PLANNING AN INTEGRATED URBAN SETTLEMENT:
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KALOBYEI NEW SITE, OR HOW TO BUILD A REFUGEE CAMP
SUSTAINABLE INTEGRATED TOWN
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ABSTRACT

The aim of this paper is to give a broad vision of the process the refugee camps are facing, regarding the constant failure of the refugee camps during the past decades, a new approach, more sustainable and integrated, aims to give response to the insecurity, dependency and instability existing in the camps. The need to build permanent settlements where the refugees and the host community can live together seems a more effective way to achieve this, as well as engaging the local community in the process for sustainable and participatory development.

For this matter, the case study of Kalobeyei New Site acts as a catalyst on how to consider an urban settlement of these characteristics. The case study is presented as an example of how this new approach is being handled, showcasing the good practices and errors learnt from it. This way, a set of guidelines and advice is built up, in order to be replicated in future settlements.

In the same way, the experience gained in this process enables us to acknowledge the problems and weaknesses; generating a list of recommendations that could be further applied and improved in the forthcoming projects.
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1. INTRODUCTION

Nowadays, the situation regarding refugee camps is in the spotlight, as most of them have been active for more than 15 years. This means, that the temporary character with which they are initially built is fading away.

In the same way, we have another trending topic, the New Towns. In the last years, a research on them has been started, showcasing the different approaches they have and their importance regarding the expected urban and demographic growth, by 2050\(^1\).

The combination of the previous two subjects, guides us to this paper’s main topic: Kalobeyei New site. This is an integrated sustainable new settlement, that will host the local and refugee communities. It is considered a new town, as it is being built from scratch, and also shares some characteristics with refugee camps, as its initial phase is conceived as an emergency phase.

Therefore, this case study is going to be broken down into different points that outlines an adequate path to follow, for the coming settlements. As this is the first case, not much bibliography is available. So this document serves as an initial step for the further research.

In order to describe the case, a series of basic principles, in line with new development and urban paradigms, have been followed. These are summarized into a 3 pronged approach: social, economic and environmental. So, different aspects will be presented, the legal framework on which the project stands, social limitations and requirements followed, emphasizing the importance of the gender approach and participatory planning. In another order, resilience strategies and environmentally friendly outcomes, and a series of urban components will be broken down.

Finally, a revision of the learnt lessons is provided. This

way, a first draft on how to design a sustainable an integrated settlement is presented, open to further modifications and feedback.

The objective of it is not to establish fixed guidelines, but to propose a series of measures that open the debate on how to tackle one of the migration problems, the refugee camps.

In brief, we find ourselves in a transition moment, where new paradigms appear, and the traditional protocols are questioned. In this framework, the presented proposal, Kalobeyei new site, opens a new line of work and a way to implement the new development approaches. With the only objective to contribute to the new paradigm, and offer a possible solution to the existing gap between the “humanitarian” (short-term) and “development” (long-term) worlds.
2. CONTEXT - REFUGEE CAMPS AND “NEW TOWNS”

The following chapter tries to describe two different elements, in order to understand the aim of the presented case study: an integrated urban settlement, where the refugee and host communities cohabit. The described two aspects are the refugee camps, and the “New Towns”. These subjects have been chosen, as they possess similar characteristic as Kalobeyei new town (the case study). On one side, we have a refugee community that is going to live for at least 5 years, in a site with similar conditions to those of a refugee camp, but with a “development” and long term approach. On the other, the new settlement is going to be planned anew, with particular interests and intentions, and following a series of principles that are supposed to achieve the desired objectives. Similarly, a “New Town” is conceived in the same way.

Finally, the case study of Kalobeyei new site will be presented showcasing the element it shares with the refugee camps and “New Towns”, so that its specificities are identified, emphasizing its innovative approach and potential interest.

2.1. REFUGEE CAMPS

REFUGEE CURRENT GLOBAL SITUATION

Nowadays, more than 60 million people are refugees living in camps or temporary shelters, mostly illegal settlements, all over the world. Even though, they are initially built as temporary solutions, the average lifespan of a refugee camp is close to 20 years, and a refugee stays, on average, up to 12 years. This means that most of these refugees are regarded to be living in a protracted situation.

According to the international community, a refugee is considered to be in a protracted situation when they have lived more than 5 years in exile, and they do not have any immedi-
The forecast of finding a long term solution to be repatriated, integrated locally or resettled 1. In Africa, this situation is mainly caused by unresolved conflict, or non-intervention. In the same way, as repatriation is seen as the only solution to refugee problems, because local integration is considered a threat, the relief model is perpetuated, and the situation is maintained 2. In fact, in most of the cases refugees are unable to go back to their home countries because they fear their persecution, they are at risk of discrimination, when belonging to minority groups, or simply because their own country is brutally destroyed 3. This implies that the access to better education, health and services in the country of asylum is ensured, contrary to their country of origin 4. More over, the lack of economic means and the “residual caseload” refugees that are too sick or too old, complicate the possibility of making the journey back.

To make matters more complex, the protracted situation is accompanied by the fact that refugee camps share a series of characteristics that hinder the adequate development of these people.

Firstly, their location is usually very crude, in peripheral border areas of asylum countries, under harsh weather conditions, and with a high level of insecurity. As a consequence, investors and governments pay no interest to them, preventing them from developing the economy and generating employment opportunities.

Secondly, as a result of the protracted situation, the proportion of people with special needs is over represented. Able-bodied men tend to leave the camp and seek for a job somewhere else to keep supporting their families. Also, the birth rate is high, increasing the number of children. And, therefore, the presence of people that have been born and raised in the camps is frequent, creating the paradox of refugees that have never been in their, so called, “homeland” 5.

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LIMITED RIGHTS

In addition to the previous conditions, the refugees find themselves very limited, as their rights are restricted. They cannot take advantage of basic human rights, including those established in the 1951 Refugee Convention and other international instruments. Even though, they are allowed to cross certain borders to escape from insecure situations, inside the asylum countries they find their movements limited, as well as their physical security, and civil and political rights. Also, as their legal status is not clear, their legal rights are in limbo. In the same way, their choices are limited, this relates directly to the fact that many long-term refugees are denied the right to take part in economic activities such as, agriculture, wage earning or income generating opportunities.

Refugees are obliged to remain in insecure areas, with reduced development possibilities, and relying on international aid. This dependency forces them to adopt survival strategies, which quite often are beyond the law and human rights.

On the one side, they tend to engage in exploitative employment, for minimal remuneration. This jeopardizes their situation, as they are exposed to violence and sexual abuse. On the other, as ultimate solutions, they carry out illegal and unsustainable farming by encroaching on land they have no right to use. They can also go for theft of crops, cattle and other resources from the local communities. Another alternative is leaving the camp and move to a town seeking for a job, an act that is usually illegal, and that promotes human smuggling and trafficking.

REMITTANCES

Taking all of the above into account, remittances sent by family members become essential, as they not only benefit the


10. Idem.
refugee population, but also have a positive effect in the socio-economic situation of the host communities. As a matter of fact, humanitarian agencies have observed that in the long term the presence of refugees revitalises the local trade, business, transport and agricultural production.

LONG TERM SOLUTIONS

As it can be seen in the previous points, the current situation and the measures adopted by the humanitarian agencies and governments are not providing an adequate solution to the refugee situation. After some reflection, it seems that the long term solutions should start by solving the root causes, such as ending armed conflicts. But, being realistic, some authors propose the promotion of voluntary repatriation as a functional alternative. This measure could appear as ideal, as we can “kill two birds with one stone”, refugee camps would come to an end, and the countries of origin will start developing and promoting economic activities, as a result of the population influx. In practical terms, this option may lead to further instability in the country, and could create risky environments for people who have good reasons not to go back to their homeland.

Thus, the potential for local integration should be emphasized, as it seems to be a viable solution. This would solve two problems at the same time, similarly to repatriation. Firstly, giving the situation of an area where there is a surplus of agricultural land, or economic opportunities, refugees could establish sustainable livelihoods, becoming independent from humanitarian aid. Secondly, as refugee camps are often seen as places where refugees live in better conditions than the surrounding local communities, the fact that generates social conflict and discomfort, local integration would dissolve these prejudices and promote more inclusive and integrated communities. This way, segregation would be avoided, and everyone will benefit equally from the existing services and facilities.
In brief, the challenges we are facing regarding the refugee situation are complex, and the decisions taken will affect the future development of refugees and host communities. The way aid is being provided, has proven to be a failure, as most projects do not create self-reliance and leave refugees in precarious social and economic situations. This leads us to look for long term solutions that will link the emergency phase with development projects, as independency is a key factor for refugees to develop their greater potential and live in sustainable conditions, that won’t interfere with the adequate development of the local communities. In the same way, the agencies’ approach to humanitarian situations should be revised, so that they can deliver more efficient, effective and sustainable economic, social and environmental planning and services for the refugees and the host communities. 

