

KARINA FASSBENDER & FALK UEBERNICKEL

HUMAN CENTERED DESIGN FOR OPEN COMMUNITY FIELDS IN KENYA



Learnings from a
Design Thinking
project in informal
settlements in Nairobi
with the Mathare
Youth Center

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01 MATHARE – A VIBRANT COMMUNITY IN EASTLANDS, NAIROBI

Mathare is a vibrant and growing area in the Eastern part of Nairobi called Eastlands. Nowadays, Mathare encompasses a number of informal settlements with approximately 500,000 people living on less than three square kilometers with one of the highest population densities not only in Kenya, but the African continent overall.



he settlements of Mathare are among the oldest slums in Kenya; people here live and work in very challenging circumstances.

Most families live in small makeshift shacks constructed from tin and mud, which typically lack sanitation, running water and electricity. Most individuals earn a daily income of less than three dollars. Current estimates suggest that around 70,000 children live in Mathare, the majority of whom lack access to formal education.

Despite these sobering figures, over the past decade much has changed for the better. Community efforts combined with support from the government, UN-HABITAT, German Development Cooperation (GIZ) and several other NGOs have resulted in the building of schools and new infrastructure, including roads and brick and mortar buildings.





COMMUNITY FIELDS AND SOCCER AS A TOOL FOR SUSTAINABILITY AND GROWTH OF PERSONALITIES

INITIAL SITUATION AND OBJECTIVES

The Mlango Kubwa community is located on the outskirts of Mathare. Around 50,000 people live together in the densely populated area, sharing basic goods such as water, sanitation and electricity as well as basic infrastructure such as schools, churches and basic roads.



As is often the case in informal settlements, public space is a critical issue, both due to its availability and concerns for safety. Over 80 percent of the population of Mathare rent their living space. Even small mud huts are typically not the property of those occupying them. As more and more people are moving to Mathare, space is increasingly filled by housing, guaranteeing owners a steady source of income. The spaces not occupied by housing are used as dump sites, typically filled with waste, broken bottles, chemicals and other hazardous items that endanger the health and well-being of the neighborhood's residents.

In early 2014, a group of young people came together in order to create safe, clean spaces for public use by children and youth living in the community. The community based organization Mathare Youth Center (MECYG) supported the process. Gradually, they were able to reclaim available public spaces with the goal of converting them into safe havens for local children and youth.

The group had the objective of establishing a football field on the newly acquired land, which required a substantial clean-up process. Subsequently, children, youth, and adults actively contributed to designing the field, leveling the ground, fencing the area, planting greenery, and painting the walls. Once finished, the field became the center of community life, serving as a safe space for community children and youth. Currently, the community even organizes occasional tournaments with teams from neighboring communities, which serve as a major draw for residents of all ages.

Football has proven to be a strong tool for community building, as sports can bring many people together for a common purpose. With the help of organizations such as UN-Habitat and GIZ, but most importantly the hard work and passion of the community, the creation of sport centers like Mlango Kubwa has been successful in many cases.

Unfortunately, in the past six months, the community soccer field has been severely damaged by neighborhood gangs coupled with general misuse. As ownership of the football field was initially not defined, it remained unclear who was responsible for its upkeep.

In response to the growing issues facing this community resource, we, together with the local community, defined a leading design challenge as follows:



**HOW MIGHT WE MAINTAIN
OPEN AND PUBLIC SOCCER
FIELDS FOR SUSTAINABLE
COMMUNITY
DEVELOPMENT AND
GENERAL WELFARE?**



Together with the Mathare Youth Center, the German Development Cooperation (GIZ) and UN-Habitat we set up a two-day program to gain an understanding of the extent to which the methods work in environments like Mathare, and to identify ideas and solutions in collaboration with the community.

03 COLLABORATIVE APPROACH

DEVELOPING SOLUTIONS FOR THE MATHARE FOOTBALL FIELD THROUGH HUMAN CENTERED DESIGN

Maintaining a soccer field in an environment without clear ownership and divided responsibilities can become a wicked problem. These problems are difficult to understand and break down, as they are multifaceted and complex. Especially in densely populated neighborhoods in Nairobi, maintaining the integrity of shared community space is a constant battle.



