中国農業大學
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Prospect and Challenges of Urban Agriculture in China

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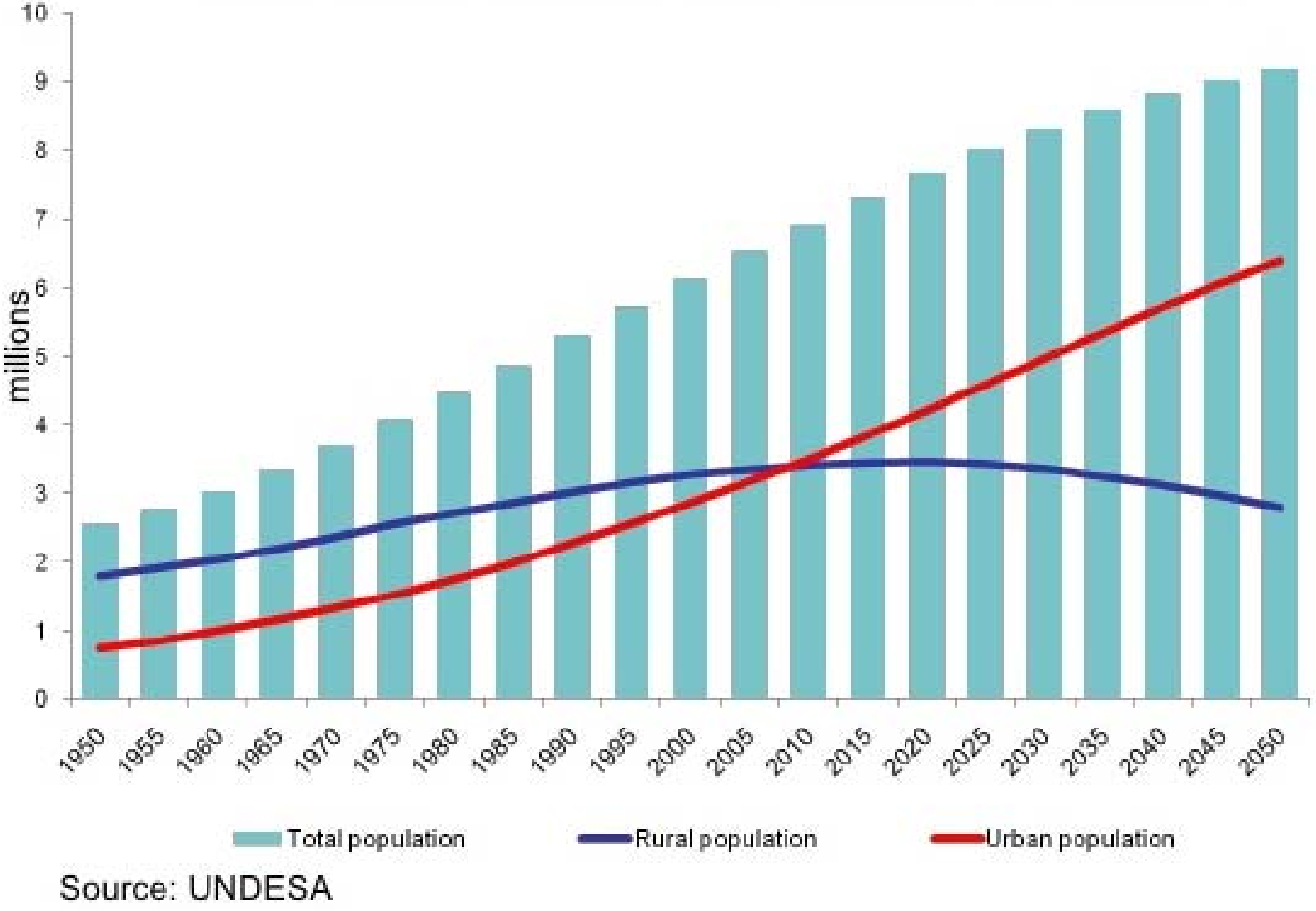
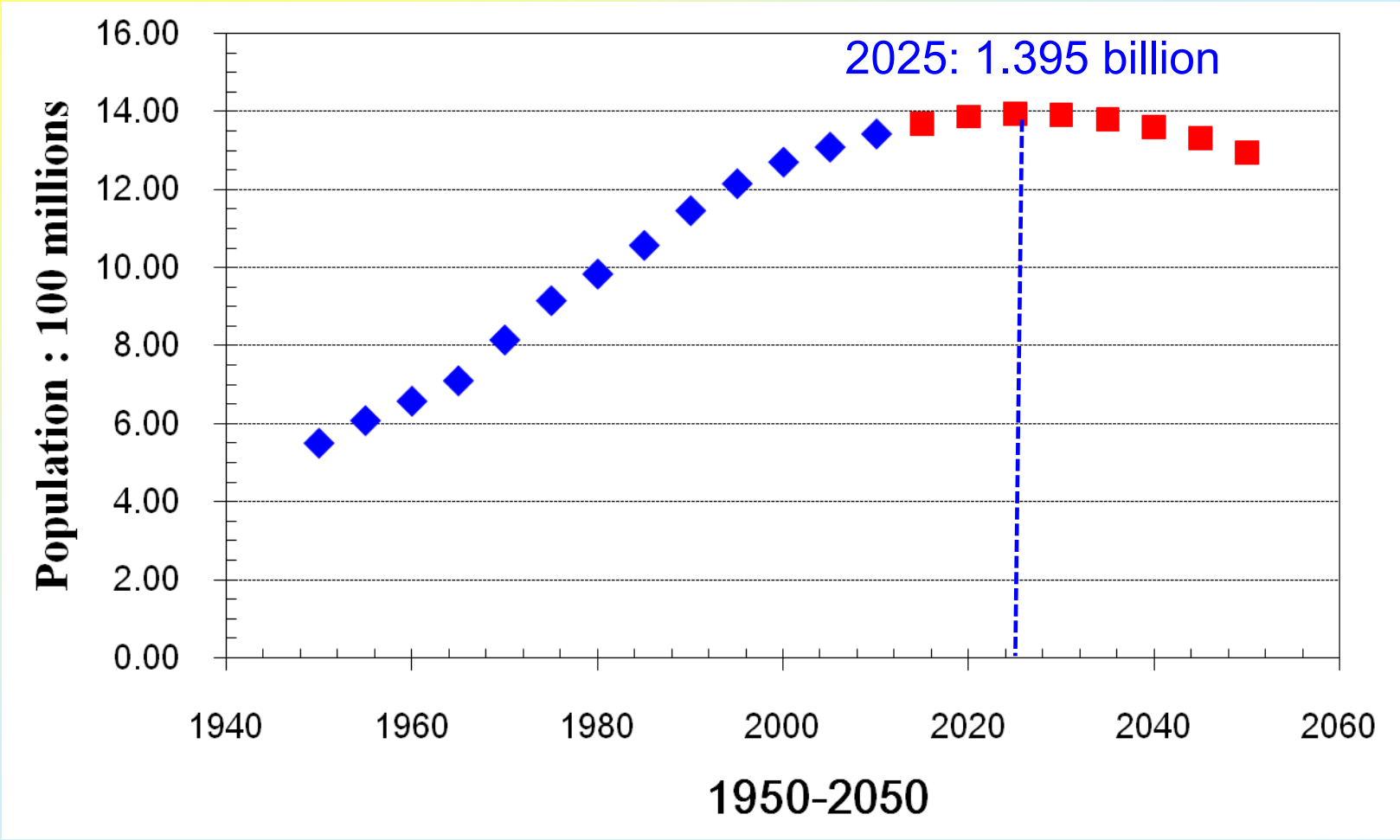
Urbanization is growing rapidly



