

*The project is a Master of science thesis called "it's there -farming in the city" and carried out within the field of architecture, planning and urban design. In short terms the project is an urban strategy for Kampala. In this strategy the green structure is at the core of urban development. The project visualizes an idea how urban agriculture processes could be used as a generator for upgrading and development of an informal settlement.*

### **It's there -farming in the city**

It's there -farming in the city conceptualises a project with its focus on the potential of urban agricultural processes and activities in Uganda's capital Kampala. It investigates if processes connected to urban agriculture could work as an overall principle to organise and develop a city. Thus if processes connected to urban agriculture could work as a design and planning device tool to generate spatial, economical, ecological and recreational values over time.

It's there -farming in the city argues that identification, definition and activation of green fields, spots and spaces for urban agriculture purposes in the informal settlements could be a coherent spatial device tool for managing urban growth in Kampala. These green spaces could be the structuring element around which the new city and neighbourhood develops. To form physical facilities and demarcated areas where these processes and activities can be carried out is a way of securing existing spatial and environmental qualities while still be able to upgrade the existing condition in the human settlements of Kampala. When the long-term re-disposition and densification of the building mass within a certain area is taking place it will be around this revitalized and protected green space. The openness created will be needed in a future heavily populated urban context.

The result, texts, drawings, 3D models, photos are gathered in a book of 150 pages. Hopefully the project can be used as material for a discussion about human settlements, urban agriculture and a sustainable urban development.

Our Master of Science thesis was completed spring 2003 at The Royal Institute of Technology (Stockholm) and Chalmers Institute of Technology (Gothenburg) Sweden. During the nine months long assignment we spent two months in Uganda's capital Kampala studying informal settlements and one month doing study visits in Kenya and Tanzania. The opportunity for doing this study was given to us by the Swedish international development agency (Sida). From them we received a MFS-scholarship (Minor Field Study). Professor Dick Urban Vestbro, Head of the Department of Built Environment Analysis at the school of architecture (KTH) in Stockholm and Professor Barnabas Nawangwe, Dean at the Department of Architecture at the Faculty of Technology (MUK) were helping us with initiating the project from the start. Stephen Mukiibi PhD student from Makerere University was our supervisor in Kampala and architect Per Kraft our supervisor in Stockholm during the project. In Gothenburg the supervisor has been teacher Bertil Malmström.

# it's there -farming in the city



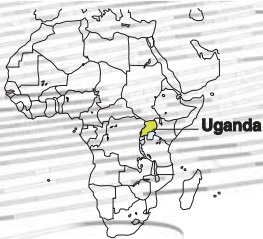
## an urban strategy for Kampala

The green structure facilitates farming systems that are developed around the city



It's there-farming in the city argues that identification, definition and activation of green fields, spots and spaces for urban agriculture purposes in the informal settlements could be a coherent spatial device tool for managing urban growth in Ugandas capital Kampala. These green spaces could be the structuring element around which the new city and neighbourhood develops. The openness created will be needed in a future heavily populated urban context.

In a globalising and rapidly urbanising world an increasing number of the population is leaving the countryside to look for a better life in the cities. People leave hard conditions looking for work and the service provided in urbanised areas. This phenomenon of urbanisation gives people opportunities but is also leading to congestion, urban sprawl, environmental and sanitation problems. Today many people live without shelter or in informal settlements without working infrastructure for water, sewage and sanitation. In many low-income countries, cities are growing in an uncontrolled way. Due to lack of resources and the rapidly changing conditions, planning is not functioning.



Kampala is one example of this global phenomenon but is also a city where urbanisation is in its initial phase. Due to this trend there is a considerable influx of poor people who settle down in informal housing areas where infrastructure and services are lacking. In these areas urban farming is commonly practised. In the informal settlements implementation of planning bylaws is not working. Planning for urban agriculture activities does not exist.

This project is based on these issues, relevant in a global urban perspective and brought to the level of the informal settlements of Kampala. Our way to treat the subjects has been to study activities and processes connected to urban agriculture. The focus was on how the processes and activities of urban agriculture shape the urban spaces and environment. The activities and processes are closely related to normal life including spatial, economical and ecological functions. In the design project we wanted to investigate if urban agriculture activities could be used as generators for planning the uncontrollable.

In the project we use information collected to create a system of places and flows. An essential part in the project is not the buildings in themselves but how the land is utilised. We define spaces that are protected by their use and leave surrounding areas for free growth and utilisation. Thus we accept to a certain extent the fact that implementation of planning and building regulations is difficult in the informal settlements.