Perspectives of numerous actors have to be considered to fully understand the underlying dynamics and challenges, and identify sustainable

solutions that can be maintained long-term, and that ensure financial self sufficiency. By taking a human and people centric view, the project team, in collaboration with the Mathare Youth Center and supporting organizations aims to turn ideas into impactful and sustainable solutions.

Human centered Design (HCD) and Design Thinking are well proven sets of principles and methods that help us deal with increasingly complex problems in challenging environments. By putting the human being at the center of the challenge, the aim is always to create solutions and experiences that focus first and foremost on improving people's lives and addressing their specific problems, regardless of age, income, gender or geography. In contrast with the status quo, in which solutions are often developed without interacting with the people for whom solutions are designed, HCD involves human beings from the very beginning of the project.

HCD projects always start with understanding the environment and the people for whom the project team is designing. As an interdisciplinary team consisting of Kenyans and external experts, it is important to gain empathy and a deep understanding of the local circumstances and context. Without empathy and deep knowledge of the environment and the people, we would not be able to design impactful solutions that can be implemented sustainably.

Since we designed the project as a hands-on training experience in collaboration with the Mathare Youth Center, approximately twenty community members were involved in the process. After gaining a broader understanding of the challenge and the various stakeholders involved, the team carried out extensive field research. Soccer players, teachers, parents, trainers, and neighbourhood residents participated in the interviewing and observation process. The goal was to truly understand the people's desires and concrete needs instead of asking them what they wanted. Furthermore, by observing and interviewing people on the street and in the community, the project team was able to gain empathy for their specific contexts. The diversity of the project team, comprised of Kenyans from Mathare as well as other areas of Nairobi, external experts and HCD experts, enabled a deep level of observation and generated critical insights.

Based on the results of the field research, we worked with youth from the Mathare Youth Center to identify insights and opportunity areas for further improvements around the maintenance of the football field. The team identified missing lines of communication between the people using the field, lack of a drainage system, and potential for income generation for maintaining the field. After developing an understanding of the problem space and defining insights, the team began the ideation phase to develop new ideas for practical solutions. By using several brainstorming techniques, the team aimed to rethink existing constraints and assumptions and break through past thinking patterns to allow new and crazy ideas to emerge.



(RE) DEFINE

We used the feedback to re-define the different prototypes. Some prototypes, such as the WhatsApp group, we implemented directly after testing it. We redefined others and then tested them again.

TEST

The prototypes helped us to put our ideas into tangible objects. We went out in the field again, on the street, to the schools and the football pitch, to test the prototypes and gather feedback from users and other identified stakeholders.

PROTOTYPE

We selected four great ideas and started to prototype them. As prototyping tools we used either paper and pen, but we also used cartons, paper and tape to build low cost but still descriptive prototypes. One idea was to create a WhatsApp group to easier coordinate the maintenance and use of the field. We prototyped this by drawing the functionalities and participants on a piece of paper.

IDEATE

The various developed "How might we" questions built the foundation for the ideation phase in Mathare. One "How might we" question was for example "How might we make the football pitch commercially attractive?". In the ideation session, we came up with as many ideas for one challenge as possible. We achieved this by applying different brainstorming techniques.

NEEDFINDING & SYNTHESIS

In Mathare, we started the process with identifying the most important stakeholders by drawing a stakeholder map. We developed a question guide with at least ten questions for every of the identified stakeholders to understand their needs and to gain empathy. The results of the interviews, observations and quotes, we transcribed and clustered to identify common themes and insights. On the basis of the newly gained insights we came up with more specific "How might we..." questions to prepare the ideation phase.

