

# KAMPALA

Urban Ecological Planning  
AAR 4525  
Norwegian University of Science and Technology

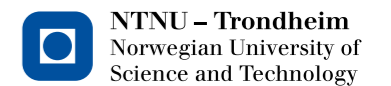


# KAMPALA

URBAN ECOLOGICAL PLANNING  
AAR 4525 FALL 2013

IN SITU DEVELOPMENT  
MARKET UPGRADING  
SANITATION

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## Preface

Working on a project from an office or classroom may definitely produce some valid conclusions, but real change may not be possible without a direct involvement in the issues of the affected people in the field which defines us as reflective practitioners. This is especially true of the developing and industrializing countries in the Global South where the interdependency between formal and informal as well as between people and institutions are particularly complex and confusing. This is the approach taken by the Urban Ecological Planning (UEP) masters' programme at the Norwegian University of Science and Technology.

This document presents the results of the field work conducted by the UEP students in the period of two months between September and November 2013. This was the fifth time that the UEP group went to Uganda in order to elaborate on different projects related to urban planning, particularly in the low-income areas. Some of the work builds on the research conducted by previous groups of students, both from UEP and others.

There are two major differences between the 2013 field work and previous field works. The first was that this time our projects were predefined by the Shack/Slum Dwellers International and their affiliated local NGO ACTogether, which is dedicated to support infrastructure upgrading in low-income settlements and organize community savings groups. The second difference was that the students were divided into two different locations: Kampala - the capital of Uganda, and Jinja - a 'secondary city' located 70 km outside of Kampala. This report covers the work conducted by the groups who were based in the City of Kampala.

The choice of Uganda as our destination was not accidental. The country is listed as one of the 49 Least Developed Countries according to United Nations' Developing Policy and Analysis Division (UN DESA, no date). Since its independence in 1962 to the late 1980s, Uganda was affected by a series of civil wars and armed conflicts which had a severe impact on the country's economy. Similarly to other nations in Eastern Africa, Uganda experiences a fast population growth. Since 1990, the population more than doubled, from 17,7 million to around 36 million today (UN DESA, 2013).

One of the characteristic phenomena of East Africa and the entire developing world in general is rapid urbanization. Uganda's urbanization rate is ranked at 4.7% in 2012 and its projected that by 2040 over 30% of the country's population will be living in urban areas (CME, 2013). Although more than half of Ugandans still live in rural areas, every year hundreds of thousands of people move into cities in hope of improving their economic status and find new opportunities. In case of Uganda, the main destination is Kampala which is by far the country's largest city and its administrative and financial centre. The entire urban agglomeration of Kampala has a population of about 1.9 million people with an annual growth rate of around 5% (KCCA, 2012). It is located on hilly terrain at an altitude of about 1,300 m above sea level, on the north shore of Lake Victoria. A large proportion of the population (40-70%) lives in low-income informal settlements (UN Habitat, 2007).

People living in those slums are faced with a number of issues that require urgent intervention, including poverty, overcrowding, unemployment, crime, evictions,

natural disasters, poor sanitation and lack of access to other basic services, such as health and education.

We, as students and professionals at the same time, were working in the field to propose solutions to those problems. As it would not be possible to tackle all of the issues mentioned above within the resource and time limits, our groups were assigned specific tasks that were related to a set of particular issues. Our objective was to show how small and incremental interventions can foster a larger change for the benefit of the entire population.

In Kampala, we were divided into three groups, each of which consisted of both the UEP and Ugandan students from Makerere University. The first group worked on a proposed Land Sharing project that is located in the slum of Kisenyi III (Kiti Zone). It was a continuation of work done by ACTogether and previous groups of students. The second group's task was to analyze the current situation and investigate options for upgrading of the Kinawataka Market in Kinawataka slum neighborhood, located in Nakawa Division. The last group was assigned

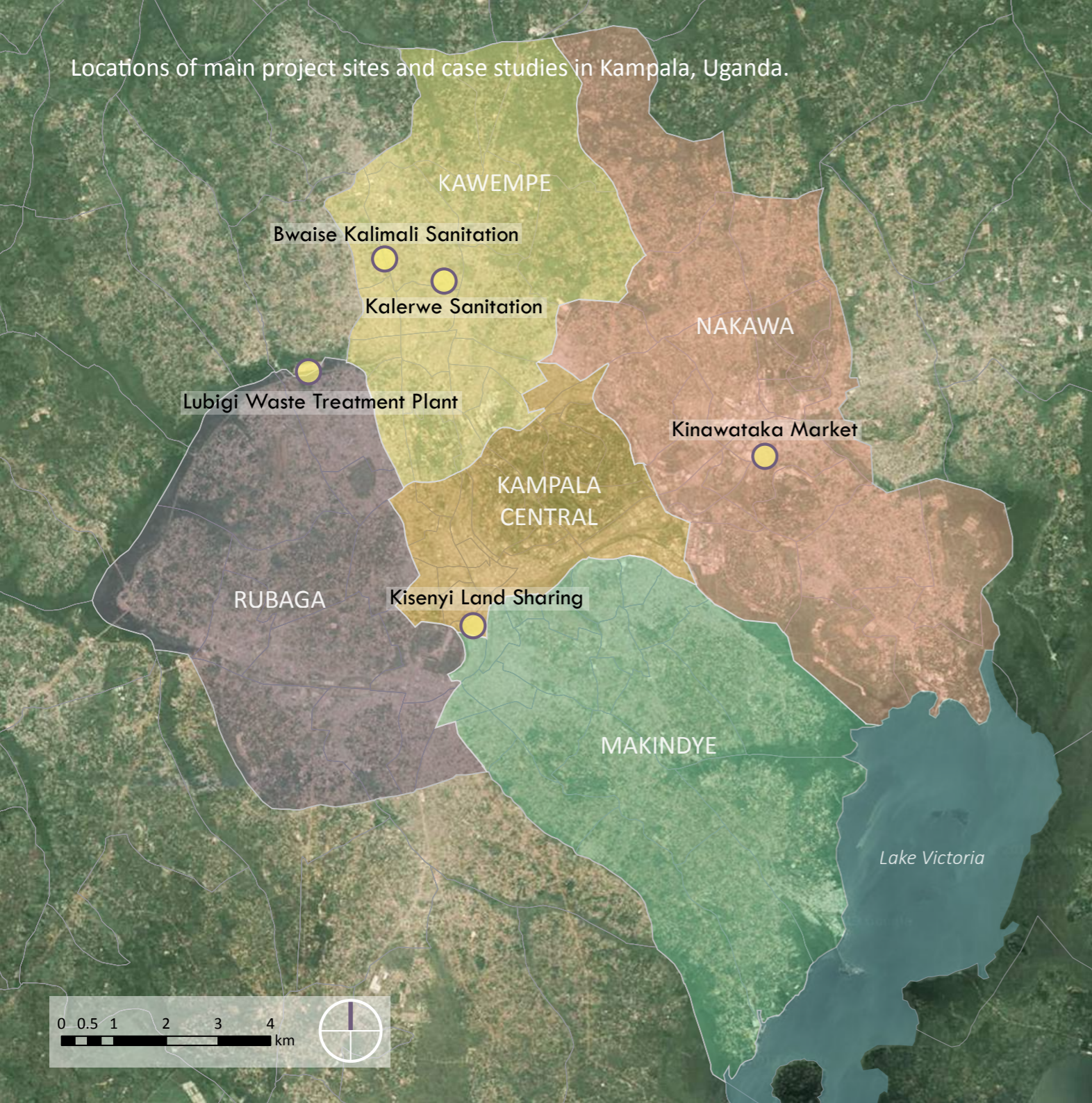
to look into the sanitation issues in Kampala's slum areas, review applicable technology options and propose low-cost sanitation unit designs.

Of course, working in a new, for most of us unknown environment was not easy and all of our groups faced many challenges, both internal and external. Cooperation with stakeholders and local authorities was not always as smooth as we expected. Getting around the city during rush hours was taking a lot of our time and using faster alternatives was dangerous and risky. We also had to deal with power outage issues which almost paralyzed our work for a several days. The good news is that we managed to overcome or adapt to those issues and were able to finish our work on time.

Although our projects are formally defined as academic, they were not perceived as such by the slum dwellers and people we spoke to in Uganda. We feel very fortunate to be given a chance to work in the field on real life issues. We are also excited about the opportunity that some of our proposals may eventually be implemented.



Locations of main project sites and case studies in Kampala, Uganda.



## Acronyms

BOU	Bank of Uganda
CBR	Cost-Benefit Analysis
CBO	Community-Based Organization
CSO	Community Support Organization
KCC	Kampala City Council
KCCA	Kampala Capital City Authority
KWSF	Kampala Water and Sanitation Forum
MATIP	Markets and Agricultural Trade Improvement Programme
MGLSD	Ministry of Gender, Labour and Social Development (Uganda)
MOFPED	Ministry of Finance, Planning and Economic Development (Uganda)
MOES	Ministry of Education and Sports (Uganda)
MOH	Ministry of Health (Uganda)
MOLG	Ministry of Local Governments (Uganda)
MLHUD	Ministry of Land, Housing and Urban Development (Uganda)
MWE	Ministry of Water and Environment (Uganda)
NGO	Non-governmental Organization
NSDFU	National Slum Dwellers Federation Uganda
NTNU	Norwegian University of Science and Technology (Trondheim, Norway)
NWSC	National Water and Sewage Corporation (Uganda)
PMC	Project Management Committee
SDI	Shack / Slum Dwellers International
UEP	Urban Ecological Planning program at the NTNU
UGX	Ugandan Shilling
USD	United States Dollar



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# In Situ Redevelopment Project

A model project of land sharing for affordable housing

Kiti Zone, Kisenyi III, Kampala, Uganda

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## Chapter 1

### Introduction

Project Background

Project Scope

Project Methodology

Project Timeline



# Introduction

**‘Everyone has the right to own property alone as well as in association with others. No one shall be arbitrarily deprived of his property.’**  
 article 17 Universal Declaration of Human Right

The feasibility and success of planning schemes are dependent upon the availability of land, the nature of land holding and ease with which it can be acquired for development. Land tenure refers to the manner in which land is owned, occupied, used and disposed of within a community.

The current policies, institutions and processes, including laws and regulations, which govern people’s access to land have historically treated it as a social asset and bedrock for the existence of life, yet at this point of time the global need to scientifically manage land can no longer be overlooked.

Land tenure becomes the crucial aspect for development especially to keep the essence of universal declaration of Human Rights where the preamble states that *‘recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world’*. Nevertheless most of the urban population do not have access to land due to low-income levels which makes them unable to acquire land in open market. Even the housing prices in formal rent market is so high that these low income earners are forced to develop housing for themselves without having tenure security. This makes them more prone to eviction. This shear sense

of tenure insecurity quadrupled by continuous fear of evictions have a lot of cumulative effect on other aspects of living like health, education, employment, access to credit etc....(see figure 1.1) (Baharoglu, D.and C. Kessides-March 2004).

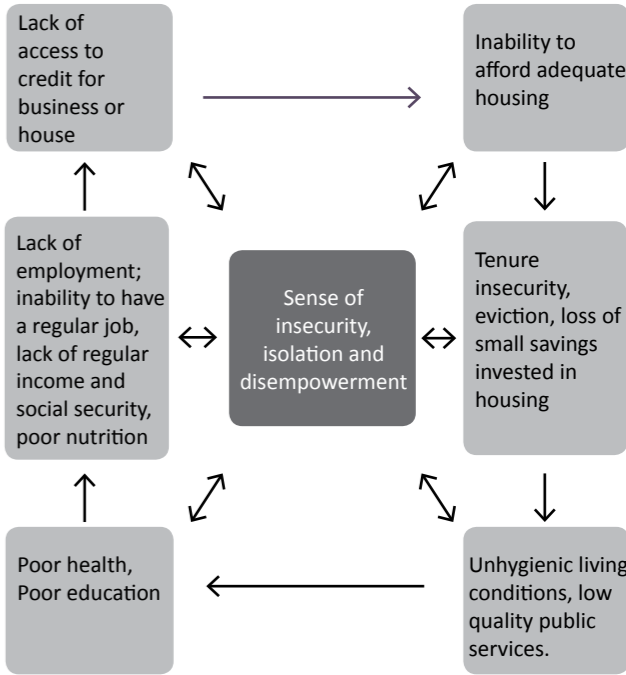


Figure 1.1 cumulative impacts of urban poverty<sup>1</sup>

1. page 127 Urban poverty chapter of the PRSP Sourcebook. Chapter 16. World Bank, Washington, D.C. March 2004

In order to successfully address the issue of land tenure in relation to affordable housing for the people living in low income settlement, the planning tool like land sharing becomes one of the solutions to look for. It is a tool in which the land owner comes into an agreement with the beneficiaries and developers on the land and the agreement made has to ensure that all parties involved are not affected in anyway.

## Project Background

### Kisenyi land sharing project

The project was started by 2011-13 UEP batch of NTNU in collaboration with local NGO ACTogether, SDI & NSDFU in the year 2011 and followed by students from New School of New York in early 2013. Both groups worked closely with community, came out with in depth analysis of the area and various ideas on how the land should be developed. Building on their work we (Students

from NTNU-UEP 2013-15 & Makerere University) were involved in the current project technical team consisting of architects, planners and engineers formed by ACTogether and were supposed to work closely with ACTogether, SDI, NSDFU and others involved agencies to take the project forward.

## Project Scope

Since a lot of background research had been done by previous groups, so our scope was limited to the extent of management and design aspects of the project, which includes:

- Assessment of project assumption in design and economic aspects
- Development of project implementation plan
- Building relationship with technical persons/ institutions that can support the project
- Continue to strengthen the relationship with government Institutions like KCCA and MOLHUD

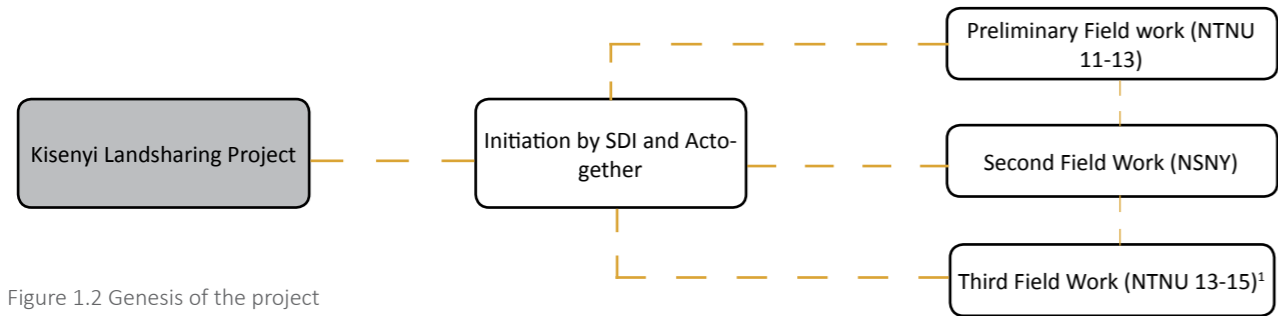


Figure 1.2 Genesis of the project

1. Current students (NTNU 2013-15)



## Project Methodology

First step of being involved in an ongoing project always starts with review of the work done till date and because of the limited timeframe, it was efficient in time rather than doing something completely new, the project started with finding the missing elements in the work done till now, so that project can move ahead on the same ground.

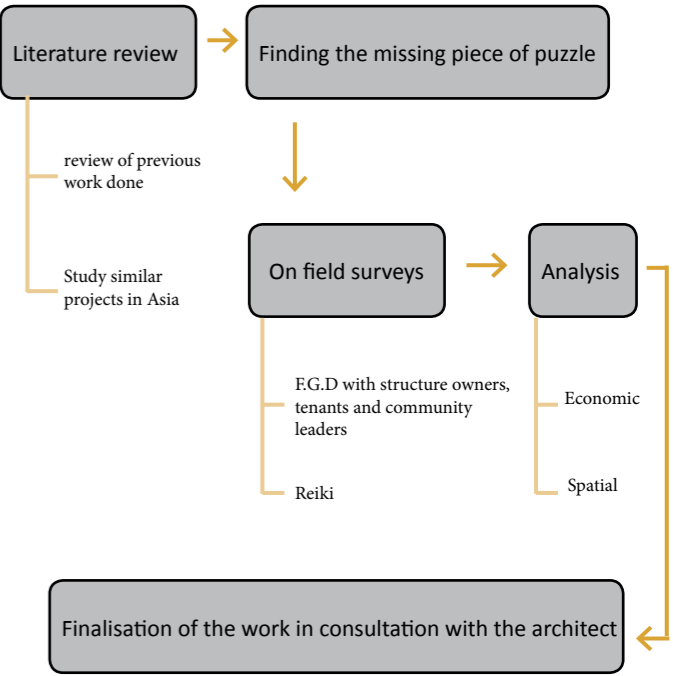
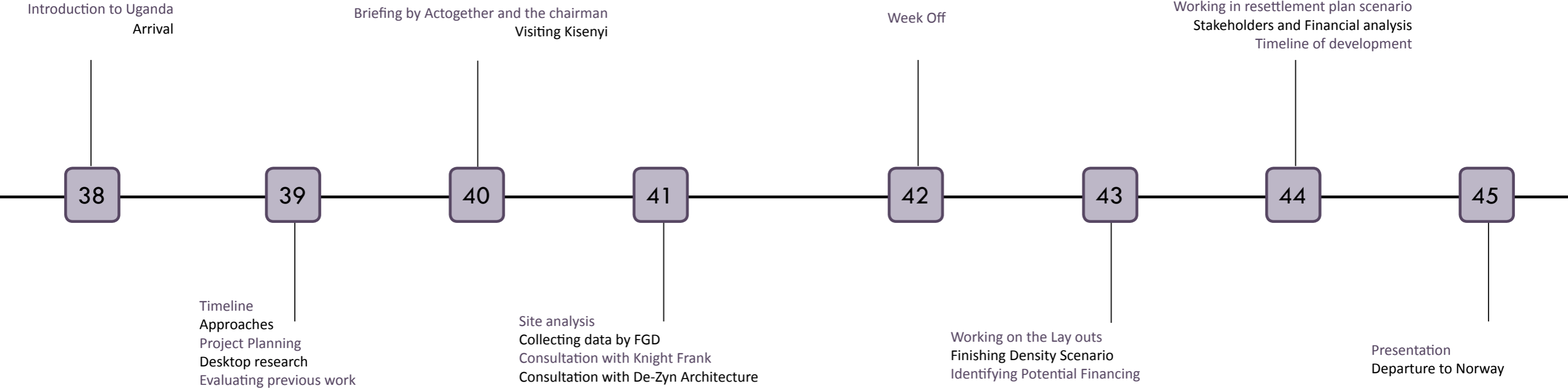


Figure 1.3 Project methodology

# Project Timeline





## Chapter 2

# Background Research

Tenure Security

Case Studies

Project Approach

# Tenure Security

“Secure land and property rights for all are essential to reducing poverty, because they underpin economic development and social inclusion.”

Anna Tibaijuka

In urban areas, large number of people are forced to establish informal settlement because of the covertness of so called formal settlement. These settlements lack basic services and most of the low income are dependent on them for their shelter & livelihood. In absence of clear property rights, these people live continuously in fear of forced eviction worsening their informality.

As per World Resource Institute about 40% (400 million) of Africans are living in urban areas, which are expected to be one billion by 2040. Most of this population explosion takes in these informal settlement, which increases the overall pool of people who face the fear of content eviction. So ultimately Africa’s rapid urban growth makes a call on change in land polices in order to protect the tenure security of the people living in these settlement, as secure tenure will contribute to more secure income/ livelihood for many.

## Land sharing-an alternative to eviction

Land sharing is one of land management tool. In terms of housing, land sharing means a plan to divide a plot of land, into two parts – one part for the landowner to develop and the other part for rehousing the dwellers who live currently in the land (UNCHS, 1986, p.66). This concept is used to remove the conflict between the dwellers and the landowner, and it also means reorganize

housing in a land so that more people can live there.

The tool of land sharing is often seen as alternative for eviction. But it is effective only when it is used wisely for example in some of cases in India it is more used as lobbying for legalizing the low income settlement i.e. giving the envelope of formality to informal areas.

## Aspects of land sharing

Technically the definition of land sharing says all about regularizing the spatial boundary, but it has to be viewed through the lenses of affordability, feasibility and legality when we talk about using this tool for low income settlement. Because for this kind of project to be successful it is necessary to have the combination of all three, otherwise it will result in urban fiasco.

As per United Nations Habitat, there are five general principles for land sharing project; agreement between property owner and resident to partition the land, participation of the residents during the reconstruction, resettling the maximum number of current residents, reconstruction of buildings to accommodate more people, and cost recovery.

These five general principal forms the basis for 3 important aspect of land sharing which we mentioned

earlier: Affordability, Legality and Feasibility and for this project to be successful it becomes important to have the answers for the questions raised by these aspects.

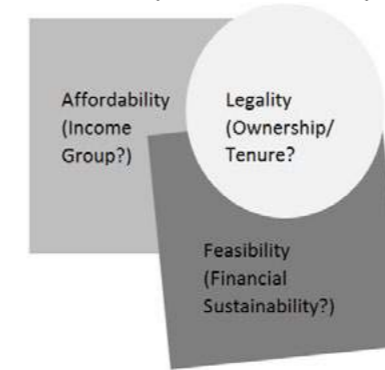


Figure 2.1 Three aspects of land sharing

### Legality:

Land sharing in a way give the legal right to the people for the ownership. As when the process is complete the dwellers get either complete or partial ownership depending on the model of housing followed & ownership of the land. The way in which the process is carried out determines the ownership of the property.

For example when there is multiple land ownership then land parcel has to be divided corresponding to the

land owned earlier but when there is just one owner and multiple structure owners (house owners) then the distribution afterwards becomes bit complex.

### Affordability:

As it is predominant that the land sharing tool is often carried out in the low income settlement. So in order to cater to these low income dwellers, it’s always necessary to have the dwelling units which are affordable for them. Prices of the unit should be kept in such a way these people can easily afford them. The only way it can be done is to either have small dwelling unit sizes or by cross subsidization through commercial areas or having a mix of variable dwelling unit sizes or having the mix of all.

### Feasibility:

As these projects cater to the low income people so the cost recovery becomes bit tricky. So in order to have a financial viable plan it’s necessary to have a cross subsidization mechanism like having a number of commercial units or more residential units which can be offered to housing market in general.

# Case Studies

The need of having well defined aspects of land sharing becomes evidents we look into similar kind of projects across the globe.

**Phnom Penh, Cambodian. 2003:**

Cambodian authorities launched four pilot slum-upgrading projects in Phnom Penh using the technique of land sharing in 2003. The projects were all designed to be financed through cross-subsidies from commercial development, with housing allocated free to beneficiaries as part of the Royal Government’s social land concession policy.

**Guangzhou, China. 2009:**

In 2005-2008 in Guangzhou, China, Urbanus was to design a 220 apartments housing complex for people for low income. The units designed to be extremely small and therefore rented at the lowest possible rates. This building integrates living, storage, shopping, religion, and public entertainment into one, there are shops and other community facilities that are placed in the lower floors of the complex.

**Odisha India. 2013:**

The Odisha Alliance is a partnership involving NGO, women organization, NSDF, and Sparc. In India, the alliance works to create housing options for the poor on two fronts:

- Through internal resources, including incremental housing programs and credit-based housing programs.
- Through government partnerships, including affordable housing schemes implemented by communities, land provision, subsidized housing mechanisms and infrastructure projects.



Tulou Housing Guangzhou, China / URBANUS Architects  
Source : <http://www.archdaily.com>

# Project Approach

In all the case studies it is evident that housing units can be affordable only either by having smaller dwelling units, cross subsidization thorough more number of units-residential and commercial units. This formed the base for the land sharing project in Kampala. **The land sharing project in Kampala is one of the unique and first of its kind in Uganda. The project becomes a kind of proto type for similar kind of development in the area.** Housing is never seen alone, it always has its forward and backward linkages with others sectors, and in these type of settlements the linkages are more strong so even a slight disturbance to any one of the link has a massive

impact on the people. This project is developed in such a way that these linkages can have minimum disruption.

So we developed a set of guiding questions for the project which further divided the project into three inter-related components: 1) design 2) finance 3) implementation from the point of view of the existing dwellers to make sure that these people suffer minimum tangible or intangible loss.

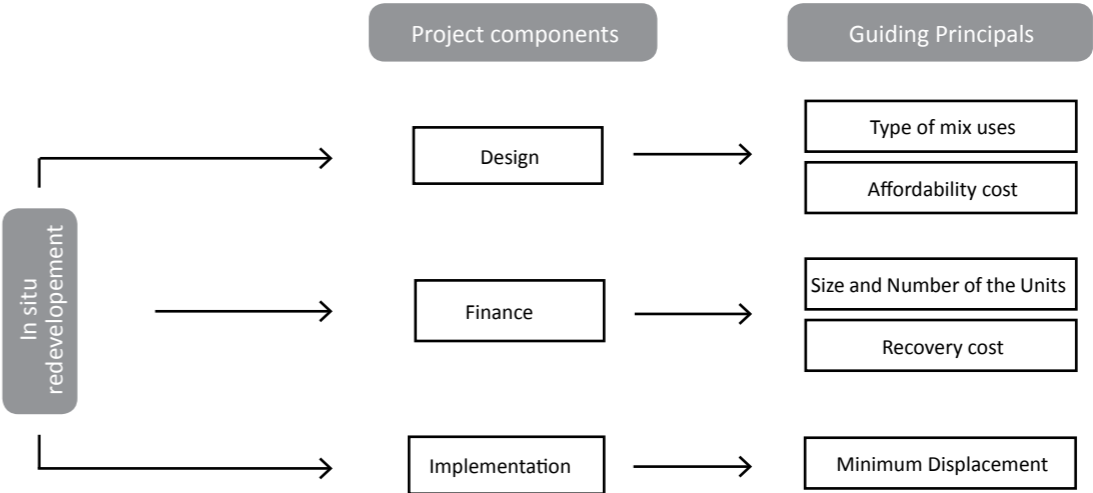


Figure 2.2 Conceptual framework



## Chapter 3

### Site Dynamics

Introduction to The Area  
Land Policy and Tenure System  
Ownership

# Introduction to the area

KISENYI III, KITI ZONE

Kisenyi is located in south western part of Kampala central business district. It consist of three parishes called Kisenyi I, II & III. It is one of the largest informal settlement in the heart of Kampala. Its closeness to the key productive areas of downtown Kampala and central Business District, makes it one of the most thriving area in the city of Kampala.

## Brief history of Kiseyni

Growth of Kisenyi can be dated back since 1885 when Kabaka Mutesa 1 of Buganda moved to Mengo Hill and established the area as the hub of his kingdom (Kampala was the capital of Buganda Kingdom). Because of its closeness to the hill Kisenyi grew rapidly with the influx of new settlers. After 1930s, many international migrant workers and tradesmen started settling in kisenyi, including the fishmongers from Kenya and timber merchants from India.

Crop farming such as beans, coffee, maize, yams, bananas and cotton was the main occupation of the people living in the area. With the influx of population in Kampala, the number of residents in the area continued growing. Migrants were attracted to available land and safe places to do business and Kisenyi because of its closeness to center Kisenyi served as a best option to settle in.( SDI, 2011)



There was no extensive service provisons in the area till 1986 when Museveni became president of Uganda. Services like water, sewerage began to reach to more number of population and electricity was extended to certain parts of the area. In following years the area became the place for diversified economic activities and grew considerably. To accommodate this growth the area was divided into three perishes called Kiseyni I, II & III. In 1968 Kampala Planning Area was extended to include Kisenyi. Many plans for the re-development for kisenyi has been made by KCCA but have not been implemented.

## Area in consideration

The site for the land sharing project in located in Kisenyi III in Kiti zone. The area of the site is 1.6 acres or 6,474.97 sqm. On the south, the area boundary is Mutebi Road and in the east, there is a 2-meter wider road and drainage. On the north and west side, the neighbor environment is commercial units, residential area, and public sanitation. Commercial area sited in the corner of the land because of the access. There are many type of business in the area, for instance dry cleaning, saloon, restaurant, video library, small market, motor spare parts shop, and shoe shining. The other part in site is residential area and empty lot used as a parking lot.

In the site, there are 75 households and 147 residents (ACTogether, 2013). The number of resident changes

rom time to time because most of the resident not permanently lives on the site, they are moving to other places due to some factors; work place, rental fee, marriage, etc. However, the characteristic of dweller is almost same.

From the economic site, their income can be seen from the affordability they have to pay the rental fee. For the residential unit, one of structure owner charges UGX 50,000 to 100,000 (USD 20 to 40) per month depending on room size, and for the commercial unit, rent varies from UGX 60,000 monthly for small kiosk (shoes shining), UGX 300,000 monthly for small kiosks, and UGX 500,000 monthly for motor spare parts shop.

# Land Policy and Tenure System

## Tenure System

Uganda’s legal system was adopted from the British legal system. Uganda’s National Land Policy was sanctioned in February 2013 by Cabinet as the framework for development and use of Uganda’s land resources for the next decades. According to the policy, land tenure in Uganda is categorised by: customary, freehold, mailo and leasehold tenure. Customary tenure is the ownership of land by communal which inherited from pre-colonial era. Freehold tenure means the ownership of registered land by private or communal.

Types	Description
Mailo Land	<ul style="list-style-type: none"><li>Privately owned by the king of Buganda and Chief in permanent time</li><li>Dwellers on land became tenants</li></ul>
Customary Land	<ul style="list-style-type: none"><li>Covers over 75% of land in Uganda</li><li>Communal customary tenure (Northern and Eastern Uganda)</li><li>Individual/ family/ clean customary tenure (Central and Western Uganda)</li></ul>
Leasehold	<ul style="list-style-type: none"><li>Land owned on specified period (Uganda Land Commission 49,99 or 199 years of public land)</li><li>Can be owned by central government, urban authorities or indivisual owners</li></ul>
Freehold	<ul style="list-style-type: none"><li>Owned by indivisuals or organisations in perpetuity</li></ul>

Table 3.1 Types of land Tenure<sup>1</sup>

1. Source: Mukiibi, Sthephen. 2013

Mailo tenure is the ownership of land by Buganda. Leasehold tenure means the owner own the property in a limited period of time.

## Uganda’s Land Policy

The policy has two major objectives: (1) to re-orient the land sector in national development by articulating management co-ordination between the land sector and other productive sectors in the economy, (2) enhancing the contribution of the land sector to the social and economic development of the country. One of the key issues outline in the policy is to handle escalating land conflicts and land evictions.

Then in Uganda, not only land, the tenure system also applies to structure building. For structure, it simply divided into three types of tenure; registered structure owner, the owner who own the structure but not registered, and the tenant.

So land sharing can be seen as one of the solutions for preventing land conflicts and evictions by sharing the occupancy of the land between the land owner and dwellers. For land sharing case, the ownership (the freehold ownership) will be divided for both land owner and the structure owner.

# Ownership

In the site area, the ownership can be divided by landowner, structure owner, and tenants. Landowner is the one who owns the land and decide the rules on the land. In Uganda, landowners have the highest power because everything that is being built on the land needs their permission. The structure owner is the one who rent a plot on the land and build a structure on it. There are nine structure owners in site area, including the landowner. The structure owner has less power compare to landowner, but has more power than the tenant has. The structure owner has right to define structure rent fees. Tenants are individuals, families, or groups who rent the structure or plot of land.

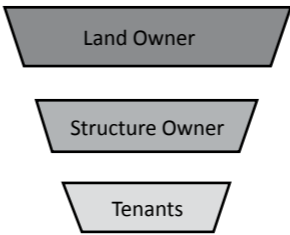


Figure 3.1 Level of ownership

The land on the site is owned by one man named Haaji Mulangwa. There are twenty one structures in site which is being used for commercial and residential purposes. Today, eight of the nine structure owners deceased and had bequeathed his property to their children. So, even the structures now own by more people, legally it is still under nine names. The number of tenants in the site is fluctuating around a hundred to hundred and fifty.



PROJECT LAND	
Land Owner	Haaji Mulangwa
Structure owners	21 claims
	9 originally
Tenants	100 to 150

Table 3.2 Land occupancy details



KISENYI III SITE MAP

NTNU UEP 2011  
Kampala, Uganda



Chapter 4

Design Approach

- Affecting Factors
- Site Design
- Unit Size and Housing
- Resettlement Plan

# Affecting Factors

This project is unique in nature and although it shares traits with ordinary slum upgrading projects, it has factors that ought to be looked at with a sensitive approach. The approach to the design of the housing units for the people in Kisenyi was affected by a number of factors:

- 1.The location of the land/the value of the land
- 2.Surrounding developments
- 3.The KCCA master plan
- 4.Affordability by the residents
- 5.Sharing of the land

## Surrounding Development value of land

The location of the land had an implication on the value and subsequently the type of development that would eventually be proposed. This was exemplified by the high rise predominantly commercial developments in

the immediate neighbouring areas. This implied that the kind of development would have to suit the prime value of the land in question. The other factor that influenced the approach to the design was the KCCA master plan in and the proposal which was a BRTS station close to the area. The implications of these plans meant that this land is not only prime in the present but also the value will appreciate even more in the future.

## Affordability

The affordability of the proposed development by the residents of Kisenyi III was also a big factor into how the developments would be planned and designed. All these factors presented bigger opportunities for commercial activities and meant that the land was better suited for high density residential and mixed use development.

## Development Proposals

Since the project land has to be purchased from the land owner, he agreed on selling his land only by seeing the development proposals, both for his part and for the project part. So we worked out several options of how the land would be shared and these were in respect to the needs of the land owner and the project and the above figures show two of the options from which the final proposal was chosen. The final proposal is discussed later in this chapter.

## Tenure security

the essence of this project is to provide the tenants with security of tenure so that they can comfortably live in the area without fear of eviction. This to a very large extent is achieved by the land sharing project by virtue of its definition providing a base for solutions to the current challenges.

## Cost

since the project beneficiaries are mostly low income earners who can barely afford decent housing, this project is sensitive to cost and affordability by the current tenants. It is the most important factor of all of them because if not well thought about then the current target beneficiaries can be roused by middle income earners.

