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HCD IN A QUASI-MARKET: LESSONS FROM A DESIGN PROJECT IN KEBRI BEYAH REFUGEE CAMP, ETHIOPIA

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ABSTRACT
A student design project conducted in a refugee settlement in Eastern Ethiopia during fall 2013 illustrates the challenges of designing appropriate products and systems for the humanitarian market. The presented case study involves the distribution of ethanol stoves within the Kebribeyah refugee camp. The students discover the challenges facing the designer within this humanitarian market. They identify the market as a quasi-market in where the end-user is not the customer and this leads to added parameters being relevant for the design process. There is a gap in applicable methodologies when designing for markets where the purchaser is not the end-user and has no influence on the product selection or feedback and where the opportunities of cooperation are limited due to the nature of humanitarian relief. The aim is that observations from Ethiopia together with existing human centred design theory can advise designers on how to best go about designing for the humanitarian market.

Keywords: Humanitarian design, Ethiopia, design methods, quasi-market

1 INTRODUCTION

A "humanitarian market" for off-grid renewable technologies has emerged and with it a need for well-fitted products and services. The humanitarian market can be defined as "the market created between humanitarian actors and suppliers to fill the need of staff and beneficiaries" [7]. A humanitarian market emerges in the aftermath of a crisis, such as natural or industrial disasters, national or international conflicts. Every humanitarian market is heavily represented by international and national non-governmental organizations (NGOs). Other factors include donors, service providers and enterprises that develop, purchase, and distribute goods such as food, shelter, medical equipment, and energy generating devices [6]. In the humanitarian market the customer is defined as the purchaser of the product or system and the end-user as the person aimed to be using the product or system. This definition will be used throughout the rest of the article. The humanitarian market can be compared to a quasi-market that is established and maintained by the public sector, services produced in quasi-markets usually implement the objectives of social profitability and welfare, the public sector is usually the subscriber, regulator, and purchaser of the service. Public sector is here comparable to the United Nations and donor countries' role within the customer-supplier relationship.

At the end of 2009 there were more than 10 million refugees in the world [1]. People become refugees as a result of war between countries, civil war and persecution from religious or political reason, famine or other natural disasters. About 80 percent of refugees come from developing countries and most refugees remain relatively close to their home region, fleeing to neighbouring countries or even within their own country. About one third of the world's refugee population lives in refugee camps. Refugee camps are temporary communities built to provide shelter and aid for refugees. Camps are intended to be temporary solutions, with the repatriation or resettlement of refugees as the ultimate goal. However, because of ongoing conflicts most refugee camps end up becoming more or less permanent settlements, often merging with local communities in the surrounding area. In fact, the average refugee spends 17 years living in a refugee camp[2]. Aid given to refugees is paid for by donations from public fundraisers, governments and UN funds. This money is normally channelled through NGOs, the UNHCR or the public sector in the host country. Humanitarian crises may emerge or change rapidly and the organizations operating within it need to master operating within this uncertainty. The big challenge might not be the lack of resources, but

rather how to use them within these dynamic environments with the best possible outcome [3]. Prolonged humanitarian crises, where whole populations rely on international financial support, will result in donor fatigue [7].

1.1 Research gap and approach

There is only a limited amount of literature available regarding design methodology for humanitarian markets. The starting point is that the humanitarian market can be referred to as a quasi-market, meaning that it is a situation where the efficiency of the free market is combined with public administration and funding. Quasi-markets are created when the public sector opens its own service production to other producers by abandoning its monopoly and hierarchical way of producing services. The main purpose of quasi-markets is to raise competition between existing or potential providers, which may be private or public, for profit or non-profit organizations[4], 2004).

Due to the practical approach of the project, the literature review was therefore primarily based on research from similar contexts and human centred design approaches. Even if this might prove to be helpful, it has its limitations.

Human-Centred Design (HCD) is a process and a set of techniques commonly used to create products, services, environments, organizations and modes of interaction [5]. The HCD toolkit from IDEO is presenting the three lenses that needed to see the world through in order to achieve a successful human centred design process; desirability, feasibility and viability. In this design project and case study the HCD methodology has been considered as well the three factors when looking at other designs in the humanitarian market. This approach has been created by the developed world designing for the under-developed and developing world. The perspectives presented might therefore be both biased and not contextually fitted. Furthermore it is not aimed at the humanitarian market and as a consequence will not consider the issue of the end-user not being the customer. A participatory design approach is often used to extract information and knowledge from a community, even though the result of this research could only be for the benefit of project planning and upwards accountability to donors and not contribute to the community directly [13]. However, most projects are reliant on and will greatly benefit from a thorough information gathering process in order to provide a detailed problem description. Processing the gathered information in a good way will also help designers provide the most fitting solution and thus hopefully avoid the problem of failing pilot projects [6]. The HCD IDEO toolkit emphasizes that for a human centred design to be successful there are three lenses that need to be fulfilled: desirability, feasibility and viability [4]. Still, refugees are not accessible for end-user research and are currently not considered during the product development process [7]. Nielsen and Santos' [8] consider the top priorities of a product from the product development enterprises point of view to be safety, manufacturability and robustness. Whether this is the viewpoint of the end-user is uncertain.

