

NAUTIA

Need Assessment Under Technological Interdisciplinary Approach

UPM Platform on Refugees



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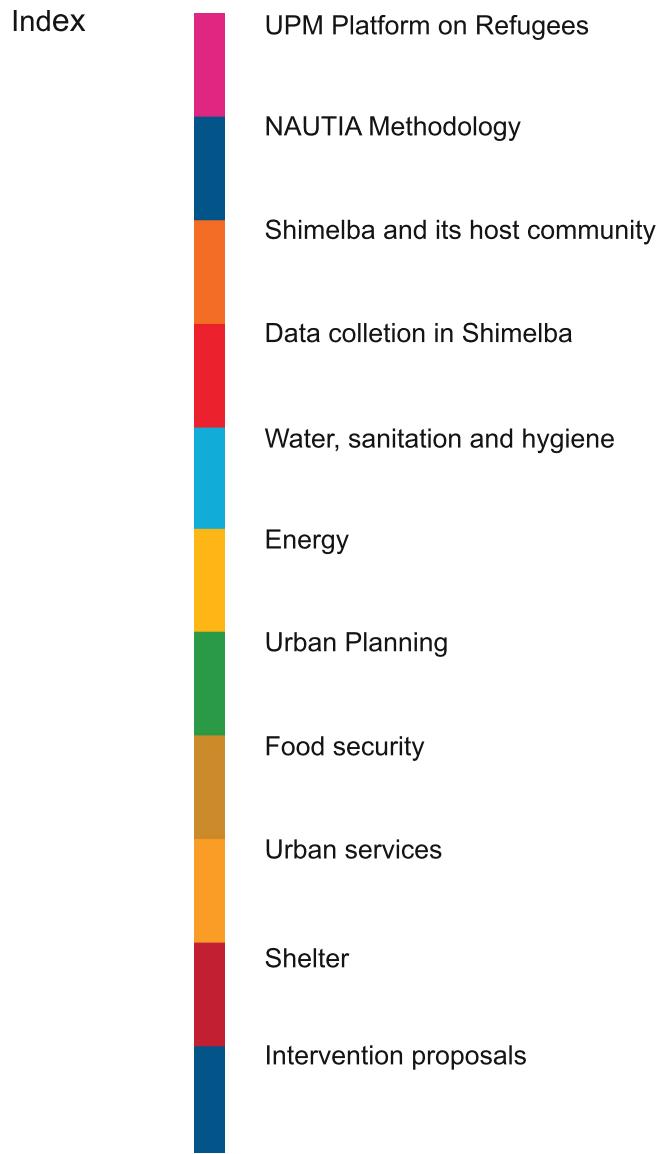
NAUTIA. Need Assessment Under Technological Interdisciplinary Approach

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Cover photo: Shimelba Refugee Camp. Mission 2018. UPM Platform on Refugees



UPM Platform on Refugees



Fig 1. Workshop with the population.



Fig 2. Workshop with children.

The Universidad Politécnica de Madrid (UPM), through the 18th UPM Call for Actions to Achieve the Sustainable Development Goals, is promoting a change of scale and strategy by facilitating platforms for stable interdisciplinary applied research linked to the work of the UPM research team, either in development cooperation or in research groups.

One of these platforms is the UPM Platform on Refugees, emerging as an interdisciplinary group linked to Shire Alliance.

Shire Alliance is a multi-stakeholder alliance formed by Iberdrola, Signify and Fundación acciona.org (two Spanish companies and a business foundation leading the energy and lighting sectors), by the Spanish Agency for International Development Cooperation (AECID) and by the Innovation Centre in Technology for Human Development of the Universidad Politécnica de Madrid (itdUPM), the latter acting as facilitator of the alliance. The Shire Alliance works in close collaboration with the United Nations High Commissioner for Refugees (UNHCR). This alliance is conceived as an innovation platform to improve access to energy for refugee populations and their host communities, developing initiatives for innovative and sustainable energy access, and energy and lighting services, launching training programs, and disseminating lessons learnt in the field of international humanitarian aid.

The objective of the platform in the first year (2018) was the development of an interdisciplinary methodology for needs assessment applied to a case: the Shimelba refugee camp and its host community, located in the Shire Refugee Camps in the north of Ethiopia.



NAUTIA

NEED ASSESSMENT UNDER TECHNOLOGICAL INTERDISCIPLINARY APPROACH



NAUTIA methodology is a tool that allows us to know the situation of the refugee camps and their host communities and, at the same time, identifies the priority needs based on the level of satisfaction achieved. The methodology is applied to refugee camps that have already passed the emergency phase and are currently facing the characteristic problems of permanent settlements. In this way, the tool strengthens the link between humanitarian aid and development cooperation.

The design of the NAUTIA methodology is aligned with the current international political context, since the humanitarian strategy is focused on promoting integration and inclusion of refugee populations within the host communities. This is reflected in international agreements such as the New York Declaration (2016), the Global Compact on Refugees (2018) and the Comprehensive Refugee Response Framework (CRRF).



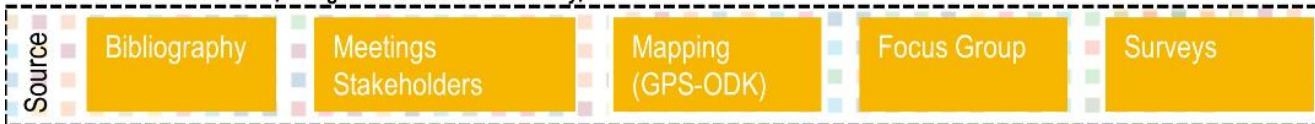
In order to promote initiatives that improve the living conditions of both groups, NAUTIA identifies as critical situations those in which the degree of disparity in the quality of life between both communities may cause social problems and integration. The NAUTIA tool assumes the interaction of the challenges to be addressed and uses a comprehensive technological approach, which reinforces the sustainability and resilience of the settlements. In conclusion, it is a tool that contributes to the 2030 Agenda and the challenge of "not leaving anyone behind".

