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Unity through agriculture? - Exploring the dynamics of intercommunity relationships and collaboration, knowledge exchange, and innovation in agriculture and food security in refugee-host communities in Adjumani, Northern Uganda

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Acknowledgments

Abstract

The ever-increasing levels of forced displacement driven by conflicts, environmental crises, and other socio-political factors, are disproportionately impacting low- and middle-income countries. Uganda, home to Africa's largest refugee population, has in the face of this employed progressive refugee policies and a settlement approach, characterised by land allocation, integrated service provision, and freedom of movement. In this context of coexistence between refugee- and host communities, both challenges and opportunities arise. This study explores how intercommunity relations, interaction, and collaboration within refugee-host communities in selected settlements in Adjumani district influence the exchange of knowledge and innovation in agricultural practices. In this endeavour, a qualitative research method in the form of in-depth semi-structured interviews, focus group discussions and participant observation was employed. Furthermore, Social Practice Theory is applied as a theoretical framework guiding the exploration of changes in agricultural practices in refugee-host communities. The findings of this study suggest that through social networks, knowledge exchange and adoption of new practices is taking place between the groups. The findings further suggests that "arenas for interaction and collaboration", which refers to arenas such as joint training programs, collaborative projects and saving groups, are important for the building of these social networks, and that these arenas are set in motion and facilitated by the Ugandan government's refugee policies and settlement approach. Additionally, the study reveals breaches in land use agreements between hosts and refugees as a significant challenge that warrants closer examination and policy considerations.

1. Introduction

In recent years, the global landscape has witnessed unprecedented levels of forced displacement due to conflicts, environmental crises, and other socio-political factors. The refugee population, an indicator of these challenges, has steadily risen, surpassing 35 million individuals in 2022 (UNHCR, 2022). This trend is especially prominent within the Greater Horn of Africa region, where Uganda serves as a notable example of a nation that hosts a substantial population of refugees and asylum-seekers (UNHCR & WHO, 2022). Uganda accommodates the largest number of refugees and asylum-seekers on the African continent, as of May 2023 estimated at approximately 1.55 million, predominantly from South Sudan, which accounts for 57% of its refugee population (UNHCR, 2023b).

More than three quarters of the world's refugee population is hosted in low- and middle-income countries (Bakewell, 2014; UNHCR, 2022). These host nations are faced with considerable challenges in managing the large influxes of refugees, many of which already face struggles with infrastructure development, resource constraints and poverty. Providing basic necessities for refugees, such as food, shelter, and healthcare, might thus put strains on the infrastructure and already constrained resources and services, and could potentially increase the challenges faced by the national populations (Bakewell, 2014). Following this, the host nations are met with difficult decisions regarding the resettlement of the refugees. Considerations such as the capacity of the communities and environments, resource access, land availability, cultural compatibility and infrastructure influence the livelihoods of both refugees and the host communities, which further has implications for the dynamics between groups (Bakewell, 2014; Khasalamwa-Mwandha, 2021; UNHCR, 2022).

The approach and strategy for handling the influxes of the refugees, and the related challenges, have for most of these low- and middle-income host nations been the refugee encampment approach (Bakewell, 2014; UNHCR, 2022). An approach often characterised by simple residence structures in close proximity to each other, more secluded from surrounding communities with restrictions of movement and high reliance on aid (Anam, 2020; Bakewell, 2014; Opono & Ahimbisibwe, 2023; Turner, 2015; Turner & Whyte, 2022). The Ugandan government has chosen a different path

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and strategy; the settlement approach.

The Ugandan government's refugee policies and settlement approach, characterised by land allocation, integrated service provision, and freedom of movement, are widely praised as being among the most progressive on the matter in the world (Akello, 2009; Khasalamwa-Mwandha, 2021; Marco d'Errico & Donato, 2024; WBG, 2016a, 2016b). These policies advocates freedom of movement and socioeconomic rights of refugees, as outlined in the Refugee Act 2006 and the Refugees Regulations, 2010 (GoU, 2006, 2010). The Refugee Act (2006) states that refugees have the right to free movement within Uganda (GoU, 2006). The Refugees Regulations (2010) further stipulate that refugees who are residing in designated refugee settlements or refugee areas shall have free access to use land for the purposes of cultivation or pasture for livestock (GoU, 2010).

Through these policies, approach and strategy, Uganda stands as a unique and dedicated host nation, showing promise in the endeavour of inclusion of the refugees in the host communities and of fostering positive relations between the refugee and host communities (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023; UNDP, 2018). Yet, the challenges faced by refugees are significant. They often have to leave behind their homes, families, social networks, and familiar environments. They may also have to learn a new language and adapt to new customs and norms. This can be a difficult and stressful experience (Khasalamwa-Mwandha, 2021). Meanwhile, the challenges faced by host communities, which accommodate and share their resources with displaced populations, are equally profound (Ally et al., 2023; Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023).

The research project's geographical focus lies within Adjumani District, situated in the West Nile Region of Northern Uganda. More specifically, this research conducted data collection in two of the district's 19 refugee settlements; Maaji and Mungula. The context of refugee settlements in Northern Ugandan reveals a complex interplay between being a refugee integrating and finding its place in a new society, resource access and the ability to maintain livelihoods (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023). Although relations between refugee and host communities have generally been positive, competition over scarce resources

like land, water, and livelihood strategies can, and have, led to tensions and conflict between the groups (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023; UNDP, 2018).

However, in this intricate relationship between local host communities and refugees, communalities of shared interests in livelihood strategies and agricultural activities emerge. In the refugee settlements in Northern Uganda a significant portion of refugees originate from agricultural backgrounds, similarly to a majority in the host communities (Khasalamwa-Mwandha, 2021). This facilitates and increases the potential for intercommunity collaboration, which further fosters the building of networks and relations. And in these social ties and interactions lies an opportunity of knowledge exchange and innovation of agricultural practices, potentially contributing to improved food security for both communities (Shove et al., 2012).

Through humanity's history, migration has been shown to be a major driver of knowledge exchange in agriculture (Manning, 2021). For instance, during the early Holocene epoch, migrating populations were central to the spread of agricultural practices. Migrants brought their knowledge of agricultural techniques and practices into new regions, which helped improve agricultural productivity. Through migration new crops and livestock were also introduced, which diversified agricultural production and made it more resilient to shocks and stresses (Manning, 2021).

A more modern example of this can be found in a study by Davila et al. (2023), which suggests that circular migration schemes between Australia and Pacific countries play a role in promoting knowledge exchange within agrifood systems. Migrant workers moving between these regions often bring with them valuable insights, techniques, and experiences related to agriculture and food production. This knowledge exchange contributes to the enhancement of agricultural practices, innovation, and sustainability in both the host and origin countries (Davila et al., 2023).

In the context of this interplay of migration, refugee settlement strategies, and knowledge exchange, this research project attempts to explore how the intercommunity relations, interaction and collaboration influence knowledge exchange and innovation of agricultural practices in the refugee-host communities in Adjumani. In the pursuit of this

exploration, Social Practice Theory (SPT) is employed as the theoretical framework. This serves as a lens through which this research seeks to interpret the practices, interactions, and cultural norms that form the social context, and to further explore how these practices are influenced by challenges and opportunities. This study aspires to contribute insights that can motive further research, and to inform policies and interventions aimed at enhancing food security and promoting harmonious coexistence among communities facing common struggles.