This can be addressed through design on two fronts: **the first is through careful analysis of the unit sizes per household and the second is through including several commercial space to eventually subsidize the target beneficiaries.**

# Site Design

This project’s main objective was to improve the current living conditions of the people in Kisenyi III. With this in mind, the task was to have a slum upgrading project that would be beneficial to the current residents. For this to be successful, it was important to identify the main problems of the area as far housing is concerned and propose solutions through various approaches. This chapter discusses how some of those problems can be solved through using design as a tool.

The main challenges that are faced by the people that live in Kisenyi are:

- 1.Tenure security
- 2.Cost/affordability
- 3.Housing quality
- 4.Maintenance of the livelihoods of the people
- 5.Development without eviction

This factor influenced the design through the inclusion of more mixed use functions rather than purely residential or purely commercial functions.The biggest threat to the affordability of the units is the standards and laws. The laws in Uganda have stipulated minimum sizes for a habitable rooms. However, this can be compromised and quality still achieved through the design rather than mere size of the habitable rooms.

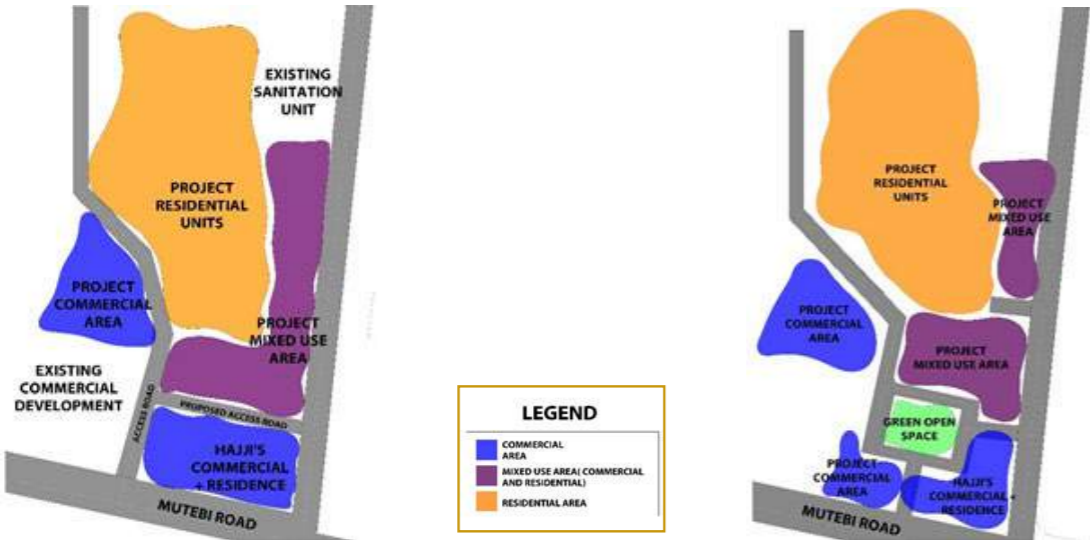


Figure 4.1 Proposed land use

## Housing quality

the quality of the housing is not only dependent on the unit size but could be achieved through design. Irrespective of the size of the spaces, quality of space is best achieved through design. Use of materials and themes such as flexibility could be used to provide more habitable and more comfortable spaces. One of the meetings with the architect established that it would be possible to have the units designed with such flexibility that a lot of freedom is left to the tenants to decide how the eventual space would be used. Possibilities of merging several units together was left as an option so that the tenants have a choice based on what they could afford and how big their families were.

As shown by the quotation below, the people in Kisenyi are not strangers to living in small spaces so the challenge is to provide decent living conditions in small spaces. As will be shown later in this chapter, it is possible to provide decent habitable spaces within small spaces.

## Livelihood

the approach to this project as earlier mentioned was to have minimal disruptions to the livelihoods of the residents and to eliminate the threat of evictions. Therefore, the proposed design of the buildings would be phased in implementations rather than having the development take place at the same time. Designing the project to be phased in terms of construction also helps to subsidize the project as after every phase the revenue increases.

## No Evictions

achieving this objective is mainly influenced by the implementation of the project. However, it is important to be conscious of the approach going into the actual physical design.

# Unit Size and Housing

*'We don't need the size of 35 sqm, right now we are living in 9 sqm unit. We will be happy to have a unit of 15 sqm with shared facilities of kitchen and sanitation.'*

A resident of Kiti zone, Kisenyi

Considering the above aspects we started wondering about the size of dwelling units i.e how big the unit should. As per By-laws and public health regulations of Uganda we found out that for a family of 6 minimum unit size of 35 sq.m for a habitable unit.

So taking the overall construction cost at 300 USD per sq.m, the cost of this unit would be around 10500 USD. So question arises for a family which earns around 1,150 US dollars(annual income of most of the families living in the project area) , these units are not affordable at all. After discussions with the community members we came down to conclusion that why can not we have the mix of variable unit sizes of 15, 21 & 36 sq m so that even the family in lowest income spectrum can dream of buying his/her dream home. For the units with 15 and 21 sq.m size we further thought of having shared kitchen

and bathroom facilities in order to reduce the cost of the units further. But these requires a lot of changes in governing By-laws and change in condominium law (laws governing the common/communal property in Uganda).

Since for the design to be approved changes in By-laws was necessary which was not possible in two months of fieldwork, so we decided on developing two design scenario one following By laws i.e going by the unit size of 35 sq.m & plot coverage of 40% and second scenario with variable units i.e the case of Special planning area where rules can be changed for the project and plot coverage of 75%. Thus in case of special planning area three main changes which we are suggesting here:

- change in minimum unit size requirement

- change in plot coverage from 40 % max to 75%
- change in rules for having shared kitchen and bathroom facilities.

A discussion with the architect had us establish that the design of the housing units would be designed in such a way as to allow for flexibility in the design. This design will allow for the tenants to configure their units as they see fit.

Through flexibility, the different units can be configured differently as shown in the figures above. The building will be designed in such a way that the units could be joined together to give more room to the units depending on the size of the family.

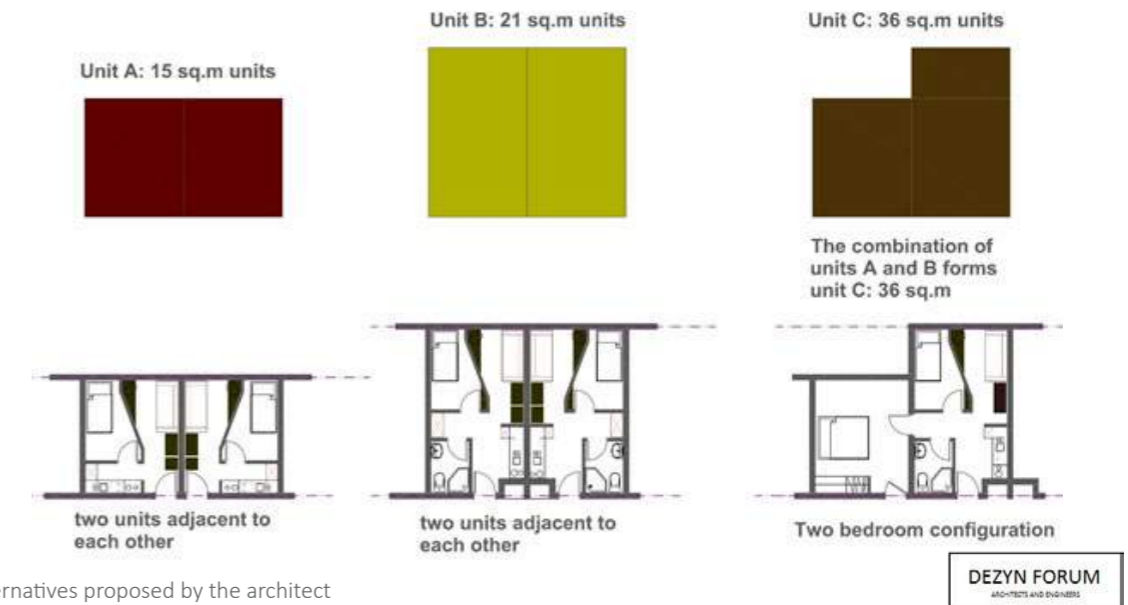


Figure 4.8 : 3 alternatives proposed by the architect

# Resettlement Plan

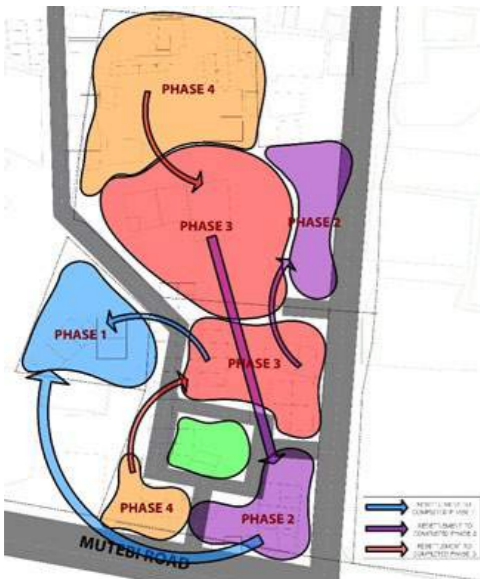
With the objectives of this project, the question of how to implement this project in the best feasible way possible is the main challenge. Our main objective was to find out how can this project be implemented with no eviction and with minimum disruption of livelihoods of the residents? The solution was to break down the construction into phases. An analysis was done to establish the sequence of the phasing.

## Resettlement plan alternative I

The logic behind the resettlement plan chosen for this case was that the area of least impact makes up phase 1. Fortunately, the land we were dealing with had a sizeable area that was not being occupied and that

provided an opportunity for the development without any disruptions in the tenancy and livelihoods of the people living on the land.

The basic idea followed in this resettlement plan was that the prior phase development will take the people that would be affected by the next phase so the development had to cater for their housing before resettlement could be done. For instance if phase 2 would affect 10 households then the minimum number of housing units that phase 1 should be 10. Therefore once phase one is completed, the 10 households would be resettled into the 10 units or more that would be completed in phase 1 before phase 2 can start.



	ACTIVITY/ DEVELOPEMENT
Phase 1	<ul style="list-style-type: none"><li>This phase started with the development of a relatively “free” area represented by the blue color.</li><li>After phase 1 development, tenants in the purple area are relocated to the completed phase 1 before phase 2 commences</li></ul>
Phase 2	<ul style="list-style-type: none"><li>Phase 2 comprises of development in the purple areas</li><li>These are commercial and mixed use developments</li><li>All tenants in the red area are relocated to the purple area (completed phase 2) and to the blue area (completed phase 1)</li></ul>
Phase 3	<ul style="list-style-type: none"><li>Development of the road</li><li>Development are done in the orange area</li></ul>
Phase 4	<ul style="list-style-type: none"><li>All tenants in the orange area are relocated to the red area.</li><li>Residential development in the yellow area</li></ul>

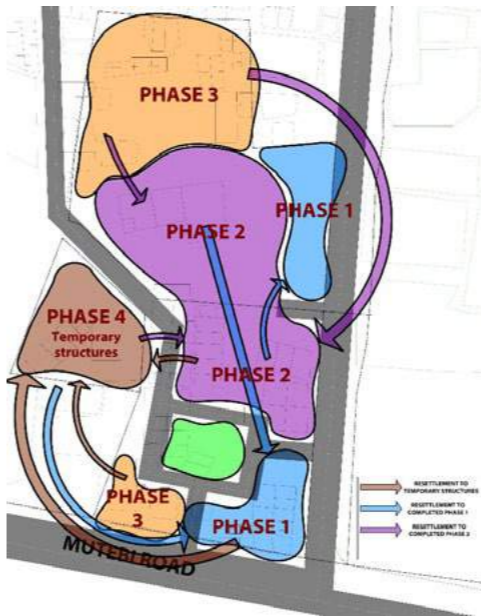


## Resettlement plan alternative II

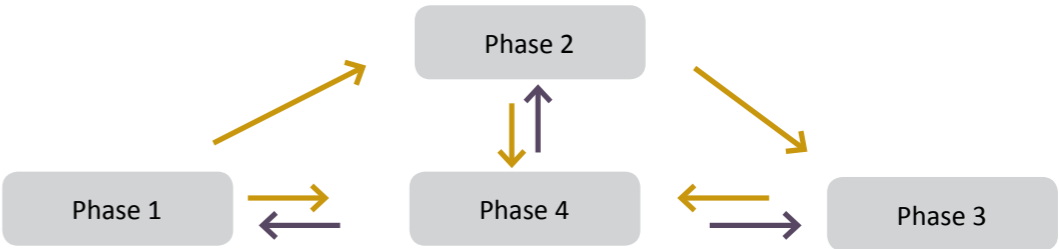
The second option is similar to the first with the difference being that temporary structures are set up and resettlement of the residents before every phase can be embarked on.

In this case, temporary structures are established in an area that is not being used at the moment. At every stage

of construction the affected tenants are relocated to the temporary structure for the time that the construction will be taking place. After construction, the affected tenants are resettled back to the completed housing units. The process is then repeated for the different phases and the area with temporary structures is developed in the last phase after all the tenants are all successfully resettled in their upgraded housing units.



	ACTIVITY/ DEVELOPEMENT
Phase 1	<ul style="list-style-type: none"><li>Build temporary structures in the brown area</li><li>Resettle the commercial units in the blue area to the brown area and develop blue area</li><li>Resettle tenants in the purple area to the temporary area</li></ul>
Phase 2	<ul style="list-style-type: none"><li>Development of the road</li><li>Develop the purple area</li><li>Resettle tenants in the temporary structures back into the purple area</li></ul>
Phase 3	<ul style="list-style-type: none"><li>Resettle tenants in the orange areas to the purple area</li><li>Develop the orange areas</li><li>Resettle tenants in the temporary structures back to the purple area</li></ul>
Phase 4	<ul style="list-style-type: none"><li>Develop permanent commercial units and workshops in the triangle part of the land</li><li>Resettle the temporary commercial units back to the mixed use units</li></ul>



Both of these approaches took the account of tenant occupancy of the area and their livelihood. It is important to keep the target beneficiaries within the boundaries of the site being worked with in order to protect them from being ousted by other possible beneficiaries interested in the project.

The benefits of having to implement the project in phases are that after every phase, the developments become operational therefore, the project begins to recoup some of the finances originally invested. Secondly, the ongoing construction work would provide employment opportunities to the residents. This is positive because not only does it maintain the existing livelihoods of the project but also provide new opportunities.

### Choosing the best

Working out and analyzing several scenarios during the design process, we chose the best option after analyzing the different options. Analysis was done on the basis of the prior objectives set out about how this project should be designed and additional criteria set out for the project.

The eventual project design was to have the following characteristics discussed in three distinct sub themes below:

#### Planning

The plan for the area would be divided between the land owner and the project in such a way that the

prime commercial areas are divided between these two stakeholders. This proposal was found to be the best because it allocates the prime land to the owner seeing that he benefits from the development of the land. On the other hand, the project benefits from this proposal as the revenue collected from the prime commercial area can be used to finance the project and to cross subsidize the cost of the housing units.

From the factors that influenced the design process, the best kind of development for the area was high density residential development with a view of not only providing housing solutions for the current tenants but also more people. Scaling up is discussed in more detail in later chapters.

### Resettlement plan and design

From the beginning of this project we determined that the best way to achieve the upgrading of this project while ensuring that the target beneficiaries are catered for without eviction and with minimum disruption to their livelihoods was to construct this project in phases. So resettlement plan and then cost-benefit analysis were done for the two design scenarios : one that follows the by-laws and the other which does not. (See next chapter for more details.

## Chapter 5

# Financial Analysis

## Cost Benefit Analysis

## Multi-Criteria Analysis

# Cost Benefit Analysis

“The raising of finance on a Limited Recourse basis, for the purposes of developing a large capital- intensive infrastructure project, where the borrower is a special purpose vehicle and repayment of the financing by the borrower will be dependent on the internally generated cash flows of the project”  
David Gardner and James Wright (HSBC)

Project finance is finance for a particular project, such as infrastructure projects like constructing roads, railway lines in this case settlement upgrading project. It is different from traditional forms of finance because the financier principally looks to the assets and revenue of the project in order to secure and service the loan. Where as in ordinary borrowing situation, in a project financing the financier usually has little or no recourse to the non-project assets of the borrower or the sponsors of the project. In this situation, the credit risk associated with the borrower is not as important as in an ordinary loan transaction; what is most important is the identification, analysis, allocation and management of every risk associated with the project.

For the feasibility of the project we tried to estimate project cost involved and analyze the cash flow through the discounted flow technique called cost-benefit analysis. As the analysis gives a broader sense of monetary numbers required for the project at each step and also we can estimate the cash inflows at various interval of project.

It is a simple way of deciding whether to go ahead with project by weighing the project cost and benefits. As the name suggest the analysis is done by adding all the cost (cash-outflows) & benefits (cash inflows) which are adjusted for time value of money. By adjusting for

time value gives the present value of money at the fixed discounted rate, as the value of money depreciates over a time frame. As said earlier CB analysis is basically done in order to have a rough understanding of amount money required for the project and time frame in which project cost can be recovered & also have a comparison that which scenario we should go for, is it feasible to have changes in by-laws or go for special planning area.

## Assumptions

Since the project is still in pre planning phase, a lot of estimations are based on various assumptions. For example total construction cost is just based on the building footprints-floral area taken from the preliminary design by the architect firm Dezyn Forum & rate of construction per sq meter was taken 300 us dollars as estimated by the architects. Similarly the cash inflows were calculated based on the rates obtained from Knight-Frank’s financial analysts. The escalations in rate for cash inflows is not taken into consideration, as per the same source from Knight-frank there is hardly escalation in prices in Kisenyi and it is expected to be same for coming years. Also it was assumed the constructed unit is sold before the starting of next phase. So the figures in the analysis should not be taken for granted as it is based on numerous assumptions, it just gives a rough idea about monetary aspects.

The estimations are solely based on the preliminary design which is expected to be changed, so all the figures from the analysis will change. But the it still gives the approximate idea about amount of money required for the project.

## Outcome of CB analysis

CB analysis was done for two scenarios 1) following the by-laws (i.e. Special Planning Area case) 2) following the By-laws based on one of the implementation plan (explained in previous chapter)

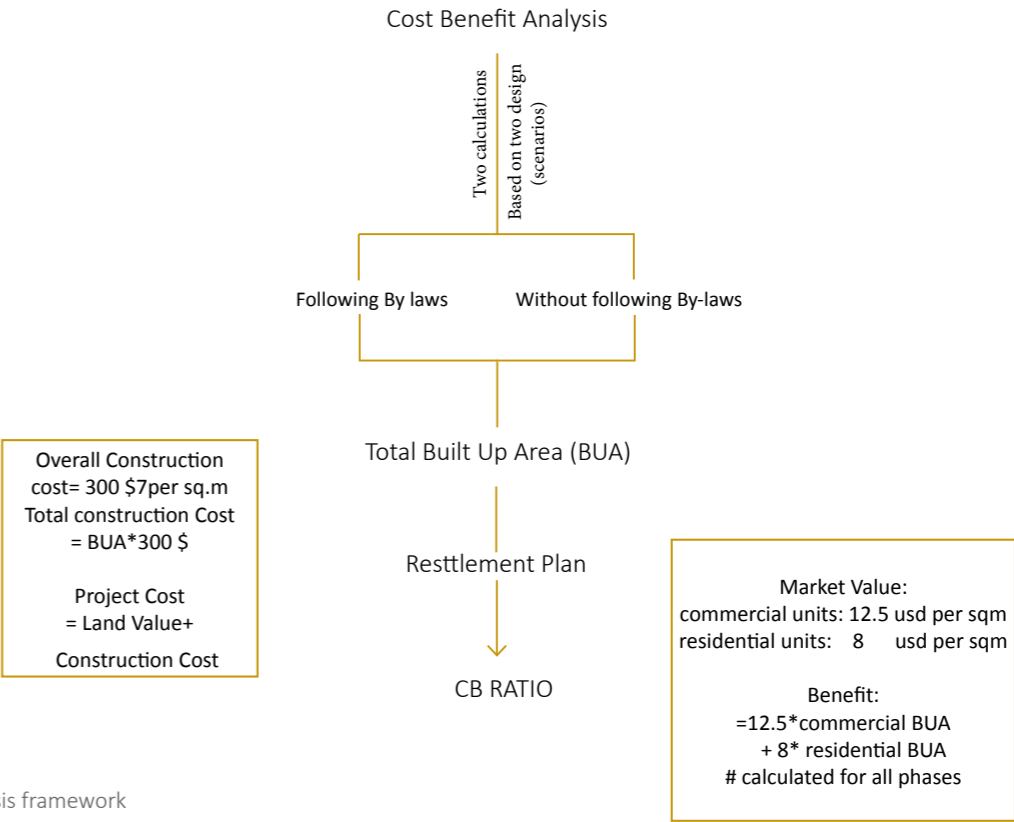
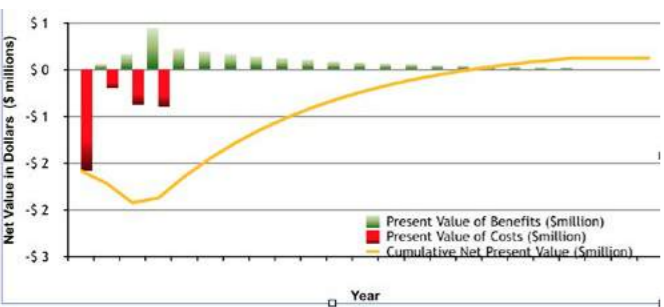


Figure 5.1 : CB analysis framework

# Multi Criteria Analysis

Scenario 1:  
Development in case of special planning area



**Key Assumptions:**

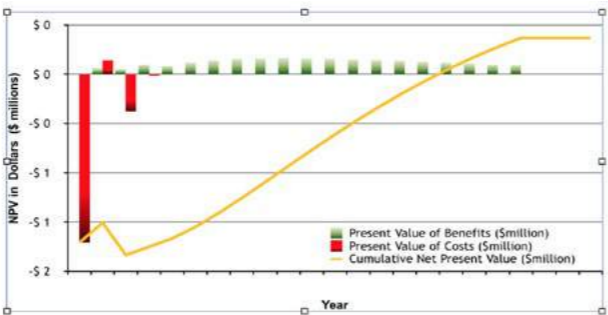
Public Sector Discount Rate 2013: 16.00%  
Appraisal period (years): 20

**Summary of the Results of the Analysis:**

Capital Costs: \$1,414,400  
Whole of Life Costs: \$3,826,962  
Present Value of Benefits: \$3,262,458  
Present Value of Costs: \$3,076,391  
Benefit Cost Ratio: 1.06  
Net Present Value: \$186,067

The benefit cost ratio for this development is more than 1 i.e benefits are more than the cost incurred so that project is feasible also considering the fact the cost incurred will be recovered around 17 years from the start of the project.

Scenario2:  
Development following the By-laws



**Key Assumptions:**

Public Sector Discount Rate 2013: 16.00%  
Appraisal period (years): 20

**Summary of the Results of the Analysis:**

Capital Costs: \$1,414,400  
Whole of Life Costs: \$1,902,285  
Present Value of Benefits: \$2,094,866  
Present Value of Costs: \$1,762,819  
Benefit Cost Ratio: 1.19  
Net Present Value: \$332,047

Even in this case benefit cost ratio for this development is more than 1 i.e benefits are more than the cost incurred so that project is feasible also considering the fact the cost incurred will be recovered around 17 years from the start of the project.

		Alternative 1		Alternative 2	
		Special Planning Area		By Laws	
Criteria	Criteria weight	Score (out of 10)	Weighted score	Score (out of 10)	Weighted score
Following guidlines	25.0 %	3	0.75	8	2.00
Recovery by commercial	50.0 %	8	4.00	9	1.50
Units open to market	25.0 %	8	2.00	2	.05
Overall	100.0 %	19	6.8	13	4.0

Since in both scenarios the Benefit cost ratio is almost same so we decided to go for another analysis involving various parameters. Three different criteria was formed based on the nature of the project and a corresponding weight-age is given to these criteria in order to have a weight-age score so that we can compare which scenario is better. The three criteria which was taken in consideration was 1) following guideline: more weightage was given to one which followed the guideline out of the total scale of 10. 2) recovery by commercial 3) No. of units offered to market.

As per index score it can be seen that scenario with special planning area scores more but it has lower benefit cost ratio but that's mainly because of the more construction cost.

**Conclusion:**

Based on the analysis it is clear that project should go for declaring the area as special planning area so that it can have special regulations. Apart from the crunching numbers another fact is that development in case of special planning area will provide more number of housing units for the low income dwellers in the city where no effort has been made to provide affordable housing for them.

“All projects depend on selecting stakeholders with whom they can jointly work towards goals that will reduce or reverse the threats to your key conservation targets.”

World Wide Federation

### Stakeholder Analysis

For any project it becomes important to identify all the individual or organisational entities which have or can have the potential to influence the project at any stage. Stakeholders play important roles as advocates, sponsors, partners and agents of change. So stakeholder analysis becomes a crucial part of pre planning phase of project. It identifies all primary and secondary stakeholders who have a vested interest in the issue with which the project is concerned.

In this project, the stakeholders categorisation is based on degree of stakeholder’s influence and level of impact. Initial step to do stakeholder analysis is by predicting issues on the project and the most involve party to every specific issue. The main intention is to focus on partnership. Determining whose needs or wants to be involved, and when and how that involvement can be achieved provides the basis for developing collaborations.

#### Legal aspects:

For the project to start on ground all the legal aspects have to be covered. As we have seen in chapter 4 that for the project there is need to have the area declared as special planning so that the by-laws can be changed

for the design. This can be done by getting approval from KCCA, if project is presented in front of them.

#### Financial aspects:

As we have seen in chapter 5 a huge amount of money is required for the project and this can not be covered by

community saving funds or SDI, so there is need to find the potential investors for the project to invest in and details have to be worked out.

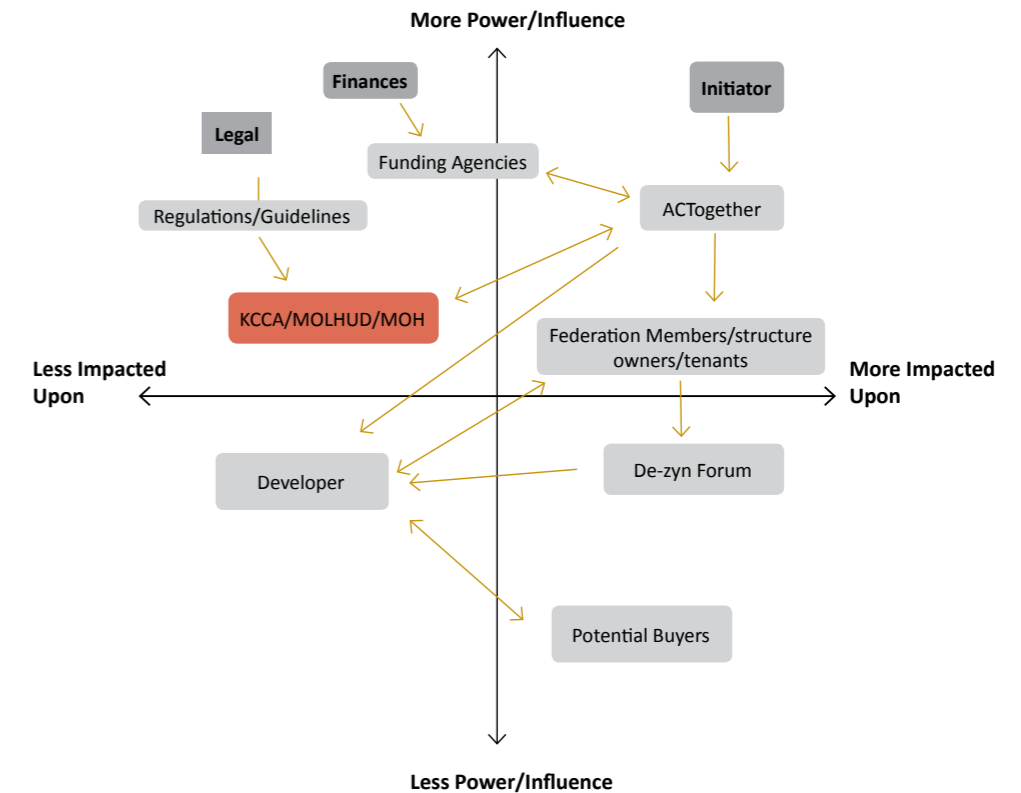


Figure 6.1 : Stakeholder Analysis

## Chapter 7

# The Way Forward

### Having a PMC Governing Framework

It has been more than four years since the starting of the project, a lot has been done and a lot has to be done but the entire process has to speed up considering the volatile nature of the land market in Kampala. So since the starting of the field work we started finding the answers for unanswered questions till now almost, we succeeded on to some extent but given limited time of fieldwork we couldn't work out details of some aspects.

These aspects mentioned below need further detailing and have to be worked out soon.

- Ownership of the land
- Having Project Management Committee
- Governing framework-Condominium law

## Having a PMC

It's high time to have a project steering committee consisting of members from SDI, Actogether, community leader. The PMC should be solely responsible for handling all the aspects involved in the three phases i.e pre construction phase, construction phase and post construction phase. PMC shall also have the added responsibility for the setting up a management committee for the site area which can be under local customary law or cooperative act, which says about the management of a neighbourhood under community ownership.

### Pre Construction Phase

This phase actually determines the shape of the project, as it deals with series of inter-related factors which guiding the development. For the PMC the first step will be finalising the design for units and building blocks in consultation with architects and community members. After finalising the design the second step can be getting the approval for SPA for the area from KCCA. If the approval is made then the project can follow the model with changes in By-laws and if not then it can follow one in by-laws. After the approval negotiation aspect (between structure owners and land owners) has to be taken care off.

After having approval for SPA, design and negotiations, there will need to arrange funds from external sources as the community savings alone will not be enough to kick start the project. Simultaneously a developer has to be involved for the construction.

### Construction Phase

If the construction is followed in phases like explained earlier, then main work for the project management team is to take care off the marketing aspect go the phases completed. Constructed units can be either sold off or can be given on rent but giving on rent will raise the questions of how can PMC own the place ?and management of it will be difficult for longer run. So it's better for the project to sell the units to individuals

rather giving on rent.

As the return of investment is completely dependent on cash inflow from selling of units constructed, so it becomes important for the PMC to start selling off the units as soon as it is finished. Since the targeted group are people from low income settlement, so there will be need to have financial tie ups with housing loan agencies so that people can consider to buy the units. We have talked various local banks and housing finance companies and most of them are willing to lend the housing loan to the poor.

### Post Construction phase

PMC is needed here to manage the cash inflow generation from the sold units. and this has to be done until project cost is recovered.

## Governing Framework

Since the units which will be sold are open to all people, an extra precaution is needed, so that essence of the development is not lost i.e units should really go to the low income earners and governing rules under condominium law has to be framed in such a way that units should not go to others but low income dwellers. Details for this have to be worked out in consultation with architects, PMC and settlement dwellers from the site area.

# Group Reflection

Every urban challenge has their own unique set of characteristics which differs spatially from one place to place. Beauty of this uniqueness lies in the fact that it always gives a scope for coming up with something new. And the fieldwork in Kampala actually gave us a chance to come up with unqiues idea for land sharing which has not been implemented in Uganda yet. It was really a unique learning experience for all of us despite being the fact that all the group members are from developing countries like India, Indonesia, Iran & Uganda. But still as a group we faced lots challenges specially because of different working style of all the members and different local conditions.

Most of the challenges found in this project was successsfully dealt by the group and it didn’t affect the research. Yet, some external challenges did. One of the difficulties we found that hampered the work a bit is the lack of updated data and information. In the development and planning area, data and information always be an issue. For instance, different data and information

from various sources is a common problem, especially in developing countries. Nevertheless, primary survey usually be one of the solution.In this project, data and information about social-economic situation was not enough for analysis or to move forward. Unfortunately, the other challenge was small opportunity to visit the field and recognise the field situation better. Besides problems in data collection, this caused a bottleneck in the decision-making. This project is a social project, so that the involvement and the opinion of stakeholders are essential to consider.

Despite having all of these problems the project exposed us to multi-layered dynamics of the low income settlement. It gave a chance to look in to their life closely and then come up with some background information which can help the Architects to design for the betterment of the dwellers in the area. More over the insights which we gained will really help us in future while working in similar kind of environment.

*All photographs in this chapter courtesy of Mehran Attar, Ashish Mohan, Karina Yudono & Marcin Sliwa*

# Group Member Profiles



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Nationality: Ugandan  
Background: Urban planning  
Status: Studying Bachelors of Urban and Regional Planning at Makerere University

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Nationality: Indonesian  
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# Kinawataka market redevelopment project



Teddy Kisembo  
Ronald Murungi  
Doryne Oburah  
Tonje Syversen

## Introduction to fieldwork

### Introduction

The project was carried out in Uganda, Africa at the heart of the capital city Kampala in a community known as Kinawataka.

### Kinawataka settlement

Kinawataka is an informal settlement found in Mbuya I - Nakawa Division, east of the city centre, whose name dates back as far back as 1888, and was coined from the muddy nature of the area during the rainy season. The settlement is approximately 150 acres in size (ACTogether, 2013) and is located in close proximity to the main railway line, Mbuya military barracks and Spear Motors, Uganda.

The settlement is one of the 10 sprawling slums (UN-HABITAT, 2007) in Kampala city, and like a number of slums it is plagued by problems of inadequate housing, rampant crime and violence, and poor livelihoods. Most of the employment opportunities range from vending in Kinawataka market, mainly done by the women, and small scale business, operated by men in un-gazetted places, making them vulnerable to possible eviction and prosecution by city authorities. Its existence has over the years been the subject of contention with National Environment Management Authority, accusing residents of encroaching on the Kinawataka wetland.

### Kinawataka market

For more than 20 years, Kinawataka market has served the local communities of Mbuya, Kinawataka and some parts of Banda. All together it consists of 126 business premises divided into two different structures (ACTogether, 2012);

- Lock-ups: permanent structures constructed using bricks and iron sheets which are well secured and closed up at the end of each business day.
- Stalls: temporary shelters roofed with iron sheets that have since rusted and are held together by pieces of wood that act as supports. A single business entity is separated from the other by a piece of wood or in some cases a tarpaulin.

The market stalls are operated by vendors selling fresh vegetables like tomatoes, onions, cabbages, and charcoal, making a total of 71 stalls. The lock-ups are operated by vendors dealing in general merchandise, groceries, and provision of services like repair of electrical appliances, adding up to a total of 32 lock-ups. In addition to the stalls and lock-ups, there are also butcheries and restaurants included in the total number of businesses.

