

Chapter 1

The Institutional and Regional Context

Gordon Prain

How abundant is Africa's urban harvest, how much does it help feed and support the 250 million people now living in the continent's towns and cities? And how could it do this better? Crop cultivation and livestock raising have long histories in urban Africa, as in other urban areas of the world (Mumford 1961; Southall 1998), but broad awareness among researchers and policy makers of either the history or the contemporary facts of life in African urban development is much more recent. This book, which is a continuation of a research agenda on African urban agriculture begun more than 20 years ago, seeks to answer the two questions above with evidence and practical proposals for technical interventions and policy support.

The need to emphasize both technology and policy support for urban agriculture is a consequence of two other histories, of agricultural research on the one hand, and of urban institutions and policy in Africa on the other. With limited exceptions, urban agriculture has until recently been marginalized, ignored or proscribed in these histories. Before moving to a discussion of the urban agriculture research agenda in Africa and the contribution of this volume, it is important to at least touch on those two histories to help understand why the agenda has taken the form that it has.

Agricultural Research and Rural Bias

The Consultative Group on International Agricultural Research (CGIAR) is a global network of governments, multilateral organizations and private foundations that works to promote food security, poverty eradication and the sustainable management of natural resources in the developing world. Its research program is carried out through 15 commodity-based or natural resource-focused international agricultural research centres located mostly in developing countries. The earliest centres, conducting research on rice and wheat, and then the CGIAR itself, were established in the late 1960s and early 1970s, explicitly to bring agricultural science to bear on

G. Prain (✉)

Urban Harvest, International Potato Center (CIP), Lima, Peru

e-mail: g.prain@cgiar.org

the severe food crises and famines that were afflicting many rural areas of the global South at that time. Initially through productivity improvement in rice, wheat and later maize, three crops which then as now provided staple food to well over half the world's population (Plucknett & Smith 1982), the network sought to help small rural farmers feed themselves better through a science-based "Green Revolution". Through changing the input response and harvest index of the major food crops, the revolution succeeded, but perhaps in ways that were not fully intended. The successes were most significant in the high-potential production areas such as the Indo-Gangetic plain, the irrigated lowland valleys and plains of Southeast and East Asia and the maize-producing valleys of central Mexico.

These systems were the proverbial bread baskets of some of the most densely populated areas of the developing world where food shortages and famines had been severe (Sen 1981).¹ Major beneficiaries of productivity increases were thus the urban consumers, who had easier access to cheaper staple foods, and their governments, for whom food shortages and high prices represented a political challenge, especially from the more powerful urban constituency. This phenomenon became known as "urban bias" in national food policies and was used to explain "why poor people stay poor" (Lipton 1977; Bates 1981). The poor in this analysis were those in rural areas farming beyond the high-potential production areas. They benefited much less from the Green Revolution and were penalized by national food policies. This analysis became an "intellectual cornerstone" of international efforts to stimulate development in Africa and continued to shape the ideas of economic planners and policy-makers into the 1990s (Maxwell 1998). In a way, much of the subsequent history of international and national agricultural research can be seen as an attempt to rectify perceived urban bias, especially in low potential, stressed agricultural systems in Africa.

The polarization of rural and urban has even come to characterise the broader investment by public sector agencies in technology generation, perhaps to the detriment of rural areas as well as urban. Whereas agricultural technology development has been almost exclusively oriented toward addressing rural needs, research on manufacturing processes, product transformation, infrastructure and sanitation have been typically focused mainly on urban needs. The World Bank, up to quite recently, organized its major development initiatives and investments around these two poles: a Vice-Presidency for Environmentally and Socially Sustainable Development (ESSD), which included agriculture and rural development and a Vice-Presidency for Infrastructure, which included Urban Development. The World Bank is one of three principal sponsors of the CGIAR and its Chairperson has always been the Vice-President of ESSD.

