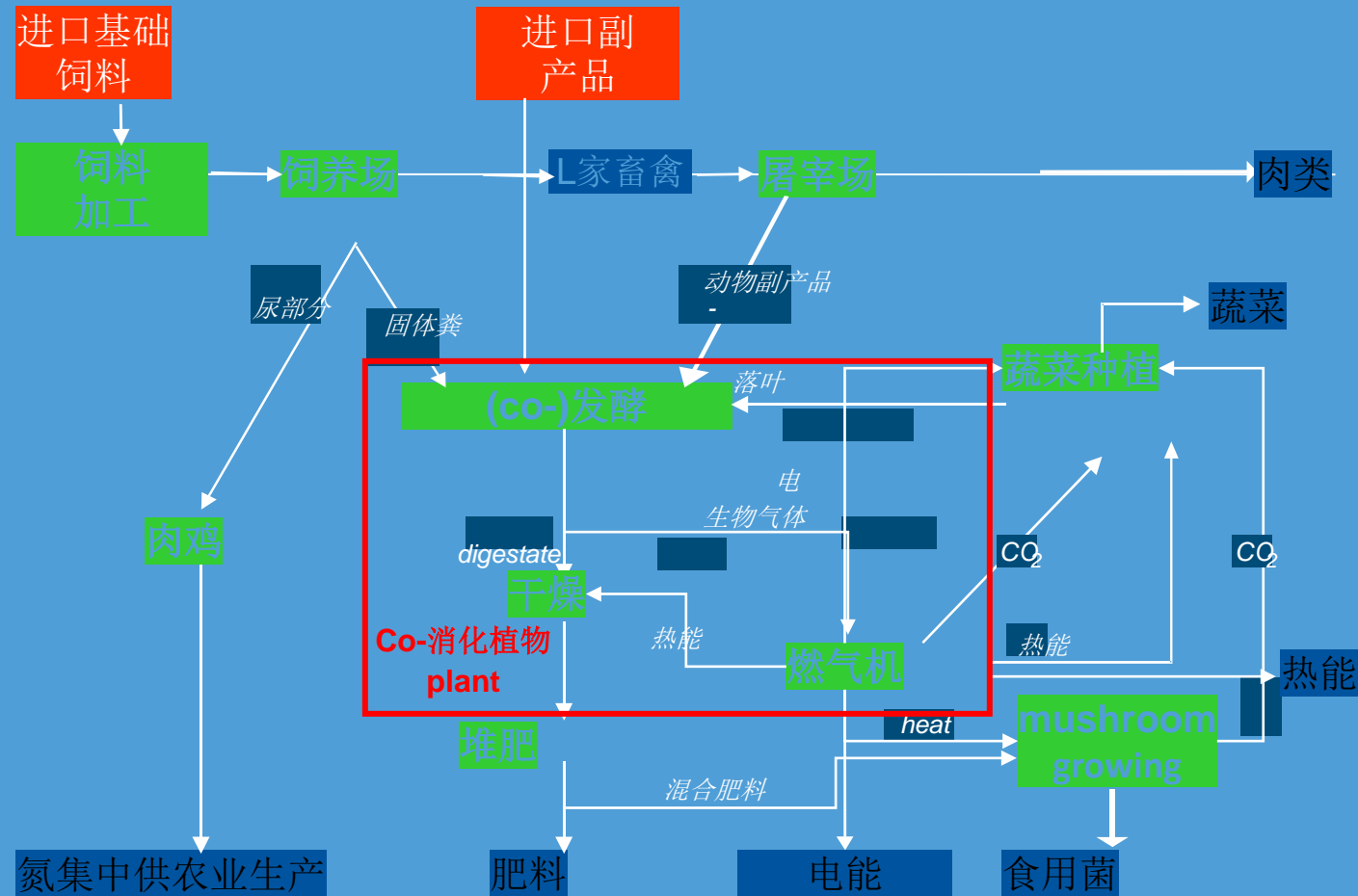
Traditional agriculture:



