

Towards resilient & responsible urban agro-food systems

China-Europe research and innovation on
(intra- and peri-) urban agriculture



- In last century: **segregation of urban consumers from food production; food became a commodity**, due to: (cooled) bulk food transport, globalization of food trade, internalization of agro-business firms, growth of supermarket chains, urban/rural planning based on separation of functions.
- In more recent years **two main tendencies regarding agriculture in city region:**



Agro-clusters (agro-parks, green ports)

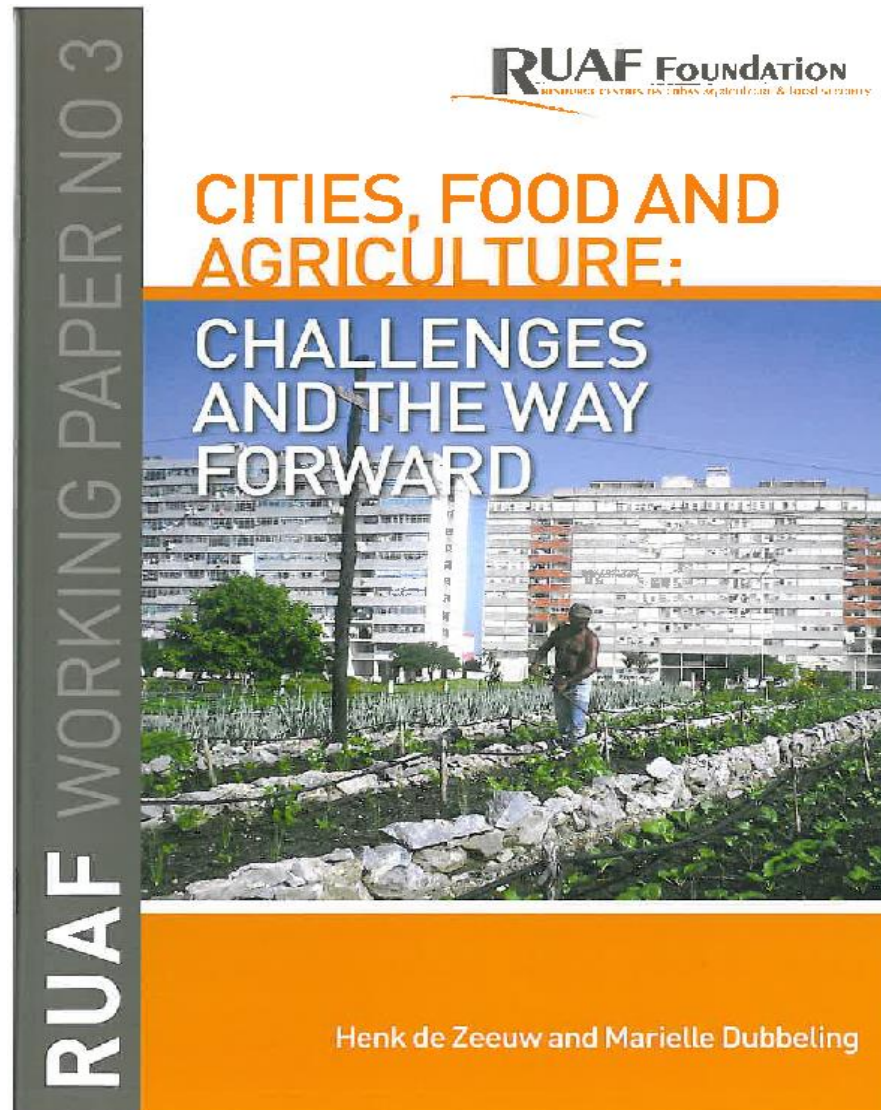
- Intensive non-soil bound types of production cluster in logistical hubs close to major cities together with agro-industries (e.g. ports, nodes of rail- and high-ways)
- In order to enhance synergy, resource- and cost- efficiency by integrating chains, closing material flows and realizing reductions in energy and water use, GhG emissions and wastes disposal
- Food is seen as a commodity; focus is on mass supply of processed food of assured minimum safety



