

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/359923466>

Social and environmental transformation of refugee and hosting community landscapes in Central and Eastern Africa

Article · April 2022

CITATIONS

0

READS

92

11 authors, including:



Sarah Laird

People and Plants International

106 PUBLICATIONS 3,082 CITATIONS

[SEE PROFILE](#)



Abdon Awono

Center for International Forestry Research

99 PUBLICATIONS 1,922 CITATIONS

[SEE PROFILE](#)



Phosiso Sola

International Centre for Agroforestry Research

68 PUBLICATIONS 1,097 CITATIONS

[SEE PROFILE](#)



Catherine Muthuri

Consultative Group on International Agricultural Research

92 PUBLICATIONS 1,853 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



CIFOR-Nontimber forest products [View project](#)



Trees for Food Security 2: Developing integrated options and accelerating scaling up of agroforestry for improved food security and resilient livelihoods in Eastern Africa [View project](#)



Social and environmental transformation of refugee and hosting community landscapes in Central and Eastern Africa

Sarah Laird

Abdon Awono

Clement Okia

Gabriela Alvarez Anaya

Verina Ingram

Phosiso Sola

Catharine Watson

Catherine Muthuri

Peter Gilruth

Ruth Mendum

Mary Njenga



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Social and environmental transformation of refugee and hosting community landscapes in Central and Eastern Africa

Sarah Laird

People and Plants International

Abdon Awono

CIFOR-ICRAF

Clement Okia

Muni University

Gabriela Alvarez Anaya

People and Plants International

Verina Ingram

Wageningen University & Research

Phosiso Sola

CIFOR-ICRAF

Catharine Watson

CIFOR-ICRAF

Catherine Muthuri

CIFOR-ICRAF

Peter Gilruth

CIFOR-ICRAF

Ruth Mendum

Pennsylvania State University

Mary Njenga

CIFOR-ICRAF

Occasional Paper 229

© 2022 Center for International Forestry Research



Content in this publication is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0), <http://creativecommons.org/licenses/by/4.0/>

ISBN 978-602-387-173-5

DOI: 10.17528/cifor/008420

Laird S, Awono A, Okia C, Anaya GA, Ingram V, Sola P, Watson C, Muthuri C, Gilruth P, Mendum R and Njenga M. 2022. *Social and environmental transformation of refugee and hosting community landscapes in Central and Eastern Africa*. Occasional Paper 229. Bogor, Indonesia: CIFOR.

Photo by Mary Njenga (CIFOR-ICRAF)

Firewood trading at Kalobeyei refugee settlement, Turkana County, Northwestern Kenya.

CIFOR
Jl. CIFOR, Situ Gede
Bogor Barat 16115
Indonesia

T +62 (251) 8622-622

F +62 (251) 8622-100

E cifor@cgiar.org

cifor.org

We would like to thank all donors who supported this research through their contributions to the CGIAR Fund. For a list of Fund donors please see: <http://www.cgiar.org/about-us/our-funders/>

Any views expressed in this publication are those of the authors. They do not necessarily represent the views of CIFOR, the editors, the authors' institutions, the financial sponsors or the reviewers.

Contents

Acknowledgements	v
Executive summary	vi
Key points	viii
1 Introduction	1
2 Background and context	2
2.1 Demographics and challenges in the context of displacement	2
2.2 A landscape approach to resilient social ecological systems	3
2.3 Natural resource management and agriculture in situations of displacement	6
3 Summary of challenges to improve natural resource management by displaced people (refugees and IDPs)	7
4 CIFOR-ICRAF experiences in refugee displacement settings in central and eastern Africa	9
4.1 Activities in the context of refugees in central and eastern Africa by CIFOR-ICRAF and partners	9
4.2 Gender and inclusion in refugee contexts by CIFOR-ICRAF and partners	11
5 New and future developments	13
5.1 Engagement landscape	13
5.2 Programme on social and environmental transformation of refugee and host community landscapes 2021–2030	13
Key terms	15
References and further reading	16

List of figures and tables

Figures

- | | | |
|---|---|----|
| 1 | Landscape approach for resilient socioecological systems | 3 |
| 2 | Interaction of refugee and host communities in multifunctional landscapes | 8 |
| 3 | Map of Africa showing current focus countries | 14 |

Tables

- | | | |
|---|--|---|
| 1 | Tools, networks and key resources regarding displaced people and the environment:
landscape level integration | 4 |
|---|--|---|

Acknowledgements

The authors greatly appreciate Anne Degrande, Divine Foundjem Tita, Jolien Schure and Richard Eba'a of CIFOR-ICRAF, and Leopold Kortekaas (United Nations High Commissioner for Refugees [UNHCR]), Cleto Dikumagege (the Food and Agriculture Organization of the United Nations [FAO]), Ousseynou Ndoye (the African Forest Landscape Restoration Initiative [AFR100]), Antoine Eyebe (independent consultant), and Dominique Endamana and Kenneth Angu Angu (the International Union for Conservation of Nature [IUCN]) for their

support in reviewing the document. The authors acknowledge the support provided by the Federal Ministry for Economic Cooperation and Development (BMZ), the CGIAR Research Program on Water, Land and Ecosystems, the United States Department of Agriculture's (USDA) National Institute of Food and Agriculture and Hatch Appropriations under Project #PEN04724 and Accession #1020895, and the Governing Multifunctional Landscapes (GML) project in sub-Saharan Africa, an initiative funded by the European Union (EU) and led by CIFOR-ICRAF.

Executive summary

Sub-Saharan Africa hosts more than 26% of the world's refugee population, with 6.3 million refugees – which represents a 186% increase in the last decade, from 2.2 million. There has been an increase in internally displaced persons (IDPs) following conflicts and violence in South Sudan, the Democratic Republic of Congo (DRC), the Central African Republic (CAR), and the Lake Chad basin. The population of refugee settlements disproportionately comprises women and children, and is characterized by highly diverse cultural backgrounds, with some settlements having people from approximately 10 nationalities. In many areas, refugees and IDPs add pressure to already vulnerable ecosystems and existing social tensions, leading to land use and resource conflicts among displaced people and host communities. Overharvesting of natural resources, competition over resources, and entering host communities' common or private lands without consent are the main drivers of conflict between host communities and refugees. These conflict situations are aggravated by the impact of climate change, deforestation, and environmental degradation, which are recognized by humanitarian organizations and are placed at the centre of their agendas.

This document synthesises the challenges in environmental sustainability facing refugee-hosting landscapes, on-going initiatives, and gaps. It also presents transformative science plans by CIFOR-ICRAF to address existing gaps towards resilient landscapes and livelihoods. CIFOR-ICRAF is a research institution in forestry and landscape management, which has evolved out of an effective merger between CIFOR and ICRAF.

Resilience, sustainability, and environmental health in host landscapes are multi-faceted and complex, with cultural, ecological, economic, social, and political dimensions. Therefore, despite various organisations working in refugee-hosting

landscapes, there are still challenges in achieving holistic, long-term and sustainable solutions. For instance, the priority goal of most United Nations (UN) agencies and major international non-governmental organizations (INGOs) is to save lives in emergency situations. There is, however, growing awareness of the importance of natural resources to the well-being of refugees and host communities, and efforts are underway to address environmental issues to reverse deforestation and land degradation, which need to be supported with data. Secondly, ongoing interventions to support refugees and the environment tend to be based on the assumption that refugee stays are short-lived and local group needs are simply linked to food, water, sanitation, shelter and security, which can be provided by UNHCR and partners. Yet this often becomes a great challenge as most refugee stays last for several decades. Thirdly, governance and host community institutions that are central to the ownership, success and sustainability of initiatives addressing environmental degradation have not always been actively involved to date.

