DESIGNING FOR URBAN AGRICULTURE IN AN AFRICAN CITY: KAMPALA, UGANDA

Jeanne M. Wolfe & Sarah McCans

Abstract

This paper reports on a pilot project to develop a 32-acre site made available by the City of Kampala for housing with the express purpose of promoting urban agriculture. Started in 2004 under the leadership of a city agronomist, with the aid of research teams from McGill University, Montreal, Makerere University, Kampala, and financial support from IDRC, the project is still ongoing. The process is one of participatory planning with the future residents, a group of mixed ethnicity and religions from all parts of the city, and includes training in house construction and agricultural techniques. Project implementation has been slower than anticipated due to unforeseen hazards such as mislaid title deeds, unavailability of government resources, communication shut-downs, the time required to transact business, acquire permissions, permits and the like, and most recently by the threat of a major power line from the Bujagali Falls to serve Kampala being thrust through the site. We nevertheless remain optimistic of ultimate success.

Keywords: *Urban Agriculture, Kampala, Community Design.*

Participatory design process

INTRODUCTION

The importance of Urban Agriculture to the survival and well being of residents of sub-Saharan African cities is becoming better known, as has been shown in studies of cities including Nairobi, Kano, Lagos, Kumasi and Accra (Egziabher et al., 1994, Binns et al., 2003, Castillo, 2003, Redwood 2009). Urban agriculture is considered a paradoxical concept for many planners, and has rarely been actively promoted: in fact it has often been banned. It is seen as a waste of valuable urban space, often a threat to public health, especially when animals and poultry are raised, a major consumer of water, and a producer of undesirable residues and accompanying nuisances, including odours, microorganisms, insects and vermin. However at the same time, as is now better recognized, it is a household coping strategy to combat hunger and poverty. It has been widely practiced in African cities since their beginnings, producing high returns in small spaces, and includes not only cultivation, but also tree crops, medicinal and aromatic plants, livestock, poultry and aquaculture (Boischio et al., 2006) . Its benefits are not limited to contributing to household food needs, but may also provide surplus for sale or exchange. Kampala has recently acknowledged these attributes, and revised the city regulations to permit and to promote agricultural activity[1] (Kampala, 2001, KUFSALACC, 2005).

Such a change in policy also leads to a questioning of both residential urban design and the urban form of spontaneous settlements, which often have a surprising degree of spatial and social organization. Most urban agriculture today occurs not only around houses, and on stairways, ledges and verandas, but also along road, rail and canal verges, on abandoned industrial lots and any scraps of unused or unclaimed land around public utilities or other installations. Sites are often physically unsuitable, polluted, vulnerable to theft and vandalism, without a secure water supply, and perhaps far from home. The research question was thus posed: is it possible to design residential areas to improve and advance urban farming activity? What would an ideal urban subdivision designed to maximize household agricultural productivity look like? What guiding principles can be evoked to maximize cultivable space, accommodate livestock, practice water conservation methods, ensure sanitary composting and generally to promote land productivity at the least possible cost to both the state and to the householder. Urban agriculture has become recognized as a poverty fighting tool, and a building block for resilient cities, but to date has received little or no design attention.

The purpose of this paper is to analyze an experiment in the design and realization of an urban agricultural neighbourhood in Kampala, Uganda, where the City Council made a 32 acre vacant site available for this purpose in 2004. It was agreed from the beginning of the project that the design process would be participatory, which meant that future residents had to be identified early in the process. Secondly, the preliminary design work was to be undertaken cooperatively as a joint learning process between architects and planners from McGill University, Montreal, and Makerere University, Kampala, a venture that engaged both faculty and students in knowledge sharing. This account illustrates not only the design process, but also the administrative aspects, and the unforeseen bottlenecks in implementation.

BACKGROUND

In October 2004, following an open competition process, Kampala[2] was chosen as one of three cities to benefit from an IDRC (International Development Research Centre, Canada) program initiative, the Edible Landscape Project, led by McGill University's Minimum Cost Housing Group under the direction of Vikram Bhatt, as described elsewhere in this journal issue.[3] While project objectives in the other two selected cities, Rosario in

[1] The gradual change in official policy towards urban agriculture started with the research and advocacy work undertaken over the last two decades by a variety of NGOs, largely supported by IDRC under the Cities Feeding People and the Agropolis programs (IDRC, 1994, Mougeot, 2005). These include: Urban Harvest, the International Potato Council, CGIAR (Consultative Group on International Agricultural Research), RUAF (Resource Centre for Urban Agriculture and Forestry), ILRI (the International Livestock Institute) and the more recently founded KUFSALCC (Kampala Urban Food Security, Agriculture and Livestock Coordination Committee), all of which have played influential roles through the years (King'ori, 2004). Their combined activities eventually led to the preparation of City ordinances governing not only cultivation (Kampala, 2001, 2005), but also animal husbandry and aquaculture. These were shepherded through council by the then mayor, Mr. John Ssebaana Kizito, and the City Minister (councillor) then responsible for Gender, Social Improvement, Community Development and Antiquities, the late Mrs. Winnie Makumbi, and were finally adopted in 2005 after much debate (Azuba and McCans, 2006, Hooton et al., 2007). It was in this spirit that the Kampala City Council decided to join the Edible Landscape Project in 2004.253,000 Ha (or 67% of agricultural lands) are reserved for cereal cultivation.