The structures in the market are occupied and operated by vendors and traders either as structure owners or tenants of structure. The owners collect rent monthly from tenants ranging from 15,000 Ushs to 50,000 Ushs depending on the location of the stall, accessibility and space occupied.(ACTogether, 2012)

### What was the project about?

This project was mainly about the upgrading/redevelopment of Kinawataka market. It shed light on the complex needs of markets in low-income communities, especially that of redevelopment that seeks to maintain the social structures of the market vendors and the community, as opposed to resettlement to a new site. As part of a strategic plan for an inclusive city, the project sought to demonstrate other alternatives to eviction, mainly through creation of partnerships between the community, planning authorities, concerned ministries and other stakeholders.

The overall objective was to create a social space that will encourage community socialization and promote the retention and growth of existing businesses that contribute positively to the neighborhood and existing employment base.

### Project tasks

The following tasks were given by ACTogether, the partnering NGO;

- Evaluate market enumeration data for Kinawataka market
- Assess preliminary designs for the market
- Research planning challenges for Kinawataka market
- Cost the market plans
- Conduct stakeholder analysis and build relationships with key players
- Write a concept note

### First impressions

It was noted that market infrastructure development has been at the centre of discussion both in the political and technical corridors, mainly due to the successes that have been registered in some market infrastructure development projects under the MATIP program.

There have also been discussions in the media(Fig.1) about the challenges and limitations that government and local authorities are grappling with in endeavoring to provide market infrastructure. These challenges range from unresolved land ownership, political wrangles that have marred the process, and lack of transparency in market management.

During the first interview with the market vendors and local leaders, it came to light that the community was fully aware of the plans to redevelop Kinawataka market. However, the question on their minds was when construction would finally commence. This was an indicator of a mixture of both high expectations and disappointment at the extended delay. One of the vendors was quoted as saying,

***“For us we are tired! It has been long two years since you promised to develop for us a market; we have lost hope in you people”***

The local leaders also pointed out that community members had lost faith in them and were beginning to think the whole project was a sham.

It was noted that these problems could have arisen from the lack of communication between the different stakeholders. Therefore, as a team, an attempt was made at efficiently keeping all parties informed during the time spent working on the project in Kampala.

### Approach to fieldwork

The approach employed during the field work was based on the context, ethical considerations and time, as broad guiding themes, and was divided into two stages; pre-field and field.

### Pre-field

This involved a series of lectures and field excursions in Trondheim, Norway, all this aimed at imparting knowledge on how planning has been influenced and approached in the Global North. At this stage, the team was able to appreciate and learn new principles in practice that could be adopted while in the field in Uganda.

### Field

More lectures were given by professional practitioners, academic researchers, government officials and ACTogether, on a wide range of topics pertaining to the Ugandan context. This helped us appreciate the context in terms of processes of urban design, community-led initiatives, policy dialogue, and emerging issues related to urban development context. This was followed by continuous visits to the sites we were assigned to, purposely to attention hands on experience, understand the real life issues in the different settlements and make different contacts with the players on the ground.

The data collected in the field was mainly through; one-on-one interviews with both unstructured and semi-structured questions, the review of different literature which included market enumeration data, minutes from previous stakeholder meetings and legal/policy documents. In addition, the preliminary design proposal was analyzed and different case studies were reviewed to help us understand more about market design and development.

Source: Daily Monitor, october 20, 2013

## Money fails to overcome politics of Kampala markets

**Dilly dallying.** Despite availability of funds, the long period taking to secure the plans for the market has been a major challenge. Sunday Minister Eriana Muhili Sserunigga finds out what is causing the delay in the market for the country.



Figure 1:

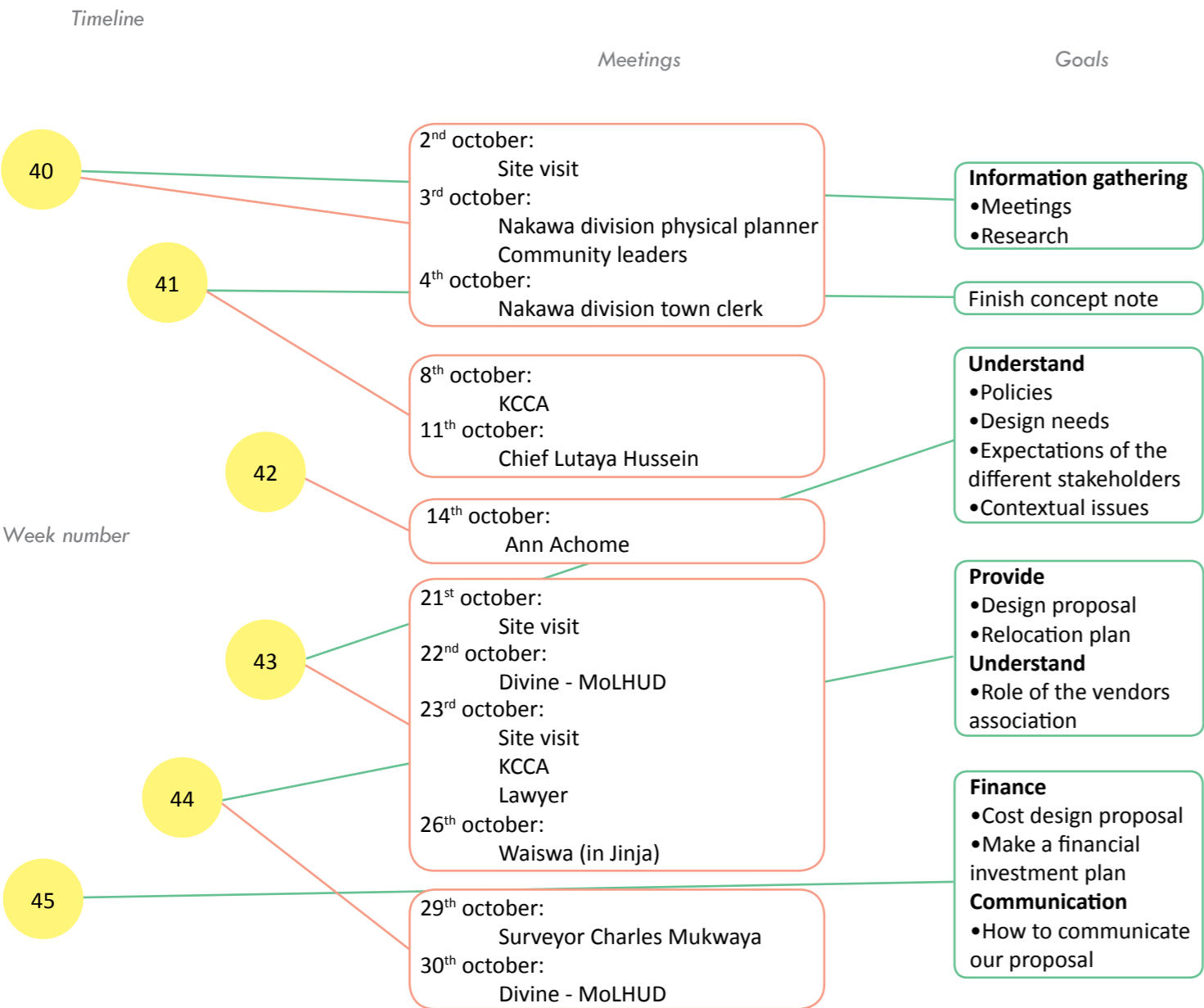
Article in Daily Monitor newspaper about market redevelopment

Source: ACTogether



Figure 2:

From left Chairman LC1 Mbuya, Deputy Nakawa Mayor and Councilor Mbuya III



### Concept note

The most urgent task given to us by ACTogether was the creation of a concept note which was to be passed on to Ministry of Lands Housing and Urban Development (MoLHUD). This concept note was to clearly explain the outlines of this project, and in order to successfully do this, information about Kinawataka market, market policies and similar projects done elsewhere was required. To this effect, ACTogether provided enumeration data from Kinawataka market and other useful information.

After consultation with the local authorities and community leaders, a draft of the concept note was written, after which a final edit was produced following input from the ministry. The final edit of concept note (Appendix B1) can be used to explain the project to third party stakeholders or funders interested in the Kinawataka market upgrade.



# Market development in Uganda

## Markets in Uganda

Markets in Uganda are strategically located both in the city centre and the suburbs. They supply the bulk of the population food, both fresh produce and durables, clothing and household products. They also provide employment to 5% or more of the active workforce, and serve as local meeting places for residents.(KCCA, 2012)

In Kampala, the largest markets are located within or in close proximity to the city centre. The market system, particularly the fresh food distribution system, is totally inefficient, resulting in unnecessarily high cumulative mark-ups despite the fierce competition and inflating food costs, whilst still only providing the individual worker, trader and agricultural producer with subsistence level income. In addition, the supply of goods to the city centre markets and the conflict between the motorized and pedestrian modes of transport significantly compounds traffic problems in and around the markets. Most importantly, there is also an evident shortage of these market facilities in the residential neighborhoods.

### Characteristics of markets in Uganda

Historically, markets in Uganda are open-air in nature characterized by temporary, permanent, semi-permanent or no structures at all depending on the context and whether or not it is located in an area gazetted for the activity. With the expansion of the population, growth of the economy and overall development of the country, newer markets have continued to spring up in upcoming suburbs and urban centers, albeit constructed with

temporary/semi-permanent structures. However, the current trend for new emerging/redeveloped markets in Uganda is the construction of market halls.

### Open-Air Markets

Open air markets are defined as public market places - usually uncovered - where bartering, selling and trading of goods takes place. They are natural gathering places that celebrate the sense of community and offer an eclectic high quality of fresh in season fruits and vegetables, dried foods, and other produce

Although open air markets today play an ever decreasing role in the public life of towns and cities, it should be noted that they are not just commercial hubs but are also centers of cultural, social and even political activities, a character that should not be lost in the new market developments that occur.(Miranda, 2009)

These markets form an integral part of the informal sector, providing an alternative for poor consumers who would otherwise not take part in consumer culture. They not only serve as anchor and magnet facilities in the communities they are located in, but increase social integration by assuming the role of the heart and soul of the areas. Despite all these functions, open air markets require careful planning and effective management if they are to be centers of sustainable local economies and community life.

### Market Halls

Market halls are covered spaces historically used as market places to buy and/or sell provisions or livestock, sometimes combined with space for public or civic functions on the upper floor. They were once a thriving tradition of indoor market halls in the United States, however they are currently seen as obsolete This type of market is a new trend of construction being applied to market development in Uganda.

This is being driven by many factors, including the high value of land in the city centre which necessitates a development that will maximize and multiply the initial investment made. However, the disadvantage of such developments is that they tend to drive out the original vendors of the markets that are being redeveloped, in favor for more connected persons in a better economic position.

### Markets - The question of urban food security

In urban areas the main food insecurity is not characterized by the lack of food production but rather by access to food.(Crush & Frayne, 2011) Accessibility hinges primarily on the individual or house hold's ability to purchase foodstuff, which in turn depends on house hold income, the price of food and the location of food outlets.

The fundamental human right of access in food in urban areas is therefore realized and highly linked to market infrastructure development.



Figure 3:  
Current Nakasero market and the proposal for the new market  
Source: <http://wandegeyamarketvendorsco-operativesociety.com>



Figure 4:  
Old and new Wandegeya market

For the case of the urban poor community, the key issues that arise with regard to food security are thus the need to bring markets closer, making them accessible to everyone, and the need to ensure that food prices are favorable for the average buyer: the current crisis in food prices has made the issue of urban food access politically relevant in Uganda.(Brown, 2013) However, simply developing infrastructure is not enough. Poverty can also affect how much access people have to infrastructure where it does exist.

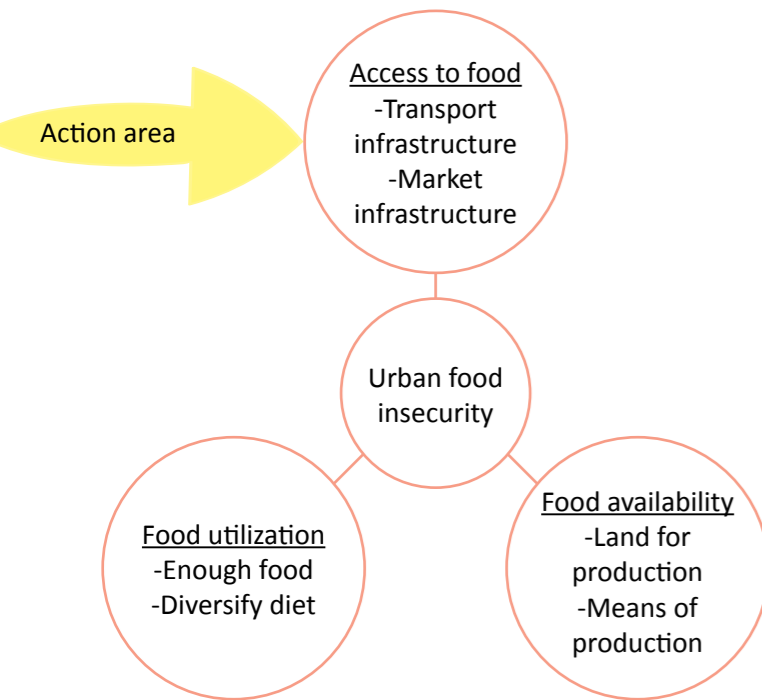


Figure 5:  
Illustration addressing food insecurity

#### Project framework

##### Government focus on market development

The Ugandan economy is dependant and dominated by agriculture. It accounts for 39% of the real GDP, 60% of export earnings and 80% of rural employment. (BOU, 2004) Of the population of over 27 million people(estimated 2005), 85% live in the rural areas and mainly depend on agriculture for their livelihoods. This sector constitutes the key intervention sector of the Poverty Eradication Action Plan.(Kata, 2006) Therefore the government's focus on market infrastructure development has been heavily influenced by the need to market agricultural produce internally and enhance the income of the 85% dependent on agriculture as a source of livelihood.

As part of the urban financing sector, local governments are required to charge market dues in order to raise local revenue. To sustain this sector, the government has undertaken initiatives to scale up market infrastructure upgrades to wider communities with the main objective of enhancing the ability of municipalities and other local authorities to generate revenue, drawing experience from objectives of Uganda Support for Municipal Infrastructure Development under MoLHUD.(CME, 2013)

The government also aims at creating an environment that is conducive for both international and local development partners in order to form strong partnerships and achieve greater efficiency in market infrastructure developments: an example of these strong partnerships is that between ACTogether and MoLHUD,

which has seen them work together on various initiatives taking advantage of each other's capacities to institute planned change.

The government has also facilitated the establishment of lending institutions for urban development and considered putting in place an urban development fund.

##### Policies and legislation on market development

To facilitate the development/redevelopment of markets in Uganda, a number of policies have been put in place: those specific to the Kinawataka market redevelopment project are discussed in below.

##### Kampala Capital City Authority Act, 2010

It lays out the functions of Kampala Capital City Authority (KCCA) that are significant to the project, like promoting economic development in the capital city, carrying out physical planning and development control and monitoring the delivery of services within its area of jurisdiction.

##### Kampala Physical Development Plan Report, 2012

This report states the spatial planning strategy for Kampala City, which is to strengthen the existing and new urban centers that will ease the pressure on KCCA infrastructure and services allowing for future development.

##### Physical Planning Act, 2010

The physical planning act states the conditions that must

be fulfilled in order to obtain development permission. It also provides procedures for obtaining development approval.

##### National Trade Policy, 2007

The ultimate objective of the policy is to create wealth, employment, enhance social welfare and transform Uganda from a poor peasant society into a modern and prosperous society. Some of the priorities of the policy are; developing capacity to exploit existing market access opportunities, boosting the trade capacities of socially and economically disadvantaged sections of the community and developing domestic trade, ensuring that it is a foundation for developing Uganda's capacity to produce and engage in remunerative international trade.

There is a significant achievement in trying to achieve this status through reforms however there are constraints related to imbalances in the market system operation attributed to inadequate market information, poor marketing infrastructure, an inefficient transport system, and a lack of explicit support policies.(Ministry of Tourism, Trade and Industry, 2007)

##### Draft Uganda National Urban Policy, 2013

The policy seeks to guide and provide an integrated framework to transform Uganda's towns into modern urban centers that are competitive, livable and sustainable, to serve as a catalyst for social-economic development.

Two significant areas of the policy issues have been addressed; Competitive urban economy and urban sector financing, looking at investing in the urban economy and prioritizing infrastructure investment priorities, and market infrastructure development.

#### Challenge of market development planning

Despite indicators of progressive willingness to invest in market infrastructure development there are still challenges that are being grappled with;

- Unresolved land ownership issues that result from the current land reforms, and systems of land administration and management rooted in the past, which create a complex web in trying to address the current demand.
- Gazetting a site for market development is an uphill task as it might require an equivalent of the project cost to cover up compensation costs when new land is bought or when disputes with encroachers on an existent site have to be resolved.
- Lack of sufficient financial resources to construct or upgrade markets.
- Management problems related to revenue collection, waste management and utility provision that arise from poor relationship between the local authorities and market committees.

#### Market development in Kampala

Markets are the exclusive domain of Local Authorities in Uganda which qualifies Kampala Capital City Authority as the local authority in charge of all markets in Kampala. KCCA's jurisdiction covers both gazetted and un-gazetted markets: un-gazetted markets are not recognized by city authorities and are therefore vulnerable to demolition. Because of their status these markets are also unable to receive any financial assistance from KCCA to help in upgrade of their infrastructure. (MoLHUD, 2011)

#### KCCA'S Role and strategies in Market Development

KCCA is the main governing body of the city and the front line administrator responsible for initiating planning processes, approving planning projects, and development control. In regard to market infrastructure development, its main objectives are to create employment opportunities, and self-sustaining neighborhoods that encourage non-motorized transport and reduce pressure from the city centre. In this regard, the authority therefore plans to;

- Gazette market sites and construct/redevelop markets
- Create a new hierarchy of service centers and sub-centers that will in turn stop the endless linear sprawl of shops and makeshift markets
- Prepare and implement the Metropolitan Economic Development Plan which includes the upgrading and establishment of commercial markets in residential zones. (KCCA, 2012)

However despite the progress that has been made, the authority does not have the financial capacity to invest in all the demands of market infrastructure in the city.

#### Stakeholders analysis

Considering the number of different stakeholders that will be involved in such a project, it is important to understand what each of their expectations is concerning the market upgrade, and the different relationships that exist between them.

Comparing the two illustrations below, it can be noted that the stakeholders with a bigger influence approach the market upgrade from a larger perspective, looking

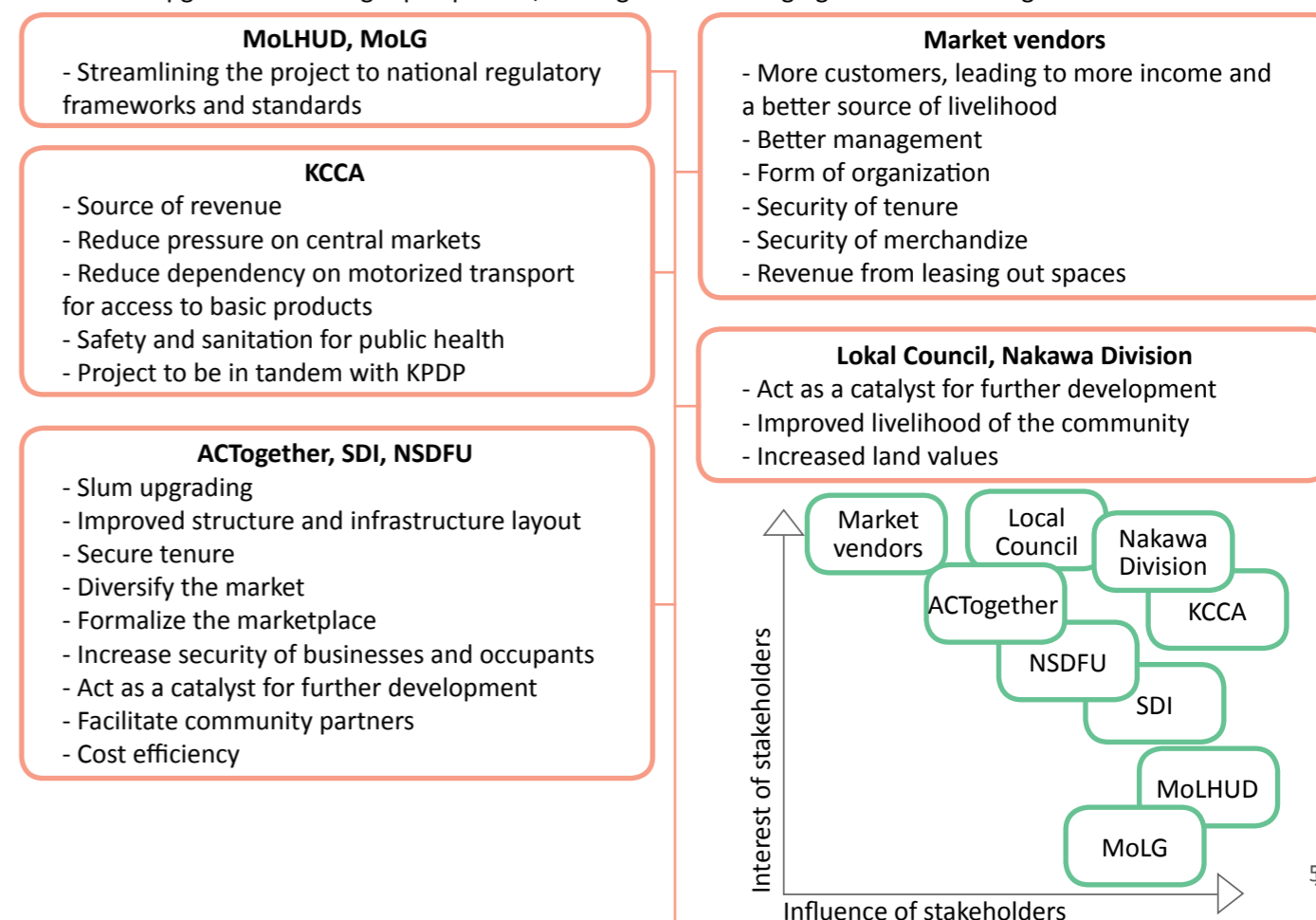


Figure 6:  
Illustration showing the different stakeholders' expectations from this project

at it from the context of the City, whereas the market vendors approach it from a user based perspective, being more concerned with the changes that directly affect their workplace and working conditions.

Although some of the expectations are similar or at least not contradicting, the different stakeholders have different approaches and priorities, making it challenging to find common ground to work on.

Figure 7:  
Illustration showing relation between influence and interest of different stakeholders

### Stakeholder role in Kinawataka market redevelopment

#### Government/ Municipality/Council

- Responsible for availing land for the market development to the NSDFU.
- Planning consultation and assistance through coordination and collaboration from the relevant planning authority, with ACTogether and NSDFU, to work out what the limitations of the proposal can be.
- Planning standards and waiving of fees where possible; relaxing of the relevant planning codes and standards will help develop a more pragmatic project.

#### Slum Dweller International (SDI)

- Financing of the project through sourcing and coordinating the finances required for the design, construction and management. It will also assist the National Slum Dwellers Federation of Uganda through Act Together with the financial modeling.

#### ACTogether

- Designing of the market prototypes.
- Procure the construction teams, materials and project management.
- Auditing the construction and management of the project.
- Managing of the project with NSDFU to oversee and ensure that it is done professionally and economically.
- Community consultation and involvement by facilitating meetings that will involve consultation and presentation of the proposals with the relevant community members.
- Enumeration and mapping of the market place, which had already been done.

#### National Slum Dwellers Federation Uganda (NSDFU)

- The federation will provide design input which will shape the design of not just the structures, but the systems which facilitate and maintain it.
- Workers: the federation members will have the opportunity to gain employment and skills with construction teams focused on including them in this project. There will be a variety of jobs that various members may be appropriate for. They will be paid accordingly for the work that they do, helping to keep as much of the money spent in the community.

#### Suubi Development Initiative

- Finance: Suubi Development Initiative will assist with the financing of the market upgrade and will be the vehicle through which community contribution and any loan repayments will be made.

#### Ministry of Lands Housing and Urban Development

- Assist supervision of the project to ensure work is consistent with government standards.
- Partnership facilitation by engaging the relevant stakeholders in government and other urban development stakeholders to maximize the efficiency of the initiative.



## Case studies

*Environment and urbanization: Sustainability and infrastructure planning in South Africa - A Cape Town case study (Mark Swilling, 2006)*

### Background

This case study looks at planning for infrastructure in Cape Town from both a sustainable development and developmental point of view, focusing on the economical and environmental aspects of planning in low-income communities. It doesn't particularly zoom into market places, but gives insight into the needs and concerns of neighborhood planning. From this it is possible to deduce the need for markets and their role in the community.

### Findings

The focus on neighborhood planning needs to be maintained: bringing facilities closer to the neighborhood reduces the need to travel. As transport is often dependent on oil, and oil prices are constantly rising, there is a negative impact on the personal economy of persons and development of the community in general when money is spent on buying and transporting food stuff from outside the community. As opposed to developing the local economy, this money is transferred over to the national/global economy. The same applies for water, fuel, and everything not produced and sold within the neighborhood.

If what has been discussed in the previous paragraph is applied within the context of public markets, it would then be advantageous to place more functions into a market. By diversifying the market and adding more facilities that the neighborhood needs, services would

be made readily available to the residents, and at walking distance. As such, looking towards solutions that are not too dependent on changes in global economy will benefit the neighborhood economy.

The study also explains how waste that is not being recycled can be used for other purposes that create job opportunities, for instance in urban agriculture. As a market generates a lot of waste, there is an opportunity of identifying the different kinds of waste and what they can be used for.

*Eating cities: The politics of Everyday Life in Kampala (Christopher Gombay, 1997)*

### Background

This thesis dealt with the history of Owino market in Kampala, focusing in part on the construction period and development. It highlights how the plans of planning authorities can sometimes struggle to adapt to the changing needs of market vendors. The preliminary plan of KCC was to build a parking yard, washrooms, perimeter walls, gates, lighting, lock-up shops, 2 restaurants and 123 stalls, but at the time of this research the market consisted of over 5000 stalls.

### Findings

During the construction of this market, KCC understood that the demand for stalls outnumbered the supply of stalls being built. However, an attempt was made at meeting this demand by doubling the number of stalls, but still that wasn't enough. As a result, vendors

encroached on the space left behind the perimeter walls and took advantage of the delivery yard and car parks to vend their merchandise: thus the market began expanding into the streets and surrounding areas. Even the vendors that had used to vend from their homes were drawn to the market, as it provided security that they did not have in the settlements. The council at that time did not have the means to stop the expansion of the market, so instead they started collecting tax from the vendors operating outside of the market: as it may, this was viewed by the vendors as 'legalizing the illegal market'. The 'illegal' markets formed on the streets after 5pm came to be more accessible for the customers, both in terms of time and location.

Drawing from the case of Owino market, it is important to understand the demands and pressures on the market, both from the vendors and customers. Focusing attention on community participation during the planning phase makes it easier to understand how the market is going to be used, and what functions it needs to include. In this case, the expansion of the market was inevitable, as the demand for stalls increased drastically due to the urban growth and political stability. There are always going to be changes that are impossible to predict in the future, therefore there is need to plan for and design public markets that are flexible in nature and can easily adapt to new user needs and the changing face of the cities we live in.

*Ford report: Public Markets as a Vehicle for Social Integration and Upward Mobility (The Ford Foundation, 2003)*

### Background

This report summarizes the results of a six-month research effort where Project for Public Spaces, Inc. in association with Partners for Livable Communities, took a fresh look at the issue of public markets which serve low- and moderate-income, ethnically diverse communities. This research made it possible to address specifically how public markets enhance the potential for social integration in public spaces and thereby create a sustainable vehicle for upward mobility and individual empowerment for low-income communities. For the purposes of this study, therefore, a successful market was defined as: one that succeeds in both its economic and social aspects and can sustain both over the long term.

### Findings

The core of this research was based on an analysis of eight existing public markets to understand how they serve low and moderate income communities with regard to the specific issues of social integration and upward mobility. Because this was not intended to be an exhaustive survey of all potential aspects of these issues, PPS used a case study approach involving 8 markets, and the findings of this research are stated below.

### Challenges of public markets in low-income communities

- Economic failure: Due to creation of a more elaborate and expensive-to-operate facility that cannot be sustained

over time and poor location, among other factors

- Failure as a “public” market: The market may be an economic success, but ends up with no overt public purpose (i.e. being part of a coordinated neighborhood economic development plan), other than what any business might contribute through the creation of jobs and tax revenue

- Failure to produce wider effects in its neighborhood: Perhaps the market is in an isolated location where it has neither a good retail location nor a sense of place or perhaps it has a good retail location, but nothing more. And especially, perhaps it is not part of a broader strategy that has anticipated and provided for nearby activity, whether economic, civic, or recreational and that knits it more closely to its community.

#### How do public markets enhance the potential for social integration in public spaces?

The data appeared to show that social integration is achieved by a market that has “something extra.” The market must have an attractor beyond its role as a place to buy goods.

#### How can public markets be viewed as a more important component of a broader civic agenda?

- Put the market in a larger economic context in a community, broadening the base of support for ongoing management and utilizing it more strategically for economic development.
- Recognize the social benefits that markets bring to public spaces and that should be sustained by a variety

of partners: markets can be community institutions like libraries.

- Connect the markets to neighborhood revitalization efforts.

#### Conclusions

Creating a successful public market involves much more than creating a successful commercial enterprise. The social and economic goals of public markets are intertwined in a way unlike those of any other civic institution or commercial entity. *Social integration depends to a much greater extent on the market functioning as a successful public space – a “place” where people come not only to shop, but also to meet others, “hang out,” and enjoy the overall ambiance and excitement of the space.*

A useful distinction is that between an “anchor” and a “magnet.” A public market as a whole must be an anchor in the retail sense in order to attract enough shoppers for economic success. It must serve the same purpose as the shopping mall anchor in supporting nearby enterprises. A “magnet,” on the other hand, attracts for other, non-commercial reasons – it is a civic institution like a library or a town hall; or it could be a “sense of place” that inheres in the market itself and that could be built in from the beginning – that same quality that is a prerequisite for social integration.

To achieve such integration, the public market must be a magnet as well as an anchor.

#### Encants Market

Architect: B720 Arquitectos

Location: Barcelona, Spain

Client: City Council of Barcelona

#### Background

Encants market is an initiative to accommodate all commercial activities and improve the mobility, the public transport system and the management of facilities in the area. The new Fira of Bellcaire market, better known as Encants Vells of Barcelona, is located in the zone of Bosquet and its redevelopment is one of the stages that will initiate the modification of the Metropolitan General Plan in the Glories area.

The new Encants market is installed as a device to mediate between the form of the Glorias square and the axis of Meridiana, an area popularly known as the Glories of Bosquet.

#### Design solutions

The B720 proposal raises a platform, or commercial square, at various levels as a continuous surface suitable for all commercial activities. By bending the platform, the different levels of the street are reconciled, understanding the market as a large square deck, capable of instilling activity in all parts of the program.

The new facility, defined as “functional, open and futuristic”, tries, from a structural point of view, to protect from the changing weather, but always retaining a sense of connection with the outdoors. The commercial solution proposed, shops and auction, are located primarily at the street level and are not placed under any building other than its own deck, which forms an open

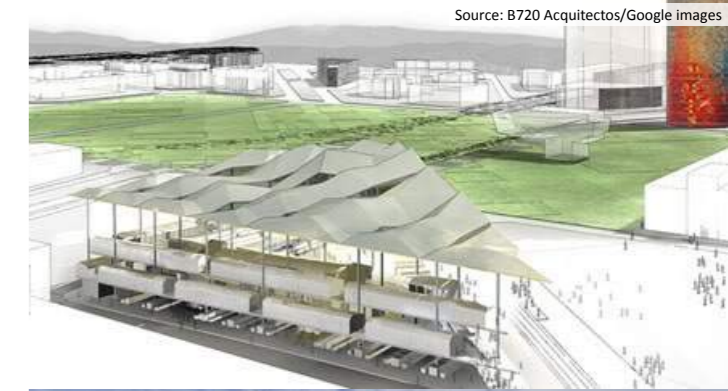




Figure 9:  
Images showing the interior of the market both proposed and constructed  
Source: B720 Arquitectos/Google images

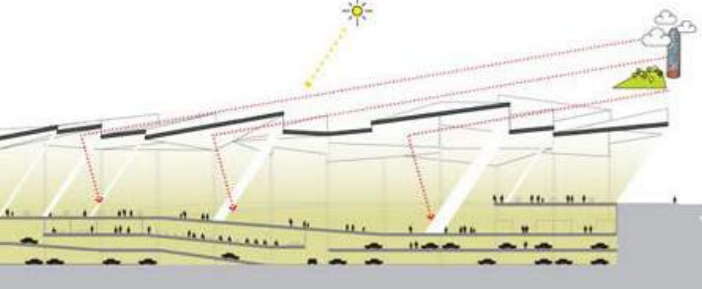


Figure 10:  
Images showing the proposed design and constructed project

commercial space with a main façade to the Meridiana avenue and the Glories square.

The remaining businesses in the market (formed by the other shops that are not at the street level) and the new supply and services that it has (restaurant, play centres, offices, multipurpose rooms...) have been located over this zero level while preserving the sense of connection with the street.

The cover, the principal component of urban recognition, protects commercial activities and reflects the city inside the market. Each modular structure has different inclinations to reflect light, atmosphere and landscape.

The project includes an underground car park with capacity for about 300 cars, loading area, storage area, locker, offices and other auxiliary services.

#### *Easbank Public Market*

*Architect: Gregory Swift (Student)*

*Location: Portland, Oregon*

*Client: City Council of Portland*

#### *Background*

The Eastbank Public Market was an upper division studio project. The goal was to design a market for Portland that is similar to those found at Pike's Market in Seattle and Quincy Market in Boston. The concept was centered on capturing and highlighting the energy at the corners of the site.

