Cities Farming for the Future

ETC Urban Agriculture / RUAF

Summary

1. Cities and countries adopting urban agriculture?
2. Some research data
3. Multi-stakeholder planning and policy formulation
4. Challenges and opportunities for collaboration
Cities and countries adopting urban agriculture: Sri Lanka

National Campaign to motivate domestic food production (2007-2010): “Let us cultivate and uplift the nation”

Overall aim: Achieve food sovereignty of the country
⇒ Cultivate every inch of available land (Gampaha: 202 ha of fallow fields and 10 ha of bare land)
⇒ Rehabilitation of all paddy fields (Gampaha: 33 ha)
⇒ Promote urban home, school and institutional gardening on office premises

Sierra Leone

Prices of rice increased 60% since January 1, 2008
“Operation Feed the Nation”

Overall aim: No Sierra Leonean shall go to bed hungry
⇒ Engage unemployed youth - including in urban areas - in high value agri-business
⇒ Promote urban agriculture in Freetown
Brazil

Ministro Patrus Ananias anuncia recursos que vão beneficiar 10 mil famílias de agricultores urbanos


Cape Town Urban Agriculture Policy (2006)

“The City seeks to employ all available means to build a prosperous City in which no-one is left out. The City recognizes that urban agriculture can play a key role in strategies for poverty alleviation (food security and nutrition) and economic development (income generation). However the City is also aware of the numerous negative impacts of urban agriculture on city life. Therefore, the City supports and promotes urban agriculture within the context that it will not degrade the quality of life of citizens, will not impact harmfully on public health, the natural environment and will contribute to the economic and social well-being of people. In order to achieve this it is necessary to create an enabling and regulated environment in which the development and practice of urban agriculture can flourish.”
Mexico City cultivates rise of 'backyard agriculture'

Led by Marcelo Ebrard, the city’s leftwing mayor, local government is expanding a “Backyard Agriculture Program” launched last year to encourage the capital’s residents to use all available space to grow crops. “We want to make people realize that they can use their gardens, yards and roof terraces to grow food,” says Adolfo López Villanueva, the program’s director. “With the climate we have in Mexico City you can get between two and three harvests a year and that would help families keep costs down.” The spiraling cost of food has given new impetus to plans for the program’s expansion and this year officials decided to increase its scope by at least 50 per cent. A parallel Urban Agriculture Program encourages communities to make communal land available for more ambitious crops such as corn, a Mexican staple, and fruit. Mr López Villanueva said the target was to involve about 200,000 city residents in the medium term. Both programs were launched in the hope that adding a dose of agriculture could improve the city’s notoriously poor air quality. Mr López Villanueva is so optimistic that he even believes participating families could generate a surfeit of agricultural produce, giving rise to farmer-style markets in the city.

Source: Adam Thomson, the Financial Times Limited 2008

Some research data: Contribution UA to food security

• Improved food availability and nutrition (producer families- household level)

• Self-production of food by poor urban households can represent 20-60 percent of their total food consumption:
  - East Jakarta 18 percent (Purnomohadi 2000)
  - Kampala 40-60 percent (Maxwell and Zziwa 1992),
  - Harare 60 percent (Mbiba, 2000)

• Farming households have better nutritional status (less stunting, increased vegetable consumption)
• Improved access to food (producer families and urban population)

<table>
<thead>
<tr>
<th>City</th>
<th>Percentage of urban demand met by UPA</th>
<th>Leaf vegetables</th>
<th>All vegetables</th>
<th>Eggs</th>
<th>Poultry</th>
<th>Milk</th>
<th>Pork</th>
<th>Fruit</th>
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<tbody>
<tr>
<td>Havana (Gonzalez Novo and Murphy, 2000)</td>
<td>70-80</td>
<td>90</td>
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<td>La Paz (Kreinecker, 2000)</td>
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<td>Dakar (Mbaye and Moustier, 2000)</td>
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<td>Dar Es Salaam (Jacobi et al., 2000)</td>
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<td>Accra (Cofie et al., 2003)</td>
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<td>Yaoundé (Dongnan, 1990)</td>
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<td>Bissau (David et Moustier, 1995)</td>
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<td>Nouakchott (Laurenis, 1999)</td>
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<tr>
<td>Shanghai (Li-Zhang and Zhang, 2000)</td>
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<td>Hong Kong (Sunil, Nasr and Ratta, 1996)</td>
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<tr>
<td>Hanoi (GTZ, 2000; Phuong Anh and al., 2004)</td>
<td>60</td>
<td>90</td>
<td>50</td>
<td>90-100</td>
<td>50</td>
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<td>Vientiane (Moustier, 2004)</td>
<td>60</td>
<td>90</td>
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<td>90-100</td>
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- UA provides products that rural agriculture cannot supply well, such as perishable products that require rapid delivery upon harvest (e.g., fresh milk and vegetables);
- Can substitute for food imports intended for urban consumption, and can thus save on foreign exchange;
- Can release good agricultural land for export-oriented production; and
- Can reduce pressure to cultivate new rural land, relieving stresses on marginal rural lands.