To bridge these gaps, CIFOR-ICRAF applies a landscape approach that delivers evidence-based, actionable and context-based gender-responsive solutions. This approach promotes collaboration and synergies between actors; contributes to international dialogue; and informs planning, programming and policy development. The elements include: i) providing science and evidence-based landscape approaches and guidelines that balance the needs of the people and ecosystems; ii) structuring engagement and empowerment of host and displaced communities in dialogue and consultation to minimize natural resource and environmental-based conflicts; iii) undertaking research to fill gaps in understanding, and integrating knowledge from multiple disciplines and resources, using refugee and host communities as a basis for evidence-based decision-making and interventions; iv) providing

evidence-based advice to local and national governments, organizations, environmental sustainability platforms and networks; v) ensuring communication methods and scientific advocacy at national and global levels to provide long-term investments in food and nutrition, water and energy security for host communities and displaced people (IDPs and refugees), and to improve policies that support sustainable forestry and agroforestry systems; and v) gender integration in all activities to ensure that the needs, aspirations and opportunities for men and women, including youth, the elderly, children and people with special needs, are addressed.

These initiatives are carried out under CIFOR-ICRAF's Refugee-hosting Engagement Landscapes where over a dozen projects on concentrated transformative work with diverse and committed partners have been implemented in several countries in eastern and central Africa. This approach adapts the centre's experiences and lessons from a diverse range of innovations implemented in over 30 countries in the Global South to address major global challenges related to deforestation and diversity loss, the climate crisis, food system transformation, unsustainable supply and value chains and extreme inequality as they manifest in refugee-hosting landscapes.

Key points

- Sub-Saharan Africa hosts more than 26% of the world's refugee population, with 6.3 million refugees – which represents a 186% increase in the last decade, from 2.2 million. There has been an increase in IDPs following conflicts and violence in South Sudan, the DRC, the CAR, and the Lake Chad basin. The population of refugee settlements disproportionately comprises women and children, and is characterized by highly diverse cultural backgrounds, with some settlements having people from approximately 10 nationalities.
- Increasingly, the impact of climate change, deforestation, and environmental degradation are recognized by humanitarian organisations and placed at the centre of their agendas.
- In many areas, refugees and IDPs add pressure to already vulnerable ecosystems and existing social tensions, leading to land use and resource conflicts among displaced people and host communities. Overharvesting of natural resources, competition over resources, and entering host communities' common or private lands without consent are the main drivers of conflict between host communities and refugees.
- Challenges to resilience, sustainability, and environmental health in host landscapes are multi-faceted and complex, with cultural, ecological, economic, social, and political dimensions.
- Interventions to support refugees and the environment tend to be based on assumptions about what local groups need, rather than science evidence, and as a result, rates of adoption of proposed innovations have often been low. The social status of many refugees and host community members, i.e., women, non-English or French speakers and less formally educated individuals, create substantial barriers between local groups and would-be innovators from outside the communities.
- Governance, and host community institutions, are central to the success of initiatives addressing environmental degradation, but they have not always been actively involved to date.
- Researchers and practitioners working with refugees and IDPs in different regions and on different areas of focus often work in parallel, and most humanitarian interventions are coordinated by clusters, calling for integrated multi-disciplinary and long-term approaches and better global coordination to ensure complementarity between agencies and actors.
- We propose an approach that produces and applies evidence and that promotes synergies between actors, and coordination across humanitarian, development, and environment groups leading to the development and uptake of innovative solutions, which includes:
 - Engagement and empowerment of host and displaced communities in dialogue and consultation to minimize conflicts.
 - Addressing/integrating local and customary governance to build upon and strengthen local institutions, both formal and informal.
 - Promoting knowledge sharing between IDPs, refugees and host communities, and other stakeholders, and the adoption of local sustainable management practices.
 - Undertaking research to fill gaps in understanding, and integrating knowledge from multiple disciplines and resources, as a basis for evidence-based decision-making and interventions.
 - Ensuring communication methods and scientific advocacy both at national and global levels to provide long-term

- investments in food and nutrition, water and energy security for host communities, and displaced people (IDPs and refugees), and to improve policies that support sustainable forestry and agroforestry systems.
- Providing evidence-based advice to local governments and organisations, who are usually the first responders to a crisis and generally key players in quick delivery.
 - Considering non-market-based approaches to address food insecurity, energy and poverty alleviation challenges, recognising that providing sufficient resources and a profit margin may not be possible in very low-income contexts.

1 Introduction

The environment – including climate change, deforestation and forest degradation expansion of commercial agriculture and associated land grabs – is at the centre of concerns relating to displaced people (refugees and internally displaced people), and environmental degradation associated with displacement can fuel a continuous cycle of conflict in which the environmental stress caused by population movements further exacerbates geopolitical conflicts that may catalyse new waves of displacement.

Poverty, civil war, intercommunity conflicts, political instability, and the increasingly negative impact of climate change drive forced displacements and migrations in sub-Saharan Africa. Displaced people must depend on host landscapes to build shelter and homes, and for woodfuel, agricultural and pastoral land, and non-timber and other products. The sudden influx of people and increased demand for natural resources and land often results in forest and biodiversity degradation and loss. However, the relationship between the environment and displaced people, including refugees and internally displaced people, and host communities, remains poorly addressed. Although tools and approaches have been developed, financing and implementation remain challenging and the interventions to support refugees and the environment tend to be based on assumptions about what local groups need, rather than social/cultural analysis combined with

scientific evidence – as a result, long-term uptake of more sustainable practices have often been low.

There is an urgent need to enhance resilient landscapes and the livelihoods of refugees, IDPs, and host communities in central and eastern Africa, including:

- Research that examines social/cultural assumptions and produces evidence to support interventions to promote inclusive and resilient landscapes and livelihoods.
- Collaborations across disciplines, and groups, that can more effectively address the complex and multi-faceted environmental and livelihood challenges in host landscapes.
- Research that better locates engagement with refugees and IDPs within the context of environmental challenges that pre-date the arrival of refugees and IDPs.
- The development of multi-dimensional approaches to address the interface of displaced people and host landscapes.
- Support for processes that acknowledge and inform local institutions and governance and creates greater dialogue and collaboration between host communities and their traditional authorities and displaced people.
- The development of innovative approaches co-designed with displaced people, host communities, and administrative authorities, that link sustainable planting and use of natural resources, agriculture and pastoralism.

2 Background and context

2.1 Demographics and challenges in the context of displacement

In 2019, 79.5 million people were forced to leave their homes due to conflict and human rights violations around the world. Socio-economic concerns, including poverty, as well as political instability and conflict are the main drivers of forced migration in sub-Saharan Africa (Bayar and Aral, 2019). For example, in 2020, civil war and political unrest in the CAR led to more than 300,000 Central African refugees living in cities, villages and refugee sites in Cameroon alone. Meanwhile, in South Kivu, more than 30,000 refugee households were registered from Rwanda and Burundi and IDPs, due to recent community conflicts in the Minembwe area. There are also more than 5,000 refugee households from South Sudan in Ituri and Haut Uele province (UNHCR, 2016). Climate change is increasingly a factor in displacement, affecting mostly women who are primarily involved in food crop agriculture to feed households. These numbers should be turned into opportunities by scaling up forest landscape restoration to combat the negative impact of climate change.

Large numbers of refugees or IDPs create a surge in demand for natural resources, exceeding the carrying capacity of the environment, with severe environmental and socioeconomic impacts. Pressure on natural resources increases, with few incentives for sustainability, or long-term management, leading to deforestation and degradation, biodiversity loss, and soil degradation (Murphy, 2001; Kakonge, 2000; UNHCR, 2018). An estimated 26,183 hectares of forest are burned worldwide each year by forcibly displaced families living in camps (Lahn and Grafham, 2015). The refugee-hosting landscape of Garoua-Boulai and Gado-Badzéré in Cameroon's forest-savanna transition zone is an area particularly sensitive to disturbances and landscape fragmentation from human activities, as the area is shared by different user groups who compete to use

it for various purposes, including agricultural and pastoral activities. However, restoring the degraded landscapes using fast growing trees with economic, social, medicinal, cultural and environmental value and using labour from displaced people should be a win-win model that needs to be implemented.