Short food chains; local agro-food systems

- **Reconnection** of local agriculture and urban markets
- Quick growth of **multi-functional agriculture** and **delivery of environmental and social services** by farmers in the city region
- **Consumers and producers in city region are linking up:** box schemes, farmers markets, consumer's food cooperatives, preferential local procurement, promotion of 'regional products',
- **Transition to responsible production and consumption**
- **Food is seen as much more than a commodity;** A strong and responsible regional agro-food system contributes to urban food security and to development of a **sustainable and resilient city region.**

Key issues for EC-China R&D on (intra- and peri-) urban agriculture

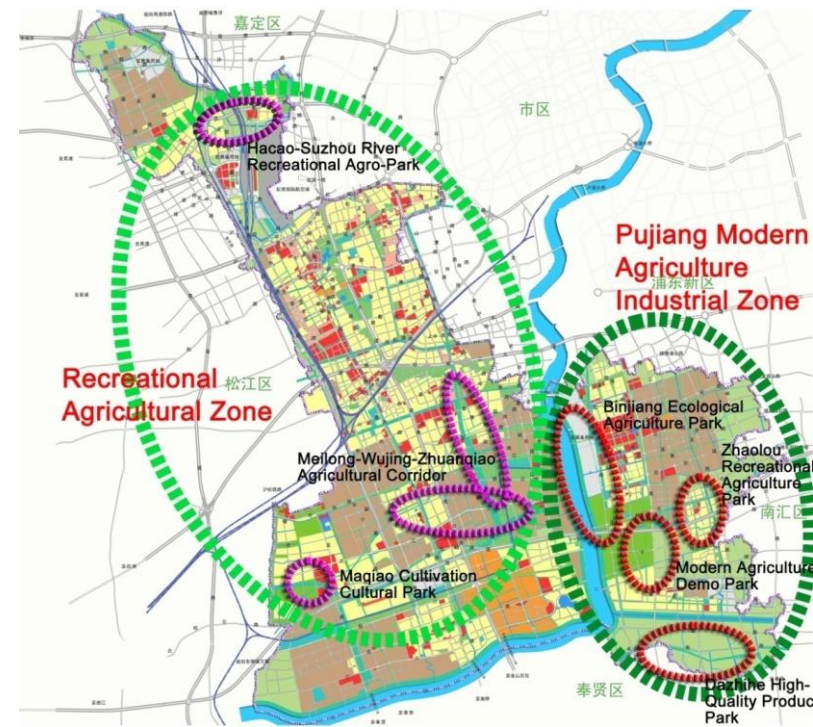


Understanding the development and impacts of short food chains (in different socio-economic and political environments)

- Characterization of different types of short food chains; Drivers for their establishment?
- Organisational and business models applied?
- Related technological innovations?
- The impacts of short food chains on local economy, the urban environment, urban food security and nutrition, social inclusion and community building?
- Which factors facilitate and hamper the development and sustainability of short food chains?

Multi-stakeholder planning of sustainable regional agro-food systems

- Exchange, adapt and test practical methods and tools for mapping and diagnosing the local agro-food system [Slide 14](#)
- Exchange, adapt and test appropriate approaches for the integrated planning of sustainable agro-food systems in the city region (multi-stakeholders, -sector and -level; urban + rural) [Slide 15](#)
- Exchange, adapt and test effective policies & strategies to stimulate short food chains and strengthen the agro-food system in the city region [Slide 16](#)



Resource recovery and productive reuse in urban agriculture

R&D on adequate **technologies and sustainable market driven mechanisms and business models** for:

- **resource recovery** (nutrients, water, organic matter) from urban organic wastes and wastewater and their **safe productive reuse in urban agriculture**
- the **use of excess energy, heat, water, CO₂ and by-products from industry** and other urban sources (e.g. block heating) as inputs in urban agriculture
- **enabling synergy and resource efficiency between different agro-enterprises** located close by (e.g. use of CO₂ from mushroom in the production of greenhouse tomatoes production, combination of fish culture with hydroponic vegetable production).
- **use of urban agriculture and -forestry to rehabilitate or bio-generate degraded intra- and peri-urban open spaces** (e.g. clandestine dump areas, abandoned industrial areas (brownfields), areas where sand or stones were excavated.