The comprehensive technological approach of NAUTIA is ensured both by the procedure used in its application and its own design, which considers the relationships among the different areas involved: energy, habitat, water, food security, education, health, infrastructure and transport.

Under this cross-sectoral technological approach, NAUTIA uses indicators, specifically designed for the context, which are applied in both communities. These indicators are fed by data obtained through different selected methodologies in order to enable channels for listening to all actors and avoiding overloading the population. Efforts are being made to collect data through five procedures: desk review, interviews with management entities, geo-referenced data collection (ODK), citizens' participation workshops with focus groups and population surveys. The software package of data collection and geolocation (ODK) allows for development of an updated geo-referenced cartography, which does not currently exist in many cases. Finally, graphic expression methodologies are applied in workshops, using icons and symbols, enabling free individual expression and reducing cultural or linguistic barriers.

NAUTIA application allows us to obtain a list of priorities identified by the population through participatory workshops. With this list it is possible to diagnose the current critical situations of both settlements and to propose areas of potential intervention in order to reduce the scarcity of resources in the settlements and to encourage the integration of both communities.

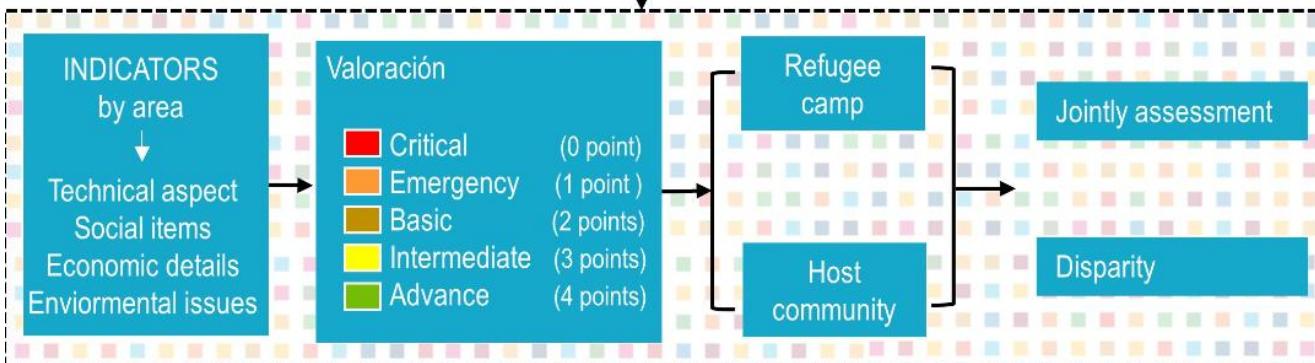
DATA COLLECTION (Refugies and Host community)