In many areas, refugees and IDPs add pressure to already vulnerable ecosystems and existing social tensions, leading to land use and resource conflicts among displaced and host communities. Overharvesting natural resources, competition over resources, entering host communities' common or private lands without consent and envy due to support that targets refugees are the main drivers of conflict between host communities and refugees (Menye, 2012; Gianvenuti et al., 2017).

There are multiple drivers of deforestation in landscapes hosting displaced people, including shifting cultivation, clearing land for livestock, and wood harvesting for firewood and construction. These drivers may exist prior to the influx of new populations, and in some cases are exacerbated by host communities responding to the demand created by displaced people, with host communities expanding agricultural fields, increasing firewood harvests and charcoal production, and thereby putting pressure on surrounding ecosystems (Cross et al., 2019; Daietti et al., 2018; Gitau et al., 2019; Johnstone et al., 2019; Kalipeni and Feder, 1999; Menye, 2012; Miller and Ulfstjerne, 2020; Troconis, 2017; UNEP, 2008). At the same time, traditional resource management practices, and local and regional trade of non-timber and agricultural products are long-standing in host communities and may provide opportunities for migrants and displaced people to improve and create more resilient multi-dimensional livelihoods. The relationship between displaced and host communities, livelihoods, and the environment is often complex, and interwoven.

A recurring challenge when it comes to creating sustainable livelihoods in these landscapes is that humanitarian aid must respond to immediate needs for food, water, sanitation, shelter and security. The long-term needs for sustainable energy supply and long-term environmental impacts are often not sufficiently considered, which leads to problems later on (Van Dorp, 2009; Kakonge, 2000; Lahn et al., 2015). Lack of consideration for environmental sustainability from the onset of a humanitarian response is due not only to the need to address an immediate crisis, but also to limited understanding of the interrelationship between development and environmental issues, and insufficient evidence on the human and social costs of environmental degradation.

2.2 A landscape approach to resilient social ecological systems

With refugees and IDPs often staying for long periods, many over 20 years (FAO and UNHCR, 2018), it is critical that environmental issues receive attention alongside livelihoods in humanitarian approaches. Landscape approaches can accommodate the complex interrelationships between cultural, social, governance, ecological, and economic factors (Figure 1; Walters et al., 2021).

Several humanitarian initiatives already support environment approaches and networks, such as the [Joint United Nations Environment Program/Office](#)

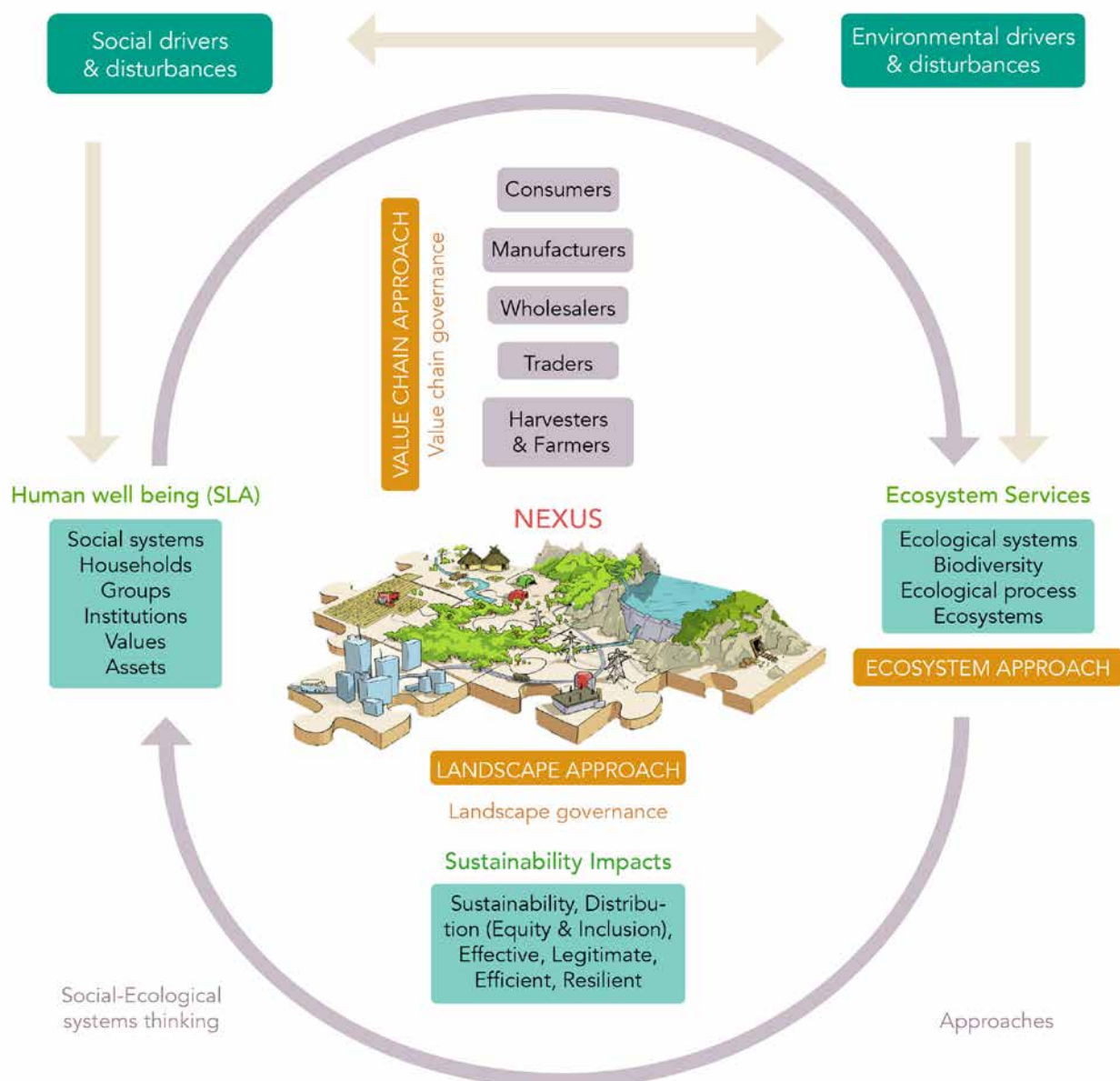


Figure 1. Landscape approach for resilient socioecological systems

Source: Ingram, 2021

[for the Coordination of Humanitarian Assistance Environment Unit](#), the [Joint Unit Environmental Emergency Centre](#) and the [United Nations Institute for Training and Research \(UNITAR\)](#) (Table 1). UNHCR and other partners have developed relevant tools for considering the environment at different phases of displacement and relocation. However, as the environment is considered a ‘cross-cutting’

concern, responsibility is not allocated to any single humanitarian institution, and the allocation of budgets and efforts fall short. This can cause serious environmental impacts for both the health and livelihood opportunities of displaced people and their hosting communities, and even spark further tensions and unrest, harming already vulnerable groups.

