

Creating an environmentally sustainable and resilient green refugee camp

Region	Sub-Saharan Africa
Award Scheme	Shanghai Manual
Themes	Migration Environmental Resilience
Sustainable Development Goals	Goal 1 - End poverty in all its forms everywhere Goal 5 - Achieve gender equality and empower all women and girls Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable Goal 13 - Take urgent action to combat climate change and its impacts Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
New Urban Agenda Commitments	Environmentally Sustainable and Resilient Urban Development

Summary

Ecological restoration and the integration of a comprehensive greening approach has enhanced livelihood security for migrant settlers in the Minawao refugee camp in northern Cameroon. An ecologically sensitive approach to the management of natural resources and ecosystems has both increased environmental sustainability, and increased the quality of life and access to livelihood opportunities for local community members.

Background and Objective

As global temperatures continue to rise, changes to socio-ecological systems are becoming increasingly pronounced intensifying the impact on both humans and the natural world. Coinciding with an unprecedented surge in human displacement, many migrants are today forced to inhabit some of the most inhospitable environments around the world, faced with extreme conditions in which cultivating sustainable livelihoods is near impossible. As much as 86 per cent of the world's refugees are fleeing to countries where resources are already scarce. As this trend intensifies, the sustainable planning and management of refugee communities will be critical to increase livelihood opportunities for migrants and displaced individuals. Given the socio-spatial negotiations between the humanitarian agenda and refugees, refugee camps exist under an increasingly permanent humanitarian governance model whilst their inhabitants also organize themselves in ways that create space to sustain a livelihood within their communities, making them important forms of urban life. Refugee communities are therefore playing an increasingly important role in urbanization processes, highlighting their status as key components of sustainable urban development. Since the Boko Haram insurgency in Nigeria in 2014, tens of thousands of refugees have fled the border to Cameroon to escape the conflict and extreme violence. The Minawao refugee camp opened in July 2013 in northern Cameroon, was first designed to accommodate 15,000 refugees; however, with a continuous influx of new refugees, the camp population has continued to grow receiving an average of 692 new arrivals and more than 287 births per month. As of January 2021, there were a total of 69,622 Nigerian refugees (of which 61 per cent were under 18 years old, and 54 per cent were women and girls).⁶⁴ Situated in Cameroon's far north, an arid region scarce in natural resources, the impact of climate change in Minawao has already been pronounced and the emergence of the rapidly expanding refugee community has only exacerbated the already pressing environmental challenges. Accelerated deforestation and desertification have brought about severe water shortages and damage to critical pasturelands. This ecological deterioration has led to inter-community conflict where there is a heavy reliance on local wood for energy with many families forced to sell the rations provided by the United Nations because wood grew so scarce it threatened their livelihoods. To address these challenges, in 2017 the United Nations High Commissioner for Refugees (UNHCR) in cooperation with the Land Life Company and the support of the Dutch National Postcode Lottery, planned to transform the Minawao camp into a green, ecologically- sustainable community as part of a larger reforestation project. The cooperation aimed to reduce deforestation around the camp and in surrounding villages, mitigate soil erosion to maintain fertility, improve soil permeability and improve living conditions, creating a model best practice for other refugee communities within the Sahel region. A green refugee community has since been developed in Minawao addressing the two most pressing challenges of today, transforming the plight of refugees and improving the environmental health of their communities via a sustainable approach. The project demonstrates unique methods with which to minimize the environmental footprint of humanitarian work, reduce costs, improve the health of refugees, and enhance the environmental quality of host communities. It has transformed the relationship between refugees and their host community, providing a more prosperous environment with new

livelihood opportunities, whilst empowering and protecting women and girls.