1.1 Problem statement

Uganda is by many considered to be the potential breadbasket of Africa, but is still a food-deficit country experiencing food insecurity (Ally et al., 2023; Bashaasha et al., 2021; Bryant, 2023; Shively & Hao, 2012). Amidst dealing with these challenges, Uganda is hosting one of the largest refugee populations in world, and practice uncommonly progressive refugee policies praised by both UNHCR and the World Bank Group, amongst others (Akello, 2009; WBG, 2016a). Northern Uganda is a region that less than 20 years ago was dealing with heavy conflict and displacement, and is now hosting many of the South Sudanese refugees fleeing for the same reason. This influx of refugees into host communities in northern Uganda has led to a number of challenges, including food insecurity and conflict (Ally et al., 2023; Khasalamwa-Mwandha, 2021). There is a need to better understand the dynamics of intercommunity relationships and collaboration, knowledge exchange, and innovation within the realm of agriculture and food security in order to develop effective interventions that can mitigate these challenges.

Except for a study by Sarah Khasalamwa-Mwandha (2021) with the title *"Local Integration as a Durable Solution? Negotiating Socioeconomic Spaces between Refugees and Host Communities in Rural Northern Uganda"*, the existing literature on intercommunity relationships and collaboration in refugee host communities is limited, especially so in Northern Uganda and in the realm of agriculture and food security. Most studies focus on the challenges of coexistence, such as cultural differences, conflict, environmental degradation and mistrust (Dawa, 2018; M. Nagai & Burnham, 2008; Muhamud & Benard, 2022; Rockmore, 2020). There is less research on the opportunities for collaboration, such as the sharing of knowledge, collaboration strategies and the adoption and development of new agricultural practices.

Uganda's settlement approach, in contrast to refugee encampment, fosters increased interaction between refugee- and host communities. This interaction further enables opportunities for knowledge exchange of agricultural practices. However, limited research exists on the specific dynamics and effectiveness of knowledge exchange within Ugandan settlements, even when you broaden the scope to refugee-host contexts globally. While there are studies on the importance of social networks for knowledge exchange and innovation in agriculture (Cadger et al., 2016), as well as the effect of migration in this regard (Davila et al., 2023; Manning, 2021), literature on refugee host relations and its influence on knowledge exchange and innovation of agricultural practices is virtually non-existent. This research gap limits our understanding of how collaboration and knowledge exchange can influence agricultural practices and contribute to food security, livelihoods, and peaceful coexistence, a gap this research project seeks to explore.

This research gap is important to address, because it could help to develop more effective interventions to improve food security and livelihoods in refugee host communities. By understanding the dynamics of intercommunity relationships and collaboration, and their effect on knowledge exchange and innovation, we can develop more effective interventions to improve food security and livelihoods in refugee host communities, as well as enhance harmonious coexistence among communities facing common struggles.

Existing research that has employed theories of social practice indicates that there is also some novelty in applying the theoretical framework SPT in the convergence of multiple cultures within the realm of agriculture and food security. SPT is a framework that understands social life as constituted by the routine practices of people (Reckwitz, 2002; Shove et al., 2012). These practices are shaped by the materials, competences, and meanings that people have access to (Shove et al., 2012). SPT serves as a useful framework for understanding the dynamics of intercommunity relationships and collaboration in the context of agriculture and food security in Adjumani, Uganda. By understanding how the agricultural practices of refugees and host communities shape their social context, we can identify opportunities for collaboration and innovation that can help to improve food security and livelihoods.

1.2 Research questions

To address the research problem in this thesis, three research questions (RQ) will guide the data collection, analysis and discussion. The overarching RQ is thus:

RQ1: How do intercommunity interaction, relationships, and collaboration influence agricultural practices in the refugee- and host communities in Adjumani, Uganda?

To further explore this question the following sub-questions have been added:

RQ2: How are materiality, competence and meaning within agricultural practices expressed, and to what extent are they shared between host communities and refugee populations?

RQ3: How do challenges and opportunities related to intercommunity dynamics and the social aspects of agricultural practices influence the processes of adoption and innovation of these practices between host communities and refugee populations?

2. Background

2.1 Adjumani district and the Ma'di people

Adjumani District is situated in the West Nile Region of Northern Uganda, and shares borders with Moyo, Arua, Yumbe, and Amuru districts, as well as South Sudan (see Figure 1.). The Ma'di tribe is the district's primary ethnic group, a shared characteristic with Moyo District in Uganda and Pageri County in South Sudan.

Adjumani district's economy is, similar to the rest of the country (Shively & Hao, 2012), primarily based on agricultural production, with over 70% of the population engaged in full-time peasant farming (UNDP, 2017). This includes cultivating crops and raising livestock. The majority of these farmers are smallholder farmers, growing both cash and food crops. The most common crops grown are maize, beans, millet, sesame, sorghum, fruits such as papaya and avocado, cassava, matooke, coffee, tobacco, peanuts, and

sweet potatoes. Sweet potatoes, cassava, sorghum and maize are the main crops grown, which make up more than 95% of the cash crops (UNDP, 2017). The agriculture sector in Adjumani is characterized by some key features that increase the challenges faced by the farmers. The majority of the crops are rain-fed for irrigation, relying heavily on unpredictable weather patterns, while at the same time mainly relying on nature for soil fertility. The farmers in the district typically cultivate on small fragmented plots, with an average of around two acres. Additionally, agricultural practices often rely on traditional methods, with limited use of modern technology or scientific knowledge that could enhance productivity (UNDP, 2017).

Figure 1.: Administrative map of Uganda (NationsOnline, 2023). Adjumani district is circled in red.

Adjumani District is the country's leading host district for refugees, with a near-even split between the local host and refugee populations. As of October 2023, the local host population stands at 242,000, while the refugee population stands at 216,000 (UNHCR, 2023d). Distributed across the district's 19 refugee settlements, the vast majority of the refugees originate from South Sudan, with a small portion, less than 1%, originating from Sudan (Balikuddembe, 2022; UNHCR, 2023c). While some settlements are

reporting that they are hosting more than 50 tribes, the dominant tribes of the refugee population in Adjumani are Ma'di, Nuer and Dinka (Balikuddembe, 2022). In the refugee settlements, the social structure is made up of distinct characteristics. 85% of the refugees are women and children, while 54% of the total population is female (UNHCR, 2023a). About 70% of households are headed by women, highlighting a significant gendered aspect of household leadership. Additionally, nearly half of these households (49%) are large families, consisting of 6 to 10 members. These demographic factors collectively heighten the vulnerability of these communities (UNDP, 2017; UNHCR, 2023a). This research conducted data collection in two of the district's 19 refugee settlements; Maaji and Mungula.

Maaji refugee settlement (see Figure 2.) is devided into three separate, but connected geographical areas; Maaji I, Maaji II and Maaji III. It was founded and opened in 1997 to receive the refugees fleeing from the second Sudanese civil war. After some time, Maaji II and III was shut down as result of repatriation of refugees, but these were again reopened in 2015 to receive the refugees fleeing the violence of the currently ongoing civil war in South Sudan, and are to this date still open and in use (UNHCR, 2018b). In 2018 there were 41764 registered refugees in the settlement, which at that time represented about 10% of the population in Adjumani District (UNHCR, 2018b).