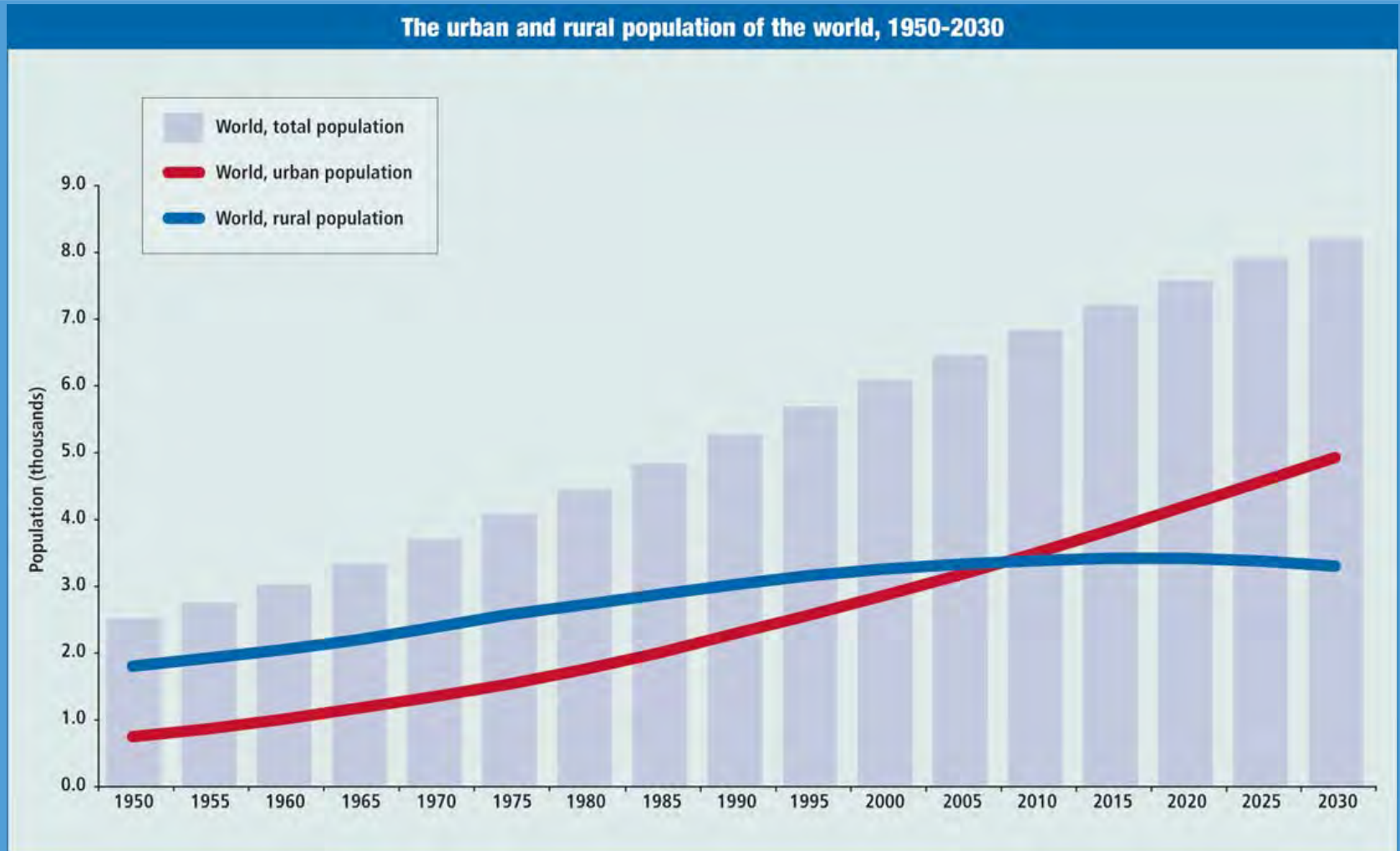
Elaboration in metropolitan agriculture



Elaboration in metropolitan agriculture



Urbanization trend: Globally



Source: world urbanisation prospects, 2005



China urbanisation

IN 2025

70%

of Chinese will live in cities with more than 1 million people

46%

of Indians will live in cities with more than 1 million people

SPEED OF URBANIZATION BY 2030

CHINA

221

number of cities with more than 1 million people



China will add
400

million city dwellers



INDIA

68

number of cities with more than 1 million people



India will add
215

million city dwellers



People, people and still people....



TOP 10 Megacities in China



Linkage: urbanization and agriculture

- Li Keqiang, vice Premier of the State Council:

'The process of Chinese **urbanization** goes hand in hand with **agriculture** modernization.'



Diversification of demand in Metropolises

- Energy and building
 - Fuel
 - Fibers
- Food
 - Fodder
 - Food Crops
 - Vegetables
 - Fruits
- Fashion
 - Flowers
 - Flavours
 - Fragrances
- Pharmaceuticals
 - Functional Foods
 - Pharmaceuticals



Agropark: An innovation in horizontal and vertical chain integration

- Spatial clustering of different agro-production chains
- Application of the C2C principle: waste is a valuable resource
- Spatial combination of agro- and non-agro functions (buildings, industrial and city waste, etc.).
- Scale increase through industrial production and processing
- Reduction of transport and by doing this: reduction of veterinary risks
- Essence: clustering offers conditions for sustainable development of agriculture and food supply



Chinese cases

- MoA perceives modern agriculture as:
 - Large scale
 - Mechanization
 - Standardization
 - Industrialization
- Wish that agricultural park, demonstration zones, science and technology parks, etc., can help the process
- Main promoters: Ministry of Agriculture (MoA) and Ministry of Science and Technology (MoST).



