

# **SEPU – Riara Mukuru kwa Njenga**

## **Enumeration report and initial planning guidelines**

**compiled by: Kheleon Nyambuga, Michele Vianello, Jane Wairutu**

**June 2015**



# **SEPU – Riara**

## **MUKURU KWA NJENGA**

### **Planning report on the enumeration area \_June 2015**

compiled by: Michele Vianello, Jane Wairitu

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## Overview

This is a report of the community enumeration by the residents of Riara village in Mukuru Kwa Njenga slum of Nairobi. The exercise was undertaken in June 2015 and was facilitated and supported by Muungano wa Wanavijiji.

Riara village is a densely built up slum that occupies XXXX. acres. The land on which Riara is built consists of about 13 registered parcels of land. Like the rest of the Mukuru Kwa Njenga slum, the parcels of land in Riara are registered to private individuals, except Riara, which is a single parcel of public land associated with the Ministry of Education's "School Equipment Production Unit" (SEPU).

There is a higher possibility that the designated use of the SEPU parcel can be converted so that it is used for residential purposes benefiting the current residents. The community enumeration was undertaken as part of an effort to adjust land tenure to allow for the upgrading of the land.

The enumeration is therefore anchored around a wider project to upgrade the SEPU section of Riara settlement. The project is supported by Institute for Development and Research Canada (IDRC) and implemented by Muungano wa Wanavijiji, Akiba Mashinani Trust, The University of Nairobi, Strathmore Business and Law Schools, and the Katiba Institute.

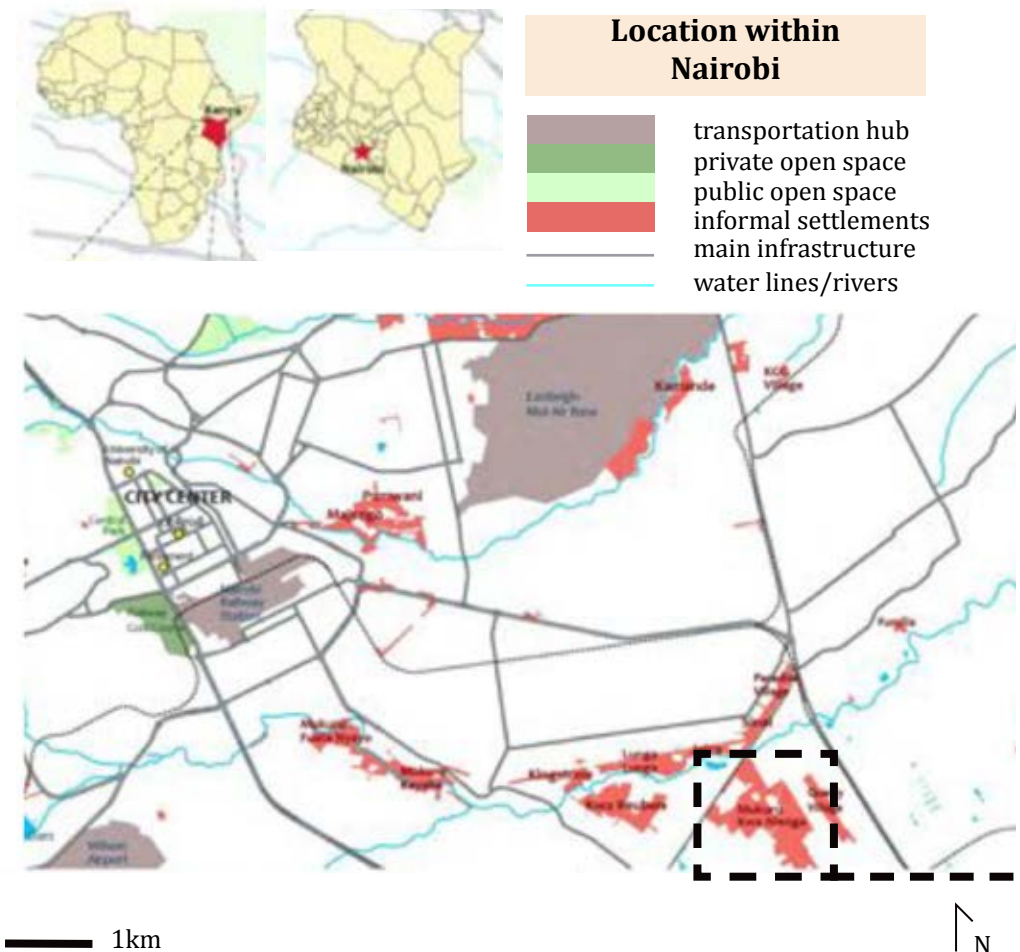
The enumeration has been tallying structures and conducting a survey of the population, aimed at gathering a wide range of data as a base for putting forward planning scenarios, involving the community itself and the above mentioned organisations. The final objective is the improvement of the lives and living conditions of slum dwellers in the area, in line with the new approaches envisaged in Kenya's new Constitution, which decentralize governance and require new processes and plan making by local authorities to include civil society.

This report presents findings on land, ownership, tenure, population, employment, education, infrastructure as well as the basic assumptions and initial conditions to be met for planning the upgrade of the area.

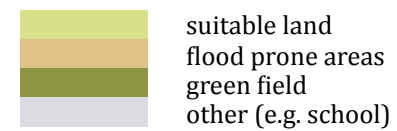
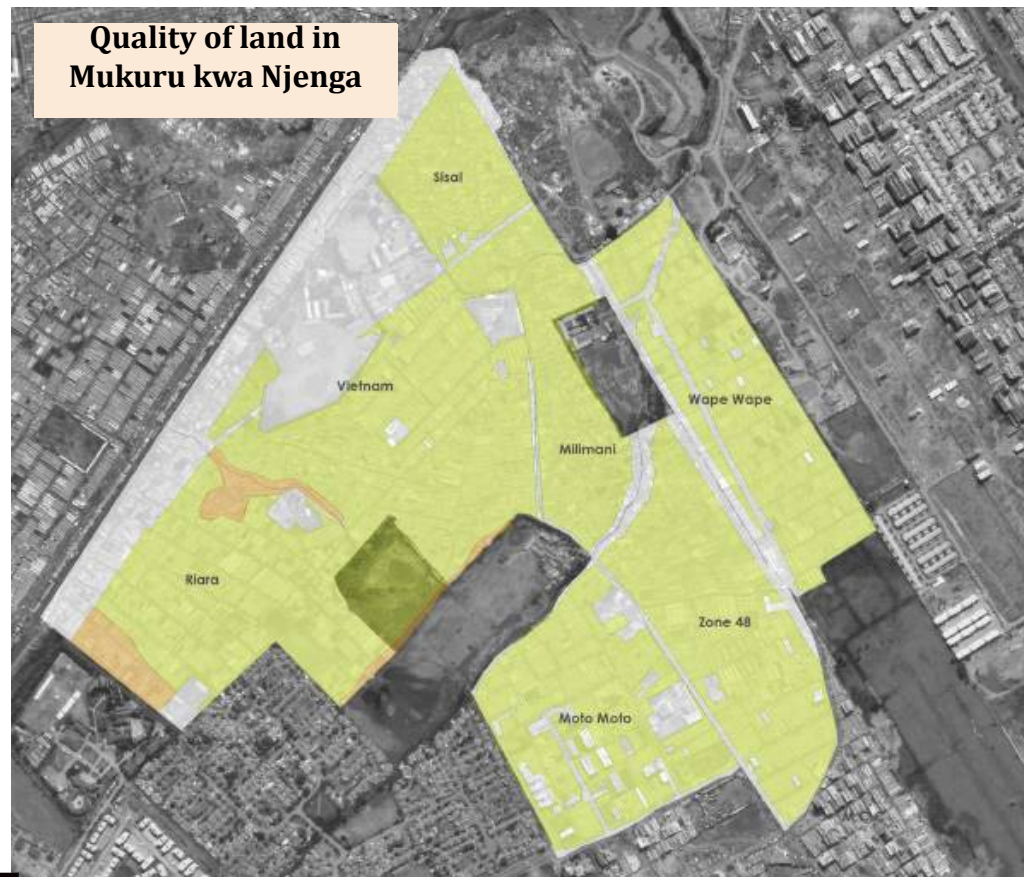
## History of the settlement

Mukuru kwa Njenga is part of the larger settlement of Mukuru one of the largest informal settlements in Nairobi, located in the South-East of the city. Mukuru is divided in two main parts Mukuru kwa Reuben and Mukuru kwa Njenga. The report focusses on an area in the village of Riara, located in the latter. The Mukuru kwa Njenga settlement began in 1958, when farm labourers occupied the land, then owned by white settlers. Subsequently, the area attracted the urban poor who built makeshift homes due to the proximity of the industrial area.

The village of Riara is located in the southern edge of the Mukuru kwa Njenga settlement and is part of the Embakasi Constituency. The village was initially bushy and covered with thorny plants known as Riara, hence its name. The beginning of the settlement can be traced back to the 1990s, when villagers from neighborhoods such as Vietnam and Sisal, came and settled here. Historical satellite images confirm that by the year 2002 the villages of Sisal and Wape Wape were consolidated, while the village of Vietnam was almost completely built and few structures were built in Riara (Google Earth 2002).



**Quality of land in  
Mukuru kwa Njenga**



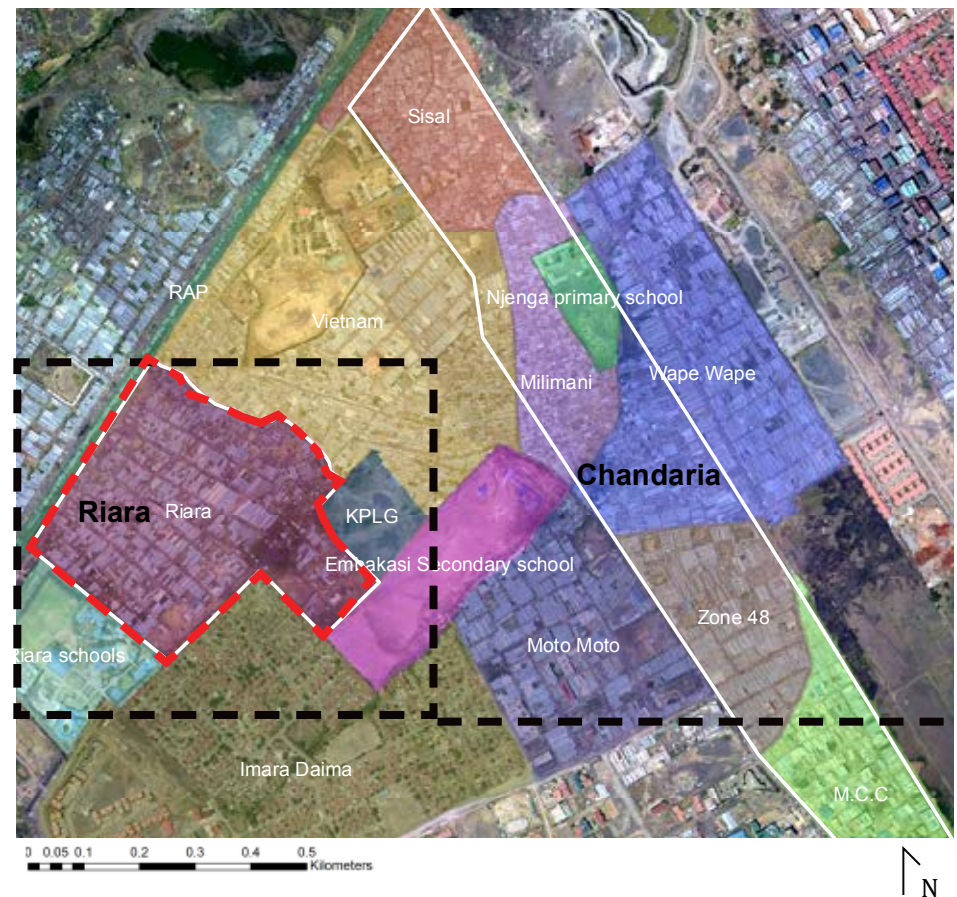


Riara is a self defined informal administrative zone served by a chief and a chairman. With Riara, Mukuru kwa Njenga has 7 villages, each with its informal structure of governance: Moto Moto, Wape Wape, Vietnam, Sisal, Milimani, Zone 48 and Riara. The location of Riara is peripheral to the core of the settlement, and borders the Riara group of schools to the South-West, the Imara Daima estate to the South-East, the Kenya-Uganda railway line to the North-West and the rest of the settlement to the North-East. Riara's total area is 48.6 acres.


The Google maps database of historical images shows that there were only 35 structures built in the southern part of Riara (the enumeration area) in November 2002, of which 22 sit on the so-called SEPU area (Google Earth 2015), nevertheless the presence in the overall village of Riara is older, and the Sauti Yetu Kwa Njenga Settlement Association claims, in its plea against eviction (annex 3), a continuous presence of inhabitants in Riara from 1988.

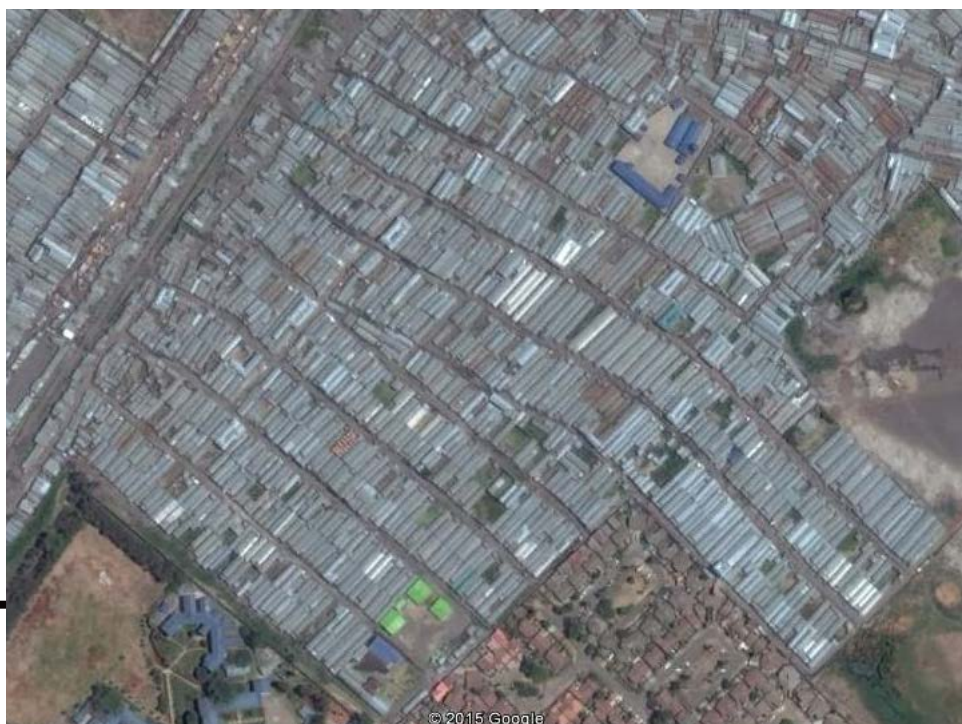
### Villages and evictions in Mukuru kwa Njenga

	Sisal
	Milimani
	Wape Wape
	Zone 48
	M.O.C.
	Riara
	Moto Moto
	Vietnam



## Riara and its evolution over time

 borders of Riara



 100m



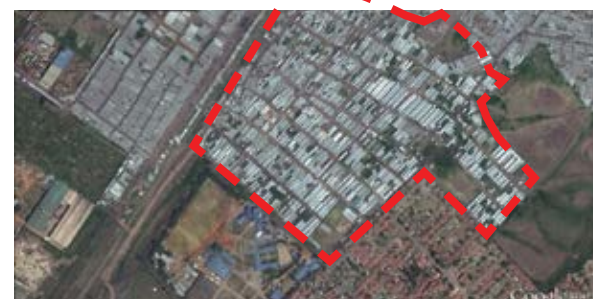
2002



2007



2008



2010

 0 0.05 0.1 0.2 0.3 0.4 0.5 Kilometers





**plots Riara is built upon**

plot ID	acres
14009	13.5
FR266_75	7.2
Part of 209_12611	7.4
209_11428	3.7
13913	0.3
13917	0.3
No ID	0.3
No ID	0.3
No ID	0.3
No ID	0.3
13918	0.2

