An Architect's Investigation into the self-reliance of a Sub-Saharan African community

CONFERENCE PAPER · MAY 2014

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Available from: Michiel Smits
Retrieved on: 18 December 2015
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Abstract

This study investigates how externally initiated development projects and the role of the architect may influence the self-reliance of a local community. The development aid for rural communities aims to improve the living quality, but often does not persist in the long run.

The article is based on the author’s experience and field research on a rural Sub-Saharan community and was gained during his work for Mt. Elgon Orchards ltd. (Mount Elgon, Kenya 2009-2014). During this period, the inhabitants were relocated from their traditional dwellings to the “new village” which was based on non-local materials and construction methods. Before the relocation, the community of Mount Elgon, Kenya, was largely self-sufficient and lived in a self-planned-, self-built and self-maintained environment. The results of the study show that, due to the use of external design, materialization, planning and construction methods in this recent major (externally initiated) intervention, the community of Mount Elgon finds itself increasingly incapable to maintain its built environment. The paper focuses on both direct factors (e.g. material and methodology) and indirect factors (e.g. social and cultural consequences, that have an influence on the self-reliance of the community).

Keywords: Self-reliance, Housing culture, rural communities, development aid

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1. Introduction

Visit to rural Kenya is a life changing experience. People met there are living day-to-day lives. Compared to the rush of the western society, theirs seems untouched by many worries. On the opposite side of the scale are people living in slums of Nairobi. Leading life in the city with hope to improve one's situation\textsuperscript{1}, which does not happen\textsuperscript{2}. This movement to slums devoured of culture and heritage could be changed if settlement situation in rural areas would improve\textsuperscript{3} which became the objective of my investigation.

1.1. The case & locality

In 2008 the owners of Mount Elgon Orchard limited\textsuperscript{4} initiated the development of social projects for the surrounding rural communities of their farm. Although not yet a licensed architect, making design proposal for an orphanage was commissioned. Soon realisation came that there were considerable environmental, social and economical insensitivities allowed. Having erroneously excluded the inhabitants from the design and construction process, it resulted in the inappropriate positioning of the structures in relation to their climatological orientation, allowing cold air into the living quarters in the evenings. This formed the first confrontation with the effects of the current decisionmaking process, role of the architect and the instruments used.

1.2. Rehousing one hundred families on Mount Elgon

While being in Kenya on one of later field studies (Mt. Elgon 2010) making a master plan with proposal for the relocation of one hundred families from the farm was commissioned. Because the farm is located in an isolated area at the border with Uganda, most of the workers have been living at the perimeter of the farm for generations. Although the owners had the best intentions in mind, it seemed they were disregarding the social and cultural background of the inhabitants, not due to ignorance, but because of the priority that lays in the general improvement of health and habitation quality. This article is formulated as an investigation on the author’s role as an architect (and that of both Habitat for Humanity Kenya and the farm owners within the body of rural development aid), the used instruments and decisionmaking process. As a result possible changes to them are elaborated.

Fig. 1. Left complete staff, Right the farm and informal settlements (author: M. Smits)

\textsuperscript{1} Davis, M., Planet of slums, Verso, London 2006, p. 29.
\textsuperscript{3} Abonyo, D., Cultural Aspects of Housing: a Case of the Luo in Kisumu Town, IAHS, Miami 2005, p. 175.
\textsuperscript{4} Mount Elgon Orchard ltd. is a flowerfarm located in the western region of Kenya on Mount Elgon. The farm produces and transports around 220.000 roses per day and has approximately 1300 workers, http://mtelgon.com/en/, (date of access: 2014-12-20).
2. Theoretical context

The first major global confrontation within the development aid industry came about through the book “Dead Aid”5. The author, Dambisa Moyo, explains how the approach, strategy and execution of currently applied development aid fail to deliver sustainable solutions. Most examples mentioned there have emerged from defective financial strategies, political insensitivities and general inefficiency of the development aid industry. The author elaborates on the abuse of the less fortunate, which is painfully portrayed in a documentary “Enjoy Poverty”, by R. Martens6. He emphasises that poverty is often used as a sales technique, indicating a rough estimation of 70% of all development aid funds flowing directly back7 to the initiating organization (which often includes architects).