#### *Design solutions*

The structure on the south exterior side of the building creates an outdoor space for the temporary seasonal farmers market. The structure has attachments where temporary canvas canopies can be attached to provide more cover to the vendors below. The social energy created by the activity here and at the corners draws people in from the surrounding area. The permanent interior stalls open into this space to allow people to easily flow between the two.

The interior courtyard created by the three buildings creates a covered indoor space for temporary, seasonal food stalls. The permanent indoor stalls open up into this space, allowing people to flow freely between the two. This space also has restaurant spaces on the upper floor with deck that overlooks the space below. The courtyard is covered by a glass canopy imbedded with solar cells.

The site model shows the buildings relationship with the Willamette River to the far left, the interstate highway system and the existing city infrastructure to the right.



Figure 11:  
Images showing views of the exterior and the internal courtyard  
Source: gls



Figure 12:  
Images showing views of the outdoor market space and the site model

# Context and site

Why Kinawataka Market?

Kinawataka market serves the neighborhood of Kinawataka, Mbuya and some parts of Banda. (ACTogether, 2012) In addition to being important for the supply of food to the neighborhood, the market also employs more than 120 vendors and is therefore an important source of livelihood in the neighborhood.

However, it currently has a poor customer base due to lack of visibility, the deplorable state of the market stalls and narrow circulation passage ways. Kinawataka market also doesn't live up to the standards for markets set by the KCCA. Therefore to meet the regulations and frameworks for markets and improve the livelihoods of the market vendors, there is need for this market to be upgraded.

Why upgrade as opposed to resettle?

The aim of this project was to upgrade this market on the current site, as opposed to resettling the vendors working there to a new location. Because there are no other markets in close proximity to Kinawataka, relocating this market would have far reaching consequences ranging from increase in transport costs to loss of employment. On the other hand, a redevelopment would not only improve the livelihoods of the vendors as earlier mentioned, but would also reduce the pressure on the city centre, drawing residents away from the central markets and in turn catalyzing development in the immediate neighborhood.

Site in the larger context

As earlier stated, the site is situated off Kampala-Jinja Highway along Kinawataka road in Nakawa Division which is located east of Kampala City traversed by Jinja road approximately 4 km from City centre. The division has one of the biggest fresh food markets in Kampala with a long history of being the arrival point of fresh foods from Eastern Uganda. It has 8 gazetted and 8 un-gazetted markets, Kinawataka Market falling in the latter category.

According to an enumeration survey NSDFU conducted in 2011, it was indicated that there are 1500 families living in Kinawataka, one of the biggest informal settlements in Kampala. The area is characterized by a mix of land uses, including residential, commercial and industrial uses.

A neighborhood study carried out within the immediate context indentified;

- The major access routes onto the site: Kampala-Jinja highway and Kinawataka Road
- The different nodes in the context: Transport node located on Jinja road and the activity node created by the existence of the market and other commercial activities along Kinawataka Road
- The major traffic conflict points: At the junction branching off into Kinawataka Road, created by the increased truck parking and at the corner next to the site created by the existence of heavy truck, smaller vehicles, motorcycles and pedestrians on a the narrow Kinawataka Road

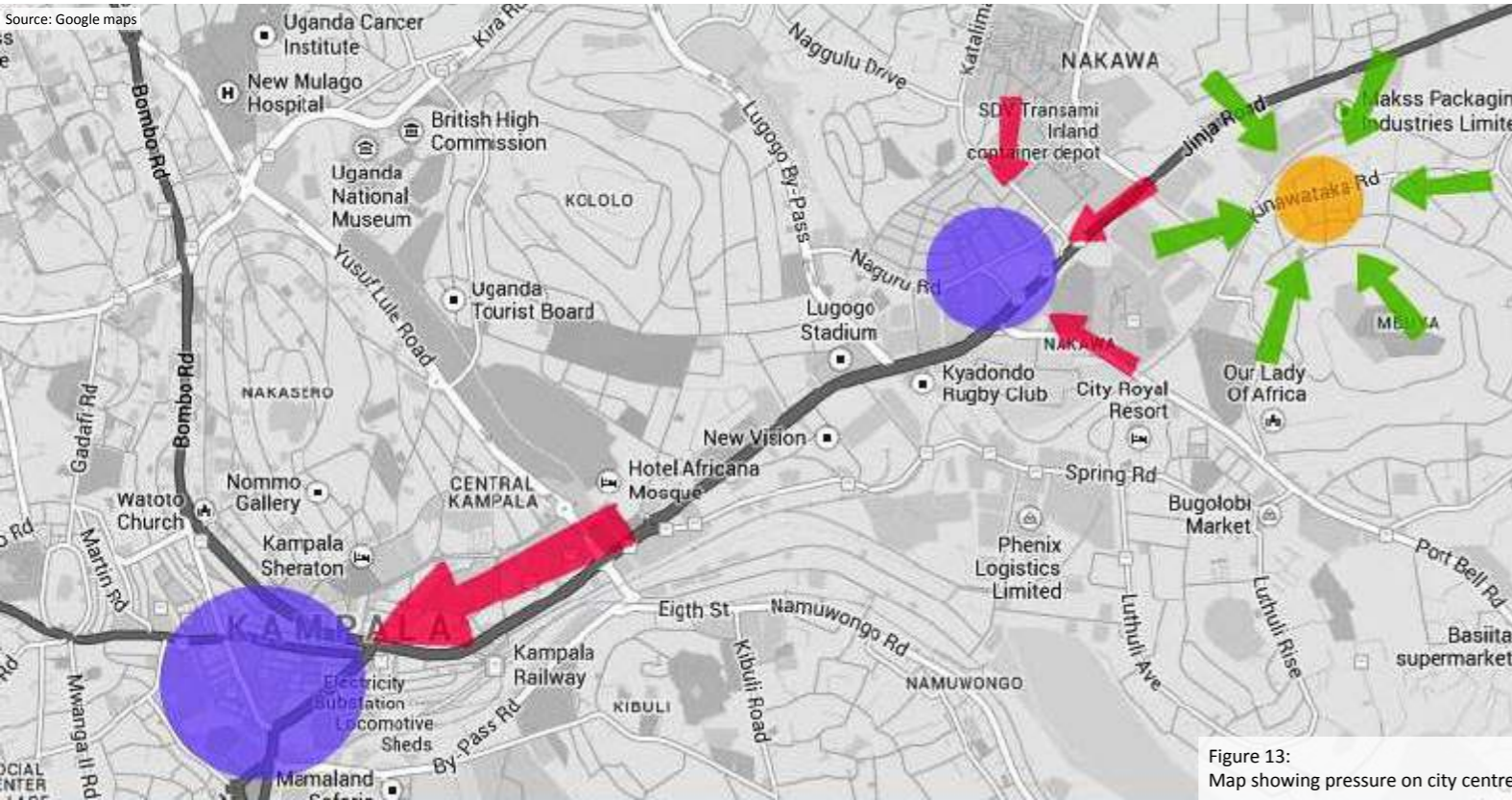
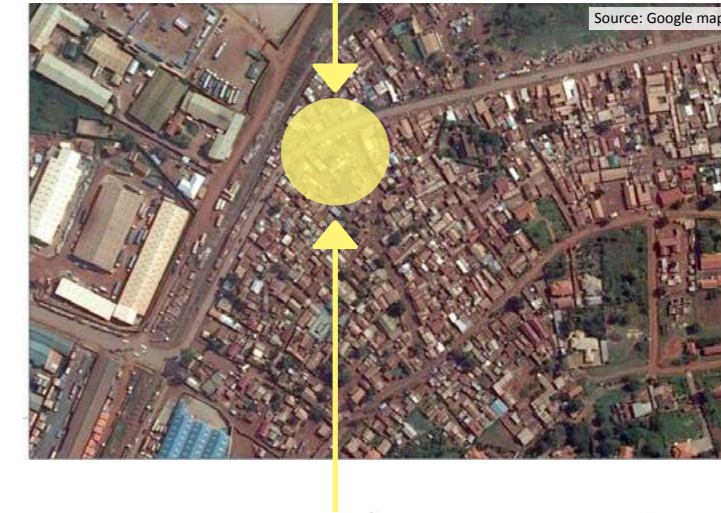
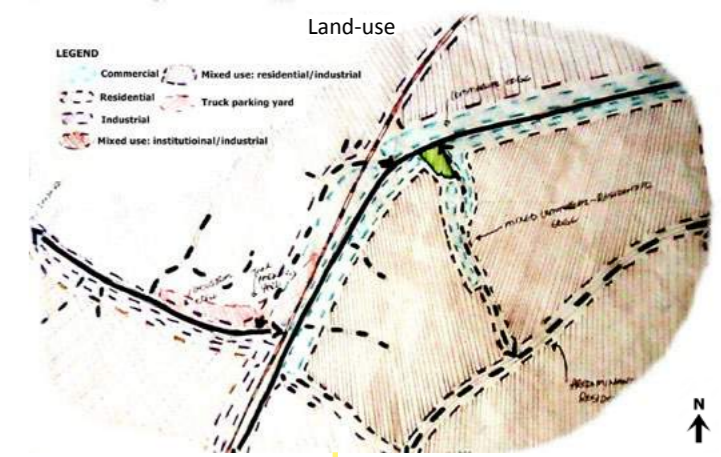


Figure 13:  
Map showing pressure on city centre

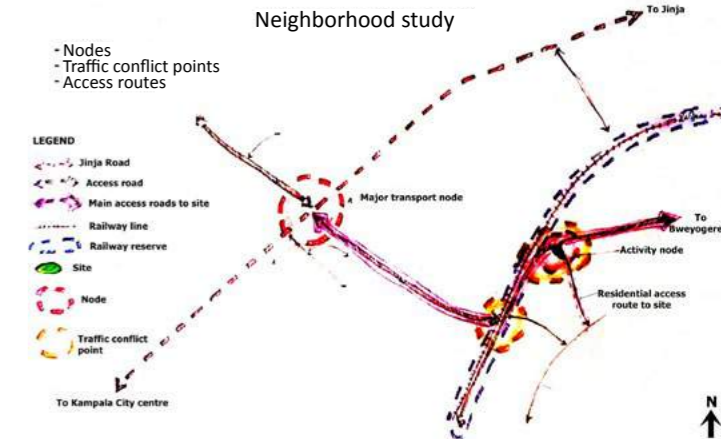


Figure 14:  
Context analysis: Land uses and neighborhood study

## Site analysis

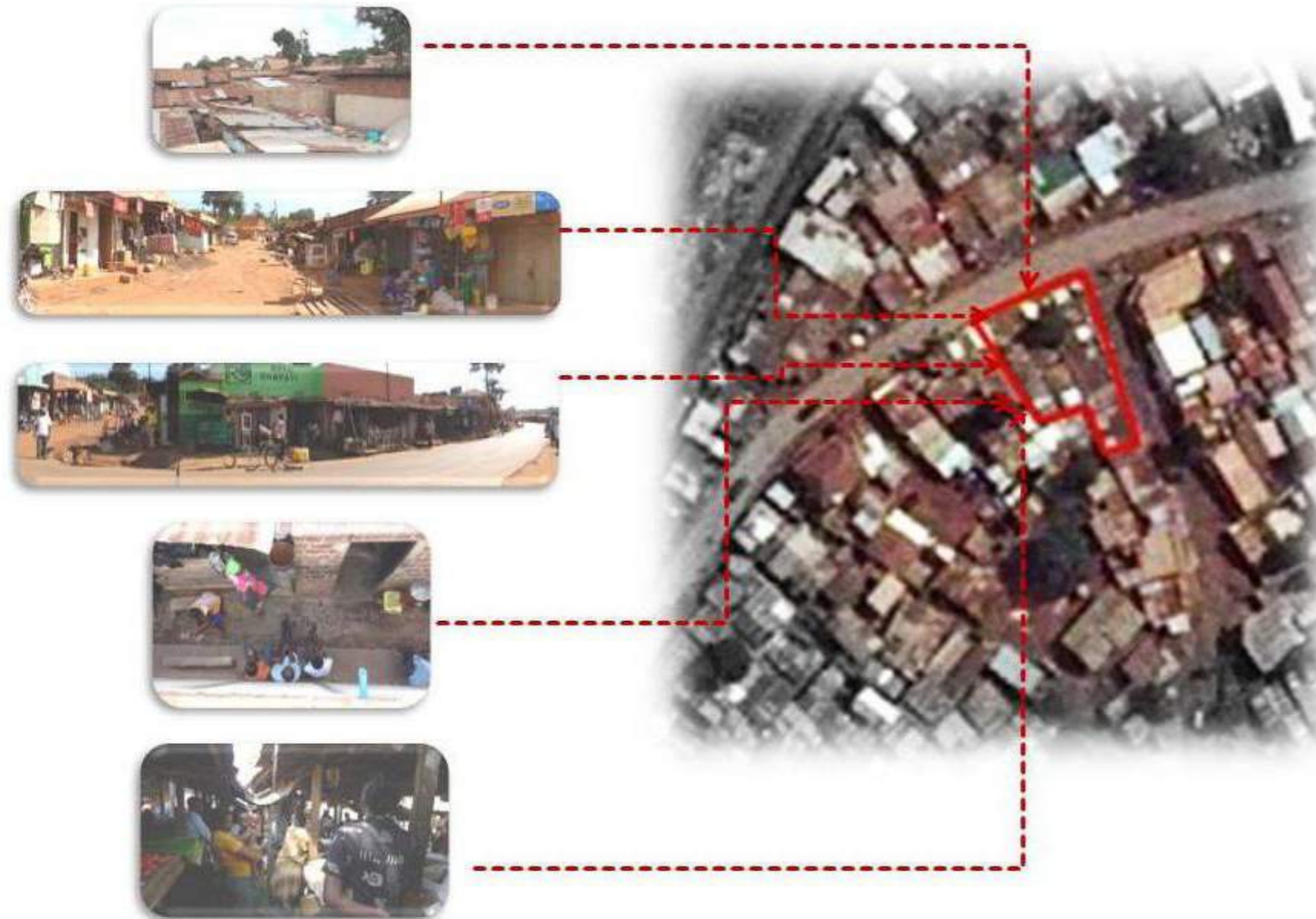


Figure 15:  
The site

## Micro-climate study

### Solar radiation

The site is oriented along Northwest-Southeast axis; as such large portions of the current market which is oriented along the same axis do not received direct solar radiation. This reduces the overall solar heat gain within the current market.

However the following design interventions need to be made:

- The redesigned market should be oriented along the same Northwest-Southeast axis
- The street-facing façades of the proposed design need to be opened up to maximize on natural light

### Air movement

The breezes on site flow from the lake in the Southeast direction.

The proposed design needs to have a façade that 'breathes', ensuring that there is cross ventilation within the new market.

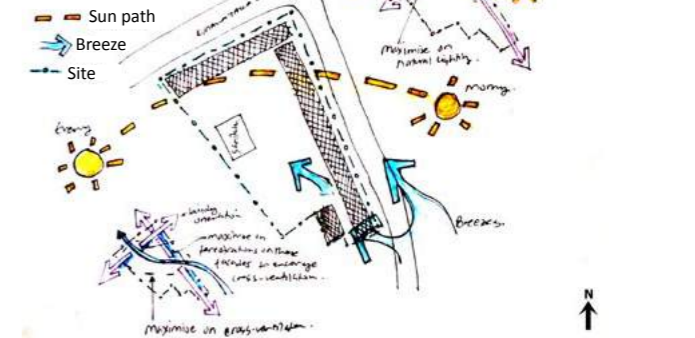
## Sensory study

### Views

Due to the existence of lock-ups along both Kinawataka Road and the access road from the residential side, there's lack of visibility into the market. This needs to be counteracted in the new design by opening up the facades to the outside. In the redesigned market, there's also need to deal with the undesirable views of the congested informal settlements in e immediate neighborhood. This can be done by creating focal points looking into the site and thus reducing the focus onto the outside. My doing so, the new market will be the focal point of the neighborhood.

## Micro-climate study

- Sun path
- Breeze direction



## Sensory study

- Views
- Sounds
- Smells

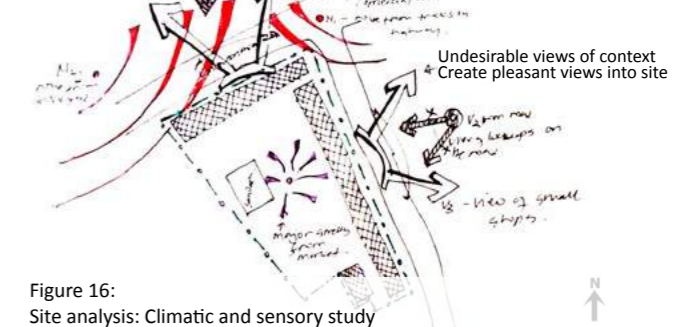


Figure 16:  
Site analysis: Climatic and sensory study

## Noise

There are two major sources of noise on site;

- The existent truck parking yard
- The industries in close proximity

## Smells

The major smells that currently exist emanate from the biodegradable waste that has not been properly disposed of onsite, with most of it being dumped in the drainage channels and narrow corridors of the market. This smell can be eliminated by developing a proper waste management system for the market: this will ensure that biodegradable waste (especially banana peels) does not accumulate within the market and begin to rot.

### Life cycle analysis

A life cycle analysis of the produce sold in the market was undertaken in order to understand the different stages from production to disposal. This made it possible to discover any unnecessary stages, and make interventions that could influence the life cycle and help improve the market.

In the current scenario, the produce is first transported to the main market i.e. Nakawa market, after which it is bought and transported by the market vendors to Kinawataka market using 'boda-bodas', bicycles or cars. This last transportation stage can be cut out by creating a delivery yard within the market that will facilitate direct delivery from the producers to market. Buying produce directly and in bigger quantities will in turn reduce the wholesale price and retail price accordingly. This solution is more efficient as it will save time and money, and also reduce the unnecessary traffic to and fro Nakawa market.

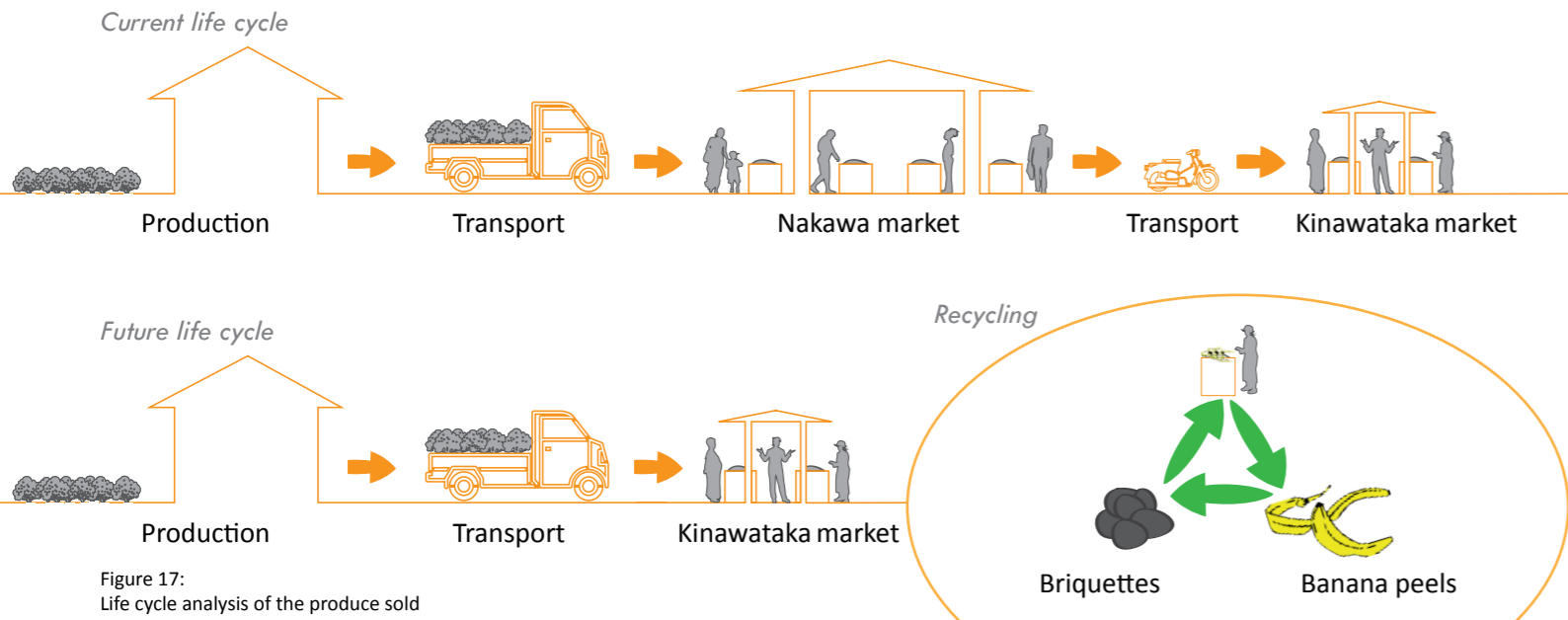


Figure 17:  
Life cycle analysis of the produce sold

Another stage that can be influenced is the disposal stage: currently, from observation the most generated waste in Kinawataka market is banana peels which are either collected by KCCA garbage trucks or sold off as feed for animals. Aside from these two cases, there exists no waste management and recycling system within the market: most of this waste is left to accumulate along the narrow corridors of the market, making it look dirty. The solution would therefore be to provide an area designated for waste disposal and recycling of mainly the banana peels. Briquettes which are an alternative fuel for cooking can be made by recycling these peels. The briquettes can then be sold to the restaurant owners within the market at a subsidized rate and also to the customers who come to the market.

### Site suitability

In order to ascertain how suitable the site is for this project, a SWOT analysis was undertaken and is written in detail below.

#### Strengths

- Proximity to major access road making accessibility for both users and delivery trucks easier
- Location in a high activity area
- Proximity to residential and commercial land uses
- Central location within the neighborhood and other neighboring markets

#### Weaknesses

- Lack of visibility
- No defined access point into the market
- Narrow circulation corridors
- Long distance from existent parking to market stalls
- Poor ground surface treatment
- Lack of parking and offloading bay
- Poor state of stalls
- Poor waste disposal

#### Opportunities

- Creation of multiple access routes to ease circulation
- Improved visibility into the market making it the focal point of the community
- Creation of a circulation courtyard and wider circulation corridors between the stalls
- Development of a waste management system
- Maximization of natural light and cross-ventilation
- Ordering the layout of the market vis-a-vis different produce sold

#### Threats

- Increased traffic along the narrow Kinawataka Road

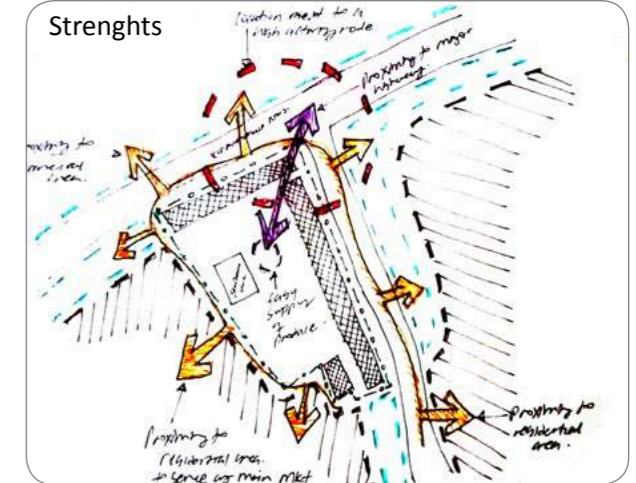


Figure 18:  
Site strengths

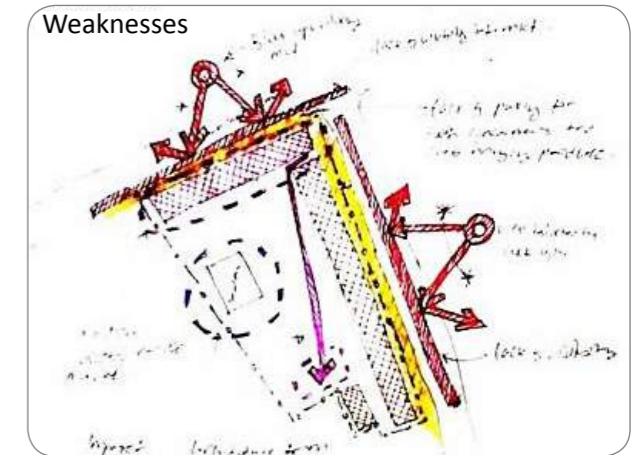


Figure 19:  
Site weaknesses

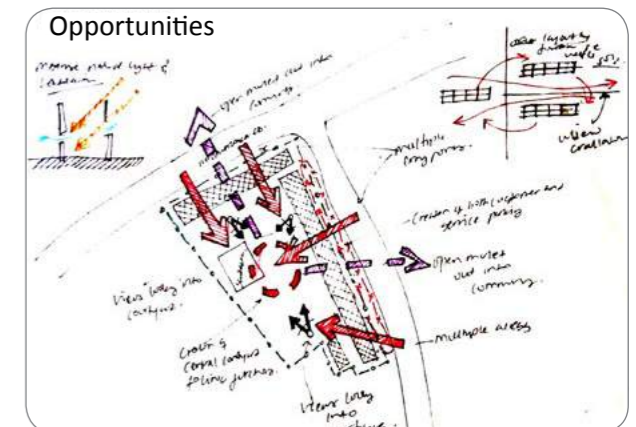


Figure 20:  
Site opportunities

# Design development

Analysis of preliminary design

A preliminary design had been proposed by an architect from SDI, therefore one of our tasks was to analyze this design and make recommendations factoring in the issues and needs we had ascertained from interviews and observation on site.

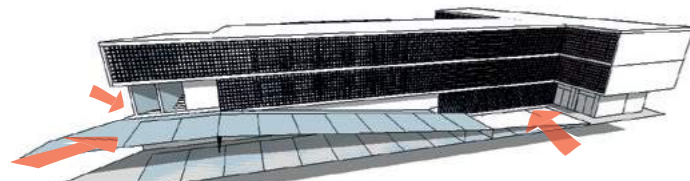


Figure 21:  
View of proposed market along residential access road

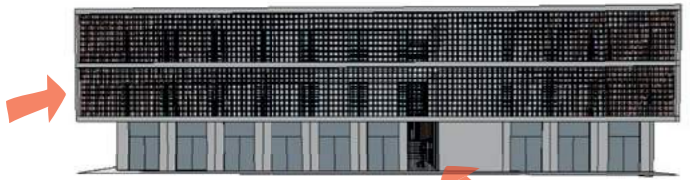


Figure 22:  
Elevation of proposed market along Kinawataka road

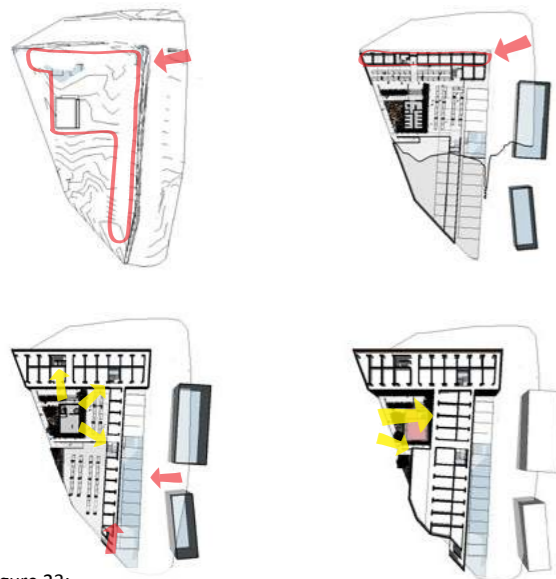


Figure 23:  
Floor plans of the proposed market

Source: ACTogether

## Demerits

### Lack of visibility

As expounded on in the previous chapter, one of the biggest challenges of the current market is the lack of visibility. However, as opposed to mitigating this problem, the proposed design instead aggravates the issue due to its sheer bulk and closed off facades which make the market less visible to the passing pedestrians

### No clear circulation

One of the key concerns of both the market vendors and the MATIP-program of MoLG and KCCA is the provision of clear access points into the market, a clear internal circulation pattern, delivery bay and parking space for potential users of the market. Though the proposed design attempted to solve the problem of lack of parking space within the current market, no delivery bay has been provided. The access points into the market are not sufficient and the circulation within the market is not well defined: some of the circulation corridors are too narrow for a user to move through, let alone the goods to be sold

### Not in accordance with regulations

The proposed market extends into the road reserve. This is against the regulations of KCCA and therefore the drawings would not be approved

## Merits

The preliminary design has dealt with the slope on the site in a positive way, maximizing the slope to divide the market into levels. This reduces the need for filling or excavation, and also makes the upper ground floor more accessible, as it is on ground level when a user is accessing the site from uphill.

## Ideas from research and case studies

The lessons learnt and ideas drawn from the different case studies researched include;

- Creation of a sense of place within the market
- Designing for flexibility of usage within the market
- Retention of a sense of connection with the outdoors on all sides of the market(Fig. 24)
- Visibility of the energy inside the market by utilizing the structure of the building to create a sense of openness and draw people in from the surrounding area(Fig. 24)
- Creation of an interior courtyard into which the market stalls open up, allowing people to flow freely between the different functions(Fig. 25)
- Creation of a high roof that will not only help maximize of natural light and cross-ventilation, but will visually draw users into the market(Fig. 26)

## Fundamental principles used in design

The new proposal for Kinawataka market approaches the design of the market from the larger context, ensuring the market is not alien or opposing within its site. As such, the new design 'grows' from its site and is influenced by different factors in the immediate neighborhood.

In response to the ever changing needs of the vendors/users the market is designed to be flexible in character. The design also incorporates key issues of;

- Access
- Visibility
- Circulation
- Waste management

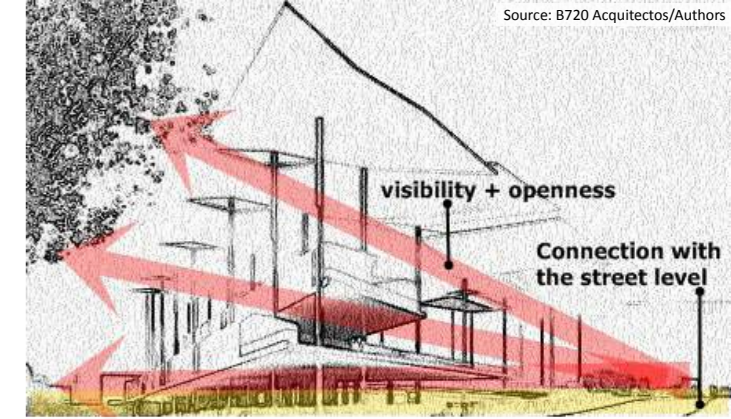


Figure 24:  
Encants market - visibility and connection to the street

Source: B720 Arquitectos/Authors

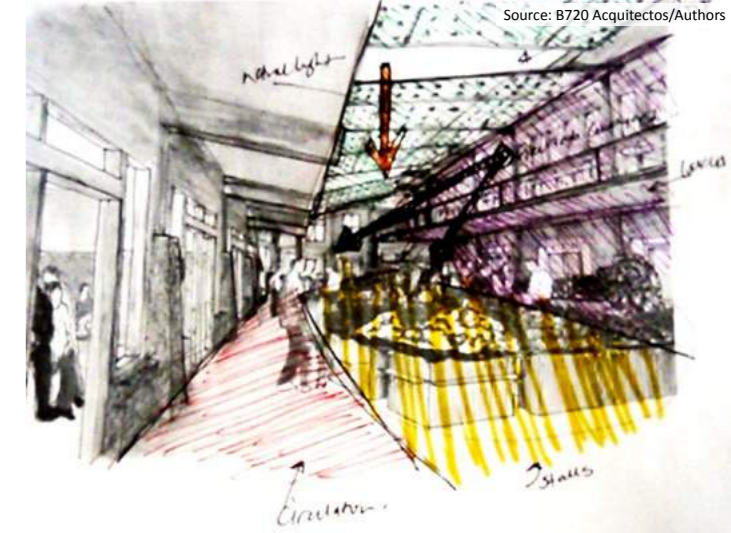


Figure 25:  
Eastbank market - interior courtyard

Source: gls/Authors

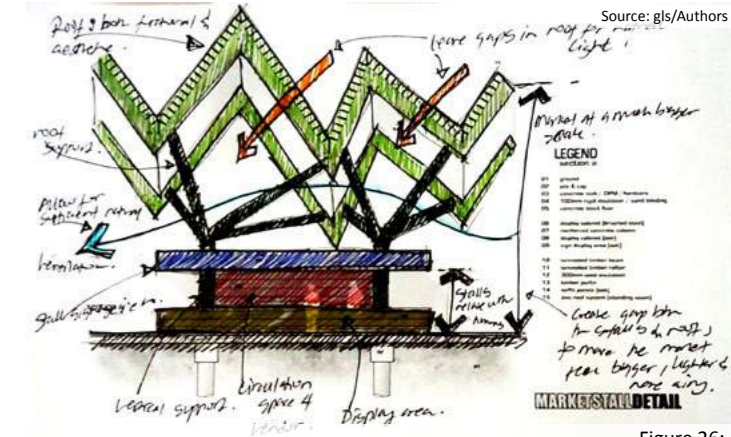


Figure 26:  
High roof

### Concept development

The design of this new proposal is based on the understanding of how an example of a farmer's market stall functions. The key elements of the stall as seen in Figure 27 below, are the structural supports: which are both vertical and horizontal, the use of signage which informs the customer about what is being sold and draws their attention to the stall, and display units 'mini-stalls' onto which the produce is placed. The nature of the stall gives the vendor great flexibility with regard to the display of his goods.

Reinterpreting this into the design of the market, the market is understood as one big stall consisting of and formed by a structural shell. The openness created by the use of the shell would then function the same way as the signage, drawing users into the market.

The shell would then be gradually filled-in with the different functions the market contains.