Mungula refugee settlement (see Figure 2.), similarly to the Maaji refugee settlement, is divided into two separate, but connected geographical areas, and was established in 1996, also to receive Sudanese refugees fleeing from the second Sudansese civil war (UNHCR, 2018a). In 2018 there were 6757 registered refugees in the settlement, representing about 2% of the population in Adjumani district at that time (UNHCR, 2018a).
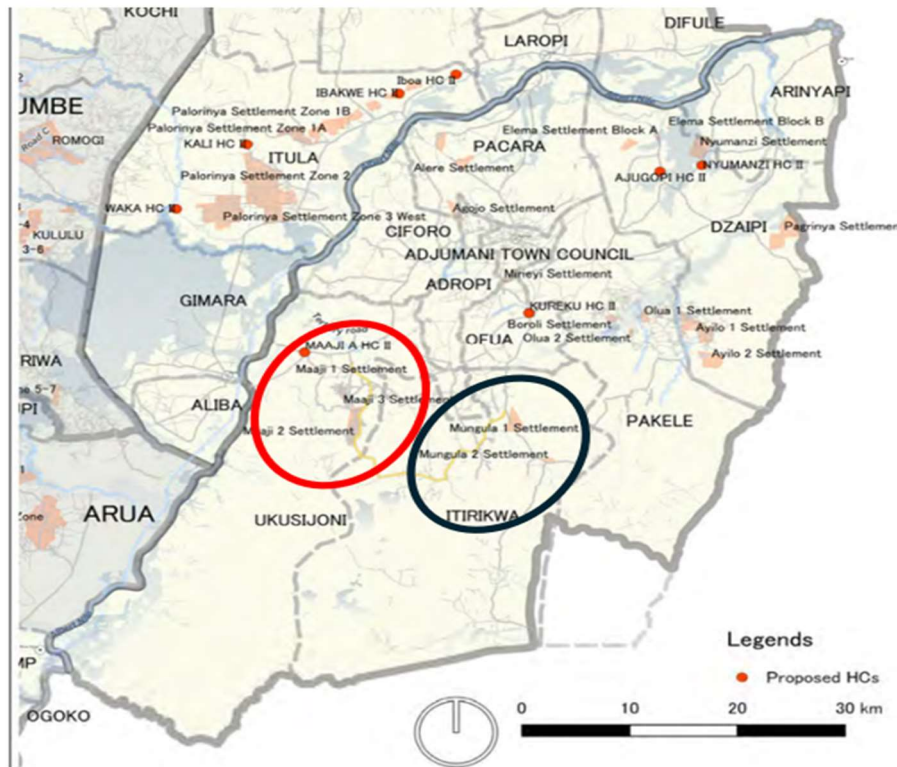
Figure 2.: Map of Adjumani District with settlements, (JICA, 2018). Red circle: Maaji refugee settlement, Blue circle: Mungula refugee settlement.

The story of the Ma'di tribe, its people and region has been shaped for generations by wars, displacements, political isolation and economic marginalisation. The open and porous border between Uganda and South Sudan has facilitated movement of the Ma'di people between the two countries amidst civil wars and conflict affecting the countries at different times (Allen, 1993; Allen & Reid, 2015).

Following the overthrow of the infamous dictator Idi Amin in 1979, the Ma'di people residing in Uganda faced persecution by his opponents due to their perceived association with the regime, as Amin came from the West Nile region. As a result, a significant portion of the Ma'di population sought refuge in southern Sudan, which at the time was part of Sudan (now South Sudan). However, in 1986, these Ma'di refugees faced renewed turmoil as they were subjected to continuous attacks by the Sudan People's Liberation Army (SPLA). These attacks resulted in another large scale flight, with the Ma'di people once again fleeing back to Uganda (Allen & Reid, 2015).

Upon their return, the Ma'di refugees encountered a harsh reality characterized by food scarcity and limited services provided by the newly established Ugandan government under Yoweri Museveni. Adding to these challenges, Museveni's government, having recently seized power in Kampala, was faced with armed resistance from various factions. Among these factions were the West Nile Bank Front (WNBF), operating among the Lugbara people to the west of the Ma'di and Adjumani District, and the Holy Spirit Movement, which later evolved into the Lord's Resistance Army (LRA), operating in the Acholi region to the east. The Ma'di territory, encompassing Adjumani and Moyo districts, was situated directly between these rebel groups, who repeatedly launched incursions into Ma'di territory, further destabilizing the region and exacerbating the difficult situation of the returned refugees (Allen, 1993; Allen & Reid, 2015).

The Ma'di people of Adjumani District share not only tribal and linguistic ties with a significant portion of the refugees, but also a collective history of forced displacement and conflict. After LRA was driven out around 2008, a measure of peace has been brought to the region. Shortly after South Sudan gained independence in 2011, it plunged into a civil war at the end of 2013, forcing another wave of displacement. More than 4 million has fled the country since the outbreak of the war, where around 1 million of them have sought refuge in Uganda, primarily residing in refugee settlements governed by the Government of Uganda (GoU) and the United Nations High Commissioner for Refugees (UNHCR). In 2016 alone, over 340,000 people fled South Sudan into Uganda (Leithead, 2016; Schiltz et al., 2019). Around a fifth of the South Sudanese refugees are now residing within Adjumani district (UNHCR, 2023d).

Although the large influx of refugees to the district poses a range of challenges, a 2016 World Food Programme (WFP) policy report project on the economic impact of the refugee settlement on the local economy in Adjumani found that the presence of refugees in the district has a significant positive impact on the local economy. Refugees generate positive income spillovers for both refugee and host households, and showed that cash aid generates larger income spillovers than food aid. The study also found that providing refugees with land further increases their positive economic impacts (WFP, 2016; Zhu et al., 2016).

2.2 Agriculture and Food Security in Northern Uganda

While climate change, environmental degradation, conflict, disease, and poverty serve as the major drivers of forced displacement, they also pose severe threats to agriculture and food security in rural households of developing countries (Birner et al., 2011; Mwungu et al., 2019; UNHCR, 2022; Zhang, 2004). After more than two decades of conflict and instability in the region of Northern Uganda, where a majority of the population experienced forced displacement, has resulted in the region lagging behind the rest of the country in terms of development (Allen & Reid, 2015; Birner et al., 2011; Zhang, 2004).

Agriculture is the backbone of the Ugandan economy, providing employment for over 80% of the population (Shively & Hao, 2012). However, Uganda is a food-deficit country, and food insecurity is a major problem, especially in the northern region where up to 33% of households are experiencing moderate to severe food insecurity (Ally et al., 2023; Nabuuma et al., 2021; Shively & Hao, 2012). The average crop yields in Northern Uganda are significantly lower than the national average due to a number of factors, including soil degradation, inadequate access to agricultural inputs, and the limited availability of irrigation (Shively & Hao, 2012; UNDP, 2017). This makes households in the region more vulnerable to food security shocks, such as droughts, floods, and crop pests and diseases (Mwungu et al., 2019; UNDP, 2017).

There is a strong association between food insecurity and poverty, with households that are poor being more likely to experience food insecurity (Shively & Hao, 2012). The poverty rate in Northern Uganda is among the highest in the country. This means that many people cannot afford to buy food, even when it is available. Additionally, many people in Northern Uganda have no, or very limited, access to land (Kang et al., 2023; Shively & Hao, 2012).

2.3 Land access and livelihood challenges in refugee settlements in Northern Uganda

The refugee settlements in Northern Ugandan reveal a complex interplay between being a refugee integrating and finding its place in a new society, resource access and the ability to maintain livelihoods (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono

& Ahimbisibwe, 2023). While there are indications that relations between refugee- and host communities in general have been positive in the region, their co-existence and sharing of resources can, and have, on occasion led to tension and conflict between the groups. These tensions may arise from competition over natural resources, livelihood opportunities, and land occupation (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023; UNDP, 2018).