In a recent study by S. Van Kinsbergen 2013 the effectiveness of global operating PI’s (private initiatives) on a micro scale is criticized. She displays the lack of sensitivity by the developers, which can be observed in the incapability of locals to maintain the project after realization. Basic cultural misunderstandings and a lack of strategy in viability studies seem distinguishable throughout the project development process. The essential effect is further decrease of self-reliance of the inhabitants.

As the majority of inhabitants still live in self-built dwellings erected with locally acquired materials, the sustainability of the current development aid project could be queried. According to Kinsbergen, inclusion of the community in the project as a whole (finance, initiative, decision making, ownership, construction and maintenance) is evidently a key component for its success. In line with this research it seems wise to venture extending this topic to the possible need for a methodology that benefits knowledge exchange from professional to non-professional, (read non-local to local). Knowledge exchange would increase the understanding of the context in all phases of the project, from initiation to maintenance, as well as increase involvement of local inhabitants as project owner(s)8.

Most development aid projects start with the best intentions and often stagnate because of very basic mistakes. In many cases the failure is due to the disregard of social and historical backgrounds of the context. This occurs mainly because of the ‘whom’, ‘where’ and ‘how’ the development is aimed, articulated and realized. Most of the development aid is initiated from the outside and without any involvement of the community. The question remains: how is it assessed what the community needs, wants or requirements are? These are a few of the many factors that should be taken into consideration when someone initiates a development in any scenario9.

“Dwelling is a process as well as an artefact. It is both the process of living at a location and the physical expression of doing so. The dwelling place is more than the structure, as the soul is more than the body that contains it. For untold millions of people the bond between themselves and their dwelling place transcends the physical limitations of their habitation. This double significance of dwelling, which has been rather elusive to many, encompasses the manifold cultural and material aspects of domestic living”10.

3. Methodologies & results

Primarily this section describes the developer’s perspective on ‘why’, ‘where’ and ‘how’ they want to “develop” the area. As comparison the characterization will be made of the inhabitants in relation to how they would like to “develop” their built environment. Based on the critique formulated in the conclusion of this first executed methodology (section 3.2.), several other methodologies were executed (section 3.3.) to increase understanding on how current development is organized, the role of the architect in this process and how decisions influence the inhabitant’s self-reliance.

3.1. Mapping: the camps

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Around 500 families live in the perimeter of the farm, divided over several camps in informal settlements. In the history of the farm there was one inventory performed but it was never translated into a map. The spatial analysis below which was completed in 2008 by the author, describes information on the infrastructure, rivers, type of dwelling, the amount of residents per house, shops, bars and farmland.

3.2. The interviews

It soon became apparent that to increase understanding in the occurring problems, interviews needed to be performed. Under supervision of the author, in a two-day session (08-11-2008/09-11-2008) 3 farm managers took the first interviews with 15 respondents (workers of the farm) that wanted to apply for a new dwelling. They were selected as the first inhabitants to be relocated from the camps to the “new village”. They were selected on the amount of years they had worked for the farm and how much they saved in the farm trust fund. Parallel to the inhabitant’s interviews several more were taken by the research author with the staff involved in the development projects (both owners and 3 management members of the trust, were interviewed over several days 10-2008).

In the evaluation with interview takers it seemed that the respondents had privacy problems due to the location (at the “new village” site), the author’s presence and the selected interviewers. Often leading to short and not very detailed information. To solve these problems respondents were selected at random for the second session (10 respondents, on 14-11-2008) and after disappointing results the interviewers were changed as well. The three new were teachers at the primary school and considered trustworthy (in the eyes of the community); moreover they have been trained as social workers. Without the physical presence but under the supervision of the author the interviewers were visiting the respondents (20) at their homes (on 19-11-2008). This had a major effect on the outcome of the interviews and the data was used to evaluate the respondent’s demography, tribe background, customs and traditions as shown below.

3.3. Other methodologies

In this section different methods and approach to the inventory of the social, cultural and historical values of the community on Mt. Elgon are explained and evaluated. The analysis of these values was performed by field action investigation, which contains: observations, games, program analyses, spatial analyses and communication, which reveal the social context of the camps.
3.3.1. Observation I Mount Elgon

To understand how the findings of the interviews affect daily life and the inhabitant’s dwellings two daily observations have been made. There in a 24-hour setting two families were observed in everyday day life in their family compound. Joseph - a father of the first observation family was a man met on the road at the camps. By choosing him and his family, the inhabitants started to understand that the aim of interviews and observation - to act as a spokesperson to the owners of the farm. As Joseph was informed the goal of observation was to understand local everyday family life he directly invited the author to visit his family.