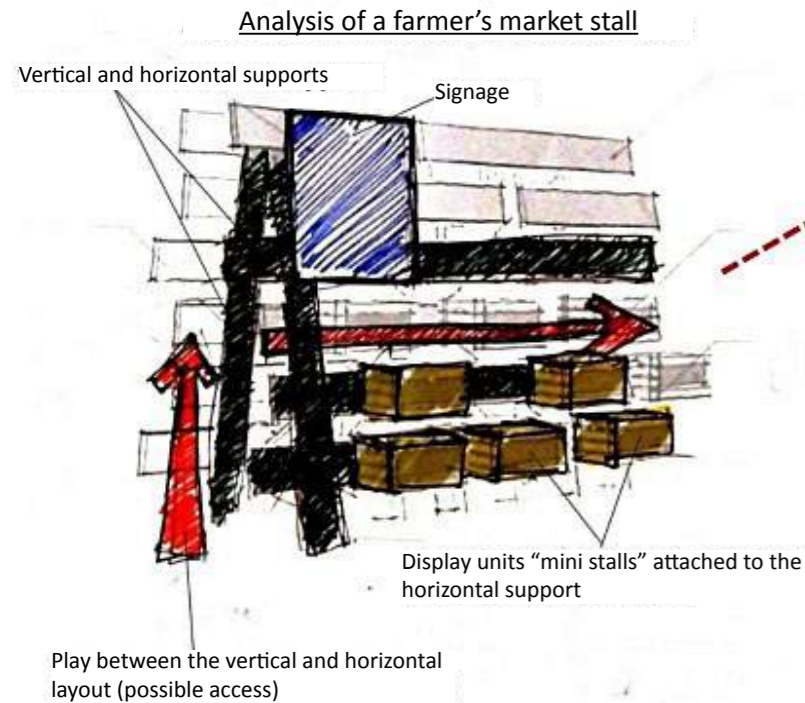
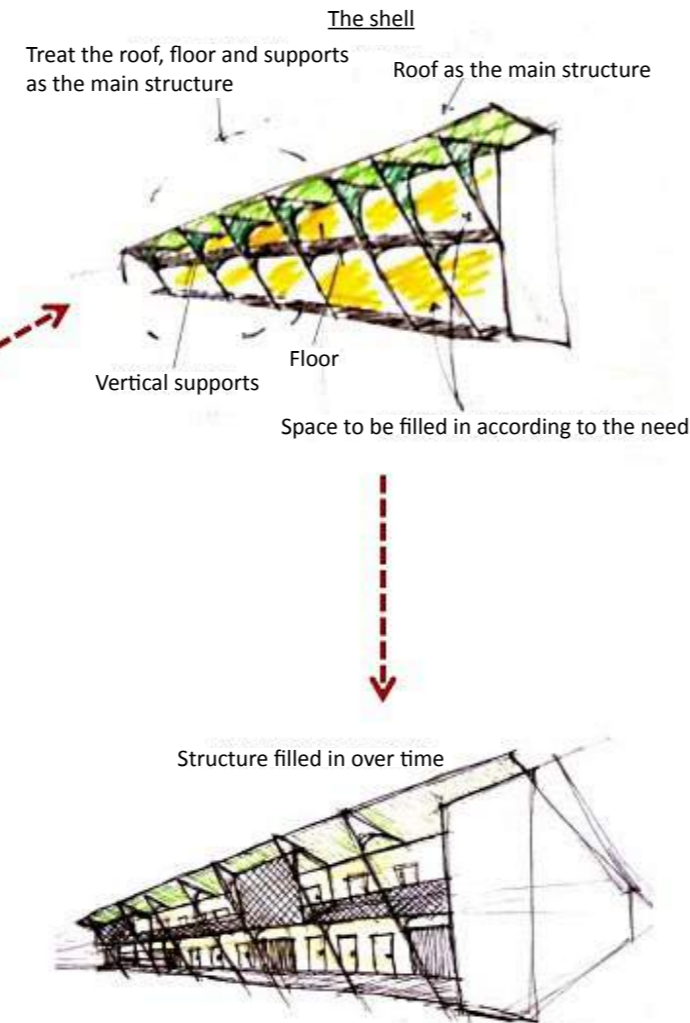


Figure 27:  
Concept development - from market stall to structural shell



### Program

The new proposal seeks to improve access and circulation within the market by providing wide circulation corridors and four pedestrian access points. In order to improve mobility, the different functions within the market have been mirrored on either end of the site, both along Kinawataka road and the residential access road. In addition, the market stalls have been divided into three categories: Matooke vendors, Butcheries/Fish mongers/ Crafts, and other fresh food vendors, in order to ease waste management and organization.

Lock-ups, restaurants and office space have also been provided to serve as 'anchor' facilities within the market. Space to cater for Mobile money/Airtime kiosks and alike has also been allocated next to the parking lot.

The community centre which was originally planned for on the first floor of the sanitation unit has been redesigned within the first floor of the new proposal, making it bigger and in turn creating room for the expansion of the toilets over time.

As per planning regulations, a delivery bay for goods and parking space for the market customers has also been provided within this new proposal. Careful attention has also been paid to ensure that the new structure does not extend into the road reserve.

Space has also been allocated for waste management: mainly for converting matooke peels into briquettes.

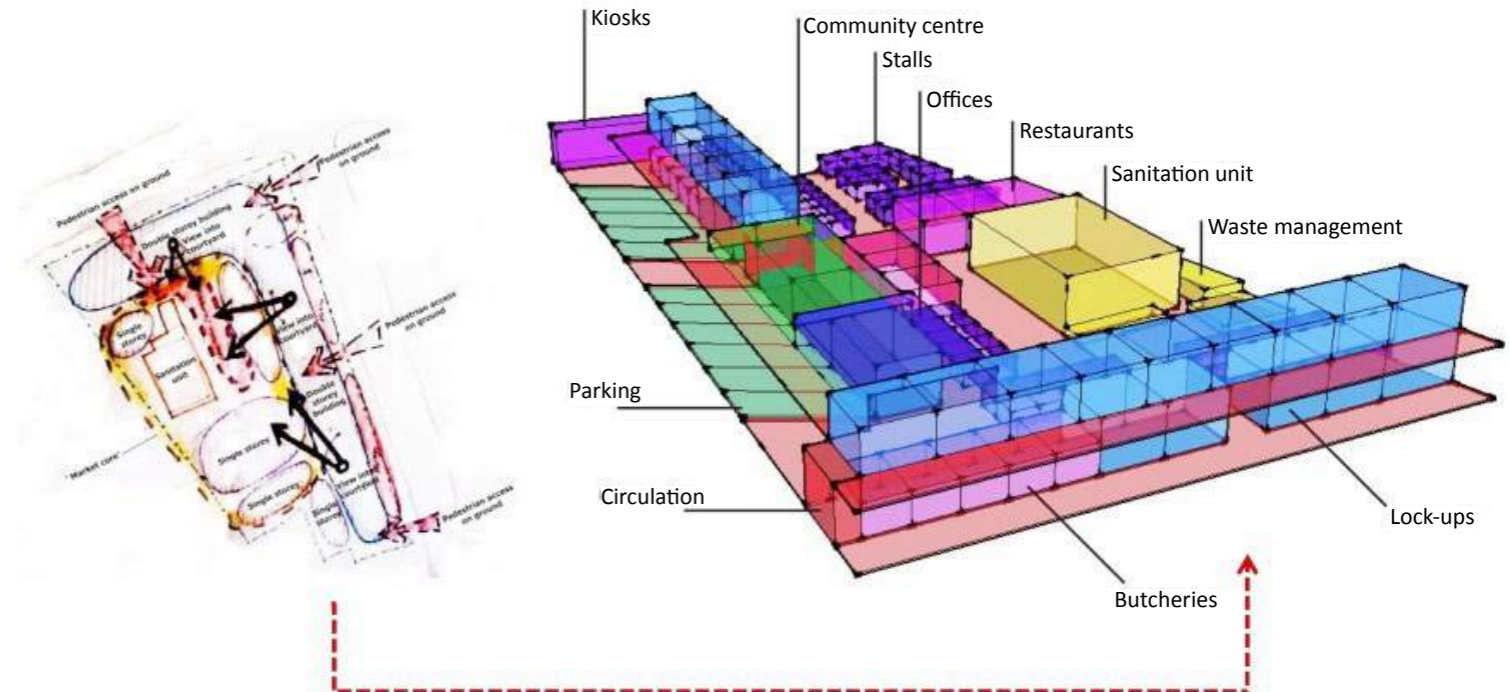


Figure 28:  
Market scheme

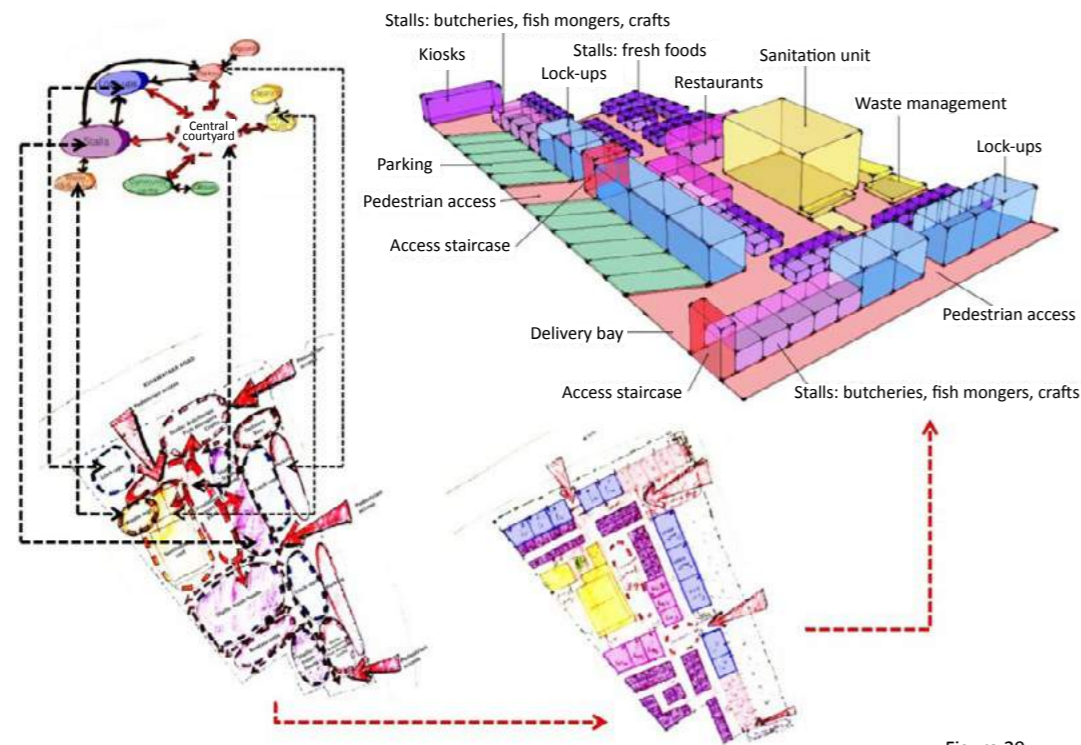


Figure 29:  
Ground floor scheme

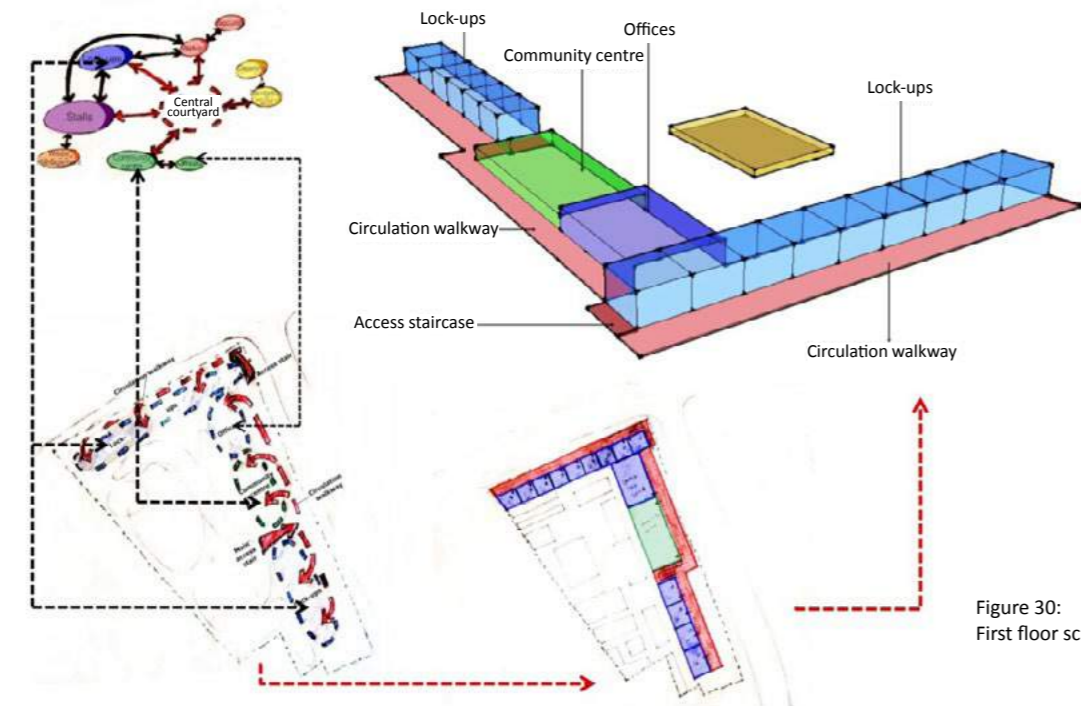


Figure 30:  
First floor scheme

### Concept application - the incremental market

As explained in the concept development section, the market has been designed as a structural shell consisting of a roof, floors, columns and beams. This ensures that the open-air character of the current market is maintained albeit reinterpreted. The nature of the roof ensures that there's filtered natural light into the interior of the market and cross ventilation.

The lockups and other functions contained within the storey structure can then be slipped in as cubes of a more economical and light-weight material that can easily be adapted to the changing needs of the vendors. The use of the shell ensures maximum flexibility as far use and gradual expansion of the market are concerned.

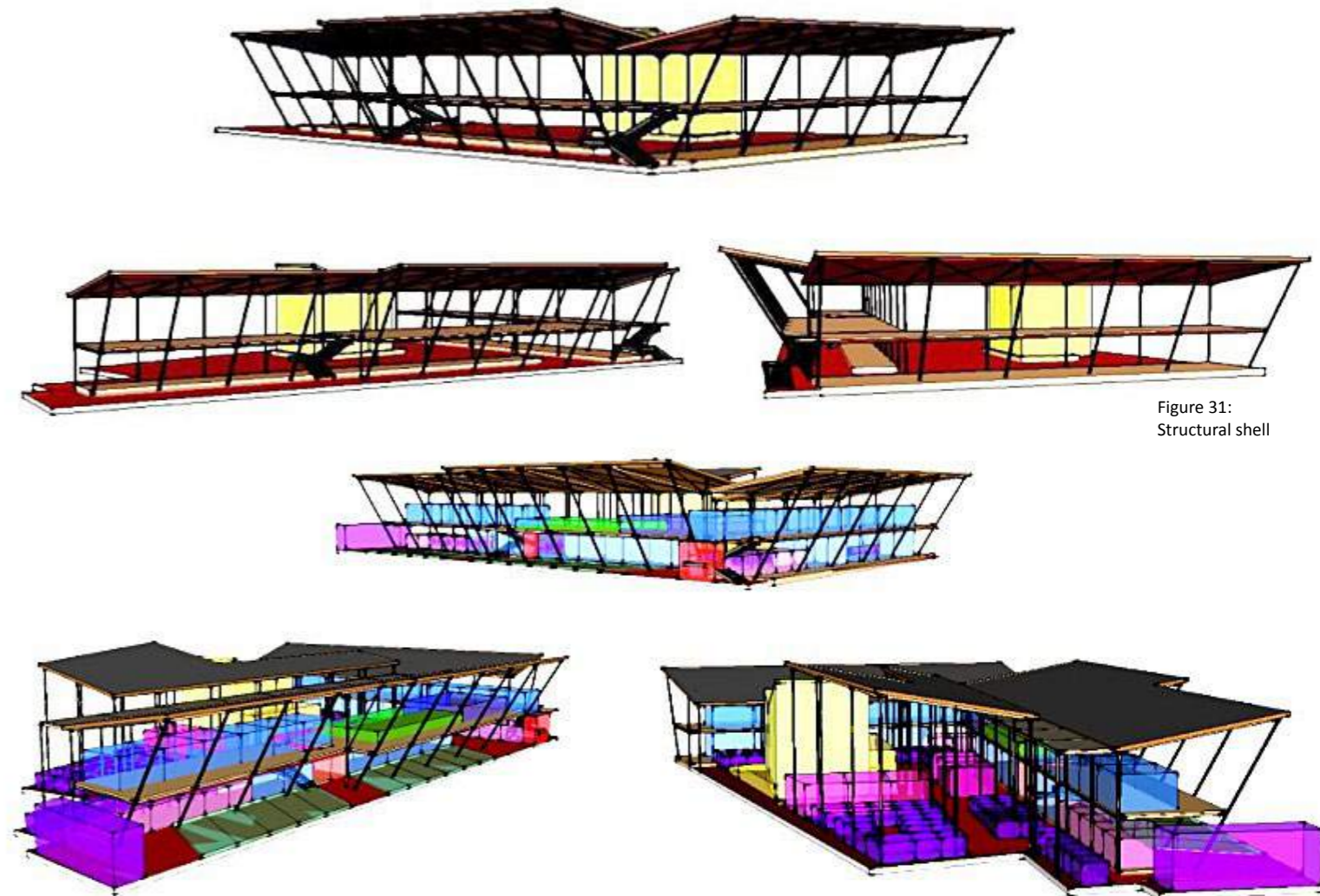


Figure 31:  
Structural shell

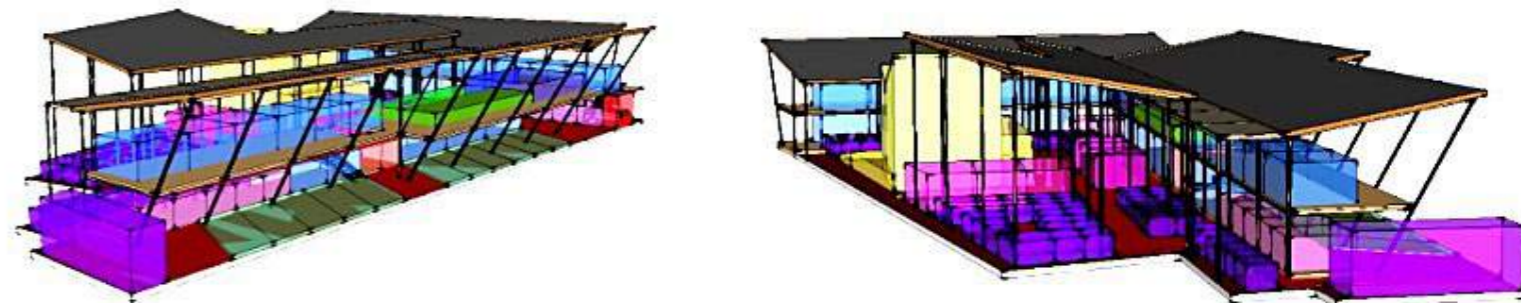


Figure 32:  
Structural shell with functions incorporated

### Financial viability of the design proposal

Considering the fact that Kinawataka market is located in a low-income community, the financial viability of our intervention is of great importance: however, due to time constraints the design proposal was not costed. Therefore, the financial model discussed in this section is based on the economy of a vendor in the market, and how an upgrade will influence their livelihood.

The income of the vendors is influenced by two factors; their expenses and their earnings. These two factors are in turn dependent on different conditions (Fig. 33). This income is further divided into two different uses; capital reinvestment back into the business and actual profit that benefits the vendor. The vendors will also be required to contribute a stipulated sum of money towards repayment of a construction loan that will be taken out for the new market. That said, the goal of the new design proposal is to improve working conditions within the market, increase the profit of the vendors and in turn improve their livelihood.

It is hoped that the new market will draw more customers, contributing to bigger sales within the market. As discussed earlier, the provision of a delivery bay will enable the vendors buy produce directly from the producers, reducing the wholesale price of the goods. The vendors will also have reduced costs as far as transportation is concerned. Because a large portion of the vendors expenses will have been greatly reduced, there will be need to increase the amount of rent in order to cater for maintenance and repayment of the

construction loan: currently the rent and taxes levied on the vendors are quite low. Although at the start this may be seen by the vendors as disadvantageous, an increase in rent is inevitable especially considering the redevelopment that will have taken place.

The provision of new market stalls also creates new options as far as ownership is concerned: the 44% of the vendors currently renting the stalls (ACTogether, 2012) could take up the option of owning, further reducing their expenses. It is therefore important to ensure that the vendors in the current market are not displaced by new ones after it is redeveloped.

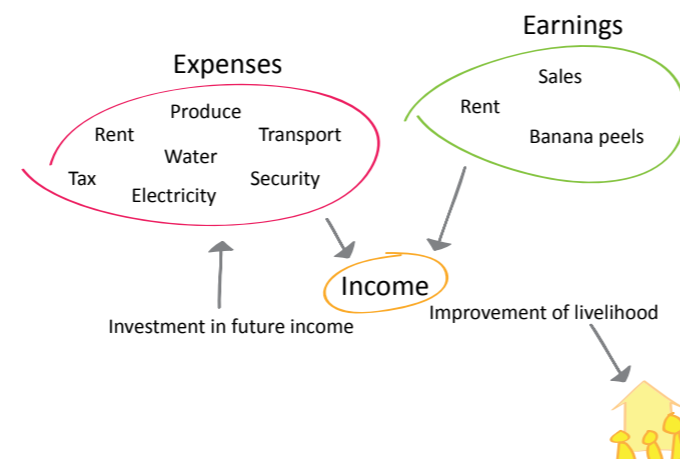


Figure 33:  
Illustration showing the analysis of the vendors income



# Conclusions

## Challenges faced

- Ascertaining the authentic land owner of the site where the current market sits was a slow and frustrating process
- The two month period of fieldwork dedicated to this project was too little to exhaustively delve into the real issues surrounding the market redevelopment. Streamlining the project time with the collaborative partner’s tasks was also difficult; as such we were not able to complete some of them
- The boundaries of the project site were not fully established (full documentation of the deed plan indicating the actual plot size). However, a topographic survey of the current market site was provided which aided the team in developing a new design proposal
- There were a number of stakeholders, each having their own expectations, which made it difficult to synchronize the work we had to do within the limited time frame
- Some of the information we needed was either not given, or was old and outdated
- Defining the thin line between what information to give or not give the community and how much to involve them in the whole planning process

## Way forward for Kinawataka market project

Before this project can commence, a lot of work still has to be done. These are some of the recommendations we have made for the way forward;

### Ironing out the land issue

Currently there are several claimants to the land, with KCCA pronouncing itself as the authentic land owner. However, the land title needs to be made as soon as possible. There is also need to make an agreement with the vendors as far as ownership of the market and stalls is concerned

### Vendors association needs to be approved

A copy of the vendors association has been sent to KCCA, and is awaiting approval. Once this is done, there is also need to assess the current management systems in the market and develop one that will ensure smooth running of the new market. The dialogue between the vendors and market management needs to be strengthened in order to avert future disagreements

### Detailed design

The design proposal that was developed dealt with the structural shell of the market, and the possible layout within this shell: it did not articulate the design of the individual stalls. As the market is designed to be incremental, and allow for change, the stalls may not all be same, requiring more thought into their design and functioning. The site in itself needs to be dealt with in regard to the creation of levels and a proper drainage system. The design therefore needs to be taken from

the schematic stage to a more detailed design stage to ensure that all the design related issues are dealt with

### Finance

All different aspects of the finances related to this project need to be researched properly. Some of the aspects include costing of the proposal, and creating an investment plan and recovery plan.

### Construction

Construction of the market should be as cheap and fast as possible. The possibility of using unconventional and cost effective building materials and techniques needs to be looked into. There needs to be a plan for the relocation of the vendors during the construction period

## Recommendations for other market projects

The world is constantly changing, so markets need to be able to cope with the changes that will come. The idea of an incremental market, a market designed with the main structure open and simple, with the essential functions provided, leaves room for change if and when required. This approach to design makes the market more adaptable to unexpected scenarios, and also creates a market prototype that is easier to “copy” for other market upgrade projects

The community is an important stakeholder in these kinds of projects, and there is a lot to gain from participatory work with them. Therefore communication between them, the planning authorities, local leaders and the project teams need to be strengthened

The affordability and financing of the projects are very important aspects that need to be carefully thought out. The market upgrades need to benefit the community and funding agencies need to be careful not create markets that are unsustainable, all in a bid to make a statement. In addition, a lot of research needs to be carried out on the economics of similar completed projects, in order to avoid the forced resettlement of the vendors due to impossible expenses following the upgrade.

### Group members profile

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# Sanitation Project

A study on the sanitation situation and solutions  
Kampala, Uganda

Kanutte Næss  
Patrick Okia  
Marcin Sliwa  
Abigail Turinayo

## Introduction

*to the sanitation project*

Among the first things that foreign visitors notice when entering any of Kampala's slums are the unhygienic living conditions and bad smell. The ground consists of a mix of soil, garbage, human waste and standing water that would not sink or drain into the channels, which in most cases are clogged anyway. Access to proper toilet and shower facilities as well as garbage collection points is poor; so many slum dwellers dump their waste just outside of their homes.

Despite various initiatives and attempts to solve those issues, problems related to sanitation seem to accelerate with the impacts of climate change and as the urban population grows, which represents serious risks for health and decrease the quality of life for low-income earners and their families. Therefore, there is an urgent need to address the basic sanitation needs in Kampala and explore realistic options for improvement.

This section summarizes the results of the our group's investigation on sanitation issues in Kampala, explains the research process as well as challenges that we faced during the field work. Further, we discuss the technical specifications of various sanitation options, propose low-cost solutions for various settlement types and provide sample designs that apply to the complex local situation of slums in Kampala. In the following part we present example analysis and implementation scenarios in two representative slum areas in Kampala. The final section of this chapter provides some general recommendations for the improvement of sanitation.

## Method

work structure and field work

The group working on the sanitation project in Kampala consists of four students (two from NTNU and two from Makerere University, Kampala) - of which two study architecture and two planning. We also received technical assistance from Mari Sjaastad from the Engineers Without Borders organization. The field data for this assignment was collected between September and November 2013 (see timeline) and then presented as part of this report in December 2013.

During our stay in Uganda, we established relationships with different stakeholders and partner organizations that could contribute to the project in some manner. We, as students from NTNU and Makerere University were invited to participate in projects carried out by ACTogether, which is affiliated with the Shack/Slum Dwellers International (SDI). Of particular significance is our cooperation in their initiative to build low-cost sanitation units in slum areas in Kampala in the upcoming few years. The guidelines for the project were

prepared and presented by ACTogether in collaboration with the UEP faculty. Besides the general objectives of analyzing the sanitation situation in Kampala, assessing the relevant toilet technology options and identifying the main planning challenges, we were also asked to develop a 'Catalogue' of sanitation unit prototypes for slum areas in which the total cost per unit should not exceed \$5,000 USD. We were also tasked to explore creative business models for long-term management and financing.

The 'Catalogue' was developed together with another UEP group that worked simultaneously on sanitation issues in Jinja. Later in the process, we decided to change the name from the 'Catalogue' to 'Toolkit', as we feel it reflects the idea of the document much better. The complete Toolkit is not included in the report, but some parts of it are incorporated here. Given the scope of the sanitation problem, we were not assigned a specific case study or area within the city and we purposely decided not to include any of those later on. Instead, we decided

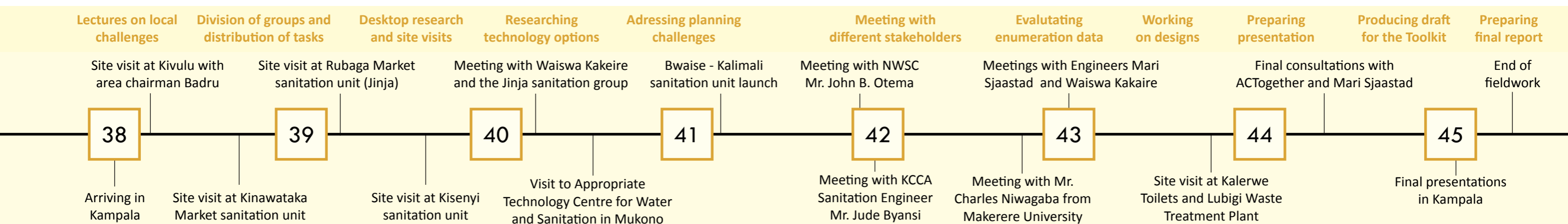
to focus on the city in general, with a special attention on areas which were identified in the Informal Settlement / Slum Profile enumeration database that has been provided to us by ACTogether. For the list and location of those areas in Kampala see Appendix C.

The sanitation project is funded by a well-known international charity organization and is scheduled to begin in the first quarter of 2014. Another important party with which we interacted is the KCCA, who during one of our meetings invited ACTogether to sign a Memorandum of Understanding and join their Water and Sanitation Forum (KWSF). Our research partners also include the Urban Pro-Poor Branch at the National Water and Sewage Corporation (NWSC) and the Department of Civil and Environmental Engineering at Makerere University.

Our research had both a quantitative and qualitative character. Among the quantitative methods was the analysis of the mentioned above Informal Settlement

/ Slum Profile enumeration data that was collected in 2013 in different slum areas in Kampala. Other kinds of information we were looking at were the statistics and financial performance data of the existing sanitation units, for example the number of toilet users per day in relation to the projections.

In terms of qualitative data, we conducted a number of informal interviews and talks during our site visits and meetings with stakeholders. Among the people we spoke to are representatives of KCCA, NWSC, faculty members at the Makerere University, people responsible for the construction and maintenance of sanitation units in Kampala and Jinja as well as the regular slum dwellers. On top of that, we performed a significant amount of desktop research, which includes review of relevant policy on sanitation, planning, housing and water in Uganda and abroad, extensive analysis of other case studies, review of information provided by ACTogether and assessment of applicable technology options.



# Sanitation Overview

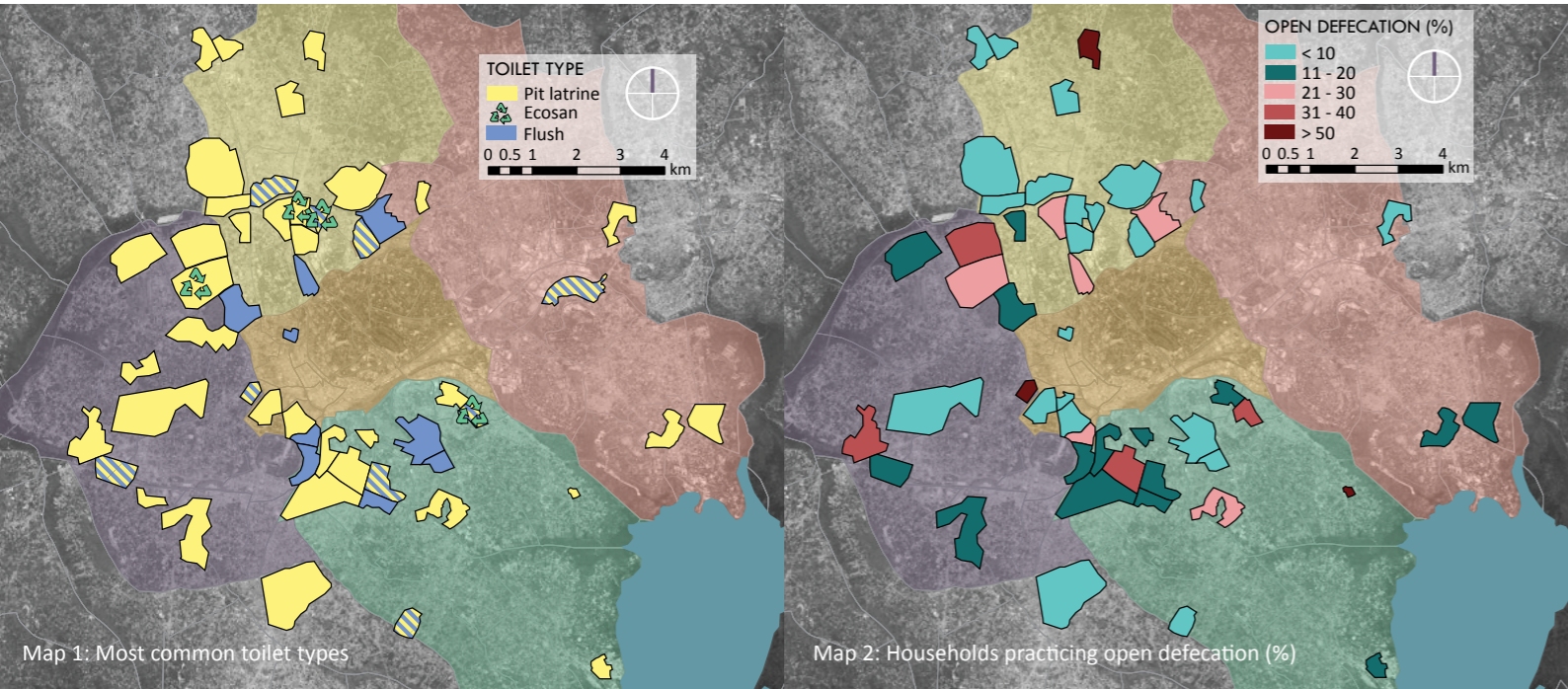
the situation today

Sanitation refers to the provision of services and facilities for the safe disposal of human waste. Lack of access to proper sanitation may cause disease and improving sanitation is generally known to have a significant beneficial impact on health for all the affected population groups (WHO, 2011).

The issues related to sanitation in Kampala are closely related to its topography. The city was initially developed on seven central hills, yet over time the built area spread over to other hills as well as to the valleys in between. The development in the low-laying areas was predominantly unplanned and uncontrolled, which means that most of the urban poor settle or squat in wetlands and valleys, with high ground water table and severe and frequent flooding. The drainage system is defective, which causes stormwater staying in those areas many days after each rainfall.

The majority of the city population relies on on-site sanitation facilities that are very difficult to construct and maintain in those living conditions. The most common toilet facilities in lower-income areas include traditional pit latrines. In some areas, their total share is over 90% of all toilets (UN Habitat, 2007). Water-borne flush toilets connected to the sewer can be found mainly in some centrally-located areas and in slums adjacent to those parts of the city (see Map 1). On top of that, it is estimated that around 22% of the households in slums are practicing open defecation (see Map 2), and around 20% use the bucket system.

The distribution of water in Kampala is fairly good, with a large majority of the residents having access to it, although there are some problems that need to be resolved, including the cost and quality of piped water as well as the repairs of aging infrastructure (KCCA, 2012).