Likewise, society’s perception about refugee camps, being a short term and small-scale problem should be transformed into being a long-term opportunity. That way, instead of regarding camps as a burden for the region or the country, they could be seen as economic and social catalysts.

### 2.2. NEW TOWNS

“‘New Town’ can be defined in a broad manner as a new settlement developed in a planned manner.”

“New Towns have existed ever since humanity started organizing itself in settlements. Planned communities have always been the ultimate challenge for politicians and designers: what is the ideal city? What is the city of tomorrow? Planned cities are a perfect reflection of the ideas and ambitions of their time.”

Even though new towns have existed since the humans

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settled down, this matter was not deeply researched until the post war. Since the 50’s, new towns have been approached in many ways, depending on the subjacent interests and objectives they were designed for. To understand the reasons why new towns are designed, we are going to review chronologically diverse new towns, so that we can outline how and why new towns have an interest and create debate.

BEFORE THE COMMON ERA

Firstly, we need to go back to the first human settlements, established Before the Common Era, by the ancient civilizations. During this period, some of the most important ancient cities were built. In these cases, it is easy to observe how governors built these cities with political, strategic and economic interest, as cultures were being spread out, and the establishment of key cities mattered for their purposes.

For example, Nekhen, located in Egypt and founded around 3800 BCE, appeared due to the migration of nomads, who shifted to a more settled life. Other cities, like Massalia (current Marseille) and Priene, had a double purpose of defense and a port. Therefore, they kept moving not to lose their functions.

In another order, we find new towns created for political reasons. This is the case of Memphis, the first capital of united Egypt, were the 1st dynasty during the Old Kingdom was established. Or, Alexandria, ordered by Alexander the Great, to replace Naucratis. It was created as a Hellenistic center linking Greece and the Nile valley. In the same way as Alexandria, but for religious reasons, a new capital was constructed, by Nefertiti and her husband Amenhotep IV: Akhetaten. They renounced to polytheism and started worshiping a single God, Aten, in this new city.
As an exception to the previous reasons, we find Caral, the center of the Caral-Supe civilization in Peru, in contrast to the previous settlements, this city reveals “the emergence of the first complex society in the New World”. Apparently, people from different towns got together to create a peaceful community based in co-operation, and not for defensive reasons, as it is commonly believed.

POSTWAR GENERATION

After World War II Europe was reconstructing itself and due to the economic boost happening at the same time, there was a huge migration from the rural areas to the cities. In order to absorb the massive flow of people, New Towns were created. These were designed following modernist planning principles that are currently outdated and that generated dormitory towns, with no diversity in their programmes, and which forced people to move by car, as the sidewalks were unsafe for pedestrians or bicycles. The financing of these cities came from governments, limiting the possibilities for them to change and develop.

NEW NEW TOWNS

Contrary to the general understanding, contemporary New Towns share many components, and are quite homogeneous. Globalization has stripped cities of identity buildings and elements, making modern city’s culture difficult to understand.

On the one side, we find the astronomic figures of urban growth in Asia, that lead to the design of new smart cities, economic cities and high tech cities. All of which are based in economic principles and aim to absorb the increasing population moving to the cities.

On the other, New Towns in Africa and South America come from private investors, and are characterised as sprawl metropolises. They have been designed following formal urban de-

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sign, that contrasts heavily with the existing informality. Moreover, they are justified as not only a political or symbolic decision, but also as an economic and social choice. This fact arises many problems related to social segregation, and increasing inequalities.

So, taking into account this new situation, urban professionals have arrived to a consensus that: “we need to strive for cities that are: resilient and flexible, that can grow in an organic way, are inclusive and offer a habitat for all income groups within society; cities should be socially cohesive and diverse; they should cater for pedestrians and bicycles; they should be sustainable, energy efficient, greener, healthier and smarter; they should be organized not just by one party, but by many, including residents.”

NEW TOWNS REGARDING THE NEW URBAN AGENDA

Therefore, in the last Habitat III convention held in Quito in October 2016, the New Urban Agenda was presented as an instrument to get cities back on track. For this matter, a series of priorities for New Towns has been drafted, showing how the New Urban Agenda can be implemented:

- Emphasize innovation
- Regeneration based on existing qualities
- No city is an island
- New Towns should be inclusive
- Infrastructure and mobility for all, from the start
- Plan for flexibility
- Adopt green and water networks as the basis for the urban plan
- Combine top down and bottom up
- Use no universal model and no export of urban models
- Stimulate exchange between New Towns

So, following these premises, we can see that every ex-
experience is unique. Therefore, trying to find a standard solution would be a failure. We should, by contrast, study each case deeply, and find out the actual situation, needs and political and economic interests underneath the decision of designing a New Town. Furthermore, these New Towns should not be seen as islands, but should be integrated in the specific framework, where they belong and influence. Not only they have an impact at the local level, but also at a regional or even national level.

2.3. CASE STUDY - KALOBEYEI NEW SITE

The case study case we are going to analyse, is a hybrid between the two matters previously presented, it is a “permanent refugee camp” designed from scratch, like a New Town. This is a pioneer project that combines the elements existing in the refugee camps, as the initial phase is meant to host 60,000 inhabitants, but, with a development approach focused on the social, economic and environmental aspects that will result in the emergence of a New Sustainable Town.

CHALLENGES

This project is proposed in a moment where the development and the humanitarian sector are facing a change of paradigm. As it has been presented before, the refugee camps have failed in their objectives and have created chronic conditions of refugees in a protracted situation.

Moreover, the common practises resulted from an inadequate management of the camps, have led to environmental issues related to Climate Change. In addition, the global urbanization is leading to a situation where the 70% of the world’s population will be living in cities by 2050. Therefore, a revision should be made on the urban conditions, the living environment and future prospects, in order to redefine how our cities should

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29. Idem.

This fact is extremely important when facing the challenge of designing an integrated New Town where the refugee and host community will live together.

As a matter of fact, this moment regarding development, seems to give the ideal context to change our approach. After the conventions held in Paris (COP21), the implementation of the Sustainable Development Goals (SDG) in 2015, and the approval of the New Urban Agenda (NUA), approved during Habitat III, in 2016; we have a new framework to guide us towards better, more sustainable, inclusive, equal and environmentally friendly towns and cities.

On one side, the three pronged approach of the SDG, that puts the social, economic and environment issues on the table. On the other, the urban principles proposed by the NUA: the cities and towns must be for everyone, the right to adequate housing, gender equality, accessible urban mobility, disaster management and resilience, and sustainable consumption, combined with long-term, integrated urban planning and design, and sustainable financing frameworks and the cooperation of all levels of government, with the participation of civil society and stakeholders.

All of this together outlines a new paradigm that puts human beings and the environment in the centre.

NEW PARADIGM AND APPROACH

Therefore, the following study case is used as a pioneer example on how the previous principles can be implemented to achieve a comprehensive development in Kalobeyei. As you will see, this project generates a series of challenges in terms of management, acceptance, risk reduction, conflict resolution and adequate implementation, as well as, being an innovative proposal for linking an emergency phase with the development stage.
Furthermore, this project opens the window for future refugee camps, and tries to align with the new urban and development paradigm, responding to the lost link between the humanitarian and development worlds. Also, this project is an opportunity to change the perception societies have about refugee camps, as the commonly found problems can be transformed into development opportunities; and, in the same way, the idea of temporary camps as a failure and a burden for the governments and regions, can be changed to opportunities for building New Towns, full of possibilities, that have a catalytic positive impact.

Altogether, nowadays we found two different ways of approaching the demographic movements. On one side, temporary solutions are proposed, the refugee camps, that in the long-term generate more problems than solutions. On the other, some countries deal with the overgrowth by constructing New Towns. These are aimed to absorb the surplus population, accomplish subjacent objectives, mostly related to economy and politics. Finally, the analysed case study brings elements from both approaches together, generating a new alternative, that responds to the refugee and migration issue in a contemporary, sustainable and visionary solution, with a human-centered approach.
3. CASE STUDY: KALOBUEYEI INTEGRATED SETTLEMENT

The following chapter aims to give directions on how to approach a new permanent sustainable and integrated settlement for refugees and the host community, considering the Kalobeyei project as the main reference.