Whilst agricultural research and other international development efforts seem to have been hardening the boundaries between rural and urban "sectors", those boundaries have been gradually eroded on the ground by the changing circumstances facing poor populations in the developing world. In Africa, demographic

¹Sen's analysis is concerned with the failure of food entitlements among specific sectors of the developing world as an explanation for famine, rather than simply with food supply or availability

change has been historically unprecedented, with an urban growth rate averaging 5 percent over the past two decades (Kessides 2006). Currently, Africa is on average one-third urbanized, but the biggest urban growth is still to come. It is projected that 367 million people will be added to the urban population between 2000 and 2030, more than twice the level of projected rural growth, leading to a majority of the population classified as urban in about 20 years.

It is often assumed that one way rural-to-urban migration is the major cause of urban growth, but in fact two other factors are as or more important: natural increase of the urban population and the reclassification of rural areas as cities and towns expand and engulf their hinterlands. Migration itself is a complex process in Africa, more commonly seasonal and cyclical than one-way (Ellis & Harris 2004). As is discussed in detail in this book, for very many households in Africa, rural–urban boundaries are quite artificial and household members move regularly between the two, creating multi-locational households in the process (Chapter 2). In fact, there is a multitude of rural–urban linkages involving not only labour, but agricultural inputs, marketing chains, micronutrients, social ties and political obligations which have been increasingly analyzed and documented (cf. Tacoli 1998; Satterthwaite & Tacoli 2002). These are also described in the different chapters of this book.

The movements of people between town and countryside reflect poverty-driven livelihood strategies and there is indeed clear evidence of urban poverty increasing as towns and cities grow, the so-called urbanization of poverty (Haddad et al. 1999). This relationship is complex though, and estimates of urban poverty are probably underestimated because of the higher costs of non-food items and services (Amis 2002). As is to be expected, rural poverty rates continue to exceed urban rates on all measures in Africa. However, reviewing data from 19 African countries, Kessides notes that what is surprising is not that rural rates are higher, but how close urban poverty is to rural poverty in many cases. This despite the presence of factors in urban areas which should lower poverty levels (Kessides 2006, p. 17). With urban populations spending as much as 80 percent of their household budgets on food (Maxwell 1998), poverty inevitably challenges their food security and leaves limited funds for other necessities such as housing, healthcare and schooling. These are important drivers underlying cultivation of crops and livestock raising, which contribute additional food for household consumption as well as releasing cash that would otherwise be used for food for other purchases needed in the household economy.

Although the International Development Research Center (IDRC) had been a solid supporter of research and development on urban agriculture since the 1980s (see below), the United Nations Development Program was one of the first multilateral agencies to recognize the trends described above, commissioning an authoritative study on the current status of urban agriculture in the 1990s (UNDP 1996). This publication pulled together available information on the role of urban agriculture and generated new estimates of the numbers of people involved in agricultural production and marketing in specific cities and the quantities of foodstuffs consumed in cities that came from urban and peri-urban production. Several of these estimates are cited in Chapter 2. The study concluded that as many as 800 million people worldwide were involved in urban agriculture-related activities.

This publication and international agreements of the United Nations – the Habitat Agenda of 1996 and the Earth Summit Agenda 21 of 1992 (UN-Habitat 2001; UNEP 2002) – also called for agricultural research for the development of technology tailored to the specific needs of urban agriculture. Urban agriculture is not simply rural agriculture done in cities. Different constraints and opportunities that are absent or of limited significance in rural contexts affect urban agriculture. Some examples include: the need to make use of micro-spaces; poor soil quality or lack of soil; opportunities to use vertical space; abundant availability of recyclable nutrients for soils and animals; availability of waste water; need for bio-management of insect and disease pests; need to manage high risk urban contaminants, etc. Some pioneer research on some of these issues has been conducted in Cuba for the widespread urban agriculture present there and results have been widely applied (Altieri et al. 1997; Cruz & Sánchez Medina 2003).