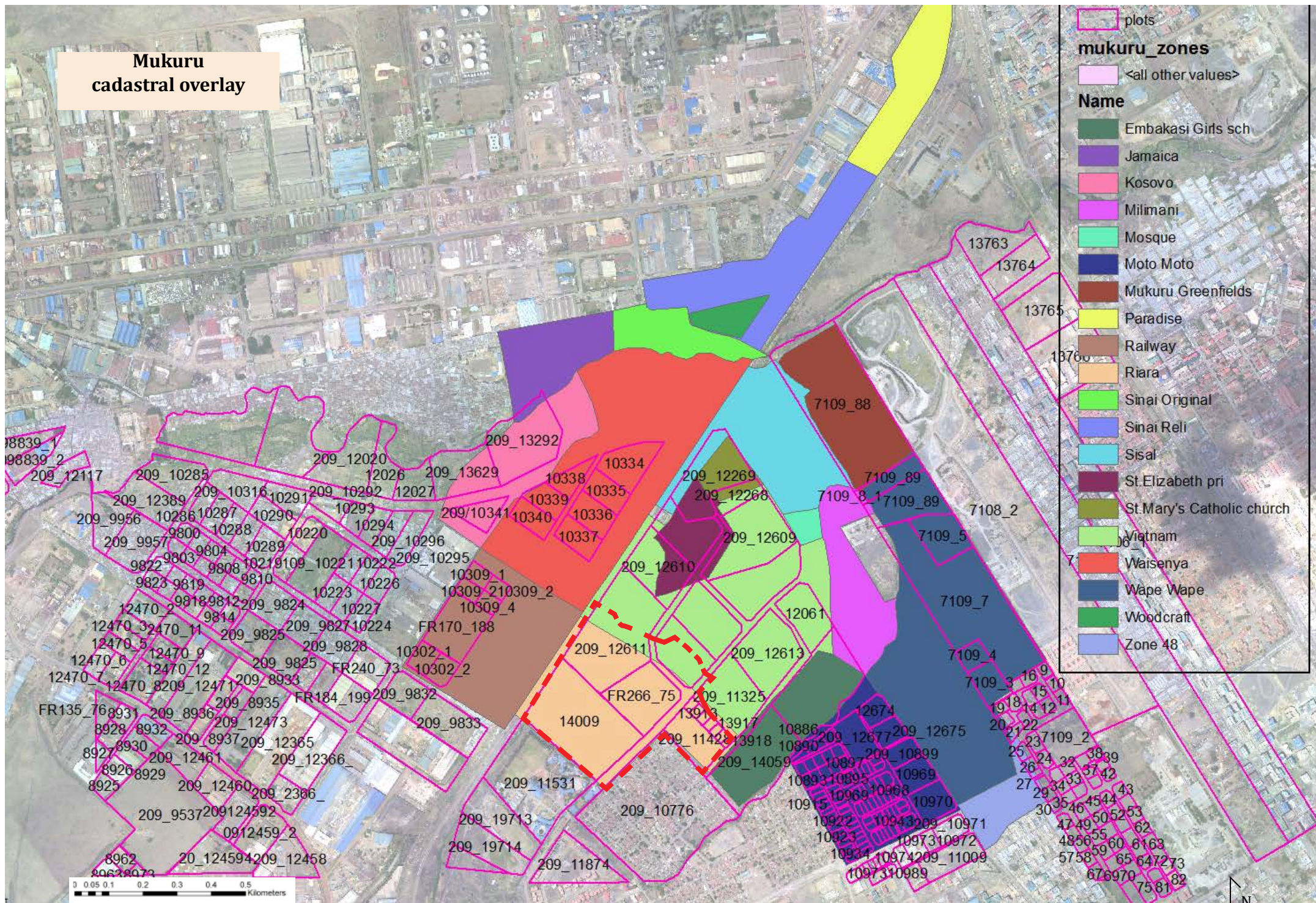
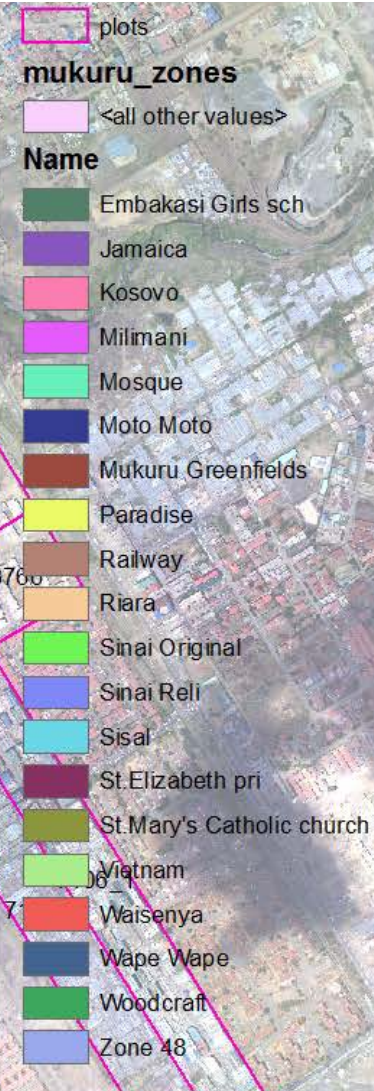
Today, the entire Mukuru kwa Njenga settlement covers about 275 acres of land allocated by the government on 99-year leases to private owners , and the village of Riara is erected on at least 11 of these properties, as shown in the map and specified in the table above.

Initially, the land in Mukuru kwa Njenga was set aside for light industrial development, but later allocated to individuals and companies – most of whom have secure title deeds. In the case of Riara, Orbit Enterprises claim to own some of the parcels of land on which the settlement has been established, while the southern portion of it is located on publicly owned land known as SEPU (School Equipment Production Unit). The dimension of the parcel is uncertain since the title deed refers to 5.1 hectares “approx.” (12 acres), while the cadastral map for SEPU represents a lot of 15 acres. Considering the claims over the western portion of the lot were done by the railway company, the actual extension of the SEPU area considered in this report is 13.5 acres.

The SEPU area is a contested area. While the land title, with reference number 209/14009, ensures the lease to the SEPU company for 99 years starting from 1996 (annex 1), the plea of the organisation Sauti Yetu Kwa Njenga Settlement Association claims that the uninterrupted presence of inhabitants in the locale grants them rights “in the spirit of the new constitutional dispensation and National land policy” (annex 2). This mobilisation and the fact that SEPU is a publicly owned company are the reasons why the SEPU area possibly represents an occasion for obtaining land titling for the community.



# **Mukuru cadastral overlay**





# identification of the enumeration area

- Enumeration Area
- Riara
- SEPU
- Flood prone areas





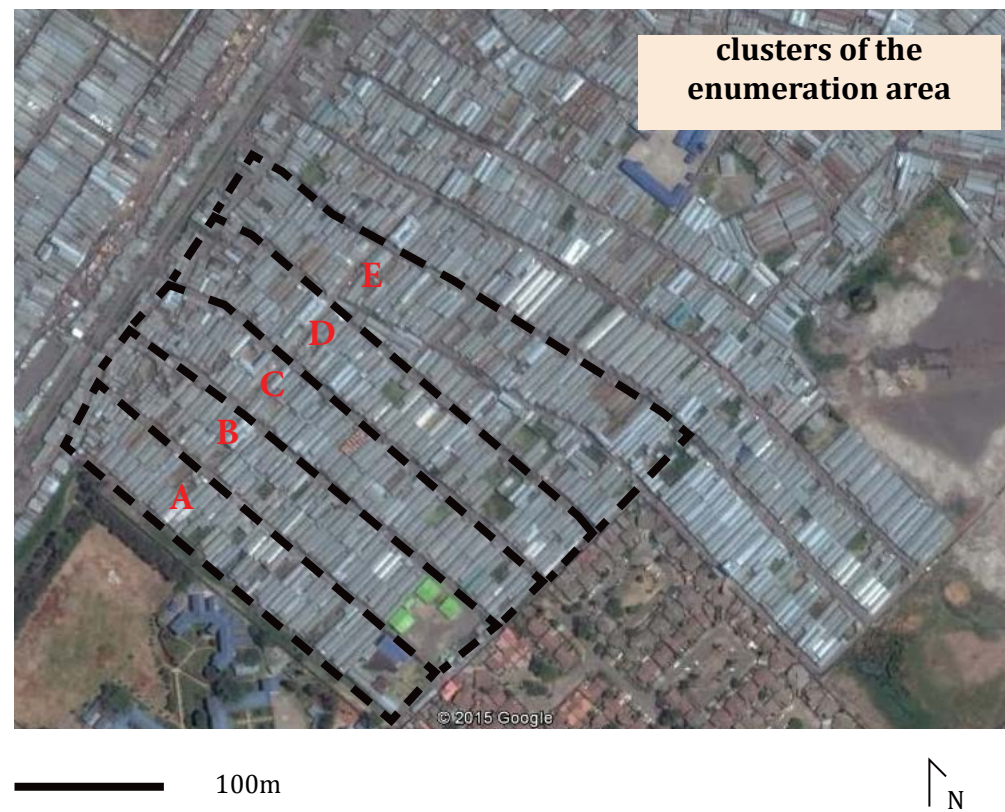
## Enumeration as empowerment for land tenure

Some of the harshest challenges in Mukuru for service delivery and improvement of general living conditions are rooted in insecure land rights. Households usually live on land informally held by private individuals, who often acquired their parcels in unclear legal circumstances. During recent years, the land has increased in value and Mukuru residents are therefore confronting a greater number of eviction threats. The enumeration intended to survey and expose the current informal arrangements of tenure in order to measure the current and projected demand for housing and include the stakeholders' interests in the upgrade scheme. For this reason the community process led by Muungano wa Wanavijiji identified the area and the interests that would be involved in an upgrade scheme, and then divided the enumeration area into five clusters (A, B, C, D and E) for the practical purpose of the survey and as means of community self-recognition and empowerment.

The SEPU area, due to its land ownership characteristics represents an opportunity to get land titling for the community. However, it is a community that developed disregarding the land ownership borders. For this reason, at the beginning of the enumeration process the community were mobilised and, through mapping, identified the portion of village to be enumerated. This portion was recognised as being a physical and social unitary entity, stretching beyond the SEPU area proper and covering 23.8 acres. Thus, the present report regards a portion of Riara defined as "enumeration area", which was identified by the community as a single unit. Two factors influenced the process of identification of the enumeration area: the morphology of the settlement and the informal parcelling of the plots.

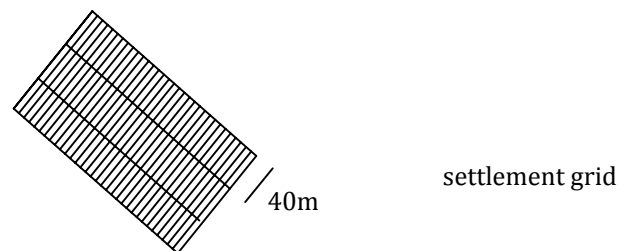
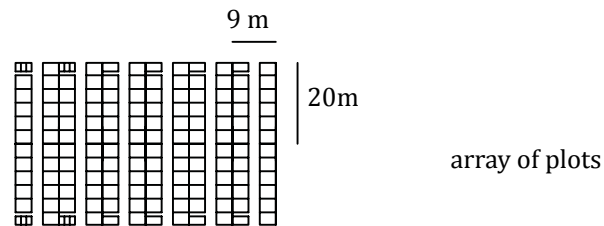
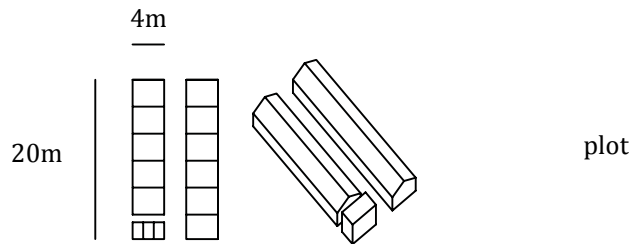
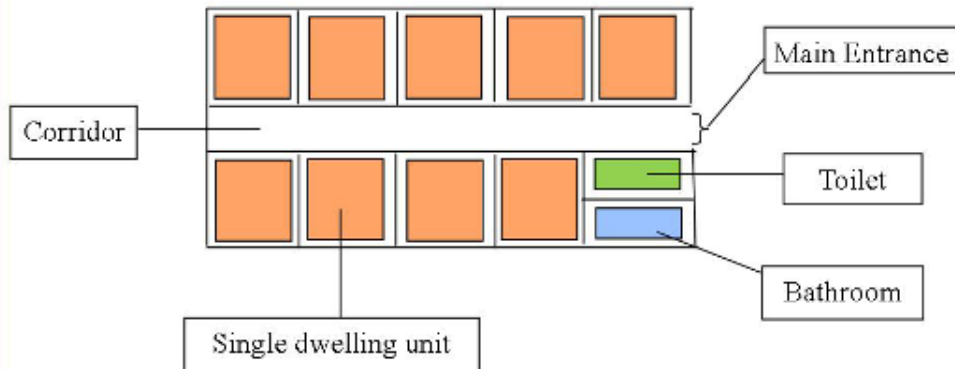
The enumeration involved a tallying of the structures, a mapping and a survey with questionnaires for each "room" (annexes 4, 5 and 6). The data presented in this report has been collected in this process.







### typical plot and aggregation



## Morphology of the enumeration area

The village of Riara is predominantly organised in a grid like informal street network, oriented approximately  $-45^\circ$  North. The grid is unevenly subdivided, as shacks tend to be aggregated in long undivided arrays. Within the enumeration area the grid is uniform with few exceptions where it is tilted and its orientation is shifted in order to adapt to the ground conditions and to the orientation of the pre-existing parts of the settlement, especially to the North-East of the enumeration area. The streets are served by drainage trenches that run parallel and on either side, approximately 80cm deep and 60cm wide. The street width is on average 7 meters. The uniformity of the housing typology and the orderliness of the housing units are a characterising feature of the enumeration area. Most houses are composed of one room of 10 by 10 feet, part of one-story semi-permanent structures whose roof and walls are made of iron sheets and floor made of concrete. Each structure is composed of 4 to 7 rooms. Structures are paired within plots sharing a communal alley, 2 meters wide on average, and sanitation facilities.



## Settlement dimension and structure ownership

The enumeration Muungano wa Wanavijiji conducted in the southern part of the Riara village, served to understand the resident population and establish the housing and service demands both quantitatively and qualitatively. Having a sound estimate of the structure ownership is crucial to meeting these needs, since the interests of the structure owners are central to any upgrade scheme.

For this reason this report attempts, through the enumeration data, to gather data on the structure owners (SOs).

**chart1: uses within the complete data set**

Structure Use		Households	Percent
	Business	150	5.80%
	Institution	14	0.50%
	Residential	2402	93.60%
	Total	2566	100.00%

Within the enumeration area the enumeration tallied: 1,149 structures, or 4,173 rooms in total;  
of these rooms  
297 were toilets,  
228 bathrooms,  
21 were under construction,  
12 did not provide information,  
323 had absent occupiers,  
726 were vacant structures.