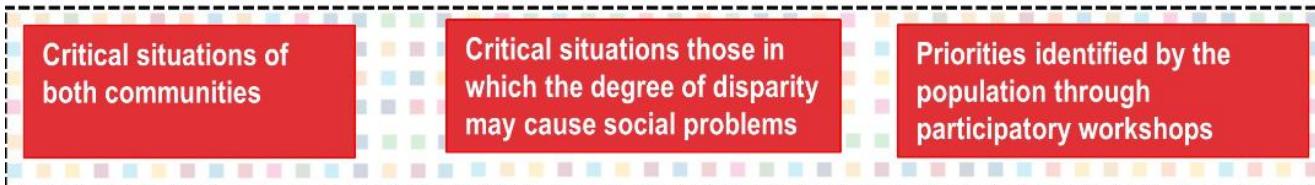
DATA LIST



INDICATORS



NEED ASSESSMENT



MULTIDISCIPLINATY TECHNICAL INTERVENTION PROPOSALS

Shimelba and its host community

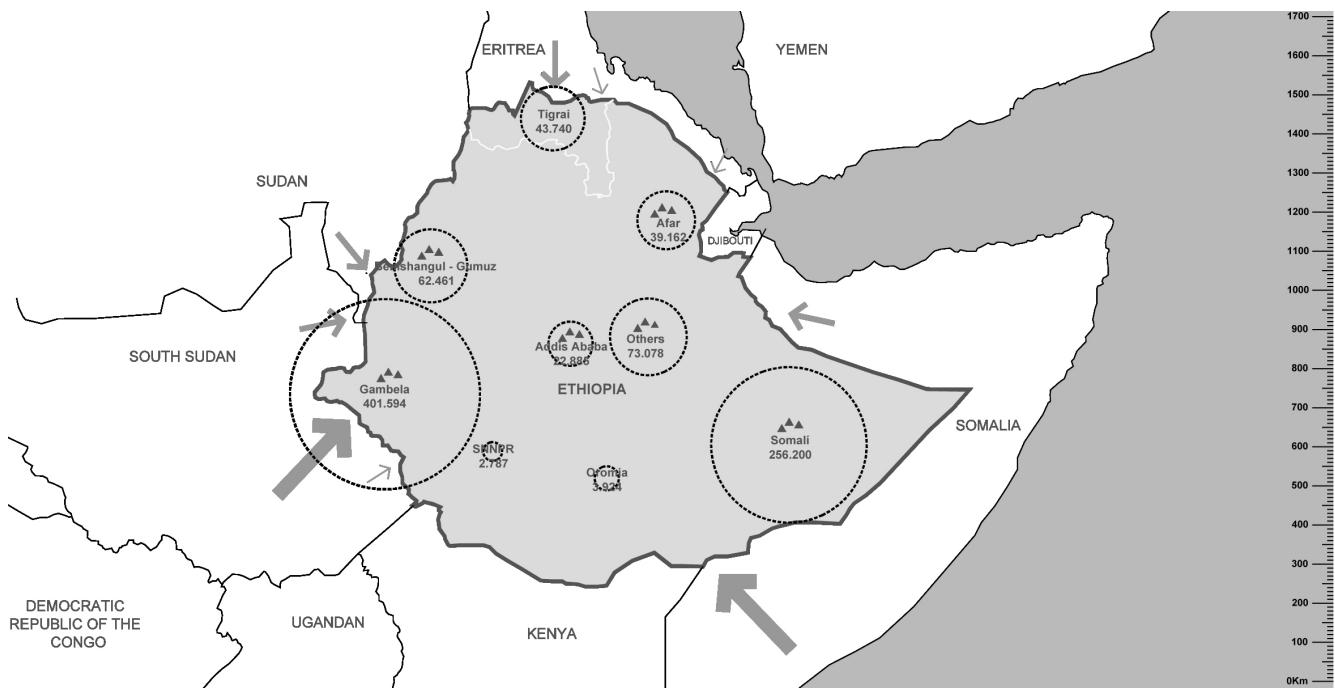


Fig.3 General map and contextualization of the migratory situation in Ethiopia.

With more than 900,000 refugees by the end of 2018, Ethiopia is the second African country with the largest (and growing) number of refugees, due to the situation in neighbouring countries. Given the high impact of this on host countries, the New York Declaration, which was approved in 2016, set up the Comprehensive Refugee Response Framework (CRRF) to respond to large displacements of refugees. Ethiopia is a pilot country of this programme.

In recent months, and in line with the Ethiopian Government's new commitments made in New York, a New Refugee Proclamation was approved, which is an update of the current one existing since 2004. In the absence of concrete measures for its implementation, this law shows Ethiopia's intention to facilitate the integration of refugees and their inclusion in daily life, since it allows freedom of movement, obtention of work permits and access to education, among other changes.

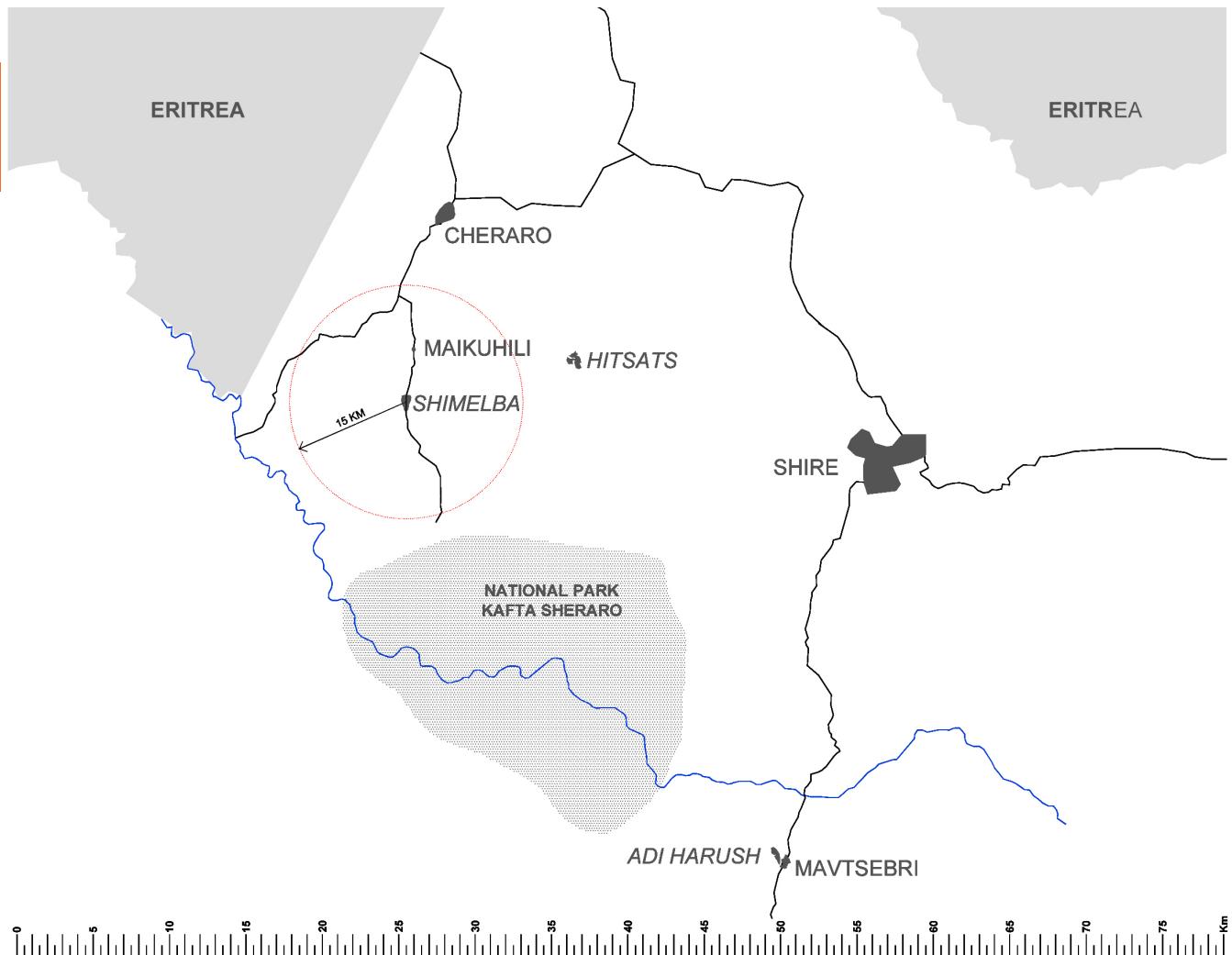


Fig 4. Location Refugee Camp Shimelba, a settlement in the Shire region in the north of Ethiopia.