To have access to land, and other essential resources such as agricultural inputs, water and access to markets, is crucial for the food security, livelihood and the general well-being of refugees in a context like this, just as it is for the host communities. In the refugee settlements in Northern Uganda there still seems to be a number of challenges in accessing these resources (Ally et al., 2023; Khasalamwa-Mwandha, 2021). The progressive refugee policies implemented by the Ugandan government are aimed at improving the refugees' livelihood and food security. Representing a shift away from camp-based refugee assistance based on humanitarian interventions, refugee encampment, these policies emphasises a more long-term approach that is meant to increase the self-reliance and integration of the refugees, as well as economic development for both refugee- and host communities (GoU, 2006, 2010; Kang et al., 2023; Khasalamwa-Mwandha, 2021).

The Ugandan government's strategy involves acquiring land from the local host communities to establish the settlements. To support the refugees' traditional reliance on agricultural and land-based livelihoods, and self-reliance, the refugees are given a plot of land (GoU, 2006, 2010; Khasalamwa-Mwandha, 2021; UNDP, 2018). However, the limited land allocated to the refugees poses significant challenges to food production and livelihood (Kang et al., 2023; Khasalamwa-Mwandha, 2021). While the average size of the allocated land is 30 x 30m per household, sizes vary from settlement to settlement, and sometimes even within a settlement (Berke & Larsen, 2022; UNDP, 2018). For instance, the average plot size in the Mirieyi settlement is 10 x 10m, while the average plot size in the Maaji settlement is 30 x 30m (Khasalamwa-Mwandha, 2021). The soil quality and fertility of the allocated plot of land also vary to a significant degree. While fertile soil and favourable rainfall in some areas facilitate farming, other areas are faced with rocky terrain that reduce the possibility for plant cultivation and grazing, and are thus, together with land size, reducing the possibility of self-reliance

through subsistence farming (Berke & Larsen, 2022; Khasalamwa-Mwandha, 2021). In a report developed by United Nations Development Programme (UNDP) on "*Land Dynamics and Livelihood in Refugee Hosting Districts of Northern Uganda*", an analysis was done using data from UN's Food and Agriculture Organisation (FAO) to assess the potential yield of a 30 x 30m plot (Berke & Larsen, 2022; UNDP, 2018). This analysis was done to asses under ideal conditions both with and without modern agriculture technologies, and came to the conclusion that *"The projections emphasise how the current low productivity levels amidst land constraints cannot sustainably meet the dietary needs of refugees in the absence of food rations."* (UNDP, 2018).

In addition to the governmental allocation of land, it is quite common for the refugees to rent land from the host communities, either in the form of cash payment, sharing of agricultural end products or work on the land owners' plots. The refugees primarily negotiate this renting of land on an individual basis through social networks, mostly through verbal agreements. These verbal agreements are quite fragile in nature, and are often broken by the landowner, which again can foster conflict and insecurity (Khasalamwa-Mwandha, 2021; UNDP, 2018). Investment in land is also constrained by use restrictions, set by the landowners, and the refugees' desire to repatriate to their homeland. This has, together with land insecurity, has led to a preference for short-term investments, contributing to livelihood uncertainty (Khasalamwa-Mwandha, 2021). In a study by Kang et al. (2023) on land access and livelihood in Northern Uganda, 27% of the refugee households, of 382 households, listed inadequate access to land for agriculture as the most significant challenge in agricultural engagement (Kang et al., 2023). Khasalamwa-Mwandha (2021) argues in her study that this lack of access to land is a significant constraint to sustainable livelihoods and local integration (Khasalamwa-Mwandha, 2021).

While some of the refugees have the opportunity to practice agriculture and cultivate crops that, to a degree, cover their livelihood needs, many remain reliant on humanitarian aid to meet their basic needs (Kang et al., 2023; Khasalamwa-Mwandha, 2021; UNDP, 2018). This dependence on assistance, coupled with the unpredictability of aid delivery, contributes to uncertainty and vulnerability. Additionally, it increases the refugees' feeling of being obliged to remain within the settlements to access this assistance (Khasalamwa-Mwandha, 2021). The economic landscape within these

settlements reflects the broader challenges of limited purchasing power. Both refugees and host communities face obstacles in fostering vibrant local economies due to their restricted financial capabilities (Khasalamwa-Mwandha, 2021).

2.4 Refugees and hosting strategies: Relations, interaction and challenges

In a global landscape with an increasing number of refugees, the countries that have taken on the responsibility to host these refugees are increasingly met with challenging decisions regarding resettling and allocation of the refugees; a process with potentially significant influence on the dynamics between the newcomers and hosting communities (Khasalamwa-Mwandha, 2021; UNHCR, 2022). With this trend of increasing refugees and asylum seekers over the last decades, another trend has followed in its path; refugee encampment. The prevalence of refugee camps has become so widespread that they have come to symbolize the typical living situation for refugees in the public consciousness (Anam, 2020; Bakewell, 2014).

By "refugee encampment", I refer to policies and practices that designate specific areas exclusively for the refugees. These designated areas can vary in their level of development. In the early stages of a camp, refugees may be sheltered in basic tents or plastic sheeting structures placed in close proximity to each other. Over time, some camps may transition to semi-permanent housing that more closely resembles the local architecture, but still often in close proximity to each other (Bakewell, 2014). Some other common characteristics of these refugee camps, and the policies and practices that create them, are that they are often, to a degree, secluded from the surrounding societies, movement in and out of the camp is more restricted, and the reliance on humanitarian aid is very high, most often completely necessary (Anam, 2020; Bakewell, 2014; Opono & Ahimbisibwe, 2023; Turner, 2015; Turner & Whyte, 2022). It must, however, be emphasised that these characteristics are not universal for all refugee camps (Bakewell, 2014; Turner, 2015).

More than three quarters of the worlds refugee population is hosted in low- and middle-income countries, not including internally displaced people (IDPs) - then the number is as high as 90%, which is also where refugee encampment is most prominent (Bakewell, 2014; UNHCR, 2022). Refugee camps are often established in response to mass

displacement events, where large numbers of refugees arrive in the same time and space (Bakewell, 2014; Turner, 2015). There are several reasons as to why host states turn to this solution to "handle" the large influx of newcomers. One rationale for this approach is to prevent a situation where the refugees are overwhelming the capacity of the host communities, such as labour market or social services, which again could lead to displacement of local populations from employment, and competition over resources that might be scarce like land, water, housing materials and firewood (Bakewell, 2014). This can potentially create social challenges for the host communities, where the refugees may be perceived as a burden, leading to resentment, hostility and conflict from and with the local population. Consequently, through refugee encampment, the host states resorts to implementation of strict control over the economic activities available to the refugees. Furthermore, hosting a large influx of refugees poses logistical challenges in providing basic necessities and humanitarian aid, such as water, food, shelter and medical care (Bakewell, 2014).

Another approach of "handling" a large influx of refugees is the implementation of refugee settlements in rural communities. Some use the terms camp and settlement interchangeably in the refugee context, but in this paper I make a distinction between the two, where refugee camps are referenced as explained above, while with refugee settlements I refer to practices and policies where the designated area is less secluded, thus more interaction with surrounding communities, more freedom of movement, allocation of a plot that house more than a place of residence, similarly to the later stages of camps the housings are semi-permanent more similar to that of the surrounding communities, and where summarisation if these result in less restrictions of economic activities for the refugees (Ally et al., 2023; Bakewell, 2014; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023; Turner, 2015).

The prevalence, trend and change to practices and policies towards the settlement approach is most prominent on the African continent, and has more specifically been embraced by Tanzania, Zambia, Sudan, and as I have attempted to portray in the introduction and previous sub-chapter with its progressive refugee policies; Uganda (Bakewell, 2014; Khasalamwa-Mwandha, 2021). The motivation for this shift has been the absorption capacity in terms of available resources such as land, water and social services, economic development of host districts (both through an increase of workforce

and presence of development partners), the degree of ethnic and cultural compatibility, increase self-sufficiency of the refugees, and in some cases, at least portrayed as such, increased agency and reflection as induvial actors in charge of their own lives (Bakewell, 2014; Khasalamwa-Mwandha, 2021; WBG, 2016b).