3.1. LIMITATIONS

Being a new concept linking refugee camps and new towns, the lack of existing bibliography is understandable. So, this paper is going to try to present the project as accurately as possible, in order to provide with the best information, and wishing to generate a basis for further research on the subject.

For this reason, the project is based in existing principles, that have been taken from the emergency protocols, and urban concepts, giving them a twist to fit them into the new approach. Therefore, it is possible that some of the taken decisions are insufficient, or rely too much in previous ways of doing. So, I would like to emphasize before proceeding to describe it, the innovation of the project and the challenge we are facing, as there are no previous examples or literature.

Having clarified the existing limitations, we continue to describe different aspects about the project that help us follow the planning and design process of Kalobeyei new site.

3.2. CHAPTER’S STRUCTURE

For this matter, a series of topics are going to be developed. In the first place, the legal framework is analysed, to show how the existing legal rules can help (or prevent) the development of a sustainable urban site. Moreover, when the framework is set, we need to create partnerships that enable the process to start and have a strong base and multidimensional approach, as
well as, being a key factor to implement the agreed project.

After having established these two points, we can pass to analyse the physical, environmental, social and economic factors that build the site up and help us achieve the ultimate goals. These factors are taken into account in line with the new development paradigm, framed in the Sustainable Development Goals, that has a multidimensional approach towards poverty.

This is the reason why the project is broken down into the following topics:

- Sustainability: risk reduction and urban resilience.
- Economy: food security and livelihoods.
- Social development: participatory planning and gender.

Finally, some urban concepts will be introduced, to round the project up. The urban design principles, which promote inclusive, integrated and sustainable cities. These help to understand how human scale planning is a key factor to achieve our ultimate goal: a sustainable town.

In the same way, a superficial analysis on the way basic services should be approached is presented, emphasising the fact that they are the basis on which the city is constructed, figurative and literally speaking, and how their design influences the people living on site and its future development.

Summing up, if the previous elements were to be taken into account, the design of a sustainable integrated urban settlement is more likely to be successful, promoting a new paradigm for sustainable and integrated settlements.

3.3. BACKGROUND

The Government of Turkana with the support of the Na-
tional Government of Kenya and the United Nations High Commissioner for Refugees (UNHCR) has been enabling the resettlement of refugees in Kakuma, Turkana County, for the last 26 years.

Turkana County is the largest county in Kenya and is home to thousands of refugees fleeing from civil strife across central and east Africa. Located in Turkana West Sub-County, the Kakuma Refugee Camp is one of the largest refugee camps in Africa. The camp was established in 1991 for South Sudanese refugees and currently consists of four settlement clusters: Kakuma Refugee Camps I, II, III, and IV. The nearby Kakuma Town is one of the nine urban areas in Turkana County. The Kakuma Refugee Camp currently hosts over 182,000 refugees, about 15% of the total population of the Turkana County making it the largest urban settlement in the county\[^34\].

While the refugees in the camp are mainly from South Sudan, the camp also hosts refugees from 14 other nationalities, including Ethiopians, Rwandans, Burundians, Congolese, Eritreans, Somalis, and Sudanese. Many of the refugees have spent up to 20 years in the camp. Since the outbreak of the ongoing conflict in South Sudan in December 2013, over 46,000 South Sudanese have sought refuge in the Kakuma Camp. In light of the ongoing violence in South Sudan and the Great Lakes Region, the refugee population in Kakuma camp is expected to continue growing.

The ongoing care and maintenance program has been based on the assumption that the refugee situation is temporary and that the solution for displacement would be found soon. As such, refugees have been receiving full assistance for their basic needs until durable solutions are found for them. With the displacement situation ongoing for over two decades, the current form of aid is not tailored to the needs, situation and prospects of refugees and host communities.

\[^34\] UNHCR, Kalobeyei Integrated Socio Economic Development Programme (KISED) Baseline Report, 2016
Although informal robust trade between the refugees and host community has emerged over time, the economic potential of the camp has not been exploited and the host community feels that it has not benefited much from the presence of refugees. The distribution of free food and non-food items from outside sources has also negatively impacted the county's economy.

Under this new paradigm shift, and with the view of reorienting the refugee assistance program, UNHCR has launched the Turkana Initiative on the Integration of the Refugee and Host Community Economies (the Turkana Initiative), in collaboration with the national and county governments, bilateral donors, UN agencies, NGOs and development actors. The overall objective of this initiative is to re-orient the refugee assistance program to contribute to:

- Improvement of the socio-economic conditions of the refugee and the host communities;
- Better prepare the host community to take advantage of emerging economic opportunities in upcoming extraction and potential irrigation-fed agriculture;
- Reduce over-dependence on humanitarian aid and prepare the refugees for durable solutions.\(^{35}\)

The development of the new refugee settlement in Kalobeyei provides a rare opportunity to increase the effectiveness of the refugee program by better integrating the refugee and host community economies and by delivering services in a manner that is integrated to the Kenyan National and Turkana County development planning.

As a result of this context, the Kakuma, Kalobeyei Integrated Socio Economic Development Programme (KKI SEDP) was created to facilitate collaboration and coordination between the government, UN agencies, development actors, NGOs, private sector and civil society to build sustainable services and economic

\(^{35}\) Idem.
opportunities in Kalobeyei, which will accommodate over 60,000 refugees and host communities.

The beneficiaries of KKISEDP will be refugees and host communities in the Kalobeyei and its surroundings. It is envisaged that a careful integration of community priorities in the local government planning process will ensure ownership and sustainability of the investments at the community and local government levels.

KKISEDP will focus on both short-term (humanitarian) and long-term (development) interventions. In order to be successful, there needs to be a long-term view to investments. On the other hand, there is the urgent need for an emergency humanitarian response in the context of the ongoing influx of South Sudanese refugees, which has led to the congestion of the Kakuma Refugee Camp.

As part of the emergency response, there is a need to settle at least 60,000 refugees in Kalobeyei. Properly planned and executed, the humanitarian response will have the added advantage of showing early results, which are critical to building confidence and the momentum needed for long-term investments.

3.4. LEGAL FRAMEWORK

The legal framework is one of the most powerful tools that influences the rest of the planning components. In the case study, we found ourselves in a peculiar situation that involves two parallel protocols.

EMERGENCY PROTOCOL

On the one side, we have the emergency protocol. This is the business-as-usual procedure when addressing a humanitari-
an emergency. The cluster approach\textsuperscript{36} is usually put in place, to ensure sufficient global capacity and effectiveness of response. In the same way, one of these clusters: the Camp Coordination Camp Management Cluster (CCCM), works as an inclusive group of actors in the camp management, whose aim is to encompass a holistic approach to camp response. These are accompanied by other measures established mostly by UNHCR, to ensure the good performance of the camps.\textsuperscript{37}

One of the main objectives of this phase is to give a rapid and effective response to the current crisis, trying to re-establish the basic needs of the affected population, in order to regain normality as soon as possible. This means that all the humanitarian tools are provided to the population in order to survive, thus, sustainability and autonomy are not a priority. Even though this is understandable because of the urgency of the situation, when this process expands on time, the humanitarian intervention tends to fail, as resources are scarce and the population lacks stability or safe livelihoods.

On the other hand, we find the legal planning process. This is the normative protocol every town should follow in order to be planned and developed in a controlled and sustainable way. This process varies from a country to another and it is inevitably linked to the level of governance and the country’s policies. This process usually follows the national guidelines, to provide a new or an existing settlement with a legal plan or extension. It would normally include the following points:\textsuperscript{38}

- An introduction: describing the current situation, the project’s purpose, physical, the scope, objectives, timelines and methodology.
- The policy, legal and institutional framework.
- A situational analysis: describing the socioeconomic, infrastructure and services context, as well as the site analysis.
- The planning proposals: outlining its objectives, design principles, land use and urban design framework.

\textsuperscript{36} NRC, “The camp management toolkit”, in The Camp Management Project, 2008 p.585

\textsuperscript{37} Ibid. p.587

\textsuperscript{38} UNHCR, Kalobeyei Integrated Socio Economic Development Programme (KISEDP) Baseline Report, 2016
• Implementation framework: describing the project’s approval and adoption, phasing, feasibility statement and monitoring and evaluation framework.