Table 1. Tools, networks and key resources regarding displaced people and the environment: landscape level integration

Source	Focus	Dimension of landscape approach		
		Biophysical	Socio-economic	Governance
Bellanca, R. (2014) Sustainable Energy Provision Among Displaced Populations: Policy and Practices. Chatham house.	Energy		X	
CARE International. The Framework for Assessing and Evaluating the Environment in Refugee-Related Operations (FRAME).	Refugees impact on Environment	X		
Duguma, L., Nzyoka, J., Okia, C.A., Watson, C. and Ariani, C. (2019) Restocking woody biomass to reduce social and environmental pressures in refugee hosting landscapes: Perspectives from Northwest Uganda. Working Paper. World Agroforestry, Nairobi.	Woody biomass stock/restocking	X	X	X
FAO. (2016) Meeting fuel and energy needs in protracted crises. The SAFE approach. Guidance notes.	Fuel and Energy and food security: SAFE approach and CFS-FFA	X	X	X
FAO and UNHCR. (2016) Assessing woodfuel supply and demand in displacement settings. D’Annunzio, R., Gianvenutei, A., Henry, M. and Thulstrup, A., Rome, Italy.	Woodfuel demand and supply	X	X	
FAO and UNHCR. (2018) Managing Forests in Displacement Settings. Guidance on the use of planted and natural resources to supply forest products and build resilience in displaced and host communities. Gianvenuti, A., Guéret, A. and Sabogal, C., Rome: 84.	Forest/wood management	X	X	X
FAO and UNHCR. (2018) Cost-benefit analysis of forestry interventions for supplying woodfuel in a refugee situation in the United Republic of Tanzania. Gianvenuti, A., Vyamana, V., G.	Forestry interventions for woodfuel	X	X	X
IBRD and The World Bank, FAO. (2018) Rapid Assessment of Natural Resources Degradation in Areas Impacted by the South Sudan Refugee Influx in Northern Uganda. Technical report.	Natural resources degradation, mapping tree cover change	X		

Continued on next page

Table 1. Continued

Source	Focus	Dimension of landscape approach		
		Biophysical	Socio-economic	Governance
Johnstone, K., Perera, N. and Garside, B. (2019) Calibrating cooking for refugee camps and surrounding host communities in Kigoma, Tanzania. Irish Aid, IIED.	Cooking fuel	X	X	
Kakonge, J. O. (2000) A review of refugee environmental-oriented projects in Africa: a case for environmental impact assessment, <i>Impact Assessment and Project Appraisal</i> , 18:1, 23-32	Environmental Impact	X		X
Lahn, G. (2015) Heat, Light and Power for Refugees, Saving Lives, Reducing Costs. Chatham House.	Energy (Moving Energy Initiative)	X	X	X
UNEP. Environmental considerations of human displacement in Liberia	Environment in different phases (link to landscape and other sectors)	X	X	X
UNHCR. (2002) Livelihood Options in Refugee Situations: A handbook for promoting sound agricultural practices.	Agriculture	X	X	X
UNHCR and IUCN. (2005) Forest Management in Refugee and Returnee Situation. Geneva: UNHCR, IUCN	Forest management	X		X
Van Dorp. (2009) Dealing with energy needs in humanitarian crisis response operations. IES, IUCN.	Energy needs	X	X	
URD, UNEP/PCDMA training program: Mainstreaming the Environment in Humanitarian Action (http://www.urd.org/course-mainstreaming-the)				
UNITAR (coordinator) SAFE Humanitarian Energy Exchange Network	Energy	X	X	X
UNITAR (coordinator) Global Platform Action for Sustainable Energy Solutions in Situations of Displacement	Energy	X	X	X
IUCN and Mercy Corps: Environment and Human Action Network (EHA)	Environmental sustainability	X	X	
Ndikumagenge, C. (2001) Humanitarisme, migrations de guerre et dégradations environnementales dans les Pays des grands Lacs. In <i>Les Enjeux</i> . Yaoundé. PP-22-26.	Food security/political Instability, natural resource degradation		X	X
Ijang T.P. and Ndikumagenge, C. (2013) Dependency on Natural resources: post conflict challenges for livelihoods security and environmental sustainability in Goma, the Democratic Republic of Congo. In <i>Development in Practice</i>	Food security/soil fertility depletion, Natural capital degradation	X	X	X

2.3 Natural resource management and agriculture in situations of displacement

- **Woodfuel and construction materials:**

Woodfuel is used for cooking meals or boiling water, and it is often harvested unsustainably, placing additional pressure on forests and ecosystems, and creating conflict with host communities. Eighty five percent of displaced persons in camps burn biomass, including firewood (UNHCR, 2019). When tree species suitable for use as fuel become scarce, the trek to find firewood becomes ever longer. Shortages hit women and girls particularly hard because they are typically in charge of gathering wood. Walking longer distances is an extra domestic burden – it restricts their ability to pursue other activities, such as agriculture, income generating activities, social and leisure activities and education, and it increases their risk of harassment and assault as they travel further away from home. Competition over scarce natural resources can also increase tensions. A [2014 survey](#) conducted in Chad, Ethiopia, Kenya, and Uganda found that 30% of refugees had come into conflict with a host community while collecting firewood. In the Imvepi refugee settlement and Rhino camp in Uganda, about 84% of refugee and host community survey participants agreed that environmental degradation is taking place, mainly due to the cutting of trees for firewood and baking bricks, and the extraction of timber and poles for construction (Duguma et al., 2019). In addition, about 60% of tree cover had been depleted in and around settlements over the last 2-4 years, as estimated using stump density as the degradation proxy. Participants in this study proposed planting and growing trees, conserving existing trees and promoting natural regeneration of trees with sprouting stumps to address deforestation.

- **Non-timber forest products (NTFPs):** A wide range of NTFPs are harvested for subsistence

and sale at local and regional (and sometimes international) trade in hosting landscapes, and many of these are multi-purpose species. For example, in Cameroon's eastern region, many of the favoured firewood and charcoal species are also valuable for NTFPs – for example, Moabi trees (*Baillonella toxisperma*) are known for their vegetal butter. These products are also mostly harvested and consumed by women and the most vulnerable people from displaced communities. This example demonstrates the need to develop non-monetary metrics that fully account for the value of non-wood products that are consumed locally, in addition to other uses that produce profits.

- **Agriculture:** The interface of refugee/IDP agricultural practices and host communities can create conflict. In many areas with displaced people in central and eastern Africa, agriculture is mostly carried out by smallholder farmers, and builds upon long-standing traditions that have evolved in local environments and reflect the biological and cultural diversity of these areas. Practices developed by host communities over generations, often to reduce risk and maintain well-being and health, rather than maximise gain, may be valuable to extend to displaced people in host landscapes. Other proven and sustainable practices such as home gardening with vegetables and fruit trees are being adapted to local contexts in Ethiopia, Kenya and Uganda (Njenga et al., 2020; Duguma et al., 2019; Watson 2018).
- **Pastoralism/livestock:** These livelihoods and production systems are also linked to culture, identity, and socio-political institutions, and could form part of refugee/IDP livelihoods. However, they involve very different relationships to land than agriculture, and access to pasture and water are the source of significant conflict between mobile pastoralists and sedentary farmers in Africa, particularly in areas with social and political unrest (Jobbins and McDonnell, 2021).

3 Summary of challenges to improve natural resource management by displaced people (refugees and IDPs)

- Challenges to resilience, sustainability, and environmental health in host landscapes is multi-faceted and complex, with cultural, ecological, economic, social and political dimensions. Displaced people can place additional pressure on natural resources, leading to persistent land use conflicts, soaring demand for natural resources, and limited livelihood opportunities (although they can also bring new practices, offer opportunities for growth, and environmental impacts are not always negative). These challenges are interwoven and complex, and are layered on top of complex cultural, ecological, economic, and political relations within host communities, and require multi-dimensional approaches (Figure 2).
- Displaced people, including refugees and IDPs, are often indefinitely settled in host landscapes and communities. Most displaced people are not registered,¹ and there is limited understanding of their natural resource practices, energy and food needs, and where interventions might be most effective in promoting sustainability and equity. IDPs do not usually have rights to land, and so there is little incentive to manage for the long term. Assumptions about who they are, and their resource use practices, are often not based on evidence and mirror gender, educational, linguistic and other kinds of prejudices. While immediate humanitarian needs must take priority, groups with complementary expertise in long-term development, and sustainable natural resource management, can also become engaged soon after the arrival of displaced peoples.
- Governance, and host community institutions, are central to the success of initiatives addressing environmental degradation, but they have not always been actively involved to date.
- Sustainability is often linked to place and culture and is not only a technical issue – building sustainable practices require incentives, cultural norms, and ecological understanding; it develops over time, in connection with the environment. Speeding up a process of knowledge exchange between host communities that have lived in a region for generations, and refugees, is a challenge. However, in some areas – such as the eastern region of Cameroon – refugees are from the same ethnic group, with a history of using similar resources, with similar customary laws and institutions, and this supports the potential adoption of sustainable practices.
- Providing technological fixes, such as more efficient stoves, may only work in the short term and while project incentives exist. Ensuring adoption of new technologies over time is challenging. Research can also reveal host community technologies (e.g., processing NTFPs and agricultural practices) that might be valuable to share with displaced people.
- Historically, the rate of adoption of initiatives to address energy, food security, and sustainability in refugee communities has been low. There is a need to evaluate the effectiveness of different approaches, and base decision-making on evidence and independent scientific evaluation, rather than assumptions. It is also important to recognize that refugee communities are diverse. Strategies must be adapted to the specific groups that are being served rather than assuming that all refugees can have their needs met with one international strategy.