Around 4:30 (23-11-2008) the observation at the family by the author began. Mapping the family compound, spatial connection between inside and outside zones were made. Detailed schedules for every person were written. Unsurprisingly at first family didn’t feel very comfortable with their every move being watched but with help of the father everybody tried to continue daily life as normally as possible.

The structure on the middle is the family house; this is the dwelling where the parents live and Martha (daughter, 8 years old). The left side of the house is reserved for sleeping. Two beds are placed there and cloths are used to make a separation between the two bedrooms (Parents’ and Martha’s). Round the beds large bins are placed for storage purposes. In total this almost covers half of the family dwelling, the other half is used as living space. Compared to other households this living room is something special because it’s furnished with the couch, chairs and large table. That the family had this living space tells something about their status. The only other examples of this kind of living space are at the houses of the chairman, other pastors or people that have a well-paid job at the farm.

The dwelling on the left side is the house of Samuel, he is seventeen thus supposed to live by himself. If compared with the kitchen/bedroom of his sisters his dwelling is really luxurious. Not only does he have a bed and small cabinet to store his clothes he also has a bicycle. His dwelling is also divided into two parts by a thin cloth. The rest of his dwelling is used as storage space. The dwelling on the right side is the kitchen space, which also functions as the dwelling for the girls. During the day sleeping materials are stored on the backside and the kitchen has full working space. At night mats are rolled out and a mosquito net is hung above the beds of the girls. The net is the only one the family has, in this dwelling there is no separation between the different functions and most space is used for storage.

The compound is fenced with a low green hedge with a small path leading to the main road. Round the family compound there are also different outdoor functions. These are not defined by anything and are for that reason marked with a dotted line. The central circular space is the place where the family gathers and eats. This place is also used to dry maize to prepare all kinds of products for cooking but also just to sit and talk. Behind the kitchen space there is an area to wash oneself out of sight of others and on the other corner a place to wash clothes. The right edge of the family compound is used for drying clothes, growing vegetables and for midnight sanitation emergencies.

The left image below is a functional scheme of the individual routes of the family members during the day. From this observation some of the key components of movement and organization became clear, along with the relations with different families and where and when they met. One of the key values is the main road that runs through all the camps. It is used by the farmworkers to go to work together in the morning, but also for children to walk to school together. Another important place of social activity is the water source, where children from all ages meet each other throughout the day.
As the functional scheme fails to communicate movement and usage of the outdoor space—3D visualization with movement patterns of the whole family during morning, afternoon, and night was made. These different activities are indicated from dotted to straight line. There it becomes clear how important the central living area is and how often it is used throughout the day. The movement at the washing space is also intense. Another relevant issue that arises is the importance of the different structures how they correspond with each other and their surroundings. The communication and possibility of movement between the different structures is vital as well. The crucial conclusion from this observation is the great significance of having separate house structures so children from a young age are taught to be self-reliant and how to become an adult within the safe borders of the family.

3.3.2. Observation II Mount Elgon

The second case was also investigated on Mt. Elgon and by the author. This observation (on 26-11-2008) mainly focused on the detailed analysis of the time schedule of the family. Here every family member explains his weekday and weekend activities. The translation of this movement is shown below. This family lived slightly more remote in the Lokobo II camp. They were living rather far from the main road, didn’t work for the farm and only had one direct neighbour. Although the difference it showed that many spatial customs (family house and kitchen usage) were comparable to the first case study on Mt. Elgon. Despite that the core of the family wasn’t next to the road it does function in a similar way. Neighbours can be seen in everyday life and most family members do participate in each other’s daily chores.

Below several important conclusions from this observation were (next to the similarities to the first case study):

- There is a main movement from the border crossing (Uganda at Suam river) to the main gate of the farm. This is mainly via de main road in the camps.
- This is also stimulated because the density of infrastructure in relation to the amount of dwellings increases the closer you get to the main gate.
- The gardens also called Shamba play a key role in the vitality of the camps economy and sustaining enough food resource. Because most households have one parent that work on the farm the other parent is in 95% of the cases working on farmland in or outside the camps. This also an important social aspect
as men and women often work together on the lands. In exchange the workers receive either payment in the form of money or food.