[2] Kampala, the largest urban area and capital of Uganda, has a

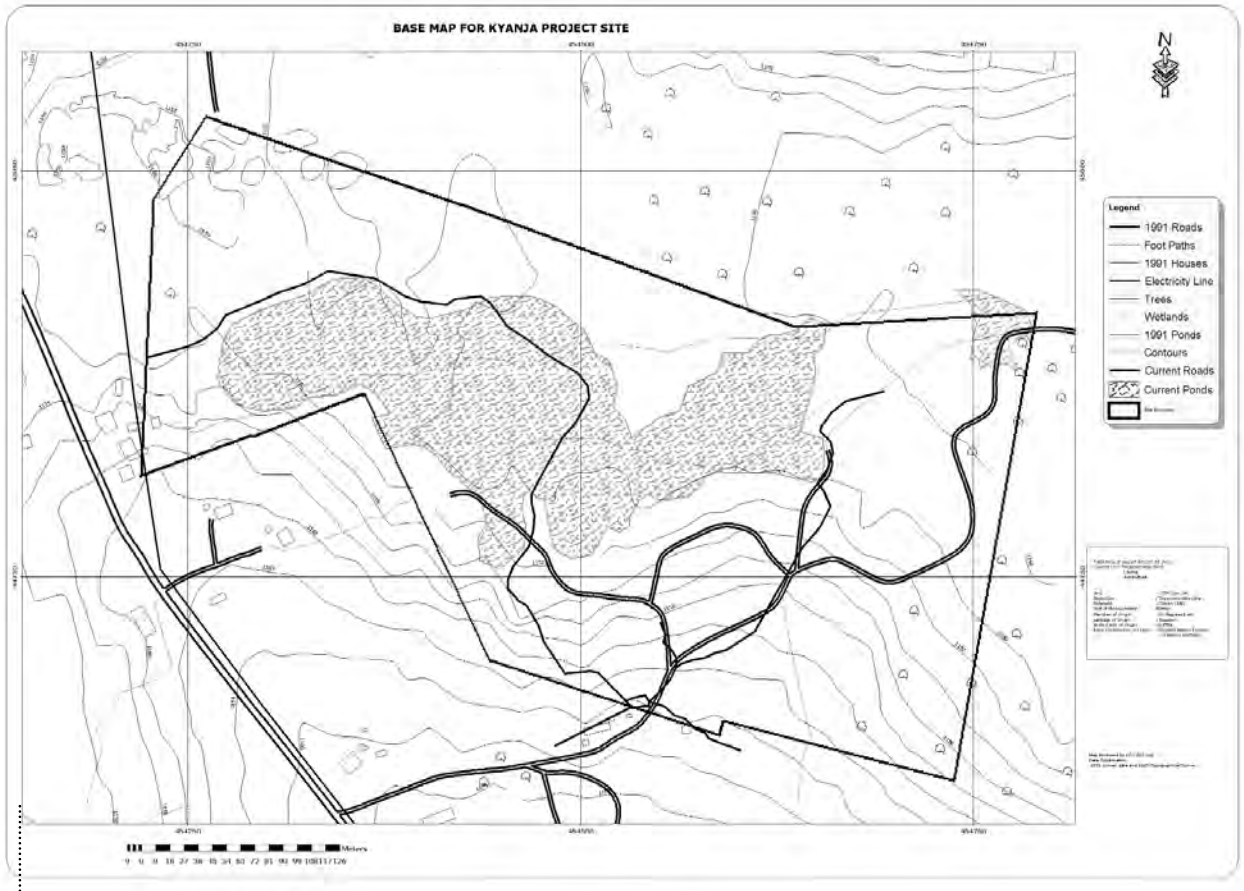

Figure 1. Initial site plan of the Kyanja project.

Argentina and Colombo in Sri Lanka, were essentially to improve production in neighbourhoods where farming was already being vigorously practiced, in Kampala the idea was to build a new residential subdivision designed to maximize the possibilities and potentials for the practice of urban agriculture.