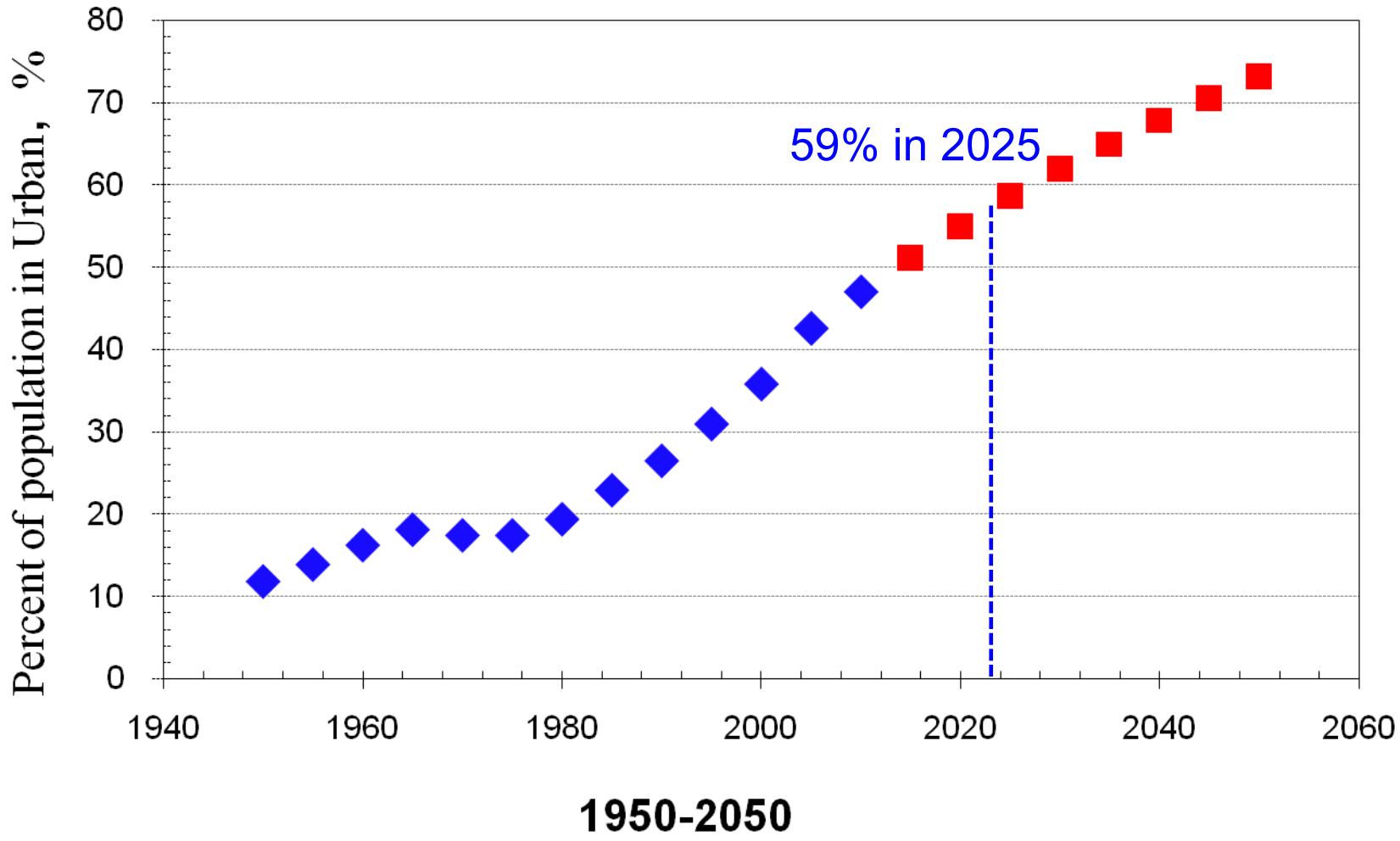
Source: UNDESA

Populations in China



Source：UN **http://esa.un.org/unpd/wpp/unpp/panel_population.htm**