**NB:** need to manage potential health risks, especially related to waste-water use in UA
Contribution UA to income and employment generation

Household level: Incomes and wages from market oriented urban agriculture often favourably compare to those of unskilled construction workers or mid-level civil servants

<table>
<thead>
<tr>
<th>City</th>
<th>Typical monthly net income in US$ for irrigated urban vegetable production</th>
</tr>
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<tbody>
<tr>
<td>Accra</td>
<td>40-50</td>
</tr>
<tr>
<td>Bangalore</td>
<td>320 (producers), 330 (wholesalers), 140 (retailers)</td>
</tr>
<tr>
<td>Brazzaville</td>
<td>140-170 (producers), 120 (retailers)</td>
</tr>
<tr>
<td>Colombo</td>
<td>58-70 (110)</td>
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<tr>
<td>Cameroon</td>
<td>69 (above minimum wage)</td>
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<tr>
<td>Dakar</td>
<td>48-66 (250)</td>
</tr>
<tr>
<td>Kampala</td>
<td>35-85 (140)</td>
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<tr>
<td>Lagos</td>
<td>120</td>
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<tr>
<td>Nsagadongou</td>
<td>25-70 (100)</td>
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<tr>
<td>Tanzania</td>
<td>60</td>
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<tr>
<td>Yaoundé</td>
<td>34-67</td>
</tr>
<tr>
<td>Hanoi / Minh City</td>
<td>40-80 (125)</td>
</tr>
<tr>
<td>Jakarta</td>
<td>30-50</td>
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</tbody>
</table>

Aggregate level: Share in urban food supply

<table>
<thead>
<tr>
<th>CITY</th>
<th>WEIGHT SUPPLIED (METRIC TONS/ YEAR)</th>
<th>% TOTAL SUPPLY (CITY OR HOUSEHOLDS)</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accra, Ghana</td>
<td>271 900 t vegetables (1992)</td>
<td>90% of fresh vegetables</td>
<td>Moldakov, 2000; C integr et al. 1999</td>
</tr>
<tr>
<td>Antananarivo, Madagascar</td>
<td>90% of leafy vegetables / city</td>
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<tr>
<td>Dar es Salaam, Tanzania</td>
<td>90% of leafy vegetables / city</td>
<td>60% of daily milk/city</td>
<td></td>
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<tr>
<td>Kampala, Uganda</td>
<td>20% of staple food consumption by households</td>
<td>70% of all eggs and poultry products consumed</td>
<td></td>
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<tr>
<td>Cienfuegos, Cuba</td>
<td>53,431 tons of vegetables, grains and root crops (2005)</td>
<td>90% of fresh vegetables/ city</td>
<td>Siscorn, 2003</td>
</tr>
<tr>
<td>Hanoi, Vietnam</td>
<td>80% of fresh vegetables / city</td>
<td></td>
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</tr>
<tr>
<td>Shanghai, China</td>
<td>530 000 t vegetables (4800 t/d)</td>
<td>60% of vegetables / city</td>
<td></td>
</tr>
<tr>
<td>London, United Kingdom</td>
<td>27 000 t honey (worth £609 757)</td>
<td>10% of income / city</td>
<td></td>
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<tr>
<td>St Petersberg, Russia</td>
<td>15 000 t potatoes, 9 000 t fruits, 23 000 t vegetables, 3 000 t strawberries</td>
<td>60% of vegetables / city</td>
<td></td>
</tr>
</tbody>
</table>
### Aggregate income and employment