When the CGIAR underwent its Third System Review 2 years after the UNDP publication, with the external evaluation examining past performance, current priorities and issues in need of attention, one of the UNDP authors, Jac Smit, was involved in the wide consultation process with CGIAR partners and critics. As a result, the panel's final report noted the almost complete absence of attention in the CGIAR research program to agricultural production systems in urban and peri-urban areas, and the review recommended the launch of a program to coordinate the contribution of the different centres to agricultural production and marketing in these environments. The CGIAR responded by calling for proposals for a cross-cutting research initiative on this theme the following year, eventually accepting a proposal by the International Potato Center for a Strategic Initiative on Urban and Peri-urban Agriculture (SIUPA), later renamed Urban Harvest.

The outputs and outcomes that have been produced by Urban Harvest and its partners working in Sub-Saharan Africa are reported in this book. However, as of 2009, the commitment of the CGIAR to conducting research for development on agricultural systems in and around cities was in doubt. A more recent restructuring gave no indication of continuing to address this type of agriculture but, on the contrary, renewed the commitment to commodity research on major staple crops, reminiscent of the earlier Green Revolution perspective.

The Treatment of Agriculture in African Urban Institutions and Policy

It is probable that the absence of attention to urban and peri-urban agriculture in international and in national agricultural research² has also been influenced by a

²Although not discussed here, attention to urban agriculture has also been absent from most national or regional agricultural research organizations and networks in Africa. One notable exception is CORAF/WECARD (West and Central African Council for Agricultural Research and Development), a network of national agricultural research institutes which identifies one of its

broader set of notions about the meaning of rural and urban. These notions – which evolved in the social and cultural history of Northern Europe and its former colonies over several centuries – have left their mark on how urban agriculture is handled by institutions and policy in Africa.

“The City in History” (Mumford 1961) has been described as the integrated development of cities and agriculture on a global scale. Cities had not only to manage links with the rural hinterland to ensure adequate supplies of food for non-agricultural city folk, but support and manage the agriculture going on within and around the city that assured its survival (Steel 2008). Bopda and Awono’s study of Yaoundé in this volume describes how African cities are strongly influenced by the agricultural background of their populations, by the way agricultural products and people flow back and forth between centre and hinterland on a daily basis and by the way most cities grew up from small semi-rural settlements in an unplanned way, with agriculture continuing to be practiced on available public lands.

The history of many cities in Africa has also been strongly influenced by European settlement and colonial government (Lee-Smith & Lamba 2000). This dynamic was studied empirically in relation to food in the 1980s (Guyer 1987). Yaoundé began as a German military garrison and trading station, self-sufficient in food thanks to local production. But in common with Kenyan and other colonial authorities, both policy and repression were used in an effort to chase agriculture out of cities. This was at least partly to replicate the vision of urban society emerging from northern Europe’s industrial revolution, that is, cities moving away from agrarian society toward industrialization and the wealth created through capital investment. Rapid urban growth in Europe occurred around manufacturing and service industries. It consisted of dense, low-cost housing for the industrial workforce – the future inner city slums – together with elite suburban settlements occupied by the “captains of industry” and the professional classes (Fishman 1987). Yet in terms of food, this division was as much ideological as real. Because transport systems failed to keep pace with urban growth, food supply to cities remained a problem. In England and other European countries, municipal authorities were obliged to “allot” small plots to workers’ families for food production (Burchardt 1997). Reduced in size or changing location, these allotment gardens have never left European cities.

Driven by the search for sources of raw materials as well as for new consumer markets, European economies exported the divide between “rural” and “urban” to their colonies, with efforts made to keep “rural” local populations out of towns except for the provision of services to the colonists (Tibaijuka 2004). Yet the legislation enacted during the colonial period and after independence is by no means clear-cut. Dick Foeken has pointed out several contradictions in the legislative situation in East Africa, sometimes supporting food production for obvious practical reasons, but always allowing for its control or elimination, most often on

outputs as strengthening peri-urban systems. In another indication of a changing perspective, the Forum for Agricultural Research in Africa (FARA) co-hosted a side event on urban horticulture during its 2008 annual meeting.

health grounds, leading to many internal contradictions among different legislations (Foeken 2005, p. 6). And as David and colleagues report in Chapter 6, urban agriculture in Kampala was more tolerated there because it was an institution – like ‘mailo’ land tenure – that partly survived because of its association with the royal house of Buganda, enlisted in the ‘indirect’ system of colonial rule. Yet in Uganda as in Kenya and Cameroon, the confused statutes or regulations resulted in a marginal form of urban agriculture, sometimes tolerated by city authorities, but practiced with insecurity and uncertainty by producers, who faced the regular possibility of harassment and intimidation. As the authors of the Yaoundé study put it: “urban agriculture has been playing hide-and-seek with urban management for a century”.