Urbanization increasing



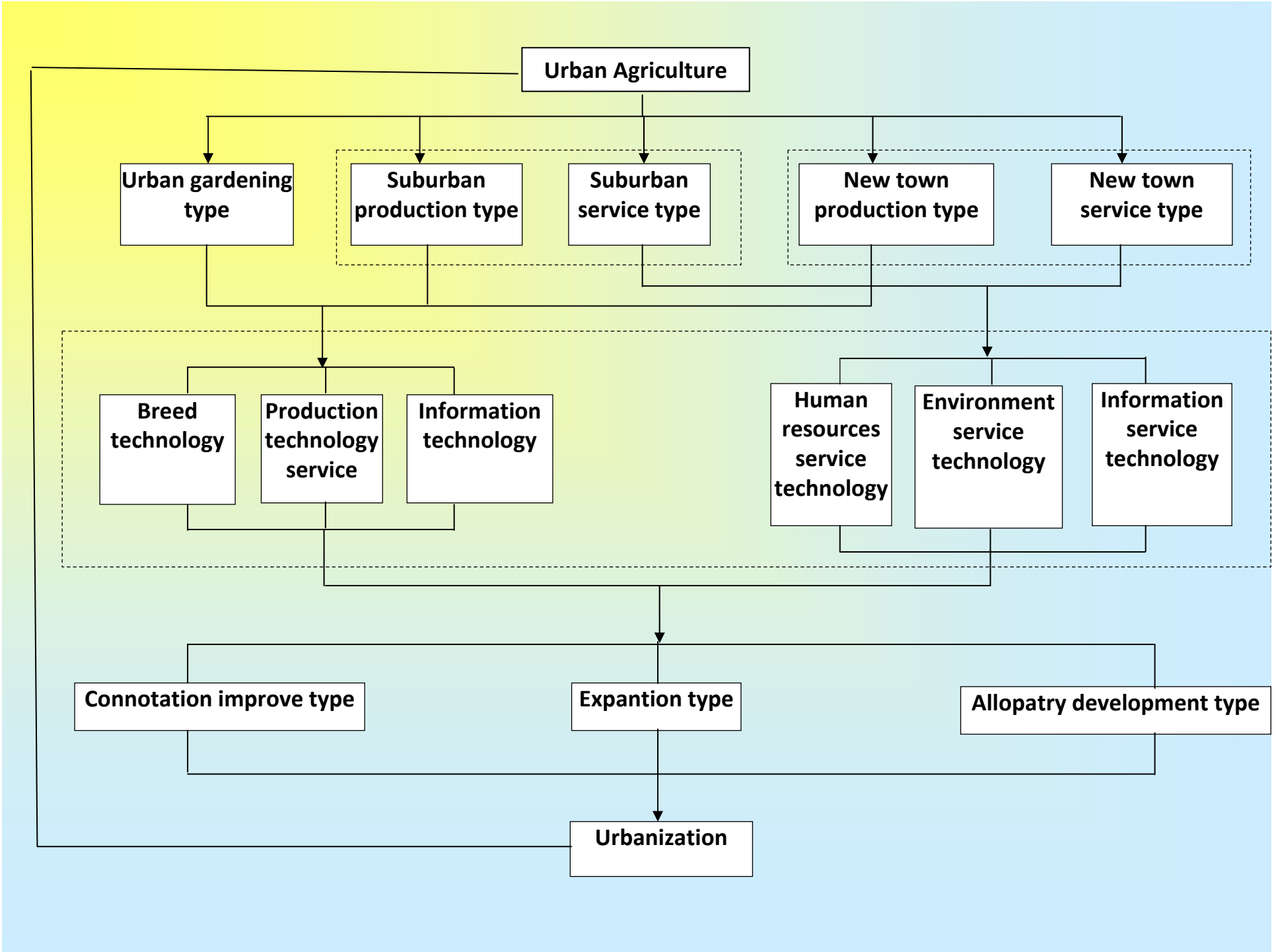
source：UN　http://esa.un.org/unpd/wup/index.htm

