In the last 15 years urban agriculture has become a research and policy field in its own right, thanks to an unprecedented growth of interest and action by a widening spectrum of sectors and actors within local, national and international arenas.

Agriculture has been practised in cities for at least 7000 years, and while there has been a resurgence of unregulated urban agriculture since the 1970s, formally recognised urban agriculture has only recently made it to the international agenda. Urban agriculture is now visible in all its diversity, thanks to pioneering initiatives. These have triggered interest and mobilised resources for tackling key management issues in urban agriculture (UA). Local and national governments include urban agriculture in urban development policies in much the same way as they have started to recognise informal housing and employment systems. While the spotlight moment for UA was prepared by the efforts of many organizations over the past 15 years, the switch has been turned on by the rapid succession and compounding of crises in recent years, linked to rising energy costs, food prices, food safety issues, water shortages, and others, which has given urban agriculture renewed impulse. Demography and human resourcefulness are challenging outmoded conventions and norms, forcing technocrats to re-invent the city for all who live in it.

This paper outlines the achievements of the last fifteen years, describing the main international players involved in the process and some of the key issues and new challenges that require attention from policy makers, researchers, development practitioners and funding agencies.

Foundations - up to 1996
The developments in UA before 1996 include at least 30 years of scholarly interest, although the UNCED summit held in Rio in 1992 sparked its growth into a recognised field of activity. Early (mostly social science) surveys in large cities in the South lead to publications by individual academics in the 1970s and 1980s. Research was done by individuals with little institutional support; networking was weak and links with policy were almost non-existent.

The early body of research examines UA from an informal sector perspective, and draws on literature on migration, nutrition, land tenure and livelihoods. When a second oil shock hit developing countries in the early 1980s, researchers turned their attention to the link between rising energy costs and food security (as would happen again between 2008 and 2010), from the perspective of eco-development and self-reliance. Between 1983 and 1987 the United Nations University Food-Energy Nexus programme (26 country/city reports) examined the growing practice of UA around the world. Building on this research, now from a sustainability angle, the UN’s Brundtland Commission on Sustainable Development issued a report in 1987 calling on governments to promote UA to help cities recycle their waste. As local governments took on more responsibilities with fewer resources in a period of economic reform and fiscal austerity, UNCED’s Agenda 21 encouraged local governments to take initiative on urban environment management. UA became
one of the ways in which cities could tap into their own resources to support local development (4). Building on these messages, the UNDP world survey and report on UA by The Urban Agriculture Network (TUAN, 1992-1996) stressed the current and potential contribution of UA to the multiple goals of urban food security, employment and environmental management (5). Surveys by the UNU and IDRC revealed that local governments in many parts of the South were already introducing innovations through municipal regulations. A good example is Dar es Salaam’s Town and Country Planning Ordinance (CAP378) Urban Farming Regulations of 1992, probably still today one of the more explicitly defined bodies of regulations on UA in Sub-Saharan Africa. Despite these studies, bilateral agencies - which control most development assistance funds - were quite slow in putting UA on their own agenda. After its world survey in 1992, UNDP invited IDRC to take the lead on UA, and IDRC stands out as an organisation where UA progressed quickly from a research sub-programme (under its Urban Environment Management Programme from 1993-6) to a full programme (two phases of its Cities Feeding People Programme were carried out from 1996-2005), building on its project experience of the late 1980s. IDRC published research funded in the late 1980s in Africa (6); jointly with UN-Habitat’s Sustainable City Programme (SCP), it funded an UA component of SCP’s Sustainable Dar es Salaam Project on participatory urban environment management. This first experience of research embedded in a policy process on UA was the precursor of a longer period of collaboration between IDRC and the UN Habitat Urban Management Programme (UMP) on policy research for UA which started in 1997. This period also saw the initial inclusion of UA on the agenda of local government international forums, including IULA’s 1993 Congress in Toronto, Global Forum Manchester in 1994 (IIED), and UNDP Colloquiums of Local Government Officials in New York (Declaration on Social Development 1994). During the 1990s the status of local governments in UN summits rose from one of NGOs and observers to that of direct interlocutors as members of country delegations. This shift resulted in the UN system becoming better informed about challenges faced on the ground and innovations being tested by local governments. The 1980s were a period of trying out new things for cities on the social and economic front. And without a doubt local governments became much more open to, and the UN system more supportive of, inclusive policies than previously, when policy-making was more centralised and most UN policies were implemented by central governments. During this period, regional networking on UA started to take place in Latin America and the Caribbean, a more urbanised developing region, leading to the creation of AGUILA in 1995 (7) and the launch of its secretariat by ETC International in La Paz in 1997. So by 1996 some descriptive information on UA had been gathered, and, increasingly, information on its linkages to social, economic and environmental (urban) issues. International actors were becoming informed and increasingly linked with one another in the international support group (SGUA). From 1996 on these actors start to seek conscious collaboration one with another to tackle issues and support strategies that would enhance UA’s contribution to urban development in the South. Recognition, outreach and alliances - 1996-2010 The last fifteen years have seen an unprecedented increase and convergence in competence and capacity building, networking and advocacy for regional and global research and policy initiatives. This process was led by a few international development organisations, which decided on a plan of action at a meeting of the SGUA, convened by IDRC at its headquarters in Ottawa in March 1996 (2). Under the leadership of this group several initiatives would unfold over the period, which in turn would trigger others:

* UA made its way into the programming of bilateral and major UN development agencies, mostly through joint projects (IDRC, DGIS, DFID, SIDA, GTZ, Swiss and French Cooperation, FAO, UN Habitat, WHO, WMO, and more recently also USAID and EU);

* A Support Group on Urban Agriculture (1996-2003) periodically brought together the main partner organisations and helped to coordinate partners’ work on various fronts, from research training to public policy formulation;

* IDRC’s steadfast support to applied research on UA throughout this period (through its Cities Feeding People Programme until 2005 and its Urban Poverty and Environment Programme until 2010);

* With DGIS-IDRC funding mainly, ETC and regional partners built a global network (the RUAF Foundation), which drew on IDRC’s portfolio and progressed, over a decade, from an information hub to a capacity-

Undoubtedly, applications of UA for productive greening of public spaces, reducing dependence on remote food sources, mitigating food staple price rises, and engaging people in healthy recreational activity, have been receiving support from growing segments of urban populations in high-income and increasingly in middle and low-income countries (linked to our need to assess public appreciation of UA).

Achievements

The initiatives mentioned above have together resulted in the following:

Marked growth in research capacity and leadership; beyond research by individual academics in universities with social science expertise, more research on urban agriculture is now being led by multi-disciplinary groups in academia and UA programmes are underway in international research organisations and in bilateral and multilateral development agencies. In academia, those
who graduated in the early 2000s are now supervising a new generation of researchers. A broader range of disciplinary fields are active in UA (including urban planning, landscape architecture and engineering) and there is a larger and better set of tools available for collecting data and informing policy scenarios for scaling-up. Dedicated reference centers now exist in all major world regions; Northern universities are creating centres and research stations, offering certificate programmes, (distance education) courses, and a few (urban) producers’ field schools are operational. Special issues of journals are being produced in a wide range of areas, and there has been exponential growth in the number of entries on UA over the last decade (a Scirus search done in July 2011 for the term “urban agriculture” yielded over 60,000 journal sources).

Marked shift in approach to policy research: from single to multi-city projects and programmes (SSA, LAC), from academic to multi-sector and multi-stakeholder research teams and ‘city teams’, from informative research to policy-responsive research.

Marked rise of government engagement: from laissez-faire to pro-active policy making (city selection, city consultations, priority scoping, networking, pilot projects, official declarations, policy guidelines by UN Habitat, WHO). On the policy front, positions for UA experts are opening up in public administrations; UA is being embedded into a broad range of policies and programmes (community agriculture, youth training, food security, civil rights, waste management, climate change adaptation, etc.); there are more diverse funding sources for UA research (private foundations, municipal and national ministries); and UA has become a regular item on the agenda of UN summits (Istanbul +5 in 2001, Global Urban Forum 2002, 2004, 2008, 2010).

More problem-solving research and policy: although research on specific economic impact is still highly relevant, there is a shift from proving benefits only to tackling risks and constraints. These include access to resources, health issues, financing, urban design, regulatory frameworks, producer organisations, business development and partnerships.

More inclusive strategy for sustainability: the focus has shifted from pro-poor/agriculture objectives to explicit multiple urban objectives; from opportunistic accommodation to planned integration; from rigid (prohibiting) to flexible management approaches (regulation, adaptation, staggered abidance); from ignoring to dialoguing with organised producers, and supporting their capacity to do so.

Mainstreaming is still underway: UA is becoming a valid currency in academia, civil society and government.

The way forward
Dismissed by many a generation ago as an oxymoron, and an acute case of arrested development destined for extinction, urban agriculture has resisted rejection, expanded and evolved, resurging even where it has been more suppressed. Promoted often (and wrongly) as legitimate in its own right, agriculture in the city is coming into the spotlight, as it learns to negotiate its legitimacy within the city, and its role in the development of climate-smart and resilient cities. In order to become and remain meaningfully urban, instead of being a burden on cities, urban agriculture must enable a city and its surroundings to better cope with its own needs. Here we list some of the challenges and opportunities facing UA research and policy, and which will require more systematic attention by the many actors mentioned above.