Official attitudes to urban agriculture in the region seemed to change during the world economic crisis in the 1980s and early 1990s. The implementation of the IMF’s structural adjustment programs following the crisis led to reduced subsidies, decreased investments in infrastructure, lower farm incomes and increased urban unemployment among public sector employees. Agriculture became a recognized survival strategy for many families, including government employees, some now out of work (Maxwell 1994; Bopda & Awono, this volume). Both Maxwell and later Page (2001) have noted that during this period, with households facing individual crises, the practice of urban agriculture in effect substituted many of the state’s social security functions and to some extent blunted political opposition to many of the economic “adjustments”. Chapters 2 and 15 discuss the extent to which stakeholder dialogue and platform-building overcomes this lack of participation in the political process through empowerment of producers and involvement in policy development and change.

An Urban Agriculture Research Agenda for Africa

The research for development agenda on urban agriculture to which this book contributes began in the 1980s, coinciding with the earliest responses to structural adjustment among local urban populations (Maxwell 1998). The collection of summary papers brought together under the title “Cities Feeding People” (Egziabher et al. 1994) – mostly based on research supported by the International Development Research Centre (IDRC) – represented a large part of what was known about the practice in Sub-Saharan Africa at that time. The aim of that early work was to understand the extent and type of agricultural practices in cities, the relative involvement of women and men and the degree to which production was for subsistence or commercially motivated.

That volume worked with a straightforward definition of urban agriculture as “not merely the growing of food crops and fruit trees but ...also...the raising of animals”, while acknowledging the difficulty of defining the terms “urban” and “peri-urban” (Tinker 1994). Plenty of ink has been spilt since on the issue of defining urban agriculture. A more elaborate definition was provided by (Luc Mougeot 2000, p. 10):

Urban agriculture is an industry located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grows or raises, processes and distributes a diversity of food and non-food products, (re-) using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area.

Industry is here understood in a sectoral sense involving the totality of production, processing and use. It includes the idea of production units consuming their production as well as products being sold in the market. In other words, it does not prejudge commercial versus subsistence as aims of urban agriculture. A second important point is the idea of an integration of urban agriculture activities with the human and material resources of the urban area through recycling of inputs and outputs. The spatial dimension of urban agriculture is the third key point. It is located along a continuum from the peri-urban fringe or interface, where it blends into rural type agriculture in some locations but is significantly affected by urban processes and actions in others (brick-making, leisure centres, dormitory towns, etc).

Many of the early studies were particularly concerned with the contribution of local food production to urban food security. At the time, “feeding the cities” was a major policy concern, albeit from a food supply perspective and particularly looking at rural–urban food flows rather than local production, which in the 1980s was “an absolute anathema to local planners” (Maxwell 1998, p. 15). These early studies disturbed the simplistic picture of a rural–urban divide.

The policy and institutional dimension of urban agriculture was one of two subsequent themes prioritized within this research agenda during the latter part of the 1990s and the advances and continuing challenges were summarized in a conference in Havana in 1999 with the title, “Growing cities, growing food: getting urban agriculture on the policy agenda” (Bakker et al. 2000). Throughout the past decade there has continued to be considerable focus on opening institutional space for agriculture in urban administrations, making broad policy declarations, reviewing and revising legislation at local and national level, and understanding the kinds of governance mechanisms which can achieve and support these changes.