Data collection in Shimelba

After the war between Eritrea and Ethiopia (1998–2000), whose end was formalized in mid-2018, thousands of Eritreans, many of them unaccompanied minors, continue to flee from their country due to the endless violations of human rights. According to UNHCR statistics, at the beginning of 2019, the four refugee camps in Shire hosted around 72,000 refugees, all of whom were Eritreans.

One of the main features of refugee camps in the Shire region is the high number of secondary movements to other countries. Ethiopia has become a transit country for Eritreans trying to reach Europe. This issue raises great concern on the part of the international community, which is present in the camps through the United Nations High Commissioner for Refugees (UNHCR), other international organisations and different implementing partners. On the side of the Ethiopian Government, the institutional organiser of the camps is the Ethiopian Administration for Refugee and Returnee Affairs (ARRA).

The present case study focuses on the Shimelba refugee camp, where NAUTIA methodology was applied. Established in 2004, it is the oldest camp of the Shire region and currently hosts around 7,000 Eritreans.

60% of the population belongs to the Kunama ethnic group (a minority ethnic group in Eritrea), while 40% are Tigrinya (majority ethnic group in Eritrea and Tigray region). The host community is considered to be those located within a radius of 15km around the camp. There are about 5,000 Ethiopians here. Few are settled around the camp, but most are scattered or in Maikuhili, which is the host community closest to the camp. The relation between both communities is close: from commercial interactions (a joint market is organised weekly), to access to certain services (such as health centres), through competition for the scarce natural resources available in the area.





Fig 5. Aerial photo refugee camp in Shimelba.

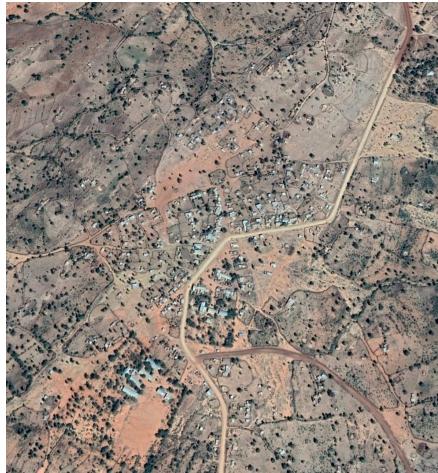
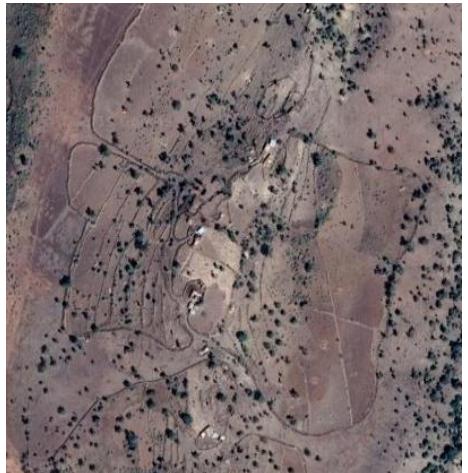


Fig 6. Aerial photo host community Maikuhili.



Fig 7. Aerial photo host community dispersed.





NAUTIA

DATA COLLECTION MISSION

(october 2018)



11 Meetings

Management entities
ARRA-UNHRC
NGOs
IRC-NRC- UNEDP-ZOA
Local Government
WOREDA
Civil organization
Refugees Committee
Supply Services Company
Electricity Ethiopian Company

GPS Mapping

Infrastructure: water and sanitation, energy, waste management, transport
Open Public Spaces
Productivity areas: farming, stockarding and economy activities
Urban Services Education, Health, Social, Cultural, Commercial
Shelter

Focal Group Workshop

General Population older than 18 years linked with population pyramid
Women older than 18 years linked with population pyramid
Young people between 12-18 years old
Joint workshop: Refugee community and Host community
All ethnic group were represented

Survey

Shimelba
Refugee Community
Host Community
Maikuhili
Host Community



The mission for data collection in Shimelba was carried out in October 2018. The work team consisted of UPM researchers and members of the Shire Alliance. The work in the field was coordinated by the ZOA team who organised the logistics, validated the methodologies and participated in the development of the activities.

During the mission, interviews were conducted with the entities in charge of the management of the camp and with the organisations with activity in the area, as well as with the local government, the national energy supply company and the Refugee Committee. Three participatory workshops were held: two of them with the most vulnerable population (women and individuals under 18) and the third with a general population sample.

Both communities participated in the workshops with the aim of promoting dialogue and integration. During the work of geo-referenced information surveying, settlements were mapped and the information extracted from bibliography was updated. Finally, surveys were conducted in both communities and the sample included all ethnic groups present. The main findings, organised by sectors, are presented below.

Water, sanitation and hygiene



Fig.8 The water points in the refugee camp are connected to the network works by gravity.

In this area, aspects such as access, availability, quality and gender perspective in the provision of water and sanitation services are analysed. These items are also linked to the hygiene systems in place. Likewise, the current demand for water and sanitation is shown through the prioritisation of these services by the population.

The population of the refugee camp and the host community have access to adequate amounts of water (30–40 litres per day). According to the local leaders and authorities, the water comes from sources which are adequate for human consumption and irrigation of crops. The identified water points are located in public spaces such as schools.

The majority of refugees have latrines in their homes (81% of respondents). However, in the host community, less than half of the population (only 46% of respondents) have latrines at home. The rest of the population defecates outdoors because there are no communal use latrines. There are only latrines for public use in public



Fig. 9 Private self-built latrines in Shimelba.