• UA and Urban Food Supply Systems: “David and Goliath”. Beyond self-provisioning, how can market UA expand its niche in an urban food-retail system (fresh, chilled, frozen, dehydrated, canned) that is increasingly dominated by corporations in the major Southern cities?
• **UA and Household Food Supply**: many roads lead to Rome. Surveys typically estimate UA’s contribution to urban households’ food supply based on households’ own food production. But food grown in the city can also be acquired by households through gifts, barter, or purchase of fresh or processed food from others. How can we more fully account for these supply channels when estimating a household’s reliance on food grown in the city?

• **UA and Urban Ecosystems**: scaling up the loops. The share of resources going to waste is typically much more than UA has been able to absorb, and more so in some sectors of a city than in others. If UA’s ability to help the city close its resource loops depends on proximity of waste provider and user, then how can UA help the city close its resource and energy loops on a larger scale?

• **UA and Urban Design**: buildings that grow. Going beyond horizontal, ground-level landscaping with UA, prototypes of vertical farms are being developed. How can we viably embed UA systems (livestock included) into new buildings and other urban structures, but even more so into the existing building stock? What are UA planting solutions that will make our cities more climate-smart? And what about opportunities and constraints?

• **UA and Urban Planning and Management**: interconnecting the grid. UA faces many constraints and risks because it has had to improvise its insertion into the urban fabric rather than fit in by design. Design must adapt to city growth and so must UA. How do we make these urban material flows, which UA should tap into, shorter, cheaper and safer, among UA uses themselves and between these and other urban land uses with which UA interacts?

• **UA and Local Policy**: the many neighbours one should satisfy. Self-provisioning, market and multifunctional agriculture are often seen as different goal-specific types of UA. But can self-provisioning and market UA really be sustained in cities without themselves having to turn increasingly multifunctional, or without having to also create some public good for the city? Is food sovereignty, security or safety alone a sufficient (or even a necessary) leading argument for a city to incorporate agriculture within its boundaries?

• **UA and Politics**: from field to city hall. More urban producers are organised than was originally thought, and some are better organised than others. But what are the political/economic conditions under which these organisations actually operate, and how effectively do they do so? Who are their supporters, allies, partners, both at city and national level? Who are not? How well do these organisations accommodate others’ priorities?

• **UA and Economic Value**: no more short-changing UA. Economic benefits of UA are manifold: (a) Direct and indirect jobs and income (see 17) - Since UA value chains start with raw material, they can become quite extensive and elaborate in any city. Improvements along the way can increase significantly the market value of products and related services, so how can we better estimate UA value chains’ contribution to the urban economy? (b) Cost avoidance - UA can contribute to a city’s economy (public and private) not only by generating revenues but also by preventing costs of all sorts, by using people, land and resources productively. How can we calculate such net savings? (c) Valuing public appreciation - Willingness to Pay (WTP) and Willingness to Accept (WTA) methods enable us to monetise the overall value that people attach to owning or having access to a specific good or service. These methods have only been applied to a very limited extent so far to UA. How can we estimate the value that people attach (or not) to particular UA land uses, and in particular to UA functions?

• **Mainstreaming Under Way**: trickling deep down and local. The era of large grants to few organisations for
policy/research innovation seems to have peaked, at least for a while. The field is more crowded today and mainstreaming is evident in many activities that have UA components. New funders are entering the stage at national and local levels. As activity centres become fragmented, will networks become decentralised from regional down to national and local levels and, if so, what role should a global network such as RUAF play?

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Notes
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1) The perspective is subjective, thus incomplete, as every major agency involved in the process over the period could tell its own story on why and how it came to engage in UA. This article hopefully will be enriched by testimonials from other sources and perspectives in the future.
2) Participants included: UNDP, WB, FAO, Netherlands Ministry of Foreign Affairs, GTZ, IDRC, ETC International/India, World Sustainable Agriculture Association, International Food Policy and Research Institute, Natural Resources Institute, TUAN, University of Ghana, Canadian Bureau for International Education, Developing Countries Farm Radio Network, CARE Canada, City Farmer, York University, Royal Ontario Museum, Toronto Food Policy Council and York University (Toronto).
3) This prize was won again in 2008 by Dakar’s micro-gardens project [Senegal], developed through a partnership with the City of Milan, Italy, and with FAO field assistance. See Thomas Forster (2011) ‘Food, agriculture and cities’, FAO Food for the Cities – Multi-disciplinary Initiative, draft 2 August.

References