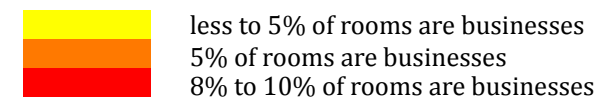
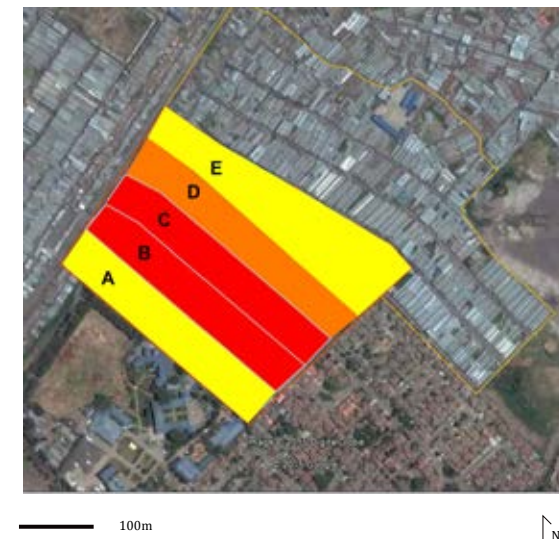
After subtracting the rooms that were either irrelevant or without available data, 2,566 rooms were actually surveyed forming the data set with complete information. This complete data set covers 71% of the rooms within the enumeration area. Out of 2,566 surveyed rooms, 2,402 were for residential use (93.6%), 150 hosted businesses (5.8%), and 14 were institutions (0.5%).

**chart2: rooms per use in each cluster**

CLUSTER		STRUCTURE USE			Total
		Business	Institution	Residential	
	A	16	1	358	375
	B	30	3	375	408
	C	48	1	485	534
	D	28	1	535	564
	E	28	8	649	685
Total		150	14	2402	2566

The enumeration subdivided the enumeration area into 5 clusters of comparable dimensions. The data in chart 2 shows how the central part of the enumeration area (clusters B and C), is where the bulk of the business activities tend to be located (8% of rooms in cluster B and 10% of rooms in cluster C), while the peripheral parts of the enumeration area (clusters A, C and D) have only 4% to 5% of rooms dedicated to business purposes. This distribution confirms that, when it comes to business distribution (and therefore street use and sociability) the chosen enumeration area appears to be a self-contained unit, oriented towards its centre.

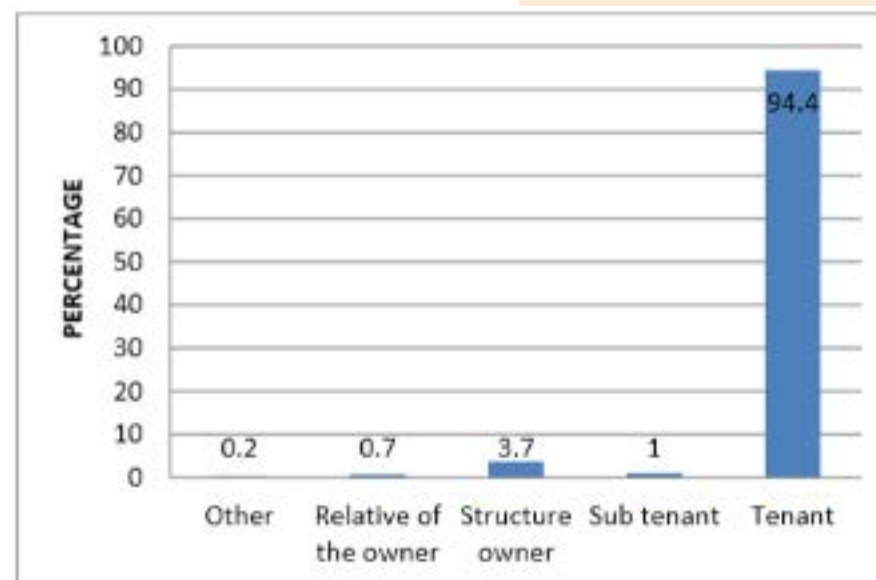
**distribution of businesses per cluster**





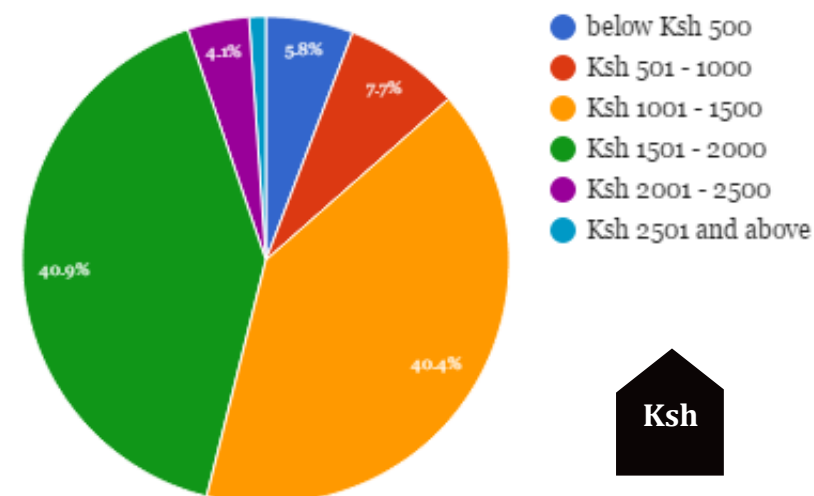
Within the complete data set the vast majority of respondents declared to be tenants (94.4%), with only 3,7% of inhabitants owning the space they either occupy with their businesses or live in. The other categories accounted for less than 2%.

**chart 3: relationship of the occupant with the structure owner**



This data is also crucial when considering the income generated by rent for structure owners. The rent ranges from below Ksh. 500 to above Ksh. 2500; with 40.4% of residents paying between Ksh. 1001 – Ksh 1500 and 40.9% paying Ksh. 1501 – Ksh. 2000. Chart 5 shows the distribution of rent paid by the residents of Riara, in percentages.

**chart 5: rent paid - percentages**



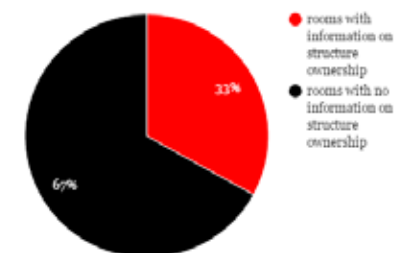
In order to get an accurate estimation of the number of structure owners the enumeration surveyed the names and identities of the structure owners for each household. Unfortunately, the collection of the data on structure owners was hindered, as often is the case, by a reluctance of respondents to provide information due to the shadowy nature of land assignments in informal settlements. Many structure owners use nicknames or just first names, making their identification problematic. Due to this situation the enumeration managed to collect information on structure owners for 1,376 rooms out of 4,173, roughly 33%.

These 1,376 rooms are the second data set, or the SOs data set. This data set, for the above mentioned reasons resulted in sometimes very fragmentary, and the community engagement as well as map and spatial analysis was fundamental to “clean” the data and obtain a reliable list of SOs.

For these 1,376 rooms the enumeration listed 371 structure owners (SOs). Out of these only 44% were known to the respondents by their full names, 44% by their first name, while 12% were known by their nicknames.

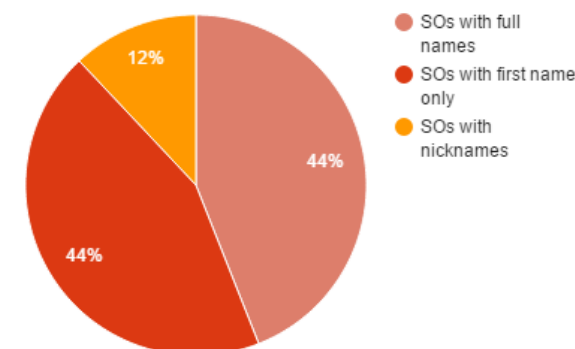
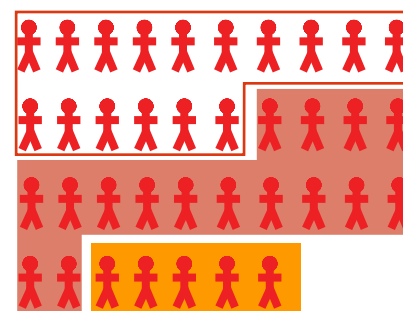


**chart 6: percentage of enumerated rooms with info on structure ownership**



**chart 7: percentage of SOs using full names, first names or nicknames**

**371 enumerated SOs**



**room uses**



0 20 40 80 120 160 m

businesses  
mixed used (res+business)  
institutions  
sanitation facilities  
residences

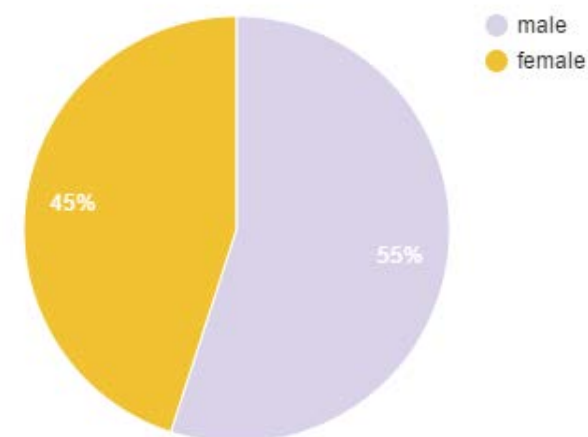
**chart 8: population  
enumerated per cluster**

Cluster	Total Population	Male	Female	Number of Households
A	957	499	458	358
B	981	550	431	375
C	1343	729	614	485
D	1409	773	636	535
E	1802	1005	797	649
<b>Total</b>	<b>6492</b>	<b>3556</b>	<b>2936</b>	<b>2402</b>

## The population

The enumeration tallied 2,566 rooms with 2,402 surveyed households, the surveyed population is 6,492 people of which, 3,556 were male and 2,936 female. The average dimension of the household is 2.7 people.

**chart 9: overall percent-  
ages of female and male  
enumerated individuals**





Taking this data into consideration, the report is attempting first an estimation of the overall population in the enumeration area, including those who did not respond or were absent, and secondly an estimation of the actual capacity of the enumeration area, by assigning a virtual average household (2.7 persons) to each structure that was vacant or currently under construction.

A brief recall of the data relevant for these estimations:

21 rooms were under construction,



12 occupiers did not provide information,



323 had absent occupiers,



726 were vacant.



2,402 were actually surveyed



Therefore the **estimated current actual population** is  $6,492 + (2.7 \times 335) = 7,396$



Given the enumeration area extension of 23.8 acres, the estimated population density for the area is  $7,396 / 23.8 = 311$  pp/acre or 115 HH/acre

While the **maximum capacity population** is  $6,492 + (2.7 \times 335) + (2.7 \times 747) = 9,413$



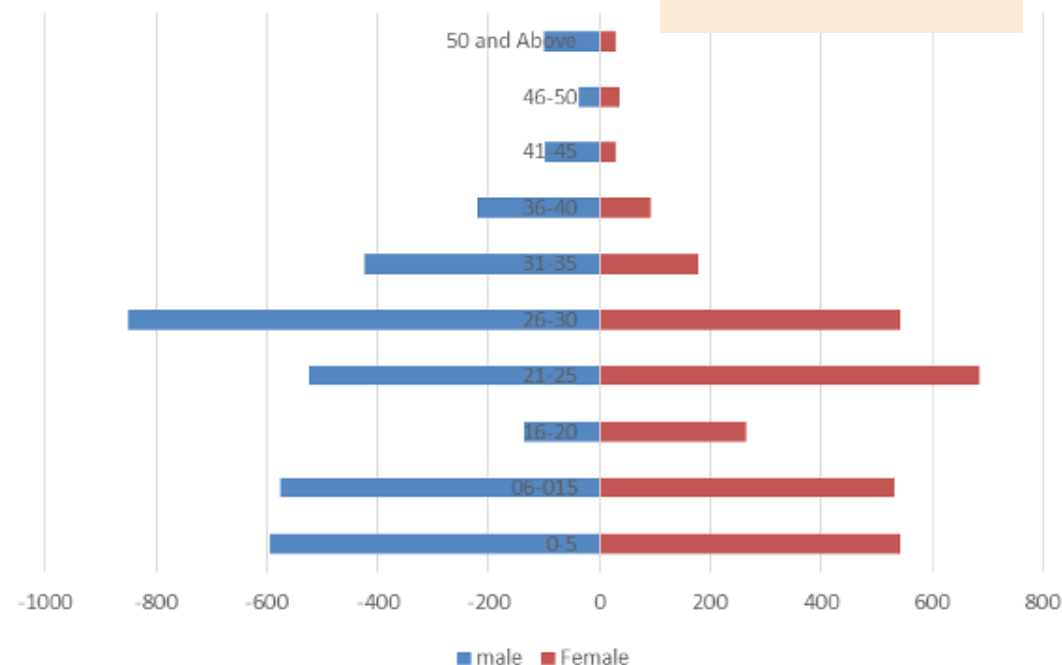
Given the enumeration area extension of 23.8 acres, the density for the current maximum capacity of the area is  $9,413 / 23.8 = 395$  pp/acre or 146 HH/acre

## Population structure and composition

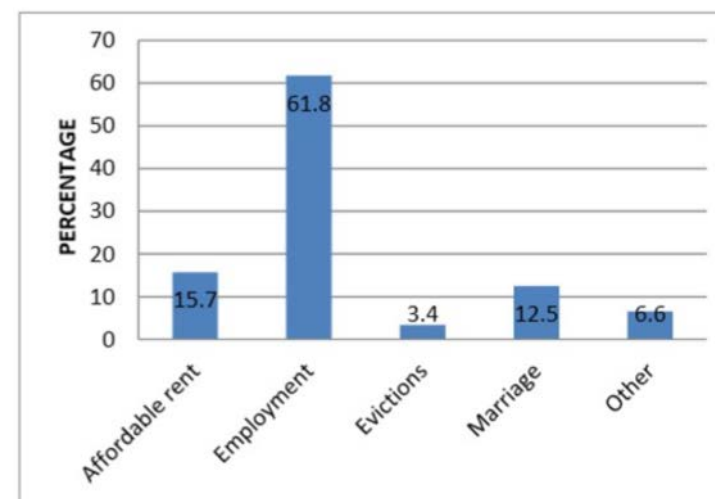
The enumeration gathered further information to assess the composition of the population within the enumeration area in order to meet its housing, social and spatial needs. One of the issues tackled first was the main reason for respondents to settle in the enumeration area. The figures in chart 10a show how employment was the major reason for moving in, with 61.8%. Marriage, a closely related reason (the employment of one of the spouses is often the reason for choosing where to live after marriage) accounted for 12.5% of responses. Affordable rent accounted for 15.7%, whereas evictions were the least common reason with the lowest percentage, 3.4%.

Employment as the main drive for settling in and the relatively recent development of this part of Riara comprised within the enumeration area, contribute to making the age distribution pyramid clearer. The most represented groups are men between 26 and 30 and women between 21 and 25, corresponding with a young workforce. Children and young teenagers are also present in high numbers for both genders, while there is a consistent drop in older teenagers and young adults (16 to 20). The population above 31 follows a classic pyramidal pattern, although unbalanced, with a larger presence of men. Population above 50 is very small, while that over 60 is virtually non-existent in the enumeration area. A datum confirmed by the national life expectancy levels at birth in Kenya for the total population: 63.52 years of age, with life expectancy of males at 62.06 years and at 65.01 for females.

**chart 10: enumerated population age pyramid**



**chart 10a: reasons to move to the enumeration area**

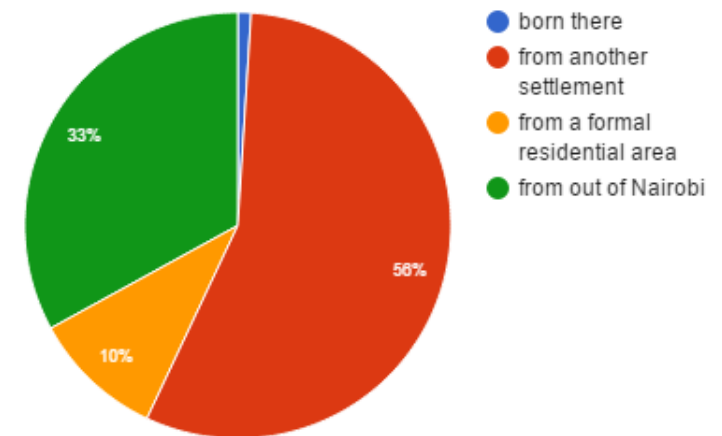


## Population growth trends and projections

The mortality rate of Nairobi County is 60 per 1000 live births. The fertility rate of the study area stands at 2.6, as with that of Nairobi County. This datum has led the present report to assume that values in the enumeration area are in line with the average of the Nairobi county.