Kampala has a long and well-documented history of urban agriculture. Throughout the terrible years of the seventies and eighties, during and after Idi Amin's rule, agriculture became an major survival mechanism for the poor (Bigsten and Kayizzi-Mugerwa, 1992, Maxwell and Zziwa, 1993). Studies show that today well over 30% of households still practice urban agriculture, and that it is equally undertaken by both rich and poor (Lee-Smith 2003). It is infinitely flexible: an activity that people can enter easily with no special training and minimal capital, if they own or can rent, beg, borrow or steal, the space to do so, and it can be practiced on a part-time or spare-time basis with children in tow and often helping. Small wonder that not only house plots, but also unused land, and spare corners are all appropriated for cultivation, even though some sites may be contaminated (Nabulo et al., 2004, Nabulo et al., 2006).

Most of Kampala's farming is the cultivation of crops for immediate family consumption: cassava, beans, maize, cocoyams, sweet potatoes, tomatoes, leafy vegetables, bananas for matooke, jackfruits, avocados, papaya and the like (Sebastien, 2005). Most in-town growing is done

population of about 1.3 million. The original pre-colonial city, Kibuga, later to become known as Mengo municipality, was the royal capital of the Kingdom of Buganda ruled by a Kabaka, the king. Kampala evolved in the early twentieth century as the parallel adjacent colonial city, largely peopled by Europeans and Asians. Mengo municipality and Kampala were amalgamated in 1968, soon after independence, although a duality of land tenure arrangements still persists (Nkurunziza, 2007). The City is governed by the Kampala City Council (KCC), which is deemed both a District and a Municipality under the Ugandan system where local government is divided into five nested tiers, each with a local council Beginning with the smallest, these are; Zone or Village, Parish, Division, Municipality, and District.

[3] Minimum Cost Housing Group, McGill University. Making the Edible Landscape, (http://www.mcgill.ca/mchg/pastproject/edible-landscape/ 02 sept. 2008) and Kampala Edible Landscape, (http://www.mcgill.ca/mchg/pastproject/edible-landscape/kampala/ 02 sept. 2008).

Figure 2. Kyanja site in 2004, informal brick making

by women; some surplus is exchanged or sold to supplement income. Mushroom farming, both oyster and shiitake, is carried out intensively in enclosed sheds, using suspended plastic bags filled with sterile cotton bol wastes and inoculated with spores, and is amazingly productive (Kiguli, 2003). There is a fair amount of poultry raising, some goats and pigs, and non-grazing cows. The city has a dairy cow-bank started in 1998 by the president, for women. Here recipients are trained in appropriate management and breeding procedures, and each participant must return two female calves to the pool for other beneficiaries to rear. (Azuba and Kabuuka, 2005). Such cattle are fed on domestic and garden wastes, especially banana skins, and are highly valued for their milk production.

THE KYANGA SITE

The Kampala City Council (KCC) chose the site for the new subdivision, which it owns. It is located in Walufumbe zone, in the parish of Kyanga, in the Nawkawa Division of the city, right in its very northernmost fringe. At the beginning of the project, it was assumed that the City would prepare the site, in terms of surveying, plot preparation, roads, surface water drainage and the provision of basic water supply, but that the beneficiaries would pay for their plot, and that all other development, house building, animal quarters, sanitary arrangements and the like, would be accomplished by the residents efforts and using whatever existing public programs, for instance in housing, that currently exist.

The Kyanga Edible Landscape Project (KELP) site had previously been earmarked for a sanitary landfill, but this use had been so strongly opposed by the neighbours that the City dropped the project. The site, roughly rectangular in shape, slopes down to the north, where its northern boundary is a small stream draining a series of marshes. Access is by a well defined track which enters the south-west corner of the site from Gayaza Road, a major arterial linking Kyanja and the city, as shown in figure 1. The site itself has never been settled, but during the last few years the whole of the low-lying northern half has been exploited by informal sector brickmakers. They have dug the clay, hand made bricks, dried and fired them on the site, leaving behind deep excavations, which are now ponds of stagnant muddy water as shown in figure 2. The southern half of the site is very beautiful rolling land, which has been cultivated in patches, again through informal sector activity.

Figure 3. Participatory design process.

PROJECT MANAGEMENT

The project is overseen by an Advisory committee headed by a City Councillor. The Project coordinator is the City Urban Agriculture Officer, Ssemwanga Margaret Abruzi who reports to the Mayor. She is supported in her work by one of the City planners, Shuaib Lwasa, a City economist, Richard Kabuka, an animator-documentalist, Janat Nnakangu and has had the assistance of planning interns from Canada, first Tonya Crawford (Sept 2005 to July 2006), then replaced by Sarah McCans (August 2006 - March 2007). Three committees made up of local professionals drawn mostly from the civil service, Makerere University and local NGOs, were formed in the early stages of the project to provide special expertise, advice and research support. These three areas are: Urban Agriculture and Community welfare, Research, Information and Documentation, and Planning and Urban Design. At the same time, senior officers from the KCC, especially the city engineer, and from national government Ministries, especially, agriculture, works and housing, are also involved. Most of the following information is taken from project meetings, reports and first hand observation, since both authors were professionally involved in the Edible Landscape initiative.