Fig.10 Communal showers not connected to the water supply.



Fig.11 Communal latrines in public buildings (Shimelba).

infrastructures, such as schools and health facilities, among others, and these are mostly separated by sex (59% in the refugee camp and 67% in the host community). Regarding the quality of the latrines used by the refugee population, more than half of them (55%) are considered adequate because they have roofs and walls, a door that closes properly, a mosquito net, a slab and lighting. The quality of household latrines of the host community was not evaluated.

Access to systems of hand-washing and sanitary napkin disposal is limited in both cases (23% in the refugee camp and 5% in the host community). In addition, there is no wastewater treatment system. Regarding the demand for water and sanitation services, the refugee population prioritises water services over sanitation, whereas neither of the two services is prioritised by the host community.

Energy



Fig.12 The places for cooking are outside and use charcoal as their source of energy.



Fig.13 Public lighting non operational.

Energy is an essential factor in addressing poverty. However, this resource is much more limited in rural contexts with low income levels, limited or nonexistent possibilities of employment and opportunities to set up a business, and where the struggle for available resources (firewood) is one of the main causes of social conflicts and deforestation. In Shimelba, only 5% of the refugee population has access to electricity, on average 6 hours a day, through insulated diesel generators (see Fig. 1). Their operation is conditioned by the availability of fuel in the area and the owners' ability to do the maintenance work. The host community is connected to the electricity grid, which is generated by 99% renewable sources (conventional hydroelectric) and has a service of 18 or more hours per day.

The resource used to generate electricity directly influences the price for users. For refugees, electricity is not affordable since it represents 15% of a family's income per month. Meanwhile, the host community spends only 5% of their income on this service. In a country with the climate of Ethiopia, electricity is considered affordable if the costs do not exceed 10% of the household income.

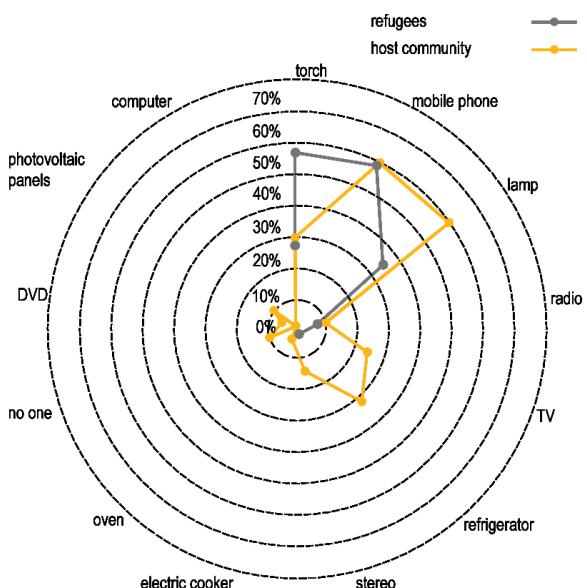


Fig. 14 The availability of consumer equipment in the families.



Fig. 15 The energy for system of illumination is passed through a thermal generation.

In terms of electricity services, the differences are also substantial. Energy services are very basic in the refugee camp: for lighting and charging mobile phones with a maximum consumption of 100Wh per day per family. The host community uses medium and high consumption appliances (refrigerator) and it records consumptions of 3.5kWh per day. Intervening in energy is a priority in the Shimelba refugee camp, not only to increase access to electricity but also to reduce the existing social gaps in comparison with the host community.

As in the refugee camp, the host population uses firewood and charcoal for cooking , and 60% of the population, mainly women, travel long distances to gather firewood. The consumption of firewood and charcoal affects mainly the health of women, children and the elderly, who are the ones who spend the most time at home.

Public lighting installations do not work , forcing women to stay at home for fear of situations of sexual and gender-based violence, especially at night. Having access to outdoor lighting systems is one of the great needs to be solved both for the refugee population and for the host community.

Urban Planning



Fig. 16 The lack of public spaces force to improvising recreational spaces in the open spaces.

In terms of urban planning, the refugee camp has a better degree of planning than the host community, which sits mostly in a scattered manner. Shimelba does not have defined boundaries so integration with the host community in urban terms is simple. In fact, the host community has moved to the surroundings of the camp, and has increased in population. Only in Maikuhili, 8km from Shimelba, there is a rural settlement with a population of 200 people. The urban settlement pattern of Shimelba, set up on two perpendicular axes, is coordinated by ARRA, which uses the compounds as a multi-family plot unit. In both communities, the settlements lack paved surfaces and drainage networks to channel rainwater, which also makes mobility difficult in the settlement.

Internal journeys are mainly carried out on foot and supported by pack animals (donkeys or camels) and external displacements by bus to the nearest town of Shiraro.



Fig. 17 The majority of trips of the population are made by walking, and uses the animal-drawn (camels and donkeys) as a means of loading.

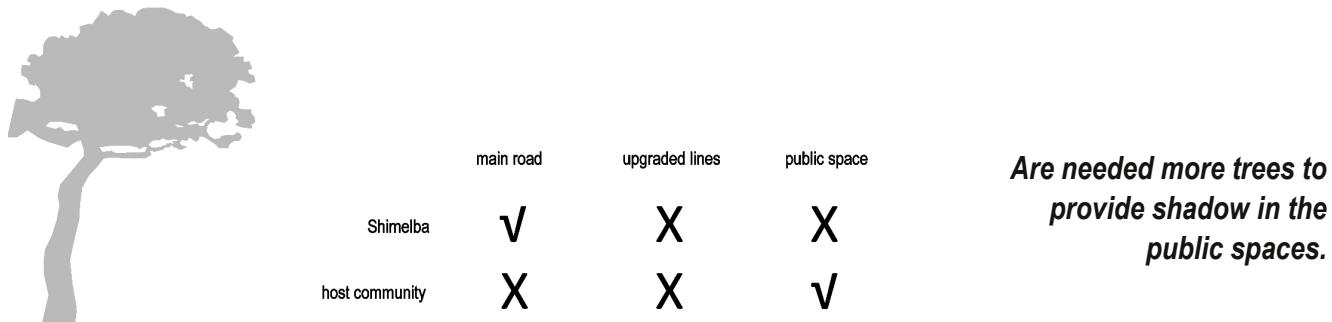


Fig. 18 Public space development. The lack of trees limits its use.

