

## A Primer on Refugee-Environment Relationships

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### 1. Introduction

The world has never had more refugees than today, and yet we know little about the spectrum of environmental challenges they face. As of mid-2019, the United Nations High Commissioner for Refugees (UNHCR) documented 20.4 million refugees under UNHCR mandate and an additional 5.6 million refugees under United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) mandate (UNHCR, 2020). The UNHCR and UNRWA were established in 1950 to manage what were expected to be short-lived European and Palestinian refugee diasporas, respectively. Seventy years later, these agencies remain essential as the world's forcibly displaced move towards security and safety, sometimes requiring assistance over generations. Across countries, years, and conflicts, refugees share a common experience of being forcibly displaced from their home, community, and land. The severing of ties that link refugees to their natural and built environment through personal cultural memory, kinship and social networks, livelihoods, land tenure, and land use amount to a totalizing disarticulation of human experience, and is part of the trauma of forced displacement. What is less understood is the extent to which refugees' traumas are compounded by environmental marginality, degradation, climate vulnerability in the long process of resettlement.

Refugee relationships with the environment are broadly determined by the asylum policy of their hosting country and regional geographic conditions. Asylum policies help define the bundle of rights afforded to refugees in terms of freedom of mobility, physical access to public services and natural resources, and agency to make resource use decisions (Blair et al., 2021). The physical and human geographies of a refugee hosting country -- influenced by the geologic, biophysical, and climatic profiles as well as historical, demographic, cultural, and economic characteristics -- shape not only the allocation and condition of natural resources but also the locations of human populations and settlements, including those inhabited by refugees. From Zaatari in Jordan, to Kutupalong in Bangladesh, to Bidi Bidi in Uganda, to Dheisheh in the West Bank, the diverse policy, environmental, climatic, and demographic characteristics of these settlements and their host countries are plainly evident. For these and other reasons described below, refugee relationships with the environment may be distinct from neighboring communities' relationships with the same landscape.

The 2018 Global Compact on Refugees (GCR) underscores a pressing need for systematic, grounded insight on refugee-environment relationships (UN, 2018). The first two primary objectives of the GCM -- to ease pressure on host countries to alleviate burden sharing, and to support refugee self-reliance -- at their core, deal with environmental concerns associated with land-based livelihoods,

socioeconomic integration, food security, sustainable resource use, and climate resilience. In addressing root causes of displacement, the GCR also points to environmental degradation, climate change and natural hazards as interacting with social determinants of forced displacement. A central challenge to effective implementation of the GCR is the perpetuation of asylum policies that site refugee settlements on marginal border land (Van Den Hoek et al., 2018), securitize refugee populations (Hammerstad, 2011; Loescher & Milner, 2005), restrict refugee mobility and access to resources surrounding the settlement, and constrain refugee agency in building food security, sustainable resource use, and climate resilience (Mabiso et al., 2014).

The aim of this refugee camp-centric primer is to provide an introductory outline of the themes presented in the 2021 PERN Cyberseminar on “Refugee and internally displaced populations, environmental impacts and climate risks”. The cyberseminar seeks to provide new insights into the processes that establish, challenge, and maintain refugee-environment relationships. With scholars and practitioners from around the world, the cyberseminar will examine the interplay between refugees, the local environment, and climate change against the broader social and political contexts that frame these relationships. Below, this primer introduces the arc of displacement, including the drivers, pathways, and settlement scenarios associated with refugee migration. Next, a brief summary of refugee-environmental scholarship is provided with specific attention towards landscape-oriented scholarship. Three methodological challenges to knowledge-building are then discussed: population and settlement data scarcity, long-term monitoring of small-scale environmental changes, and adapting humanitarian data collection imperatives for environmental awareness. The primer concludes where cyberseminar participants will begin.

## **2. The arc of displacement**

Displacement is most common among socially vulnerable people, and it serves to further marginalize and dispossess them within societies where it occurs. Where refugees are concerned, the drivers of displacement are persecution: risk of life and bodily harm due to threats targeted at individuals or groups due to their identity, culture, ethnicity, family origins, and/or political ideology. Persecution is distinct among the possible drivers of displacement, and merits special legal protections and entitlements to refugees and asylum seekers. While environment disasters are certain to predominantly affect marginalized groups, they act with none of the targeted intent or malice that can result in outcomes such as genocide. For this reason, the term “climate refugee” is commonly rejected among international agencies and national migration authorities, and in most scholarship (Biermann & Boas, 2008, 2010).