VISION

At the start of the project, before any future residents had been identified, the local Kampala team developed a vision statement for Kyanja to guide their work, namely: "To develop a socially diverse and healthy neighborhood, that empowers community members to generate food and income, while preserving the environment" and more specifically,

1. To explore and demonstrate how urban agriculture in Kampala can be integrated as a sustainable permanent land use in city growth and development.

2. To enable Local Government and community-based organizations to create a food-secure future by establishing a productive green neighborhood.

3. To overcome current challenges of undertaking public participation with poor urban dwellers.

4. To produce practical tools for site plans and low-income housing designs that support urban agriculture activities, for use in Kampala and elsewhere.

It is especially because of the last two aims, that the project has been closely documented and monitored to date.

WORK PLAN

Three major phases of work were foreseen at the very beginning in 2004, although as will be seen, things did not work out quite that way. Briefly, these were:

Phase 1 Sept.'04 Sept.'05	Site analysis and background studies	physical characteristics, identification of potentials and constraints, housing and agricultural needs - studies and typologies, infrastructure options, land tenure and subdivision options (largely university teams)
Phase 2 Sept.'04 onwards	Participatory design	identification of the clientele, information sessions, workshops on agriculture, plot design, environmental management, housing design, finance and construction (local team)
Phase 3 Starting Mar.'06	Implementation	surveying, road construction, surface water drains, water network, house building, cultivation etc. starting March 2006.

THE CLIENTELE: SELECTION OF THE BENEFICIARIES

The executive committee of the City Council established criteria for the selection of people to occupy the site at the beginning of the project. While the policy of the City was to offer plots to the most poor, needy and deprived, certain indices of stability were called for, namely: to be a law abiding Ugandan citizen, resident of Kampala for at least three years; to show evidence of having paid taxes for that time; familiar with and committed to the practice of agriculture; to be without land for cultivation; to be of low or modest income, and if salaried, to be earning the minimum wage; be capable of saving and mobilizing funds for a house; and be a person wishing to be empowered through entrepreneurial skills. In addition, the KCC stipulated that at least 40% of the households should be women-headed, and that beneficiaries should come in equal proportions from all five Divisions of the city.

Advertisements were widely circulated, and from the numerous enquiries, 600 applications were accepted for evaluation by the Community Services staff of the City, a fair proportion of these were re-interviewed for suitability by agricultural extension officers for suitability, and from these, 124 were selected.

This process took almost a year: it was not until August 12th. 2005 that the beneficiaries and their families were received at City Hall by the then Mayor, John Ssebaana Kizito the originator of the project, to mark their start in the enterprise. Of the 124 family heads, two thirds are women, about half are married, their average age is 27 years and at least four are HIV positive. Most have children: on average, four per family. Since then, a series of workshops have been held with the beneficiaries on various themes. Particular attention has been paid to the form of house needed, future agriculture practices, possibilities for revenue generation and community facilities. In addition a savings scheme has been started whereby beneficiaries may deposit money at City hall in preparation for lease payment and house construction.

THE DESIGN PROCESS

From the outset, it was understood that the design process would be participatory and that it would evolve as more and more stakeholders became involved and more information became available. It was also envisaged that this was to be a learning and knowledge building process, in that each stage would be documented both for use in Kampala,