The second theme was health. One of the grounds for local government proscription or repression of urban agriculture had always been the health risks it posed to urban populations through being an enabling environment for disease (moisture, dirt, animals) or a direct pathway through plants taking up pathogens or poisons (Birley & Lock 1999; Lock & de Zeeuw 2003). Yet conversely, one of the major potential contributions of urban agriculture was food and nutrition security and for both of these potential outcomes, evidence was needed. The companion volume to this book (Cole et al. 2008) describes the recent history of this research (see Chapter 9). It is worth pointing out that during the 1990s food security and especially nutrition has fallen off urban planning and development priorities, with almost all the substantial work having been done by nutritionists and other researchers outside of urban management or planning (Maxwell 1998).

Perhaps partly because of this body of work conducted during the 1990s, including the conclusion that urban food security could become the “greatest humanitarian challenge of the next century” (Atkinson 1995, p. 152), urban food and nutrition

security did appear to return to the priorities of policy makers in Africa during the first years of the 21st century. At the level of international policy-making, food security and urban agriculture were highlighted in the Habitat Agenda emerging from the UN HABITAT II meeting in Istanbul 1996, but failed to make it into UN-Habitat's program at that time. A session on food security was however part of the World Urban Forum in Nairobi in April 2002, and a month later a workshop on "Urban Policy Implications of Enhancing Food Security in African Cities" was also convened in Nairobi and attended by mayors and city officials from all over the continent. It reviewed the role of urban and peri-urban agriculture (UPA) and rural-to-urban food flows in confronting urban food insecurity and how to strengthen these through policy.

At these and other meetings on the same issue which took place in Africa at that time (see Chapter 14 below), declarations were made and many officials returned to their cities with a changed view of urban agriculture, determined to strengthen local food production as a strategy for urban poverty alleviation (FAO 2002). Yet the circumstances of agriculture in African cities in 2002 were not well known. The pioneering studies carried out in the 1980s had provided vital new information from major African cities, but important knowledge gaps remained, along with the possibility that significant changes might have occurred in the following decades. As the CGIAR Strategic Initiative on Urban and Peri-urban Agriculture (SIUPA, later Urban Harvest) was established in 2000, it was seen as important that such forums fed into and were linked to the setting of the research agenda. The numerous initiatives by IDRC and the partners it supported (see Chapter 14) also fed into the setting of the research agenda. Especially important was an emerging integrated vision of urban agriculture as technical practices offering economic benefits and entailing potential health impacts – both positive and negative – in an institutional and policy context that could make or break it.

As it set out to harness the technical skills and capacities of the international agricultural research centres for improving urban and peri-urban agriculture, Urban Harvest set its African research agenda through an analysis of the research gaps and needs during a multi-stakeholder planning meeting in Nairobi in 2000 (Chapters 2 and 14). Representatives of six African cities, as well as international and national researchers and urban development specialists, attended that meeting and three countries – Cameroon, Uganda and Kenya – answered the call for proposals that followed. This book describes that process, containing the results of the research that was undertaken and the story of the interventions that were made in urban governance.

The book is divided into five sections, the first setting the context and summarizing the research findings, then a section on the research from each country, Cameroon, Uganda and Kenya, followed by the final section addressing the way forward in the light of potential institutional change. Following this introduction on the institutional and regional context, Chapter 2 provides an analysis of the results from all the research activities in a common framework. This is essentially the framework provided by the three major research themes established through the stakeholder meeting in 2000:

- Urban agriculture, livelihoods, and markets;
- Urban ecosystem health; and
- Policy and institutional dialogue and change.