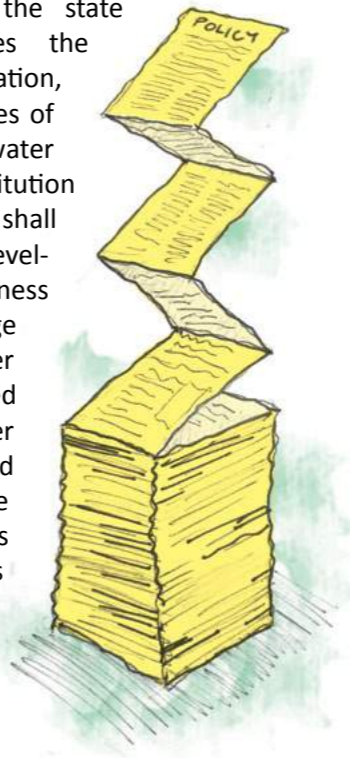
# Policy framework

on sanitation in Uganda

At this moment, there is no single integrated policy document which would relate entirely to sanitation. However, there is a policy framework, which comprises of a set of policies and laws that are being used to guide the various activities relating to provision of sanitation. The most notable ones include, but are not limited to:

## The Constitution of the Republic of Uganda (1995)

The Constitution of the Republic of Uganda sets down the state objectives and provides the framework for decentralization, as well as overall principles of state policy, including water and sanitation. The constitution states that the state shall promote sustainable development and public awareness of the necessity to manage land, air, as well as water and sanitation in a balanced and sustainable manner for the present and future generations. The constitution also states that every Ugandan has the right to a clean and healthy environment, while expecting citizens to play an active part in making this possible.



## The Local Governments Act (1997)

This act specifies functions and services for local governments, which includes district and urban councils, as well as those to be delegated to the parish level. This is in conformity with the Constitution of Uganda.

## The Land Act (1998)

The Constitution and Land Act set out the various land tenure systems in Uganda. The document recognizes four types of land ownership and tenure systems: customary, freehold, mailo and leasehold (Republic of Uganda, 1998). The Land Act regulates how both Government and private owners of land can set up facilities on land they occupy and own. Land tenure issues are critical to the development of water and sanitation infrastructure. Any location of a water supply and sanitation facility project must respect the proprietary rights of the landowner or occupier as protected by the Constitution and the Land Act.

## NWSC Statute (1995)

The National Water and Sewerage Corporation Statute establishes the NWSC as a main authority regulating water and sewerage in Uganda and gives it the mandate to operate and provide those services in areas entrusted to it on a sound commercial and viable basis.

## National Health Policy (1999)

It emphasizes prevention through Primary Health Care (PHC) act which includes sections devoted to sanitation and hygiene.

# Institutional framework

on sanitation in Uganda

Sanitation provision in Uganda is being undertaken by various institutions or actors who have different, often overlapping responsibilities and roles:

## Ministry of Water and Environment

The MWE is the main agency for formulating national policy on water and sanitation. The mandate of the Ministry is to set standards to be followed by all the players within the water and sanitation sector, monitor the effectiveness of service delivery as well as manage and regulate all water resource developments, bearing in mind the need for efficient utilization of the scarce resources in the context of climate change. In reality, the impact of the MWE in water and sanitation is limited to the development of public sanitary facilities and promotion of good practices of hygiene and sanitation in small towns and rural areas.

## Ministry of Health

The MOH is responsible for hygiene and sanitation promotion for households through the Environmental Health Division (EHD) and general education on hygiene, health and sanitation in health centers, which they operate.

## Ministry of Education and Sports

The MOES is responsible for hygiene education among children and provision of sanitation facilities in primary schools. It also promotes hand washing campaigns among the urban poor.

## Ministry of Gender, Labour and Social Development

This ministry is responsible for gender responsiveness and community development and mobilization. It assists the sector in gender-sensitive policy development, and supports local governments in capacity building.

## Ministry of Lands, Housing and Urban Development

The MLHUD is responsible for the management of land affairs, including physical planning, surveys and mapping, land registration, urban development and housing. That also refers to the administration of land for public sanitation facilities.

## Ministry of Finance, Planning and Economic Develop.

The MFPED mobilizes funds, distributes them to sectors (including water and sanitation) and coordinates development partners. The ministry reviews plans for the sector as a basis for allocation of funds and reports back on compliance with national budgetary objectives.

## National Water and Sewerage Corporation

The bulk of the urban water supply is provided by the NWSC, which operates and provides water and sewerage services for large urban centers across the country, including Kampala. NWSC is responsible for implementing water and sewerage tariffs after they are being set by the parliament. Their activities are aimed at expanding coverage and improving efficiency in service delivery. NWSC operates sewage treatment infrastructure in Kampala and is responsible for the extension of sewer system network to areas that are not yet connected.

## Kampala Capital City Authority

KCCA is the overall planning body in charge of Kampala, with responsibility to enforce plans and ensure that they conform to the set of rules and regulations. KCCA

has also been involved in the provision of public toilet facilities, whose construction fees are entirely covered by them and maintenance costs is financed by the community.

## Local governments

These are empowered by the Local Governments Act for the provision of water and sanitation services. They receive grant funding and may mobilize local resources for implementing water and sanitation initiatives. Local governments also appoint and manage private operators for projects outside the jurisdiction of NWSC. District governments

are encouraged to set up District Water and Sanitation Committees (DWSC) to oversee and provide effective coordination of water sector activities in the respective local governments.



## Kampala Water and Sanitation Forum

KWSF is a KCCA's initiative that brings together the public and private sector, NGOs, civil society and all other actors who can contribute to water, sanitation and hygiene in the city.

## NGOs and CBOs

NGOs and CBOs complement government efforts in the delivery of water and sanitation services, by mobilizing community participation, promotion of health and hygiene, lobbying as well as providing training of communities and corresponding local governments. Given that the KCCA alone does not always have the capacity to provide sanitation facilities in all the informal settlements within their jurisdiction, NGOs are taking the role of providing affordable public toilets for slum communities. NGOs and CBOs work together with different stakeholders in order to undertake those activities without any legal restriction.

## Private sector

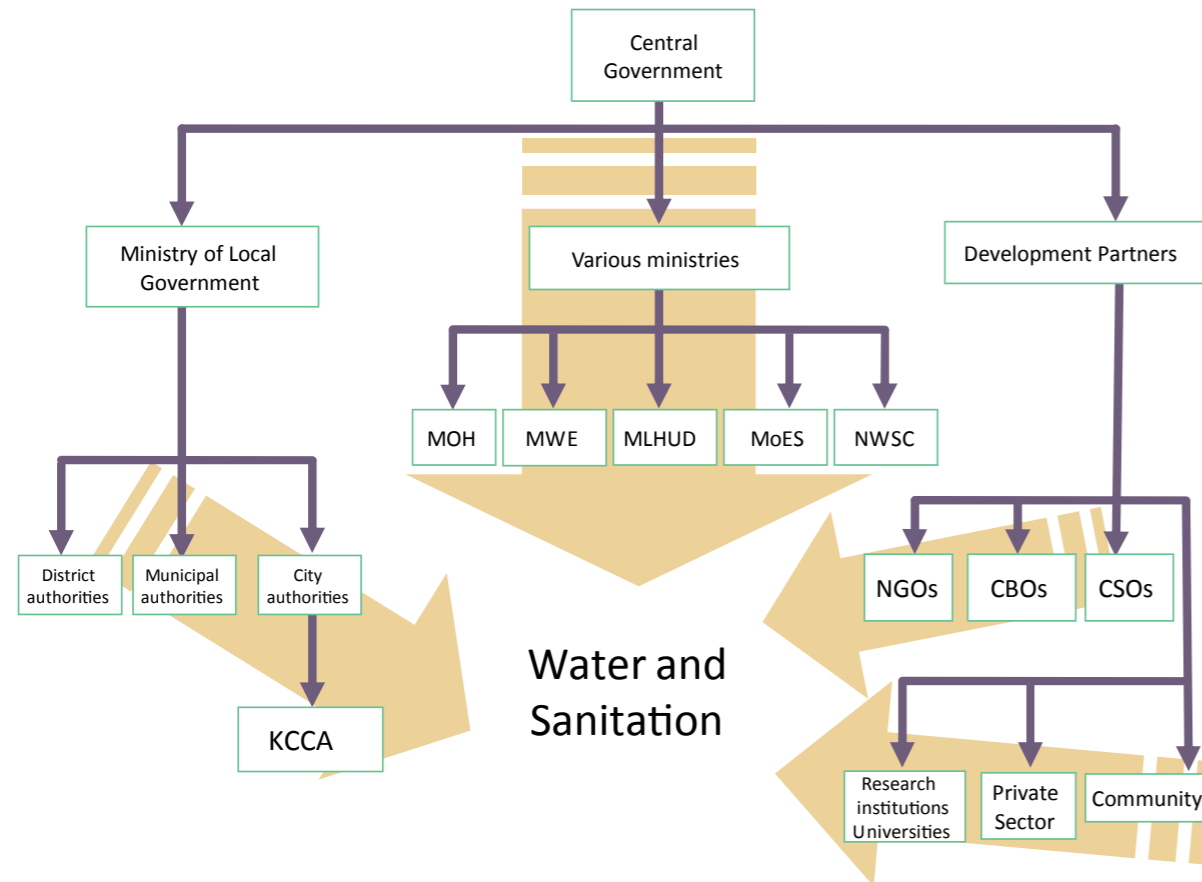
The largest provider of sanitation services in Uganda is the private sector as the majority of the population, especially in urban areas, is not served by the sewerage network operated by public utility, the NWSC. Private sector firms undertake design, construction and maintenance of water supply infrastructure and sanitation facilities under contract to local and central government, especially for on-site facilities outside of the centralized sewerage network.

### Communities

Those are the prime users of sanitation facilities; therefore their main role is to address their demands for monitoring, operating and maintenance of sanitation facilities, especially public toilets. They actively participate in the planning process and when that is not possible, they take initiative by mobilizing their own resources in order to provide sanitation facilities for themselves.

All stakeholders, including development partners, NGOs and civil society coordinate their activities through the Water and Sanitation Sector Working Group (WSSWG).

The diagram below is a general overview of all the mentioned stakeholders involved in the water and sanitation sector in Uganda as well as the relationship between them.



## Planning and land challenges

*for implementation and operation of sanitation facilities*

Sanitation provision in most of Kampala's informal settlements is not viewed as a priority. This is because informal settlements are often seen as a burden to the well functioning of the city. As a result little is done by the local authorities in provision of services such as safe drinking water, solid waste management and proper drainage. Therefore, most of the sanitation projects are being undertaken by NGOs or the communities themselves.

There are many issues and challenges that are related to planning when it comes to provision of sanitation facilities as they are being explained below.

### Increase in population

Population growth means increase in demand for land resources for settlement with minimal consideration of sanitation facilities which is very common in informal settlements. Failure to acquire basic services and land for housing results in squatting on any available open space, like wetlands or steep slopes, in which it may be very difficult to provide sufficient sanitation facilities. As a result of the population growth, the density in informal settlements increases to levels which make many of those areas inhabitable.

### Planning challenges

The Physical Planning Act (2010) declares the whole country a planning area and empowers KCCA to plan for all land under its jurisdiction irrespective of which land tenure system or administration of such land. But

despite the Act, KCCA often fails to override private interests. It has little leverage of power to control access and ownership of urban land.

On the other hand, NGOs and donors may feel that since they are providing services such as clean water or sanitary facilities to a community, they can do it anywhere on 'the common land', without considering that most of this land is owned by private owners or families and not by communities. The landowners may be very happy to make the land available for everyone's benefit, but they also have a right to be asked and even to refuse.

### Access to land

Any project to be planned and implemented requires the availability of land. The issue of land acquisition is a very big challenge in Kampala, especially in informal settlements. This is due to the fact that most of the residents are either tenants or illegal occupants without security of tenure. Therefore, evictions are rampant as landowners may have different ideas for the use of their land resources.

In most cases where the low income earners acquire land, they may not have legally bounding land titles, which makes it easy for the high income earners to claim that the land belongs to them. Limited access to land and the high levels of evictions resulted in the proliferation of slums as the poor resort to wetlands and other ecological sensitive areas, which are seen as free areas for settlement.

### Multiple land tenure systems

As mentioned before, there are four types of land tenure systems recognized by the Constitution: customary, mailo, freehold and leasehold. Despite several attempts by different regimes to harmonize land ownership and utilization, many unresolved issues remain and they continue to hinder land development in Uganda, which is especially visible in Kampala, where land value increases the fastest. These conflicts lead to squatting as well as constrained land transactions.

### Multiple land administration institutions

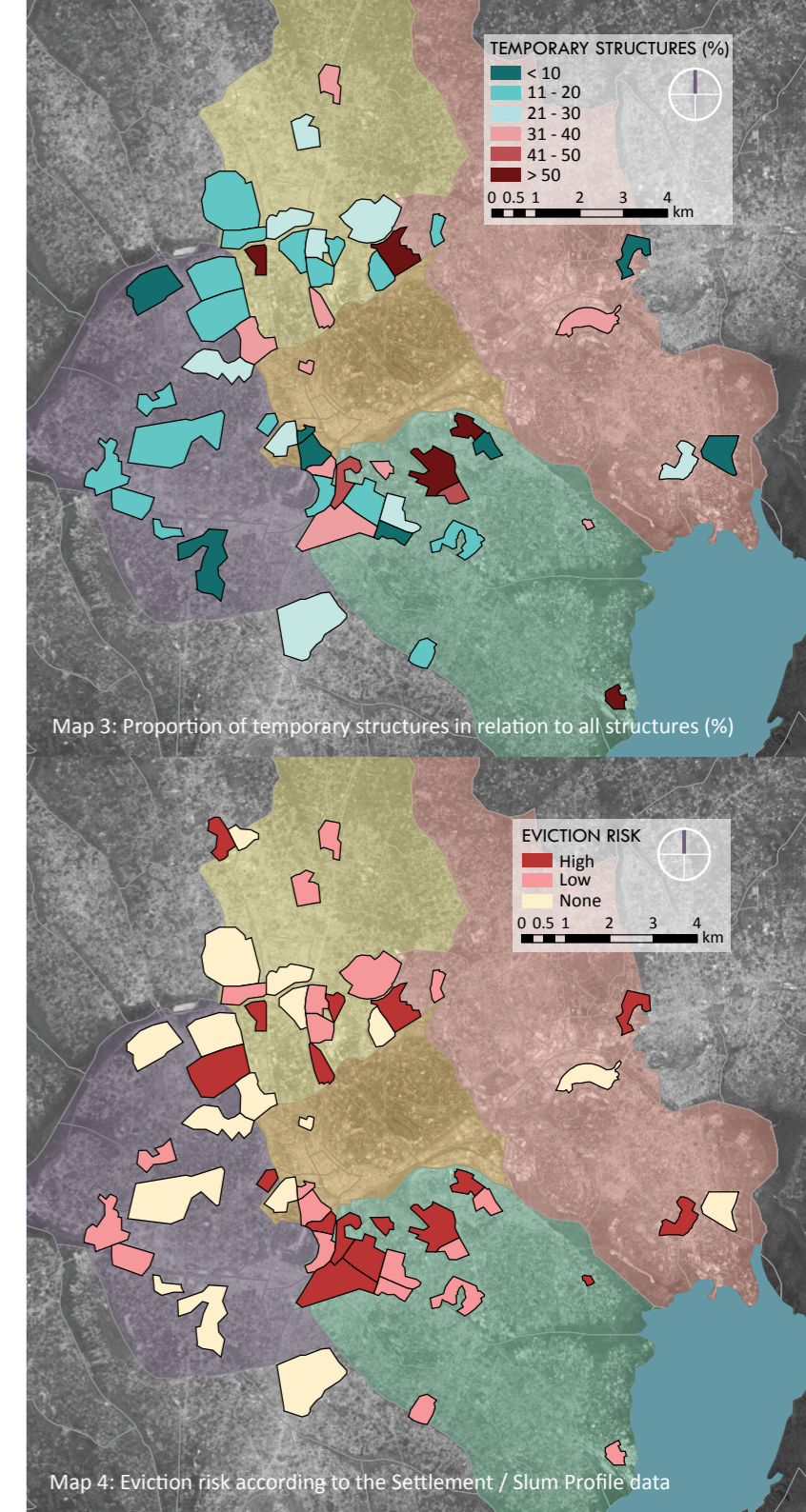
The multiple tenure systems of land ownership pose a challenge to planning for services and utilities in many areas including informal settlements. Kampala has multiple land administration organization, without

having a common land management information system. Each institution is responsible for managing and leasing out land that it owns without proper consultation and collaboration with others. This means that there are conflicting interests in regards to land, especially for public toilets.

### Evictions

These have adversely affected the most vulnerable categories of people in Kampala's urban areas. If left without provision of specific policy direction, it would lead to socio-political instability and livelihood insecurity as the scarcity for land increases. Lack of security of tenure in informal settlements results in a higher proportion of temporary structures in relation to all structures (see Map 3).

Therefore, extra caution should be taken when planning for a sanitation facility in an area with a high eviction risk (see Map 4). Investing large amounts of money in extensive sanitation systems may not be the best option in settlements with a serious threat of all the residents being evicted and the structures being demolished. Alternative solutions, such as low-cost, incremental or temporary toilets with a possibility for upgrading in the future may be more suitable for those settlements.



## Sanitation and gender

challenges and prospects

Women often have a primary role and responsibility for management of household water supply, sanitation and health. Because of their dependence on water resources women accumulated a considerable knowledge regarding location, quality and storage of water. However, efforts geared towards improving management of the world's scarce freshwater resources, extending access to safe drinking water and provide adequate sanitation often overlooks the central role of women.

This problem is especially relevant to Uganda, where the rights of woman and children are often violated, despite them being recognized in the Constitution of Uganda (1995). Yet in most of the sanitation units in Kampala we visited, women were in charge of maintenance and management and it was often them who came up with innovative and creative ways for improvement of those facilities.

Sustainable management of water resources and sanitation facilities provides great benefits to society in the long term. Therefore it is crucial, first to involve both women and men to ensure that their specific needs and concerns are taken into account. Second, it is very important to determine what people want, what they can contribute and how they will participate in decision making on the types and levels of services, location of facilities, operation and maintenance. For reaching this second goal, it is necessary to analyze a given target group from a gender perspective. Only then can efforts be truly effective and sustainable.

In our research, we identified a few general steps which should be taken in order to achieve a gender approach to sanitation and water management.

### Enable equitable access

Since sanitation needs differ between men and women, equitable access to all sanitation facilities for both genders should be ensured. Simple measures, such as providing accessible clean water as well as sanitation facilities in schools and promoting hygiene awareness in classrooms amongst girls (especially important after puberty) can reduce health risks and enable women to devote more time to education, income generation and even the management of water and sanitation facilities. Moreover, the design and location of latrines close to housing may reduce violence against women, especially at night.

### Participation and equity in decision making

Women are under-represented in the water and sanitation decision making process and management. In order to make it truly democratic and transparent and to represent the needs of the people, both men and women must have their voice heard. A start has been made by an increase in the number of female ministers of water and environment, but the empowerment of women must also be felt at the grass root level. In South Africa, Lesotho and Uganda, the ministers for water are implementing affirmative action programs in the water sector to train women for water and sanitation related careers, including science and engineering.

At the local level, an increasing number of women have now been trained to locate water sources and to decide on the location of facilities. Since these changes were made, women are now actively involved in water and sanitation management. While it may be hard to imagine change in orientation of water policy in many cities in the near future, affirmative action policies such as "Women in Water Awards" and a bursary for young women to take up careers in the water sector in South Africa have proved to be a successful means of empowering women (DWAF, 2013).

### Resource mobilization

Formal and informal women's organizations and networks can play important and stimulating roles in mobilizing resources for sustainable and equitable water and sanitation management projects, for instance, the Swayam Shikshan Prayog in India have facilitated the formation of over 1,000 women's savings and credit groups that have mobilized their own savings to provide loans for one another (Groots, 2013). Women started organizing to address development issues such as sanitation and water supply in their communities. Women should also be given access to appropriate technology, such as computer connected to Internet, to allow them perform further research and seek for funding or national or international collaboration opportunities.

Only with a full participation of women, sanitation in Kampala can truly be improved. Without it, even the best technology solutions would be insufficient.



## Sanitation and housing

*challenges and prospects*

Access to proper sanitation has always been one of the key aspects of housing, which means it is a basic human need for everyone. However, there is a severe disparity between sanitation and housing in Uganda, which is caused by the inability to provide affordable housing that would secure access to basic services.

In the recent years, enabling policies to guide housing development, improvement and management have been adopted. Currently, it is estimated that Uganda has approximately 6 million households living in around 4.5 million housing units (UN Habitat, 2012), but there is a major mismatch in access to affordable housing by both high and low income earners. One of the problems is that the growth of housing has been left almost entirely to market forces which do not favor investment in affordable shelter. As a result, the formal private sector has responded to the needs of the high and middle income earners, leaving the urban poor to be catered for by the informal sector. This has partly contributed to the spontaneous growth of slums and squatter settlements.

Housing conditions are generally substandard as most of the dwelling units are built out of temporary building materials that cannot maintain their stability for more than three years. Most houses in slums are predominantly single-room, commonly known as “muzigo”, a local description of a tenement. These structures are built in such a way that there is virtually no space between them. Clusters of shelters are just separated by a corridor or verandah. In this type of housing, a single room acts as a bedroom, sitting room, store and so on. Most of “muzigos” are occupied by 4-6 persons, which by most measures would be classified by overcrowding.

The majority of the housing units in Kampala’s slums are occupied by tenants. The cost of rental per unit (average size 3 m x 1.5 m) varies between 15,000 UGX (6 USD) to 30,000 UGX (12 USD) per month. In most cases, the rent does not include access to any form of adequate sanitation, which means that those tenants need to pay per demand or find other ways of handling their personal needs.

## Waste management

*in relation to sanitation*

Similarly to most rapidly growing cities in the developing world, Kampala experiences serious issues related to inadequate waste management, especially in poorer settlements outside of the city centre. Particularly problematic are polythene bags, which are dumped into toilets and drainage channels.

This has a serious impact on sanitation, especially when solid waste enters into pits and sewerage infrastructure, which results in damage to the pipes and clogging, which then require extensive repairs. In most of the informal settlements, waste is dumped in places where garbage disposal vehicles cannot access.

A large part of waste generated in Kampala is organic, which decomposes after a few days causing bad smell and spreading of bacteria. Garbage also attracts houseflies which spread diseases such as diarrhea and cholera. The problem intensifies during the rainy seasons, when contaminated rainwater does not drain properly.

KCCA faces serious challenges in collecting, transporting and disposing of solid waste. Waste generation in Kampala is estimated at 1 kg per person per day. However, out of the 100% of waste generated daily, KCCA collects only 40% and disposes 30% to landfills (WaterAid Uganda, 2011).

Therefore, private companies have now also gotten involved in waste management. They offer services ranging from collection, transportation and disposal of wastes to the landfills. However, not all city residents can afford to pay their fees for garbage collection.

There is no centralized system for recycling or segregation of solid waste in Kampala, although many low-income residents perform small scale garbage processing or segregation for domestic reuse or additional income generation. Nevertheless, this is not sufficient to solve issues caused by the inefficiency in solid waste collection, especially given the projected population growth.



Kisenyi slum





Communal water pipes are very common in Kampala's slum areas



First-flush system for stormwater harvesting is useful after dry seasons



Water taps in larger sanitation units are also used for laundry

## Water provision

*in Kampala*

Water is a basic need in our lives and the environment; so failure to have access to safe water is a manifestation of many challenges. Water accessibility is a problem especially in informal settlements as the main sources of water for households are limited to either public stand pipes, protected springs, open wells or in the best cases individual water taps. However, high levels of pollution of those water sources often make it unsafe for human consumption. An alternative method to access water is through stormwater harvesting, but its collection is dependend on the season.

Another important issue is water affordability, whereby most of the poor households cannot afford it because of high consumer tariffs. Unequal and high pricing is a problem as low income households end up paying much higher rates compared to upper income earners. This is also caused by the fact that users in informal settlements often need to pay for water by demand, whereas residents in more affluent areas have an option to pay the water bills monthly according to a predefined harmonized tariff.

What should also be noted is that those water tariffs are being set by the federal government and implemented by NWSC, which is the overall institution in charge of water distribution and supply as well as sewage treatment and disposal. However, water provision in slum areas is often controlled by individuals who charge their own, higher fees, thus taking advantage of the most vulnerable social groups.

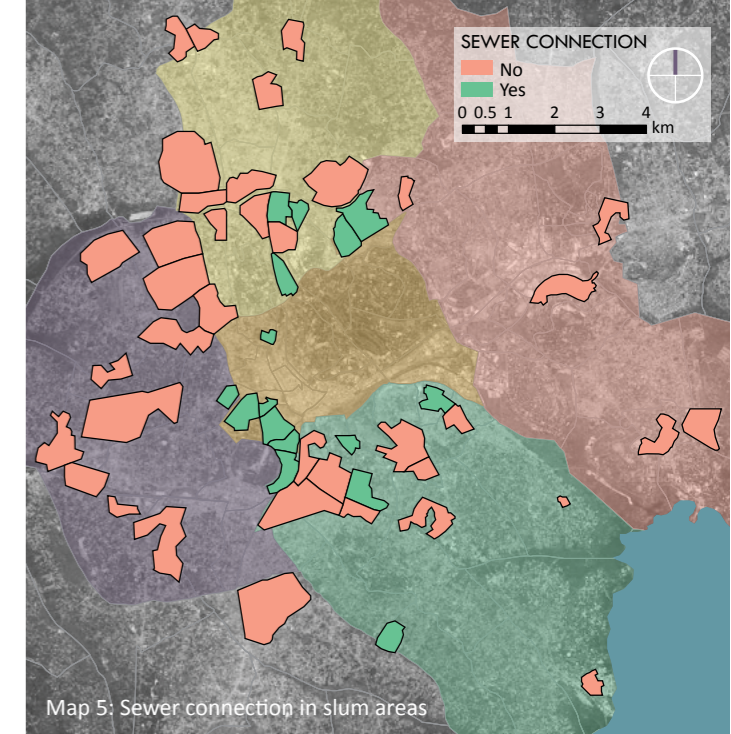
## Sewerage infrastructure

*in Kampala*

Most cities in the developed world are entirely served by a conventional sewerage system that transports human waste to treatment plants or discharges them safely into specially prepared basins. This is not the case in the Global South, where the coverage of sewer pipes does not reach very far. In Kampala, only 7% of population is connected to the centralized sewerage system (NWSC, 2013), and this is mainly in central areas (see Map 5). Most of the sewerage and drainage networks in the city date back to the colonial times and they require extensive repair works and maintenance.

Today, there is only one operational sewage treatment plant in Kampala - Bugolobi (NWSC, 2013). However, there are plans to construct four new facilities on the outer parts of the city. First of them is the Lubigi plant in Kawempe division, which is scheduled to open in 2014. Its sewer catchment will increase the coverage in Kampala to 15% by 2018 (New Vision, 2013).

In any case, it is particularly difficult to provide sewers in unplanned and low income areas, because of the scarcity for land and due to high costs of construction and maintenance. The upkeep would make the resultant tariffs unrealistically high, which are often out of reach for most slum dwellers. Therefore, many people will still have to rely on on-site sanitation, predominantly pit latrines, which has contributed to ground water contamination. In order to address this problem, the Ministry of Health and the KCCA are promoting ecological sanitation solutions by emphasizing the use of dry toilets in urban areas that do not utilize the conventional sewerage system.



Map 5: Sewer connection in slum areas



Tank and pit emptying fleet



Lubiri Waste Treatment Plant (under construction)

# Technology summary

toilet solutions

To establish a sustainable sanitation system, where water resources and nutrients are re-used, conventional wastewater management needs to be revolutionised. There is a wide range of ecological sanitation options out there, but some links are often missing in order to close the loop. For example, they may require more space than what is available, and there might be different socio-cultural challenges related to the implementation of such technologies.

## Traditional pit latrine

Superstructure for privacy and a hole or seat over a pit where excreta is disposed.

**Limitations:** Problems with smell, flies and mosquitos  
Tendency to be abandoned when full  
Contaminates ground when not sealed  
Not possible to connect to sewer line  
Not possible with an offset system

**Advantages:** No need for water  
Easy to build and use

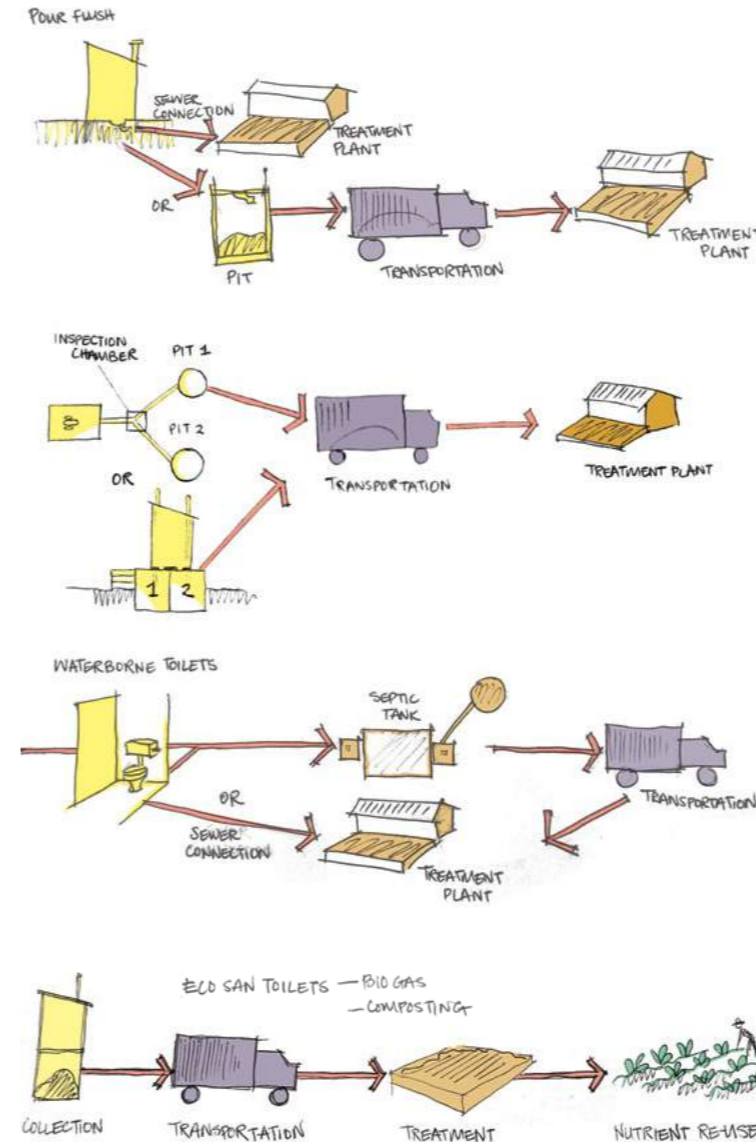
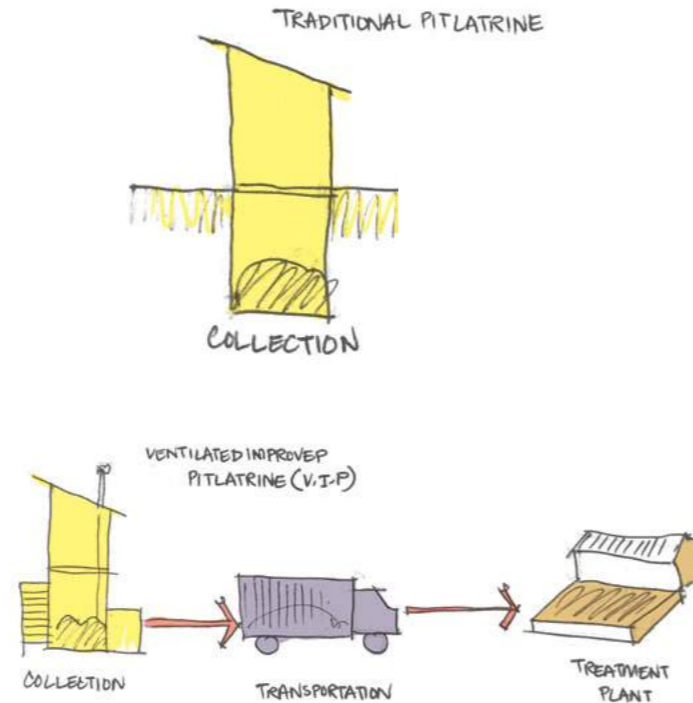
## Ventilated improved pit latrine (V.I.P.)

Same as traditional pit latrine, but with a ventilation pipe connected to the pit.

**Limitations:** Same as traditional pit latrine, except the smell, flies and mosquitos

**Advantages:** Pipe eliminates smells and traps flies  
Same as traditional pit latrine

During our research we looked into a wide range of technologies to identify suitable solutions for Kampala. Because of the mentioned missing links, lack of space and transient population, the ecological solutions are often challenging to implement, but in the long run they should be the first choice. In the end we identified the following technologies as the most relevant or applicable for low-income settlements in Kampala.



## Pour flush latrine

An alternative to water borne toilet. Connected to septic tank, sewer line or pit.

**Limitations:** Requires water and manual pouring  
Can easily be clogged with solid waste

**Advantages:** Requires less water than water borne  
Can be connected to sewer  
Water trap eliminates smell  
Easy to empty

## Double-pit latrine

Two pits connected to the pan, with pits underneath or slightly apart from the toilet itself.

**Limitations:** Takes up slightly more space

**Advantages:** In case of high water table, it might be better to dig two shallow pipes  
With two years resting time all pathogens are dead, so waste is removed safely

## Water borne toilet

Connected to sewer or septic tank.

**Limitations:** Is dependent on large amounts of water  
Septic tank requires periodical emptying

**Advantages:** No flies or smell  
Safe and pleasant to use

## Bio gas / Urine diversion dry toilet (UDDT)

Ecosan. Returns nutrients from urine and faeces instead of disposal.

**Limitations:** Requires a lot of space  
Needs extensive management  
Requires education and training  
Cultural challenges for reuse of compost  
Requires skilled labour for construction

**Advantages:** Environmentally friendly  
Possibility of extra benefit from compost

## Lessons learned

*from existing sanitation units*

In order to provide recommendations and guidelines for urban sanitation systems, our group conducted an in-depth analysis of existing situation, which consisted of site visits, consultations, review of enumeration data and research. From this, we identified several issues that should be taken into consideration when new sanitation units are planned.

