Abstract
In Uganda, urban agriculture means preventing starvation amongst single mothers and their families in the ruined fringes of Kampala. For Berliners, it means affluent, lifelong city-dwellers celebrating cherished cultural traditions in their immaculate schrebergärten. In Australia, urban agriculture might refer to an inner city community garden, a suburban farmers market, or a bountiful backyard kitchen garden. These experiences of urban/peri-urban agriculture (UPA) seem worlds apart, yet they all share at least one important feature: they serve to bring living processes and community into a local focus. Joining people to each other and to the land, UPA systems can be described more generally as local food networks. These networks encompass the practical aspects of cultivation, harvest and distribution, and the social dimension of shared experience. Powered by frisson at the urban/rural boundary, UPA issues can enliven vital social discourse in the developed world.

The urban farm visionary Jac Smit observes:

Farming in the open spaces of a community brings a community together. Farming requires cooperation/partnership and creates community. Perhaps the greatest benefit in the 21st century of urban farming will turn out to be its capacity to reconnect urban [wo/]man with nature.

(http://www.cityfarmer.org/ourplanetJS.html)

I suggest that urban agriculture can be an effective, localised community-building mechanism among the urban and suburban middle class. Further, a strong public policy and implementation framework can help position UPA as a generator of positive cultural storylines, or social narratives, that promote a personal

Definitions
- **Urban and peri-urban agriculture** (or UPA) refers to agricultural practices within and around cities which compete for resources - land, water, energy, labour - that could also satisfy other requirements of the urban population.
- **Urban agriculture** refers to small areas within cities, such as vacant lots, gardens, verges, balconies and containers, that are used for growing crops and raising small livestock or milk cows for own-consumption or sale in neighbourhood markets.
- **Peri-urban agriculture** refers to farm units close to town that operate intensive semi- or fully commercial farms to grow vegetables and other horticulture, raise livestock, and produce milk and eggs.

(http://www.fao.org/ag/magazine/9901sp2.htm)
engagement with environmental sustainability. This social transformation, achieved through community-building, can lead to important changes in lifestyle and consumption patterns in a developed nation such as Australia. A second-order effect of this proposed cultural transformation is the reduction of structural pressures on the poor and hungry who are the typical focus of UPA initiatives.

In this article, I will first offer some discussion of UPA system factors in the Australian context. Next, we’ll scan through some strategies and tactics for fostering the emergence of local food networks, including a case-study examination of the Australian Community Foods website. Concluding the article is a review of current readings and references relevant to UPA in Australia and abroad.

**Urban agriculture as a community-building tool**

Community-building is the conscious cultivation of exotropic social groups. As a social strategy, community-building has roots in sociology and complexity studies, more broadly referred to as "social ecology", where:

> [t]he emphasis is on thinking about the big picture, while at the same time being willing to act in small meaningful ways, and also share and celebrate the associated visions, processes and outcomes to facilitate their rapid spread throughout society.

We are concerned here with the potential to raise the moral and creative capacity of a society. Local food networks are ideal structures to carry information about living in balance with the environment and with one another. Powerful social connections are re/established. In the UK, this connectivity was identified as the key cultural outcome in the "Future of Farming" White Paper:

> Our central theme is reconnection. We believe the real reason why the present situation [in food policy] is so dysfunctional is that farming has become detached from the rest of the economy and the environment.

> The key objective of public policy should be to reconnect our food and farming industry: to reconnect farming with its market and the rest of the food chain; to reconnect the food chain and the countryside; and to reconnect consumers with what they eat and how it is produced. (Cabinet Office, Jan 2002; http://www.cabinet-office.gov.uk/farming)

**Local food networks**

Wherever urban agriculture is found, its underlying concern is the interleaving of growers/growing and eaters/eating to form a web of least-effort/benefit-maximised physical and social connections. In Australia, local food networks typically find expression as:

- Farmers markets: organised by council or by farmers
- Farm gate trails
- Food co-ops
- CSA (Community Supported Agriculture)
- Community gardens
- Family/backyard gardens

These networks are often "powered" by one or two key individuals, facilitator/leaders who are the human attractors responsible for stirring the motions of community into being. Empowering and assisting these individuals is the critical strategy for creating more local food networks.