Chapters 3, 4, and 5 contain the results of the research undertaken in Cameroon and led by scientists from the International Institute for Tropical Agriculture (IITA). The data are from Yaoundé, but a national perspective informs the institutional study in Chapter 5. Chapters 6, 7, 8, and 9 report the results of the collaborative research for development that was undertaken in Uganda. The results in Chapters 6, 7, and 8 are all from work carried out in Kampala led by scientists from the International Centre for Tropical Agriculture (CIAT), while Chapter 9 summarizes a major study – also carried out in Kampala – on health and urban agriculture. While initiated by Urban Harvest and the University of Toronto, this health study generated a research-to-development institution whose history is also analysed in the book’s conclusions. The section on Kenya (Chapters 10, 11, 12, and 13) presents data from three cities, Nairobi, Nakuru and Kisumu, supported by the Urban Harvest Programme. The Nairobi study in Chapter 10 was led by the International Livestock Research Institute (ILRI), while Chapters 11 and 12 represent follow-up research in Nakuru. Chapter 13 describes a study supported by Urban Harvest as a result of its Anglophone Africa Training Course on Urban Agriculture held in 2004, and led by the World Agroforestry Centre (ICRAF), which was also involved in the Nairobi study described in Chapter 10.

In the concluding section, Chapter 14 begins by returning to the international institutional context of urban agriculture. It looks back in some detail at the urban agriculture research agenda as implemented in the Sub-Saharan African region over the past 6 years or so by IDRC, Urban Harvest, the Resource Centre for Urban Agriculture and Food Security (RUAF) and other partners. Finally, Chapter 15 provides an in-depth analysis of the kinds of policy and institutional change related to urban agriculture that have been achieved in the three countries through the partnership platforms and stakeholder dialogue established in the different cities.

References

- Altieri, M, Rosset, P & Nicholls, C 1997, ‘Biological control and agriculture modernization: towards resolution of some contradictions’, *Agriculture and Human Values*, vol. 14, pp. 303–310.
- Amis, P 2002, ‘Thinking about chronic urban poverty’, *Chronic Poverty Research Centre (CPRC) Working Paper no. 12*, World Bank, Washington, DC.
- Atkinson, S 1995, ‘Approaches and actors in urban food security in developing countries’, *Habitat International*, vol. 19, no. 2, pp. 151–163.
- Bakker, N, Dubbeling, M, Gundel, S, Sabel-Koschela, U & de Zeeuw, H (eds) 2000, *Growing cities, growing food: urban agriculture on the policy agenda. A reader on urban agriculture*, Deutsche Stiftung für internationale Entwicklung (DSE), Germany.
- Bates, R 1981, *Markets and states in tropical Africa*, University of California Press, Berkeley, CA, USA.