Ideas are intangible thought constructs, not real or tangible. In order to see if the ideas are viable and feasible, we need to test the ideas in reality. This is enabled through the building of prototypes, or tangible versions of our ideas. Four different teams were created to work on one prototype. The outcome was four different prototypes, from software based services, namely a WhatsApp group to facilitate communication between the people using the soccer pitch, to tangible solutions like a new roof-top to minimize flooding of the field during rainy season.

As a last step in the process, we went back to the street, football field and schools to test our prototypes. The test feedback provided insights for how to improve the solutions. After successful testing, some prototypes were reworked. Others, such as the WhatsApp group, were implemented immediately. All in all, applying the HCD approach to the setting in Mathare created great opportunities for developing solutions to maintain the football pitch as a usable public space, as well as creative excitement among community youth.

04 LEARNINGS FROM APPLYING HCD IN MATHARE

COLLABORATION
AND CONTEXTUAL
IMMERSION ARE
CRUCIAL TO A
SUCCESSFUL
COMPLETION OF AN
HCD PROJECT

Applying creativity, innovation concepts and methodologies such as HCD in an environment in which even basic education is lacking presented the team with challenges, and thereby substantial opportunities for learning. The only way for the project team to learn was to immerse themselves in the environment of the Mlango Kubwa community, along with their diverse experiences and expectations.



1.

FROM KENYANS TO KENYANS

Having a diverse facilitator team consisting of Kenyans and international actors is important for increasing the spectrum of ideas and solutions through diversity of lived experience, and for ensuring local perspectives and understandings of challenges and solutions are integrated. Especially when it came to working with local youth, the presence of Kenyan co-facilitators encouraged

young community members to open up. It mitigated their shyness and fostered increased courage and self-confidence, leading to fuller participation in the process. The Kenyan team members used familiar words and metaphors to explain the process and tasks; indeed, without the Kenyan perspective, this project would not have been possible.

LEARNING

Having Kenyans at the core of the facilitation team is critical to ensuring their cultural point of view is considered and a broad spectrum of ideas and solutions is achievable.

2. ADAPTATION OF THE METHODOLOGY TO LOCAL CONTEXTS

Usually, an HCD learning experience is structured in contiguous theoretical and hands-on parts. Although theory and practice are closely linked, in the initial introduction into HCD theoretical input provides a foundation for practice. In a classroom environment at the university level, there are often tools and materials at hand, such as powerpoint slides, to support the process. At the youth center in Mathare this infrastructure was missing. As a result, we used flipcharts and brown paper to visualize as many of the concepts as possible.

We noticed early on that there were two main challenges. First, there was a language barrier, as most youth understood and spoke English, but were more comfortable in Sheng, a mixture between Swahili and English used primarily in Nairobi.

Secondly, most of them had a hard time thinking abstractly, an integral part of the HCD methodology for locating new concepts and ideas. This, combined with an overall shyness from many of the participants, led to a bumpy start. We quickly adapted to the situation by recruiting co-facilitators, who translated theory and instructions into Sheng. Interestingly, in the prototyping sessions, the youth discovered their creativity, breaking the ice. With this, their ability and talent in generating new solutions emerged.

LEARNING

The structure and format of the learning experience has to be strongly adapted to the local context. In this case, there was a need for learning by doing and getting as much hands-on and tangible experience as possible. The explanation of the theory can be and must be shortened to a minimum.



3. KNOW-HOW TRANSFER

In an intercultural environment with diverse groups, knowledge and experiences, expectations can differ widely. Our participants came from various backgrounds, which proved challenging when facilitating the HCD methodology and building the project teams. In the second step of the Design Thinking process, for example, defining insights

by using metaphors was not always easy, as the metaphors were not necessarily clear to the participants from Nairobi. In teaching, it can be challenging to understand the group's background and experiences and use these as a foundation, however this is crucial to the successful transfer of knowledge, and conveying the intended message.

LEARNING

In the process of know-how transfer, the facilitated content and material plays a major role, however every participant's background, experiences and expectations are also critical. Finding the common ground to build upon is essential for a successful learning experience. This can be established through warm up exercises, but even better is long lasting working relationships.