Objectives of agropark in China:

- Ensuring food security and safety
- Introducing and demonstrating new varieties, new technology, and new facilities
- Incubating modern farmers (nurturing, training)
- Multifunctionality of agriculture (ecologic protection, leisure, tourism, etc).
- Scientific innovation between industry, university and research institutes



Typology of agricultural parks/zones

- Food security focused zones: grain, cotton, oil & sugar. Located in major favorable production areas (优势农产品区)
- Vegetable basket focused zones: vegetables, fruits and flowers. Located in major cities. (大城市区)
- Unique local focused zones: silk, herbs, tea, etc. located in less developed areas. (特色农产品区).



Development status

■ By MoA:

- 2010: first verified agricultural demonstration park numbered 50
- 2012: second verified agri. Demo. Park total 101.

■ By MoST:

- 27 verified parks in 2010
- 15 verified parks in 2002
- 21 verified parks in 200

- Provincial level: 406 (1999 data); county level: more than 3000 (2002 data)



Chinese Case 1: The Yangling Agricultural Hi-tech Industries Demonstration Zone

- 位于中国陕西省 Located in Shaanxi Province
- 占地8.3万亩 Covers 5500 ha
- Industrial distribution
 - Modern agricultural demonstration park
 - Low-carbon agriculture-related industries park
 - Grain and oil logistic park
 - Feed industries park
 - Science and education industries park



Case 2: Shanghai Sunqiao Modern Agriculture Development Zone

- Founded in 1994 with planning area of 4 square kilometers
- 六大产业Six Industries
 - 种子种苗产业 Seeds and Seedlings
 - 温室工程安装与制造产业 Manufacture and Installation of Green Houses
 - 设施农业产业 Agricultural Production with Facilities
 - 农产品加工产业 Processing and Marketing of Agricultural Products
 - 生物技术产业 Biotechnology
 - 旅游观光产业Sightseeing Tours and Education on Popularizing Science and Technology