**Cultivating the UPA story**

The future of UPA policy and programmes in Australia must begin with a concerted effort to shape a cultural narrative that celebrates local food networks. The few extant surveys of Australian urban farm and garden activity reveals a surprising level of public participation, yet in terms of cultural story its existence is largely unspoken. We have very few positive images of city farming, office food swapping, downtown

<table>
<thead>
<tr>
<th>City</th>
<th>Pop(M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>3.85</td>
</tr>
<tr>
<td>Melbourne</td>
<td>3.22</td>
</tr>
<tr>
<td>Brisbane</td>
<td>1.59</td>
</tr>
<tr>
<td>Perth</td>
<td>1.31</td>
</tr>
<tr>
<td>Adelaide</td>
<td>1.06</td>
</tr>
<tr>
<td>Newcastle</td>
<td>.47</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>.37</td>
</tr>
<tr>
<td>Canberra</td>
<td>.35</td>
</tr>
<tr>
<td>Wollongong</td>
<td>.25</td>
</tr>
<tr>
<td>Hobart</td>
<td>.19</td>
</tr>
</tbody>
</table>

Australia’s 9 major clusters (200,000+) account for 70% of the national population.
co-ops, etc. There is no visionary story, or "policy narrative" to inform public discourse. *Local food networks are a popular story waiting to be told.*

**The role of government policy**

Enthusiastic public participation in local food networks could be inspired and supported by public policies. However, direct civil support of UPA runs contrary to the dominant economic paradigm in first-world countries. UPA promotes local self-sufficiency manifested in fungible transactions, i.e., non-cash value exchange (as through barter, charity, common bounty, etc.). Commercial operators, who see the cashless operations of local food networks as a direct threat to their business, fiercely challenge government and community projects of any size. Since there is no generative, guiding story informing a policy attached to local food networks, public intervention in the food business can be portrayed as a frontal attack on free markets. This public/private uncertainty is fearsome territory for politicians and policymakers alike.

If the Commonwealth and state governments are actively supporting UPA, they are being very modest about sharing their achievements. A quick internet search across two likely websites suggests that amongst policymakers the terms "urban" and "agriculture" are not in active dialogue:

<table>
<thead>
<tr>
<th>Site</th>
<th>Search term</th>
<th>Found results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Agriculture Portal</td>
<td>agriculture</td>
<td>300+</td>
</tr>
<tr>
<td></td>
<td>urban agriculture</td>
<td>0</td>
</tr>
<tr>
<td>NSW Department of Agriculture</td>
<td>agriculture</td>
<td>(exceeded capacity of search)</td>
</tr>
<tr>
<td></td>
<td>urban agriculture</td>
<td>0</td>
</tr>
<tr>
<td>Google</td>
<td>+&quot;Urban agriculture&quot; +australia</td>
<td>2100 hits worldwide 0 (*.gov.au) sites in the first 60 hits</td>
</tr>
</tbody>
</table>

It’s hard to get a conversation going, at least in part because there is precious little economic or demographic baseline data centred on UPA. A very fuzzy assessment comes from the ABS (ironically, via a Canadian website!):

> According to the Australian Bureau of Statistics, about 2.5 million Australian households (about 35%) grow some of their own fruit and vegetables. This is estimated to be about 110,000 tonnes of fruit and about 153,000 tonnes of vegetables a year. About 80,000 Australian households have poultry that produce around 2,000 tonnes of meat and more than 26 million dozen eggs.