In this regard, the settlement approach, Uganda is praised by many, including UNHCR and World Bank Group (WBG), as the state with one of the most progressive refugee policies in the world (Akello, 2009; Khasalamwa-Mwandha, 2021; Marco d'Errico & Donato, 2024; WBG, 2016a, 2016b). In contrast to the limitations of the refugee encampment approach, Uganda's approach and strategy involves an integrated service provisioning, directed at both refugee- and host communities. It is quite uncommon for a state to include refugees in national plans, but Uganda has done so (WBG, 2016a). This strategy involves a set of rules that is built upon the inclusion of both refugee- and host communities in service provision, humanitarian aid and training programmes provided by governmental and organisational programs (Khasalamwa-Mwandha, 2021; Nambuya et al., 2018; WBG, 2016a).

These efforts to promote coexistence are evidenced through joint training programs, cultural events, and dialogue sessions that actively promote positive interaction and understanding between refugees and host communities (Kang et al., 2023; Khasalamwa-Mwandha, 2021). Furthermore, this focus on shared access to essential services, particularly education, healthcare, and markets, has further facilitated increased interaction and fostered positive engagement between the two groups (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Nambuya et al., 2018; Opono & Ahimbisibwe, 2023). Adding on interaction and relation between the groups, Khasalamwa-Mwandha (2021) states that the joint livelihood activities and projects enhance the refugees' social networks, which again enhance resource access (Khasalamwa-Mwandha, 2021). To go further on the strategy's emphasis on "integrated service provisioning", it is through these interactions and collaborations, which include language training and exposure, strengthening the integration process of the refugees (Khasalamwa-Mwandha, 2021; Nambuya et al., 2018; Opono & Ahimbisibwe, 2023; WBG, 2016a). As stated by Nambuya et al. (2018), *"There can be no integration without interaction"*, and the indications and reports that this interaction between the groups, host and refugee, is happening in Uganda are quite strongly evidenced (Khasalamwa-Mwandha, 2021;

Marco d'Errico & Donato, 2024; Nambuya et al., 2018; Opono & Ahimbisibwe, 2023; WBG, 2016a).

While Uganda's progressive refugee policies, and the strategy of settlement approach, have shown promise, it is important to acknowledge that interaction in and by itself does not guarantee successful integration or peaceful coexistence. This context of coexistence, sharing of resources and navigating cultural differences, which is central to this approach and strategy, is faced with its own set of challenges. As shown in the last in last sub-chapter on land access and livelihood, there are specific challenges met in the Ugandan refugee context regarding accessing vital resources. Following this, conflicts have risen and occurred between hosts and refugees as a result of resource competition, as predicted in the refugee encampment approach (Bakewell, 2014; Bjørkhaug, 2020; Khasalamwa-Mwandha, 2021). In connection with resource access, there has also been reports of discontent and feelings of unfairness in the host communities over the divide of aid and service provision, both governmental and organisational, favouring the refugees (Ahimbisibwe, 2018; Bjørkhaug, 2020; Khasalamwa-Mwandha, 2021). Furthermore, the large influx of refugees and competition over common pool and natural resources has had a negative environmental impact through, for example, overharvesting of the local vegetation for firewood and building materials, again feeding to resentment and conflict (Ahimbisibwe, 2018; Berke & Larsen, 2022; Khasalamwa-Mwandha, 2021; Muhamud & Benard, 2022).

There are also challenges outside of resource competition that have been the cause of friction and hostility between the groups. Being refugees fleeing from conflict, there is a risk of "spill-over conflict" where, for example, inter-tribal friction is a source for violent confrontation, which might directly affect the host population or become a cause for resentment. In the Ugandan context with the refugees from South Sudan, there have been reported cases of this taking place between the Nuer- and Dinka tribes (Ahimbisibwe, 2018; Khasalamwa-Mwandha, 2021). There are also reports of conflict and friction arising from theft, trespassing, both by people and grazing animals, and conflicting cultural practices, such as fencing plots, marriage practices, burial rituals and gender roles (Ahimbisibwe, 2018; Khasalamwa-Mwandha, 2021). Furthermore, Khasalamwa-Mwandha (2021) argues that as a result of the remoteness of the settlements, there is limited infrastructure, and that the settlement strategy has led to

concentration and clustering of the refugees which *"... affords refugees vital networks from within but fails to bridge networks with the local communities"* (Khasalamwa-Mwandha, 2021).

As shown in the background section of Adjumani district (see Chapter 2.1), a 2016 WFP policy report found that the presence of refugees in the district has a significant positive impact on the local economy (Zhu et al., 2016). This positive economic impact is further exemplified in Khasalamwa-Mwandha's (2021) study stating that the economic benefit of refugees is reflected through *"significant increase in demand for goods and services generated through renting of land/property, improved services, and infrastructure supported, through humanitarian and development initiatives"* (Khasalamwa-Mwandha, 2021). However, without undermining this benefit and positive economic impact, a WFP analysis on the effectiveness of food assistance in the refugee context in Uganda found that one of the most common challenges faced in the markets, as a result of the refugee influx, was increased prices of services and goods due to increased demand (WFP, 2016). This can again lead to frustration and friction between the groups.

3. Theoretical framework: Social Practice Theory

The exploration of the complex dynamics of intercommunity relationships, agriculture and food security within the context of refugee-host communities in northern Uganda necessitates a robust and fitting theoretical framework (Ally et al., 2023; Bjørkhaug, 2020; Khasalamwa-Mwandha, 2021). Given the nature and focus of the research questions of this study, which seeks to explore relationships, knowledge exchange, and innovation dynamics related to agricultural practices, the application of Social Practice Theory (SPT) emerges as a particularly suitable lens. Guided by practice-theoretical perspectives, such as Giddens (1984) "*The Constitution of Society: Outline of the Theory of Structuration*" and Bourdieu (1977) *"Outline of a Theory of Practice",* the theories of social practice seek to investigate social change and stability through placing the practices as the units for analysis, as opposed to the actors who perform them (Hargreaves, 2011; Schatzki, 2001; Shove et al., 2012; Warde, 2005). Broader concepts such as behaviour or social phenomena is, then, investigated through the study of

routine activities and social practices, such as making food, bicycling, cleaning or playing sports (Hargreaves, 2011; Shove et al., 2012).

The application of SPT is gaining traction in research, particularly for studies on resource consumption, behavioural change, and especially environmental behaviour (Breadsell et al., 2019; Hargreaves, 2011; Mguni et al., 2020; Nash et al., 2017; Westskog, 2022). Mguni et al. (2020) also utilize SPT in a Ugandan context, similar to this study. However, their focus differs, centring on access and resource consumption in the capital city, an environment which is quite different compared to the study context of this research (Mguni et al., 2020). Although its application in studies of agricultural contexts is less common, there's a growing interest, as evidenced by studies on agricultural transition (Huttunen & Oosterveer, 2017) and practices related to urban agriculture (Georgios, 2017; Jansma & Wertheim-Heck, 2021). These studies, and the theorists who form the basis of the theoretical frameworks applied, all share a practice-oriented approach to understanding social change and stability, which aligns with the frequently quoted statement from Warde (2005); *"The principal implication of a theory of practice is that the sources of changed behaviour lie in the development of practices themselves"* (Warde, 2005). However, there are variations among the theorists in defining what a practice is, and what the components that make up a practice are, and thus, consequently, in the studies applying the theories (Hargreaves, 2011).