Urban Agriculture

- With the rapid growth of urban population, the demand for fresh agricultural products in urban areas is getting bigger and bigger. The safety of the supply should be guaranteed.
- Urban agriculture is highly needed for the metropolis, Beijing and Shanghai in particular, to supply over 20 million population with daily fresh vegetable.
- Small pieces of lands scattered around the urban areas are playing the important role in urban agriculture.
- Urban agriculture must be low input, non-toxic, water efficient and soil fertility must be carefully managed.

Development of Urban Agriculture in China

- Development strategies on urban agriculture for most cities have been made in China.
- Urban agriculture is growing with the development of the large- and medium-sized cities.
- Lack of supporting technology constraints the development of urban agriculture.
- The establishment on the technology servicing system for urban agriculture is urgently needed.


Urban Agriculture
Urban gardening type
Suburban production type
Suburban service type
New town production type
New town service type
Breed technology
Production technology service
Information technology
Human resources service technology
Environment service technology
Information service technology
Connotation improve type
Expantion type
Allopatry development type
Urbanization

Urban Farm Enterprise

- Territorial units are grouped into municipal administrative Urban Farm Enterprise
- Determines appropriateness of different technologies for its subunits
- Urban Farm Enterprise:
  - **Coordinates urban agricultural activities in the municipality**
  - **Dispenses extension and technical assistance**
  - **Links farmers and gardeners**
  - **Links education, research and service centers**