Figure 3. ***Participatory design process.***

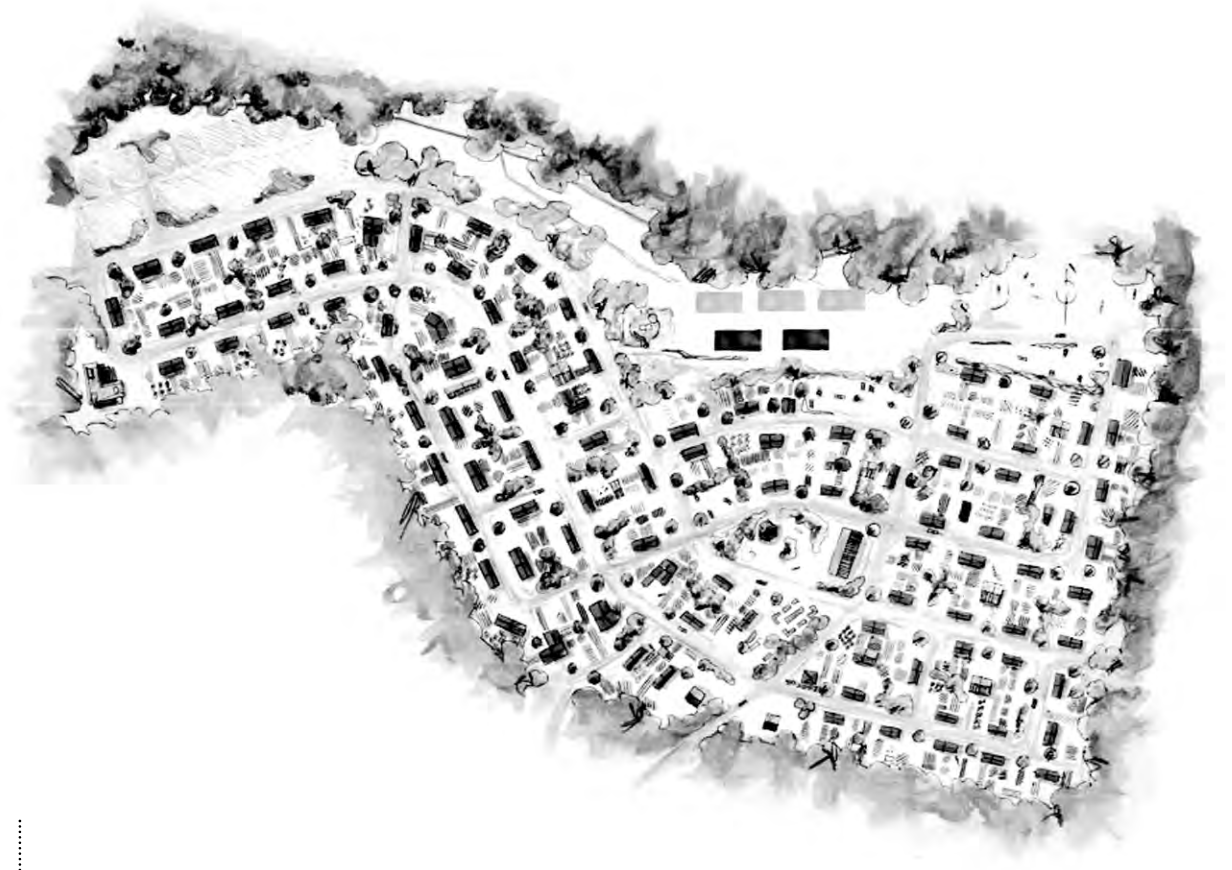

Figure 4. Designed site plan

and for comparison with parallel work going on in Rosario and Colombo. Further dissemination was planned for the World Urban Forum in Vancouver in summer 2006.

During the autumn and winter terms of 2004-2005, teams from both McGill and Makerere Universities worked on the project, in order to undertake basic studies and to generate ideas for debate. At McGill, graduate students from the Minimum Cost Housing Group of the School of Architecture worked on site analysis, tools for urban agriculture and for community planning, while graduate students of the School of Urban Planning looked at possible tenure options, namely cooperative, community, shared or individual plots. The Makerere students, drawn from Architecture, Planning, Veterinary science and Agriculture, formed mixed teams to prepare site plans, and later on the architectural students developed house plans. In May 2005 a workshop was held in Montreal to compare and debate all these designs, along with similar research being undertaken in Rosario and Colombo.

The first Community design workshop (figure 3) was held in October 2005, when the conceptual community plans prepared by the McGill and Makerere students were presented and discussed, and as a result, a final site plan was drawn up by Tonya Crawford as shown figure 4.

The land was surveyed and staked out to that design by December. A second October workshop with the clientele focused on agricultural technologies, energy efficiency, and sanitation. Part of the workshop was led by Jeep (Joint Energy and Environmental Projects), a sustainable technology NGO, located close to the site on Gayaza Road. It is expert in agriculture, permaculture, low-cost energy-efficiency including cooking stoves and solar devices, sanitation and building management. Plot layout and housing design, using prototypical house plans devised by architectural students of Makerere were the subject of another community workshop in April 2006. This work was accompanied by costing out the building materials for a typical house by Tony Ahuzma, a senior architectural student. At this time, the KCC, on the request of the mayor, brought a bulldozer into the site, to open the roads for the new subdivision:

needless to add, this generated great excitement and provided wonderful photos to show at the World Urban Forum in Vancouver in June.

BOTTLENECKS

In 2006 there were a whole series of unforeseeable impediments to progress, and these are outlined as a sort of cautionary tale. First were the presidential, national and mayoral elections at the beginning of the year, which slowed down everything in the country. For instance, the Tender Board, which among its other duties, was supposed to meet in January to look at the bids for the site preparation work was unable to meet. In March 2006 a new mayor was elected, Mr. Al-Haji Nasser Ntege Sebaggala. (He had previously been mayor in 1998, but had a short reign because he was taken into custody while visiting the US because of legal problems). While Mr. Sebaggala is conversant with and sympathetic to urban agriculture, the whole electoral process, and his transition to taking over in May delayed much being done on either on the project or indeed in the whole operation of the KCC.

Between August and October, the work of the KCC was again severely slowed down when it was discovered that one of its accountants may have been embezzling funds over a period of years, and the whole operation of the City Council was put on hold as accounts were frozen during the investigation.