(http://www.cityfarmer.org/westpacificUA.html#westpacific)

Fortunately, some baseline data is being measured, thanks to the patient efforts of a scattering of academics, scientists, and concerned domain experts. One such methodical, back-room activist is Peter Houston, who has managed to secure approval for a statistical audit of UPA activity using GIS (geographic information system) and quantitative analysis to develop relevant metrics. Houston describes the context for the project, which is sponsored by the Rural Industries Research and Development Corporation (RIRDC, http://www.rirdc.gov.au/programs/ras.html):

> Despite being implicated in the complex sustainability agenda of Australia’s peri-urban regions, the agriculture that occurs there is not well understood and its economic value has never been systematically examined. Using a spatial frame derived from research into population change, the value of peri-urban agriculture is calculated using ABS Agricultural Census data. The analysis shows that peri-urban regions in the five mainland States produce almost 25% of Australia’s total value of agricultural production. Evidence from other surveys suggests this may be a significant underestimate. These surprising findings have important strategic implications for agricultural development, urban and regional development and, ultimately, sustainable development. However, peri-urban issues are often submerged in public policy deliberations and peri-urban agriculture is poorly served by the Agricultural Census.
An earlier, limited-area survey was carried out in 1996 in the greater Sydney basin. The survey confirmed the priority of market gardening in areas closest to the city.8 Even with better data, government is challenged to develop a positive, yet real-politick policy line. A 1999 RIRDC report, for example, lists policy issues associated with peri-urban poultry farming, pointing especially at the problematic aspects of land-use planning (http://www.rirdc.gov.au/pub/shortreps/sr94.htm):

**Planning for Agriculture on the urban fringe in Australia**

<table>
<thead>
<tr>
<th>Policy options</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval required for new poultry sheds</td>
<td>Assessment difficult where environmental impact statements (EIS) lack sufficient detail</td>
</tr>
<tr>
<td>Implement environmental legislation</td>
<td>Difficult to determine whether farmers are doing everything financially possible to minimise off-site impacts</td>
</tr>
<tr>
<td>Educate land buyers about the potential for agricultural externalities</td>
<td>Property owners maintain the right to complain</td>
</tr>
<tr>
<td>Enforce buffer distances to separate incompatible land use</td>
<td>Difficult to enforce if it involves restricting the development rights of neighbouring landowners</td>
</tr>
</tbody>
</table>

The challenges are very real, and complex, yet failure to develop a relevant social narrative that celebrates UPA as a groovy middle-class preoccupation means that UPA will remain a "concern of the poor". Efforts to engender enthusiasm for sustainable cities via integrated agriculture will inevitably be understood as prescriptive and exclusionary. Community gardens will be forever associated with the underprivileged, and therefore off the dominant cultural agenda. We in the middle-class will lose the opportunity to community-build around a positive, life-affirming activity.

JB Jackson, impassioned surveyor of the cultural landscape, asserts that "it is precisely now, when urban existence makes it all but impossible for most of us to relish the quality of space, when any contact with a garden in particular is out of the question, that the search for the archetype, a rediscovery and confirmation of its existence becomes so urgent" (Jackson 1980: 20)9 *One of the most important benefits of a national UPA policy and implementation framework would be to normalise local food networks as a characteristic benefit of Australian civic experience.*

**Community-building strategies and tactics**

Under favourable conditions, local food networks form spontaneously. These favourable conditions are comprised of social or economic perceptions that can be shaped by individuals, government, and NGOs. Essentially, any feedback mechanism that positively reinforces the clustering of supply and demand for local produce via an alternative food system will yield emergent results. The US-based Community Gardens Association has even developed a curriculum for optimising the social outputs from garden projects (http://www.communitygarden.org/pubs/index.html).

Morag Gamble, one of Australia's leading city farm champions, affirms the importance of community connections, pointing to the second-order benefits of local food networks:

> Community-led urban agriculture projects facilitate positive change on many levels. The projects not only help to create a of sense of place and ownership, but help to strengthen ties between community members, between residents and their local environment, and between residents and the regional businesses, institutions and governing bodies.10

*To put it simply, significant change can begin as soon as we take the time to tell each other positive stories about the future.*

**Brainstorming**

Here are some ideas for setting up "reflectors" that would help position UPA favourably in Australian cities:

- Urban design projects undertaken by academia frequently encourage integrated uses. The implementation in commercial reality rarely takes these innovations into account. A recent flurry
of sustainability assessment codes (eg, LEED)\textsuperscript{11} provides an opportunity to include UPA facilities in the overall design performance ratings.