Even though this document seems fundamental for an adequate urban development, it is not followed in many cities.

Furthermore, it is noted that in contrast to the humanitarian protocol, the legal planning has a long term scope, and takes development aspects into consideration, yet, it can lack immediacy and current problem solving.

Hence, the challenge we are facing in our case study implies the combination of these two processes. Starting with the implementation of the emergency steps, which will be transformed and upgraded to meet the legal plan requirements. This one should, in the same way, be conceived in several phases, so that the transition between different stages can lead to a successful implementation. Thus, an incremental approach is needed, open to future modifications, and flexible enough to adapt to unexpected eventualities.

This innovative approach implies the reform of the existing legal frameworks and a change of mindset. A flexible system breaks with the traditional static way of planning a city. Fixed regulations and unchangeable layouts do not function in this context, as dynamic strategies and flexible schemes are required. For this reason, it is important to develop updated and adapted guidelines that help us in the planning process.

In our case, the Kenyan guidelines were used as the base legal framework. Moreover, the UN - Habitat urban principles and the SDG framework were followed, as a reference for sustainable urban settlements.


URBAN DESIGN PRINCIPLES

5 UN-HABITAT PRINCIPLES

- **ADEQUATE SPACE FOR STREETS AND PUBLIC SPACE IN AN EFFICIENT STREET NETWORK**
  - 30-35% to the street 15-20% public space / 50 % plots.
  - At least 18 km of street length.
  - At least 100 crossings per km2

- **MIXED LAND USE**
  - At least 40 percent of floor space allocated to economic use
  - Limited land-use specialization; single use blocks should cover less than 10% of any neighborhood

- **SOCIAL MIX**
  - 20-50% of residential area should be low cost housing
  - Each tenure type should be not more than 50% of the total

- **ADEQUATE DENSITY**
  - At least 15,000 people per km2, that is 150 people/ha

- **CONNECTIVITY**
  - Emphasis on walking distances and public transport

As it can be observed in the previous list, the 5 UN-Habitat principles aim to design more inclusive, and better connected cities and towns. Giving special attention to the mix use, to prevent ghettos and bedroom neighbourhoods from appearing, as well as promoting economic activities that activate the streets. This last point when combined with the first principle, offers a walkable city, that permits us move relatively short distances between home, work and services. Moreover, if this is integrated with affordable housing, services and transactions, vibrant street life and dynamic cities are generated.
In the same way, the UN-Habitat’s 3 pronged approach\textsuperscript{41} gives directions on how to design cities. It is based on taking three aspects into consideration: the legislative part, the urban planning and design and the economic plan. It is developed to enquire that urban plans do not lack a more comprehensive concept, and regard the urban issues included in a legal and economic reality. And, in this way, obtain more sustainable and integrated urban plans.

**New Urban Agenda**

“By 2050, the world’s urban population is expected to nearly double, making urbanization one of the twenty-first century’s most transformative trends. Populations, economic activities, social and cultural interactions, as well as environmental and humanitarian impacts are increasingly concentrated in cities, and this poses massive sustainability challenges in terms of housing, infrastructure, basic services, food security, health, education, decent jobs, safety and natural resources, among others.”\textsuperscript{42}

Even though, some improvements in the quality of life of millions of urban inhabitants, including slum and informal-settlement dwellers have been done since the United Nations Conferences on Human Settlements in Vancouver in 1976 and in Istanbul in 1996, and the adoption of the Millennium Development Goals in 2000, we are still far from adequately addressing these challenges. Therefore we should take advantage of the opportunities this context presents by readdressing the way cities and human settlements are planned, designed, financed, developed, governed and managed.

“The New Urban Agenda, will help to end poverty and hunger in all its forms and dimensions; reduce inequalities; promote sustained, inclusive and sustainable economic growth; achieve gender equality and the empowerment of all women and girls in order to fully harness their
vital contribution to sustainable development; improve human health and well-being; foster resilience; and protect the environment.

Therefore, the NUA emphasizes the importance of sustainable and integrated urban development; acknowledging the vision of cities for all, referring to the equal use and enjoyment of cities and human settlements, seeking to promote inclusivity and ensure that all inhabitants, of present and future generations, without discrimination of any kind,

For these matters, the new urban paradigm will transform its main concepts: transforming urban sprawl into compactness, segregation into integration and congestion into connectivity. In this case, again, we find a 3 pronged approach. In this case, the issue is tackled from a social, economic and environmental approach. And, its implementation is based in 3 points too: planning, governance and capacity building.

**Sustainable Development Goals**

“The 2030 Agenda for Sustainable Development gives a prominent role to urbanization and cities with the inclusion of a stand-alone goal for cities and human settlements. This comes as recognition that cities are a string that connects all other goals together; their density and economies of agglomeration link economy, energy, environment, science, technology and social and economic outputs.”

In line with the New Urban Agenda, the new development framework: the SDG, give high importance to cities in towns. In fact, around one third of their indicators have an urban component. But, there is a stand alone goal, number 11, that refers directly to urban settlements: Make cities and human settlements inclusive, safe, resilient and sustainable.
This specific goal is divided into 7 targets. As we are not going to proceed to describe each one of them in detail, as this is not the aim of this paper. Following you can find a brief description of them.

The 11th goal of the SDG follows similar principles as those presented in the UN-Habitat principles and the NUA. It also has a holistic approach, emphasizing the social, economic and environmental components in urbanity. Accessible (11.1), connected (11.2) and inclusive (11.3) cities are promoted. Cultural and natural heritage maintenance and safeguard (11.4) is encouraged, and following the environmental thread, there is an increasing interest on disaster risk (11.5) and adverse city environmental impact reduction (11.6). Moreover, emphasizing the inclusive element, there is a promotion of universal provision of green spaces, in particular for women and children, older persons and persons with disabilities (11.7). Finally, 3 points are made regarding this last target:

- **11.a** Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

- **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

- **11.c** Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

As it can be observed, these urban design principles share
a common vision that expects to give response to the urban issues and encourage the design of more sustainable, inclusive and integrated cities.

3.5. PARTNERSHIPS

The project we are studying is conceived in a very particular situation, where many organisations and actors are included and follow diverse roles. The project is supported by organisations at a local, regional, national and international level, even though the site is being built in Kenya. This is because its relevance goes beyond national borders and has global implications.

On the one side, we are managing a refugee settlement, so the presence of refugee focused agencies is required, in this case, UNHCR is the project manager, and they are responsible of coordinating the rest of the implicated actors. On the other, this is a catalyst project globally speaking, where many agencies and governments are interested in supporting the plan. This is why various governments have been included in the process.

With this in mind, it should be pointed out how Kenyan national and country authorities are fundamental players. They are essential to implement, make decisions and support the project. In this case, they are included in all the process. Again, the town is included in the Kenyan policy, which is controlled and followed by national and regional governments, this means that the steps to be taken have to be approved by them. Therefore, their presence as one of the main actors is a key point.

Moreover, in terms of technical advice, implementing partners are included in the process. They have a less representative role, while they coordinate and are responsible of the adequate development of the project.
This is the case of: UN Habitat, NRC, UNICEF, Peace Winds Japan, LOKADO... Their role is essential for an adequate execution of the different aspects of the project, yet this makes the process more complex in terms of coordination and management.

Accordingly, it should be emphasised that regardless of the variety and number of actors included in this particular project, their participation not only gives a multilevel vision, but manages to approach the process in multiple directions and dimensions, taking into consideration its intrinsic complexity.

3.6. RISK REDUCTION AND URBAN RESILIENCE

Having a proper understanding of the physical location of the site and its climate constraints is fundamental to generate an adequate and coherent response that takes advantages of the existing conditions, transforming the problems into opportunities.

Firstly, in terms of climate, the site is located in a semi arid area. Not only it lacks of water, but the soil characteristics make the situation worse. On one side, the infiltration levels are low, increasing the flood risk and jeopardising the provision of underground water, as they dry and are not refilled. On the other, this fact makes agriculture a difficult issue as the soil is less and less fertile, losing quality year after year.

This illustrate how water scarcity and flooding are the main issues. Even though this fact seems contradictory, as one implies very little water in contrast to a large amount of it, the reality we are facing is that the area lacks water most of the year, preventing people from developing agriculture at a large scale, and reaching the limits of drought. But, at the same time, when it rains, twice or three times a year, the high quantity of rainfall,
in addition to the water arriving from run-off in the hills 35km away, combined with the soil's low infiltration capacity, gives the perfect scenario for heavy flash flooding.