This case study will contribute to expanding knowledge on what the contextual needs within this market are and to shed light upon the challenges a designer might face in the humanitarian market. There is a gap in literature when it comes to designing for this market and based on the design project in Ethiopia.

1.2 Methods and scope

Six days were spent researching in Kebribeyah refugee camp and the surrounding area. During the first visit the main goal was to understand the end-users need for off-grid energy solutions in regards to cooking as well as achieving a greater understanding of their cooking habits, culture and environment. Five semi-rigid interviews with refugee women were completed, each interview lasting about 45 minutes and conducted in the setting of their homes. Later, a group discussion with three of the former interviewed women was conducted. Key informants in the camp were also interviewed, including but not limited to: field staff from Gaia, United Nation High Commissioner for Refugees (UNHCR) and Administration for Refugee and Returnee Affairs (ARRA) officials and incentive workers amongst the refugees. A structured interview with Abdirizak Mussa-Eid Ardaale, one of the field staff from UNHCR was added were we requested him to prioritize what he thought to be most important when implementing a new product in Kebribeyah refugee camp. During the second trip we visited the two other camps in the area, Sheder and Aw-barre, and made a second visit to Kebribeyah. This was to see the similarities and differences between them as well as different projects that already had been or would be implemented. We also observed the refugee women cooking injera, their regular

breakfast dish. Follow-up research and interviews were conducted in the capital of Ethiopia, Addis Ababa and finally a two day visit to the University of Mekele. These interviews were done based on a snowballing sampling technique[9]. In Addis Ababa we met with many different stakeholders; these included Horn of Africa Regional Center/Network (HoA-REC/N), Gaia, Danish Refugee Council (DRC), Save the Environment Ethiopia (SeE), local and national governmental agencies and different branches of the UNHCR.

2 DESIGN CHALLENGE, CONTEXT AND OBSERVATIONS

Kebribeyah is a refugee camp run by the United Nations High Commission for Refugees (UNHCR) in collaboration with the government arm responsible for the implementation of refugee protection and assistance activities in Ethiopia; the Administration for Refugee and Returnee Affairs (ARRA). Kebribeyah was constructed in 1991, and today has a population of almost 16,000 Somali refugees [10]. The design challenge was to design an alternative solution to provide off-grid energy solutions for refugee camps and one of the first steps of the research was an eight weeks field study in Ethiopia. The research took a starting point in a case study for the distribution of ethanol and ethanol stoves in Kebribeyah refugee camp in eastern Ethiopia. Upon arrival the refugees are provided with basic supplies such as pots and pans, tarpaulins, wood for constructing shelters etc. A non-governmental organization (NGO) called Gaia Association[11] has been providing the households in Kebribeyah with ethanol stoves since 2005 and currently distributes ethanol.
The aim of the design project was to assess the possibility of designing an improved stove design, but due to the contextual insights retrieved, the result of the project became the design of a system and products that supports local fuel availability and self-reliance as a compliment to the Gaia project.

2.1 Fuel access

During the visit it was discovered that the supply of ethanol is insufficient and the refugees still rely on the use of charcoal and collection of firewood in order to cook their meals. Refugees had been provided with four different stoves in addition to the Gaia Ethanol stove[11] and it was only after talking to the women that the students realised that their main concern was fuel access, not stove design. Only a sixth of the ethanol needed was available and the women were forced to still use fossil fuel. This information is not available on any fact source identified.