¹ Most refugees are registered due to their need for international protection, but IDPs in many cases are not because they are protected by their own government.

- Researchers and practitioners working with refugees and IDPs in different regions and areas of focus – e.g., humanitarian, development, the environment – often work in parallel, and do not integrate or collaborate. However, the challenges and problems require multi-disciplinary and long-term approaches, and coordination at the grassroots level to ensure complementary and collaborative approaches between agencies and actors. In some cases, these processes have begun, and they offer important insights and lessons (see Table 1) There are also differences between central and eastern Africa in this regard. Sufficient time must be allocated to engage in research that can inform curated best practices in the form of interventions. The fundamental differences between research and non-research outcomes must be more clearly articulated.
- The literature on traditional natural resource management systems and refugees is limited, and the potential for knowledge exchange between refugees, IDPs and host communities poorly understood.

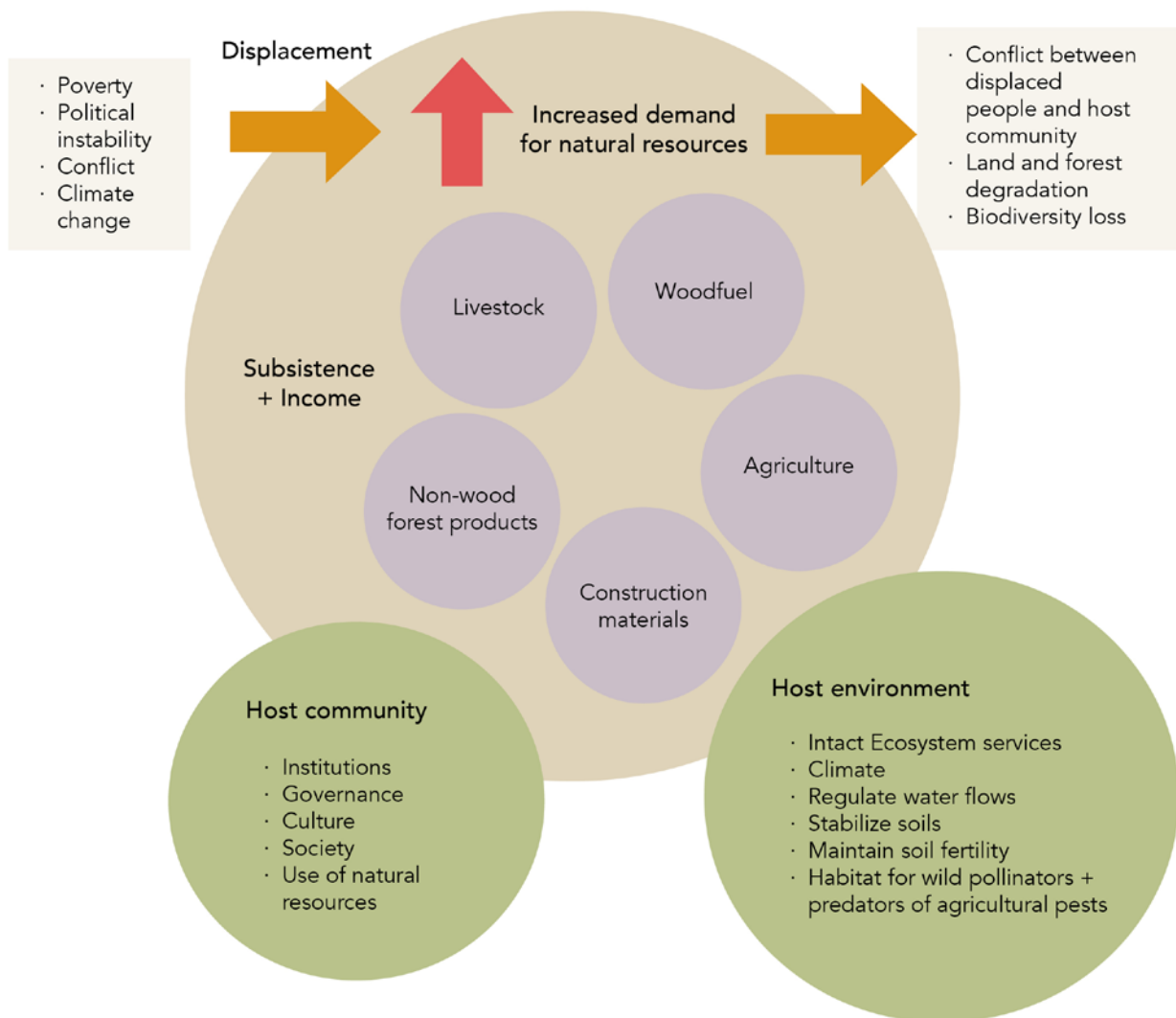


Figure 2. Interaction of refugee and host communities in multifunctional landscapes

4 CIFOR-ICRAF experiences in refugee displacement settings in central and eastern Africa

4.1 Activities in the context of refugees in central and eastern Africa by CIFOR-ICRAF and partners

- **Cameroon:** Since 2018, the Governing Multifunctional Landscapes (GML) project, funded by the EU and implemented by CIFOR-ICRAF has supported integrated landscape-level interventions in the town of Garoua-Boulai and the Gado-Badzere refugee camp. Scientific evidence has been built from various studies on, for example, land use systems, woodfuel cross-border trade, and consumption and impacts on natural ecosystems. Forest restoration has been launched with local communities and displaced people through agroforestry with fast growing species and NTFPs. The introduction of improved cooking technologies is ongoing, based on consultation and collaboration with end users. Project collaborators include CIFOR-ICRAF, the EU, UNHCR, the Government of Cameroon through the divisional office and the Ministry of Forestry and Wildlife, the councils of Mandjou and Garoua Boulai, and civil society organisations, including Ingénierie du Développement Durable and Lutheran World Federation.
- **Uganda** – In 2018-2019, the United Kingdom's Department for International Development supported ICRAF and the *Deutsche Gesellschaft für Internationale Zusammenarbeit* to pilot integrating energy and sustainable natural resource management into the refugee context. ICRAF developed and tested tree growing designs for refugees and hosts which are now being scaled up to other refugee settlements in Uganda. ICRAF runs a community training centre that also produces diverse species of tree seedlings, including fruits. Follow up technical support is offered by community technical team training run by ICRAF. ICRAF, in partnership with Save the Children; Enable; Vision for Humanity, healing a hurting world; and Joint Energy and Environment Projects (CGIAR and NGOs) are carrying out research and development for energy, the environment and climate, including the development of resilience livelihoods in refugee-hosting districts. The project targets a total of 2.1 million beneficiaries.
- **Ethiopia, Kenya and Uganda:** ICRAF, the International Water Management Institute, Pennsylvania University in partnership with NGOs, and UN bodies that include the Danish Refugee Council (Kenya and Uganda) and Adventist Development and Relief Agency Ethiopia, UNHCR, and UN Habitat, with BMZ support between 2019-2022, are undertaking research and development on sustainable energy, as well as gender responsive resource recovery and re-use (RRR) in refugee-host community settings, in order to optimise the use of scarce resources. The gender component of the project is supported by USDA-NIFA via the participation of Penn State University. The RRR innovations include the recovery of household grey wastewater and plant nutrients from organic residues for home gardening that include tree growing, and the production and use of biochar for soil amendment and fuel briquettes. The interventions target 3,600 people who will be reached directly, and lessons will be disseminated to about 200,000 people through media outreach. Research will be carried out to understand how community trainings and adaptation of the RRR innovations work in these contexts and to determine their impacts, which will be communicated to inform decision-making and implementation of similar development work.
- **Ethiopia:** ICRAF, the Norwegian Refugee Council and Norwegian Church Aid successfully accomplished a one-year inception period