Therefore, in order to take into consideration future growth in the planning of the settlement the 3.8% population growth rate of Nairobi County was applied to the enumeration area. Locally the population growth is influenced by different factors, key among them being immigration. This makes it difficult to make accurate projections. Most of the residents in Riara migrated from other informal settlements and the highest factor influencing the migration was the search for employment opportunities (mainly in the nearby industrial area) or the affordability of rent. These factors can nevertheless be subject to substantial variations according to the evolution of the area, the local job market and the conditions of the built environment. Nevertheless, the main migration patterns show how the intake of new inhabitants in the enumeration area is from within Nairobi (67%), showing how the future growth will be highly influenced by the type of transformation that the area will undergo.

**chart 11: place of origin  
of the enumerated  
population**

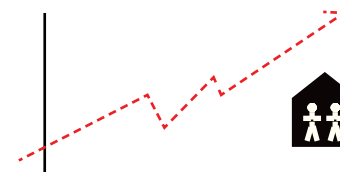


Therefore the linear growth of 3.8% is used to provide a rough estimate of the evolution of the population in the enumeration area, in line with that of the Nairobi county.

The used projection formula for determining the population is:  

$$p_j = p_i (1 + x/100)^n$$

$p_j$     Projected Population  
 $p_i$     Initial Population  
 $x$      Population Growth Rates (3.8% p.a)  
 $n$      number of years



**chart 12: population linear projections**

YEAR	2015	2020	2025	2030	2035
Projection of enumerated population	6492	7823	9427	11359	13688
Projection of estimated population	7396	8912	10739	12940	15593
Projection of the maximum capacity	9413	11342	13667	16469	19846



## Health

Other revealing features of the demographics are the morbidity rates. These are based on self-diagnoses and responses from the enumerated households to the question, “which are the most common diseases your family suffers from?”

Out of 2,402 households surveyed on health related issues, 16,9% did not provide any information, while the most common conditions reported were:

Malaria, in 1300 households

Common cold, cough and flu, in 931 households, with 56 having pneumonia.

Typhoid, in 198 households

Cholera, in 123 households

Diarrhoea, in 124 households

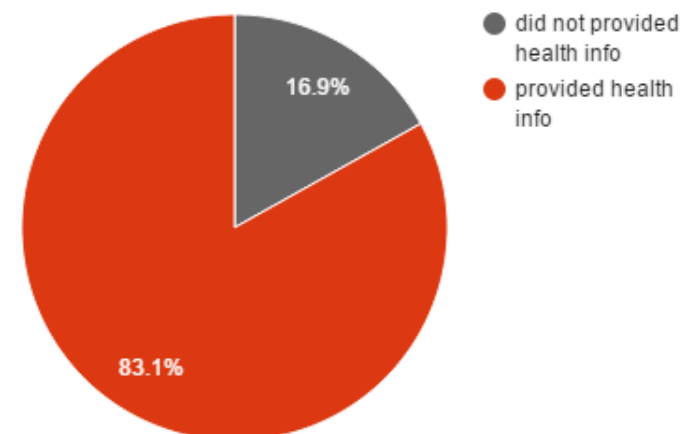
HIV/AIDS, in 37 households, while STDs were present in 6

TB, in 19 households



These figures, although being partial, give an interesting picture in terms of sanitation needs in this part of the settlement. Most of the diseases in question can actually see major decreases through interventions on street drainage (malaria), the introduction of sewers and water pipes (cholera, typhoid, diarrhoea), and the construction of well insulated and aerated dwellings (cough, cold, pneumonia).

**chart 13: surveyed population who provided information on health**

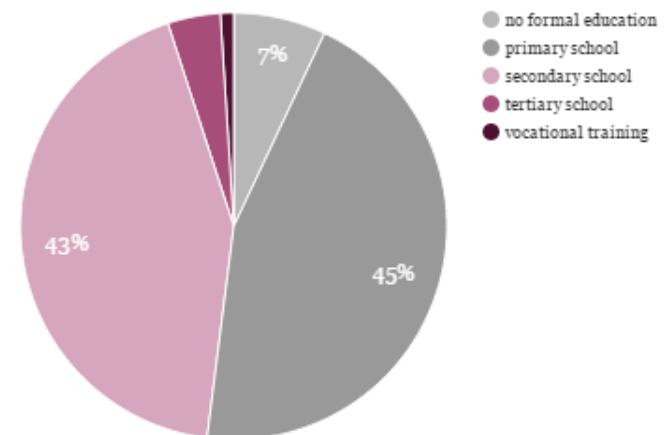


## Education and employment

The information gathered on education and employment on the enumerated segment of the population, 6,492 persons, provides interesting insights into the social structure of this part of the village.

Most of the residents have received formal education (92%), up to primary level (45%), secondary (43%) or tertiary (4%). Only 1% had vocational training, while 7% received no formal education. In spite of the very high overall figure for people with a secondary education, the enumerated population lacked tertiary education and professional skill training, the two types of formation most likely to give access to formal paid jobs. This situation is mirrored by the employment distribution among the enumerated population.

**chart 14: level of education**



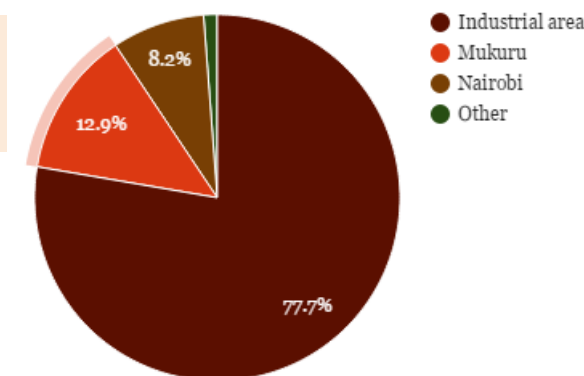
As the chart shows employment is very precarious, with 43.1% of enumerated persons doing casual work. Casual labourers are paid on a daily basis with the average amount payable per day likely to be below Ksh. 407 (the lowest salary according to the Regulation of Wages Order of 2003).

The conditions of casual labour often have similarities to self-employment, being in most cases part of the informal economy. The second category accounts for 8% of the enumerated population, in most cases small businesses within the village of Riara, such as grocery stalls, cooked food vending stalls, video shows, salons, barber shop and bars. This variety is a testimony to the potential of the locale in the creation of jobs, especially in view of a growth of the population. Self-employment among the occupation categories is the most gender balanced, with 54% of self-employed being women and 46% men.

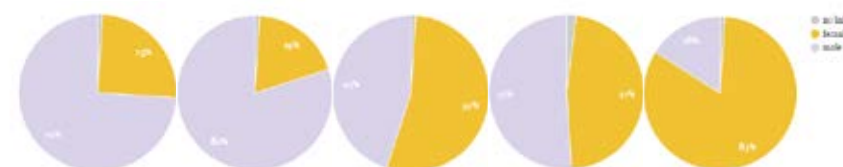
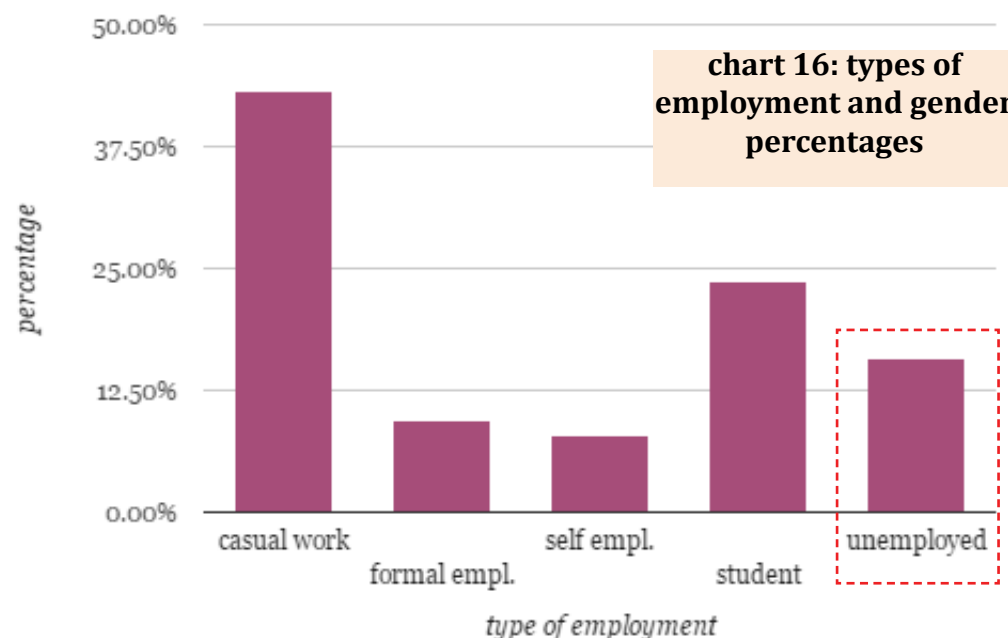
Currently, 15.8% of enumerated persons (1,025) are unemployed. 83% of these are women, who when unemployed, tend to be housewives in order to take care of households and/or children. Only 9.4% of the enumerated persons are formally employed with a permanent job, and of these 80% are men.

The spatial distribution of jobs is also revealing. The bulk of enumerated persons (77%), work in the industrial area adjacent to the settlement, mostly in either formal jobs or as casually employed labourers, but also in informal activities. This confirms the industrial area as the area where most jobs are created, absorbing most of the labour force, and explaining the reasons behind the settlement location and its overall growth over time. Table 15 shows the most commonly occurring places of work and their relevant percentages.

**chart 15: spatial distribution of employment**



**chart 16: types of employment and gender percentages**

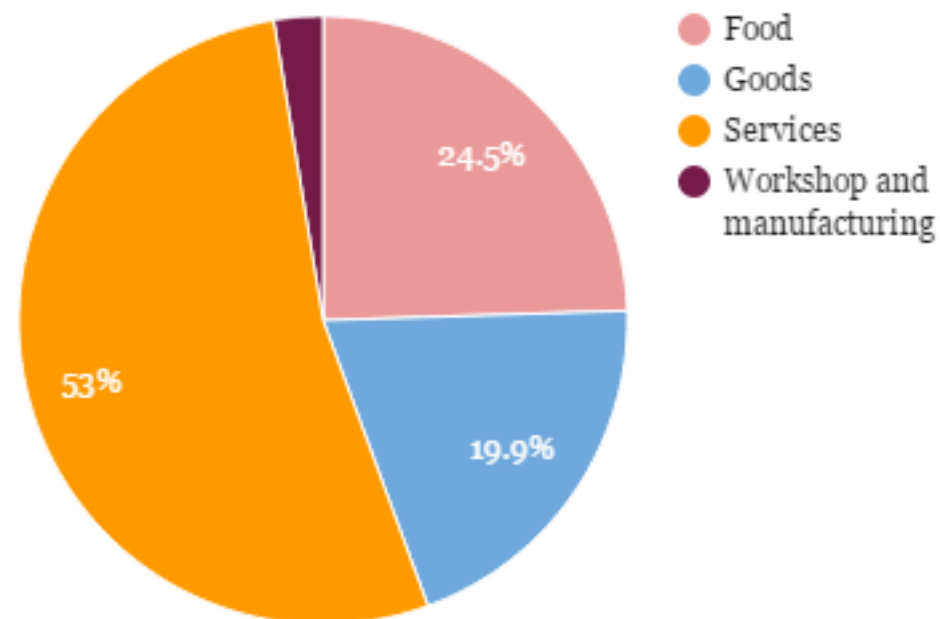


**chart 17: businesses in the enumerated area**

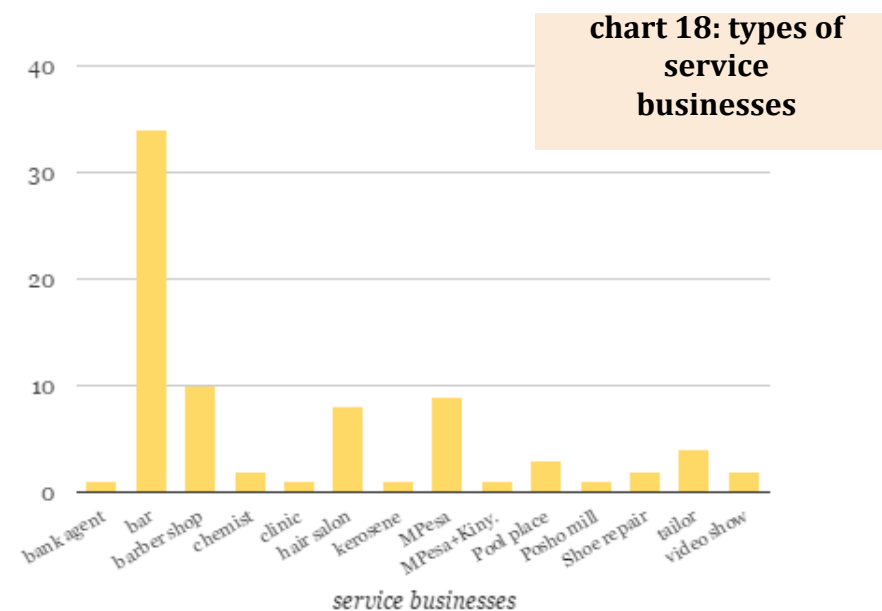
## Businesses in the enumerated area

The potential for job creation within the enumerated area should not be underestimated, specially in the scenario of an upgrade project. With the population in the area presumably increasing in the future, the conditions will become more favourable for businesses. Chart 17 shows the various business types and their percentage distribution within the enumeration area.

The most predominant business types are service and food based businesses. Service business takes the highest percentage with 53%.

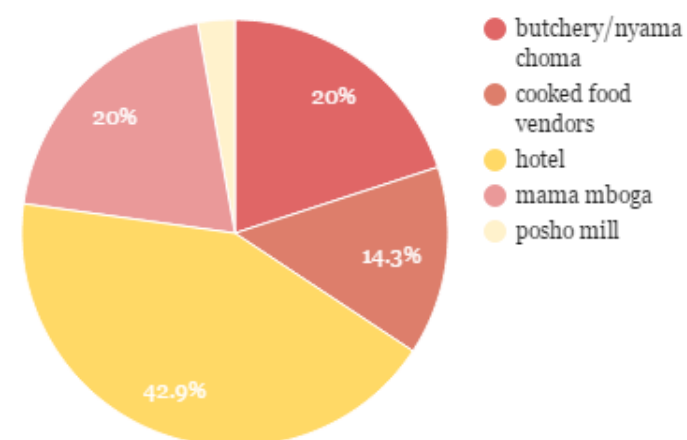


Service businesses include: bank agents, bars, barber shops, chemist/ or clinics, hair salons, kerosene pumps, Mpesa agents, kinyozi, pool places, shoe repair, tailor workshops and video shows.



Food related business takes the second biggest share of the businesses in the enumerated area (24.5%) including butcheries/nyama choma, cooked food vendors, hotels, posho mills and mama mbogas (see chart 19 for distribution)

**chart 19: types of food businesses**



Finally, sale businesses amount to 19.9% and include retail shops, boutiques and music shops.

Workshop and manufacturing activities are the least represented at 2.6% of total businesses, with mostly carpenters and electronic repair stalls.





## Remarks on social and community facilities

Most of the social services in Mukuru kwa Njenga, such as education and health, are provided informally through private individuals and organizations. This occurs due to the absence of government programmes providing services to informal settlements. Other reasons that lead to the prevalence of informal facilities include poor economic status, lack of security of tenure, and lack of space.