The aim has been to explore how the processes connected to urban agriculture could be used as generators to vitalize, shape and improve the physical environment within an informal settlement. Hence to create a system that is founded in the landscape, the topography, the settlements morphology and the activities related to urban agriculture. We try to conceptualise a project with its focus on the potential of urban agricultural processes and activities in Kampala, based on essential facts and observations about what is already there.



## a green structure with function

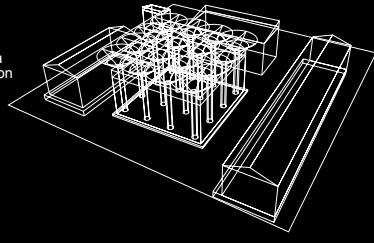
"Long term solutions...Develop a highly intensive and specialised food production system in the city" (KCC 2002)

The overall design element is the definition of green spaces and their connections. The green spaces within the settlement are unified in a system that could be further connected in a network of green structures supplying the city with leisure, production and service space (ecological services). These open and green fields, spots and spaces, could be used in many different ways and developed over time according to changing needs. The green structure created can for example be practically used for new infrastructure that is necessary, as water supply, irrigation, infiltration, animal and plant habitat, and communications.

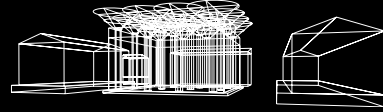


# it's there -farming in the city

**Food banana = matoke**  
middle density high crop  
provide horizontal semi transparency  
provide shadow & coolness  
banana trees in a line demarcate area  
leave earth level semi free for utilization



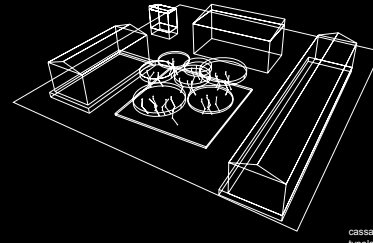
matoke trees axonometric  
typology & perspective



**Cassava**  
low-density semi low crop  
semi transparent  
disturb horizontal transparency  
volume creating element  
occupy earth level



cassava plantation kagugube

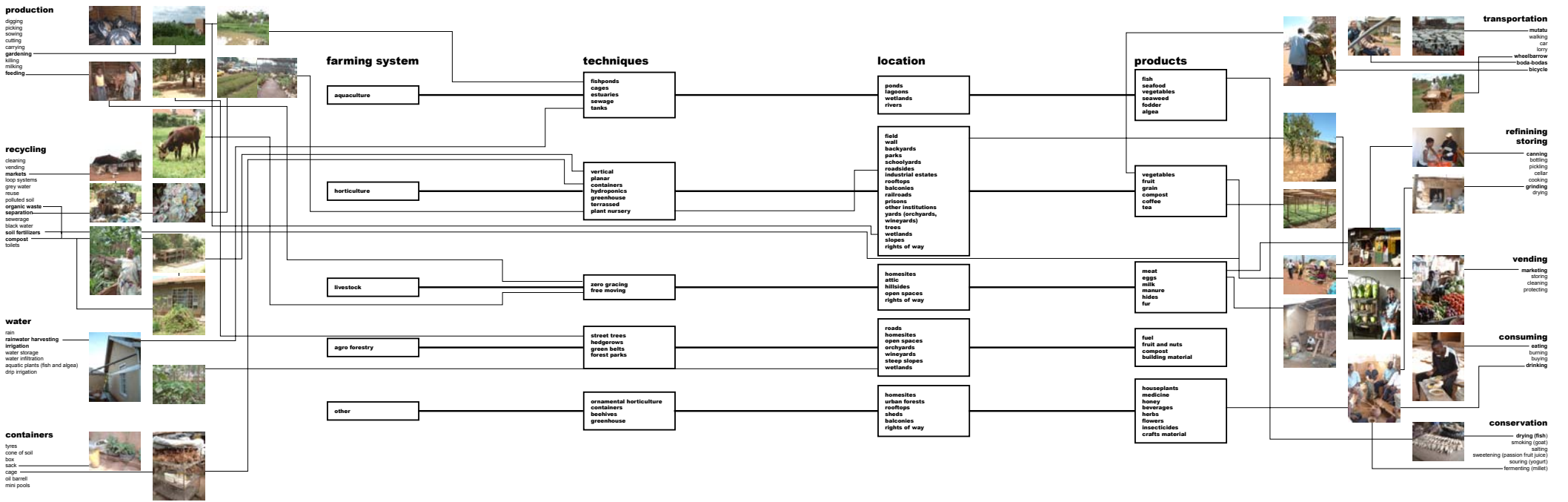


cassava plantation axonometric  
typology & perspective

## Urban agriculture processes connected

urban agriculture processes and activities shape the spatial environment of Kampala