<table>
<thead>
<tr>
<th>CITY</th>
<th>PRODUCERS (SELF-PROVISION, MARKET)</th>
<th>ECONOMIC CONTRIBUTION</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCRA, Ghana</td>
<td>13.6% of households in 16 city areas 700 market farmers (1987)</td>
<td>2% of city GDP 2.7 million farmers (31.8% workers)</td>
<td>Sonou, 2001</td>
</tr>
<tr>
<td>DAKAR, Senegal</td>
<td>15,000+ jobs 30000 family vegetable farms (14000 jobs) ca 1250 commercial vegetable farms (6000 jobs) 250 poultry units (1996)</td>
<td>117,000 direct and 28,000 indirect jobs (1998)</td>
<td>Mbaye &amp; Moustier, 2000: 246</td>
</tr>
<tr>
<td>LA HABANA, Cuba</td>
<td>15-20% families have a home-garden (2 areas)</td>
<td>Urban Agriculture forms at least 90% of the informal sector and is second largest urban employer (20%) Urban fresh milk production was worth an estimated USD 7 million in 1993. The annual gross output of over ten thousand urban agriculture enterprises totalled 27.4 million USD, with an annual value added amounting to 11.1 million USD.</td>
<td>Personal communication Mr. Majani UCLAS, Dar es Salaam, 2001 &amp; Saeio 1998</td>
</tr>
<tr>
<td>GOVERNADOR VALADARES, Brazil</td>
<td>45% of population practices some form of Urban Agriculture</td>
<td>1.77% of city GDP (2003)</td>
<td>Loo &amp; Suares, 2003</td>
</tr>
<tr>
<td>SHANGHAI, China</td>
<td>2.7 million farmers (31.9% workers)</td>
<td>17% of city GDP</td>
<td>Yi-Zhang &amp; Zhangen, 2000</td>
</tr>
<tr>
<td>BEIJING, China</td>
<td>Peri-urban agriculture absorbing high amounts of migrant labour (between 500,000 and 1 million people)</td>
<td>15–20% families have a home-garden (2 areas)</td>
<td>Liu (2004)</td>
</tr>
</tbody>
</table>

In New York (SA), Cornell University and New York State Department of Agriculture and Markets, estimated the economic impact in New York State if New York eaters shifted their purchasing to 10% from local farmers and another 10% from local processors. The impact estimate is substantial: around 17,000 jobs will be created and US$16 billion of new income generated.
UA as a strategy for more resilient cities

- Greening the city and improving biodiversity
- Improving air quality and reducing urban heat island effect

Hirano (1999) has estimated that total amount of green space in Beijing can absorb some 4,240,000 tonnes of CO2/year, release 2,950,000 tonnes of O2/year, absorb 10,739.6 billion KJ heat/year through the process of transpiration, and remove 30,516.56 tonnes of dust/year.

- Improving municipal waste management by re-using organic solid waste and waste-water in urban agriculture

Ghana: 15,000 wastewater farmers earn a profit of US$ 4 million/yr

- Reducing of ecological footprints and energy costs related to urban food provision.

NB: Some observations

- Few recent data (most studies 1990’s and early 2000)
- No common methodology

- Need for comparative study on:
  - Contribution to urban food security (protein, carbohydrates, vitamins)
  - Income and employment generation; contribution to city GDP
  - Substitution national food imports
  - Comparative value of urban land according to its use
  - Reduction in carbon foot print

- RUAF can offer 20 cities where such data can be collected
RUAFs approach to national and municipal capacity building and policy formulation on UA

- 8 regional partners
- 21 partner cities
- 3 programmes:
  - Awareness raising and information exchange (1998-2004)
  - Multi-stakeholder action planning and policy formulation on UPA (05-08)
  - Strengthening UPA production systems, market chains and producer organizations (09-10)

Multi-stakeholder policy formulation and action planning (MPAP)

- Participation of different stakeholders (municipality, national government, NGOs, research institutes, universities, private enterprises and producer organizations)
- In a participatory process of situation analysis, strategic planning, policy formulation, project implementation and monitoring & evaluation
MPAP-some results

- 21 cities formulated a City Strategic Agenda on UA
  => Setting up community gardens and rooftop gardens (Bulawayo; Bogota; Bobo Dioulasso),
  => Establishing farmer markets (Lima-Peru),
  => Promotion of space confined technologies in school-gardens and low income settlements (Hyderabad, Bangalore, Gampaha)
  => Development agro-tourism enterprises (Beijing, Chengdu)

MPAP-some results

=> Integrating urban agriculture into the city development and zoning plans (Beijing) or into other sectoral policy documents (like the Food and Agriculture Sub-sector Development Policy II document of the Ministry of Food and Agriculture in Ghana; Operation Feed the Nation SL)

=> Revision of outdated bye-laws on urban agriculture (Accra and Bulawayo) and/or formulation of new bye-laws and ordinances on urban agriculture (Villa Maria del Triunfo, Lima)

=> Provision of land and equipment for urban agriculture (Accra; Bulawayo and Cape Town)
  • => Inclusion of urban agriculture in the municipal budget
MPAP - A Case study – Rosario, Argentina

• 1 million inhabitants
• 60% poverty, 22% extreme poverty
• End of 2000: economic crisis -> municipal and social interest in UPA
• How to best strengthen existing UPA activities?