Another impediment was the question of issuing leases to the beneficiaries. When acquired by KCC, the land later allocated to KELP had consisted of seven parcels, but the deeds to three of these parcels could not be located. In the interests of fairness, the City Advocate, Lilian B. Adriko recommended not releasing any land until this problem had been resolved. It took almost a year before the lost deeds were recovered, and it was not until November 2006, that a plot allocation meeting was held at which land distribution was made through the drawing of straws. Plots are to be leased from KCC at standard rates: five years at 3,000,000 Ush. (about $3530 US).

At the same time, the Central Government has changed the funding system for local government which puts less money into the hands of KCC, thus curtailing its activities even further. Meanwhile, there are even rumours of dismembering the KCC in favour of the five district councils, which seem to be gaining in relative power.

The most recent anxiety about Kyanga has been that of the Bujagali Falls power line. Uganda is desperately short of electricity, and construction has started to add to hydro capacity from the River Nile. The transmission lines from the Falls to Kampala pass directly through the site, a point which was not noticed until the survey posts were discovered by one of the lessees. Negotiations with the power authority to try to move the alignment slightly north were not successful, but at time of writing the problem has not been totally resolved. The most likely alternative is that a parcel of land close to the site will be found to replace the acreage lost to housing because of the power-line easement. Looking on the bright side, it does provide more space for cultivation under the line itself. This of course required redesign of the project which has been accomplished by City planners in collaboration with Makerere University.

THE DESIGNS

The sifting through design ideas with the clientele was a very interesting process. To begin with, in terms of land tenure, none of the future occupants wanted any form of community or cooperative holding: given a choice they preferred to have individual plots. Evidently a place of ones own is very important, and to have total control over a plot is everyone's dream. Research was undertaken on the minimum size of plot required to support a family through agriculture. The results were inconclusive, but in any event, the City Council pointed out that beneficiaries could not be allocated more than the standard plot of 250 to 350 sq.m. (approx. 35 ft. x 75 to 100ft.) since that would be favouritism, compared with other parts of the city. The sitting of houses on the plots was debated. How to do this to maximize space for cultivation? Most thought by placing the house close to, or on, the front lot line, and perhaps by making houses semi-detached, thus saving on space and materials. It was felt that animal quarters should be on the rear boundary line, at the intersection of four lot-lines to save space. Animals require protection from the sun and the rain. Their quarters should have roofs with a large overhang, aligned from east to west to provide shade and promote ventilation, and enclosed with a low wall or fence.

The access road and the form of the site conditioned the layout of the neighbourhood. The