In relation to urban agriculture there are a number of processes and activities that shape the spatial environment of Kampala. The processes are for example the production, refining, transportation, storage, selling, consuming, recycling of ua products. These activities are connected and interrelated. All parts of these processes depend on factors as place, technique, facilities provided, density and space available, farming system, infrastructure, soil fertility and water supply in its location (See diagram below). Some of the diagram components are taken from UNDP definitions of ua for Habitat II, 1996). Some of these processes are practiced to its utmost potential. Other processes are not practiced in a conscious manner. They could be carried out in a more efficient and generative way if stimulated and vitalized.

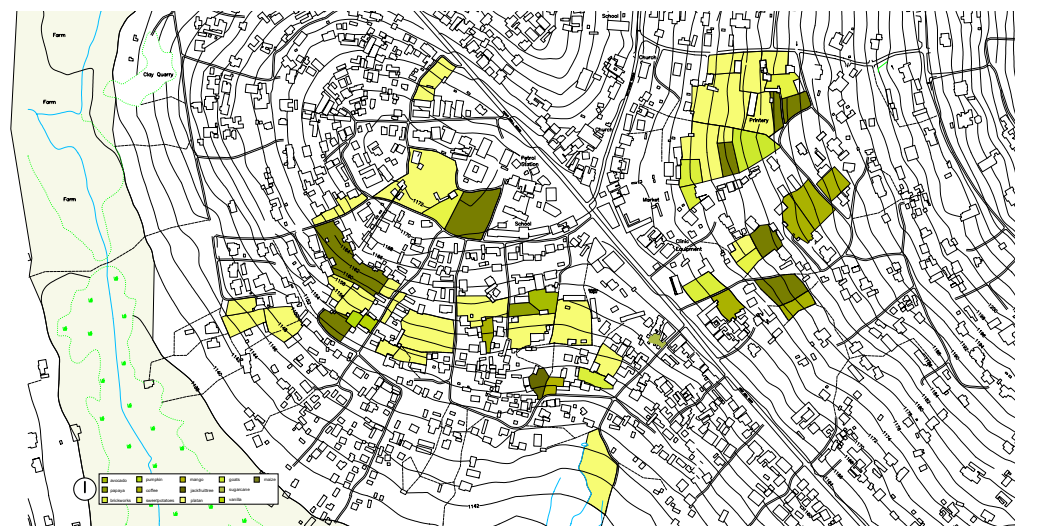


**Recycling.** A good example of an activity that could be vitalized is the process of recycling organic waste. This is sometimes carried out within local small-scale and resource efficient systems but could still be brought to a higher level. "In Kampala over 1000 metric tonnes of urban waste/garbage are collected daily, which is only 30-40% of the total garbage disposal. Most of this garbage comes from food markets and is degradable, although most of it is usually mixed with non-degradable material such as polythene, metal, plastic, glass and concrete among others. The collection and transportation costs the city a fortune. The revenue collection of some divisions of the city council is not sufficient to address the budgetary requirements of collecting the garbage disposed here." (Key Food Security/challenges in Kampala city, KCC 2002). Systematically organised, in small- and middle scale systems, the ecological and economical potential in recycling these large amounts of organic waste could be developed to its full extent.

**Water.** Water harvesting for different purposes as irrigation, storage, and infiltration is a process that is not used to a large extent. In Kampala there is no lack of water, instead there is water in plenty from natural wells on the hillsides, fresh water in lake Victoria and from the heavy rainfalls during the rainy seasons. The challenge is rather how to store the water from the ample rainfalls for dryer season and to keep the wells and streams free from contamination. Another difficult challenge is how to prevent soil erosion caused from the heavy loads of water during the rainy seasons. The erosion results in soil degradation and destruction of house constructions and polluted and unhealthy flooding when the drainage system is blocked with garbage. The use of plantations and green structure for water infiltration in a conscious way to prevent soil erosion and soil degradation is a potential that could be further explored and developed. Water harvesting for washing and cleaning, irrigation for plantations, infiltration and purification of grey water are also possible.

**Food production.** Another process is the selling of fruits and vegetables that are produced within and in the vicinity of the city. Selling of goods and food are widely practised, formal and informal markets are situated all over the city. Often in addition to a formal market there are informal markets, street and roadside vendors. This system supplies the inhabitants with fresh food products of high quality. Lack of appropriate facilities for vending as well as for storage, refining and processing gives hygienic problems, which also result in health problems. There are great challenges and possibilities in development of this short distance production and supply system.