Case study – Rosario, Argentina

1) Strengthen production:
-> seed donations
-> technical assistance
-> training

2) Improve security access to land:
-> identification of vacant land areas (GIS)
-> construction of a « land bank»
-> temporal user-right agreements (2 years)
-> exemption property tax (private lands)
Case study - Rosario, Argentina

3) Construction of agro-industries (by rehabilitating old city infrastructure)

Case study - Rosario, Argentina

4) Strengthen commercialization:
   - hygienic conditions
   - product control
   - Community Supported Agriculture
Case study – Rosario, Argentina

5) Integration of UPA in the city urban development and strategic plan
6) Formalize a municipal UPA programme (technical staff, extension officers, with a yearly budget of 100,000 US$/yr)

Case study – Rosario, Argentina

7) Promote multifunctional use of open spaces and their participatory design
   - Multifunctional public parks
   - « Productive streets »
   - Flood zones
8) Form a (peri)urban producer organization
   -> training in organizational management, policy lobbying, project formulation

9) Integrate UPA into social housing programmes

Some impacts:

Food security and employment creation

-> 10,000 families participating in the programme
-> 2 agro-industries, 7 farmer markets
-> producers earn an additional 90-150 US$/month
Case study – Rosario, Argentina

Some impacts:

-> Improving the environment
-> Rehabilitating waste-lands

From a crises to a new urban model ..... Rosario, Argentina
Case study – Beijing, China

- More than 17 million inhabitants
- 0.5 million migrants produce a large part of the vegetables consumed, but without any official
- Increase in demand for recreational services
- Lack of drinking water

Action-planning: different UA models
1) Migrant cooperatives: promoting ecological production and marketing
2) Agro-tourism
3) Rainwater harvesting

Beijing UA policy guidelines:
- Ecological certification
- Public investment in agro-industries and cooperatives
- Integrating agricultural and social services
- Spatial planning of different UA models ("zoning")
- New regulations for collectively owned land tenure
- UPA integrated in 5-year plan (2006-2011)
Strengthening the urban agriculture market chains (RUAF-FSTT)

-> Farming system and market analysis
-> Design and implement “From Seed to Table” projects
-> Strengthen producer organizations
-> Improve access to financing and investment

Lessons learned

-> Re-think rural-urban linkages (highest return on land versus food security?: need for innovation of urban farming systems)
-> Poverty reduction: optimization of food chains to face food and climate crisis
-> Need for a real spatial strategy for UA (inclusion in master plan, land tenure arrangements, fiscal incentives)
-> Link to urban water and sanitation (waste-water and storm-water management)
-> Innovative ways of financing UA (land trust, participatory budgeting)
Challenges and opportunities for collaboration

1. Dialogue on role urban agriculture in future urban scenarios
   - WB Participation in Networking session WUF
   - Contribution RUAF to WB Strategy Paper

2. Channeling more funds to local initiatives on UA
   - Co-financing components City Strategic Agenda/ local multi-stakeholder initiatives on UA
   - Promoting increased local financing for UA (part. budgeting, providing guarantee funds to credit organizations)

   RUAF to act as an Intermediate Funding Mechanism on UA (co-funding from WB, DGIS, IDRC and others)

Challenges and opportunities for collaboration

3. Research and monitoring impacts UA
   - Comparative research (in RUAF partner cities)
   - Integrating UA in urban monitoring programmes databases (MDGs, global urban observatory)

4. Inter-municipal research and training programme on UA
   - Channeling more funds to local initiatives on UA
   - Build on RUAF training programmes and DL courses
   - City and University partners to develop and train other city partners in key subjects
Challenges and opportunities for collaboration

5. Enhancing national policy formulation on UA
   --> Rural-Urban linkages
   --> Poverty Reduction Strategy Plans
   --> Link with urban water and sanitation
   --> Spatial development strategies

6. RUAF can offer training, technical, methodological and policy advise to WB projects or their partners in the field of UA

Thank you and looking forward to future collaboration

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