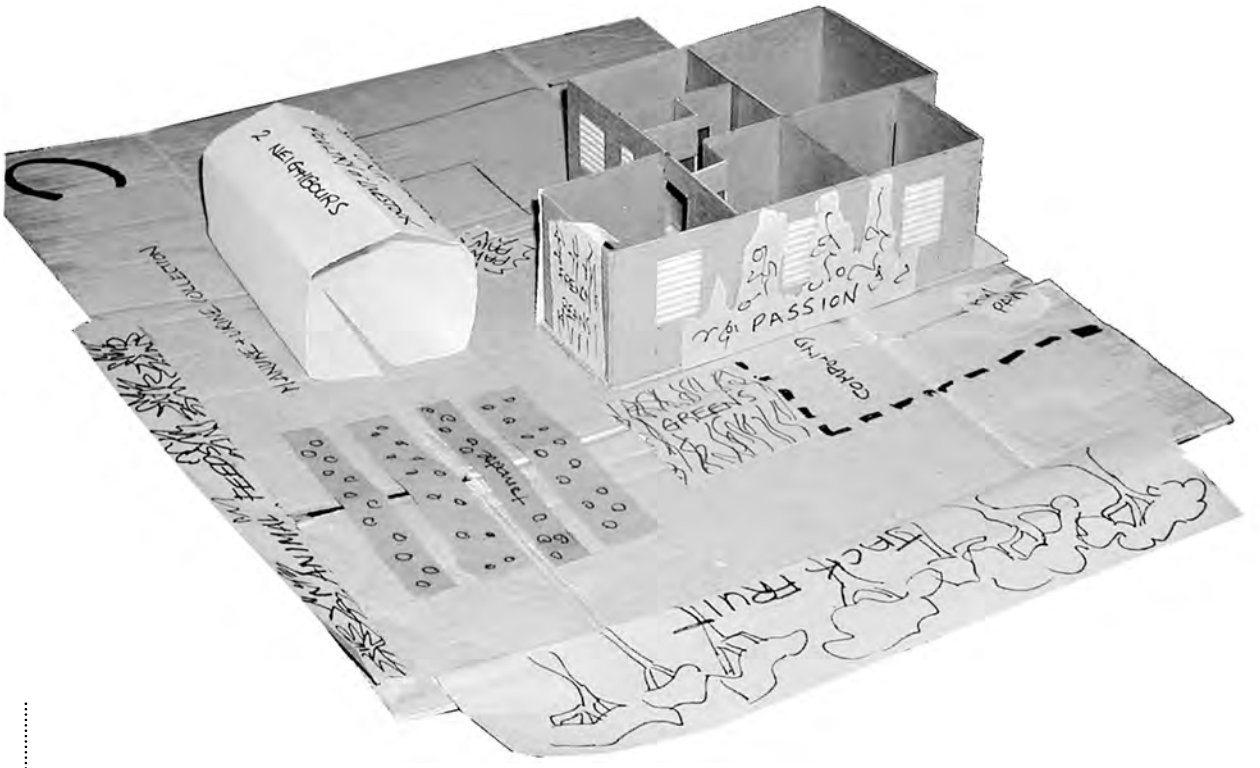

Figure 5. Photograph of a model plot undertaken during a workshop. This model integrates Urban agriculture to the design.

ideas of the various university groups were astonishingly similar - essentially each proposed a main street housing the services snaking down the hill towards the clay pits and stream, with residential streets branching off from it, each more-or-less parallel with the contours. This was on the assumption that the water mains would be brought in along the main street, and that in the early stages there would be a stop-tap at each corner. Carrying the water from the tap to home would thus be virtually on the level. Although each design-group proposed some sort of rehabilitation for the dug-over area of the clay-pits, such as fishponds for aquaculture, and even filling some of them in to provide house lots, it was envisaged that this area would be developed in a second stage.

The beneficiaries have spent a lot of time thinking about their house plans since most will be doing the construction themselves. The Makerere architectural students worked on a number of schemes and model building (figure 5) has been an important part of the workshops.

It is envisaged that houses will be self-built of self-made interlocking rammed-earth blocks. This is a technology developed in South Africa which has already been used in Uganda. The "hydroform" blocks can be made with hand operated equipment under the guidance of Ministry of Housing personnel.

House plans also include simple systems of roof-water capture for animals and irrigation. Sanitary systems will consist of "Ecosan" toilets, a system developed in Sweden and introduced into Kampala under the urban improvement program. These toilets separate urine and solid wastes: the former are sterile and used directly for feeding plants, while the latter are scientifically composted to become soil fertilizers. Animal quarters providing shade, safety and ventilation were also designed, and plans made to compost animal and vegetative wastes.

The future residents have also begun saving money. Over $25,000 US, an enormous sum for such an impoverished community, has been paid into an account established by the KCC and is held in trust in their names for their future use in Kyanja. Many of the beneficiaries have begun cultivation of their plots even though building has not yet begun. A model house is being constructed which is also serving as a teaching vehicle to show people how to build their own.

CONCLUSIONS AND FINDINGS TO DATE

Although this account is one of a work in progress, much has been achieved, and many the first articulated objectives are in sight of being achieved.

The concept of building an urban neighbourhood capable of supporting significant urban agriculture is tenable. Despite being forced (by subdivision bylaw) to design a subdivision with urban-sized lots in Kyanga, important provision can be made for farming, and be combined with environmentally sensitive management. With careful interplanting, it has been shown that up to five crops per year can be produced from one plot. Animal husbandry can be managed in a safe and sanitary way.

Participatory planning with the urban poor, in this case a group of mixed origins, ethnicity and religions, can work well. It has been learned that capacity-building workshops need a strong focus, hands-on activities and thus, thorough advance preparation. It is interesting that the beneficiaries, having been disinterested in the idea of cooperative farming at the start of the process, have recently formed a community cooperative to tackle collective local problems. It is evident that after two or three years of association trust has been built up among this group of diverse people.

Participatory planning is best accompanied by substantive workshops, so that everyone, professionals and beneficiaries, can learn as they attack the design problems and their management. Training in micro-finance, house building, plot preparation, the establishment of boundary markers and cultivation methods has brought people together in non-threatening situations that is helping forge community links and a sense of belonging.

A design and learning process and partnership involving two widely separate universities (McGill and Makerere), the Kampala City project team, Kampala politicians, numerous government agencies, and the beneficiaries of the project, has undoubtedly led to extensive sharing of knowledge and ideas. We have no methods to quantify this, but it is worth noting that (a) the town of Entebbe has enquired about how to undertake the same sort of experiment, and (b) the recent Millennium Villages Project, an initiative of Jeffrey Sachs, is using similar methods, namely; bottom-up participatory planning, low-cost small-scale interventions, along with extra-community support. (The major difference is that for the last named, the support is generous for 5 years rather than the 2.5 years and comparatively meager resources allocated to the Kyanga project).

Project implementation can be thrown off balance by unforeseeable hazards. The project has weathered mislaid land-ownership deeds, changes in the political landscape, availability of government agency resources, communication shutdowns, power outages, delays in the time to transact business, acquire permissions, permits and the like, and by completely unexpected events such as the building of the Bujagali Falls power line. It is clear that participants in such a process have to be patient, and that outside funders must not expect that everything will follow timetables. Flexibility in scheduling is a necessity.