- The ubiquitous downtown "food courts" would be ideal spaces for a local food showcase. In addition to the cheap factory food, a mini farmers market, or community food stall would put UPA directly in contact with the office workers.

- Spontaneous/ephemeral UPA would be appropriate for the daytime downtown crowd. This year Sydney City Council used parsley as a decorative plant in a 90,000-plant flower display and was swamped with public interest in the concept of edible public art. (http://www.cityofsydney.nsw.gov.au/cosc_nr_nr2_280802.asp)

- Better urban retail space utilisation, as in the Mt Gravatt demonstration (vermiculture in shopping centre: http://www.cityfarmer.org/rooftopmicrofarm.html)

- Australia has any number of civic enhancement programmes (eg, the Tidy Town scheme), and Agenda21 initiatives (http://www.un.org/esa/agenda21/natlinfo/countr/austral/social.htm) which could be extended toward inclusion of local food network schemes.

- Community gardens are already recognised as important community assets. Yet despite the enthusiasm and investment of civic energies to date, no Commonwealth programme is accountable for promoting and sustaining these projects. The kitchen garden tradition is likewise uncelebrated and unsupported. Backyard veggie patches provide social linkages for intergenerational families and neighbourhoods, as well as supporting biodiversity.

- In the suburbs, endless acres of water-hungry turf could be replaced with food cultivation if such a practice were actively suggested in the media and facilitated by enlightened planning policy.

A policy and implementation framework for communities that wish to undertake local food network projects would boost UPA activity significantly.

**Case study: Australian Community Foods**


Australian Community Foods is an experiment using a web-enable directory to spark “autopoetic” (self-instantiating) behaviours. It is an attempt to construct positive feedback mechanisms that promote community networking and effective group management. The website is free to use for anyone interested in local food, including growers, retailers, co-ops, and of course the people who consume food.

The facility is built around a geo-spatial directory and matching service. Users fill out a short profile form and their directory entry is geo-coded. Each month, the directory database is analysed to find matching profiles (correlations are based on geography and user preferences). A server-side agent sends out email introductions to the people listed in the directory. The site allows anonymous contacts to be initiated between parties so that privacy preferences are respected. It is hoped that the long-term effect of this introduction service will be to quietly and steadily invite the delightful surprise of community connections that might not have occurred otherwise.

Equally important is the lowering of administrative barriers to participation. As noted earlier, local food networks are often powered by individuals with a passion. However, the work of community-building involves a range of skills, including the capacity to support administrative functions associated with group formation and maintenance.

Our observations in Australia have shown that for many growers and consumers this administrative load is simply too much additional burden. Not only is this damaging to the group coordinator, but in general alternative food systems present a fractured, poorly-narrated experience to the rest of the community and culture at large. When an isolated success does occur, the lack of a robust information-sharing network means that a valuable solution pattern is not widely communicated to others.

The web can be an ally in this struggle, and Australian Community Foods is working to demonstrate some potentially useful applications through the website, including a mix of facilities to meet typical community-building demands:

- Self-publishing is provided to encourage local content accumulation
- Site hosting is provided for organisations without an existing website
Online tools to streamline group interaction, eg: newsletter creation, contacts management

Our progress, as the site is rolled out nationally, will provide valuable experience to others seeking to grow strong community connections in the alternative food supply chain. Although Australian Community Foods has just launched (Oct-02), it has attracted significant interest from major growers, government, and consumer associations. In the United States, Local Harvest (http://www.localharvest.org/) could be seen as a more mature cousin of our Australian endeavour (although we were first!).

Through a combination of positive feedback dynamics and creative community-building, we hope to see Australian Community Foods add measurably to a sustainable (and sustaining) emergence of local food networks.

About the author

John Brisbin is the President of Australian Community Foods, an incorporated non-profit association providing internet technologies to support local food networks. He first began exploring networked information systems in the early 80s. Moving to Australia in 1995, he helped establish Social Change Online, serving as Senior Solutions Designer 1999-2002. John is currently working through the Social Ecology post-grad programme at University of Western Sydney. He has a large bus and intends to use it!