### Healthcare

Despite the high morbidity rates in the enumerated area in Riara, there seems to be a lack of formal healthcare services. Most facilities in the area are mainly informal chemists, selling over-the-counter medication, or mini clinics. These facilities are private and there is no documented government involvement into healthcare service provision within the enumerated area.

Information on the overall healthcare provision for the enumerated population, for instance in structures located outside of the enumeration area has not been included in the enumeration survey.

### Open spaces

The enumerated area has almost no provision of public or communal open spaces. Most open spaces in the settlement are associated with social facilities, mainly education or green fields. These, at times are used informally by the community for different purposes, such as sports grounds, recreational spaces, grazing areas. This is especially evident, in proximity of the enumeration area, in the KPLC area or in the Embakasi Secondary School compound.

As makeshift public spaces, streets serve as multi-functional spaces playing physical, social, and economic roles. They are used as playing areas, meeting spaces, areas of worship etc. The role of public spaces is crucial, and their en-

hancement and betterment is a priority objective in a possible upgrade scheme, in accordance with the new role accorded to streets in UN Habitat guidelines in slum upgrading (UN Habitat 2015).

Other open spaces tend to be residual and are not used regularly, favouring the accumulation of solid waste, and their transformation into dumpsites.



## Education

The education facilities in Mukuru kwa Njenga are a mix of formal and informal schools, with a prevalence of informal and privately owned ones. Some big school complexes exist at the periphery of Riara, such as the Riara group of schools, the Embakasi secondary school, or just outside of it such as the Our Lady of Nazareth School or the Kwa Njenga Primary School. Formal schools can have fees around Ksh. 500 per month. The only formal school complex within the enumerated area, set up by an NGO, is the Bridge International School located in the south eastern corner of the settlement, which offers primary education at subsidized rates of about Ksh. 300 per month.

Informal day care centres for infants between the ages of 0 to 2 years are relatively common in Riara. Most pre-primary schools in the village are combined with primary schools. A survey of informal schools conducted by Muungano wa Wanavajiji in both Mukuru kwa Njenga and Mukuru kwa Reuben in 2015, identified 6 informal schools in Riara, out of which 1 was placed within the enumeration area: the Riara Tumaini school, located in cluster E.

Based on the provisions envisaged in the Physical Planning Handbook of the Kenyan Ministry of Lands (Republic of Kenya 2007) this report hypothesises that one nursery schools of 150-260 children will be required for a population of 2500. One primary school should be provided for each 3,500 people. Riara has an estimated population of approximately 7,400 people. It therefore follows that there ought to be at least 3 nursery schools and 2 primary schools. Ideally these should be public and free for all.



## Remarks on poverty

The World Bank defines poverty in absolute terms as living on less than US\$1.25 per day. Information on income was considered unreliable and hard to obtain in the enumeration and was therefore not included in the surveyed data. Nevertheless environmental and social basic poverty level indicators in the enumeration area such as unemployment, rent ranges, age pyramid, morbidity rates, population density, health facilities, sanitation infrastructure and education facilities, help define the enumeration area as an ostensibly urban poor area.

The second phase of the survey of the enumeration area will tackle poverty more directly through focus groups, with the objective of identifying the poorest inhabitants of the enumeration area starting from the abovementioned indicators.

## Existing facilities

The current common social facilities in the enumeration area are places of worship such as churches and mosques. These places are also used as makeshift places for public meetings and other forums. The National Youth Service office in Riara also serves as a public facility where people meet and interact. Most of the functions and meetings in the area are held in open spaces, churches, people's homes and on the streets.

According to the Physical Planning Handbook, the demand for social and community facilities has to be estimated at around 1 hectare for every 20,000 people. With an estimated population of about 7,400 the enumeration area will need to dedicate about 0.35 hectares to facilities.

Given that the area of SEPU Riara, the target area for a possible upgrade scheme, measures about 13.5 acres. this attributes to 2.6% of Riara SEPU. These facilities include playgrounds and public social halls among others.

Despite the fact that private and communal facilities are not providing services with the same degree of equality and accessibility of public ones, the presence of facilities which can claim some kind of ownership of the land can assist the community in negotiating for land titling and fighting eviction threats, by demonstrating its continuous presence in a place.





**institutions**



0 20 40 80 120 160  
m

 institutions



## Water services and supply

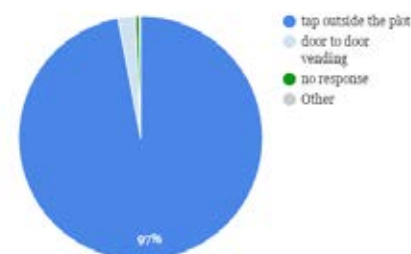
The provision of basic service and infrastructure to households is a major issue in upgrade schemes. Disrupting the informal agreements of cartels within slums can be one of the hardest things to achieve. In the case of the enumeration area water is mainly provided from the Nairobi City County Water and Sewerage Company to some individuals who resell it to the rest of the inhabitants. The company pipes the water up to the water tanks and provides the metres used to bill the individual water providers. The residents in turn buy the water from the water providers, in a mix of formal and informal provision of service.

About 97% of the residents interviewed get water from taps outside the plots while 2.3% get water from door to door vending by water hawkers and 0.1% have taps inside plots. 0.5% did not respond and 0.1% got water from other sources. These proportions are similar for institutions and businesses.

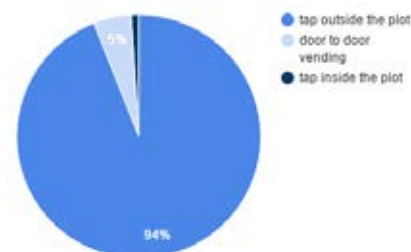
The businesses surveyed take their water from different sources: about 94% from taps outside the plot, 5% from door to door vending by water hawkers and 1% from a tap inside the plot.

About 93% of the institutions interviewed source their water from taps outside the plot while 7% source from a tap inside the plot.

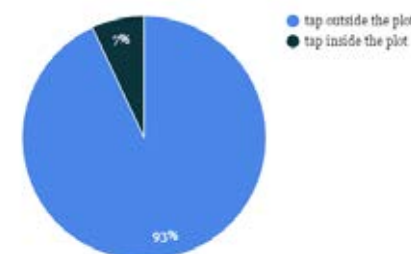
**chart 20: source of water of households**



**chart 21: source of water of businesses**



**chart 22: source of water of institutions**



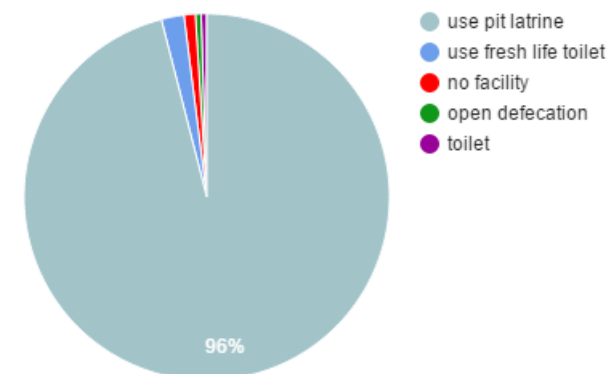
## Sanitation in the households

The sewage system is absent in the entire enumerated area and the prevalent type of sanitation facility is the communal pit latrine, shared by the households of each plot. This makes the maintenance of the sanitation infrastructure dependant on manual emptying, keeping it below the sanitation standard of normal sewage systems. The distribution of the types of toilets used by each household is as follows: about 96% use pit latrines, 2% use Fresh Life toilets, 1% have no facility, 0.5% defecate in the open while 0.5% claim to use other type of sanitation facilities.

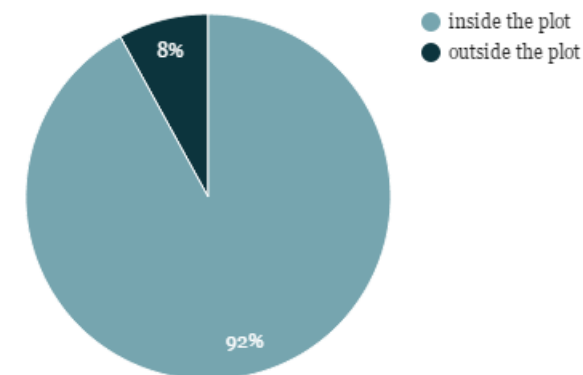
About 92 % of the households interviewed said the toilets they use are located inside the plots while 8% are located outside the plot as shown in chart 24. However, the toilets inside the plots tend to be poorly maintained e.g. they become full and spread bad odours into the houses.

About 95% of the toilets used by households in Riara are communal, while 5% are private toilets.

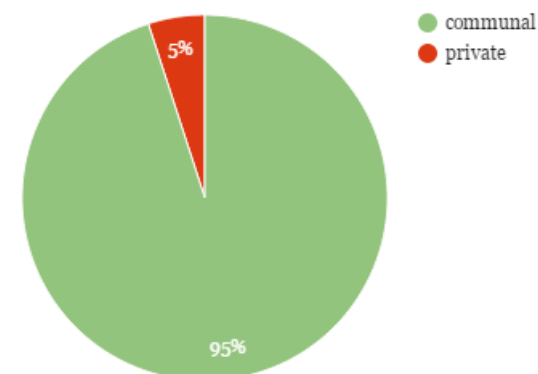
**chart 23: types of latrine in households**



**chart 24: location of latrine for households**



**chart 25: ownership of latrine for households**



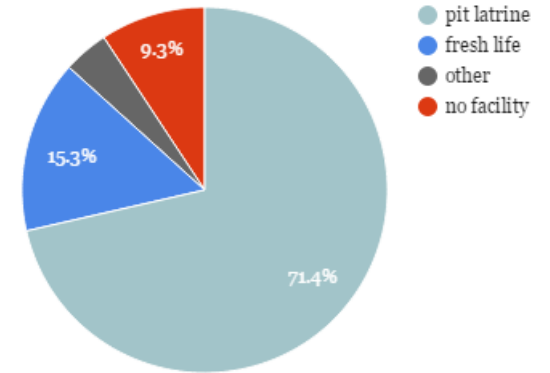
## Sanitation in businesses

The businesses interviewed use different type of toilets, 71.4% use pit latrine, 15.3% use fresh life, 4% use other type of toilets and 9.3 have no facility.

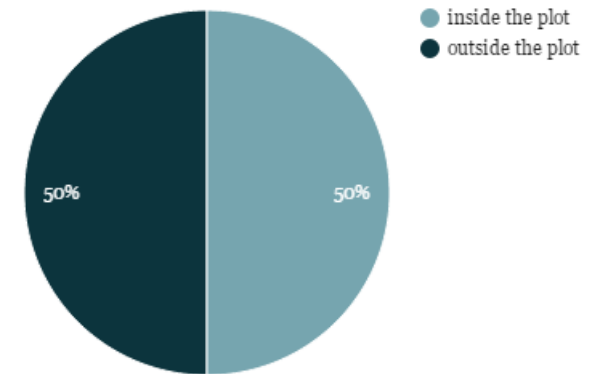
About 50 % of the businesses which answered declared they use a sanitation facility located inside the plots while the other 50% used one located outside.

About 86% of the toilets used by businesses in the enumerated area are communal, while 14% are private toilets.

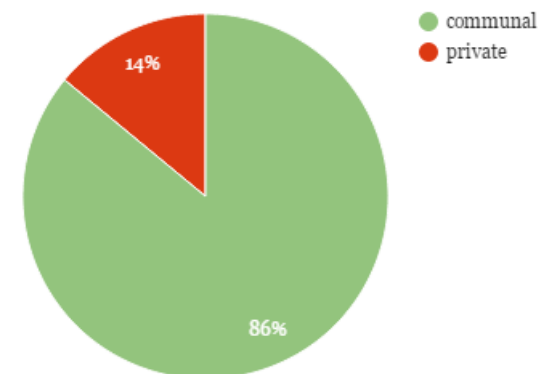
**chart 26: types of latrine in businesses**



**chart 27: location of latrine for businesses**



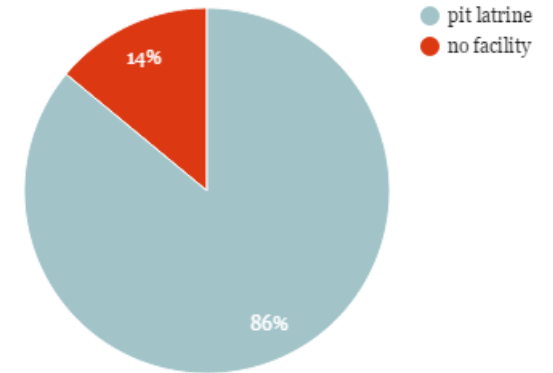
**chart 28: ownership of latrine for businesses**



## Sanitation in institutions

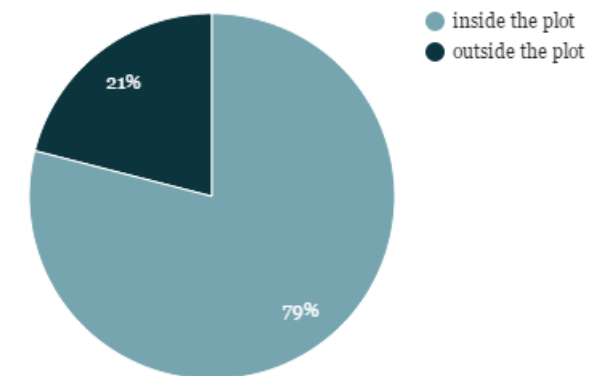
About 86% of the institutions interviewed use pit latrine type of toilet while 14% have no facility as shown on the chart below.

**chart 29: types of latrine for institutions**



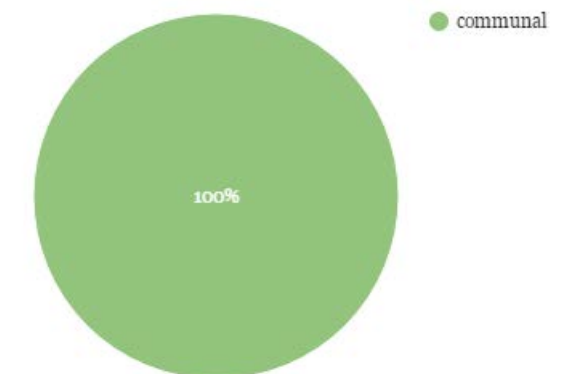
About 79 % of the institutions surveyed declared the toilets they use are located inside the plots, while 21% used toilets located outside the plot.

**chart 30: location of latrine for institutions**



All the sanitation facilities used by institutions are communal.

**chart 31: ownership of latrine for institutions**





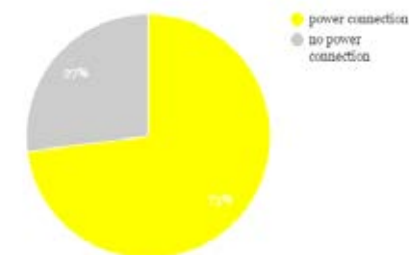
# Electricity

The most prevalent method used to acquire and distribute electricity in Riara is to illegally connect households to the the electricity service lines. A few of the residents have direct connection from the Kenya Power grid with their own meters and re-sell power, becoming the major supplier of electricity (“sambaza”). The sambaza method relies on makeshift connections with exposed cables hanging over the shacks. It is unsafe and can cause accidents like fires caused by short circuits or deaths by electric shocks.

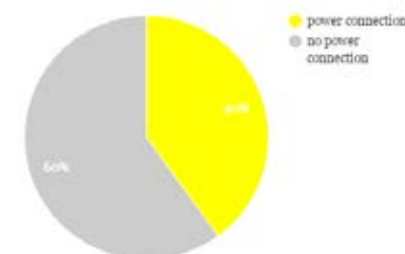
About 73% of the households have access to electricity but they do not have their own metre. For the businesses only 44% have access to electricity while for the institutions only 29% have access to electricity as shown on the charts.

