A Design Approach as a Possible Organization of Public Spaces in Emergency Areas

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Abstract. The paper tries to identify, through strategic design axes, some areas in emergency contexts to locate collective spaces serving the local population, such as schools, community centres and spaces for aggregation. These public places have the purpose of regenerating the surrounding context by improving the quality of life and above all by strengthening the identity of the place through social and cultural spaces that the community identifies as landmarks of the settlement fabric. Through the analysis of some case studies in East Africa, the research tries to highlight some infrastructural axes which to locate permanent public services by reducing the distances between inhabited areas and primary services. The aim is to link the scattered and fragmented settlements in the territory without identity, with an axis of public services that could accommodate more functions and at the same time increase their size according to the needs of the local community. A design approach allows these areas to be developed strategically with a new configuration of services along certain infrastructural axes. A well-managed and effective regeneration of these areas in emergency contexts is essential to strengthening the identity of the place. The comparison of the selected case studies could represent an opportunity to rethink the planning of services in emergency areas to provide guidelines for practitioners involved in these particular contexts. And once again the paper wants to demonstrate how an architectural approach can solve a possible organization of spaces within fragmented contexts.

1. Introduction

The world population of forcibly displaced persons exceed 80 million at mid-year of 2020. According to the latest UNHCR report, "some 79.5 million people had been forced to leave their homes due to persecution, conflict and human rights violations". That number includes 29.6 million refugees, 4.2 million asylum seekers, and 45.7 million internally displaced persons (IDPs). War, conflicts and the coronavirus pandemic have all contributed to those figures over the year, the UNHCR report said. According to UNHCR's 2020 Mid-Year Trend Report, 67% of refugees "originated from just five countries," more than two-thirds of refugees. Among these countries, 6.6 million came from Syria, 3.7 million from Venezuela, 2.7 million from Afghanistan, 2.3 million from South Sudan and 1 million people from Myanmar. While Turkey hosts 3.6 million refugees, which is the largest number of refugees in the world. Germany came fifth in this ranking, with 1.1 million in attendance [1].
People leaving their countries of origin have no guarantee that they will find better living conditions elsewhere. They often face restrictive policies in the countries where they find refuge and become critically dependent on humanitarian assistance. Most of these fleeing people are housed in organized and supervised camps that provide shelter and first aid services such as medical care, food and education. These refugee camps are generally built and run by a government, the United Nations High Commissioner for Refugees (UNHCR), international organizations such as the International Committee of the Red Cross (ICRC) or Non-Governmental Organizations (NGOs). They are generally temporary settlements to satisfy basic human needs for only a short time. Although they are considered a monument to human suffering, they are also a place of hope and optimism. They represent a starting point for a new change of life. Although the displacement condition is expected to remain temporary, it is not uncommon for these living conditions to become permanent, leading to situations in which people live their lives in refugee camps.

Refugee camps, especially in their emergency phases, are places where everything seems to be similar, repetitive and modular. This is due to an organized and repetitive settlement of the tents or shelters. Traditions and cultures are mixed together. “Despite the initial visual/systematic homogeneity, the camp is a site for cultural diversity, contestation, and hybridization. Coming from different regions, backgrounds, traditions, urban settings (villagers, city dwellers, nomads), and economic conditions (rich, middle-class, and poor), a refugee camp resembles a colourful mosaic that is suddenly painted with white, over which the big turquoise signage of UNHCR has been placed. These dynamics, mosaics, and colours need to be uncovered again” [2]. This repetition without reference points within the settlements generates a loss of cultural identity. In this regard, the paper aims to strengthen the identity of these places through a strategic design approach. Axes of permanent public services are identified with the function of connecting the various repetitive and modular settlements scattered in a fragmented way in the territory, becoming the focal points of a vulnerable territory. As for nowadays, humanitarian organizations have created short-term rather than long-term solutions, considering refugee camps as a collection of shelter items, rather than being considered in light of the social benefits of the settlement as a whole [3].

The design of the refugee camps represents an extreme form of urban architectural practice. A refugee camp should therefore be planned with a temporary but at the same time unpredictable lifespan and with many potential trajectories for social development thanks to the creation of public places and socialization spaces along with equipped service infrastructures, as identified by this research.

2. The axes of collective spaces: a strategic design to regenerate emergency contexts

To address the regeneration of refugee camps, the research focused on East African contexts in which refugee camp planning has witnessed transient changes over time as a result of two different phenomena: civil war and climate change.