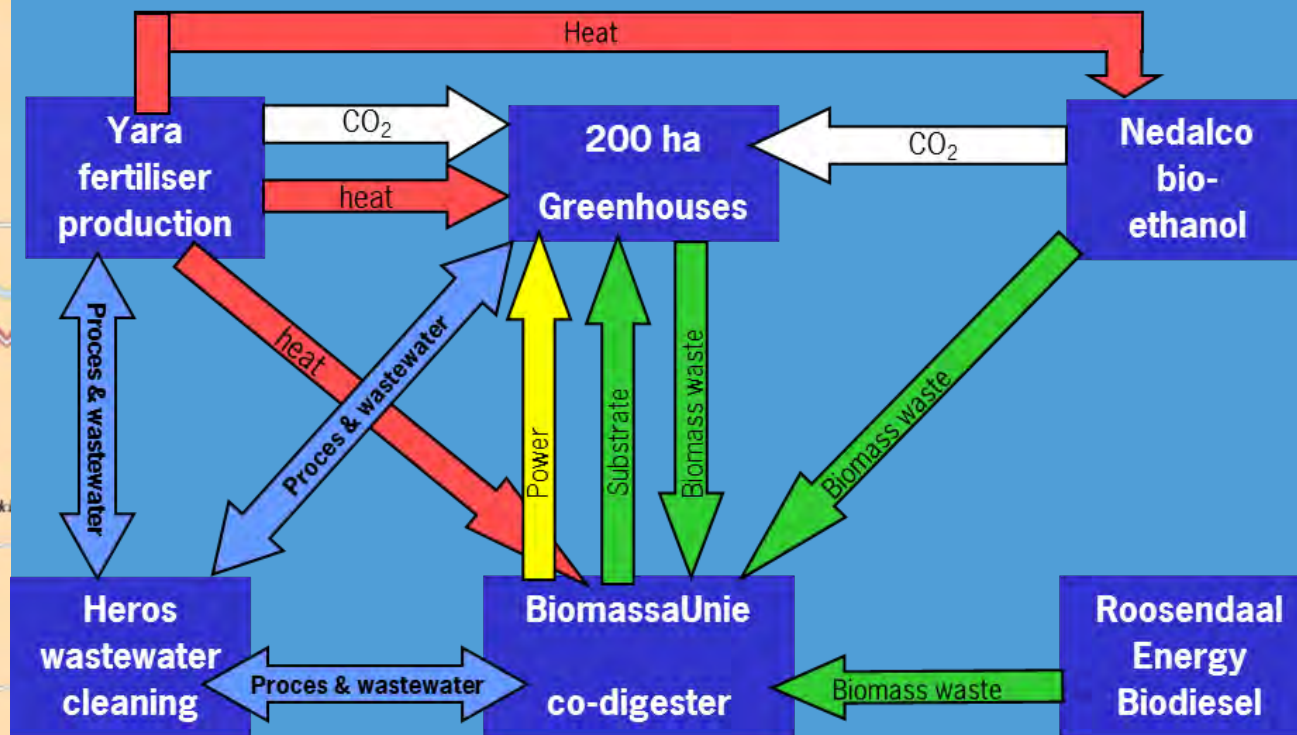
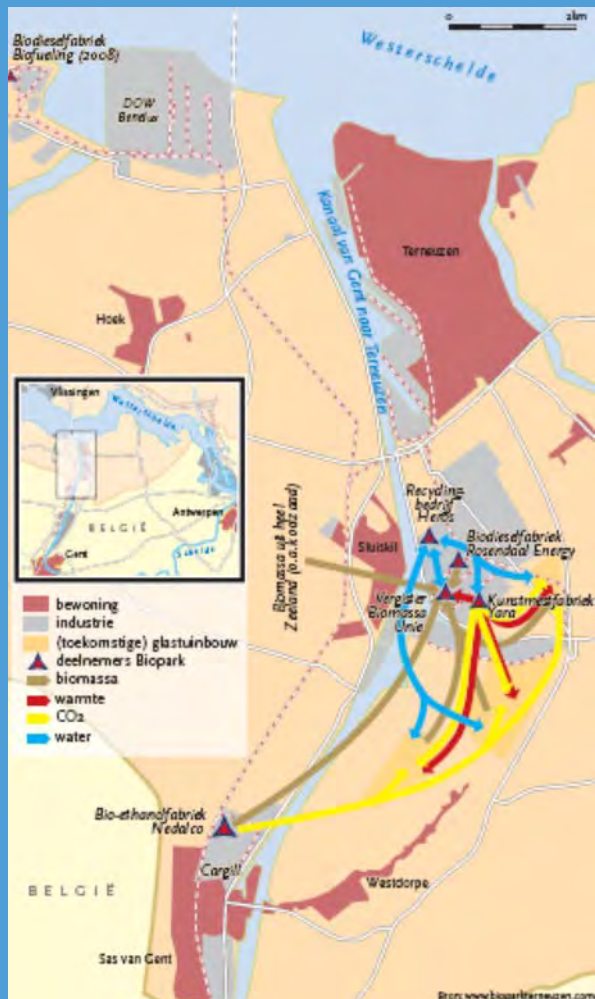
Dutch case 1: Greenport Venlo



- Serving 7 million Germans
- Greenhouse area,
- Consolidation centre
- Large pig farms
- Large chicken farm
- Large dairy farm
- Harbour
- Serving a metropolitan market of 7 million German consumers.



Case 2: Merging between agro-industry and greenhouses: Biopark Terneuzen



- Agropark in sea harbour
- Primary agricultural production through industrial ecology connected to agro-industry
- Focus on sustainable development of bio-energy production
- In operation



Case 3: Agriport A7



- Centre for growing vegetables, agribusiness industry and logistics, 30 minutes from Amsterdam

Primary production:

- Large scale glasshouses :
500 ha growing to 1.000 ha
- Open field crops : 40.000 ha

Vegetables industry, logistics and services

- Business park: 70 ha

To be added

- closed fish production and processing
- ICT-server centre



Comparison between Dutch and Chinese cases

	Dutch	Chinese
Initiator	Private sectors look for each other (organically grown)	Chinese government promoting (designed)
Chain integration	Best vertical and horizontal integration within and between chains	Demo, show case, mostly loosing connections
Scale	Handful of large parks	Thousands parks, most small
Identification	Each has a unique character	Similar amongst each other



Challenge questions

- How to address these challenges facing Chinese metropolitan agriculture?
 - Lack of economical viability
 - Balance between commercial production and recreation/agro-tourism
 - Why is the chain integration on the Chinese agroparks so low?
 - The balance of individual companies within the parks between autonomy and interdependence.



Thanks



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