4. INTERCULTURAL TEAM

In the beginning of the project we divided the group of twenty project members into four intercultural and interdisciplinary teams. Multidisciplinarity enables teams to view situations from a variety of angles and generate a broader range of insights, observations, and later, ideas and prototypes.

In the context of Mathare, it was crucial to have the local community at the center of the project teams, in order to develop insights and ideas relevant in the context. Gaining empathy is an integral part of the Design Thinking process and easier with team members who not only speak the local language but are also respected in the community. This opens up channels of insights closed for strangers to the community.

LEARNING

Intercultural teams are critical to gaining empathy and approaching the challenge from a variety of angles. At a later stage of a project, it also fuels the ideation and solutionizing process.



5. INCLUSION OF NEIGHBOURHOOD AND STAKEHOLDER

The community and other stakeholders involved in the challenge are an integral point of contact for the project team. These are the people directly affected by the problem, and they have the potential to benefit most from the solution in development. Therefore, involving the community and stakeholders early enough in the Design Thinking process helps to ensure that the problems identified and the ideas generated are relevant.

Building trust between the community and the team is crucial to a meaningful level of sharing and insight generation. Particularly in unfamiliar environments, it is key to involve team members who the community understands and respects, but can remain neutral. This fosters the deepest level of information sharing.

LEARNING

Involving the community and other relevant stakeholders from the very beginning of the project is critical to ensuring that the problems identified are real needs.



6. INCREASING MOTIVATION FOR FINDING SOLUTIONS

The Design Thinking process is extremely hands-on. Therefore team members across cultures are rapidly becoming drawn to and getting involved in the process. Still, before jumping in, it is important to have some basis of theoretical understanding. During the project, we saw that the "doing" parts

in particular visibly increased the motivation of all participants. Suddenly, it was about more than just a theoretical framework; in focus were rather practical to do such as "go out and interview stakeholders", or "build a prototype".

LEARNING

Doing and making things is of utmost importance and should be expanded throughout the entire project. For the project members, having something tangible to build and test in a short time is very rewarding.



7. DEVELOPING RESPONSIBILITY

The project resulted in the community, neighborhood, and project team co-developing a number of solutions for the Mathare Youth Center. Naturally, an emotional bonding with most of the solutions quickly emerged. By the end of the project, one prototype was realized immediately. The process of rapidly developing prototypes of

ideas and then testing them in the field fosters a sense of ownership on the part of the team members. Due to the very interactive design of the project and by including the youth and the community in the project teams, a sense of shared responsibility and a proactivity related to applying the process in future projects developed.

LEARNING

Developing solutions in interdisciplinary and cross-cultural teams and transforming theoretical ideas into tangible prototypes leads to a very high level of responsibility and ownership to realize solutions quickly. This ownership helps ensure sustainability, and is important to drive the project forward even after the project facilitation team has left.

05 IMPACT!

DEVELOP BETTER SOLUTIONS WITH HCD AND DESIGN THINKING IN INFORMAL SETTLEMENTS AND CHALLENGING ENVIRONMENTS

In the development context and more generally, the impact of a project is what defines the success of an initiative. Many projects struggle with maintaining their impact long-term, especially after external support structures leave the project. After putting in effort and many resources and bringing hope to communities, projects still often die because of the difficulty of achieving financial sustainability. So how can HCD develop impactful and sustainable solutions in the context of challenging environments and informal settlements?