- Most siblings above 18 (approximately 70%) are not in secondary education (in most cases because of lacking finance). Most of them work around trying to generate project-based income (daily basis). This is not enough to sustain their own life (dwelling and nutrition) and thus stick to the family compound longer than normally would be the case. Because of this siblings tend to stay longer at home, they receive a steady income later, marry older, get children later (and less).
- In more and more houses you can see proper furniture, bicycles, motorbikes, etc. coming up. Which should indicate that there is more money to spend, sadly it is often not use for the education of the children. Especially children who have poor results in primary school are being pulled out often around grade 7 and been put to work on the garden or in the house. It would be advisable that especially this group receives support (VTC and Youth polytechnic).
- Almost all friends of children come from the camps.

3.3.3. Board game: The dream village

Interviews, observations and analysis increased the insight into societal and spatial tendencies within the build environment. More important there seems to be a communal notion of the communities spatial organization (position chairman and church). This would imply any form of external organization highly problematic. For this reason the next methodology aimed to gain insight on how and where the community would like to plan future activities and projects. To bypass the pressure as seen in the interviews and observations a game form was chosen.

The dream village board game seemed to take away the stress of questions and give people the opportunity to show what the ideal spatial organization of their village would look like. During three days (02-12-2008/04-12-2008) the board game was played with 15 respondents living inside the current camps. The board was covered with a map of the “new village” location. The game was explained by one of the social workers (of the interviews) and because map reading is difficult for most inhabitants the road to Suam, the Kaptega River and Boa’s place (future market place) were indicated to them.

![Board game image](image)

The pieces made for on the board game where: houses, church, market place, water collection point, school, chairman, bush shops, etc. All the correspondents showed their ideal village without knowing or seeing what the others gave as a possible scenario. The board games were supervised and attended by the author and performed at the respondent’s homes.
From every contestant photographs of the final solutions were made. By dividing the map into 5 zones (shown in the image above) it was possible to derive spatial statistic values from the different solutions given. The analysis is shown on the image above. What started as a way to grasp the community’s dreams soon became a whole research in itself. From the first analysis it became clear that the position of certain public functions was in exactly the same position between different contestants. Indicating that although the correspondents have a different background there is a common notion of the position of public functions. This proves in certain ways that community has a natural way of organizing their public space and that ignoring it (as seen in external initiated development) could be potentially damaging. This illustrates that the current development (master plan) of the new camp poses possible problems for inhabitants.

4. The new village

The image below shows the contrast between the typology of the camps (left) and that of the introduced dwelling (right) in the new village. In contradiction to the former situation, many spatial, physical and social obstructions were found in the comparison between the two. In the new village, inhabitants are allowed to construct only one structure on their compound. This means a drastic change in culture as men and women are often forced to live together in one house.

Taking a look at the programme of the dwelling some more severe changes can be seen. Because walls instead of cloths now make separation in the programme, the dwelling loses its flexibility and inner social climate. Now family members have their own room, which can be closed off from family life. Where traditionally an average family would have between 60 and 100 square metres of programme for each family, this is now reduced to a mere 30 square metres. For the families that have over 6 members (the great proportion of inhabitants still have extended families) it is impossible to fit the family into the new dwelling. As a result young children are forced to live outside the family compound in a nearby village. In recent events this has threat their wellbeing, as without parental care they are exposed to alcohol, drugs and violence.

Where, in the camps, the outdoor living room was semi-enclosed from the public and in this way partially maintained the privacy of the family, it is now fully exposed to street life. In the last observations we can see an
increase of time being spent inside the family structure instead of being outside. This could cause a further increase of privacy and has possible negative effects on social transparency within the community, which in itself is a choice that the family or community should make based on the possible social consequences.

Over centuries rural community regulations provided guidelines for family and spatial organization. With the introduction of governmental and farm regulations these guidelines are pushed outside the community and become individual interpretations. Where traditionally the chairman and village board handled these, they are now regulated in a far more distanced, formal model. Requesting changes is difficult (questioning the decision of your employer is almost never successful) and often taking a long time especially those that require governmental involvement.