(2019) project entitled “Strengthening Self-Reliance of Refugees and Host Communities through Enhancing Livelihoods and Restoring Degraded Environments in Shire area, Northern Ethiopia” in four Eritrean refugee camps in northern Ethiopia (namely, Adi-Harush, Mai-Ayni, Hitsats and Shimelba) and their host communities, funded by the Norwegian Ministry of Foreign Affairs through the Royal Norwegian Embassy in Ethiopia. A detailed and comprehensive baseline assessment and formative research were conducted to identify and prioritise short-term livelihood and degraded land restoration options, which were implemented during the inception period and will guide/inform the development of a 3–4-year project (2021–2023/4) entitled “Restoring Degraded Environments and Enhancing Access to Sustainable Livelihood opportunities and Energy for the Refugees and Host Communities in Shire Area, Tigray, Ethiopia”. This project has been developed, reviewed and approved by the donor (but delayed because of the conflict in Tigray, where the refugee camps are located). Some of the major activities during the inception period that involved scientific backstopping from ICRAF (such as availing various technologies that suit the context; creating access to quality germplasm and supplying quality planting material; providing various training programmes and continuous technical support; and compiling learnings, lessons and experiences) include i) organising and supporting women’s groups on alternative energy or energy-saving technologies; ii) greening refugee camps; iii) strengthening or upgrading existing public nurseries with the Rural Resources Centre business model run by both refugee and host community youth and women groups; iv) organising and supporting youth groups on beekeeping activities as livelihood options; v) restoring degraded hillsides, supporting sustainable enclosure management and introducing improved agroforestry practices; vi) introducing cost effective water harvesting and soil and water conservation activities, and vii) introducing Assisted Natural Regeneration/farmland farmer managed natural regeneration (FMNR), silvicultural practices, and beekeeping enterprises for value addition to enclosures, restoration of degraded landscapes, and environmental health and livelihoods. The major intervention activities proposed for the years ahead include, but are not limited to, i) promoting/introducing

alternative water harvesting technologies such as rainwater or roof water harvesting for household consumption and small-scale irrigation activities; ii) establishing an ecological shelter belt around micro-dams/water sources for substantiality of water sources and improved irrigation practices within the refugee-host communities; iii) building the capacity of refugee and host communities on climate smart, good agricultural and natural resource management practices and conflict resolution mechanisms; iv) developing and providing manuals, implementation guides and technical toolkits and publications.

- **Eastern Africa:** A scoping study in Ethiopia, Kenya, Somalia, South Sudan and Uganda in 2019 by ICRAF, with the support of FAO, developed guidance notes for forest and tree-based solutions in displacement settings in eastern Africa. The main forest and tree-based interventions identified were agroforestry systems/practices; integration of trees in farmlands; woodlots, woodland and FMNR; boundary/hedgerows; greening office and residential areas; fruit orchards; management of invasive *Prosopis juliflora*; and establishment of nurseries. The study concluded that the self-resilience of refugees, IDPs and host communities is contingent on a healthy, well-managed environment (trees, soils and water). Forest and tree-based interventions are key to maintaining resilient landscapes and achieving self-reliance in the displacement settings of eastern Africa. However,
 - Most forest, woodlands and trees are being depleted without replacement and/or management strategies and techniques that reduce such pressure.
 - Most refugees have no access to land or rights to trees to practice sustainable options; although the domestication of the Comprehensive Refugee Response Framework is a huge opportunity as land is increasingly being availed to displaced persons.
 - Displacement areas are usually located in the most marginalised, vulnerable and socio-economically challenging areas and/or are prone to drought/flood, with low agricultural potential, and poor infrastructure, making it difficult for displaced persons to fully engage and benefit from market economies.

- Forest and tree management is not prioritised in terms of budgets and other resources, resulting in inherently low support services and little adoption of sustainable practices. However, the engagement of devolved and or decentralized governance systems in most countries is an opportunity to increase investments, guidance, support and ownership in displacement areas by subnational governments and agencies.
- Tree management is often unsuccessful due to dry conditions, resulting in water scarcity and poor seedling survival. Several interventions have already been tried, and lessons learnt, which might need better contextualisation and scaling.
- **National and global partnerships:** CIFOR-ICRAF is a member of many national and global platforms and networks and provides science and technical support on tree and forest-based solutions for sustainable landscapes and livelihoods in refugee contexts. The centre's partnerships include 50 organisations that comprise funders, UN bodies, CGIAR centres, national and international NGOs, local and national governments, and universities. The platforms and networks that the centre is part of include:

National platforms and networks

- National Agriculture, Livestock and Natural Resource Management Component Thematic Working Group at Kakuma-Kalobeyi refugee settlements (Kenya).
- Energy Component Thematic Working Group at Kakuma-Kalobeyi refugee settlements (Kenya).
- Garissa Integrated Socio-Economic Development Plan Task Force for Agriculture, Natural Resources, Environment and Energy at Daadab refugee settlements (Kenya).
- Energy and Environment Working Group for Refugees and Host Communities (Uganda).
- Humanitarian-Development-Peace Nexus (Cameroon).

Global platforms and networks

- Global Platform for Action on Sustainable Energy in Displacement Settings, convened by UNITAR.

- Safe Access to Fuel and Energy Humanitarian Energy Exchange Network, convened by UNITAR.
- Cross-network friends of ecosystems-based adaptation (environment and humanitarian action network-ecosystems for disaster reduction and mitigation).
- Working group on ecosystem-based adaptation in humanitarian and post-disaster contexts, convened by IUCN and Mercy Corps.

Other existing initiatives from partners, linked to environmental and forest restoration in refugee sites, central and eastern Africa

- FAO and UNHCR currently work together to support refugee households to facilitate their establishment and to increase their livelihoods. Incomes are mainly derived from agriculture and the charcoal trade. Support is also provided to host families in Ituri and Haut-Uele provinces. The objective of these various forms of support is to advance agricultural practices with improved seeds and agroforestry, so as to reduce pressure on forests.
- In South Kivu province, FAO works to support at least 30,000 refugee households from Rwanda and Burundi. The objective of the support is to guarantee food security and provide fuel wood. Seventy percent of the support goes to the refugees and IDPs, while 30% is allocated to the host communities.

4.2 Gender and inclusion in refugee contexts by CIFOR-ICRAF and partners

Refugees, and sometimes host community members, tend to be both young and female. The reasons for this are diverse but include the involvement of men in conflict, male migration for the purpose of income generation, and large family size, which means that childcare and household maintenance absorb significant percentages of time among women of childbearing age. Gender inclusion in this context requires dedicated outreach to adult women to understand their social and cultural needs, preferences, and requirements of all community members. A major gap in the literature is the cultural change experienced by refugee and host community members caused by the death of family members,

physical displacement, and integration into camps and settlements organised and managed by national governments, various NGOs and UNHCR. CIFOR-ICRAF's approach to gender integration focuses on understanding local conditions and customising both landscape-level planning and individual interventions to allow for the greatest possible inclusion of

participants. In circumstances where communities may have experienced severe neglect and require international humanitarian intervention, the CIFOR-ICRAF approach prioritises understanding the lived experience of marginalised individuals and adjusting technical and policy support, rather than attempting to alter the behaviours and beliefs of displaced persons.