Displaced people have limited control over the timing of evacuation, the destination of mobility, and the duration of displacement (Betts, 2013). Once displacement has happened, there is little theory to guide our understanding of the destinations that asylum seekers may select. Evidence suggests that displaced peoples go to places where they have previous life experience, and where they have existing social networks (Betts, 2013), and the presence of humanitarian aid agencies, existing refugee camps, and asylum registration programs also serve as pull-factors to displaced people (World Bank, 2017). The UNHCR’s preferred settlement option is for refugees to integrate into urban host communities, and this is indeed the route adopted by approximately 60% of refugees (Muggah & Abdenur, 2018). Voluntary repatriation is a rarity as only 317,200 refugees returned to their countries of origin in 2019. Third-country resettlement is rarer still, with only 107,800 refugees resettling in a third country in 2019. Settling in a camp is considered by UNHCR as a last resort though 10% (2.6 million) refugees reside in camps today. Many have identified the problematic nature of refugee camps in limiting livelihood opportunities

for refugees, enforcing strict movement and host-interaction measures, and providing insufficient infrastructure and services to vulnerable populations (Oesch, 2017; Ramadan, 2013; Turner, 2016).

Refugee camps may be thought of as a temporary solution to forced displacement, yet the average stay in a refugee camp is more than 10 years (Devictor, 2019; Devictor & Do, 2017). In 2019, nearly 16 million refugees (77%) were living in a “protracted refugee scenario” (PRS) in which over 25,000 refugees of the same nationality live in exile in a host nation for more than 5 years (UNHCR, 2020). Common in PRS is the practice of “warehousing” that restricts refugee migration from camps, effectively isolating refugees from neighboring communities, preventing settlement in urban areas or third countries, and broadly trapping refugees in a camp for an indefinite duration (USCRI, 2019). Refugee populations in protracted displacement face socioeconomic and legal barriers on their ability to migrate away from impacts. Living in so-called mobility traps (McLeman, 2019), the forced sedentarization of PRS brought on by warehousing turns what should be a temporary solution into a lasting reality for millions of people.

### **3. Grounding refugee-environment relationships within and beyond the camp**

Academic research on refugee-environment relationships has been active at least since the mid-1980s (i.e., Young, 1985) but has rapidly grown over the last decade, driven by methodological developments in crowdsourced data collection (Herfort et al., 2021; Van Den Hoek et al., 2021), satellite and drone remote sensing (Braun et al., 2019; Lang et al., 2020; Leiterer et al., 2018; Rossi et al., 2019), and machine learning (Quinn et al., 2018; Tiede et al., 2021; Tingzon et al., 2020). Moving beyond conceptualizing refugees as population stocks or flows, other perspectives used the landscape as the integrative spatial unit within which refugee and host populations and settlement conditions, natural resources, and local climatic conditions may be collectively analyzed (Unruh, 1993).

Refugees tend to have few choices around the location, type, and intensity of resource use, and the adoption of the landscape view has been essential for illuminating the short-term and long-term challenges, consequences, and opportunities of refugee-environment relationships. Much research has been directed towards identifying localized environmental degradation (Ghimire, 1994) and resource overuse (Jaafar et al., 2020), refugee-host resource conflicts (Martin, 2005), and natural hazard exposure (Ahmed et al., 2018). Documenting the environmental footprint of refugee camps is a recurrent analytical theme and highlights the challenges faced by host countries whose requests for financial support from UNHCR and the international community to provide basic services to refugees – water, food, shelter – are typically only partially met. In contrast, other research has identified refugee-led improvements on local ecological conditions (Maystadt et al., 2020), increased land productivity in and around refugee settlements (Perkins et al., 2017), the importance of refugee-host relationships in environmental resource management, and socioeconomic integration with the hosting community (Alix-Garcia et al., 2018; Betts et al., 2017). To date, there has been little systematic research on refugee-environmental relationships across refugee settlements (with exception of Maystadt et al. (2020) and Van Den Hoek et al. (2018)), and case studies are often set in the most populated refugee settlements and collectively present a bricolage of empirical approaches that challenge attempts for comparative analysis.

Expected climate change impacts on refugees and refugee-hosting countries raise concerns about the long-term habitability and sustainability of refugee settlements (Van Den Hoek et al., 2018). A number of local factors influence refugee vulnerability to climate change, including direct exposure to climate hazards (Ahmed et al., 2018). However their propensity for adverse outcomes, including food insecurity, impoverishment, and harm to bodily health, is owed to structural factors that inhibit people’s ability to respond to hazards (Meerow et al., 2016). The structural determinants of refugees’ vulnerability

may include their relative poverty and inequality (Leichenko & Silva, 2014), state fragility (Selby et al., 2017), or factional and ethnic divisions (Schleussner et al., 2016), among others. Already largely dependent on state and humanitarian intervention, these vulnerable populations will *likely* require interventions to safely maintain residence in areas exposed to climate hazards.