Moreover, the site is relatively flat, gradually falling away from the south edge toward of the site bounding the A1 highway towards the west. With an approximate level change of 30m across the site the average slope factor of 0.5%. However, due to the relatively fat area and large number of waterways this also creates a site liable to flooding. The consequences of these rapid and strong floods are devastating, destroying infrastructure, housing and crops. Also, as a result of the stagnant water, we find vector prone areas that derive into illnesses such as malaria, dengue and those related to the gastrointestinal system.

There are four main river beds running through/adjacent to the site. Although they are seasonal, and run for just a few days per year, they should be respected as existing ecological corridors, as part of a resilience strategy to prevent against flash flooding.

To make matters worse, as a consequence of climate change, these rains are less reliable every year, making harvesting and prevention difficult to plan.

So, taking these facts into consideration, it is fundamental to plan a disaster risk reduction and mitigation strategy that will prevent the settlement from suffering the consequences of the harsh weather and flooding.

Consequently, a solution has been adopted that adapts to the natural constraints, takes advantage of the existing physical environment, mitigates the flooding risk, and, at the same time, creates interesting spaces and economic opportunities.

As it can be observed in the plan, the identified tributaries
and lagers are maintained almost untouched. On the one hand, a 200m buffer zone has been left at both sides of the lagers to prevent the urban settlement from flooding. Along them, a series of water pans are proposed so that the run-off is harvested before entering the site, and along the streams, so that the impact of the floods is reduced and the water is used for agriculture.

On the other hand, along the smaller streams that flow inside the urban area, a series of green corridors have been designed. These follow the proposed grid and enable the water to follow its own path. The proposed activities in the corridor are sport fields, community agricultural lands, public spaces and so on. This means that when the water arrives, these areas will be flooded, and as they are controlled, the potential damages are minimised.

Moreover, in order to increase the potential of the green corridor strategy, an integrated drainage system has been proposed inside the corridors. The system is composed by retention ponds located in the public green areas, that mitigate the flooding risk and serve as a way to harvest water for agriculture. With the same logic, the main roads have been designed with a drainage system that connects to these ponds, reducing the quantity of runoff over the site.

Similarly, the street drainage meets similar objectives: flood mitigation and water harvesting. We can find 3 types of roads in the system: the main arteries, which possess a formalised drainage, and a grid of North - South and East - West streets, that use a low cost open drainage located at both sides of the roads, following the existing slope, in order to reduce the required water engineering. The N-S system is the primary, consisting in a continuous open ditch, whereas the E-W, secondary, connects to the N-S in every intersection, using a smart technological solution.
This consists in a wider ditch filled with big stones and covered in gravel, permitting the runoff infiltration that joins the primary flow of water. The system stands out thanks to its simplicity, it is easily maintained and prevents the problems derived from street crossing.

Moreover, in order to address the community in a direct way, the secondary ditches are connected to the block level urban agriculture. For this aim, a low cost tank is placed at the block limit to harvest water. It can be used for agriculture at a block level, empowering the inhabitants with resources, and maximising the use of water.

It is, therefore, important to realise that the strategies and interventions related to resilience will determine the success or the failure of the site. As it is broadly known, nature is difficult to control and few times we are able to change natural paths and behaviour, without nature coming back to its original situation. Henceforth, providing a town with urban resilience strategies should be a priority, mitigating the consequences derived from climate change, as well as the importance of adapting our cities to the environment and physical location, so that they can be developed sustainably.

3.7. FOOD SECURITY AND LIVELIHOODS

As it has been previously described, the provision of land for agricultural use is one of the disaster mitigation systems. This not only implies a resilient response, but it provides the inhabitants with an income generating activity, as well as a way of supplementing nutritional needs.

On the one hand, we are located in a pastoralist area, where the host community continues to live from livestock. On
the other, the refugee community has shown interest in other activities, such as agriculture or businesses. Therefore, to approach the livelihood issue, it is necessary to understand the broader picture, that is to say, the socio-economic context.

**SOCI-ECONOMIC ANALYSIS**

Kalobeyei area is part of Turkana administrative area. Being traditionally an unsettled area, as it is used for pastoral purposes. It became a settled human settlement when the Kakuma refugee camp was built in the area, in 1992. Due to conflicts in the surrounding countries, Kakuma camp experienced a large influx of population. Also, the closure of the camps located in the coast of Kenya meant the increase on the population of the camp.

For these reasons, Kakuma camp has brought various social, economic and spaces changes. On one side, the arrival of refugees from different cultures generated situations of conflict with the host community. In fact, the humanitarian organizations would provide the refugees with services, increasing the inequalities between the Turkana people, who saw their situation being dismissed. On the other side, the population growth brought economic opportunities to the region, as trade relations were created within the communities. Specifically, the provision of goods and services encouraged these transactions.

“The changing social and economic landscape related to the refugee settlement has also been translated spatially, with the development of the refugee camp largely associated with growth of Kakuma town, and other villages surrounding the camp. The town and villages rely on the camp for survival, since the camp has not only created threshold populations for goods and services, but also various employment opportunities. This includes employment for various locals by the various humanitari-

44. UNHCR, Kalobeyei Integrated Socio Economic Development Programme (KISED) Baseline Report, 2016, p.58

45. Ibid. p.59
an organizations working there, and also as casual labourers by the refugees. Kalobeyei is also spatially and socioeconomically linked with other neighbouring urban centres such as Lokichoggio, Lokitaung and Lodwar. 

**AGRICULTURE**

So, as it can be seen, agriculture is included in the three levels of the urban resilience strategy: at a site level, in the spaces between the neighbourhoods (the lagers); at a neighbourhood level, agricultural land is reserved for the community in the green corridors; and at a block level, we find the urban agriculture, that provides each family with a small piece of land to develop a small scale agricultural activity. In conclusion, the risk reduction strategy is directly related to the livelihoods and the urban design, being conceived as an integrated solution.

**COMMERCE**

Achieving integration means that these realities must be analysed and taken into account. Trade seems to be a key point for community connection and interaction. This is the reason why the location of several markets of key importance.

Following the same logic as with agriculture, we find 3 scales of commerce and different approaches: (insert market diagram)

- Small: street kiosk and corner shops
- Medium: large commercial plots in 20m roads
- Large: big markets located in the main arteries

Each of the scales tries to address different issues and create interconnections between people:

For a daily basis, streets are activated by the corner shops and kiosks, encouraging the block, and community level trade. These are focused in daily items, such as fresh products. For weekly activities, we find medium scale markets located at
the 20m roads. These concentrate specific uses that differ from fresh food and basic necessities. We can find a hairdresser, or a more diverse food stall. Lastly, the big markets, at a neighbourhood and site level, address the main trading actions. These include regional products, livestock selling, etc.

So, these strategies demonstrate how the economic dimension is a key issue to achieve a sustainable settlement. Taking into account agriculture, livestock and business all together with a comprehensive vision, that not only include family and small size activities, but larger scale too, is essential to create an economic network and dynamics that will last and will maintain the families and the social structures longer.

3.8. PARTICIPATORY PLANNING

The social framework existing in the area is complex and diverse. We find a local community with a particular culture, the Turkana; and the refugee community, composed by different nationalities and cultures. In order to make the site sustainable, their participation in the process is fundamental. Them participating will mean the success or failure of the project, as in the short term the refugees will be the pillar of the town, and for the long term, the site should respond to the necessities and will of the host. Therefore, a participatory planning scheme needs to be set up.

Sometimes the minimum standards may exceed everyday living conditions for the surrounding population. But such situations may also indicate the need for action in support of the surrounding population and for dialogue with community leaders. Therefore, the fact that both communities are addressed, is a key point to promote an integrated settlement, where both communities can live together and benefit from each other.
As contrary to traditional refugee camps, the settlement is not closed by a fence, segregating refugees from the host, and there is not a controlled entrance preventing certain groups from entering the camp. We find ourselves in an open free site, where the host and refugees can move freely, establish businesses and benefit from the public facilities. This means that the integration of both groups is more likely to happen, generating a diverse and inclusive town. That will be, therefore, more sustainable than an ordinary camp.