5 New and future developments

5.1 Engagement landscape

CIFOR and ICRAF scientists have developed the Refugee-hosting Engagement Landscapes initiative for Resilient Landscapes and Livelihoods in Central and Eastern Africa project with the aim to carry out concentrated, long-term transformative work with diverse partner organisations. The approach proposed involves refugees and host communities, as well as other stakeholders, to co-develop evidence and context-based solutions to promote socio-economic welfare while integrating the protection of biodiversity and mitigating climate change – a triple objective of forest landscape restoration – with great attention given to supporting planning and programming.

This initiative addresses the persistent challenges in environmental degradation and food, water and energy insecurity and sustainable provisioning of other natural resource and ecosystem services in refugee settings. The engagement landscape is also developed with recognition that the priority goal of most UN agencies and major international INGOs is to save lives. In addition, the growing awareness of the importance of natural resources to the well-being of refugees means that urgent efforts are underway to address environmental issues by reversing deforestation and land degradation trends. Such efforts include networks such as the [Environment and Human Action Network](#) and the [Global Plan of Action for Sustainable Energy Solutions in Situations of Displacement](#), to which CIFOR-ICRAF scientists contribute.

While the humanitarian sector is highly skilled at delivering life-sustaining relief items as well as education, water and sanitation, shelter and other critical services to displaced people, additional contributions from other sectors are needed as the number of refugees grows in sub-Saharan Africa due to climate and conflict-related crises as indicated in the displacement global trends report by UNHCR (2019).



Figure 3. Map of Africa showing current focus countries

To avoid spreading efforts too thinly across the region, the proposed programme will start by focusing on eight landscapes from six countries, including Cameroon (two in Gado Badzere and Minawao), Chad, and the DRC (South Kivu and potentially Ituri province) for central Africa; and Uganda, Kenya and Ethiopia for eastern Africa (Figure 3). Interventions in these countries will allow for collaboration and comparison across the central and eastern African regions and for research to be undertaken to produce evidence on the relative strengths and roles of local governance, forest restoration, sustainable agriculture, soil and water management, NTFPs, and livestock.

5.2 Programme on social and environmental transformation of refugee and host community landscapes 2021–2030

The Refugee-hosting Engagement Landscapes initiative is evolving into a programme that seeks to create evidence-based strategies and inform

decision-making while building synergies with other actors towards building resilient landscapes and livelihoods in refugee-hosting landscapes. This approach adapts the centre's experiences and lessons from a diverse range of innovations implemented in over 30 countries in the Global South to address major global challenges on deforestation and diversity loss, the climate crisis, transforming food systems, unsustainable supply and value chains and extreme inequality as they manifest in refugee-hosting engagement landscapes.

The programme will address multiple United Nations' Sustainable Development Goals (SDGs), including SDG 2 (zero hunger – including improved nutrition, food security, and sustainable agriculture); SDG 5 (gender equality); SDG 7 (affordable and clean energy, including woodfuel); SDG 13 (climate action); SDG 15 (life on land, including sustainable use of forests and biodiversity); SDG 16 (peace, justice and strong institutions, including accountable and inclusive institutions at all levels); and SDG 17 (promotion of partnerships to achieve sustainable development). The platform itself is grounded in SDG 17, and will draw upon the respective strengths of partner organisations, including

CIFOR/ICRAF, UNHCR, FAO, UNDP, EU, IUCN, AFR100, I2D, and the Great Green Wall. The core programme aims to:

- Engage host and displaced communities in dialogue and consultation.
- Address local and customary governance and build upon and strengthen local institutions.
- Promote knowledge sharing and adoption of local natural resource management practices.
- Undertake research to fill gaps in understanding, and integrate knowledge from multiple disciplines and resources, as a basis for decision-making and interventions.
- Engage national and global policymakers to provide long-term investments in energy, food and nutrition security for refugee and host communities as well as improve policies that support sustainable forests, trees, and agroforestry in connection with refugee settings:
 - Offer technical advice to relevant networks, platforms and working groups.
 - Participate in networks, platforms and working groups working on resilient landscapes and livelihoods.
 - Provide technical support on the evidence-based solutions developed, tested, and adapted by CIFOR-ICRAF and partners.

Key terms

Migrants – Movement of people related to poverty and economic causes.

Forced displacement – The forced movement of people due to insecurity, violence, and conflict, who are seeking protection, security, and survival. This includes refugees (<25%) and IDPs (>75%).

Internally displaced people – People displaced within a country's borders.

Refugees – People displaced across national borders.

Host communities – Communities living in a region prior to the arrival of refugees and IDPs.

Woodfuel – All types of biofuels derived directly and indirectly from woody biomass. In sub-Saharan Africa, this is typically in the shape of fuelwood and charcoal, but other forms, such as briquettes, pellets and sawdust can be included.

NTFPs – Non-timber forest products.

Food security – “Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” (2009 Declaration of the World Food Summit)

Multi-functional landscapes – “Multifunctional landscapes are typically characterized by diversified land use and complex landscape structure, thereby potentially covering many, often competing interests of different stakeholder groups.” (<https://www.sciencedirect.com/science/article/pii/B9780124095489120986>)

Conflict – An actual or perceived opposition of needs, values, and interests between two or more individuals.

Governance – Structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation. (<http://www.ibe.unesco.org/en/geqaf/technical-notes/concept-governance>)

Climate smart agriculture (CSA) – Sustainably increasing agricultural productivity and incomes, adapting and building resilience to climate change and reducing greenhouse gas emissions. (https://www.researchgate.net/publication/282940339_Climate_Smart_Agriculture_an_approach_for_sustainable_food_security)

Forest landscape restoration (FLR) – “A process that aims to regain ecological functionality and enhance human well-being in deforested or degraded landscapes.” (Global Partnership on FLR – a group of over 30 partners engaged in FLR)