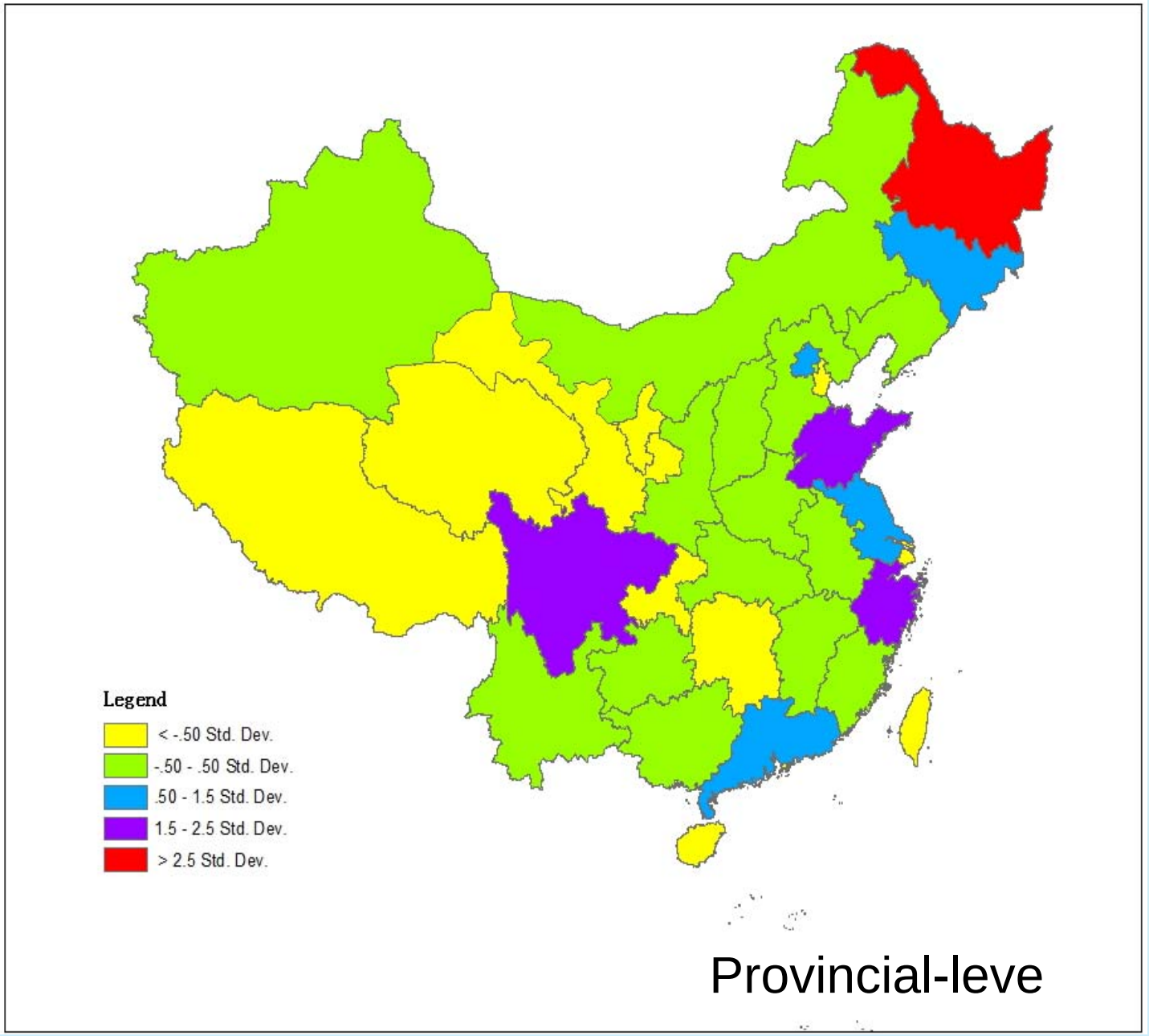