Furthermore, an equitable participation of women, men and youth in planning, decision-making and local management will help to ensure that the entire affected population has safe and easy access to the key areas that will ensure that the rights and capacities of all vulnerable people are considered. So, for this aim we should optimise people’s participation, ensuring that all representative groups are included, especially those who are less visible. This implies that the right to information is ensured to all members of the community.

However, it should not be forgotten that the communities are diverse, culturally speaking, and this implies cultural constraints that, taken into account would lead to an accepted plan. In this case, we found the host community, members of the Turkana culture, pastoralists, that have traditionally live in a nomadic way, but that have been settled lately, thanks to the access to public facilities. On the other hand we find the refugees. They have different nationalities and origins: South Sudanese, Ethiopian, Ugandan, Congolese and Burundian. We are not going to go through the characteristics of each nationality, although, it is visible their differ culturally, and have diverse cultural habits and understanding that may make the design process more complex.

We find ourselves facing a challenge: how to address both communities. On one side, we need to organise workshops with the host community. These will provide information about their
needs, their wills and their concerns. They will serve as a reference for the long term approach, as they will be staying on the site in the future.

On the other, addressing the refugees tries to focus on the emergency phase needs. Understanding the issues and the situation the refugees are facing, can provide the tools to design a pragmatic and effective settlement.

As we can see, the combination of both approaches gives a broad picture that takes into account the short and long term, including everyone in the process.

### 3.9. GENDER APPROACH

The way women and men interact and live within a city is different\(^{48}\), hence, the way we design it will affect substantially their performance in the town. Therefore, including gender sensitive participation processes seems substantial to achieve inclusive and sustainable cities, in an integrated way.\(^ {49}\)

It is important to understand that women not only perceive and experience cities in a way different than men, but also use public spaces in different ways\(^ {50}\). In fact, public spaces are directly linked to the work patterns, and the household economy. Their daily routines may include moving from one area to another, mostly using public transportation and during the early and late hours. This fact exposes women to the risk of sexual assault.\(^ {51}\)

The previous examples show how some urban planning components could be address during the design process, so that they are more gender sensitive and help to create a better and safer city. Together with a point often overlooked, the general and conventional vision that emphasizes women’s need for pro-

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49. EVERS, Mariele, in IASC, “Gender mainstreaming and participative planning for sustainable land management”, in Journal of Environmental Planning and Management, 54:10, 1315-1329, 2011

50. (UN Women/Safe Cities Global Programme/2009).

tection, making women responsible for their own protection\textsuperscript{52}. These components include mixed use, accessibility, mobility, safety and security, distribution of services, community buildings and social mix.\textsuperscript{53}

In the same way, refugee camps possess elements that put women at risk and make them suffer from poor design\textsuperscript{54}. Daily activities such as water collection and the use of public sanitation, expose them to safety risks, as it can increase women’s and girls’ vulnerability to sexual and other forms of gender-based violence\textsuperscript{55}. Therefore, in order to minimise the risks, to provide a better quality response and have a better understanding of women’s camp experience, they are included in the participatory process. This means that we will develop a process with all the communities, in addition to a parallel women participatory process, so that their participation is not jeopardized.

During these workshops women are able to show how the location of basic services and facilities such as latrines at an unsafe distance from the house or poorly lit streets allow attacks to take place. Similarly, the construction of barriers in the perimeters of camps, that refugees need to cross to obtain firewood\textsuperscript{56} or other items, gives the perfect scenario for assaults and unsafety\textsuperscript{57}.

Therefore, it can be observed how camp characteristics can contribute to or mitigate the proclivity of sexual violence experienced by camp inhabitants. Identifying measures to mitigate the occurrence of sexual violence has shown to decrease the likelihood or prevalence of rape as a result of war, short-term measures intended to complement grander goals of peace-building, state-building, and nation-building. We specifically emphasise the living circumstances of those living in and around refugee camps, as they are likely to experience sexual violence, particularly when they leave the camp for the bush in search of fuel sources and construction materials, travel between camps, and/

\textsuperscript{52} JAGORI, “Building safe and inclusive cities for women. A practical guide”, 2011

\textsuperscript{53} UN-HABITAT, “Gender and urban planning: issues and trends”, 2012

\textsuperscript{54} NHCR, “Refugee women in camp management”, in Senior Coordinator for Refugee Women Unit, 1998


\textsuperscript{56} Idem.


\textsuperscript{Source: UN - Habitat}
or travel unaccompanied by male companions58.

Accordingly, the designed master plan has included all these aspects to promote a gender inclusive and safer city. Some of the elements that are taken into consideration are:

- Family latrines, instead of shared ones.
- Adequately lit streets and public spaces.
- Block level water points, situated in a visible and semi-private space.
- Block and community level commerce.
- Street activation, by the promotion of block level commerce.
- Promotion of renewable energy for cooking, to decrease the firewood need.
- Creation of businesses related to firewood selling, to prevent the need to move long distances to fetch it.

In conclusion, it is expected that where these kind of measures have been implemented, there will be lower rates of sexual violence, and we summarise these as four main hypotheses: Fuel provision programmes will reduce rape by preventing women from going out into the bush.

- Gender sensitive camp design will decrease the overall number of rapes59.
- An increased of active streets will reduce the number of rape incidents.
- The provision of accessible services, such as water or sanitation, close to the household and as far as possible, at a family level, will contribute to a decline in the overall number of rapes.

3.10. BASIC SERVICES

As we have seen in the previous chapters, some urban components affect and influence the way a city is perceived.
lived and sustained. In this case, we are going to analyse how the basic services are designed to promote a sustainable town.

In the case of Kakuma, refugees have access to a multiplicity of health and education facilities. The refugees not only access medical care and education centers from facilities within the camp, but also have access to those located in Kakuma town\(^6\). The achievement of a good network of facilities, is therefore, fundamental. And we can see in the following analysis of Kakuma camp’s facilities, how it can be done.

**HEALTH**

At the lower level, most households access health services from the facility closest to them (within walking distance to their houses), which is often the clinic located within their cluster. In fact, Kakuma 1 has the highest number of health facilities (5) compared to the rest of the clusters, and hence households living here have wider options for medical care.

Further analysis indicate that there is a positive correlation between the location of the household and where they access lower order medical services (dispensaries), giving indication that some people tend to go for medical services near where they stay.\(^5\) Walking is the most utilized means of access to all levels of health facilities (92.9%).

This greatly points to the role of service accessibility to medical services and should be used a lesson in the planning of Kalobeyei. Location of health facilities in Kalobeyei should thus consider that, their accessibility and usage relies greatly on ability of the populations to walk to them. Their locations in the integrated settlement should thus consider the existing settlement patterns, as well as the anticipated future patterns especially in the host community. This will greatly boost the integration process, and promote the standard of living in the community.

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\(^5\) UNHCR, Kalobeyei Integrated Socio Economic Development Programme (KISEDPS) Baseline Report, 2016, p.61
By contrast, for higher order medical service, 58% of the respondents accessed high order medical care from Kakuma general hospital and another 20% accessed the services from Kakuma mission hospital. The remaining 22% indicated that they receive such services from the various clinics spread in the clusters.

**EDUCATION**

Kakuma refugee camp has among the highest concentration of primary and secondary schools per square kilometre in Turkana County, as represented by a total of 48 primary schools and 3 secondary schools, as well as one primary and one secondary school located just outside the refugee camp. The camp also has 14 early childhood development centres and, in terms of secondary schools, there are three secondary schools located within the camp. These represent 33% of the total number of secondary schools located within the larger Kakuma area. In fact, there are a total of 9 secondary schools identified within the larger Kakauma area.

The high provision of education facilities in the camp has largely been associated with “education refugees”, who are often migrants from Sudan (South & North) who come to attend the “relatively better” schools in the camp and exploit various learning opportunities linked to the camp, and go back to their country to take up various positions as technocrats.

In the same way as in the health facilities, households in Kakuma refugee camp access the schools nearest to them, and for which pupils can easily walk to the facilities. The school enrolment rates vary with the population of the various clusters, and also are determined by the nationality of the refugees living in that area. For example, areas with high South Sudanese populations have higher enrolment rates compared to those with other nationalities. Kakuma I has largely benefited from its existence.
KALOBYEI NEW SITE’S FACILITIES

In the case of Kalobeyei new site we find ourselves in between two requirement frameworks, the Kenyan guidelines and the Sphere and UNHCR guidelines. Therefore, a combination of both, going for the one more demanding when in doubt, is the chosen way to determine the needed public facilities.