Actions and Implementation

In 2017, UNHCR, the Lutheran World Federation (LWF) and the Land Life Company received a donation of USD 2.7 million from the Dutch National Postcode Lottery and subsequently initiated work on the Minawao camp, facilitating proactive greening measures to tackle the social and environmental crisis at hand. Cooperating under a public-private partnership model, the support of all three entities produced staggering results over just a few years developing a sustainable, green refugee camp model which integrated innovative ecological preservation techniques. In order to create a more sustainable lifestyle for the refugees and their host community, the focus was given to four core elements: guaranteeing environmentally sustainable shelter; reforesting degraded land; transition to sustainable cooking alternatives; and capacity building for local refugees. Emergency shelters had originally been built using wooden poles and plastic sheets but these temporary solutions were quickly damaged, eventually becoming sources of litter polluting the community and surrounding areas. The project facilitated a movement towards eco-friendly alternatives for sustainable housing solutions. Under the green refugee camp model, transitional shelters were introduced incorporating sustainability principles via the use of locally- produced non-baked bricks (produced sparing wood and other fuels). Local sourcing of these bricks also eliminated the carbon footprint resulting from conventional production and transportation. Subsequently, a total of 14,850 community members were offered sustainable shelters with 22,445 people benefitting from UNHCR's efforts to construct eco-friendly family shelters throughout the camp. LWF also established an energy-efficient stove production centre along with two eco-friendly briquette production centres in which families can transport their waste for recycling via conversion into usable briquettes; promoting the circular use of materials. As of 2020, 11,460 energy-efficient stoves had been distributed to families in the camp, and over 5,000 families had received training in briquette production. Specific efforts were made to train local women in briquette and stove production, to empower them through income-generating opportunities. In return, they played a key role in educating the local community on the use of eco-friendly energy/stoves, for example through three community fairs in 2018 including National Youth Day and International Women's Day. Where 1,019 of the planned 5,100 households had access to alternative and/or renewable energy as of January 2021, this highlighted that solid foundations had been established; however, further work is required to expand access to a greater number of homes. Where a 18 km (approximately) radius of land had been cleared around Minawao, the project's reforestation pillar as led by LWF was subject to underlying tension around the Gawar community and in the nearby Zamay Forest Reserve – a site of strong cultural significance to the Zamay people. Afforestation has remained a key activity with over 300,000 trees planted since the project's launch in 2017. Using 'cocoon technology', a novel method developed by Land Life, planted seedlings were provided the best chance of survival in the harsh conditions. The process involved burying donut-shaped water tanks made from recycled boxes, encircling plant roots and feeding them with a steady supply of water via a string that connects to the young shoot. Previously, due to a lack of technical knowledge, the tree survival rate was less than 10 per cent leading to largely unsuccessful reforestation efforts. However, the introduction of this new technique has increased their survival rate to 85 per cent while reducing water consumption by 61 per cent, with some trees growing up to 3 m in height. These trees are providing invaluable protection from sun and wind in the face of extreme heat and windstorms. In subsequent years, the tree canopies are expected to continue to grow, forming mini-forests between houses that will further bolster living conditions and environmental protection by reducing soil erosion and increasing carbon sequestration. To date, 119 hectares of land has been reforested and 26 tree nurseries developed within the camp and in nearby villages. These have provided job opportunities for local community members and also allowed residents to come together and learn new skills. Gaining knowledge on seedling growth and maintenance has enabled the Minawao refugees to become more self-sufficient. A five-year tree planting cycle is ensuring that the local community has a continuous supply of wood, which can be used as firewood while the vines are used in roof construction. Fruit from trees donated by LWF can be harvested after two years, and after three years most of these trees are large enough to be pruned. Over the next 20 years, it is projected that 2,160 tons of cashew nuts will be produced, as well as 8,400 tons of neem oil and 160,000 tons of fodder over the next 40 years allowing for a long-term local food production system. In addition to providing job opportunities for men and women, the planting activities have also opened up educational opportunities for children with 12 new nature clubs established in local schools. These clubs help care for the community's newly-planted vegetation and educate the children about the importance of protecting the environment. As a highly replicable initiative, the project has been designed to permit a flexible and transferable approach to environmental restoration in similar environments. The project has demonstrated the role of afforestation in rebuilding and empowering refugee communities, combining ecological conservation with agroforestry and vocational skills training to cultivate an eco-friendly living environment with new socio-economic opportunities to improve quality of life. However, it must be acknowledged that the project's scalability relies heavily on funding and donations from external organizations, and these remain the main obstacles to project continuation. It is key to note that interventions undertaken by international institutions such as those in Minawao should be conducted in close collaboration with local authorities to help streamline institutional ownership and facilitate long-term sustainability making more impactful change to these local communities.

Conclusion

While refugee communities often face extremely harsh conditions, natural resources also remain a precious commodity and equal consideration must be given to the accessibility and quality of these assets. As exemplified in Minawao, the continuing influx of refugees led to severe environmental degradation depriving what was already barren land of its essential ecological capital, destabilizing living conditions even further. In order to

accommodate highly marginalized populations, the planning and development of refugee communities should prioritize environmental management through conservation and restoration efforts, understanding ecological resources as critical components to sustain the livelihoods of local inhabitants and foster more resilient communities. In addition, as highlighted through the development of renewable energy sources in which local products were regenerated to create eco-friendly briquettes and stoves, the protection of natural capital can feed into circular systems creating long-term sustainability achieved through the recycling and reuse of organic materials. Building on the project to date, it is equally important that greening activity is extended to neighbouring villages in order to more effectively combat desertification and in this regard, the careful selection of reforestation species will help to prevent imbalances in local ecosystems. When deployed on the metropolitan scale, green infrastructure has proven its value in creating a diverse range of benefits for municipalities and their inhabitants. As emerging urban environments where initial transience often transpires into long-term settlement, green infrastructure integration should also be sought as a key tool to build socio-environmental resilience and sustain livelihoods in refugee communities. With an array of benefits, the value of reforestation in Minawao was apparent, improving soil quality and water retention, and facilitating shade and wind protection. It also enabled local food production and associated job creation in a more self-sufficient and adaptive community. The use of innovative technology to improve afforestation is also impactful where state-of-the-art reforestation cocoon technology, global positioning system (GPS) tools and drones used in the planting, tracking and monitoring of individual trees, enabled the facilitation of sustainable agroforestry creating a greener, more prosperous community in which refugees and their hosts can build secure livelihoods. Refugees often lack education and knowledge concerning the critical value of ecological systems and a lack of resources hampers their acquisition of important skills. Concerted efforts should be made to reduce this deficit, mainstreaming environmental protection education into refugee communities, in particular for children and youths, to encourage a long-term role in protection efforts. Where environmental protection has created jobs and income in Minawao, it is important to understand the intrinsic connections between environmental protection and local economic development in which skills transfer – cutting across key areas such as reforestation, eco-friendly stove and briquette production, and land management – contributes to the formation of symbiotic relationships between environmental sustainability and livelihood prosperity. In this regard, the greening of the Minawao community has also empowered local women and girls, improving their position in families and increasing their safety and independence.