### Financing and Maintenance

The key obstacle to solve the sanitation problem in Uganda is poor financial planning. We found that developing a sound strategy for long-term financing or upgrading of sanitation facilities is at least as important as the initial investment. The funding model that was used by various international agencies and NGOs to implement the projects is in many cases failing to address the issues of long-term maintenance and management. The organizations often choose not to take responsibility to monitor and help with the management of the sanitation units after they are built. This is why it is recommended to select an organization or maintenance team early in the process to ensure a proper transition from design, implementation and long-term management.

The most common financial challenge in regards to maintenance of toilet facilities was the payment for municipal services, especially for water provision and emptying of septic tanks or in some cases, pit latrines. It is often unclear who should take responsibility for the payment and how the costs should be divided. When the community fails to pay for the provision of water,

the taps are often disconnected which forces people to use often congested and contaminated springs. In many cases, the distribution of piped water is regulated by individuals who raise the price for water in order to make additional profits. Those issues need to be overlooked during the planning process.

Septic tanks fill up quickly (on average every 3-12 months), and the price for emptying ranges between 75,000 and 150,000 UGX per trip, which is beyond the payment capacity of many communities, even if different households share the cost. As a result, many of the tanks and latrines are never emptied. For this reason it is necessary to develop a long-term financial model before the construction, both for communal and private toilets.

### Estimation

Another issue that is directly related to the financing is that, the projections often overestimated the daily usage of sanitation units, which also meant much lower income than expected. For example, the toilets in Rubaga Market in Jinja were projected for about 500 users per day, but in reality the usage in the first 6 months was only about 60 people per day. On top of that, the initial price of 250 UGX for a single use was too high for the community members, so it was dropped to 200 UGX (Bachmayer et al. 2013). It was also pointed out that some persons who were responsible for collecting the fees were not accountable, which also brought the income level down. This means that it is not only difficult for the management to assure an adequate and regular maintenance, but

also the time for loan repayment for the construction of the unit will be much longer than estimated before. It is important that the estimates are realistic so that the project will serve its users, rather than being a burden for them.

### Scale

Getting the scale right is a crucial consideration to assure the financial feasibility of the project and at the same time avoid problems of overcrowding and hygiene. While it can be generalized that most slums experience shortage of toilet units, there are also cases where new sanitation units were built too big. This was also true for the sanitation unit in Kisenyi, one of the biggest and densest slums in Kampala. The project provided for three separate sections (for women, men and children) with toilets in each of them, but experience showed that there was no need for that many toilets. Since the shortage of housing was a severe problem in Kisenyi, the community decided to adopt the original men's and children's toilets into bedrooms. As of today, the women's washroom is being used as a mix-gender toilet, serving the households around it. One of the community representatives told us that she would have preferred to have a few smaller units scattered around different parts of the area, rather than one big unit in the center.

According to a study by Günther et al, who worked on sanitation research in Kampala, there is a direct correlation between the number of users sharing one toilet unit and their personal hygiene. They recommend



The taps are disconnected when the community fails to pay for water



The full pits are abandoned when the community can't afford to empty them



The steel hatches has been stolen and was replaced by an iron sheet



Solid waste blocks the drainage channels



Ecological toilets require extensive training and maintenance

that to ensure adequate personal hygiene and cleanness of toilets in slum areas, each unit should not be shared by more than four households or around 20 people (Günther et al. 2012). Finding the right and realistic balance between the financial return, accessibility and level of hygiene is never easy, especially in rapidly changing slum communities, but it is a crucial indicator of the success of the project.

### Construction and Labor

It is very important to find the right proportions between the numbers of cheap (or free), often unskilled laborers composed of the community members and the availability of external technicians to overlook the project. Community involvement is necessary to cut down construction costs and increase their feeling of ownership, but there should be enough professional supervision in order to ensure proper implementation and cost control (Bachmayer et al. 2013). Poor construction management often causes structural defects and makes the project go over budget.

### Ownership

One of the fundamental factors for a successful sanitation unit is the feel of ownership (at least partial) by the local community. It is evident from our research and site visits that when the community is involved in the planning, financing, implementation and maintenance of a sanitation unit, they tend to take a better care of it, as opposed to projects that have been entirely financed and built by external parties. In general, toilets that were

used only by households that had key access to them were the cleanest and well maintained. When a public toilet is considered, there should be a provision of local community involvement in the decision making process.

### Security

Protection of the sanitation units from vandalism and stealing is a big issue, especially for the ones with more advanced technology. As a result, most of them are locked with either the caretaker or the individual households using keys to access the toilets. Some of the most common security concerns include the robbery of light bulbs, ceramic sinks, and all kinds of metal objects as well as illegal collection of water directly from the tank. It was not uncommon that additional security measures had to be provided as a response to those problems. For example, the water tank in the Rubaga Market sanitation unit had to be fenced to prevent people from stealing water. In other cases, additional metal gates and locks were provided to make sure no one can enter at night or whenever the caretaker is not present.

### Health and Hygiene

The negative impacts of bad maintenance and misuse of sanitation units go far beyond the intermediate users. Therefore, health concerns and hygiene should always be prioritized when projects for upgrading of sanitation facilities are undertaken. For example, improperly used septic tanks and pit latrines get easily filled up with garbage and rainwater that is then mixed with human waste. Especially problematic are plastic bags which

clog pipes and make it impossible for vacuum tankers to empty the pits and tanks. As a result, the raw sewage from pits is often emptied manually, causing health hazard for those workers who perform this operation. The situation gets worse when the community decides to do it themselves by emptying or discharging the sewage directly into drainage channels, which then spread the contamination to other settlements.

### Socio-cultural

This is most likely the single most underestimated challenge in the implementation of new sanitation projects. Various initiatives failed, because the designs did not consider the demographic and cultural profile of their users. This is especially true for the ecologically friendly solutions, such as Biogas and UDDTs, which are based on ideas that may be difficult to accept for some cultural groups and on top of that require extensive training and maintenance. For those reasons, it is difficult to assure proper management of such ecological units in transient and culturally diverse areas. On the other hand, those options will likely be a better choice for more stable and homogeneous communities. This does not mean that environmentally friendly solutions should not be considered for certain scenarios, but the reality shows that it is often better to implement a simple solution that works than an ambitious project that will most likely fail, which means wasted time and funds of all the parties involved. Therefore it is important that the choice of technology and a maintenance scheme is determined by the users.

# Sanitation options assessment

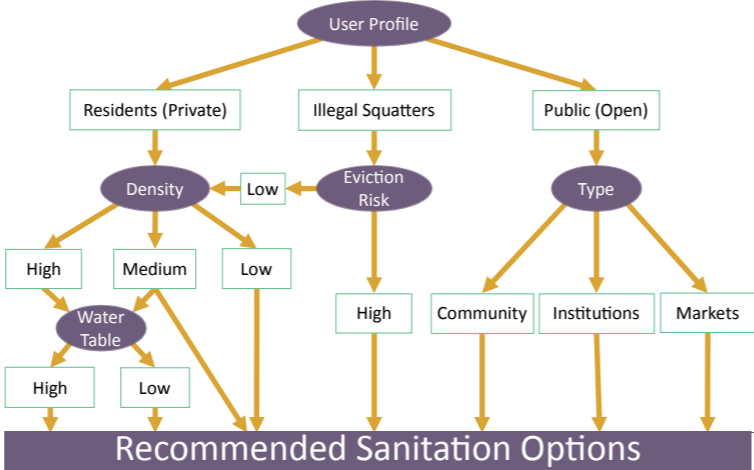
for different settlement types and user profiles

Having in mind all the lessons learned from our site visits and the analysis of the available technology solutions, the next step was to propose applicable sanitation options for slums in Kampala. This was done by matching appropriate technologies and proposed unit designs to a set of representative informal settlement types and user profiles in Kampala and Uganda in general.

The diagram is a very simplified model that explains how those characteristic categories of settlements or users could be identified and shows example of proposed solutions. For example, if we were commissioned to design a toilet for private households in a high density informal settlement with a low eviction risk and high water table that is not connected to sewer, we would probably need to limit our options to elevated VIP toilets or elevated pour flush with pit. Biogas or composting toilets may be a better fit for more stable community that lives in a lower density area. It is important that the designs for all of those options should allow for the

possibility for upgrading, especially in areas that are not connected to sewer or with lack of security of tenure.

The table summarizes the results of our analysis. It includes example locations for private and public toilets, main issues, proposed technology options as well as some recommendations for maintenance and management.



	Settlement Types	Identified Areas	Key Issues	Technology Options	Maintenance	General Recommendations
Residential (Private)	High density Informal Low water table Slope	Low-laying Slums, e.g. Bwaise, Kalerwe, Katanga, Kisenyi, Katwe, Butabika	<ul style="list-style-type: none"><li>• Frequent Floods</li><li>• Sinking soil</li><li>• Ponding of wastewater on surfaces</li><li>• Garbage dumping</li><li>• Poor maintenance of pits</li><li>• Water affordability</li><li>• Transient community</li><li>• Contamination of ground water</li><li>• Poor drainage</li></ul>	<ul style="list-style-type: none"><li>• Elevated VIP Toilet</li><li>• Elevated pour flush toilets connected to pits</li><li>• Low flush water closet toilets with sewer connection and rain water harvesting system for flushing</li></ul>	<ul style="list-style-type: none"><li>• Four households per stance, each with access key</li><li>• Ownership is shared between the households</li><li>• Hygienic (i.e. vacuum) pit or tank emptying system through chamber</li><li>• Refuse collection areas to prevent mixture of solid waste in pits</li><li>• Dry surface cleaning</li></ul>	<ul style="list-style-type: none"><li>• Each latrine has to be placed strategically on site to be accessible for emptying by a vehicle</li><li>• Lining of the latrine vault or pit to prevent ground water pollution</li><li>• Use of visual illustration charts to sensitize on health and hygienic use of the toilet</li><li>• Cleanable floor and surfaces</li><li>• Negotiation with authorities for emptying subsidies for these poor communities</li></ul>

	Settlement Types	Identified Areas	Key Issues	Technology Options	Maintenance	General Recommendations
Residential (Private)	High density Informal Low water table Slope	High-laying Slums, e.g. Kinawataka, Kagugube Kivulu, Kasubi, Nankulabye, Nyago	<ul style="list-style-type: none"><li>• Limited space</li><li>• Occasional flooding</li><li>• Garbage dumping</li><li>• Poor infrastructure and accessibility</li><li>• Water affordability</li><li>• Transient community</li></ul>	<ul style="list-style-type: none"><li>• Pour flush toilets connected to shared septic tanks</li><li>• Low flush water closet toilets with sewer connection and rain water harvesting system for flushing</li></ul>	<ul style="list-style-type: none"><li>• Regular cleaning</li><li>• Hygienic (i.e. vacuum) tank emptying system through chamber</li></ul>	<ul style="list-style-type: none"><li>• Smaller units due to space limitation (min 2 stance)</li><li>• Each latrine has to be placed strategically on site to be accessible for emptying by a vehicle</li><li>• Cleanable floor and surfaces</li><li>• Seek connection to sewer where possible</li></ul>
	High or Medium Density Illegal Squatter Settlements	Undeveloped mailo land, Open 'free' space Public land	<ul style="list-style-type: none"><li>• Eviction risk</li><li>• Clustered settlements</li><li>• Water access and affordability</li><li>• Transient community</li><li>• Precarious and unsafe construction</li></ul>	<ul style="list-style-type: none"><li>• Cheap and easy to construct options such as VIP toilets with possibility for upgrading</li></ul>	<ul style="list-style-type: none"><li>• Regular cleaning</li><li>• Ideal ownership by local authority (e.g. KCCA)</li></ul>	<ul style="list-style-type: none"><li>• Undertaken with the local authority and community to ensure adequate lifespan of the facility and secure ownership</li></ul>
	Low or Medium Density Informal	Kampala suburbs, other municipalities in Uganda	<ul style="list-style-type: none"><li>• Poor infrastructure</li><li>• Water access and affordability</li><li>• Lack of access to sewer</li></ul>	<ul style="list-style-type: none"><li>• EcoSan (UDDT)</li><li>• Bio gas</li><li>• Low flush water closet toilets or cistern flush toilet with sewer connection or shared septic tank</li></ul>	<ul style="list-style-type: none"><li>• Regular cleaning</li><li>• Hygienic emptying and transfer system</li></ul>	<ul style="list-style-type: none"><li>• Regular provision of technical information, advice on use and maintenance to the community required</li><li>• Marketing strategies may be necessary to find and secure markets for compost and bio gas</li><li>• Skilled labour in construction required</li></ul>
Public	Communal	Taxi parks Public parks	<ul style="list-style-type: none"><li>• Large number of users</li><li>• Maintenance issues</li><li>• Security from vandalism</li></ul>	<ul style="list-style-type: none"><li>• Bio gas</li><li>• Low flush water closet toilets or cistern flush toilets with sewer connection</li></ul>	<ul style="list-style-type: none"><li>• Regular cleaning</li><li>• Onsite caretaker to manage</li><li>• Require payment on use</li></ul>	<ul style="list-style-type: none"><li>• Usage monitoring required</li><li>• Should ensure long opening hours</li><li>• Sufficient lighting for security</li><li>• May incorporate community hall above or next to the unit</li></ul>
	Institutions	Schools Churches Community centres Work places	<ul style="list-style-type: none"><li>• Large number of users</li><li>• Need for exceptional hygiene</li></ul>	<ul style="list-style-type: none"><li>• Low flush water closet toilets or cistern flush toilet with sewer connection or shared septic tanks</li><li>• Ecosan</li></ul>	<ul style="list-style-type: none"><li>• Regular cleaning</li><li>• Need for responsible person for cleaning and education</li></ul>	<ul style="list-style-type: none"><li>• Institution should take full responsibility for maintenance of the unit</li><li>• May be combined with environmental education and sensitization</li></ul>
	Market	Marketplaces, e.g. Kinawataka, Kalerwe, Nakawa, Nakasero	<ul style="list-style-type: none"><li>• Large number of users including outsiders</li><li>• Accessibility to water</li></ul>	<ul style="list-style-type: none"><li>• Low flush water closet toilets or cistern flush toilet with sewer connection or shared septic tank</li></ul>	<ul style="list-style-type: none"><li>• May require payment on use</li><li>• Onsite caretaker to manage</li></ul>	<ul style="list-style-type: none"><li>• May include space for laundry or small store (selling e.g. toilet paper and cleaning products) to provide additional funds for maintenance and repayment</li></ul>

# Design 1 : Elevated Compact Double Pit Toilet

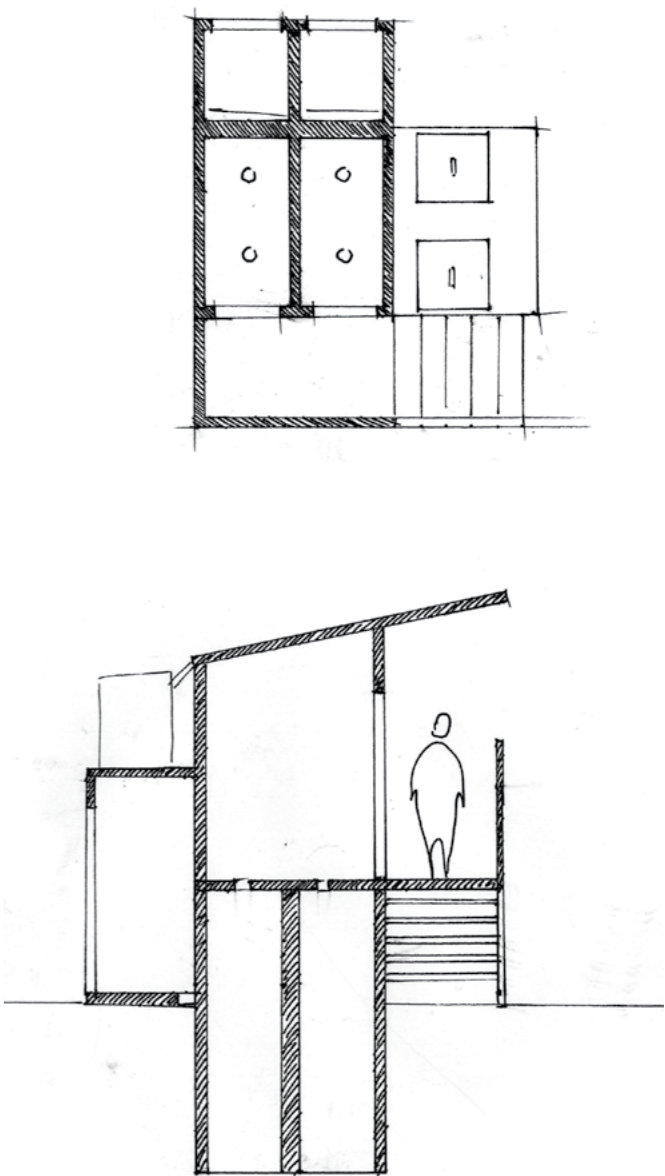
for high-density residential settlements with high water table



**PERMANENT SUPERSTRUCTURE**  
Burnt or interlocking brick  
**PIT**  
Burnt or interlocking brick with concrete slab  
**UNIT SIZE**  
2 stances, assumed 50 users per unit  
2 showers  
**PIT LIFE**  
2 years  
**PIT DEPTH**  
2 meters (0,8 under ground)

COST (UGX)	VIP DOUBLE PIT
Intital cost (community contracting)	4,1 to 4,9 mill
Intital cost (municipal contracting)	5,4 to 6,5 mill
Annual costs	0 UGX (self-emptying)
10 year cost	4,1 to 6,5 mill

The elevation and compactness of this toilet design makes it appropriate for areas with high water table and issues related to lack of space. The unit may be developed incrementally with rain water harvesting tanks and shower facilities added later, according to the needs. The unit requires little maintenance, which means that it can also be applied in settlement with transient population. Nevertheless, this proposal should not be viewed as an ultimate solution to the sanitation issues and communities should opt for more advanced options if possible.



# Design 2 : Elevated Pour Flush Toilet with Septic Tank

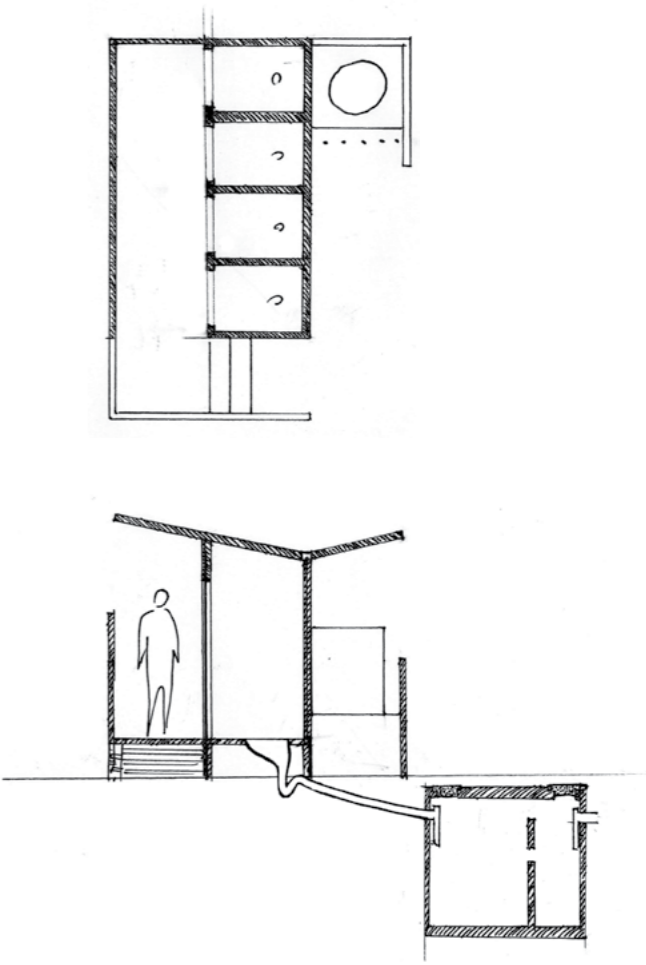
for more established medium-density residential settlements with high water table



**PERMANENT SUPERSTRUCTURE**  
burnt or interlocking brick  
**SEPTIC TANK MATERIALS**  
burnt or interlocking brick with concrete slab  
**SEPTIC TANK DIMENSIONS:**  
2m x 2m x 2m (w x l x d)  
**SOAK PIT DIMENSIONS:**  
0.5 m (radius) x 3 m (depth)  
**ANNUAL COSTS**  
water fees to NWSC, septic tank desludging  
**UNIT SIZE**  
4 stances, assumed 100 users per unit  
(4 households per stance)

COST (UGX)	POUR FLUSH DOUBLE PIT
Intital cost (community contracting)	7 to 8,2 mill
Intital cost (municipal contracting)	9,4 to 10,9 mill
Annual costs	450 000 UGX (water cost and septic truck)
10 year cost	12,6 to 16,8 mill

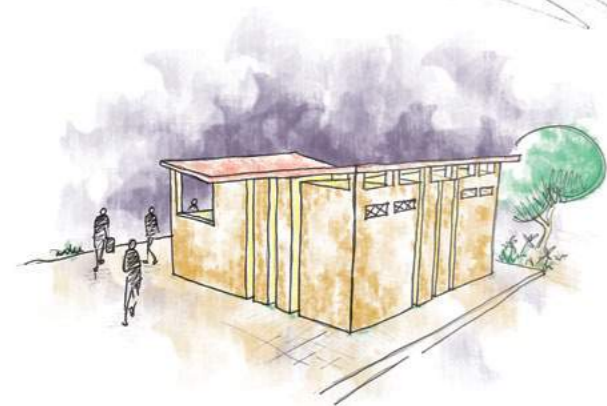
This slightly bigger unit has more possibilities for additional income, if a full-time caretaker is present. Harvested rain water can be used for flushing and hand washing, and can save up to 100 000 UGX per year. The unit includes space for a small store for water vending, selling sanitary products or airtime. There is also a provision of space for advertising



and a health awareness board. To ensure that the technology works properly, some training may be required. It is important that the users don't dispose of anything but water and soft tissue paper into the pour flush toilet. The design provides for the option of sewer connection in the future.

# Design 3 : Pour-Flush Biogas Public Toilet

for marketplaces, public spaces or high density residential settlements



COST (UGX)	PUBLIC BIOGAS
Intital cost (community contracting)	15,7 to 19,3 mill
Intital cost (municipal contracting)	20,9 to 25,6 mill
Annual costs	1,3 mill (water cost)
10 year cost	15,7 to 25,6 mill

PERMANENT SUPERSTRUCTURE

burnt or interlocking brick

BIO GAS MATERIALS

burnt or interlocking brick

BIO GAS DIMENSIONS

12 m³ digester, 5 m³ gas chamber

ANNUAL COSTS

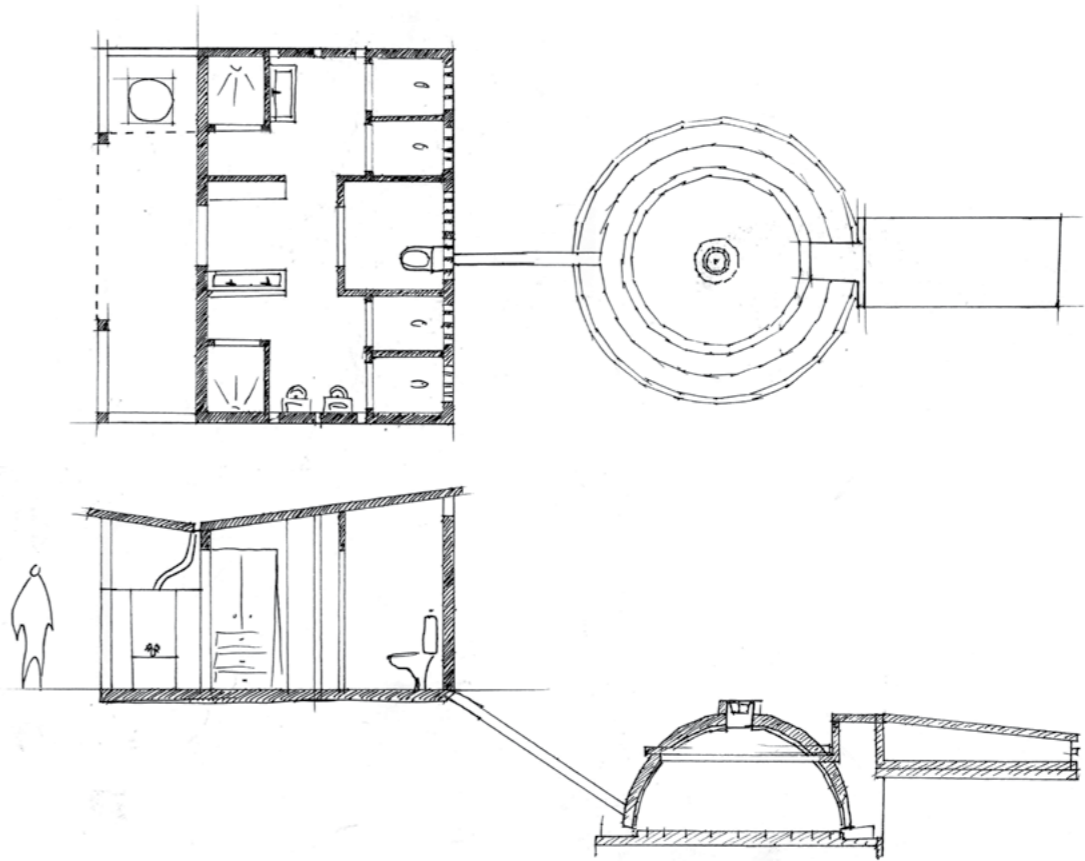
water fees to NWSC

UNIT SIZE

5 stances (1 handicap), assumed 250 users per unit

2 showers, 2 urinals, 2 sinks

The design of this communal toilet is incremental, which allows for horizontal expansion in the future. A full time caretaker is required for management and operation of the biogas tank. The recovered bio gas can be used to lit security lights at night. This unit may act as a centre for activity and environmental learning for children. Additional space for storage is also provided. Harvested rain water can save up to 200 000 UGX per year.





## Scenario 1: Kisenyi

### Key issues/main challenges

- # Flooding
- # High population density
- # Limited space
- # Poor infrastructure
- # Solid waste management
- # Land and tenure insecurity

### Common structure

Clustered settlement with courtyards.

Informal and unplanned.

Narrow passageways.



### Common building materials

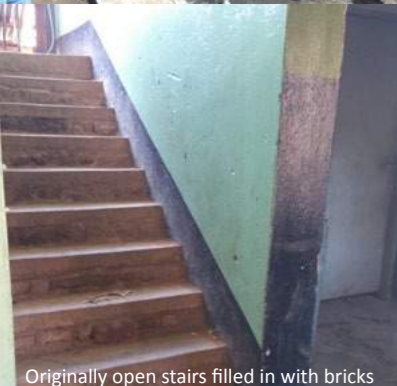
Roofing: iron sheets 90%

Walls: bricks 64%

Flooring: cement 76,7%



Workers making coal in Kisenyi



Originally open stairs filled in with bricks

### Settlement profile

Kisenyi comprises of three parishes: Kisenyi I, Kisenyi II and Kisenyi III. It is located in the South Western part of the Central Division of Kampala, close to the Central Business District and west of the Civic Centre. Eviction threats in parts of Kisenyi are serious and the share of temporary structures is relatively high (25-40%), comparing to permanent buildings.

# area total  $\approx 1\text{km}^2$  (205 acres)

K I: 25 acres, K II: 120 acres, K III: 60 acres

# population total  $\approx 19\,400$

K I: 2400, K II: 9000, K III: 8000

# density total  $\approx 23\,385/\text{km}^2$

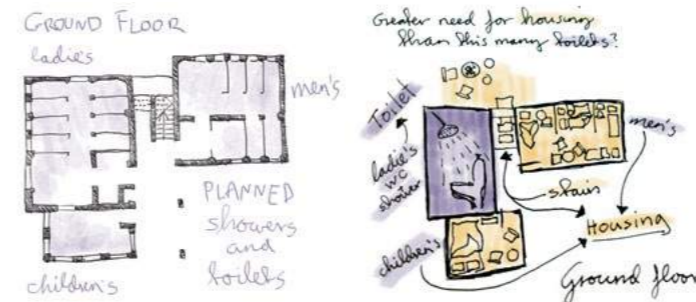
K I: 23\,722, K II: 18\,533, K III: 32\,947

### Health and hygiene

Most of Kisenyi's inhabitants live in extremely close quarters, with sub-standard services and poor sanitation. They are often exposed to risks regarding their health and hygiene. The area is very flood-prone, something that virtually all of its inhabitants have a personal experience with. Flooding causes a lot of distress and can lead to loss and damage of personal property and the water can get contaminated and spread disease. The lack of space and risk of flooding can be identified as the main issues affecting the design of a sanitation unit in this area.

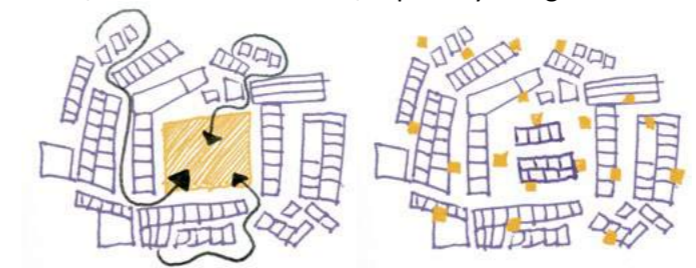
### The Federation unit in Kisenyi III

In Kisenyi III the NSDFU constructed a sanitation unit in 2003 (in use since 2006). Originally, the ground floor was planned to contain separate men's, women's and childrens charters, but today only the women's charter is used as planned. The other parts were turned into dwelling units and the open staircase was filled in with bricks to accommodate people living underneath it. In general it seems like the need for housing or shelter was greater than the need for this many toilets in Kisenyi, and the inhabitants say that they have no problem sharing the facilities because they all know each other so well. After a long process of lobbying and direct action, the inhabitants managed to connect the units to sewer.



### Size, distance and location

Additional features of the unit include community spaces meant for church meetings, adult education classes, community assemblies and as meeting offices. The unit is large, and it is a long walk for some households to get there, which can feel unsafe, especially at night.



### Recommannations for sanitation in Kisenyi

In our analysis, we identified two main issues related to sanitation in Kisenyi; the first being freequent flooding, while the second is related to the mismatch in scale and estimation of the currently functioning unit compared to the real needs of the settlement. In general, issues that have to be taken into consideration include: high density of the area, flood prone terrain, need for more spread out units, personal relations (they know each other well) and housing needs as the main priority. Therefore, we suggest the construction of smaller shared elevated toilets in empty spaces, scattered around the entire area. If eviction threts Kisenyi were resolved, it may be suitable to implement more ecological solutions, such as biogas, especially for medium-size and larger toilet units.



Panorama of Kisenyi



Kalerwe



Flooding in the area



Disconnected water tap



New sewer line through the settlement

## Scenario 2 : Kalerwe

### Key issues/main challenges

- # Flooding
- # High population growth
- # Open sewers
- # Management of units
- # Emptying of pits

### Location

Kalerwe is situated North-West of Kampala, close to Makerere University.

### Common structure

Characterized by an endless stretch of cramped dwellings, open drainage channels that serve as sewers, unpaved narrow passageways and is constantly bustling with human activity.

Kalerwe is a victim to rapid population growth as it is home to one of the largest markets that draws majority of the informal economy. Kalerwe is generally low lying and undergoes regular flooding during the rainy season. Most of the housing stock in the slum is made up of single-room “muzigo” type dwellings.

### Prevalent Sanitation conditions

Human waste is a problem to reckon with in this area and most households lack access to proper sanitation facilities. The slum residents generally lack space and cannot afford their own toilets; and the most common toilet solutions are therefore shared pay toilets, or buckets and plastic bags. There is a widespread use of poorly constructed and maintained pit latrines which contributed to the contamination of the underground water sources.

Emptying of these toilets is also a challenge whereby the area is inaccessible to trucks and the residents are also unable to afford the private or public emptying charges therefore resort to abandonment of filled latrines or make holes in the pit that drain the waste to the surface uncontrollably when it rains. Majority of the slum dwellers can not afford private connection to piped water and this generally precludes the use of water closets.



The drainage channels and sewers often get clogged by solid waste

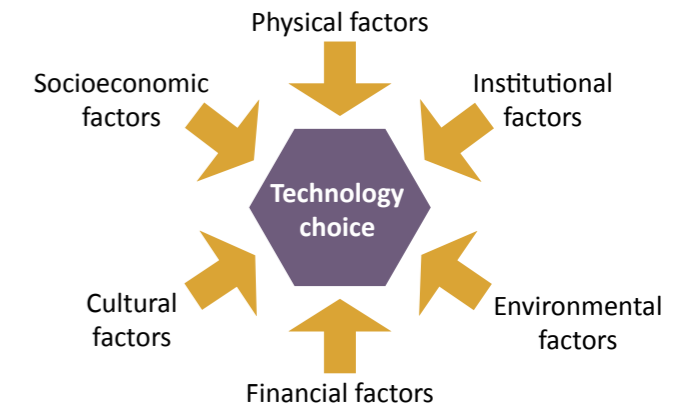
### Solution Analysis

Like most Kampala slums, a number of organisations have made several attempts at improving the sanitation issues in Kalerwe with introduction of Ecosan toilets as one of the major initiatives, but unfortunately without success. Using Ecosan toilets means less contamination of groundwater and stench, as well as fewer flies. However, this technology has not been successful for a number of observed reasons:

- # Transient nature of the slum community
- # Lack of training and sensitization of users
- # Lack of market for fertilisers
- # Proper construction requires skilled labour
- # Complicated maintenance procedures
- # Cultural bias against waste re-use

According to the Settlement Profile data, eviction threat is low in Kalerwe and the ratio of temporary structures in relation to all buildings is relatively small in comparison with other slum areas. Poor solid waste management is a major issue in Kalerwe, causing clogging and damage to toilets and drainage system.

Some parts of the slum are already connected to the sewer network and since Kalerwe is located close to the new Lubiri waste treatment plant, there is a high chance that the entire slum will be served by proper sewage system in the future. Space for new sanitation facilities could be acquired by demolishing or retrofitting existing units that are no longer in use.