The planning of Shimelba, unlike for the host community, does not include areas of public use. Therefore, the referred to public spaces are informal open spaces without any type of conditioning or design. This limits the hours of their usage for leisure due to the high temperatures reached at midday. In both settlements, the existing public space is used for commercial and sports activities.

Lastly, social awareness on waste management is very high in both communities. There are no garbage problems in the settlements. However, among the refugee population, waste management is not considered a priority, contrary to the opinion of the host population.



Food Security



Fig. 19 Area of communal farming placed around the camp.



Fig.20 Food products commercialized in the market.

In terms of food security, the results show a reality marked by a deficiency in the intake of food of animal origin, high dependence on basic food supplies by the refugee population, and high vulnerability in a context of regional climate change, both in the case of the host population and the refugee population. Although the agricultural sector in Ethiopia is one of the most important for the country, from the point of view of the high volume of workforce involved in the same strategic interest, the reality observed in Shimelba and its surroundings shows a sector highly vulnerable to desertification and extreme weather.

Agricultural production in the area is one of the most important activities; sorghum (*Sorghum spp.*) is the main crop, followed by sesame (*Sesamum indicum L*), which is destined for export.

The presence of the Kunama population in Shimelba is a potential positive element for the implementation of strategies that lead to greater food production in the camp. By tradition, this population group has basic knowledge to cultivate the land and raise livestock. The presence of an area assigned for cultivation of vegetables and some fruit trees (papaya and mango) for self-consumption in the refugee camp stands out.



Fig. 21 Weekly market with both populations for food in exchange and everyday products.

This space is cultivated with hand tools. Irrigation is applied on the surface and by ploughing thanks to the presence of a few plants already in place.

The lack of intake of products of animal origin raises the question of including the raising of livestock in any proposal to improve food security. Moreover, in turn, this would result in production of manure with fertilising properties.

There are synergies with other sectors, such as obtaining biomass as an energy source. The increase in deforestation, together with the prohibition of firewood gathering by the refugee population, reveals their need of obtaining resources for cooking. This situation leads to the sale of food (some of it items from the humanitarian aid basket) to obtain these resources in the internal market of the camp.

Urban services



Fig. 22 Primary School in Shimelba.

Shimelba has two primary schools (one for the refugee population and one for the host community), a secondary school shared by both populations, a health centre and a centre for those with mental health problems. It also has an open space for the Friday market, fenced spaces for a children's playground, a library, several churches (Orthodox, Catholic and Protestant) and mosques, a recreational centre and a volleyball court, in addition to the free spaces spontaneously occupied by children and their games.

It is in elementary schools where the disparities between both communities are more evident because the school buildings for the refugee population are in better conditions than those of the host population. In the latter, 50% of the modules lack roofs and some classes are taught in improvised classrooms.

However, overcrowded classrooms are more frequent in the refugee community, with 80 students per class.

In the host community, that proportion drops to 50. The students, who participated in one of the workshops, asked mainly for classrooms, electricity, uniforms and books for their schools.

The refugee camp does not currently have a vocational training centre, despite the fact that the population needs it. In Maikuhili, however, there is a Training Centre in Agriculture. Education is rated among the top five priorities by both populations.

Furthermore, it is striking that despite having health centres both in the refugee camp and in the host community of Maikuhili, the populations, especially the refugees, consider access to health services as a priority. The nearest hospital is in Shire, two and a half hours by road, and women identify the local health centres as unsafe spaces.

Regarding communication technologies, more than 50% of both populations have a smartphone, despite the fact that data coverage is very poor in the refugee camp. For the host population, unlike the refugees, access to Internet is among the top five priorities, although there are almost no laptops or tablets, let alone Internet centres that facilitate access to them.

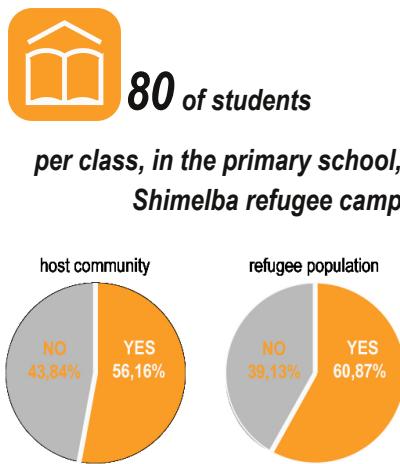


Fig. 23 Population with mobile device.



Fig. 24 Children's playground in Shimelba.

Shelter



Fig. 25 Houses in the host community.

Both in Shimelba and in its host community, dimensions of the plots are more suitable for a rural environment than an urban one and are delimited by permeable plant elements or walls made of clay. Both communities have subsistence crops and livestock inside their plots. Spaces of private use are shared between people and livestock, which results in generation of health problems.

Shimelba is composed of 4,436 households, with an average of 5.25 people living in each one. In the case of the host community, the average drops to 4.45. Building materials used by the refugee community are plant fibres for the roof and clay for the vertical elements, while the host community uses zinc sheets and cement. In both communities, self-construction is the building mean used.

In qualitative terms, the refugee population is in a worse situation than the host community.