2.2 Multiple stakeholder agendas and power relations

It was discovered that stakeholders affecting stove use and fuel distributions include refugees, UNHCR, ARRA, but also the local community and government, donors and NGOs like Gaia Association, the Ethiopian government and citizens, manufacturers of products used in the camp (like Dometic), other smaller NGOs and international organizations such as USaid. There are some challenges connected to a multiple stakeholder environment, amongst others complex power structures and multiple stakeholder agendas and the design solution depends on the relationship between all of these. Understanding these structures in the case of Kebribeyah is a demanding task. The first impression was that the relationships between the different stakeholders in Kebribeyah are unclear not only from an outsider's perspective, even the stakeholders themselves struggled when attempting to explain the complex power structures. In particular, the relationship between ARRA and UNHCR is challenging to map out. For instance, in order to be permitted entrance to the camp the students needed to explain the project's intentions with three levels of UNHCR and ARRA separately. UNHCR was always the first office visited and they decided whether or not they would encourage ARRA to approve the visit. All stakeholders have their own "entry point(s) and criteria for participation" in humanitarian operations (Bellenca & Garside, 2013). Further, ethnic and cultural power relations affect the success and acceptance of a technology and a system. Ethiopian and Somali culture is fundamentally hierarchical and vertically oriented. (IDMC, 2004; Gundel, 2006). This was apparent in most social settings and formal meetings attended. In Kebribeyah these hierarchical structures appeared in many ways. They were present within each organization, within the refugee community as well as shown in the interaction between the refugees and staff from the different organisations. When conducting the research the students got the impression that permission given from camp officials gave us a "free-pass" to act in ways which would be considered intrusive, such as photographing the refugees and entering their homes. The refugees seemed to have little authority over these decisions, even if they were not forced to accept visitors they might have felt obliged because of their gratitude

towards the organisations providing for them. Traditionally, clan structure is the main foundation for the pastoral Somali society [12]. Governance in the Somali region of Ethiopia is a complex relationship between state and traditional institutions, such as councils of clan elders [13]. The students believe these social structures also play an important part in the lives of the Somali refugees in Kebribeyah. This was pointed out to us by one of the UNHCR officials of Somali descent, who advised us that in order to gain support for the project amongst the refugees, involving the elders and the most respected women would be a good move. However, Bloom and Betts argue that there is a fear that participatory methods may enhance existing power structures within communities instead of empowering those who are the most marginalized [14].

2.3 Short-term thinking, long-term settlements

Many refugees have been resettled to other countries but the majority will most likely spend several more years in Kebri beyah. In spite of this, many of the refugee met expressed a hope to be resettled to the USA in the near future. One of the women interviewed had just had her application declined and even though some of the younger refugees had grown up in the camp, it seemed they were considering it a temporary home. Most international organizations working in the humanitarian market operate with annual or biannual budget terms. For local partitions of these organizations, long term planning is therefore a challenge. Stakeholders explained that short-term objectives and long-term thinking collide in these chronic emergencies. When Kebribeyah refugee camp was established the priority of UNHCR and the government was to cover the basic needs of the refugees: food, water, shelter, sanitation and health care as in all crisis situations [1]. Other, more long-term solutions were not a concern. In order to cook their food, the refugee's harvested wood from the surrounding trees, which has led to complete deforestation of the area. As a result of the deforestation, fuel for cooking has received more attention and for the last 7 years Gaia Association has worked on providing ethanol as an alternative fuel for cooking. Unfortunately the supply of ethanol does not nearly cover what is needed, so the refugees still rely on collecting firewood.

2.4 The role of pilot projects

The Save80 stove was designed to save 80 percent of firewood. The system consists of a specially designed stove with pots that fit perfectly. It also comes with the wonder-box, a Styrofoam insulation box designed so that the user will heat the food on the stove and then put the pot into the wonder-box in order to finish the cooking process. 10 Save80 stoves and wonder-boxes were distributed to chosen families in Aw-barre refugee camp through a pilot project. According to Aw-barre staff, the project was terminated for several reasons. Although the system is very effective, it is not adapted to the cooking culture and habits of the Somali refugees. Some of the reasons mentioned by the refugees for why they did not use the stove was that the input hole for firewood was too small, the stove produced too much smoke (the Somalis prefer to cook inside), the stove is too tall (the Somalis prefer to sit on the ground or on a short stool) and they couldn't use their regular pots and pans. However, UNHCR officials expressed discontent on the number of pilot studies (and other kinds of research) conducted that did not evolve into a permanent solution. "Research projects and pilot studies are great, and we highly encourage them, but we would like more of this to turn into something useful for us", one UNHCR official stated.

2.5 Income gathering and livelihood

Refugees come from all parts of society and most of them have capacities that go unused. Refugees were observed who had created their own livelihoods, as well as livelihood programmes set in motion by UNHCR or NGOs. Some owned small shops, others had animals or produced vegetables and one man sold electricity from his own generator. Some refugees also built stoves from old USaid tin cans. Enabling refugees to create a livelihood is also beneficiary for the local community as a whole. Increasing the range of products and enhancing the purchasing power of the refugees will stimulate the local market, thus enabling a more healthy economy. In the Aw-barre and Sheder refugee camps the refugees, in addition to some food-aid, receive 100 birr (approx. 5.2 USD) per family member per month in order to purchase the goods they need. The refugees met in these camps seemed satisfied with this system, as it enabled them to make a choice as to what food and other items they would purchase. This system can further stimulate the local market, where non-refugees from the local community, as well as the refugees, will come and sell their crops and goods.