The monthly expenditure on electricity is between Ksh. 250 to Ksh. 2800 with a crossing average of approximately Ksh.400 for the enumeration area.

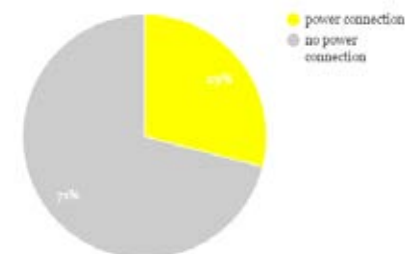
**chart 32: households connected to the electricity grid**



**chart 33: businesses connected to the electricity grid**



**chart 33: institutions connected to the electricity grid**



## Planning guidelines

For the initial planning assumptions on the SEPU area it is proposed to adopt the concept of the “mat” as conceived by Alison Smithson (1974). This concept was inspired by vernacular northern African and Greek architecture and city building in order to reproduce the complexity of old settlements in modern planned ones. It was described by the author as follows:

“mat-building can be said to epitomize the anonymous collective; where the functions come to enrich the fabric, and the individual gains new freedoms of action through a new shuffled order, based on interconnection, close knit patterns of association and possibilities for growth, diminution and change”.

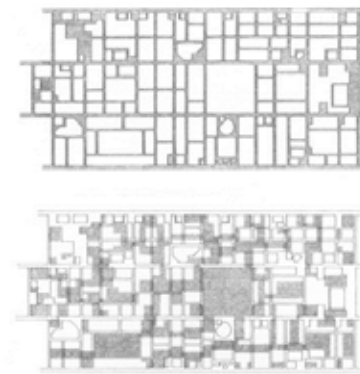
The concept uses a textile metaphor hinting at the idea that there is a grid acting like a “loom”, which is the fixed structure on which a variety of possible spatial patterns can be “woven”.

In practical terms mat or mat-building is a large-scale, high-density structure or complex of structures organised on the basis of an accurately modulated grid, with similar criteria and indexes of floor area and volume ratios, but within which variations can happen. The grid, which provides the basic spatial order, cuts the area in squares of equal dimension. Within each of those squares variations of building, typologies with different spatial arrangements can be built. Thus the mat approach would provide rational and orderly development, as well as complexity and variety.

In the case of SEPU it is proposed to adopt a grid that traces the dimensions of the spontaneous aggregation of shacks in the enumerated area, that is a grid of about 44 x 44 metres. The grid would identify 24,5 squares.

In a first phase the planning would identify a decanting area, possibly in the KPLC in the proximity of the SEPU area. There temporary shacks would be built on an area equal to two squares of 44 x 44 metres.

**examples of “mats”**  
**Free university Berlin 1963-73,**  
**reconstruction of Frankfurt**  
**1963.**  
**Candilis, Josic and Woods**



**the “mat” grid applied to  
the SEPU area**



100m



## the phasing

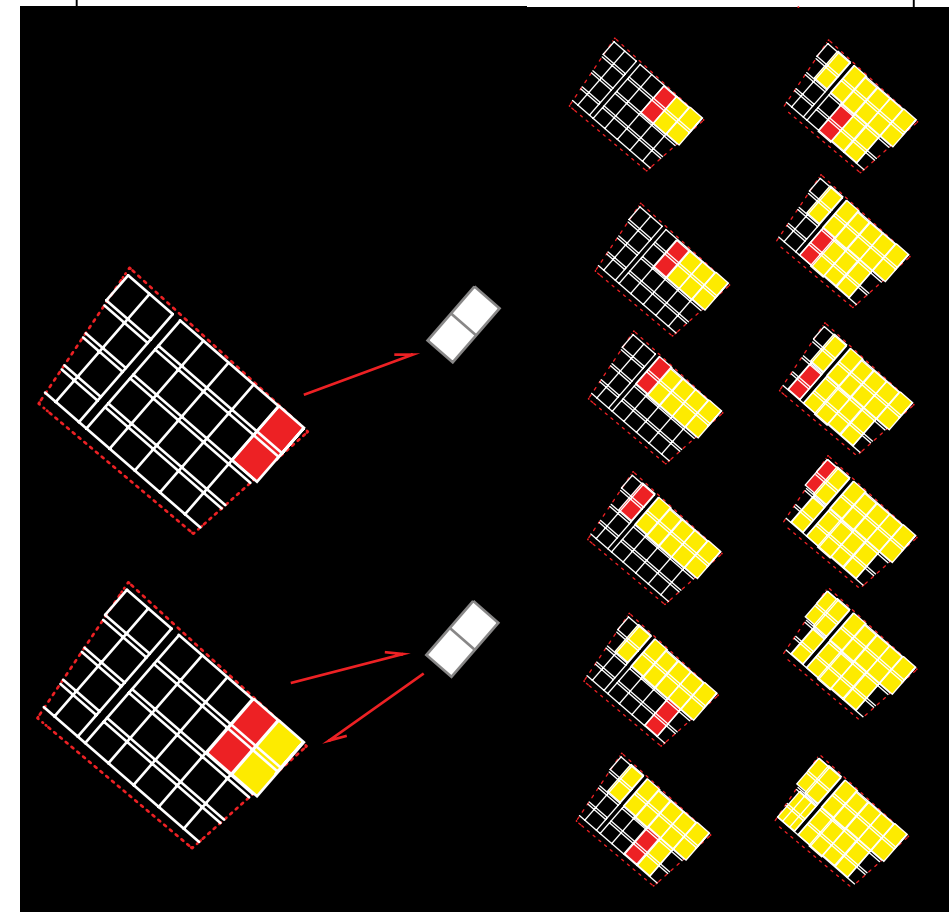
The decanting area would then be used to empty two of the grid squares at a time, and allow the building of two squares of the “mat”. This gradual substitution of two squares at a time would mark the timeline of the scheme implementation.



Each square of the mat should provide around 90 dwelling units. These figure can be balanced out by providing different, more or less dense, options for the spatial configuration of each square.

Different typologies are sketched out to provide hypotheses for the initial phases of the planning, taking into consideration the position of the squares in the mat. A typologies are fit for the ends of the arrays, while B typologies are fit for the central segment of the arrays.

As an initial approach, considering that the cost of construction per square metres will be around 15,000 Ksh, and a maximum affordability level at around 350,000 Ksh the units will be between 23 and 30 square metres.

Some initial typologies of square composition are visually presented for further verification in the next phases of the planning.



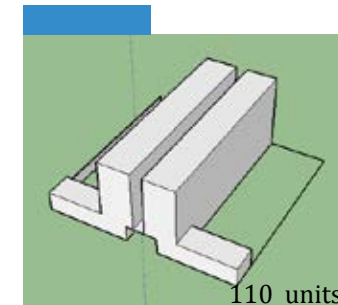
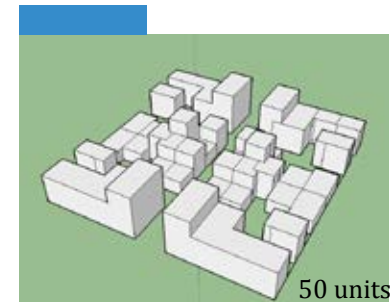
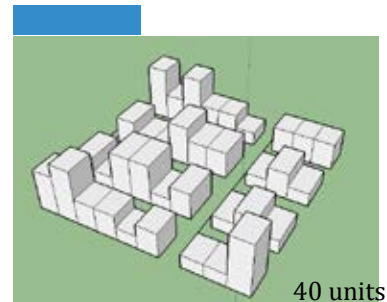
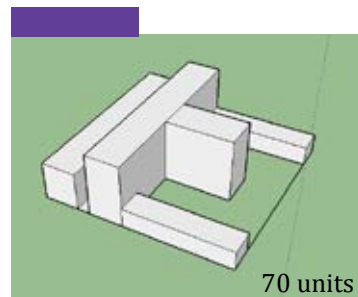
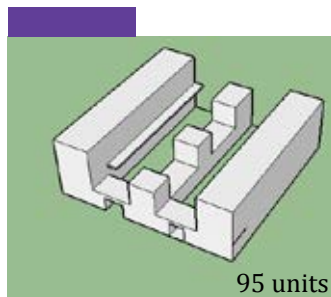
 demolition  
 reconstruction



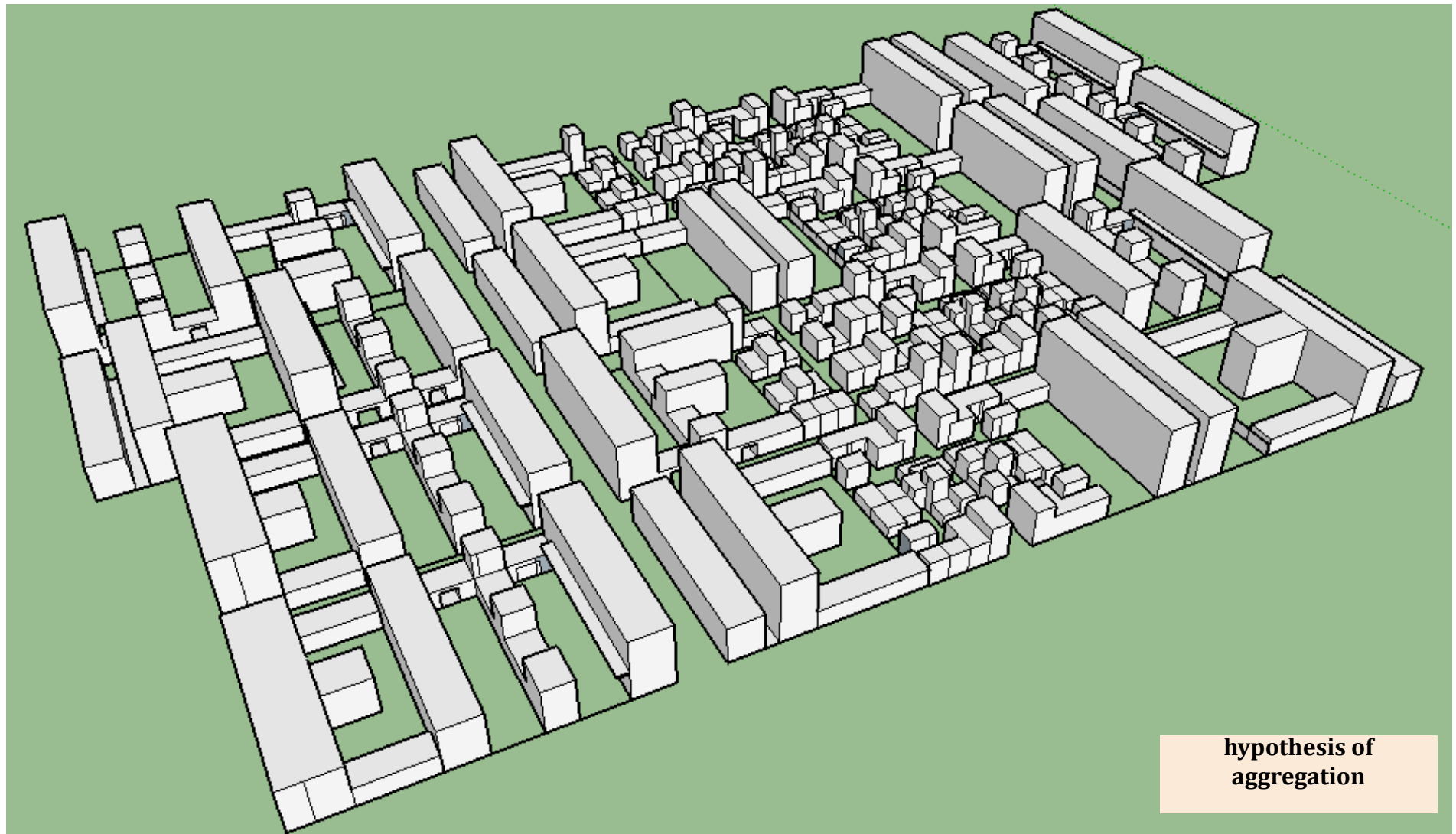


typologies A  
typologies B

100m







# annex 1\_ extract from the land title



REPUBLIC OF KENYA

## THE REGISTRATION OF TITLES ACT (Chapter 281)

GRANT NUMBER I.R. 88 619

ANNUAL RENT: Kshs.72/-

TERM: 99 years from 1.7.1996

(REVISABLE)



DEPARTMENT OF LANDS  
DOCUMENT SCANNED

KNOW ALL MEN BY THESE PRESENTS that THE PRESIDENT OF THE REPUBLIC OF KENYA hereby Grants unto SCHOOL EQUIPMENT PRODUCTION UNIT a company limited by Guarantee and having its registered office at NAIROBI (Post Office Box Number 25140)

(hereinafter called "the Grantee") ALL that piece of land situate in the City of Nairobi in NAIROBI AREA District containing by measurement five decimal one nought nought (5.100) hectares/0.0000 or thereabouts that is to say L.R. No. 209/14009

which said piece of land with the dimensions abutments and boundaries thereof is delineated on the plan annexed hereto and more particularly on Land Survey Plan Number 238841 deposited in the Survey Records Office at Nairobi

### TO HOLD

for the term of ninety nine (99) years from the First day of July One thousand nine hundred and ninety six

SUBJECT to (a) the payment in advance on the first day of January in each year of annual rent of shillings seventy two (kshs.72/-) (Revisable) v.e.f. 1.7.1996

(b) the provisions of the Government Lands Act (Chapter 280) and (c) the following Special Conditions (namely):

P.T.O.

FORM 4 (Inoffensive Industry)

### SPECIAL CONDITIONS

1. No buildings shall be erected on the land nor shall additions or external alterations be made to any buildings otherwise than in conformity with plans and specifications previously approved in writing by the Commissioner of Lands and the Local Authority. The Commissioner shall not give his approval unless he is satisfied that the proposals are such as to develop the land adequately and satisfactorily.
2. The Grantee shall within six calendar months of the actual registration of the Grant submit in triplicate to the Local Authority and the Commissioner of Lands plans (including block plans showing the positions of the buildings and a system of drainage for disposing of sewage surface and sullage water) drawings elevations and specifications of buildings the Grantee proposes to erect on the land and shall within 24 months of the actual registration of the Grant complete the erection of such buildings and the construction of the drainage system in conformity with such plans drawings elevations and specifications as amended (if such be the case) by the Commissioner PROVIDED that notwithstanding anything to the contrary contained in or implied by the Government Lands Act if default shall be made in the performance or observance of any of the requirements of this condition it shall be lawful for the Commissioner of Lands or any person authorized by him on behalf of the President to re-enter into and upon the land or any part thereof in the name of the whole and thereupon the term hereby created shall cease but without prejudice to any right of action or remedy of the President or the Commissioner of Lands in respect of any antecedent breach of any condition herein contained.
3. The Grantee shall maintain in good and substantial repair and condition all buildings at any time erected on the land.
4. Should the Grantee give notice in writing to the Commissioner of Lands that it is unable to complete the buildings within the period aforesaid the Commissioner of Lands shall (at the Grantee's expense) accept a surrender of the land comprised herein:
  - (i) Provided further that if such notice as aforesaid shall be given within 12 months of the actual registration of the Grant the Commissioner of Lands shall refund to the Grantee 50 per centum of the stand premium paid in respect of the land, or
  - (ii) at any subsequent time prior to the expiration of the said building period the Commissioner of Lands shall refund to the Grantee 25 per centum of the said stand premium. In the event of notice being given after the expiration of the said building period no refund shall be made.
5. The land and the buildings shall only be used for inoffensive light industrial purposes with ancillary offices and stores.
6. The buildings shall not cover more than 90 per centum of the area of the land or such lesser area as may be laid down by the Local Authority in its by-laws.
7. Accommodation not exceeding 100 square feet may be provided for a caretaker or night watchman or such lesser area as may be laid down by the Local Authority in its by-laws.
8. The land shall not be used for any purpose which the Commissioner of Lands considers to be dangerous or offensive.
9. The Grantee shall not subdivide the land without the prior consent in writing of the Commissioner of Lands.
10. The Grantee shall not sell transfer sublet charge or part with the possession of the land or any part thereof or any buildings thereon except with the prior consent in writing of the Commissioner of Lands. No application for such consent (except in respect of a loan required for building purposes) will be considered until Special Condition No. 2 has been performed.
11. The Grantee shall pay to the Commissioner of Lands on demand such sum as the Commissioner of Lands may estimate to be the proportionate cost of constructing all roads and drains and sewers serving or adjoining the land and the proportionate cost for the supply of both the water and the electric power to the land and shall on completion of such construction and the ascertainment of the actual proportionate cost either pay (within 30 days of demand) or be refunded the amount by which the actual proportionate cost exceeds or falls short of the amount paid as aforesaid.
12. The Grantee shall from time to time pay to the Commissioner of Lands on demand such proportion of the cost of maintaining all roads and drains serving or adjoining the land as the Commissioner may assess.
13. Should the Commissioner of Lands at any time require the said roads to be constructed to a higher standard the Grantee shall pay to the Commissioner on demand such proportion of such construction as the Commissioner may assess.