- Birley, M & Lock, K 1999, *The health impacts of peri-urban natural resource development*, Liverpool School of Tropical Medicine, Liverpool.
- Burchardt, J 1997 'Rural social relations, 1830–50: opposition to allotments for labourers', *Journal of Agricultural and Rural History*, vol. 45(part II), pp. 165–175.
- Cole, DC, Lee-Smith, D & Nasinyama, GW (eds) 2008, *Healthy city harvests: Generating evidence to guide policy on urban agriculture*, CIP/Urban Harvest and Makerere University Press, Lima, Peru.
- Cruz, M & Sánchez Medina, R 2003, *Agriculture in the city. A key to sustainability in Havana, Cuba*, Ian Randell, IDRC, Kingston, Jamaica.
- Egziabher, AG, Lee-Smith, D, Maxwell, DG, Memon, PA, Mougeot, LJA & Sawio, CJ 1994, *Cities feeding people: an examination of urban agriculture in East Africa*, IDRC, Ottawa, ON.
- Ellis, F & Harris, N 2004, 'New thinking about rural and urban development', *Keynote paper for department of international development sustainable development retreat*, London.
- Fishman, R 1987, *Bourgeois utopias: the rise and fall of suburbia*, Basic, New York, NY.
- Foeken, D 2005, Urban agriculture in East Africa as a tool for poverty reduction: a legal and policy dilemma? *ASC Working Paper 65/2005*, African Studies Centre, Leiden, Netherlands.
- Food and Agriculture Organization (FAO) 2002, *Declaration: feeding cities in the Horn of Africa*, FAO Newsroom, www.fao.org/english/newsroom/news/2002/4820-en.html [Accessed 9 May 2009].
- Guyer, J (ed) 1987, *Feeding African cities: studies in regional history*, Manchester University Press, Manchester.
- Haddad, L, Ruel, M & Garrett, J 1999, 'Are urban poverty and undernutrition growing? Some newly assembled evidence', *World Development*, vol. 27, no. 11, pp. 1891–1904.
- Kessides, C 2006, *The urban transition in Sub-Saharan Africa. Implications for economic growth and poverty reduction*, Cities Alliance, SIDA, World Bank, Washington, DC.
- Lee-Smith, D & Lamba, D 2000 'Social transformation in a post colonial city: the case of Nairobi', with Lamba, D in Polese, M & Stren, R (eds) *The social sustainability of cities: diversity and the management of social change*, University of Toronto Press, Toronto, ON.
- Lipton, M 1977, *Why poor people stay poor*, Harvard University Press, Cambridge, MA.
- Lock, K & De Zeeuw, H 2003, 'Health and environment risks associated with urban agriculture' in *Annotated Bibliography on Urban Agriculture*, SIDA & ETC-RUAF, CD-ROM, RUAF, Leusden.
- Maxwell, D 1998, *The political economy of urban food security in Sub-Saharan Africa*, FCND Discussion Paper No. 41, International Food Policy Research Institute, Washington, DC.
- Maxwell, DG 1994 'The household logic of urban farming in Kampala', in Egziabher, AG, Lee-Smith, D, Maxwell, DG, Memon, PA, Mougeot, LJA & Sawio, CJ (eds) *Cities feeding people: an examination of urban agriculture in East Africa*, IDRC, Ottawa, ON, pp. 45–62.
- Mougeot, LJA 2000, 'Achieving urban food and nutrition security in the developing world: the hidden significance of urban agriculture', *A 2020 Vision for Food, Agriculture, and the Environment, Focus 3, Brief 6 of 10*, International Food Policy Research Institute (IFPRI), Washington, DC.
- Mumford, L 1961, *The city in history: its origins, its transformation and its prospects*, Harcourt, Brace and World, New York, NY.
- Page, B 2001, 'Urban agriculture in Cameroon: an anti-politics machine in the making?' *Geoforum*, vol. 33, pp. 41–54.
- Plucknett, DL & Smith, NJH 1982, 'Agricultural research and Third World food production', *Science*, vol. 217, pp. 215–220.
- Satterthwaite, D & Tacoli, C 2002, 'Seeking an understanding of poverty that recognizes rural-urban differences and rural-urban linkages', in Rakodi, C & Lloyd-Jones, T (eds) *Urban Livelihoods: a people-centred approach to reducing poverty*, Earthscan, London, pp. 52–70.
- Sen, A 1981, *Poverty and famines: an essay on entitlement and deprivation*, Oxford University Press, UK.
- Southall, A 1998, *The City in time and space*, Cambridge University Press, Cambridge.
- Steel, C 2008, *Hungry city: how food shapes our lives*, Chatto and Windus, London.

- Tacoli, C 1998, 'Rural-urban interactions: a guide to the literature', *Environment and Urbanization*, vol. 10, no. 1, pp. 147–166.
- Tibaijuka, AK, 2004, *Africa on the move: an urban crisis in the making*, a submission to the Commission for Africa, Commission for Africa, Nairobi.
- Tinker, I 1994, 'Urban agriculture is already feeding cities', in Egziabher, AG, Lee-Smith, D, Maxwell, DG, Memon, PA, Mougeot, LJA & Sawio, CJ (eds), *Cities feeding people: an examination of urban agriculture in East Africa*, IDRC, Ottawa, ON.
- UNDP 1996, 'Urban agriculture: food, jobs and sustainable cities', *United Nations Development Program, Publication Series for Habitat II, volume 1*, UNDP, New York, NY.
- UNEP (United Nations Environment Programme) 2002 *Agenda 21: global programme of action on sustainable development*, <http://www.un.org/esa/dsd/agenda21/>.
- UN-Habitat 2001, *The Istanbul declaration and the Habitat Agenda*, HS/441/97/E, Nairobi. http://www.unhabitat.org/downloads/docs/2072_61331_ist-dec.pdf.