REFERENCES

AZUBA S.M., and KABUUKA R. 2005, "Urban Farming and HIV-AIDS initiatives supported by Kampala City Council," in RUAF (ed.), *Gardens of Hope. Urban Micro-farming as a Complementary Strategy for Mitigation of the HIV-AIDA Pandemic*, RUAF, Leusden, The Netherlands: 260-70.

AZUBA S.M., and McCANS S. 2006, "Effecting Policy Change and Implementation in Urban Agriculture, Kampala, Uganda," *Urban Agriculture Magazine* 16: 60-1.

BIGSTEN A., and KAYIZZI-MUGERWA S. 1992, "Adaption and Distress in the Urban Economy: A Study of Kampala Households," *World Development* 20: 1423-41.

BINNS J.A., MACONACHIE R.A., and TANKO A.I. 2003, "Water, Land and Health in Urban and Peri-urban Food Production: the Case of Kano, Nigeria," *Land Degradation and Development* 14: 431-44.

BOISCHIO A., CLEGG A., and MWAGORE D. (eds.) 2006, *Health Risks and Benefits of Urban and Peri-Urban Agriculture and Livestock (UA) in Sub-Saharan Africa*, International Development Research Centre, Ottawa, Canada.

CASTILLO G.E. 2003, Livelihoods and the city: an overview of the emergence of agriculture in urban spaces, *Progress in Development Studies* 3: 339-44.

EGZIABHER A.G., LEE-SMITH D., MAXWELL D.G., MEMON P.A., MOUGEOT L.J.A., and SAWIO C.J. (eds.) 1994, *Cities Feeding People: An Examination of Urban Agriculture in East Africa*, International Development Research Centre, Ottawa, Canada.

HOOTON N., LEE-SMITH D., NASINYAMA G.W., ROMNEY D., in collaboration with ATUKUNDA, G., AZUBA, M., KAWEESA M., LUBOWA A., MUWANGA J., NJENGA M., YOUNG J. 2007, *Process and Partnership for Pro-Poor Policy Change. Learning Lessons from the Kampala Urban Agriculture Policy Process,* ODI, ILRI & Kampala: CIP, Urban Harvest, KUFSALCC. ODI, ILRI London, London, UK.

IDRC. 1994, *Cities Feeding People: An Examination of Urban Agriculture in East Africa*, IDRC, Ottawa, Canada.

KAMPALA. 2001, The Kampala City Urban Agriculture Ordinance, Kampala, Uganda.

KIGULI J. 2003, "Mushroom Cultivation in Urban Kampala, Uganda." *Urban Agriculture Magazine*: 20-1.

KING'ORI P. 2004, *Assessment of urban and peri-urban agriculture research in the Centres of the Consultative Group on International Agricultural Research (CIGAR) in Sub-Saharan Africa*. Urban Harvest Working Papers Series 1 and International Potato Centre.

KUFSALACC. 2005, *The Kampala City Urban Agriculture Ordinance: A Guideline*, Kampala and Nairobi: KUFSALCC (The Kampala Urban Food Security, Agriculture and Livestock Coordination Committee) and Urban Harvest.

MAXWELL D.G., and ZZIWA S. 1993, "Urban agriculture in Kampala: indigenous adaptive response to the economic crisis," *Ecology of Food and Nutrition* 29: 91-109.

MOUGEOT L.J.A. (ed.) 2005, *Agropolis: The Social, Political, and Environmental Dimensions of Urban Agriculture*, Earthscan and IDRC, London, UK.

NABULO G., NASINYAMA G.W., LEE-SMITH D., and COLE D. 2004, "Gender Anaysis of Urban Agriculture in Kampala, Uganda," *Urban Agriculture Magazine* 12: 32-3.

NABULO G., ORYEM-ORIGA H., and DIAMOND M. 2006, "Assessment of lead, cadmium, and zinc contamination of roadside soils, surface films, and vegetables in Kampala City, Uganda," *Environmental Research* 101: 42-52.

NKURUNZIZA E. 2007, "Informal mechanisms for accessing and securing urban land rights: the case of Kampala, Uganda," *Environment and Urbanization* 19: 509-26.

REDWOOD, M. (ed.) 2009, *Agriculture in Urban Planning: Generating Livelihoods and Food Security,* Earthscan and IDRC, London, UK.

SEBASTIEN R. 2005, *Associations between Household Food Security, Socio-economic Characteristics and Urban Farming Activities in Kampala, Uganda*. University of Toronto, MSc thesis in Public Health Sciences, Toronto, Canada.

Authors' Addresses:

Jeanne M. Wolfe

School of Urban Planning, McGill University
Suite 400, Macdonald-Harrington Building,
815 Sherbrooke Street West
Montreal, Quebec H3A 2K6
jeanne.wolfe@mcgill.ca
Sarah McCans