2.6 Communication

Translators were assisting the design students from Gaia, ARRA and UNHCR that were all familiar to the refugees. This seemed to confuse the refugees as to what was the role of the students. This might have affected their answers, as the refugees may have answered in the way they assumed would benefit them the most. Also, the translators were mostly men, and an impression was that some of the women were quite uncomfortable having not only us, but also them in their homes and kitchen. In addition the translators were not trained interpreters and should have been better briefed by us beforehand on how to act towards the refugees in order to not compromise the findings. It seemed they did not interpret every word of the refugees' responses, but rather gave us a summary of what was said. Occasionally two interpreters were needed as Somalis and Ethiopians speak different languages. One solution to bridge a communication gap can be to use participatory approaches. A participatory design session was attempted with one of the refugee women. The value of the results can be discussed, but it was apparent that other skills are needed in order to conduct participatory design with participants from an unfamiliar culture especially when interpretation is needed. by trying to get the refugee woman to help us identify key aspects of her cooking habits as well as how she wanted a stove to perform through drawing on a piece of paper. The woman was reluctant to engage in the process and was not particularly interested in drawing. In addition, trying to engage someone who is not easily engaged when not speaking directly to her, but through an interpreter, was another challenge. Not all people are used to state their opinion. In a context where the end-user has little power over their own livelihood and way of living a general belief that their contribution will not be taken into consideration was apparent.

2.7 Ethics and safety

During the field study in Kebribeyah the impression became that it was only the permission of ARRA/UNHCR office and field staff that was needed in order to conduct research that affected the refugees. In a situation where the refugees have lost much of the jurisdiction over their own daily life and future, further preventing autonomy may create a situation where they are viewed and treated like objects rather than subjects. The students often felt that they were put in an ethical dilemma, which they did not feel they had appropriate tools to handle. Instead they relied on what they call common sense and sensitivity and were questioning how they should define it as appropriate behaviour or not. The last issue that requires attention in the case of designing for humanitarian interventions is the question of safety for the students involved and to balance this against the need for contextually fitted design. Most refugee camps are located in border areas with variable security levels and student projects should carefully consider this aspect of humanitarian design projects. The area this student group travelled to was at the time being considered as stable, but the design group had to take precautions in relation to how to travel, where not to travel and how to avoid health risks. It was considered as key to the students' safety that an agreement had been made with the UNHCR and the Gaia stove program in order to travel safely and to understand the context regarding safety.

8 FINAL REMARKS

Even though there are similarities designing for the humanitarian market and the conventional consumer market in development regions, one significant difference that affects the design process is that in the humanitarian market the end-user is not the customer. Not having defined and understood the correlations and differences between what the end-user needs and what the customer wishes to invest in may lead to contextually inappropriate solutions, poor technical performance or products not reaching the end-user. The students have learned that within the humanitarian market there is a multitude of parameters to take into consideration; meaning 'traditional' design methodology might not be sufficient or applicable and that the designer will have to adapt to and understand multiple agendas and power relations relevant to the performance and acceptance of a design. The design might also have to be flexible in its form due to the rapidly changing external factors involved in the humanitarian market. While observing an increase of design methodologies merging for design for development, design for the humanitarian market lags behind.

Based on the discussed observations, it is recommendable that humanitarian designers pay attention to:

1. Geographic context: climate, draught, resource prospects
2. Available materials and human resources

3. Can the design be repaired and maintained locally with limited infrastructure and without supply of extra parts?
4. The existing market structure and value chains
5. Stakeholder relationships, connections and agendas: Who can be useful collaboration partners?
6. The needs of the humanitarian customer wants (the purchaser, in this case not the end-user)and what influences the choice of the humanitarian customer
7. Remember that first-hand information is always better: For the humanitarian customer a product is desirable if it is necessary, functional and relatively cheap. These are rational criteria for choosing the designs they consider to be most appropriate. For the refugees on the other hand, there are additional criteria for when a product is desirable, such as appearance or other preferences that we would not have had insight into unless we had travelled to the field and gained first-hand knowledge.
8. Consider business potential: What capabilities exist within the solution and the context? Is creation of livelihoods a possibility?
9. (How) can you create a sustainable design within this framework? Analyze the life cycle of the design

More case studies are needed that can lead to advice on practical approaches for designers aiming for this market.

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