1246

# REPUBLIC OF KENYA

DISTRICT OF NAIROBI AREA

Locality City of Nairobi

Reference Map South A-37

Bearings	Distances

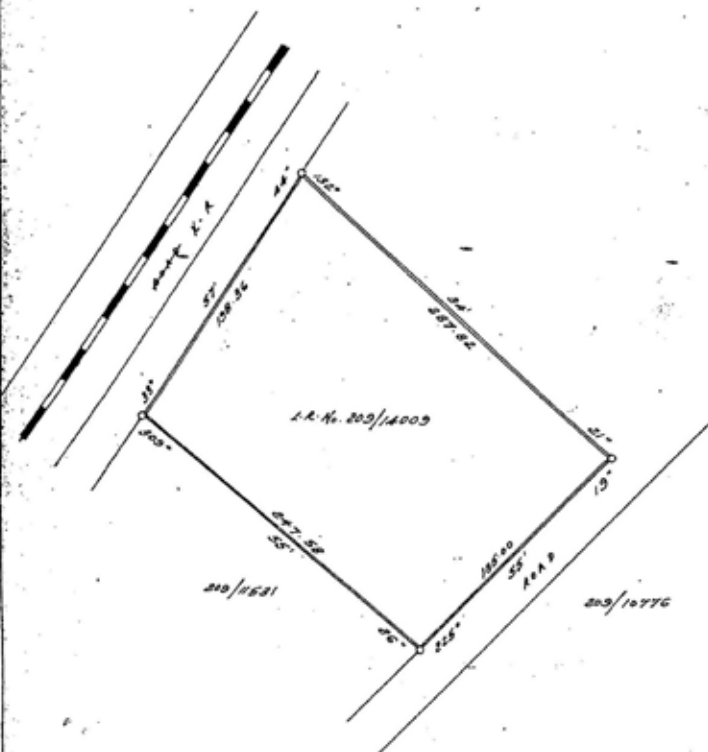
Land Reference No. 203/14009

(Orig No.

Sub division No. (Orig No.

of Section No.

Area = 5.100 Ha. (Approx.)



M.J. Rigan  
Head Surveyor

for Director of Surveys

Nairobi 21<sup>st</sup> Nov 2001

DEED PLAN No. 238841

Scale 1 in 2500

Drawn by  
Checked by

14. The Grantee shall pay such rates taxes charges duties assessments or outgoings of whatever description as may be imposed charged or assessed by any Government or Local Authority upon the land or the buildings erected thereon including any contribution or other sum paid by the President in lieu thereof.

15. The President or such person or authority as may be appointed for the purpose shall have the right to enter upon the land and lay and have access to water mains service pipes and drains telephone or telegraph wires and electric mains of all descriptions whether overhead or underground and the Grantee shall not erect any buildings in such a way as to cover or interfere with any existing alignments of main or service pipes or telephone or telegraph wires and electric mains.

16. The Commissioner of Lands reserves the right to revise the annual ground rent payable on the 1st January, 1989 and thereafter at the expiration of every ten years of the term. Such rental will be at the rate of 2 per centum of the unimproved value of the land as at 31st December, 1988 as assessed by the Commissioner of Lands or at the rate in force on the 31st December, 1988 whichever is the greater.

1612x The Commissioner of Lands reserves the right to revise the annual ground rent payable hereunder at the expiration of every ten years of the term. Such rental shall be at a rate to be determined by the Commissioner of Lands of the unimproved value of the land as at the end of every tenth year of the term.

SAMMY SILAS KIMENI MUAITA

IN THE WITNESS WHEREOF I,

Commissioner of Lands have by order of the

President hereto set my hand this

6<sup>th</sup> day of MARCH 2002

in the presence of:

*[Signature]*  
J. M. MUKIA  
REGISTRAR OF TITLES

DRAWN BY:  
JACKSON K. MUKIA  
SENIOR REGISTRAR OF TITLES  
P.O. BOX 30088  
NAIROBI

LAND TITLES REGISTRY - NAIROBI REGISTRY  
REGISTRATION OF 1112 & 517

REGISTERED AS No. L.R. 88619/1

PRESENTED 6<sup>th</sup> May 2002

WITNESSED BY:  
K.N. GICHUHA  
REGISTRAR OF TITLES

2) THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THE TITLE  
Created by Registrar of Titles claiming  
interest under Section 65(1) (f)

Presentation No. 2348 Date of Registration: 26-11-2008

1. I hereby certify that this is a true copy of the original

Stamp duty Sh 500/-

Copying fee Sh 20/-

1st February 2012

*[Signature]*

Registrar  
S. Maina 235



Affix adhesive revenue stamps in payment of the fee here

1572/2012

For Official Use Only

No.

Received:

Form Y - Registration of Titles Act (Chapter 281), rule 3  
Form J - Government Lands Act (Chapter 280), rule 2  
Form J - Land Titles Act (Chapter 282), rule 3  
Form C - Registration of Documents Act (Chapter 285), rule 2  
Form C - Land (Perpetual Succession) Act (Chapter 286), rule 4

REPUBLIC OF KENYA  
APPLICATION FOR COPY

TO: THE REGISTRAR,

LAND REGISTRY, NAIROBI/MOMBASA

Our Reference:

I/WE request you to supply

Certified/Uncertified

copy/copies of the following:

LR No. 209/14009  
IR No. 88619

\* Adhesive revenue stamps at the rate of Sh. 2 per certified copy are pinned to this application to meet the stamp duty payable thereon.

\* Adhesive revenue stamps to the value of Sh. 50/- in payments of fees are affixed hereto.

Date: 31.1.2012

(Signature)

Insert below in BLOCK CAPITALS the name and address in Kenya to which the copy/copies is/are to be sent:

Name: LANGAT & CO. ADVOCATES

Postal address: BOX 2484-00200 NAIROBI

\* Delete if not applicable.

(For completion in the Registry)

For Official Use Only

Despatched:

The above-mentioned copy/copies is/are forwarded herewith.

The above required cannot be met because

Date: 20


Registrar

TO BE SUBMITTED IN DUPLICATE



:: Kenya Revenue Authority - Integrated Tax Management System ::

Page 1 of 1

 <b>KENYA REVENUE AUTHORITY</b>		<b>Taxpayer Registration Certificate</b>		Document Number: 1755649
<b>General Data of the Taxpayer</b>				
<b>Name</b> LUMWACHI WYCLIFFE IMBWAGAH		<b>Taxpayer Category</b> DOMESTIC		
<b>Taxpayer PIN</b> A0057377293		<b>Registration Date</b> Sep 2, 2010		
<b>Activity</b> Others				
<b>Contact Information</b>				
<b>District</b> NAIROBI WEST		<b>City/Town</b> NAIROBI CITY (WEST)		<b>Building</b> ACK GARDEN HOUSE
<b>Street / Road</b> 1ST NGONG AVENUE		<b>Area Name</b> 20		<b>LR Number</b> 00200 - 2484
<b>P.O. Box</b> 00200 - 2484		<b>Main Email Address</b> wlumwachi@yahoo.com		
<b>Tax Obligation</b> INCOME TAX INDIVIDUAL				
<b>Obligation Register Date</b> DEC 31, 2009				
*This certificate is computer generated and therefore not signed. It is valid certificate issued under the authority of KRA.				





## annex 2\_ request of eviction



### SCHOOL EQUIPMENT PRODUCTION

MAKERS OF SCIENCE EQUIPMENT AND TEACHING AIDS  
P.O. Box 25140 - 00603 NAIROBI Telephone: +254 - 020 - 3869279,  
Cable: SEPU Fax: 3861232  
E-mail: [sepu@wananchi.com](mailto:sepu@wananchi.com) Website: [www.sepukenya.com](http://www.sepukenya.com)  
V.A.T. No. 0131570F PIN No.: P0006094811  
Office & Workshops: Inside University of Nairobi, Kenya Science Campus, Ngong R

SEPU/DC/2010

23<sup>RD</sup> MARCH 2010

THE DISTRICT COMMISSIONER  
P.O. BOX 30040  
NAIROBI

#### RE: LAND NO. L.R NO. 209/14009 GRANT NO. LR 88619 EMBAKASI IMARA DAIMA.

The above land belongs to this Institution under the Ministry of Education. We are requesting you to assist us in removing the people who have encroached it, because we need to fence it and develop it later.

Attached is a copy of the title deed

Thank you

Perpetua S. Wanaswa  
ACTING MANAGING DIRECTOR

PSW/fnc

CC:

The District Officer  
Embakasi

The Permanent Secretary,  
Ministry of Education,  
Jogoo House 'B',  
Harambee Avenue,  
P.O. Box 30040,  
NAIROBI

Chair Person  
SEPU Board of Directors

*received*

*2010/03/23*  
*[Signature]*

## annex 3\_ association plea against evictions

Your Ref: SEPU/DC/2010

Date: 1/11/10

PERPETUA S. WANASWA

ACTING MANAGING DIRECTOR

Psw/fnc

Dear Madam,

RE: RESISTANCE OF REMOVAL OF PEOPLE FROM THEIR PLACES OF

RESIDENCE IN RIARA ZONE (VILLAGE)-MUKURU KWA NJENGA

We the residence of Rira Village in Mukuru under the umbrella organization, SAUTI YETU KWA NJENGA SETTLEMENT ASSOCIATION. It has come to our attention that the intended removal of people from their residences, is amounting to illegal eviction as attached.

We would like to inform you that we have been settling at Rira since 1988 and we have grown in population of about 30,000 persons and done several development projects including education institution and water /projects.

We would like to reiterate that we are going to resist any form of eviction from our homes that is contrary to the spirit of the new constitutional dispensation and the National land policy not forgetting the evictions guideline policy that is in the pipeline. To this effect we demand;

- i) Consultations and dialogue before any action on the ground
- ii) A relocation plan for the affected persons.

Yours Faithfully,

Signature.....  
Patrick O. Wandhala  
Chairperson  
Sauti Yetu Kwa njenga  
Settlement Association.

Signature.....  
John Njeru  
Secretary  
Sauti Yetu Kwa Njenga  
Settlement Association

CC:

1. The District Officer  
Embakasi
2. The permanent Secretary  
Internal Security



# annex 4\_ questionnaire form for housholds

3. The Acting Permanent Secretary  
Ministry of Education  
Jogoo House 'B'  
Harambee Avenue  
P.o Box 30040  
Nairobi
4. Chairperson  
SEPU Board of Directors
5. Ministry of Land
6. Ministry of Housing
7. Kituo cha Sheria
8. Pamoja Trust
9. Kenya National Commission of Human Right
10. Kenya Human Rights Commission



## FOMU YA WAKAAJI WA KIJILI CHA RIARA KUJIHESABU RIARA ENUMERATION FORM RESIDENTIAL

1	Jina la nguzo (Name of cluster)				
2	Numbari ya nyumba (House Number)				
3	Jina la mwenye kufanya shughuli ya kuhesabu (Name of enumerator)				
<b>PERSONAL AND HOUSEHOLD DETAILS</b>					
4	Jina la Mwenye kujaza hii fomu? (Name of Respondent)				
5	Kitambulisho cha mwenye kujaza (ID number of Respondent)				
6	Jinsia (Sex)	a) Mwanaume (Male)	b) Mwanamke (Female)		
7	Mwenye kujaza hii fomu ni nani? (Who is the respondent)	a) Kiongozi wa nyumba (Household head)			
		b) Bibi wa kiongozi wa nyumba (Spouse of household head)			
		c) Mtoto wa kiongozi mwenye nyumba (Child of Household head)			
		d) Jamii ya kiongozi wa nyumba (Relative of household head)			
		e) Ingine (Other)			
8	Jina la mwenye Nyumba (Name of structure owner)				
9	Nambari ya kitambulisho cha mwenye nyumba (ID of structure owner)				
10	Jinsia (Sex)	a) Mwanaume (Male)	b) Mwanamke (Female)		
11	Jina la mkaaji wa hii Nyumba (Name of occupant)				
12	Nambari ya kitambulisho cha mkaaji (ID of occupant)				
13	Jinsia (Sex)	a) Mwanaume (Male)	b) Mwanamke (Female)		
14	Ni watu wangapi wanakaa kwa hii nyumba? (How many people live in this house?)				
15	Matumizi ya nyumba (Structure Use)		Aina ya matumizi ya nyumba (Type) Grocery, Church, Mosque, Day care Center, School, Clinic, Dispensary, Chemist, bar, lodging, Retail shop, Wholesale, workshop, Lodging, Community hall, social hall, entertainment, Salon, Kinyozo etc)		
		Category	Sub - category	Type	Name
	Biashara (Business)	Services	Bank agent, M-pesa, Pool Place, Bar, Lodging, Video show, Hair salon, Barber shop		
		Food	Mama mboga, Cooked food vendors, Hotels, Butchery Nyama choma, Bakery		
		Workshop/Manufacturing	Carpenter, Electronic repairs, Garage, Welders.		
Goods		Retail shop, Wholesale shop, Boutique, Hardware shop			

			Plastics.		
	Huduma za jamii (Social Services)	Religious Institution.	Church, Mosque		
		Education Institution.	Day care centre/Nursery, Primary, Secondary school.		
		Health	Clinic, Chemist, Dispensary, Herbalist.		
		Social hall			
Makazi (Residential)					
Huduma (Utilities)		Water, Toilets.			
Inginde (Other)					
16	Uhusiano wa mkaaji wa hi nyumba na mwenye nyumba ni upi? ( Relationship of the occupant with the structure owner)	a)Mimi ni Mwenye hii Nyumba (Structure Owner)			
		b)Mpangaji (Tenant)			
		c)Mpanganji wa Mpangaji (Sub Tenant)			
		d)Jamii ya Mwenye Nyumba (Relative of the Owner)			
		e) Inginde (Other)			
17	Mwenye nyumba huishi wapi?(Where does the owner live?)	a)Kwenye hii ploti (In this plot)			
		b)Hapa kwa kijiji hiki (In this village)			
		c) Hapa Nairobi (In Nairobi)			
		c)Nje yaNairobi (Not in Nairobi)			
		d)Sijui (I don't know)			
		e)Kwinginde, taja (Other, state) _____			
18	Ikiwa wewe ni mpangaji, wewe unalipa kodi pesa ngapi kila mwezi? (If you are a tenant, how much do you pay as rent?)	a) Chini ya (Below)Ksh.500			
		b) Ksh 501 – 1000			
		c) Ksh 1001-1500			
		d) Ksh 1501-2000			
		e) Ksh 2001- 2500			
		e) Ksh 2501 and above.			
19	Uliishi wapi kabla uje hapa Mukuru? (Where did you live before you came here in Mukuru?)	a)Nimezaliwa hapa (Born here)			
		b)Kwa kijiji kingine hapa Mjini Nairobi (In another informal settlement in Nairobi)			
		c)Hapa Mjini Nairobi lakini si kwa kijiji (In a formal residential area within Nairobi)			
		d)Nje ya Mji (Out of Nairobi)			
20	Umeishi hapa Mukuru Kwa muda gani? (For how long have you stayed here in Mukuru?)				
SETTLEMENT AND STRUCTURE DETAILS					
21	Je Kwa nini uliamua kukuja kuishi hapa? (Why did you come here?)	a)Kodi ni bei nafuu (Affordable Rent)			
		b) Kikazi (Employment)			
		c)Ndoa (Marriage)			
		d)Kufurushwa kwa kijiji kingine(Evictions)			
		e)Inginde (Other)			
22	Je hii nyumba ina maji? (Does this household have Water?)	a)Ndio (Yes)		b)La (No)	
23	Je hii nyumba hupata maji kwa njia ipi?	a)Bomba la maji ya mtu binafsi (Individual tap water)			

	(What is the water source?)	b) Maji ya jamii ( tap inside the plot)	
		c) Tap outside the plot	
		d)Maji ya Kisima (Well)	
		e)Maji inayouuzwa na wachuuzi (Door to door vending by water hawkers)	
		f)Inginde eleza (Other , State)	
		24	Aina ya choo mnachokitumia (What type of toilet do you use?)
b)Choo ya Kawaida (Pit latrine)			
c)Hakuna ( No facility)			
d)Mstuni (Open in the bushes)			
f) Inginde eleza(Other)			
25	Choo unachokitumia iko wapi? (Where is the toilet located?)	Ndani ya ploti (Inside the plot)	
		Nje ya ploti (Outside the plot)	
26	Choo unachotumia kinamulukiwa na nani (Who owns the toilet?)	Private (Kibinafsi)	
		Public/Communal (Ya umma)	
27	Ni magonjwa gani husumbua jamii yenu? (What diseases does your family frequently suffer from)	a)	
		b)	
		c)	
		d)	
ELECTRICITY CONNECTION			
28	Je, una umeme/stima? (Do you have electricity connection?)	a)Ndio (Yes)	b)La (No)
29	Je, una mita yako ya umeme/stima? (Do you have your own electricity meter?)	a)Ndio (Yes)	b)La (No)
30	Je, unalipa pesa ngapi kwa matumizi ya stima kila mwezi? (How much do you pay for electricity per month?)		