Urban agriculture, disaster management and adaptation to climate change

- R & D to identify and develop specific (intra- and peri-) **urban production systems that have special importance for climate change mitigation and adaptation** in urban areas
- R & D to study the impacts of climate change on urban agriculture and to develop **innovations that make urban food production systems more resilient to climate change**



Multi-functional land use

Exchange, research and innovation on:

- Which **combinations of functions** are encountered in urban agriculture; the advantages and disadvantages of each type (for farmers, for consumers and for the City region as a whole)?
- What are **successful business and financing models** for each of these types of multi-functional farms?
- What are the main **constraining and facilitating factors** for the development of each type of multi-functional land use?
- Which **policies** are most effective to facilitate multi-functional agriculture in the city region?



Land tenure

- How to improve the **protection** of agriculture land in the city region and **reduce urban sprawl**?
- How to ensure that agricultural land in the city region is **used in an optimal way**, e.g.
 - **Prevent that land is underutilized or lying idle (“waiting to be sold”)**
 - **Create favourable conditions for productive investments by the actual producers e.g.:**
 - enhanced security of use / **longer term leases** for migrant farm operators;
 - Directing economic incentives and training/extension support **to those who actually operate the farms and small enterprises**



Food safety in intra-and peri-urban food production, processing and distribution

- **Health risk assessments:** identification of important health risks associated to certain products, production & processing practices and -locations; identification of main ways to prevent / reduce these risks.
- **R and D to develop technical innovations in (intra- and peri-) urban production systems and other measures** to prevent/reduce health risks associated with (certain types of / practices in) urban agriculture, notably:
 - Industrial contamination of crops, agricultural land and irrigation water in city region
 - Contamination of crops, soils or groundwater due to intensive use of agro-chemicals
 - Transfer of diseases from urban livestock production to human beings (zoonosis)
 - (unsafe) reuse of urban organic wastes and wastewater

CITYFOOD: Linking Cities on Urban Agriculture and Urban Food Systems

Joint ICLEI / RUAF initiative:

- **City hub:** Cities present on line their urban food policies and actions and their results
- **Community of Practice:** Practitioners share best practices and mutually assist in problem solving
- **On line Compendium:** fact sheets, business models, guidelines and tools, library
- **Training and technical support services**

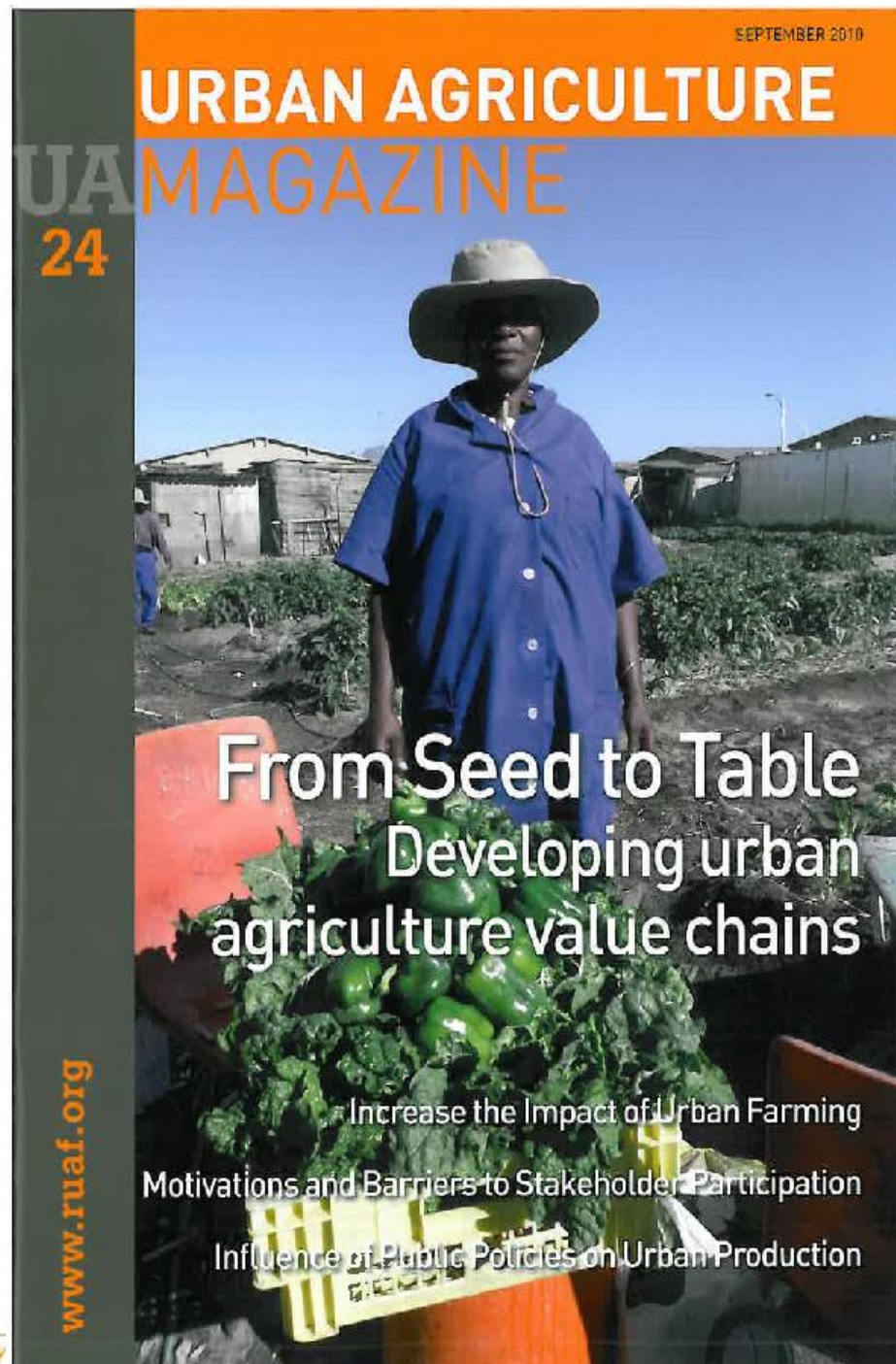
You are invited to join CITYFOOD;
Contact: cityfood@iclei.org or
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THANK YOU