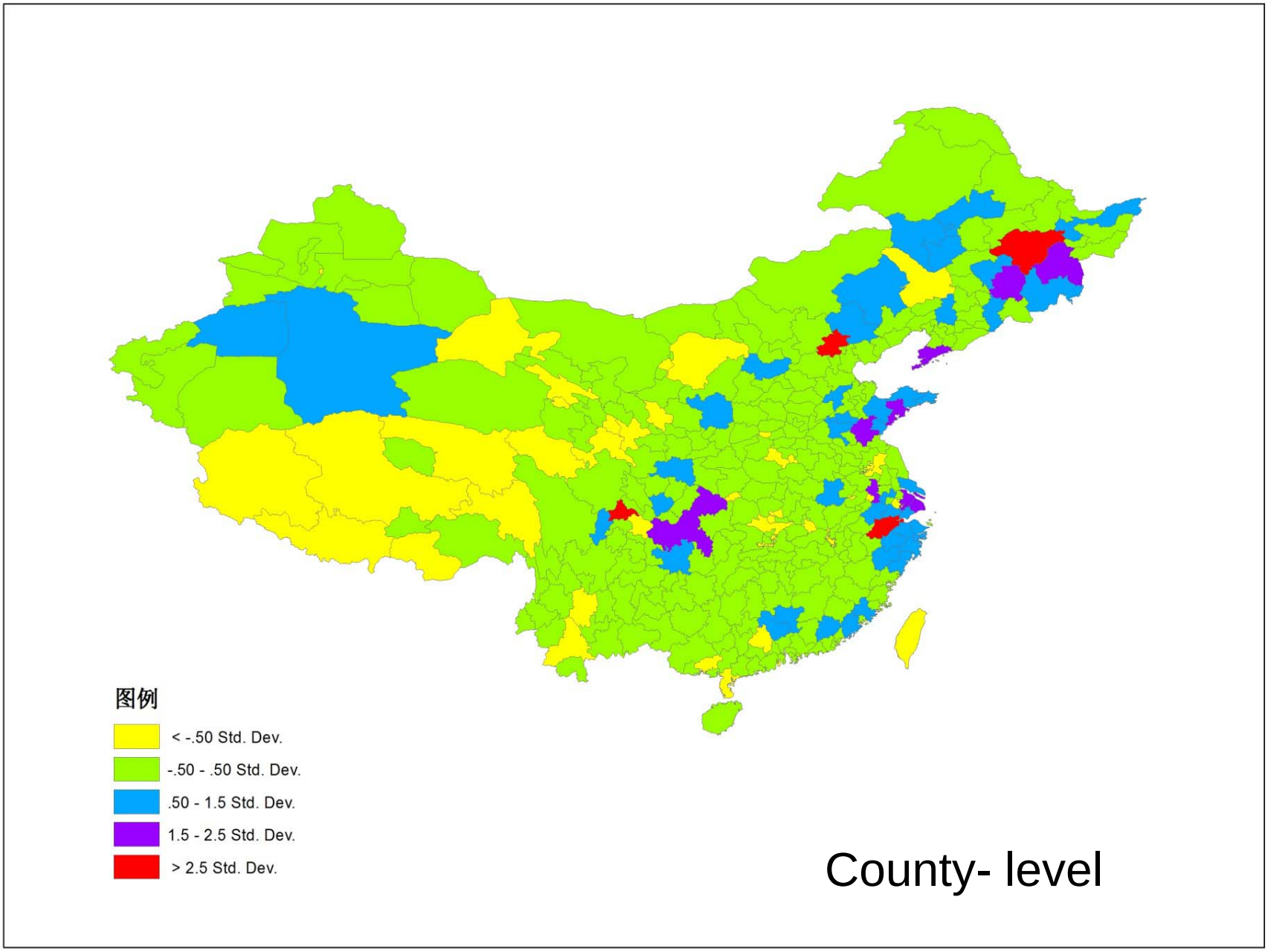