In this study, SPT is applied as a theoretical framework guiding the exploration of changes in agricultural practices in refugee host communities, through networks (relation and collaboration), knowledge exchange and innovation, which with an expanded scope explore the effects of "refugee host coexistence" facilitated by Ugandas refugee policies and settlement approach. The agricultural practices are studied through Shove et al. (2012) understanding of practices as made up of the elements *materials* (things, tools), *meanings* (symbols, aspiration) and *comptences* (skill, knowledge). While this study is built upon exploring and understanding the practices through Shove et al. (2012) formulation and concept of practices and the elements that make up a practice, it is also influenced by Reckwitz (2002) and Schatzki's (2001) theories and concept of social practices (Reckwitz, 2002; Schatzki, 2001; Shove et al., 2012).

3.1 Core concepts of Social Practice Theory

SPT involves investigating and understanding the configuration of practices that make up a social context; how they emerge, change, disappear and persist (Reckwitz, 2002; Schatzki, 2001; Shove et al., 2012). The theory conceptualises and understands practices as routinised forms of behaviour that is formed through individual, but interconnected, integrated blocks, or as Shove et al. (2012) formulates it; elements (Reckwitz, 2002; Shove et al., 2012). Practices only exists in the interaction and unity of these elements, where no single element can fully encapsulate the entirety of a practice (Reckwitz, 2002; Shove et al., 2012). Building on Reckwitz (2002) and Schatzki (2001), Shove et al. (2012) propose that the elements that make up a practice are *materials, competences* and *meanings.*

Materiality underscores the significance of resources and physical conditions in shaping practices (Schatzki, 2001). Within SPT, materials refer to the physical resources and objects used in a practice, such as tools, technologies, the materials objects are made of and other tangible objects that shape how a practice is performed, even the human body (Reckwitz, 2002; Shove et al., 2012). In the context of this research project, materiality involves the availability of land, access to resources, agricultural tools and inputs, and the physical environment within both refugee settlements and host communities. These elements have a direct influence how agricultural practices are conducted. These material conditions interact with competences and meanings to shape practices (Reckwitz, 2002; Shove et al., 2012).

Meanings highlight how practices are embedded in cultural norms, interpretations and symbolic associations (Schatzki, 2001; Shove et al., 2012). Within Shove et al.'s (2012) concept of the element, meanings refer to ideas, symbolic meanings, norms, values and aspirations (Shove et al., 2012). Aspirations have strong ties to motivational knowledge, which falls under *comptences,* as motivational knowledge often informs aspirations (Reckwitz, 2002). For example, knowing (motivational knowledge) that a certain practice leads to a better harvest can influence the aspiration of wanting increased food security. In this study context, understanding the cultural meanings associated with agricultural practices and food consumption is of importance. Cultural norms, traditions,

aspirations and beliefs influence what types of crops are cultivated, how food is prepared, and the sharing of resources within the communities (Reckwitz, 2002; Shove et al., 2012).

Competences highlight that there is specific knowledge needed for every practice, some of which is explicit knowledge, while some of it is tacit knowledge (Reckwitz, 2002). Within Shove et al.'s (2012) concept of the element, competence is understood as know-how, skills required to perform, techniques, and more abstractly, a shared understanding, specific to a particular context and practice, of what constitutes good and appropriate performance (Shove et al., 2012). In the context of this study, techniques, skills and knowledge of specific agricultural practices, as well as preparation and consumption of the agricultural end-product, are of importance. This can be specific ways of preparing the field for sowing and harvesting, ways to prepare food, and what to plant when and where.

In their theory of social practices, Shove et al. (2012) propose that practices are constituted by the interrelation of these elements, which become integrated through repeated enactment, acts of doing, in the end resulting in routinised behaviour. It is through performance that the patterns of practice take form and are reproduced (Shove et al., 2012). A practice, in this sense, is not just an isolated action but a routine behaviour that intertwines these elements. These practices, which involve activities like cooking, working, and caring for oneself or others, then persist or disappear based on the strength and consistency of the connections between these elements (Reckwitz, 2002; Shove et al., 2012).

3.2 Structure and social networks

Structure is not a core focus of SPT, especially so in Shove et al.'s (2012) theory, which centres the focus on understanding social change and stability through the development of practices and the trajectories of the elements of which practices are made of (Shove et al., 2012). As Shove et al. (2012) argue, analysing the connections between the elements of practices allows for examining change and stability without prioritizing agency or structure (Shove et al., 2012). However, following this study's curiosity and interest in how challenges and opportunities enable or constrain interaction and

collaboration, and thereby the possibility of knowledge exchange that influences agricultural practices, it is relevant to give some attention to structure and its role in SPT.

Following the tendency of theorists of social practice being influenced by Giddens' (1984) structuration theory in the matters of interrelation between agency, structure and social practice (Schatzki, 2001; Shove et al., 2012; Warde, 2005), this paper goes the same path in defining and understanding the concept of 'structure'. Giddens' (1984) concept of structuration understands structure as organised sets of rules and resources that contribute to the production and reproduction of social systems. Structure includes both the more persistent aspects of social life, such as institutions, and the more dynamic processes, such as social interactions and activities of human agents. Giddens introduces the idea of "the duality of structure," where structure is seen not just as a background for action, but as both a medium and an outcome of the practices it recursively organises. This dual nature of structure suggests that while structures can enable and constrain social actions, they are also shaped and recreated through these actions (Giddens, 1984).

Any approaches to the conceptualisation of change is built upon previous interpretations of the relationship between actor and structure (Shove et al., 2012). Structure is not something that should be understood outside of practice. Building on Giddens' (1984) structuration theory, which highlights the interplay between social structures and human action, Shove et al. (2012) argue that *"activities are shaped and enabled by structures of rules and meaning, and these structures are, at the same time, reproduced in the flow of human action."* (Giddens, 1984; Shove et al., 2012). Furthermore, Reckwitz (2002) argue that social fields and institutionalised complexes *"are 'structured' by the routines of social practices."* (Reckwitz, 2002). This study will, however, not explore how practices influences or reproduces structures, nor will it explore the practices of focus through the lens of structures. It is merely used as scope to investigate how structures enable, or constrain, interaction, and through this influence practice.

Structure encompasses the broader social and cultural factors that influence practices, which, as argued, is reproduced through the performance of practices (Reckwitz, 2002). Understanding the contextual factors specific to northern Uganda's refugee host communities is considered of great importance in this study. Historical, as in the

region's and the Ma'di peoples' history of conflict and displacement; political, as in policy intervention and the settlement approach; and economic factors, such as freedom of economic activity for refugees and competition in the market, shape the opportunities and challenges faced by these communities. Additionally, considering the context of resource availability, infrastructure development, and access to markets is important for understanding the interplay between practices and their outcomes (Reckwitz, 2002). Recognizing the contextual constraints and opportunities opens up for a better analyse of how practices evolve and shape intercommunity relationships.

Furthermore, practices are embedded within social networks, and building on the conceptualisation within SPT of how practice takes form and is reproduced through performance, the significant role social networks play in the spread of practices, including the elements of practice, is emphasised in SPT (Schatzki, 2001; Shove et al., 2012). According to Shove et al. (2012), building on studies of social networks and communities of practice, the pathways through which practices evolve, spread and recruit new practitioners, depend to a great degree on social ties that bind individuals together, such as neighbours, friends, or groups with shared interests, often transcending formal organisational or institutional boundaries. This phenomenon, described as 'social contagion', underlines the significance of pre-existing relationships in the spread of practices, and how they migrate among individuals connected by social contact (Shove et al., 2012).