Moreover, the fact that the host community, living or not inside the site, is allowed to use them makes the distribution more complex. Several strategies are put in practise: grouping complementary activities such as small markets and kindergartens, locating the schools between 20m roads, while kindergartens are situated near 15m ones, or establishing the health centres in 200-300m radius distance.

In the same way as in the livelihoods section, a 3 scale approach is used for the public facilities too. Starting from the

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62. Ibid. p.64
centre of the site, where the hospital, secondary school and big market is located; the distribution of the facilities follows a mega block and then meso block level logic. This means that we can find a medium scale market, a health center and a primary school in every mega block, the area situated between 25m roads, that provides service to around 5,000 people, so that it takes around 20 to 30 minutes to get to them. At a community level we can find small markets, kindergartens and waste management centers. As a result, these daily and smaller services are provided per 6 to 9 blocks, around 600 to 900 inhabitants, being located at a 5 to 10 minute walking distance.

Taking these factors into consideration a more complete master plan is designed, providing a wide range of health and education facilities, situated so that they are accessible, at a walking distance and taking everybody into account.

3.11. WATER, SANITATION AND WASTE MANAGEMENT

Following with the basic services, we find a set that have to do with daily and household and neighbourhood level issues: water, sanitation and waste management. These imply social, economic and environmental components, that not to be tackled in an adequate way could lead to unsustainable situations, low dignity situations and public health problems.

WATER CONTEXT

Regarding water, we find different situations depending on the analysed area. On one side, the amount of water used by households in Kakuma refugee camp varies widely, depending on size of household, and location of water point. Since water is free of charge among the refugees, household incomes do not influence the amount of water used by households. Among the
interviewed households, daily water usage varied from 10 to 360 litres per day. Most households however used an average of 60 litres per day (mode water usage)⁶³.

All respondents in Kakuma refugee camp identified that they get their water from a tap located within the camp. There were however major variations in the actual location of the taps. For example, while all respondents in Kakuma refugee camp identified that they get their water from a tap located within the camp. There were however major variations in the actual location of the taps.

There was however a negative correlation between the amount of water a family consumed and where the water was acquired from, implying that households who access water from long distances generally consume less of the commodity⁶⁴.

On the other, the amount of water consumed by host community households in Kakuma ranges from 10 litres to over 500 litres per day, with a majority of the households consuming 60 litres per day. The high variations reported in water consumption amongst this group depend on two key aspects, the number of people living in the household and the household monthly income. The positive correlation with household monthly income is related to the fact that, 64.3% of the host community respondents paid for their water. The average cost of a 20 litres jerry can of water is Kshs. 5, although the actual costs vary from Kshs 5 to Kshs. 20 depending on where the water is fetched and whether it is transported to the household.

The major sources of water among the host community respondents included water kiosks (38.4%), piped water in taps (27.7%), river banks (11.6%), boreholes (8%) and shallow wells (3.6%). Respondents who got their water from a piped source (tap) consumed more water than the rest, mostly due to the ease with which they access the commodity.

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⁶⁴. Idem.
It should not be forgotten that availability of water is key to the survival of both the people and various agricultural practices in Turkana county. In Kalobeyei, just like in many other arid places in Kenya, availability of water, and the distance to various water facilities determines how much water a family is able to acquire and use in a given day.

Kalobeyei sub-location has the highest number of water points among Kalobeyei ward sub-locations. Water in Kalobeyei is accessed from boreholes and wells, water pans/dams, river banks, piped water and water kiosks and other dedicated water points. While some sources of water do not have cost implications on households, others have associated costs, determined by the water service operator, and whether the water is delivered at home or fetched from source.

The mean water usage per household in the host community area is 81 litres, although the range of quantities varies widely from 20 litres to over 200 litres per day, depending on the household size and income.

Also, a majority of respondents accessed their water from boreholes. Interestingly, respondents who accessed water from river banks used between 20-80 litres per day. This could be associated with the amount of time it takes to fetch water from the river banks, since the process itself is slow and tedious, often requiring patience in the digging of the wells along the river banks, and waiting for the water to fill up.

While Kalobeyei sublocation has the highest number of water points as compared to the rest of the sub-locations within the ward, respondents interviewed in the sub-location also identified that they pay higher tariffs for water. As the cost of water in Kalobeyei ward ranges from Ksh.5 to Ksh 20, with a mean cost of Ksh. 8.33 per 20 litres jerry can and a mode of Ksh 5. Moreo-
ver, other than about 8 boreholes and wells which are operated by a Non-Governmental Organization, most of the other sources of water are either open access to the community, or their use is regulated and managed by the local communities.

The water points are, however, unevenly spread throughout the sub-location, and are only concentrated within a radius of one (1) Km from the Kalobeyei market. These facilities are also located within a radius of about 12 km from the Kalobeyei refugee site. This service distribution pattern could be influenced by the nature of settlements in the area, in which the areas around Kalobeyei town have more permanent form of settlements as opposed to the rest of the ward, where temporary settlements could be noted as influenced by the pastoral nature of the people living there.

SANITATION CONTEXT

In Kakuma Camp, pit latrines are the main facilities used for human waste disposal. The location and usage dynamics of the pit latrines however varies, with 75% using pit latrines within the plot, and 19.8% using shared pit latrines. These are often latrines provided together with the housing units, and either shared among various houses within a neighbourhood, or which families build over time to serve their household only. In the same way, in Kakuma town the majority of people dispose their human waste in pit latrines within their plots (51.7%), which is a huge shift from a majority in Kalobeyei host community area who dispose their human waste in the bushes. The bush is however still an important human waste disposal area, as used by 15.3% of Kakuma town inhabitants.

By contrast, among Kalobeyei host community households, the bush is the main area for disposal of human waste as identified by 59.6% of the respondents, followed by pit latrines.
within plot (34.6%).

These statistics are highly consistent with findings from the 2009 Kenya population census in which 79.6% of households in Turkana North (95.3% in rural areas and 31.6% in urban areas) used bushes as their main mode of human waste disposal, followed by pit latrines.

WASTE MANAGEMENT

Burning and burying/composting are the two main types of solid waste disposal in Kakuma refugee camp. The 58.6% identified that they burn their waste, while 40.8% indicated that they bury it. These waste disposal methods can largely be attributed to the many waste burning piles spread throughout the camp. The burying of waste also easily explains the many waste pits spread throughout the camp, as well as a lot of litter that can be seen in the neighbourhoods.

Similarly, in the Kakuma refugee camp, burning is the most popular method of solid waste disposal among Kakuma host community members, as identified by 83.8% of the respondents. Other means of disposal include burying (10.3%), throwing randomly (0.9%) and organized collection from the houses (5.1%) especially for those living within the town itself. While haphazard throwing can be associated with the degrading environment in the town, those who indicated that their waste is collected from the houses pay between Kshs. 100 and Kshs. 300 per month for the service.

In the same way, burning is the major solid waste disposal method among Kalobeyei host and refugee households. 96.2% of the households in the host community burned their waste as compared to less than 2% of households who either buried their waste or had it collected from their houses.
Therefore, having analysed the way water, sanitation and waste disposal is managed, we can try to apply the lessons learnt, not to repeat the same mistakes. With regards to water, establishing sources at a block level seems a good idea to avoid long distances, and security risks. Moreover, taking the water scarcity found in the area into account, water recycling systems should be implemented, in order to be able to reuse the water in agriculture, and this way, minimise the environmental impact.

Regarding sanitation, and in line with the water strategy, opting for a dry sanitation solution, or a system that uses little water is more appropriate. One of the possible systems is the double ventilated pit latrine. The characteristics of it, enables the families to compost the human waste, for further use as composting material. The key point, is to occupy a fix portion of land, as the pits are never used simultaneously, but by seasons. Also, the location of the latrines should be inside the family plots, as far as possible. It has been observed that in this way the maintenance is better, they remain cleaner and for security reasons they are the most accepted.

With regards to the waste management system, we find its implementation essential to generate an environmentally friendly settlement, reducing the vector produced illnesses and pollution. So, in this way, burying waste should be decreased gradually, as a more effective system is implemented. One of the options could be the installation of block recycling and waste management points. These are collected by a waste management service, a possible business opportunity, and gathered in a neighbourhood central plant, that processes it, recycling and discarding the waste materials, which are eventually disposed in a site dumping site. This way, the garbage is substantially reduced, as employment is created and the environment is protected.
In order to design an adequate housing system, we need to have a general vision of the current housing of Kakuma town’s community, Kalobeyei’s and the refugees’ in their countries of origin. This way, it is easier to understand the way of living, and the decisions taken regarding housing are not random, but based in their actual needs.