58 %
of the women felt
unsafe in their
own homes

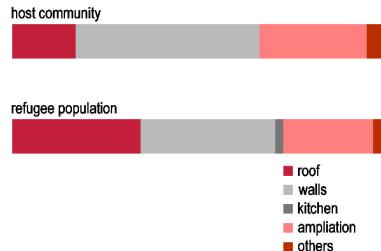


Fig. 26 Housing improvements.

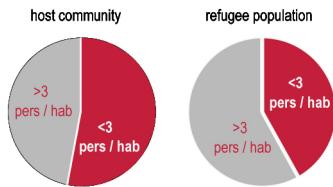


Fig. 27 Overcrowding graphic.





Fig. 28 Houses in the Shimelba refugee camp.

The difference in building quality is the main factor of disparity because of the lack of durability of the structures. 85% of the refugee shelters do not meet the essential requirements of habitability. The refugee population does not have access to adequate construction materials and construction techniques are not well implemented. Consequently, shelters do not have watertight roofs and walls must be renovated annually.

Consequently, 80% of the shelters in the camp are vulnerable to inclement weather such as rain and wind, in comparison with 20% in the host community. For this reason, the refugee population considers that improvement of housing is a priority, and in particular, the adaptation of walls and roofs. Moreover, solar radiation is the main cause of excessive temperatures inside the houses. The material used by the host community, despite its greater durability, causes overheating problems.



Intervention proposals

Reflections

The Refugee Platform, thanks to the funding of the General Directorate for Cooperation of the UPM, is working in the Shimelba refugee camp and its host community to improve the living conditions. To this end, a methodology was developed to allow a comprehensive assessment of the needs of both the local and refugee population, as well as the differences between them, by applying an interdisciplinary approach. Information about the needs of the population regarding energy, habitat, water, food security, education, health, infrastructure and transport was gathered through different procedures.

The aspects analysed in detail correspond to the areas of knowledge where UPM experts can make a substantial contribution, although the general context and the priorities of the population were also considered.

The results indicate that the most obvious differences are observed in the access to basic electricity services and in the quality of the houses, to the disadvantage of the Shimelba refugee camp. Only in the case of school infrastructure and sanitation (latrines) are the differences in favour of the refugee camp. In the rest of the sectors analysed, such as access to water, power for cooking, infrastructure and food security, both communities are in rather precarious situations, but there are no imbalances.



Multidisciplinary intervention proposals

Thanks to the NAUTIA methodology, needs can be prioritised, both in terms of the disparity between the host community and refugees, and in absolute terms. After identifying these priorities, the next step is to propose a set of actions through co-creation processes with both communities, in accordance with the capacities of UPM and its partners in the field.

It is advisable to prepare different proposals since financial resources can be assigned to different areas: energy, ICTs, construction, generation of productive activities, capacity building, improvement of food security, etc.

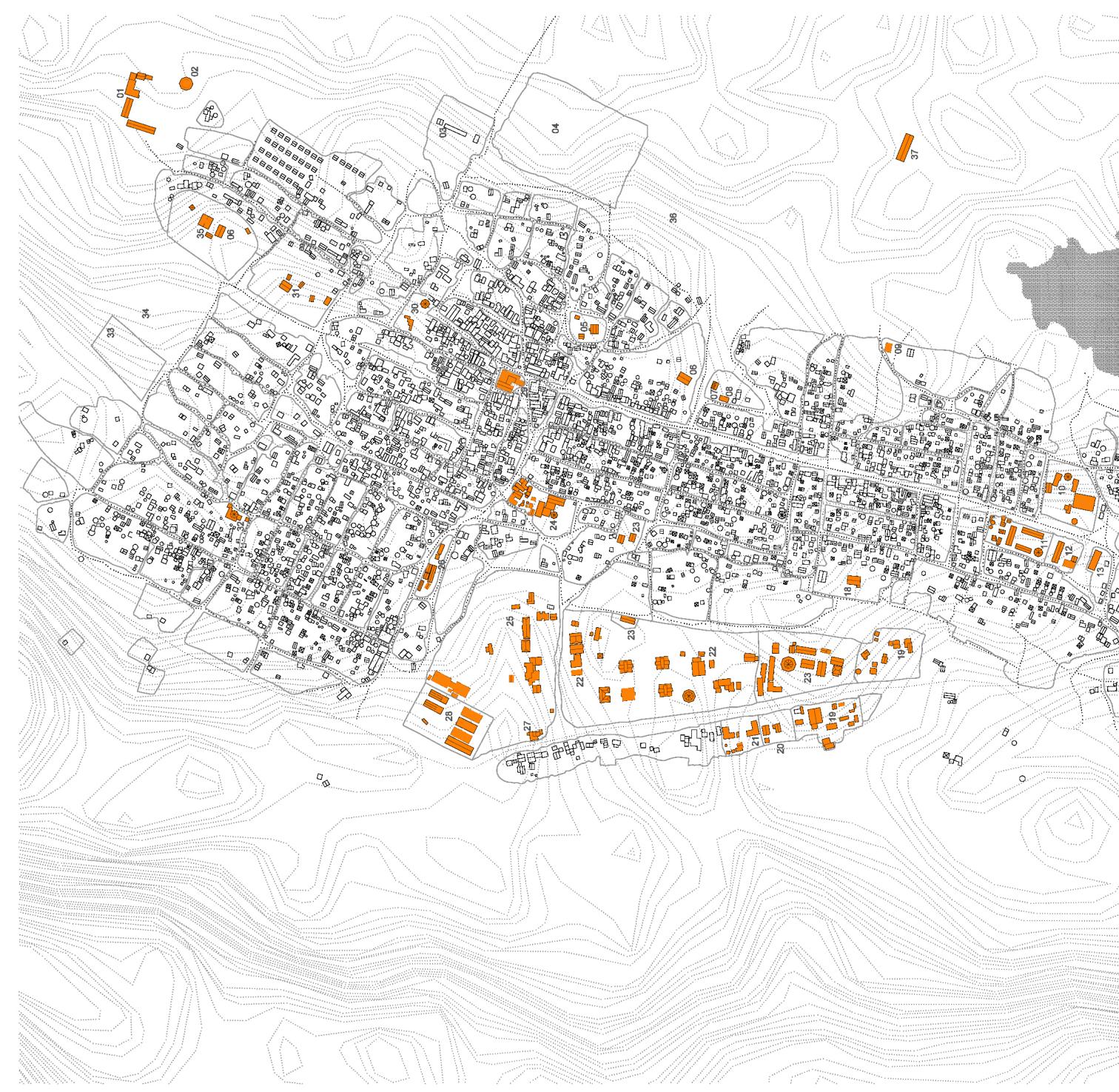
Some widely agreed initiatives have emerged from the workshops and the survey. In the refugee community, the provision of electrical services at both domestic and industrial levels is a high priority. Services such as the grinding of grain and pumping of water for agricultural use have been identified as contributing to improvement of the energy-water-food links.