Shove et al.'s (2012) arguments on the role of social networks in practice theory offer valuable insights for understanding how interaction and collaboration within the communities influence agricultural practice. This perspective aligns well with the study's context of refugee host communities and the exploration of interaction, relationship and collaboration between them. Here, the pre-existing social ties, which might be formed through shared experiences of displacement, cultural background, or shared interest in agricultural activities, as well as the situation of coexistence, have the potential of influencing the adoption and adaptation of agricultural practices. The robustness and character of these social bonds, and broader structural factors like access to resources and economic opportunities, will likely play a crucial role in how knowledge about agricultural practices travels within and between communities (Shove et al., 2012).

Additionally, in relevance to this paper's interest in how Ugandas refugee policies and settlement approach influence interaction and collaboration between the host and refugee communities, Shove et al. (2012) point out that transition literature suggest that governments play an important role in facilitating the creation of networks, coalitions, and partnerships. These collaborative efforts lays the foundation for creating the conditions necessary for the configuration and spread practices (Shove et al., 2012).

An explanation of how Shove et al.'s (2012) concept of practice and its elements is operationalised for analysis in this study is given in the Methods chapter (section 4.2).

4. Methods

This chapter outlines the qualitative research methods and strategies used, the analytical methods employed, and the ethical considerations involved in gaining insights into the dynamics of intercommunity relationships, collaboration, knowledge exchange, and innovation within the realm of agriculture and food security in refugee host communities of Adjumani district, Northern Uganda. The analysis is framed within the theoretical framework SPT, which provides this study with a lens to interpret the nuances of routine behaviours, interactions, and cultural norms that underpin livelihood pursuits and food security strategies, and to explore how these practices adapt in response to challenges and opportunities.

The nature of the research questions and theoretical framework necessitated a flexible and in-depth approach, for which a qualitative research methodology was considered and chosen as the most suitable approach. Qualitative research, with its emphasis on understanding the lived experiences of research participants, seeks to delve into the complex realities these experiences entail in a way that goes beyond mere data collection. Researchers of this methodology often seek to achieve a deeper level of empathy by "seeing through the eyes" of the individuals being studied, thereby uncovering the intricate web of meanings, motivations, and experiences that influence human behaviour within specific contexts (Bowling & Ebrahim, 2005; Clark et al., 2021).

In its pursuit to achieve this, qualitative research adopts an emic perspective, meaning that it is striving to access and interpret the insider's view of their own social world (Bowling & Ebrahim, 2005). This approach intentionally avoids making value judgments during data collection, focusing instead on how individuals or groups experience and attribute meaning to their interactions with others, objects, and their environments. By prioritizing the insider's viewpoint, it facilitates an analysis of the formation and dynamics of associations, aiming to understand the reasons and ways people relate to each other and their surroundings from their own perspectives (Bowling & Ebrahim, 2005).

The qualitative research approach offers several key strengths that align closely with the objectives of this paper. As opposed to quantitative research, which seeks to measure and quantity phenomena, qualitative research often takes an interpretive form that is rooted in a naturalistic paradigm, in other words; it is embracing the complexity of multiple realities and perspectives (Bowling & Ebrahim, 2005; Clark et al., 2021). It operates on the assumption that reality is multifaceted, with the aim of the researcher being to explore how individuals construct their reality within the contexts of their social worlds. This approach involves a deep engagement with the artifacts of everyday life, including material objects, meanings, and competences, and how these elements interweave to form the tapestry of social reality (Bowling & Ebrahim, 2005; Shove et al., 2012). Moreover, this methodology emphasises the importance of processes, directing attention to the mechanisms through which social worlds are constructed. This includes an examination of how environments, artifacts, and social change, such as the arrival of refugees in the district, interact to shape and redefine the social landscape. Such a focus not only enriches the understanding of individual and collective experiences, but also sheds light on the dynamic nature of social realities and relationships, providing a comprehensive lens through which to view the intricacies of human interaction and societal change (Bowling & Ebrahim, 2005).

A qualitative approach allows for a rich exploration of the interplay between intercommunity relationships, collaboration, and knowledge exchange of agricultural practices in the specific context of refugee host communities in two refugee settlements Adjumani district. The interactive nature of qualitative research allowed me to interact with people, observe their behaviour, and visit the places where they live and work. The

flexible and dynamic nature of qualitative research allows me to explore different perspectives on the topic. This flexibility is important in a study context where diverse groups, hosts and refugees, coexist in the same geographical space. There is no single truth when it comes to understanding the dynamics of intercommunity relationships and collaboration; qualitative research allows me to explore the complexities from various angles.

4.1 Study area, sample and sampling methods

This study was conducted in Adjumani District, located in the West Nile sub-region of Northern Uganda, which also borders South Sudan to the north. The research specifically focused on two refugee settlements within Adjumani District; Maaji and Mungula. During a planned 4-month stay in the field, I participated in an internship with an NGO, Food for the Hungry, working with the refugee host communities. More specifically, the internship took place in the livelihood department of the NGO, which together with the chosen NGO was chosen because of the relevance to the topic of the research. This internship increased my access to the field, the relevant social setting, informants, and people of interest in this research project. The field access that was gained during the internship also influenced the selection of which settlements to conduct the data collection, as these were among the ones I was working the most in. Additionally, these settlements were also chosen because of their location. Experience from the internship and information from my key informants gave the impression that the settlements placed further from the town were more active in terms of agricultural activities.

The selection of study area and participants is partly reflected in the title of the research project *"Unity Through Agriculture? - Exploring the dynamics of intercommunity relationships and collaboration, knowledge Exchange, and innovation in agriculture and food security in refugee-host communities in Adjumani, Northern Uganda"*. The area of focus and targeted participants for this study were from both the refugee and host communities that were involved in agricultural practices in any way, and lives within the two settlements in Adjumani district; Maaji and Mungula. This included individuals with their own farming plots, refugees working on host community plots

(either employed or renting), and those involved in collaborative projects where both groups worked together on agricultural land or other food and agriculture initiatives.

The data collection method that was used for this research project is purposive sampling in the form of opportunistic and snowball sampling. Purposive sampling, sometimes referred to as judgemental sampling, is a group of sampling methods commonly used in qualitative research (Clark et al., 2021; Etikan et al., 2016). In purposive sampling the researcher employs a non-random approach that involves purposively choosing participants based on characteristics relevant to the research questions. Unlike random sampling, which aims for a broad population representation, purposive sampling focuses on recruiting participants who can provide rich information to maximize the use of available resources. This entails identifying and selecting individuals or groups with specific knowledge and experience related to the phenomenon under investigation. While knowledge and experience are crucial, it's also important to consider participant availability, willingness to participate, and the ability to communicate their experiences and perspectives clearly and reflectively (Etikan et al., 2016).

During my internship with Food for the Hungry, I anticipated that my participation in the livelihood department would grant me access to potential participants through established connections within the refugee and host communities. This presented an opportunity to utilize opportunistic sampling, a strategy where researchers capitalize on encounters or situations that present themselves in the field to identify and recruit participants relevant to the research. To expand the reach of the sample further, snowball sampling was employed, a sampling method that is relying on the accessed participants to increase the reach of samples through recommendation or bringing in other participants that meets the focus of interest (Clark et al., 2021; Luborsky & Rubinstein, 1995).

