Prospect and Challenges of Urban Agriculture in China

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Contents

■ Urbanization in China
■ Development of Urban Agriculture in China
■ Challenges for Urban Agriculture
Urbanization is growing rapidly

Source: UNDESA
Populations in China

2025: 1.395 billion

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

![Graph showing urbanization increasing from 1950 to 2050 with 59% projected in 2025](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
- Expansion 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
Fig. The overall distribution of organic agricultural enterprises
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!