Strengthening horticulture in urban and peri-urban areas of the Global South: policy challenges and interventions

Gordon Prain

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Outline

- The urban and the rural in agricultural R&D
- Urbanization dynamics and the practice of urban and peri-urban horticulture (UPH) along the rural-urban continuum
- Nutrition, environmental and income benefits of UPH
- Risks and policy challenges and options for protected horticulture
From urban to rural bias in food policies
Rural romance and research bias?
 Mixed employment in rural areas: not a new thing

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Farm income</td>
<td>43.7</td>
<td>64.2**</td>
<td>47.6**</td>
</tr>
<tr>
<td>Livestock</td>
<td>16.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm wages</td>
<td>3.4</td>
<td>4.6</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-farm income</td>
<td>36.9</td>
<td>31***</td>
<td>52.4</td>
</tr>
</tbody>
</table>

*Poor households
**Total farm income
***Includes remittances

Source: Ellis 2000
Urbanization dynamics: more than the growth of cities and an exit from farming

- Looking to the city for a new life
- Temporary and seasonal migration
- Daily “commuting” – doubling the daytime size of cities
- Mixed employment along the rural-urban continuum
- Establishment of multi-local households
- “Urbanization” of rural areas
The institutional and policy divisions between rural and urban

- Ideological opposition between “urban” and “agriculture”
- Long colonial history of protected urban areas (“chasing agriculture out of cities”)
- Sectoral policies for rural and urban development
- Rigid administrative boundaries
- Capricious or punitive urban zoning decisions
- Divided mandates of ministries
- Divided multi-lateral institutions (e.g., former vice-presidencies of WB)
### Proportion of households engaged in UPA in some African cities

<table>
<thead>
<tr>
<th>City / town</th>
<th>Country</th>
<th>Farming households</th>
<th>Survey date</th>
<th>City population at that date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addis Ababa</td>
<td>Ethiopia</td>
<td>17% - vegetables only</td>
<td>1983(^a)</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Dar-es-Salaam</td>
<td>Tanzania</td>
<td>36% - vegetables and other crops</td>
<td>1995(^a)</td>
<td>2,500,000</td>
</tr>
<tr>
<td>Nairobi</td>
<td>Kenya</td>
<td>20% - vegetables and other crops</td>
<td>1985(^a)</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Nakuru</td>
<td>Kenya</td>
<td>35% - crops and livestock</td>
<td>1998(^b)</td>
<td>239,000</td>
</tr>
<tr>
<td>Kampala</td>
<td>Uganda</td>
<td>30% - crops and livestock</td>
<td>1991(^a)</td>
<td>774,000</td>
</tr>
<tr>
<td>Kampala</td>
<td>Uganda</td>
<td>49% - crops and livestock</td>
<td>2003(^c)</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Mbeya</td>
<td>Tanzania</td>
<td>93% - crops and livestock</td>
<td>2002(^d)</td>
<td>266,000</td>
</tr>
<tr>
<td>Morogoro</td>
<td>Tanzania</td>
<td>90% - crops and livestock</td>
<td>2002(^d)</td>
<td>228,000</td>
</tr>
<tr>
<td>Ibadan</td>
<td>Nigeria</td>
<td>45% - vegetable crops, 40% - livestock</td>
<td>2000(^e)</td>
<td>2,550,593</td>
</tr>
<tr>
<td>11 in Southern Africa</td>
<td>9 SADC members</td>
<td>22% - crops and livestock, but poor households only</td>
<td>2008(^f)</td>
<td>varied</td>
</tr>
<tr>
<td>21 in West Africa</td>
<td></td>
<td>20-50% - crops and livestock</td>
<td>2006(^g)</td>
<td>varied</td>
</tr>
</tbody>
</table>

\(^a\) Egziabher et al 1994, \(^b\) Foeken 2006, \(^c\) David et al 2010, \(^d\) Foeken et al 2004, \(^e\) FAO 2012a, \(^f\) Frayne et al 2010, \(^g\) Drechsel et al 2006. Table adapted from Lee-Smith 2013
Agricultural contribution to livelihoods along the rural-urban continuum: primary income source of sample households in Kampala (%)
The contribution of UPH to women’s livelihoods: proportion of total and women populations farming in selected cities in SSA

![Graph showing the percentage of total and women farmers in various cities.]

Some types of UPH

Bio-intensive gardening, Dhaka

Urban old food security plot, Nairobi

Survival horticulture

Sub-division gardening, Manila, Philippines - urban new

Small-scale commercial, peri-urban Lima, Peru
Contribution of UPH to food and nutrition security

- **Lima** Producers in two sites consume greater diversity of vegetables with higher beta-carotene than non-producers
- **Nairobi** Producers consume more beta-carotene rich vegetables
- **Accra** Higher levels of dark green vegetables consumed by producers than non-producers
- **Kampala** For producers with larger land holdings growing vegetables and raising livestock increases food security. Livestock more significant than vegetables for increasing child nutritional status
- **Bangalore** Producers have higher diet diversity scores than non-producers, especially among poorest

*= < 1%  **= < 10%
Horticulture and the urban environment

Uptake of hidden urban natural resources

Low cost maintenance of green spaces

UHI Map (Based on 2002 Landsat Image)

Waste management and water conservation through recycling

More liveable, climate smart cities

Reducing heat island effects
Competitive advantage of commercial UPH for low income women and men through vegetable value chains

- Input access
- Highly segmented accessible markets
- Market information
- Multiple marketing channels for different volumes and operations
- Producer-consumer trust
Gender Involvement in Vegetable Trading in Selected Markets in Nairobi

Trade in Vegetables by Gender

<table>
<thead>
<tr>
<th>Vegetable Type</th>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>Tomatoes</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Onions</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>Cabbage</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>As. Veg.</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>Kales</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>B.Night shade</td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td>Amaranthus</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>S.Plants</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Exotics

ALVS
Risks of UPH: chemical/biological contaminants and pesticide use

Washing vegetables in contaminated water, Lima

Roadside plots exposed to HMs from cars, Manila

Pesticide presence in the field and home, Lima
Levels of toxicity of pesticides applied in Lima, Peru*

* Survey data collected 2005
Protected horticulture examples

Private sector organic vegetable operation, peri-urban Philippines

Farmer association, Cochabamba, Bolivia. Fruits and vegetables, peri-urban-rural fringe

Plastic mulching, Cochabamba, Bolivia
Some key issues for the wider application of protected horticulture in UPH

- **Investment issue**: better opportunities where agriculture higher proportion of income
- **Security issue**: better where more secure tenure, not subject to theft or seizure
- **Issue of health risks**: high potential to maintain income and reduce occupational health and food safety risks
  - Reduce pesticide use
  - Reduce deposits of heavy metals close to roads
Some key issues for the wider application of protected horticulture (cont)

- **Issue of credit for protective structures – a double burden:**
  - Zero or very limited credit for UPH = the UPH policy trap
  - Women important in UPH, but less tenancy rights or access to credit than men – dependency on men for access to resources – gender-based policy change required
Protected agriculture as integral part of policy influencing

Urban agriculture Show and Tell day, with presence of district mayor, Kampala, Uganda

Proposing new zoning for organic agriculture with District mayor, Lima
Thank you!