For the Monitoring and Quality Checking Team

Checked by \_\_\_\_\_ Signature \_\_\_\_\_

Cross checked by \_\_\_\_\_ Signature \_\_\_\_\_

Date: \_\_\_\_\_

Hii fomu imechapishwa kupitia usaidizi wa shirika la Muungano Wa Wanavijiji.

annex 5\_ questionnaire form for businesses



FOMU YA WAKAAJI WA KIJILI CHA RIARA KUJIHESABU  
RIARA ENUMERATION FORM  
BUSINESS.

1	Jina la nguzo (Name of cluster)			
2	Numbari ya nyumba (House Number)			
3	Jina la mwenye kufanya shughuli ya kuhesabu (Name of enumerator)			
PERSONAL AND HOUSEHOLD DETAILS				
4	Jina la Mwenye kujaza hii fomu? (Name of Respondent)			
5	Kitambulisho cha mwenye kujaza (ID number of Respondent)			
6	Jinsia (Sex)	a)Mwanaume(Male)                      b)Mwanamke(Female)		
7	Mwenye kujaza hii fomu ni nani?(Who is the respondent)	a) Mwenye biashara (Owner of the business)		
		b) Mfanyi kazi kwa biashara (An employee)		
		c) Ingine (Other)		
8	Jina la mwenye Nyumba (Name of structure owner)			
9	Nambari ya kitambulisho cha mwenye nyumba(ID of structure owner)			
10	Jinsia (Sex)	a)Mwanaume(Male)                      b)Mwanamke(Female)		
11	Jina la Biashara (Name of the Business)			
12	Matumizi ya nyumba (Structure Use)	Aina ya matumizi ya nyumba(Type) Grocery, Church, Mosque, Day care Center, School, Clinic, Dispensary, Chemist, bar, lodging, Retail shop, Wholesale, workshop, Lodging, Community hall, social hall, entertainment, Salon, Kinyozi etc)		
		Category      Sub - category      Type      Name		
	Biashara (Business)	Services      Bank agent, M-pesa, Pool Place, Bar, Lodging, Video show, Hair salon, Barber shop		
		Food      Mama mboga, Cooked food vendors, Hotels, Butchery Nyama choma, Bakery		
		Workshop/ Manufactur ing      Carpenter, Electronic repairs, Garage, Welders.		
		Goods      Retail shop, Wholesale shop, Boutique, Hardware shop Plastics.		
	Ingine (Other)			
15	Uhusiano wa mwenye kuweka biashara hii na mwenye nyumba ni upi? ( Relationship of the business occupant with the structure owner)	a)Mimi ni Mwenye hii Nyumba (Structure Owner)		
		b)Mpangaji (Tenant)		
		c)Mpanganji wa Mpangaji (Sub Tenant)		
		d)Jamii ya Mwenye Nyumba (Relative of the Owner)		

		e) Ingine (Other)
16	Mwenye nyumba huishi wapi?(Where does the owner live?)	a)Kwenye hii ploti (In this plot)
		b)Hapa kwa kijiji hiki (In this village)
		c) Hapa Nairobi (In Nairobi)
		c)Nje yaNairobi (Not in Nairobi)
		d)Sijui (I don't know)
		e)Kwingine, taja (Other, state)_____
17	Watu wangapi hufanya kazi kwenye biashara hii? (How many people do work in this business?)	a). Watu wenye wanalipwa na biashara (Paid employees)_____
		b. Watu ambao ni wa familia ya mwenye kuweka biashara (Family members)_____
17	Ikiwa wewe ni mpangaji, wewe unalipa kodi pesa ngapi kila mwezi? (If you are a tenant, how much do you pay as rent?)	a) Chini ya (Below)Ksh.1000
		b) Ksh 1001 – 2000
		c) Ksh 2001-3000
		d) Ksh 3001-4000
		e) Ksh 4001 and above.
18	Ulimiliki Kibanda hiki cha biashara au ploti kwa njia ipi? (Means of acquisition of land or structure)	a)Nilipata nafasi hapa nikajenga (I found space here and built a house)
		b)Nilinunua ploti hapa (Purchased land)
		c)Ndoa (Marriage)
		d)Ninalipa kodi ya nyumba (I am paying rent)
		Sababu ingine (Other reason)
19	Umfanya biashara hapa Mukuru Kwa muda gani? (For how long have you done business here in Mukuru?)	
SETTLEMENT AND STRUCTURE DETAILS		
20	Je Kwa nini uliamua kukuja kuishi hapa? (Why did you come here?)	a)Kodi ni bei nafuu (Affordable Rent)
		b) Kikazi (Employment)
		c)Ndoa (Marriage)
		d)Kufurushwa kwa kijiji kingine(Evictions)
		e)Ingine (Other)
21	Je hii nyumba ina maji? (Does this household have Water?)	a)Ndio (Yes)                                      b)La (No)
22	Je hii nyumba hupata maji kwa njia ipi? (What is the water source?)	a)Bomba la maji ya mtu binafsi (Individual tap water)
		b) Maji ya jamii ( tap inside the plot)
		c) Tap outside the plot
		d)Maji ya Kisima (Well)
		e)Maji inayouuzwa na wachuuzi (Door to door vending by water hawkers)
		f)Ingine eleza (Other , State)
23	Aina ya choo mnachokitumia (What type of toilet do you use?)	a) Choo ya maji iliounganishwa no Bomba la taka(WC connected to Public Sewer)
		b)Choo ya Kawaida (Pit latrine)

		c)Hakuna ( No facility)
		d)Mstuni (Open in the bushes)
		e) Ingine eleza(Other)
24	Choo unachokitumia iko wapi? (Where is the toilet located?)	Ndani ya ploti (Inside the plot)
		Nje ya ploti (Outside the plot)
25	Cho unachotumia kinamulukiwa na nani (Who owns the toilet?)	Private (Kibinafsi)
		Public/Communal (Ya umma)
ELECTRICITY CONNECTION		
25	Je, una umeme/stima? (Do you have electricity connection?)	a)Ndio (Yes)      b)La (No)
26	Je, una mita yako ya umeme/stima? (Do you have your own electricity meter?)	a)Ndio (Yes)      b)La (No)
27	Je, unalipa pesa ngapi kwa matumizi ya stima kila mwezi? (How much do you pay for electricity per month?)	

### For the Monitoring and Quality Checking Team

Checked by \_\_\_\_\_ Signature \_\_\_\_\_

Cross checked by \_\_\_\_\_ Signature \_\_\_\_\_

Date: \_\_\_\_\_

*Hii fomu imechapishwa kupitia usaidizi wa shirika la Muungano Wa Wanavijiji.*

# annex 6\_ questionnaire form for institutions



## FOMU YA WAKAAJI WA KIJIKI CHA RIARA KUJIHESABU RIARA ENUMERATION FORM INSTITUTION/SOCIAL SERVICES

1	Jina la nguzo (Name of cluster)	
2	Numbari ya nyumba (House Number)	
3	Jina la mwenye kufanya shughuli ya kuhesabu (Name of enumerator)	
PERSONAL AND HOUSEHOLD DETAILS		
4	Jina la Mwenye kujaza hii fomu? (Name of Respondent)	
5	Kitambulisho cha mwenye kujaza (ID number of Respondent)	
6	Jinsia (Sex)	a)Mwanaume(Male)      b)Mwanamke(Female)
7	Mwenye kujaza hii fomu ni nani?(Who is the respondent)	a) Mwenye/meneja wa taasisi (Owner/Manager of the Institution) b) Mfanyi kazi (An employee) c) Ingine (Other)
8	Jina la mwenye Nyumba (Name of structure owner)	
9	Nambari ya kitambulisho cha mwenye nyumba(ID of structure owner)	
10	Jinsia (Sex)	a)Mwanaume(Male)      b)Mwanamke(Female)
11	Jina la taasisi (Name of the institution)	
12	Matumizi ya nyumba (Structure Use)	Aina ya matumizi ya nyumba(Type) Grocery, Church, Mosque, Day care Center, School, Clinic, Dispensary, Chemist, bar, lodging, Retail shop, Wholesale, workshop, Lodging, Community hall, social hall, entertainment, Salon, Kinyozi etc)
	Category	Sub - category      Type      Name
	Huduma za jamii (Social Services)	Religious Institution.      Church, Mosque      .      .
		Education Institution.      Day care centre/Nursery, Primary, Secondary school.      .      .
		Health      Clinic, Chemist, Dispensary, Herbalist.      .      .
		Social hall      .      .      .
	Ingine (Other)	
13	Uhusiano wa mwenye taasisi hii na mwenye nyumba ni upi? (Relationship of the owner of the institution with the structure owner)	a)Mimi ni Mwenye hii Nyumba (Structure Owner) b)Mpangaji (Tenant) c)Mpanganji wa Mpangaji (Sub Tenant) d)Jamii ya Mwenye Nyumba (Relative of the Owner) e) Ingine (Other)
14	Mwenye nyumba huishi wapi?(Where	a)Kwenye hii ploti (In this plot)

	does the owner live?)	b)Hapa kwa kijiji hiki ( <i>In this village</i> ) c) Hapa Nairobi (In Nairobi) c)Nje yaNairobi ( <i>Not in Nairobi</i> ) d)Sijui (I don't know) e)Kwingine, taja ( <i>Other, state</i> ) _____
15	Watu wangapi hufanya kazi kwenye taasisi hii? (How many people do work in this Institution?)	a. Watu wenye wanalipwa na Institution (Paid employees) _____  b. Watu ambao ni wa familia ya meneja/mwenye taasisi (Family members) _____
16	Taasisi hii husaidia watu wangapi? (How many people does this institution serve?)	Male (Wanaume) _____  Female (Wanawake) _____  Total (Jumla) _____
17	Ulimiliki Kibanda hiki cha biashara au ploti kwa njia ipi? ( <i>Means of acquisition of land or structure</i> )	a)Nilipata nafasi hapa nikajenga ( <i>I found space here and built a house</i> ) b)Nilinunua ploti hapa (Purchased land) c)Ndoa (Marriage) d)Ninalipa kodi ya nyumba (I am paying rent) Sababu ingine (Other reason) _____
18	Ikiwa wewe ni mpangaji, wewe unalipa kodi pesa ngapi kila mwezi?  ( <i>If you are a tenant, how much do you pay as rent?</i> )	a) Chini ya ( <i>Below</i> )Ksh.1000 b) Ksh 1001 – 2000 c) Ksh 2001-3000 d) Ksh 3001-4000 e) Ksh 4001 and above.
19	Hii taasisi imekuwa ikisaidia watu wa Mukuru Kwa muda gani? (For how long has this institution been operating here in Mukuru?)	
SETTLEMENT AND STRUCTURE DETAILS		
20	Je Kwa nini uliamua kukuja kuishi hapa? ( <i>Why did you come here?</i> )	a)Kodi ni bei nafuu ( <i>Affordable Rent</i> ) b) Kikazi ( <i>Employment</i> ) c)Ndoa ( <i>Marriage</i> ) d)Kufurushwa kwa kijiji kingine( <i>Evictions</i> ) e)Ingine ( <i>Other</i> )
21	Je hii taasisi ina maji? ( <i>Does this institution have Water?</i> )	a)Ndio ( <i>Yes</i> )                      b)La ( <i>No</i> )
22	Je hii nyumba hupata maji kwa njia ipi?  ( <i>What is the water source?</i> )	a)Bomba la maji ya mtu binafsi (Individual tap water) b) Maji ya jamii ( <i>tap inside the plot</i> ) c) Tap outside the plot d)Maji ya Kisima ( <i>Well</i> ) e)Maji inayouuzwa na wachuuzi (Door to door vending by water hawkers)

		f)Ingine eleza ( <i>Other , State</i> )
23	Aina ya choo mnachokitumia ( <i>What type of toilet do you use?</i> )	a) Choo ya maji iliunganishwa no Bomba la taka(WC connected to Public Sewer) b)Choo ya Kawaida (Pit latrine) c)Hakuna ( No facility) d)Mstuni ( <i>Open in the bushes</i> ) e) Ingine eleza( <i>Other</i> )
24	Choo unachokitumia iko wapi? (Where is the toilet located?)	Ndani ya ploti (Inside the plot) Nje ya ploti (Outside the plot)
25	Choo unachotumia kinamulukiwa na nani (Who owns the toilet?)	Private (Kibinafsi) Public/Communal (Ya umma)
ELECTRICITY CONNECTION		
25	Je, una umeme/stima? (Do you have electricity connection?)	a)Ndio (Yes)                      b)La (No)
26	Je, una mita yako ya umeme/stima? (Do you have your own electricity meter?)	a)Ndio (Yes)                      b)La (No)
27	Je, unalipa pesa ngapi kwa matumizi ya stima kila mwezi? (How much do you pay for electricity per month?)	

### For the Monitoring and Quality Checking Team

Checked by \_\_\_\_\_ Signature \_\_\_\_\_

Cross checked by \_\_\_\_\_ Signature \_\_\_\_\_

Date: \_\_\_\_\_

*Hii fomu imechapishwa kupitia usaidizi wa shirika la Muungano Wa Wanavijiji.*



## References

UN Habitat, (2015), Streets as Tools for Urban Transformation in Slums, Nairobi.

University of Nairobi, (2015), Improving access to Justice and Basic Services in the Informal Settlements of Nairobi, Modelling Phase, Nairobi.

Alison Smithson, (1974), How to Recognise and Read Mat-Building, Mainstream Architecture as It Has Developed Towards the Mat-Building, in Architectural Design, 9, pp. 573-590.

Kenya. Ministry of Lands, Physical Planning Dept. (2007), Physical Planning Handbook, Nairobi.