Cooking is another very important part of the compound programme that has been forced to move to a different position in the compound. The inhabitants traditionally cooked outside. But the developers perceive this as a fire hazard. For this reason, they provided a kitchen inside the new dwellings. Socially it is considered unacceptable to cook inside, so inhabitants refuse to use the indoor kitchen. Luckily, this gives the family an additional bedroom, which in most cases it desperately needs. In the first weeks in the new dwelling most of the women could be seen cooking outside just around the corner from the kitchen on an improvised stove. After making this observation an outdoor kitchen was added to the dwelling design and from then on all dwellings have an exterior kitchen. Traditionally the kitchen was in a separate structure in the homestead, this was not allowed by the developers and so attaching the program to the dwelling was forced. Which is a comparable development in contemporary African city life. In the left image below you can see the traditional, separated kitchen (Butula) in the centre the new village project and on the right image the comparable situation in the city (Kitale).

Another example on how private functions are positioned in the public is sanitation. In the analysis of a neighbouring project of recently developed houses (by the Kenyan authorities), inhabitants were taking showers and urinating outside. When taking a look inside the dwellings, they had a proper shower and toilet inside. Being inquired why they didn’t use the indoor sanitation explanation given was that this was socially unacceptable (because it is considered not hygienic as house never had any sanitation pit). In the garden they made a typical local shower unit made out of thatch just next to the house. In the sanitation units of the new village, the toilet and shower were positioned on the edge of the family compound. Provided with proper sanitation, the developers thought that the inhabitants would be happy with the solution provided. Where in fact the inhabitants are not allowed to pull up any structures they often attach cloths to the dwelling where they want to shower.

5. Conclusion

The rural community of Mount Elgon is confronted with rapid urbanization in addition to industrialized materials and construction methodologies. This basically entails fast modernization of their built environment. Their dwellings used to be made with locally available (renewable) materials and the construction methodology evolved over centuries, passed down to every new generation. Thanks to low population density spread over vast areas the materials had sufficient time to regrow. The community is currently confronted with difficult decisions due to the increase population and a general lack of land and resources.
Traditional construction materials are difficult to access as they have insufficient time to grow. The encroachment of cultivation on forestry is also rising\(^\text{11}\). Inhabitants have to deal with the option of continuing the traditional construction of dwellings (with inferior materials thus increasing the measure of maintenance\(^\text{12}\), for example: applying grass instead of thatch), less durable dwellings (lifespan) or using aid industrialized construction (more durable materials). Modernization frequently necessitates the use of non-renewable materials and construction methods unfamiliar to them, on most occasions requiring them to hire labour.

Most of the indigenous architecture is one hundred percent bio-based (renewable resources), completely self-built and tends to be constructed with large sense of communal values\(^\text{13}\). Paradoxically most facilities developed for rural communities (schools, houses, etc.) ignore these tendencies and fail to examine the consequences of the choice for materials and construction methodology\(^\text{14}\). Not only do they overlook global tendencies (ecological materials) but they also seem to reduce the community’s ability to sustain the project after the developers depart. In fact developed societies in search of sustainable solutions could learn from rural materialization and construction techniques, furthermore they could use this knowledge to evolve their own insights in a sustainable society. The architect could play a vital role\(^\text{15}\) in understanding societal sensitivities and help to increase efficiency (social and spatial) of the offered solutions.

“The model itself is the result of the collaboration of many people over many generations as well as the collaboration between makers and users of buildings and other artefacts which is what is meant by the term traditional. Since knowledge of the model is shared by all, there is no need for drawings or designers.”\(^\text{16}\)

This article intended to investigate various methodologies that enhanced sensitivity by the architect towards: location, user, communication, construction methods and material appliance. These methods could possibly be adapted to provide an increased sensitivity towards social and ecological alternatives to current western solutions within the built environment. Before the professional becomes able to do so he needs to understand how his decisions in analysing, organizing, communicating, strategizing, designing and constructing are of influence in a community’s built environment and their self-reliance.

This requires a different role (of professionals) that transcends the framework of the current “commercial” ones within the built environment in a multitude of factors, susceptible to change by each spatial agency\(^\text{17}\). In the last decade many new approaches in practice are investigated on: community activation\(^\text{18}\), participatory approaches\(^\text{19}\), communication\(^\text{20}\), decision-making\(^\text{21}\) and more. Hopefully enabling the professional to shift to a modest and supportive role for the inhabitants. Not limiting his actions to merely offer spatial solutions for a community but enabling inhabitants to investigate them of their own volition\(^\text{22}\). Including their own knowledge on the project locality, social structures, traditions and building culture into the development process sustaining their self-reliance.

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