The analysed contexts are Kenya, which today hosts over 491,000 refugees [4] from civil war situations and Somalia, which hosts 24,725 refugees and asylum seekers [5], where the formation of refugee camps is due to both war situations and as a result of climate change that poses a significant threat to water resources, health, infrastructure and ecosystem services and biodiversity.

Over half of Kenya’s refugee come from Somalia. The majority of them (84%) live in refugee camps like Dadaab [6]. For this reason, the research focused on the Dadaab camp in Kenya on the border with Somalia. Poverty, war, climate change has influenced the creation of refugee camps, a modular repetition of shelters without identity. These premises have led to reconsidering the implementation of these camps through a methodological approach that starts from the analysis of the context, or rather from the analysis of the refugee camp itself. The first step is to analyse the distances between public and private spaces through a range of action that can be covered on foot (500 m in 6-8 minutes). Secondly, through the data collected relating to the distances and the location of public and private spaces, two infrastructural axes are identified to connect private and public spaces. The third
A key step involves the localization of essential services, such as schools, health centres, markets, placing them at an adequate distance from private canters, i.e., from the areas inhabited by shelters.

According to the reference context, the axes could be arranged in a parallel or perpendicular way to each other to intersect and create a collective space of certain importance. These communication axes make it possible to reduce the distance between homes and services by creating convivial places. The spaces of aggregation represent landmarks in the refugee camp, creating an identity to the camp itself that previously didn’t exist (figure 1).

The methodological process, therefore, concerns the interventions of a series of collective spaces along the axes, these are small-scale but socially catalytic spaces to transform a wider context. The sites involved must be selected through an analysis that takes into consideration several aspects, including social and environmental ones and, if possible, also in dialogue with the local community.

Figure 1. The three steps of Design Process

3. Case Study: Refugee Camp of Hagadera

This analysis is about the specific situation of an area in Kenya, at the border with Somalia, where it is possible to recognize some main refugee camps. In the beginning, this study considers the situation of accessibility and functional organization in these refugee camps [7].

All camps lie at distances between 7 Km (Ifo, Ifo II and Hagadera) and 15 Km (Dagahaley and Kambioos) from the main compounds for UNHCR and its humanitarian agency partners, situated within the village of Dadaab. Between each camp, usually, the distance is around 2/3 Km apart from Ifo to Hagadera, where it’s about 10 km. These lengths make it difficult to go from one camp to the other by food and it’s safe to say they limit the accessibility not only to the camps but also to Dadaab’s village. The biggest camp of the complex is Hagadera with its area of 8.7 km²; the second is Ifo II, then Ifo, Dagahaley and finally Kambioos, which is currently the smallest, but was set up to be the largest according to the traces of the road grid and the overview maps by UNHCR [8]. All the camps are set up starting from the grid: it’s very visible and strict in the newest ones (Ifo II and Kambioos), but it can be recognized also in Ifo both in the south-east and north parts, which are more regular, and in the older areas around the market where two blocks, for examples, got combined together. The street network defines blocks with the same dimensions with the exceptions of the central part of Ifo where there are bigger and more squared lots, Ifo’s north addiction with its long and slim division, and the blocks in Dagahaley that are longer than the standard ones. Whereas all the organisations working in Dadaab (UNHCR, CARE, etc..) acknowledge the issues with the grid layout and even promote other systems, it’s the only solution used due to the emergency and the possibility to create the camps quickly (figure 2, figure 3).
Figure 2. Current situation of the camps: distance between services and residential areas (credit: G.C. Coriglione, 2018)
Figure 3. Current situation of Dagahaley and Ifo camps: distance between services and residential areas (credit: G.C. Coriglione, 2018)
3.1. Organization of the Hagadera camp

The organization of Hagadera camp consisted of two big compact groups separated by a distance of less than 1 Km where the first one is divided into eight lines and three “avenues” 100 metre wide; the second one, into three lines and one “avenue”. These areas are not roads, but more spaces for some new services (usually it’s health posts and schools).

UNHCR’s guidelines suggest that facilities are centralised with one market or feeding centre per camp (which should consist of 20,000 persons) and one school and a distribution point per sector (5,000 persons); this is in order to provide aid to the maximum number of people possible so the places should be chosen based on an invariable distance from the shelters. In fact, due to the design of the grid or to the spontaneous development in the outskirts, there are a lot of households far away from the main services; people living in the farthest areas have to walk up to 5.5 Km (30/40 minutes) to reach the market in each of the camps. The problem is not just with the markets and food distribution, but with primary facilities in general. However, in the last years, a lot of smaller service buildings appeared closer to the “outer blocks”, mainly in the empty axis dividing the different parts of the settlements, especially in Hagadera and Ifo II. Those are mostly health posts and schools. Most of those non-residential buildings inside camps have been placed by UNHCR site planners, but there are also other structures (characterized by non-central placement and irregular shape of the space they occupy) built by the refugees (for example some mosques in Dagahaley). The market (or the food distribution facility in the case of Ifo II), is the most important service of each camp and it offers everything.