References and further reading

- Bayar, M. & Aral, M.M., 2019. An analysis of large-scale forced migration in Africa, *International Journal of Environmental Research and Public Health*. DOI 10.3390/ijerph16214210. https://www.researchgate.net/publication/336915557_An_Analysis_of_Large-Scale_Forced_Migration_in_Africa
- Cross, J. et al., 2019. Energy and Displacement in Eight Objects: Insights from Sub-Saharan Africa. <https://www.chathamhouse.org/sites/default/files/CHHJ7521-MEI-Energy-Displacement-8-Objects-RP-FINAL.pdf>
- Daietti, L. et al., 2018. Rapid Assessment of Natural Resources Degradation in Areas Impacted by the South Sudan Refugee Influx in Uganda. <https://reliefweb.int/sites/reliefweb.int/files/resources/66363.pdf>
- Duguma L, Nzyoka J, Okia C, Watson C, Ariani C., 2019. Restocking woody biomass to reduce social and environmental pressures in refugee-hosting landscapes: Perspectives from Northwest Uganda. Working Paper No. 298. *World Agroforestry*, Nairobi. DOI: <http://dx.doi.org/10.5716/WP19032.PDF>
- FAO and UNHCR, 2018, 2018. Managing forests in displacement settings: guidance on the use of planted and natural forests to supply forest products and build resilience in displaced and host communities, by A. Gianvenuti, A. Guéret and C. Sabogal. Rome, 84 pp. <https://www.fao.org/3/I8309EN/i8309en.pdf>
- Gianvenuti, A. et al., 2017. Rapid woodfuel assessment : 2017 baseline for the Bidibidi settlement, Uganda. Available at https://www.researchgate.net/publication/328368512_Rapid_woodfuel_assessment_2017_baseline_for_the_Bidibidi_settlement_Uganda
- Gitau, K.J. et al., 2019. Factors influencing the adoption of biochar-producing gasifier cookstoves by households in rural Kenya. *Energy for Sustainable Development*, 52:63-71. DOI 10.1016/j.esd.2019.07.006. <https://www.sciencedirect.com/science/article/pii/S0973082618308913>
- Jobbins, M. & McDonnell, A., 2021. *Pastoralism and Conflict: Tools for Prevention and Response in the Sudano Sahel*, 1st ed. Washington DC: Search for Common Ground. <https://reliefweb.int/report/niger/pastoralism-and-conflict-tools-prevention-and-response-sudano-sahel>
- Johnstone, K., Perera, N. & Garside, B., 2019. Calibrating cooking for refugee camps and surrounding host communities in Kigoma, Tanzania. Available at https://www.climatelearningplatform.org/sites/default/files/resources/calibrating_cooking_for_kigoma_iied_0.pdf
- Kakonge, J.O., 2000. A review of refugee environmental-oriented projects in Africa: a case for environmental impact assessment *Impact Assessment and Project Appraisal*. . 18(1):23-32. Available at <https://www.tandfonline.com/doi/abs/10.3152/147154600781767565>
- Kalipeni, E. & Feder, D., 1999. A political ecology perspective on environmental change in Malawi with the blantyre fuelwood project area as a case study, *Politics and the Life Sciences*, 18(1): 37-54. DOI 10.1017/S0730938400023546. <https://www.jstor.org/stable/4236461?refreqid=excelsior%3Aa249b3ab3464b5ad1c79ac684da7583c>
- Lahn, G. & Grafham, O., 2015. *Heat, Light and Power for Refugees: Saving Lives, Reducing Costs*, Chatham House. The Royal Institute of International Affairs, London. <https://www.chathamhouse.org/sites/default/files/publications/research/2015-11-17-heat-light-power-refugees-lahn-grafham-final.pdf>
- Menye, L.C., 2012. *Socio-Economic Impact of Refugees on the Areas Neighboring Camps: A Case Study of Kenya's Refugee Camps*. Retrieved March 3, 2014, from Centre for

- Army Lessons Learnt. Available at http://usacac.army.mil/cac2/call/docs/12-21/ch_6.asp
- Miller, R. L-A., and Ulfstjerne, M. A., 2020. Trees, tensions, and transactional communities: Problematizing frameworks for energy poverty alleviation in the Rhino Camp refugee settlement, Uganda. *Energy Research & Social Science*, 63. [101404]. <https://doi.org/10.1016/j.erss.2019.101404>
- Murphy, J.T., 2001. Making the energy transition in rural East Africa: Is leapfrogging an alternative? *Technological Forecasting and Social Change*. DOI 10.1016/S0040-1625(99)00091-8. <https://www.sciencedirect.com/science/article/abs/pii/S0040162599000918?via%3Dihub>
- Njenga M., Gebrezgabher S., Mendum R., Adam-Bradford A., Woldetsadik D., Okia C., 2020. Circular economy solutions for resilient refugee and host communities in East Africa. Project brief series No. 1. IWMI, Colombo, Sri Lanka., project website under 'Publications & Outputs' <https://rrr-refugee.iwmi.org/wp-content/uploads/sites/42/2020/09/rrr-in-refugee-settlements-in-africa-project-brief-series-no-1.pdf>
- Troconis, I., 2017. The Broken Promise of Solar Cooking. The Case of Goudoubo Refugee Camp in Burkina Faso. Available at https://www.academia.edu/35676803/The_Broken_Promise_of_Solar_Cooking_The_Case_of_Goudoubo_Refugee_Camp_in_Burkina_Faso
- UNEP, United Nations Environment Programme., 2008. Destitution, distortion and deforestation. The impact of conflict on the timber and woodfuel trade in Darfur. Available at <http://www.unep.org/tsunami/>
- UNHCR, 2019. Global Strategy for Sustainable Energy. A UNHCR Strategy 2019-2024. Available at <https://www.unhcr.org/partners/projects/5db16a4a4/global-strategy-for-sustainable-energy.html>
- UNHCR, 2018. Global trends: Force displacement in 2028. <https://www.unhcr.org/5d08d7ee7.pdf>
- UNHCR, 2016. South Sudan Situation: Regional Emergency Update. <https://data2.unhcr.org/es/documents/details/49738>
- Van Dorp, M., 2009. Dealing with Energy Needs in Humanitarian Crisis Response Operations: A Quick Scan of Policies and Best Practices of Humanitarian Aid Organizations and Potential Alternative Energy Sources and Technologies, Institute for Environmental Security. Available at http://www.envirosecurity.org/fuel/Quick_Scan_FUEL_project.pdf
- Walters, G., J. Sayer, A.K. Boedhihartono, D. Endamana, and Angu Angu K., 2021. Integrating landscape ecology into landscape practice in Central African Rainforests. *Landscape Ecology*, April 3, 2021. <https://link.springer.com/article/10.1007/s10980-021-01237-3>
- Watson C., 2018. Agroforestry with refugees in Uganda: overwhelming demand and a huge desire to plant <https://blog.worldagroforestry.org/index.php/2018/07/06/agroforestry-with-refugees-in-uganda-overwhelming-demand-and-a-huge-desire-to-plant/>

CIFOR Occasional Papers contain research results that are significant to tropical forest issues. This content has been peer reviewed internally and externally.

This paper synthesises the challenges in environmental sustainability facing refugee-hosting landscapes, on-going initiatives, and gaps. It also presents transformative science plans by CIFOR-ICRAF to address exiting gaps towards resilient landscapes and livelihoods. CIFOR-ICRAF is a research institution in forestry and landscape management, which has evolved out of an effective merger between CIFOR and ICRAF.

The assessment shows that resilience, sustainability, and environmental health in host landscapes are multi-faceted and complex, with cultural, ecological, economic, social, and political dimensions. Therefore, despite various organisations working in refugee hosting landscapes, there are still challenges in achieving holistic, long-term and sustainable solutions. On the other hand, governance and host community institutions that are central to the ownership, success and sustainability of initiatives addressing environmental degradation have not always been actively involved to date.

To bridge these gaps, CIFOR-ICRAF applies a landscape approach that delivers evidence-based, actionable and context-based gender-responsive solutions. This approach promotes collaboration and synergies between actors; contributes to international dialogue; and informs planning, programming and policy development.

These initiatives are carried out under CIFOR-ICRAF's Refugee-hosting Engagement Landscapes where over a dozen projects on concentrated transformative work with diverse and committed partners have been implemented in several countries in eastern and central Africa. This approach adapts the centre's experiences and lessons from a diverse range of innovations implemented in over 30 countries in the Global South to address major global challenges related to deforestation and diversity loss, the climate crisis, food system transformation, unsustainable supply and value chains and extreme inequality as they manifest in refugee-hosting landscapes.



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

The CGIAR Research Program on Forests, Trees and Agroforestry (FTA) is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with ICRAF, the Alliance of Bioversity International and CIAT, CATIE, CIRAD, INBAR and TBI.

FTA's work is supported by the CGIAR Trust Fund: cgiar.org/funders/

cifor.org

forestsnews.cifor.org



Center for International Forestry Research (CIFOR)

CIFOR advances human well-being, equity and environmental integrity by conducting innovative research, developing partners' capacity, and actively engaging in dialogue with all stakeholders to inform policies and practices that affect forests and people. CIFOR is a CGIAR Research Center, and leads the CGIAR Research Program on Forests, Trees and Agroforestry (FTA). Our headquarters are in Bogor, Indonesia, with offices in Nairobi, Kenya; Yaounde, Cameroon; Lima, Peru and Bonn, Germany.