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- Characterization of the **various types of farming and forestry within the city region**; identification of opportunities to enhance links with urban markets, improve quality, reduce footprint, etc.
- Identification of urban consumed **products from outside the region that might be replaced through local production with lower ecological foot print** (analysis food flows and life cycles)
- **Mapping and analysis of urban food problems** (malnutrition, obesity) in different parts of the city. Identification of target groups and opportunities for improving their nutrition through enhanced local food production and improved food distribution.
- Characterization of the actual **marketing/distribution channels for regional products**; identification of opportunities to improve distribution of healthy and affordable regional products
- Identification and characterization of **recent innovations and initiatives** in the regional food system and the actors involved and identification of “lessons learnt” and opportunities for **upscaling**

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- **How to integrate urban agriculture / urban food planning with urban development and spatial planning and sector policies** (environment, infrastructure development, health,)?
- **How to involve the various stakeholders** (local producers, consumers, agro-enterprises, ...) actively in the planning process?
- How to arrive at **common principles and values and a joint vision** on the desired regional agro-food system?
- How to design and assess **scenarios for the development of the regional agro-food system and target setting**
- How to establish the **agenda for action**: key issues and priority action fields; selection of strategies and related policy measures
- How to develop an **operational framework** for the realisation of such an agenda: legal framework, allocation of institutional responsibilities; coordination and monitoring mechanisms; financial mechanisms

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- **Inventory** of the various policies/strategies that are applied to strengthen the local agro-food system
- Assessment of the **impacts** of such strategies on the regional agro-food system (resilience, responsible production and consumption, impacts on urban food security/nutrition, income / employment, city ecology)
- The advantages/disadvantages of the **operational and institutional modalities applied** to implement these policies/strategies
- **Identification of gaps and complimentary or alternative** policies/strategies

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Financing urban agriculture

- Inventory, assessment, design and testing of **innovative ways to finance urban agriculture:**
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- What **mix** of regulations, incentives, subsidies, credit, resource mobilisation/savings (individual/collective), and risk reduction is most adequate for different types/scales of urban agricultural production, processing and distribution?



- Incentives for transition to safe and ecological production
- Payment for eco-system services by urban agriculture
- Preferential local food procurement by local government
- Local innovation funds for short food chain initiatives and initiatives to close material flows in urban agriculture (water, nutrients, energy)
- Participatory budgeting
- Supporting Savings and Loans Associations by/for urban producers
- Government guarantees for credit institutions providing low cost loans to small scale urban producers and associations; subsidized risk insurance schemes for small farmers
- Adaptation of building regulations; Building companies to co-finance productive green infrastructure.
- Inclusion of urban agriculture in sectoral policies and budgets

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