Fig. The overall distribution of organic agricultural enterprises



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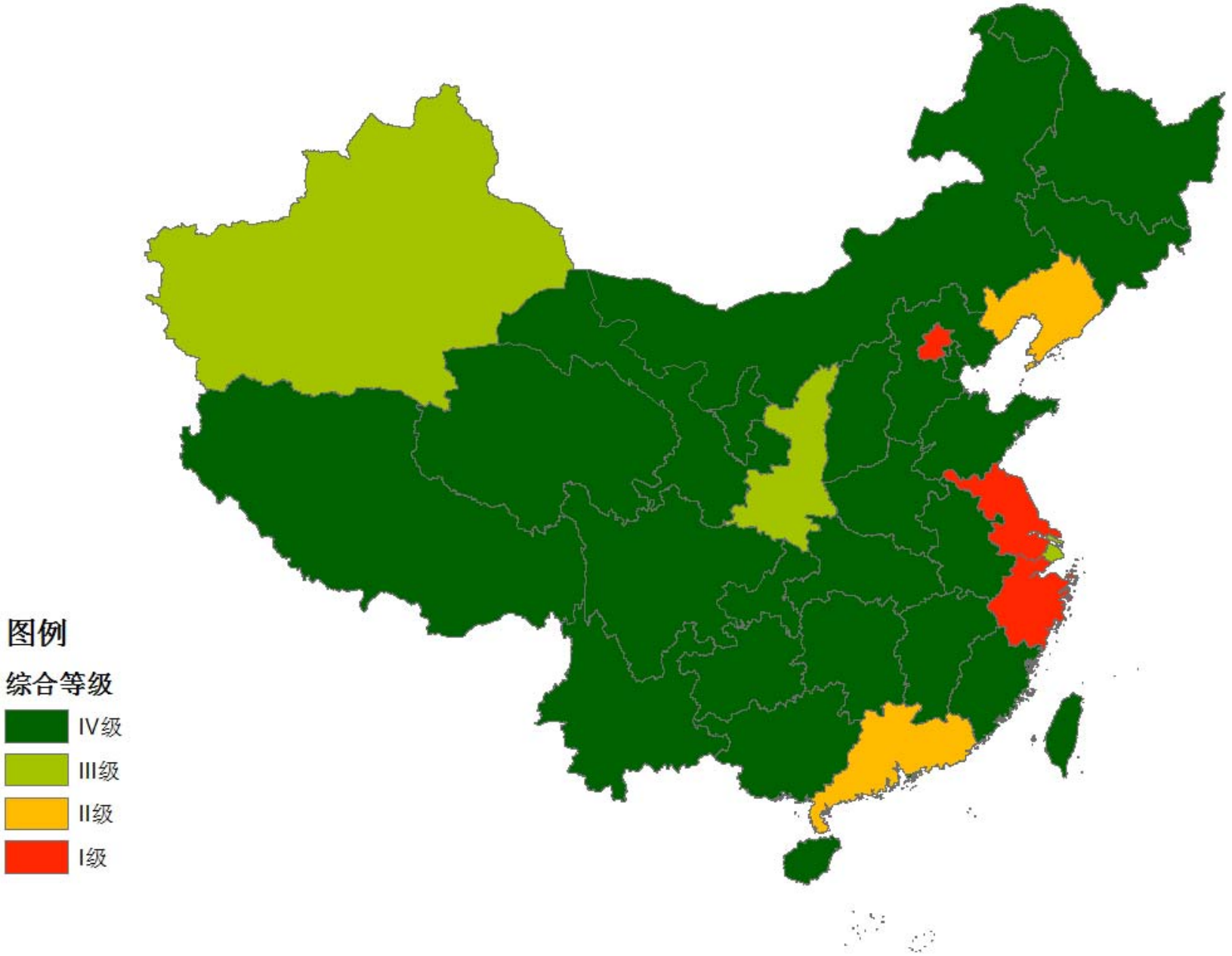