The combination of different processes could create synergy effects with new spatial relations as a consequence. To form physical facilities and demarcated areas where these processes and activities can be carried out could be a way of securing existing spatial and environmental qualities while still be able to upgrade the existing condition in the human settlements of Kampala.



## letting the existing direct urban development

The method chosen is to identify, document and study land use patterns and processes connected to urban agriculture in these areas. These processes could for example be production, transport, consumption, and recycling.

**Method**  
By comparing these two different types of settlements we acquired knowledge about where, how and to what extent urban agriculture is practiced. Observations were based on mapping with camera and sketching. We did observations of built structure and its relation to urban agriculture and other open spaces in the areas. The dialogue with residents and city farmers during documentation informed us how the spaces in between the buildings are used and defined, assets in green space, land utilisation, density in population and in functions. These interviews were non-structured and performed during visits. In order to understand both areas we had guided help from local residents.



The focus was on how the processes and activities of urban agriculture shape the urban spaces and environment

# it's there -farming in the city



## designing it's there in Kitintale

a generative process defines and facilitates an urban agriculture system



**Designing it's there** is made as a generative project using what is already there. The proposal is situated in Kitintale, zone 7 and 12 in Mutungo Parish, Kampala. Kitintale is a relatively new settlement in the peri-urban fringe. It contains a mixture between commercial, farming and domestic activities. In the core of the settlement there is trading centre connected to the regional road infrastructure. The green structure with farming activities is extensive and still fairly continuous.

### Project master plan

We wanted to create a structure that is founded in the landscape, the topography, the settlements morphology and the processes connected to urban agriculture practised in that landscape. Existing open spaces, but also created, are connected to each other. The design of artefacts and demarcation of spaces are to be seen as articulations, securing of values when the area grows. The articulations are made of a drainage system, water tanks, ponds, recycling plant, gas plant, water infiltration beds, animal keeping, educational spaces, plantations, sunshade, rain harvesting, storing, production and refining spaces. The settlement adjoining will grow according to the shapes of the articulations, leaving the "protected spaces as means of open space savours, income generators and ecological services".

We put the focus on the use of land instead of the buildings constructed on the site. We introduce a new scale in the area that gives clearness and the nodes missing today. The result is a mixture between formal and informal systems that interact, a planning that generates new spatial concepts.

*"Ecosystem services are the benefits that humans derive, directly or indirectly, from ecological functions." (Costanza 1997)*

**Buildings**  
The buildings are put into a system of processes and flows. They form part of an organisation of land in constant change. The buildings need to be flexible and adapt to the use of the green structure. With the connections of communications and green spaces they launch a new scale in the area. The buildings create new nodes for activities.

Buildings are designed and located according to characteristics of the area. Thus the topography is used to facilitate the work as cleaning, storing, recycling etc. The constructing elements are made of concrete and/or metal beams and pillars. To close spaces, local materials as papyrus, cane, wood or bricks are used depending on security, aesthetical and sun shading factors.

**Communications**  
Communication paths follow the height curves and green spaces to create better flows in the area. Today there is a lack of cross-communication between the roads leading down to the wetlands. Sun shading covers some parts of the communication. Most of the paths are surfaced with gravel and the edges are made of concrete and/or stone. When necessary the paths are asphalted for heavier transport. Drainage is adjoined to the paths to stop water to rush into the wetlands. The drainage and water system are connected to water infiltration beds and fishponds.

**Land tenure**  
This project interferes with the existing land tenure system in Kampala. The design crosses various plots with different owning conditions. It is still important to make clear who owns or uses the land. For example the choice of crop depends on the time that is possible for growing; insecurity of land tenure tends to destroy soil and the use of destructive farming systems. The city needs to redesign the properties. In this case agreements between landowners, users, new interests and the city need to be made to achieve new plots for the project.

### a green structure with function

"Long term solutions...Develop a highly intensive and specialised food production system in the city" (KCC 2002)

In the designated places for ua there is a span between cooperative and privately owned functions. Also NGO's and donor organisations could be working with activities. The inhabitants could for example manage general facilities as water and recycling. This would mean some kind of cooperative. Other parts within the system could be managed by private initiatives, such as farming, plant nursery, poultry breeding etc. Important is that the project is in it's overall structure owned, used and managed by the inhabitants. Implementation will work in steps, connecting parts when possible and unifying them into the system. One part is not dependent on the other but will support each other when operational.