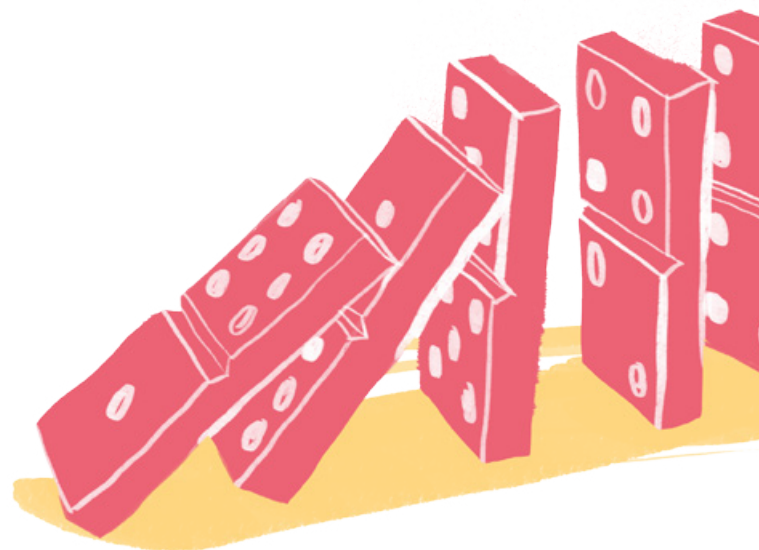
HCD AS THE FOUNDATION OF EVERY PROJECT

In the future, Human Centered Design must become the basis for every development project globally. As a lens on the human being, HCD focusses not only on needs, desires, attitudes and behaviours of people but also offers valuable insights about the specific market. By looking at insights, sustainable and economically successful solutions can be designed by using modern technology and advanced business models. It is our conviction that only the combination of a deep understanding of human beings and the context they live and work in paired with a refined understanding of technology leads to successful solutions. Therefore HCD must be an integral part of all projects in order to increase the effectiveness, sustainability and lasting impact for improved and newly designed solutions.



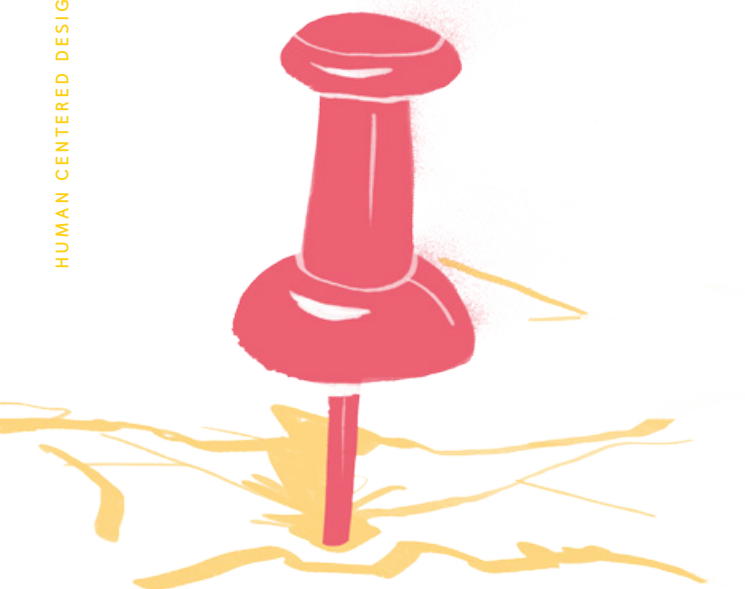
LEAVING TRACES

The ultimate goal in a project in development and social contexts is to achieve long-term, sustainable impact for as many people as possible. By not doing a project for but rather with the local community through a hands-on and interactive approach, the community becomes empowered to apply the HCD process in the future by themselves. This enables them to proactively maintain and improve the implemented solutions even after the project team has left. Long-term, sustainable impact is therefore achieved.



INVOLVING LOCAL COMMUNITIES

Successful and sustainable projects demand for a strong integration of the local community. HCD and Design Thinking ensure this by incorporating people from local communities during field research and testing activities as well as making them an integral part of the project team. As we learned, this leads to a sense of ownership and responsibility in the local community, which fosters further development and maintenance of the newly invented solutions.





IMPRINT

Thank you to UN-HABITAT, GIZ, ITMP and University of St. Gallen for supporting this first pilot project in the informal settlements of Nairobi. It was a learning journey not only for the project participants but also for us. We learnt a lot from the Mathare community and we feel confident to improve life with HCD and Design Thinking in the future.

Furthermore we want to say thank you to the University of Nairobi by supporting us during the field research activities and moderation.

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