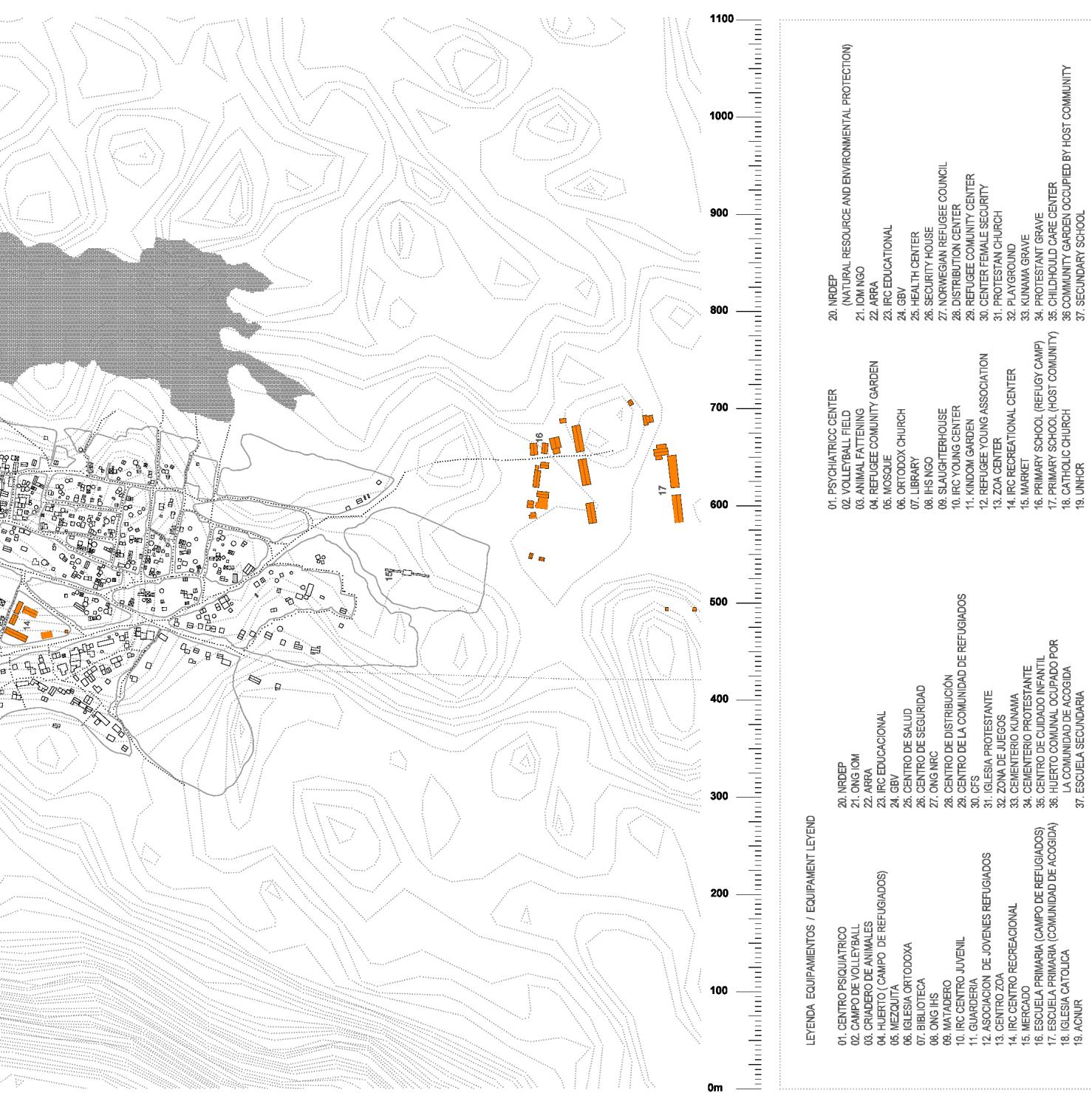
Given that quality of housing in the refugee community is abysmal and that the population considers it a priority requiring improvement, training activities could be implemented for the whole population, both for women and men, because almost all shelters are self-constructed.

Education is also a priority of equal importance for the two communities. An intervention of great acceptance would be the creation of an Internet centre, which would serve for basic training in digital literacy, as well as allow for distance training in self-construction or in sustainable cultivation.

The challenge is not to find an intervention of interest, necessity and with impact because the shortcomings are so abundant that there are plenty of possible actions. The challenge lies in co-creating, together with the two communities, sustainable plans, taking into account the recent changes in the rules of the game for the refugee population in Ethiopia. This will require close collaboration among all actors involved.







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Energy access to refugees and host communities



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