### Proposed solution

The situation analysis provided us with a lot of useful information that helped to eliminate solutions that for some reasons will not work and highlight alternatives from which the best one could be chosen.

Having in mind bad experiences with Ecological sanitation in Kalerwe, we do not propose this as a solution at this moment. Our suggestion for the improvement of sanitation in Kalerwe is the development of a number of small elevated pour-flush double-pit latrines with an option to convert them into water-borne toilets once the settlement gets a connection to the sewer in the future. In the meantime, there would be no need for pit emptying or extensive maintenance operations, which is important for settlements with a transient community, like Kalerwe at least before the population is more established.

# General recommendations

and way forward

## 1. Get the community involved

Sanitation is a very personal matter for everyone; therefore it is important that all users are involved in the decision making process, implementation and maintenance. In addition to that, community participation may bring many other benefits, such as cost reduction for materials and labor or creative ideas for construction and management. Particularly important is the involvement of women who in most cases are the ones responsible for sanitation and water management within their households and communities.

## 2. Learn from previous experiences

New toilet or shower facilities in slum areas are usually erected in place of older ones that for some reason did not work properly or did not satisfy the basic sanitation needs for their users. Finding out what those problems are and learning from them is crucial for not committing the same errors as before and for this reason it should be an integral part of the planning process.

## 3. Consider settlement status and its demographics

Most informal settlements experience issues related to unclear land ownership situation, evictions and lack of security of tenure. As a result, those areas tend to be treated as transitional and very few people are interested in investing their private money in upgrading projects, which includes sanitation. In those cases, an attempt should be made to resolve those problems and when this is not possible, to come up with an alternative that could eventually be improved in the future.

## 4. Locate the toilet strategically

Basic mapping and surveying exercises may be necessary to find good locations for new sanitation facilities. Non water-borne toilets should be located further away from rivers, springs and wells and placed at least a couple meters above the ground water table in order to prevent the mixing of sewage and water resources. At the same time they should give the best access possible to households, institutions and other facilities they serve.

## 5. Promote health and hygiene awareness

Even a state-of-the-art toilet will not improve personal hygiene and eliminate health risks if it is not used properly. For this reason, good sanitation will only be possible when it is accompanied by proper education, training and awareness campaigns that would not only instruct the users how they can care of themselves, but also about how to keep their surroundings clean and safe for others.

## 6. Improve waste management

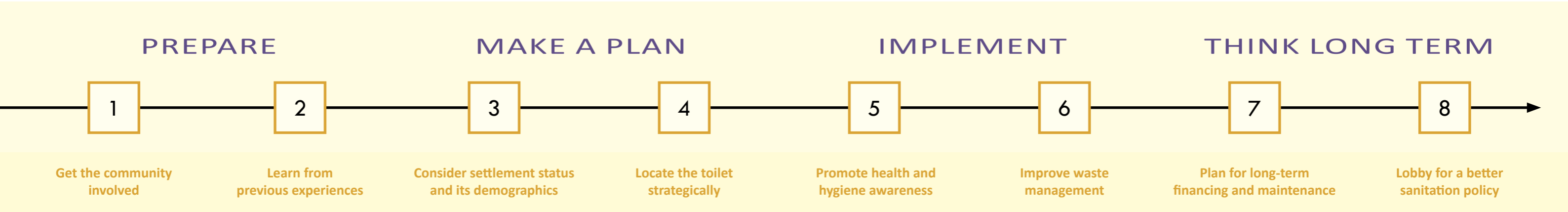
Inadequate waste management system has a severe impact on sanitation, especially in the densest informal settlements. Pits, tanks, pipes and drainage channels get easily clogged with garbage, which then require frequent and expensive repairs. This problem can be solved by providing garbage collection points close to all sanitation units. Ideally, those who wish to improve sanitation in their area should seek partnerships with local waste management companies in order to come up with a more efficient system for garbage collection, recycling or reuse.

## 7. Plan for long-term financing and maintenance

Functioning and well-maintained toilets require a budget for long-term upkeep and a management plan, which unfortunately many households take for granted. This is why users should decide themselves how will the money be collected and who will be responsible for maintenance before the unit is implemented. Any initiatives for additional profit-generating solutions, such as vending or paid laundry services should also be explored in advance in order to provide sufficient space for such activity.

## 8. Lobby for a better sanitation policy

Even though most of this report relates to small-scale interventions, we should keep in mind that a big change may not be possible without the support of local and national governments. As of today there is no integrated policy document in Uganda that would address the issues mentioned in this report, therefore it is important that the affected communities address their demands for the creation and implementation of a better sanitation policy.



# Group reflections

on the sanitation project in Kampala

Although all of us had some previous field practice related to planning and architecture, our involvement in the sanitation project has definitely been a life-changing experience. It enriched us both as professionals (through learning by doing), and as human beings, the everyday toilet ‘users’. Most of all, we learned how to appreciate the conditions we have and that in our normal routines we do not need to spend too much time thinking about sanitation, which after all is one of our basic needs.

The living conditions which we have seen in some of the slums in Kampala are so bad that it is even hard to describe them in a way that would show the true scope of the problem. Sanitation is at the very top of the list of issues that require more urgent intervention. Yet, in the eyes of policymakers it is not so. Perhaps if they take a trip to those poor settlements every once in a while to remind themselves what the true problems are, Kampala would be much better place today.

It is said that the world should focus more attention on cities, which are growing dangerously fast. We would add that the biggest challenge is in slums, where living has never been easy and it will definitely not get better unless the governments and the most influential actors change their approach and take serious action to address the sanitation needs and all other critical issues of slum dwellers.

As we write this report, as students and young professionals, we hope that we never forget about those experiences and the lessons we learned in Uganda. Some of us may work on sanitation issues again, others will not, but the important thing is not to conform to the indolence and bureaucratic inefficiency that paralyzed all kinds of welfare initiatives, especially the ones that relate to the most poor and vulnerable. Only by becoming different and better than the previous generations we can make a substantial and long-lasting change in the future.

Having some of our proposals implemented in real life may only be a small step forward for the general improvement of the situation, but for us it will be both a great reward and encouragement to continue planning and designing interventions that would help improve quality of life of larger groups of people in Uganda and in any other place where we end up working.

We do not wish this report to become just another irrelevant student project; therefore we commit ourselves to follow up on those issues the in the future and to look for other opportunities like the UEP and the field work in Uganda. We believe that this is not the end, this is just a beginning of a great challange and a great adventure.

## group members profile



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All photographs in this chapter courtesy of Kanutte Næss and Marcin Sliwa.

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We appreciate the assistance of the SDI and ACTogether staff, especially Mr. Hassan Kiberu, Ms. Skye Dobson, Mr. Waiswa Kaikare, Mr. Meddie Lutwama Mohamed and Mr. Frederick Mugisa with providing access to the necessary data and supervising project work for all the three groups.

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Advice given by Mr. John Bosco Otema, the Urban Pro Poor Unit Manager at NWSC; Prof. Charles Niwagaba, the Chair of Department of Civil and Environmental Engineering at Makerere University; Ms. Ashabrick Nantege Bamutaze, the Training and Development Officer at the Appropriate Technology Centre for Water and Sanitation and Mr. Jude Byansi, the Sanitation Engineer at KCCA has been a great help in the research on sanitation issues. We are also thankful to Ms. Mari Sjaastad from Engineers Without Borders for her advise on toilet technologies and Prof. Yngve Karl Frøyen from the Department of Urban Design and Planning at NTNU for his assistance with Geographic Information Systems.

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## References

- ACTogether. (2013). Informal Settlement / Slum Profile. Kampala.
- ACTogether. (2012). Enumeration Report and Surveys. Kampala.
- Bachmayer, G., Schermbucker, N. (2013). Toilet Report. Kampala: Slum Dwellers International.
- Baharoglu, D. & C. Kessides. (2004) Urban poverty chapter of the PRSP Sourcebook. Chapter 16: 127. Washington, D.C: World Bank.
- Bank of Uganda. (2004). Annual report. Kampala.
- Brown, AM. (2013). Uganda's National Urban Policy: The emerging response to Poverty, Food security and gender in Urban Uganda; Policy Brief No 6: 3.
- CME Consult Group Ltd. (2013), Draft National Urban Policy. Kampala.
- CME Consult Group Ltd. (2013). Uganda National Urban Policy - Draft 1. Kampala, Uganda.
- Crush & Frayne. (2011,). Supermarket Expansion and the informal food Economy in South African cities Implication for urban food Security Journal of Southern African studies Volume 37 Number 4.
- Dobson, S. (2011). This is Kisenyi. ACTogether/SDI. Kampala.
- IPSOS MORI. (2009). Understanding your stakeholders: A best practice guide for the public sector. Ipsos MORI Social Research Institute.
- Kata, F. (2006). Growing out of poverty - strategic direction in the agriculture sector: A case related to clusterin.
- KCCA. (2012). Kampala Physical Development Plan. ROM Transportation Engineering Ltd., Shapira-Hellerman Planners, Larry Aberman & Associates, Tzamir Architects and Planners Ltd. & Ofek Aerial Photography Ltd.
- Liang, Ruifeng. (2008). Tulou: Affordable Housing for China presentation.
- Miranda, G. (2009). Two Stages and just one; Open-air Market, a Morphological Study on the Open-air Market of Caruaru (Brazil) in the Space of the Town in 1992 and in 2007
- Ministry of Tourism Trade and Industry. (2007). Uganda National Trade Policy
- MoLHUD. (2011). National Physical Planning Standard and Guidelines
- Mukiibi, Stephen. (2013). Housing in Uganda presentation.
- NTNU. (2011). Kisenyi II Report: Resettlement. Norway: NTNU.
- NTNU. (2011). Kisenyi III Report. Norway: NTNU.
- Rabe, Paul E. (2010). Land Sharing in Pnom Penh and Bangkok: Lesson from Four Decades of Innovative Slum Redevelopment Projects in Two Southeast Asian 'Boom Towns'.
- Republic of Uganda. (1997). Local Governments Act — CAP. 243. Act of Parliament. Kampala: Uganda Printing and Publisihing Corporation, 1998.
- Republic of Uganda. (1998). The Land Act — CAP. 227. Act of Parliament, Kampala: Uganda Printing and Publisihing Corporation, 1998.
- UT-HABITAT. (1986). Handbook on Best Practices, Security of Tenure and Access to Land: 66.
- UN-HABITAT. (2007). KCC situation analysis of informal settlements in Kampala Kivulu (Kagugube) and Kinawataka (Mbuya 1) parishes.
- WWF. (2005). Cross-Cutting Tool: Stakeholder Analysis.
- African Portal. (n.d). Conflict in Uganda's Land Tenure System. Retrieved from: <http://www.africaportal.org/articles/2012/05/14/conflict-uganda's-land-tenure-system>
- Atuhaire, Patience. (2010). Kampala's Law on Waste Management Impractical. Retrieved from Uganda Radio Network: <http://direct.ugandaradionetwork.com/s/about/the-work-of-urn/?PHPSESSID=f3e4531eb3ac26addbbd5a5f73f9724d>
- Dispatch - Changing faces. (n.d) new plans for the markets. Retrieved from: <http://www.dispatch.ug/changing-faces/3087/>
- DWAF. (2013). Events 2013. Women in Water Awards. Retrieve from: <http://www.dwaf.gov.za/events/WWA2013/default.aspx>
- Global Poverty Project, the. (n.d) Infrastructure and poverty. Retrieved from: <http://www.globalpovertyproject.com/infobank/infrastructure>

Günther, I., Niwagaba, B.C., Lüthi, C, Horst, A., Mosler, H.-J. & Tumwebaze, K.I. (2012). When is shared sanitation improved sanitation?: The correlation between number of users and toilet hygiene. Retrieved from: [http://www.eawag.ch/forschung/ess/publikationen/pdf/Policy\\_Brief\\_2\\_2012.pdf](http://www.eawag.ch/forschung/ess/publikationen/pdf/Policy_Brief_2_2012.pdf)

Groots. (2013). India: Swayam Shikshan Prayog (SSP). Retrieved from: <http://www.groots.org/members/india.htm>

Hutton, G., Haller L., Bartnam, J. (2007). Global cost-benefit analysis of water supply and sanitation interventions. Journal of Water and Health. World Health Organization. Retrieved from: <http://www.iwaponline.com/jwh/005/0481/0050481.pdf>

New Vision. (2013). National water to build new sewerage system. Retrieved from New Vision website: <http://www.newvision.co.ug/news/649601-national-water-to-build-new-sewerage-system.html>

NWSC. (2013). About Kampala. Retrieved from National Water and Sewage Corporation website: <http://www.nwsc.co.ug/areasinfocus.html>

Saleh, Nico. (2009). Tulou Housing Guangzhou/URBANUS Architects by Iwan Baan. Retrieved from: <http://www.archdaily.com/24210/tulou-housing-guangzhou-urbanus-architects-by-iwan-baan/>

UN DESA. (n.d.). Least Developed Country Information. Retrieved from United Nation website: [http://www.un.org/en/development/desa/policy/cdp/ldc\\_info.shtml](http://www.un.org/en/development/desa/policy/cdp/ldc_info.shtml)

UN DESA. (2013). World Population Prospects - the 2012 revision. Retrieved from: <http://esa.un.org/unpd/wpp/index.htm>

UN Habitat. (2007). Situation Analysis of Informal Settlements in Kampala. Retrieved from: <http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2335>

UN Habitat. (2012). Uganda National Urban Profile. Retrieved from: <http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3332>

United Nations. (n.d) The Universal Declaration of Human Rights, Article 17. Retrieved from the United Nations website: <http://www.un.org/en/documents/udhr/>

Urban Markets Platform. (n.d). Marketplaces as an urban development strategy. Retrieved from: <http://urbanmarketsplatform.wordpress.com/2013/10/23/marketplaces-as-an-urban-development-strategy/>

WaterAid Uganda. (2011). From Rhetoric to Reality! Challenges of Urban Solid Waste Management in Kampala City. Retrieved from <http://www.wateraid.org/uk/~media/Publications/solid-waste-management-policy-brief-uganda.ashx>

WHO. (2011). 10 facts on sanitation. Retrieved from World Health Organization: <http://www.who.int/features/factfiles/sanitation/en/>

World Habitat Awards. (2013). Alliances for building capacities and options for the urban poor: experiences from urban Odisha. Retrieved from: <http://www.worldhabitatawards.org/winners-and-finalists/project-details.cfm>

# Appendix A

*In Situ Development*

## 1. Built up area calculations

Various designs parameter:

Land use break up	
Total land	1.6 acres (6474.9 sqm)
For Haaji	2590 sqm(40%)
For hausing	3885 sqm(60%)

### Various Scenarios for Housing project:

- All the scenarios is based on the ideal situation of one buildings but it gives the clear idea about how much built up space we are looking at.

### Case 1: following By laws and regulations:

We found that without changing the by laws minimum size of dwelling unit for a family of 6 is 35 Sqm

Plot coverage: 40 %

Building foot print: 1554 sqm

No. of floors	Built up space(B.U.S)	Net built up space without super structures and commons areas (15% B.U.S)	Commercial area (if one floor space is given)	Residential built up space	No. of residential units (35 sqm)
G +2 (ground +2 floors)	4662	3962	1321	2646	75
G+3	6216	5284	1321	3963	113
G+4**	7770	6604.5	1321	5283	150

\*Area in square meters

\*\* This is the most feasible scenario and requires minimum deviation from by laws

### Case 2: High density special area Housing:

Plot coverage: 75% ( needs to be taken in order to make the project affordable)

Variable unit sizes: 15 sqm, 21 sqm, 22 sqm

Foot print: 2913.75 sqm

No. of floors	Built up space(B.U.S)	Net built up space without super structures and commons areas (15% B.U.S)	Commercial area (if one floor space is given)	Residential built up space
G+2	8741.25	7430	2477	4953
G+3	11655	1748.2	2477	7430

## 2. Interviews

**30 September 2013** - Meeting with the architects (Paul Lugalamb , Moses Mubeezy)

**2 October 2013** - Meeting with ACTogether (Skye Dobson, Waiswa Kakaire, Mara Forbes)

**3 October 2013** - Meeting with chairman (Hasan and Barinda)

Meeting architects (Waiswa Kakaire, Mara Forbes, Elena Archipovaite, Paul Lugalamb, Jacinta Kabarung, Moses Mubeezy)

**10 October** - FGD in Kisenyi (Hasan, Barinda, Nantume Husna, Charles, Musisi, Kitibwa, Nassazi, Mr. Abbasi)

Meeting with Knight Frank (Alfred Zaki)

Meeting with ACTogether (Skye Dobson, Waiswa Kakaire, Mara Forbes)

**23 October 2013** - Meeting with Waiswa

Meeting with lawyer

**24 October 2013** - Meeting with KCCA, Ministry of Land

Meeting with the architects (Skye Dobson Mara Forbes, Elena Archipovaite, Paul Lugalamb, Jacinta Kabarung, Moses Mubeezy)

**4 November 2013** - Meeting with architects (Skye Dobson Mara Forbes, Elena Archipovaite, Paul Lugalamb, Jacinta Kabarung, Moses Mubeezy)

# Appendix B

1. Concept note

## NAME OF PROJECT: RE-DEVELOPMENT OF KINAWATAKA MARKET, NAKAWA DIVISION, KAMPALA CITY

### Responsibility in the project

- Ministry of Lands, Housing and Urban Development
- Kampala Capital City Authority
- Nakawa Division
- Slum Dwellers International (SDI)
- National Slum Dwellers Federation of Uganda (NSDFU) & ACTogether
- Vendors in the market
- Local community leaders
- Buganda Land Board

### Background

Kampala City is the main capital city of Uganda, the main economic and administrative centre of the country. As in most sub-Saharan cities, markets play a key role in Kampala. They are generally strategically located both in the City Centre and the suburbs; supply the bulk of the population food, both fresh produce and durables, clothing and household products; provide employment to 5% or more of the active workforce. As a centre it provides market opportunities for agricultural products from local and regional markets serving as a linkage between rural and urban communities thus enhancing trade opportunities. Kampala city has 41 gazetted markets and 19 un gazetted market as of 2011, Source: KCCA Gazetted and Un Gazetted Markets 2011, of all the Divisions Nakawa presents the highest number of markets un gazetted eight [8] markets. Kampala has more market facilities and

vendors than are required to supply its population with foodstuffs and household goods. Paradoxically there is an evident shortage of market facilities in the residential areas, with over half the capacity and more than half the trade concentrated in the City Centre.

Nakawa is one of the Divisions in east of the City traversed by Jinja road approximately 4 km from City centre and has one of the biggest fresh food market in Kampala with a long history of being the arrival point of fresh foods from Eastern Uganda. The Division has 8 Gazetted markets and eight [8] un gazetted market of the ungazetted ones, Kinawataka Market is among. The market serves as source of livelihood to many vendors and traders.

Kinawataka Market is located off Kampala-Jinja Highway along Kinawataka road in the Division of Nakawa in Kampala City. For more than 20 years, this market has served the local communities of Mbuya, Kinawataka and some parts of Banda. An enumeration survey NSDFU conducted in 2011 indicated that there are 1500 families living in Kinawataka. Kinawataka is characterized with mixed land use, like residential, commercial and industrial. There are no other markets in close proximity, so this market is important both as a source of livelihood for those who work there, and for bringing foodstuffs and groceries closer to the residents. All together the market consists of 126 business premises of [fresh food, fish, butcheries, restaurants, fresh fruits and charcoal among others] divided into two different structures; lock-ups and stalls.

The project borrows its strategy from the successful experiences of Shack/Slum Dwellers International, for instance in policy change under Urban Poor Fund International-funded projects, in India, South Africa, Kenya and Zimbabwe, where the poor people have joined hands with the government and other partners to scale up the slum upgrading through community led strategies for sustainable development of the Cities.

### Problem statement

Being a slum community, Kinawataka is challenged with accessibility of other markets, and the deplorable state of the current market undermines the potential livelihoods of the people. This is being exacerbated by the current urban development challenges facing Kampala city that accrue from pressures exerted by city centre markets especially traffic congestion both human and vehicular.

The market as of today has some big challenges that need to be addressed in the process of redeveloping the market.

- The most prominent challenge is the poor state of the market, both in terms of the structures, sanitation and accessibility. These problems are easily visible, and therefore it is likely that they may take some focus away from other challenges, that are equally important.
- There is also a need to look into the administration of the market, and formalize the existing market association, so that it is the community and users of the Market who will have responsibility for the maintenance and operation of the market.

### Main Objective

The main objective is to solicit funds to re-develop Kinawataka market.

### Specific objectives

- Improve the livelihoods and working conditions of the market vendors.
- Increase accessibility to the market and make it more versatile and desirable for the users.
- Demonstrate the concept of partnerships in slum upgrading and role of communities in settlement transformation.
- Improve the management and maintenance of the market.

### Target Beneficiaries

- The target beneficiaries of this redevelopment will be the Federations members who are also market vendors.
- The market will serve the immediate neighborhood, i.e. Kinawataka community at large.

### Implementation strategy

The project will be implemented through a partnership of different institutions and actors in the urban development agenda at various levels. Among the stakeholders include Kampala Capital City Authority [KCCA], Market Vendors and Traders, Nakawa Municipality, ACTogether, Slum Dwellers Federation [SDI], National Slum Dwellers Federation Uganda [NSDFU], Ministry of Lands Housing and Urban Development [MoLHUD], Buganda Land Board among others etc.

Each of the different stakeholders has responsibility to ensure the successes of the project among them are;

**Nakawa Municipality/ KCCA/ Buganda land Board**

- Facilitate in acquisition of land for the project.
- Planning consultation and assistance through Coordination and collaboration from the relevant planning authority.
- Guidance in physical planning regulatory frame works and physical development projects.

**Slum Dwellers Federation [SDI]**

- Outsourcing and coordinating the finances required for the design, construction and management.

**ACTogether**

- Participate in the design of the project
- Procure the construction teams, materials and project management as community based as possible.
- Be responsible for auditing the construction and management of the project.
- Oversee and ensure that management is done professionally and economically through assembling a project management committee (PMC), which will be responsible for day-to-day tasks, collection of revenues and maintenance thereafter.
- Establish good relationship with the community through community consultation and presentation of the proposals.
- Enumeration and Mapping of the settlement within the market area.

**Federation**

- The Federation will provide planning and design input which will shape the design of not just the structures,

but the systems which facilitate and maintain the market.

- Provide labor force during project execution stage.

**SUUBI Development Initiative**

- SUUBI DEVELOPMENT INITIATIVE will assist with the financing of the market upgrade and will be the vehicle through which community contribution will be accessed.

**Ministry of Lands Housing and Urban Development (MoLHUD)**

- Responsible for Supervision of the project to ensure work is consistent with Government standards and planning regulatory frameworks
- Partnership facilitation through identifying and engaging relevant stakeholders in Government and other urban development stakeholders to maximize the efficiency of the initiative.

Relocation of the vendors during the construction period will be necessary: the community leaders will provide a suitable location as the construction phase approaches. A temporary relocation plan of the market vendors has been drafted where two alternatives are to be adopted. Either the vendors will be accommodated along the street during the project execution phase, or a close vacant site will be identified for relocation.

**Benefits as a result of implementation of the market project**

- Increase security of tenure for the sitting tenants
- Provide a catalyst to upgrade the surrounding

neighborhood in a similar model

- Facilitate community partnership in the project
- Improve livelihoods of the market vendors
- Facilitate extension of infrastructure and services by KCCA
- Increase source of revenue for Nakawa Division

**Financing plan**

The program looks forward to secure funding from Slum Dwellers International-Urban Poor Fund International, 20%of the project cost contribution by the Federation members [who are also market vendors] from SUUBI Development Initiative and support from Government of Uganda. However this has not yet been secured and therefore the project seeks financial support from all Development Agencies. Besides financial support, there is strong political commitment from various actors and partner institution, for instance the Minister of Lands Housing and Urban Development, Mayor from Nakawa Municipality and Local Councilors towards the market redevelopment project.

**Recovery of costs by Developer**

- Renting out of the stall and lock ups till the recovery period
- Savings from the urban poor funds to contribute to financial recovery.

*2. Meeting with Kinawataka Leadership*

**Venue:** LC1 Office, **Time:** 10:00am, **Date:** 3/10/2013

**Agenda:** Meeting the contact persons and discussing issues to feed the Concept Note

**Issues raised were the rational of the market, why do you think the market re-development is a priority?**

- All the other neighboring market are not with in close proximity for the community to reach for instance there is Nakawa market,Bugolobi market, Ntinda Market and Kiira market all surrounding Kinawataka Market. Redeveloping the market will reduce on the travel distance to buy food and other items.
- The conditions within the market environment are not conducive for the vendors and buyers for instance no parking space, poor structure etc.
- They need the market to be at the standards of the city? (built within the plan of KCCA)

**Any management committee/team you have instituted for the market?**

- There is MBUYA welfare partner an old management committee which was largely responsible for managing the market affair.
- A new management committee is in offing to be MBUYA Market Vendors Association comprising of all representative.

**Relocation plan during the project execution**

- Chairman acknowledges that during the project execution a site for relocation will be identified.
- The requirements that the community would like to be considered in the design**
- Community hall which can be used for meeting and hire

**Impact of the market redevelopment to the neighboring community**

- Land values are likely to increase Chairman say land values shot from 10Million Ug Shs for a plot to 50 Million Ug Shs during the tarmac road construction
- What is the movement and interaction of people and the market?
- The market serves all classes of people within the neighborhood of Kinawataka.
- A small percentage represents temporary Immigrants and permanent Immigrants are more in the area. Immigrants from Congo DRC, Kenya, Rwanda etc.

**Customers:**

- Customers are mainly the community, or by passers from the main road.
- No other markets nearby, so it would be good to expand the market to sell other commodities than just food. “sustainable neighborhood”
- They want to attract more customers from outside the neighborhood

**Wants:**

- Want to improve the conditions within the market, both for the customers and vendors
- Community Centre
- Different sectors for different products, with space for individual vendors

**Needs:**

- Better accessibility
- Better standards - permanent market

**Involvement:**

- Land

- Don’t ask the vendors to design what they want, show them different design solutions and let them choose between them

Management:

- ..... welfare partners

**KCCA:**

- Tax: 6500/3500 per month
- Waste is collected by KCCA on a daily basis! (we need to plan for a collection point)

Pressure from the community

- Too much theory and paperwork
- When are you starting? ACTION!
- If we say it is a good market, they trust us, they just want a working market

**Attendance**

Lutwama Meddie Actogether	0703634249
Kitosi Emmanuel councilor Mbuya I Parish	0701515564
Murungi Ronald NTNU	0774720219
Tonje Syversen NTNU	0793894317
Oburah Doryne	0774367339
Niyonzima Emmanuel	0783213873
Byarugaba Stephen LC1 Chairman	0752934098/0776934098

3. Meeting with Town Clerk Nakawa Division

**Venue:** Town Clerk’s Office, **Time:** 8:30am, **Date:** 4/10/2013

**Agenda:** Committing earlier engagement on the Kinawataka Market project

**Meddie from Actogether led the delegation to the Town clerk. Issues raised for discussion were a reflection of earlier engagement, what had already been done, what is being done and the way forward.**

- The project was about re-development of Kinawataka Market.
- The NTNU team will help Actogether to put up information (Identify capacity needs for the project to take off, review of Enumeration data, conduct any other feasibility studies, policy frameworks and the market design review where appropriate.
- Organize the market community in one Association to be formalized.
- An Interim committee has been instituted to steer the process comprising all actors.

**Way forward**

- A soft copy of Articles of association and any other information regarding the Land i.e. the block, title and its ownership to be sent to the Town clerk as soon as possible to effect the process. The town clerk will have an input then forward it to central KCCA for legal approval.
- The Directorate of Gender, Community service and Production in KCCA is directly responsible for the Market development in Kampala.
- For this project to move on a few things need to be clarified (the legality and availability of the Land,

approval of the Market Association by KCCA)

- The land title will belong to Nakawa Urban Authority since it’s a legal entity co owned by the Market Association.
- The relocation plan of the community member still remains unclear but alternative suggestions have been suggested during the construction that people will move to the street.
- A working team was assigned to the project [ Physical Planner- Anna Achom, Building Inspector-Ben Ntege 0794660914, Civil Engineer-Augustine Kabanda 0758310014/0772422022

**Attendance**

Lutwama Meddie Actogether	0703634249
Kitosi Emmanuel councilor Mbuya I Parish	0701515564
Murungi Ronald NTNU	0774720219
Elena Archipovaite NTNU	0793894310
Byarugaba Stephen LC1 Chairman	0752934098/0776934098
Kiseka Godfrey Town Clerk	0794660037
Hassan Kiberu Chairman USDF	
Waiswa Engineer Actogether.	

#### 4. Meeting with Devine (MoLHUD economist)

**Venue:** MoLHUD, **Time:** 11:00am, **Date:** 22nd /10/2013  
**Agenda:** Updates from MoLHUD towards Kinawataka Market project

**The meeting was about the concept note write up and the Kinawataka market project updates from UEP students**

- Land ownership needs to be documented in the background of the concept note;
- More input on the Implementation strategy by the Commissioner for Urban Development.

#### **Way forward**

- DEVINE plans tomorrow 23rd .10.2013 to communicate and inform the Commissioner for Urban Development Mr. Samuel Mabala about the Kinawataka market project updates.
- The Land ownership, Partnerships with KCCA and Ministry of Local Government [MoLG] are important and DEVINE promised to communicate to the Commissioner for Urban Development to follow-up with calls to establish contacts.
- DEVINE promised to arrange a meeting with all the steering committee likely on Thursday 24th. 10.2013 to discuss consensus issues on the market project.

#### **Project updates from the student side;**

- Working towards an alternative market design proposal
- Small contacts have been established with KCCA especially with Physical Planner Nakawa, the Directorate of Gender, Community services and production.
- Site visits and interaction with vendors/ communities.
- Reading different policies, legislation, Acts, ordinances underpinning the market project

#### **URGENT RESPONSE ...**

The Land for the Kinawataka Market Project needs to be streamlined especially its ownership, Plot no and Block.

#### 5. Meeting with Waiswa (ACTogether)

**Venue:** Jinja, **Date:** 26/10/2013  
**Agenda:** Structural elements of the market using low cost materials

- T-beams and laddies can bear 100 floors, it all depends on what technology you use for the walls.
- Interlocking bricks usually used for 1 floor buildings, but if you stabilize them with columns they can take 4 floors. Columns usually steel and concrete. The hollow interlocking bricks would probably be better (I think they are cheaper, and we have to put the columns in there somehow anyway, so it's an advantage if they are hollow). The cost effectiveness of the interlocking bricks is not that well looked into, but they shouldn't be more expensive than the burnt bricks, and they are more sustainable.
- Dimensions of T-beams: The ones they use are max 3.6 m long, but this is originally scaled down from some other size. The reason they don't want to use longer ones is the maintenance. These ones are possible to handle by oneself if something happens (it is probably also easier during the construction period).
- People are scared of the new solutions
- What building technologies would you recommend us to look into?
- We have to show different scenarios to convince KCCA. It has to be up to their standards, and still affordable for the vendors. In the Wandegeya market, the rent is so high that the original vendors have to move out, and there are new vendors coming in.

#### 6. Site visit 23<sup>rd</sup> of october

#### **Main issues:**

- Visibility - no one can see the market
- Accessibility and parking - parking both for customers and suppliers
- Security - storage
- Rains
- Electricity
- No management of the market
- Divide market into sectors
- Proper cooking area - main thing is stoves, could they be in-built?
- Space
- Distance from the stalls to the access-points
- Narrowness of corridors
- State of the stalls
- Low roofs
- Waste management
- The market also serves itself (the other vendors)

#### **Considerations for the design process:**

- Circulation
- Design of the stalls
- Storage
- Roof
- Office for management of the market
- Shifting community centre from the sanitation unit - more toilets
- Water supply
- Viability of doing stalls - security, storage etc.
- Doing lock-ups on ground
- Where to put the parking?
- Provide a spot for garbage until the truck comes
- Recycling of banana peels
- Give oppurtunities

Appendix C

list and location of slum areas in Kampala

ID	Settlement	Division
1	Banda	Nakawa
2	Bukasa - Katangole	Makindye
3	Bukesa	Central
4	Bukoto 1	Nakawa
5	Butabika Kirombe	Nakawa
6	Bwaise 1	Kawempe
7	Bwaise 2	Kawempe
8	Bwaise 3	Kawempe
9	Ggaba Mission	Makindye
10	Kabalagala	Makindye
11	Kagugube Kivulu	Central
12	Kalerwe	Kawempe
13	Kamwokya - Kifumbira	Central
14	Kamwokya 2	Central
15	Kansanga	Makindye
16	Kanyanya Quarters	Kawempe
17	Kasubi	Rubaga
18	Kataba - Buyinja	Makindye
19	Katanga	Kawempe
20	Katwe 1	Makindye
21	Katwe 2	Makindye
22	Kawaala	Rubaga
23	Kazo Angola	Kawempe
24	Kibuye 1	Makindye
25	Kilombe - Lukuli	Makindye
26	Kinawataka	Nakawa
27	Kisenyi 1	Central
28	Kisenyi 2	Central
29	Kisenyi 3	Central
30	Kisowera	Kawempe
31	Kisugu	Makindye
32	Kosobo - Bukooza	Rubaga

ID	Settlement	Division
33	Kyebando - Kisalosalo	Kawempe
34	Lungujja	Rubaga
35	Luzira	Nakawa
36	Mengo - Kisenyi	Central
37	Mpererwe - Kikuubo	Kawempe
38	Mulago 2	Kawempe
39	Mutundwe - Wabiyinja	Rubaga
40	Najjanankumbi	Rubaga
41	Nalukolongo - Kitawuluzi	Rubaga
42	Namirebe Bakuli	Rugaba
43	Namungoona	Rubaga

ID	Settlement	Division
44	Nankulabye	Rubaga
45	Nateete	Rubaga
46	Nsambya - Gogonya	Makindye
47	Nsambya - Kevina	Makindye
48	Nsooba	Kawempe
49	Nyago	Makindye
50	Salaama	Makindye
51	Sebina - Dobbi Zone	Kawempe
52	Ssebaggala	Kawempe
53	Wabigalo	Makindye
54	Wankulukuku	Rubaga