Current readings and references

Australia

Towards a Community Supported Agriculture
Very useful introduction and guide to the UPA scene in Australia. Primarily aimed toward practitioners and activists, this 30pg book may be freely downloaded from the site.

Australian Community Gardens Network
Excellent resource for anyone starting up or managing a community garden project. Species information, soil techniques, and essential guidance on group management.
SEED International
http://www.permaculture.au.com
Morag Gamble and Evan Raymond have established this excellent resource portal featuring courses, workshops, permaculture and alternative farming technologies, and an online library of research essays. This site covers most of the city-farm work undertaken in Australia to date.

Pacific Edge Permaculture
Russ Grayson and Fiona Campbell are activists, consultants, and advisors with deep roots in the local food network scene. Co-founders of the Australian Community Gardens Network.

Natural Produce Network
Producer trading network: mainly rural, but looking for urban participants. The network seeks "to establish, promote and support sustainable production systems that enhance the environment, and provide consumers with natural, healthy products"

Urban Ecology Australia
http://www.urbanecology.org.au
"Urban Ecology studies the ecology of cities and human settlements eg. energy and water flows, resource use, how we build and where we build." Useful links and people to contact.

School Vegetable & Herb Growing Project
http://www.vnc.qld.edu.au/et8gqssc.htm
Excellent student's links page with lots of practical information.

CommunityBuilders NSW

International

CityFarmer
http://www.cityfarmer.org/
The UPA scene is dominated by this incredible online resource put together by Canada's Office of Urban Agriculture. Start here.

The Urban Agriculture Network (TUAN)
http://www.cityfarmer.org/TUAN.html
TUAN is an organising network for UPA activities internationally, with 7,500 members from over 80 countries. TUAN was a founding member of both SGUA and RUAF

Center for Sustainable Urban Agriculture
http://www.cityfarmer.org/CenterSustUA.html

Resource Center for Urban Agriculture and Forestry (RUAF)
http://www.ruaf.org/
Maintains a searchable library of research papers

IDRC: Cities Feeding People
Massive site by Canada's International Development Research Centre.

**Support Group on Urban Agriculture (SGUA):**
http://network.idrc.ca/ev.php?URL_ID=7449&URL_DO=DO_TOPIC&URL_SECTION=201
Cities Feeding People hosts the SGUA programme.

Some findings in the past decade:

- More than half the urban farmers are women (80% in Latin America, 60% in East Africa, and 60% in Eastern Europe).
- The best use of urban solid waste and waste water is for food production, monitored by strict public quality control.
- Urban agriculture is compatible with other land uses, such as residences, institutions, transportation, utilities, and commerce.
- Urban agriculture is an activity that contributes to a solid community economic base through micro-enterprise.

**Center for Urban Agriculture/Fairview Gardens**
http://www.fairviewgardens.org/

**UPA Economics**
http://www.newvillage.net/2urbanagnet.html
Jac Smit and Joe Nasr: Community Scale Economics: Six Recipes For Success

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1 "Extropic" refers to a system that generates energy available for work outside the system boundaries. In this context, I refer to the external social benefits of healthy, localised community groupings. More info at: [http://www.extropy.com/faq/index.html#03.01](http://www.extropy.com/faq/index.html#03.01)
2 Hill, Stuart. [http://www.zulenet.com/see/chair.html](http://www.zulenet.com/see/chair.html)
4 Rappaport, Julian. Discusses the form and function of story extensively. He asserts that stories are critical components of cultural behaviour because “…stories mimic the way we actually experience the world—as sequential, woven interrelationships experienced in real time. Stories about our people, our community, and our settings are particularly powerful vehicles to influence our possible selves…” Art of Social Change (1998)
5 For more discussion of policy narratives, see the excellent "Narrative Policy Analysis: Theory and Practice", Emery Roe, 1994, Duke University Press
11 LEED (Leadership in Environmental and Energy Design) is a well-publicised example of a building rating system. [http://www.usgbc.org](http://www.usgbc.org) See also the BASIX system.