Kakuma and Kalobeyei host and refugee housing typologies Among refugees, a house is a show of security for the family, and often a solace from the many challenges they are faced with. A key indicator of a refugee family's comfort is the space standards within and outside the house, as well as the material used in constructing it, especially given that most refugee resettlements are in highly marginalized areas.

The housing unit standard has remained the same. The size of a basic single family housing, constructed on either the plots by NCCK over the years is 6 by 3 metres, which space is supposed to accommodate up to 6 family members. Larger families get larger/multiple houses to meet the minimum UNHCR space standard per person. These units are usually provided as a single room, which over the years has been associated with major social and cultural challenges. In most African cultures, it is wrong for parents to share the same room with their children, which is the predicament that most families find themselves in upon arrival at Kakuma refugee camp. This often calls for rapid modification to ensure privacy within the houses, translating to internal space subdivisions in the short term. In the long term, as refugees settle in, they devise more permanent solutions, which involves creating extra rooms (extensions) next to their existing houses.

The standard household for Kakuma host community lives in a house with one to three rooms (or has one to three separate rooms in their compound). The kitchen was also a very important
space among respondent households, with its location being more significant. 82.5% of the households had their kitchen as a separate unit located outside the living spaces. This has positive impacts on indoor pollution, in which, a very low rate of inhabitants of Kakuma host community were exposed to high levels of indoor pollution from cooking fumes.

**INCREMENTAL HOUSING**

The housing design is, therefore, a key element in order to achieve our ultimate goal. Its design is a big challenge as the first stage is focused in emergency and humanitarian aid, in contrast with the medium and long term development phase. This means that the residential strategy should follow these phases in a natural way that would not prevent people from being able to develop adequately. This is the reason why an incremental housing strategy has been developed.

Firstly, we need to analyse the initial shelter, the one provided by UNHCR. It is composed by a timber structure wrapped in a plastic canvas, and covered with a iron sheet pitched roof. The dimensions of the hut are 6x3 metres, and they are built without a formal foundation, on a compressed earth floor.

One of the weakness of the UNHCR shelter is the lack of foundation and the possibility of an extension. In contrast, it is possible to formalise its walls, building a mud brick wall around it and removing the canvas. These two facts give us the clue to an incremental house design.

On one side, we need to build a formal foundation since the beginning, that will enable the house to formalise in secure conditions. Therefore, a concrete ring slab is built, with a 4 by 10m dimension, anticipating the future built surface. For the flooring, compressed and stabilised earth can be used to fill in the ring and create a flat strong surface.
On the other, the timber structure and roofing are maintained, and its shape followed for the following stages. The only modification is the walling materials, that are changed, instead of using adobe, a ISSB system is implemented. This constructive system is very appropriate as the bricks can be manufactured on site, and they can be used as a self construction system. Moreover, this system alouds future modifications and building in two stories. These modifications will be done by the inhabitants in the measure of their possibilities, as bugetary constraints are a reality. This is one of the reasons why the incremental approach is proposed.

So, as it can be observed in the following figure, in the emergency stage a concrete slab ring will be built, and the emergency shelter will be set on it. For the first phase, a ISSB wall system will be set up on the foundation. For the next stages, depending on the family’s needs and economic situation, they will be able to make an extension in the horizontal sense, such as an extra bedroom or two extra bedrooms, covered with an iron sheet roofing. The other possibility is to build another story, for this matter a concrete ring beam is needed, in the layer where the door and windows end, being used as a lintel, after that a floor can be built supported by this beam, and the new ISSB walls constructed on it, covered by the previous roofing. Finally, if the town develops adequately, the plots could be divided into two, and eventually into 4, arriving to medium/high density levels.

Considering the implementation of this housing strategy, combined with the previous urban components, we find ourselves with a settlement that follows an emergency to development logic, it uses local materials and technologies, and provides its inhabitants with freedom to grow and develop as they wish, in a medium and long term. At the same time, this model enables the city to be dynamic, and change depending on the needs and behaviour. This way the city is designed to provide service to
Fig. 28. Incremental housing phases.

Source: UN - Habitat
its inhabitants, and to adapt to their needs and desires.
The analysis and description of the Kalobeyei New Site has presented the social, economic, environmental and urban components that should be taken into account in order to design a sustainable and integrated settlement. This is a great challenge, as the way aid is given is not sustainable and is producing situations of self-reliance among refugees. Still, the society’s perception of refugees is negative, and hopefully in the coming years will change to a more positive one, if long term and autonomy principles are to be implemented.

Also, it should not be forgotten, that every experience is unique, so even though this paper gives a series of guidelines, they should be regarded as recommendations. In fact, before taking any determination, the full understanding of the actual situation, needs and political and economic interests relying underneath the decision of building a new settlement should be met. As this new site will not only impact its surroundings, but have a regional or national repercussion.

Following the impact consequences, giving an adequate emergency response that shows early positive results is a key point for the site’s success, and its further implementation. It has been observed that this will encourage long-term investments and the dynamization of the site, as it will probably work as a pole of attraction in the region.

Therefore, the best design should be the main objective. For this matter, following the urban design principles appears to be essential. These have been drafted to encourage more sustainable, inclusive and integrated cities. These objectives can be addressed as we give response to the existing urban issues, generating better cities and towns. At the same time that we contribute to the development and urban global agenda.

Simultaneously, it should be stressed the participatory component in the process, to avoid past mistakes. As it has been
said repeatedly, cities and towns are for everyone, and no one is left behind. Accordingly, implementing participatory planning as a “must” in our design process is essential. Not only this system helps understand the actual needs, but provides a multidimensional vision and a broad approach, that leads into more creative, and interesting outputs that present the existing level of complexity and variety.

Having understood the context, we can proceed to implement the social, environmental, economic and urban components that will generate the final plan. As it has been previously described, each component has a series of specificities, but they share some common points:

- The plan is adapted to the context, in all its dimensions. Socially, meets the population’s expectations and needs, especially those more vulnerable.

- Environmentally, the existing climatic and physical characteristics are taken into account and integrated in the design. They are regarded as opportunities, and taken advantage of, i.e. in a resilience strategy, or for the green space location. Economically, the existing opportunities are strengthen, promoting entrepreneurship, and maximising the existing resources. That way, not only the site is sustainable, but the dynamics have a broader impact.

- The participation of multiple actors is indispensable. Problems have stopped being mono sectoral, but comprehensively understood. Therefore, the inclusion of partnerships as a basis for the development of the project should be a trend, as this fact gives a multidimensional vision of the project and aims to address the existing issues at different levels. Avoiding future failures and lack of empathy.

The emergency to development phase is addressed in a
participatory way. Contrary to the traditional ways, not only the refugee community is seen as the main target group, but the host community is regarded in the same level of importance. Emphasizing the long term vision, in which the refugees will go back home, and the site will continue to develop with the host community in a sustainable way.

The gender approach, as a cross cutting element, is taken into account since the beginning, putting women and vulnerable groups in the front line. The deep understanding of the different way women, children and men perceive and live in a town is integrated in the planning process, putting special emphasis on preventing sexual based violence.

Accessible and universal facilities are a priority. Not only regarding health and education, but the basic infrastructure, such as water and sanitation, has to reach a minimum standard based in the mentioned urban principles, and aligned with the human rights. Accessibility, affordability, security and quality, with the system structured in a way that permits future improvement, are essential aspects included in this process.

In line with the emergency to development process, incremental strategies are fundamental in most of the components (housing, drainage, business...), becoming a cross cutting element of the planning process. This fact, enables the city to grow according to the inhabitants' necessities, wills and behaviour, generating dynamic and malleable cities that adapt to the people, and not the other way around.

To sum up, it can be observed that the design of a sustainable integrated settlement is not a fantasy anymore, but a global necessity to address migration and development issues. We are witnessing a new era where the traditional paradigm is being transformed, and where we can contribute giving innovative and creative solutions, as the analysed case study, Kalobeyei
new site, shows.

The challenges that the SDG, NUA and other international agreements offer are wide and inspiring, as they encourage us to look for new ways to address the humanitarian and development performance and the refugee crisis response. So, therefore, taking advantage of this complex situation, it seems encouraging to think that we can take a step forward and reinvent how refugee camps are addressed, and be part of the global change.
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