Fig. Spatial scale distribution of organic certification center in 2012

Basic Principles

- Uniform distribution throughout the country
- Intensive use of organic matter to boost and preserve soil fertility and biological pest controls
- Use of each patch of available land to produce food, guaranteeing intensive production and high yields of crops and animals
- Multidisciplinary integration and the intense application of science and technology
- A fresh supply of good quality products, offered directly to the population, guaranteeing a balanced production of not less than 300g of vegetables daily per capita and an adequate variety of animal protein sources
- Maximum use of the potential to produce food, such as labor force available and the recycling to wastes and by-products for plant and animal nutrition

Vegetables and Fresh Herbs

First and most developed and successful initiative

- Organoponics:
  - located in areas with infertile soils and production constraint
  - container is filled with mixture of organic matter, substrate and soil
- Intensive Vegetable Gardening:
  - practiced on good soil.
  - Organic matter is applied directly during preparation for planting

Science Technology and Training

- Focus on practical on-site training
- Extensions system the depends on the participation of extension agents, research center, experienced farmers and gardeners and other individuals and institutions related to urban agriculture

Integrated disease and pest management

- Characterized by low pest and disease incidence because of small plot sizes and generous application of organic material to soil
- Biological pesticides
  - The development of new technology and it's artisanal and semi-industrial production are critical for urban agriculture
- Cultural techniques:
  - Site selection
  - Planting dates
  - Crop varieties
  - Elimination or alternate hosts of pests and diseases
  - Crop rotations

Urban Agriculture and Sustainability

- **To achieve sustainability must be rationalized and integrated**
- **Have developed sustainability indicators:**
  - **Amounts of organic matter collected, processed and applied**
  - **Degree to which varieties are breeds are adapted to local conditions**
  - **Degree of crop-livestock integration**
  - **Local water availability and soil moisture**
  - **Efficiency of water use**
  - **Use of integrated pest and disease management systems**
  - **Degree of participation of farmers in training courses and extension activities**

THANK YOU

for your attention!

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