#### **4. Methodological challenges to refugee-environment knowledge-building**

A central challenge in documenting refugee-environment relationships is the absence of reliable data that are consistently collected over time and space. Even with a large and growing collection of open demographic, environmental, climate, and biophysical datasets, significant data and analytical gaps remain in documenting refugee-environment relationships. Georeferenced ‘population of concern’ data collected and maintained by UNHCR that include the locations of refugee settlements are inconsistently precise and consistently imprecise. Moreover, these data are updated pseudo-annually to include newly established settlements and exclude closed settlements, which makes it difficult to develop a comprehensive view of refugee settlement locations over long time periods. These locational data are divorced from UNHCR refugee demographic data, which are aggregated and distributed at the national rather than sub-national or settlement-level, and refugees at large are excluded from national censuses even in major refugee hosting countries (Carr-Hill, 2013). Advancements in satellite image-based mapping of human settlement locations and extents (CIESIN et al., 2020; Van Den Hoek et al., 2019), remote monitoring of refugee settlement establishment and growth over time (Friedrich & Van Den Hoek, 2020; Jenerowicz et al., 2019), data-driven population mapping (Freire et al., 2020), and increasingly open data sharing by UNHCR are steadily improving our ability to place refugee populations and settlements on the map.

National refugee response policy and geography contribute to differences in refugee settlement morphology (i.e. layout and configuration), materials used for dwellings and infrastructure, the presence of or proximity to natural resources such as fuelwood, timber, agriculture, or water, and the means of attributing environmental change to refugees. Within a settlement, the spatial comingling of small-scale dwellings, infrastructure, and agricultural cultivation, if present, typically require very high resolution imagery (1 meter or less) for accurate delineation; this is especially so with densely populated settlements (Aravena Pelizari et al., 2018). Using more commonly available moderate resolution imagery (10-30 meters) may result in so-called mixed pixels whose value is a combination of its constituent parts. Similarly, nighttime lights satellite data that have been instrumental in modeling rural poverty often have little value in refugee settlements that are either too small to emit detectable nighttime lights illumination or that don’t have nighttime electrification to begin with. A related challenge is the attribution of measured environmental changes such as fuelwood harvesting or agricultural cultivation to a specific refugee population rather than a surrounding host community. Without georeferenced information on land tenure or settlement-specific information on patterns of resource use, the proximity of a refugee settlement to a region of environmental change does not necessarily indicate refugee-caused changes. Crowdsourced and participatory data collection of refugee settlement infrastructure and land use by the Humanitarian OpenStreetMap Team (HOT) (Herfort et al., 2021) and others alongside advances in repeat drone imagery collection promise more persistent awareness of fine-scale environmental conditions and change and nuanced attribution of environmental changes.

Refugee settlement planning and delivery of basic services to refugee populations drives operational awareness of refugee-environment relationships through settlement-level mapping of WASH-related infrastructure (toilets, water points) and public services like schools, clinics, banks and markets.

This spatial information may provide useful indicators for humanitarian response at the outset of refugee arrival, but early and reactionary data collection is less valuable for understanding environmental relationships that may evolve over the long-term and beyond the settlement extent. Paradoxically, refugee settlements that have been inhabited for the longest periods of time often have less available environmental information compared to more recently established settlements since they preceded large volume data collection through remote sensing or participatory or crowdsourced mapping. Discussions on humanitarian environmental awareness have begun to shift from reactive to anticipatory orientation with advancements in early warning and prediction (Kruczkiewicz et al., 2021). Anticipatory action is premised on monitoring trends in climate, environmental change, social conflict, and socio-economics to predict near-future hazards or risks and initiate a meaningful response before an event occurs through, for example, early warning systems for drought and food insecurity and evacuation in anticipation of natural hazards. In addition to the need to build a broader evidence base (Weingärtner et al., 2020), questions remain of how to best incorporate refugee populations into anticipatory action data collection, two-way data sharing, and decision-making to ultimately respond to the risk.

## 5. Conclusion

The combination of geographic and social marginalization, protracted confinement, and an overarching absence of refugee populations in nationally representative data heightens the potential for local environmental degradation and long-term climate vulnerability for the world's refugees. Despite research advances and increased recognition of the importance of refugee-environmental relationships in scholarship, practice, and policy, a number of pressing unknowns remain. This cyberseminar will focus on new perspectives and innovative methodological approaches from geography, remote sensing, economics, disaster studies, and development studies that shed light on the environmental and climatic challenges faced by refugees, as well as impacts of camps on the local environment, and will offer potential solutions for addressing these challenges.

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