Hagadera market, with its 300 stalls, is considered to be the largest in all the complex and has a reputation for being run by businessmen of urban origins; the other markets thought, are no smaller than 200 stalls. Education remains one of the most pressing needs in Kenyan refugee camps and a lot of associations supported the construction of small and medium schools within each camp. Nowadays, a lot of students receive basic education both in Dadaab and Kakuma’s refugee camps each year and the majority of the service buildings in each camp are used for education. However, very few students can transition to secondary institutions, largely due to their lack of financial capacity to pay the tuition fees and other related costs required by both public and private institutions. Even if 11 schools are present, there is still a lack of secondary school spaces to absorb all the students coming from primary schools and, without secondary education, many youths cannot pursue professional training, thus limiting their chances to have meaningful jobs. The other service sector that gets most of the attention is healthcare. Many health posts are scattered within the camps and most of them are closer to the residential blocks than some other facilities (for example the police stations). The hospitals, in the Dadaab complex, are in total 3: one in Dgahaley, with an area specialized in cholera, one in Ifo and one in Hagadera that got recently expanded hence becoming the biggest one; Ifo II and Kambioos, instead, have 2/3 health centres each. All the other health facilities are small health posts run by a lot of different organizations. Each camp then presents a set of police stations, graveyards and other camp facilities including public toilets, community centres, children’s areas, administration buildings, religious buildings, brick production area, storage, waste disposal areas and garages. The water supply is managed with boreholes and water tanks dispersed through the blocks (figure 4, figure 5).

4. Results

The continuous need of growing brought to the creation of 5 different centres (Dagahaley, Hagadera, Ifo, Ifo2, Kambioos) with several configurations, all combined by a rigid grid that does not follow a natural human settlement, creating anonymous villages, where all the main services are concentrated in one location, sometimes not easily reachable from every point of the village. Going through the analysis of the geographical context, it was possible to better understand the reasons for the creation of five centres and the relation between the camps and the nearest cities, both in Kenya and Somalia, pointing out the main problems related to the territory, considering infrastructure, energy access, water supply, social issues.
Figure 4. Current situation of Dadaab camp: distance between services and residential areas (credit: G.C. Coriglione, 2018)

Figure 5. Current situation of Hagadera camp: organization of main services (credit: G.C. Coriglione, 2018)
Relying on this study, there is the willingness to reconsider the framework of these settlements to give them the configuration of a permanent city, that could work as its nature. However, right now the uncontrolled development of these camps produced a bad distribution of services, increasing the distances between residences and primary services, as well as a scarcity of infrastructures inside and outside the camps. The aim of a possible project could be to set a new configuration of services and residences, in which the amenities are redistributed along the urban pattern to decrease the walking distances among them. This is possible by the addition of permanent public buildings along with the main axis of the camp, that could host several functions and that could increase their dimension depending on the needs of the city; these public services could be hospitals, health centres, markets, schools and civic centres that could help people to live in this emergency situation (figure 6, figure 7).

**Figure 6.** Hagadera camp: identification of main axis for the distribution of public services (credit: G.C. Coriglione, 2018)

**Figure 7.** Detail of Hagadera camp: identification of some areas for public services (credit: G.C. Coriglione, 2018)
5. Conclusions

Through a study relating to this specific context, the localization of services, the situation of infrastructures and the organization of settlements, it is possible to think about the main axis for the distribution of public elementary buildings that could accommodate more functions and at the same time increase their size according to the needs of the local community.

Therefore, this work seeks to identify a design approach to strategically develop refugee camps with a new configuration of services along certain infrastructural axes. The methodological approach applied in this research could also be used in other emergency contexts maintaining a specific typological and figurative architectural aspect, strengthening the identity of the place. The aim is to create a new type of organization that rejects the fragmentation of spaces. In other words, rejecting a fragmented vision with sporadic opportunities for intervention and a concept of territorial transformation, this research has opted for a work strategy for urban units studied at the right scale where it is possible to recognize specific relationships with real dimensions, linked to urban or rural transformation, with morphological local characters.

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