Initially, the sampling design was strategic, with an objective to sample across ethnic groups, gender and age. While being in the study area, the sampling strategy was adapted to the situation, and purposive sampling in the form of opportunistic and snowball sampling was chosen as the sampling method and strategy, largely to increase the time use efficiency of the research. The strategy of taking advantage of access in the field and to further the reach through snowball sampling has had some effect on representation, more specifically on gender and tribes the refugees belong to. It must however be said that the female population is larger than the male population amongst

the refugees in the settlements (UNHCR, 2023a). The male population often stays behind in South Sudan, moves out of the settlements for work or moves more frequently between the borders (Khasalamwa-Mwandha, 2021). This, together with the sampling method, resulted in a somewhat skewed representation when it came to the gender representation of refugees (see **Table 1**). Equally relevant, there are more than 50 tribes present amongst refugees in the settlements in Adjumani district (Balikuddembe, 2022), which is larger than the sample size of individual interviews. Be that as it may, another aim of the study was to get a sample size of the refugees that potentially could say something about the perspective and difference of being a refugee with Ma'di background, the tribe majority of Adjumani district, and refugees with non-Ma'di background. An aim I consider successfully achieved (see **Table 1**). Being a Ma'di majority district, I didn't meet a single member of the host community that was of another tribe than Ma'di during my stay in the district, thus all of the interview participants from the host community were Ma'dis.

The age requirement for the interview participants that was set for this research was over 18 years old. This was set as a result of assumptions of what age the population move out of their family household, and when they become responsible for their own subsistence through agricultural practices. This is something that was discussed with key informants and research assistant, that lived in the area and had experience with settlements, prior to setting the requirement. This set requirement also came with an aim to get a sample size that represented age variations of the geographical area, and age variation that potentially could give a variation in the perspectives and lived experiences between the ages. However, the population in both Uganda and the refugees in Adjumani are quite young, with around 4% of the Ugandan population above 60 years old and around 3% of the refugee population above 60 years old (UBoS, 2023; UNHCR, 2023a). This, together with the sampling method, resulted in an age range of 21 – 60 years in host participants, and 19 - 51 years in refugee participants. Most participants in both groups were between the age of 30 - 45 (see **Table 1**). Nor was there any noticeable difference in the perspectives and lived experiences in the age range of the data sample in relation to the research questions of this study.

Community	Total Interview Participants	Gender Distribution	Age Range	Median Age	Tribe(s) / Ethnicity
Host	15	9 male, 6 female	21 – 60	37	All Ma'di
Refugee	17	6 male, 11 female	19 - 51	36	Ma'di 6, Kuku 8, Dinka 1, Acholi 1, Mbari 1

Table 1: Table of interview participants from individual interviews with host and refugee communities in Maaji and Mungula refugee settlements, Adjumani, Uganda.

4.2 Data collection methods

In this research, a multifaceted approach involving the combination of in-depth interviews, focus group interview, and participant observation was employed to enrich the insight and understanding of the complex dynamics at play within refugee-host communities in Adjumani, Northern Uganda. This qualitative research's strength lies in its intention to 'see through the eyes' of the participants, thereby honouring the assumption that social realities are manifold and subjective. Ensuring the credibility of these varied accounts becomes a cornerstone for the trustworthiness of the findings (Krefting, 1990).

To ensure and increase this credibility, and to increase the portrayal of the participants' lived experiences, the analysis chapter of this paper is built in a way where the participants are central in the portrayal of the themes and subjects of the analysis. As a result of this aim, a conscious choice of including the quotes from the participants written in the language of which they spoke was made, meaning sentence structure and grammatical errors are not corrected. To increase the readability and understanding for the reader, I have added essential information in brackets, such as what geographical area they are referring to when they are saying "this side" or "that side".

These tasks are supported by the flexibility and depth that often follow qualitative methodologies, which are developed for navigating multifaceted social landscapes, such as refugee-host community relations. Such an approach is invaluable in a setting where

diverse groups, both hosts and refugees, navigate their coexistence within the same geographical context. The ability of qualitative research to explore the multifaceted nature of intercommunity dynamics from various angles was a significant benefit to this study (Bowling & Ebrahim, 2005; Clark et al., 2021). This focus on capturing the richness and depth of human experiences is particularly relevant in this study, which examines interactions, collaborations, knowledge exchange and innovation of agricultural practices within these communities (Bowling & Ebrahim, 2005; Clark et al., 2021; Krefting, 1990).

The criterion of credibility is a criterion the research project further attempted to establish through the combination of focus group- and individual in-depth interviews, and participant observation. Furthermore, interview questions were deliberately designed to enable subjective perspectives from participants.

This study employed in-depth interviews as a key method to gain rich insights into the lived experiences of the participants within the refugee-host communities of Adjumani district. In-depth interviews, a cornerstone of qualitative research, facilitate for an in-depth exploration of participants' experiences through deliberate encounters between the researcher and participant. This is a method that offers practicality, flexibility, and cost-effectiveness in data collection, and brings several advantages in the research process that make it particularly well-suited for this study's objectives (Bowling & Ebrahim, 2005).

Firstly, in-depth interviews enable the researchers to directly engage in the research process and with the interview participants. Through this direct engagement researchers can guide discussions towards specific topics while also allowing the exploration of broader themes across the interviews (Bowling & Ebrahim, 2005). This interaction is something I see as an important factor for creating a nuanced understanding of the dynamics of intercommunity relationships, collaboration, and knowledge exchange in agriculture and food security within the targeted communities.

Secondly, the chosen format, the semi-structured interview, provides a balance between flexibility and structure. This approach combines open-ended and directed questions following a structured yet adaptable dialogue, guided by a set of pre-established questions, an interview guide, that reflects the research questions and the objectives of the research (Clark et al., 2021). In doing so, it allows the participants to share personal

narratives, challenges, ambitions, and innovative strategies in agriculture, potentially uncovering nuanced details that a group setting might overlook. The adaptability of semi-structured interviews, which is achieved through attentively adjusting the questions, including follow-up questions, based on the responses of the interview participants, further enhances the depth and detail of the data collected, as well as enhancing the portrayal of personal lived experiences (Bowling & Ebrahim, 2005; Clark et al., 2021).

Finally, semi-structured interviews facilitate nuanced dialogue that respects the participants' confidentiality and autonomy. This approach offers invaluable insights into the lived experiences of individuals navigating the challenges and opportunities of agricultural engagement and community collaboration in the study context. This method has the potential to enrich the data with personal narratives and diverse viewpoints, while also aligning with the ethical and empathetic principles that underpin qualitative research (Bowling & Ebrahim, 2005; Clark et al., 2021). My view is that through this attentive method of engaging with the communities and participants, the research has the potential to shed light on the intricate web of social relations, practices, knowledge exchange and innovations that contribute to forming the life within these communities.

While in-depth interviews offer rich insights into individual experiences, focus group interview emerged as a valuable complementary method for exploring how meanings are constructed collectively within the refugee host communities in Adjumani district. Focus groups, which are group discussions organised to explore specific issues and experiences, facilitated interactive discussions where participants shared, debated, and refined their understandings of topics related to intercommunity dynamics, collaboration, knowledge exchange and agricultural practices (Clark et al., 2021; Kitzinger, 1994). Focus groups can be effective because they bring people together to discuss a topic, allowing for a deeper exploration of their collective views and experiences. This setup encourage the participants to exchange ideas, challenge different viewpoints, and can potentially reveal common concerns, challenges or goals that might not be apparent through individual interviews (Clark et al., 2021).

Furthermore, organising discussions around specific issues, such as participants' views on agricultural practices or intercommunity relations, provides a window into the

communities' collective perceptions. The dynamic nature of focus groups can further encourage participants to elaborate on each other's viewpoints, leading to a richer and more holistic portrayal of intercommunity dynamics within the refugee host communities (Clark et al., 2021).

In the data collection for this paper, only one session of a focus group interview was conducted with a women's saving group that consisted of a mix of members from both the refugee and host communities. This was done at the beginning of the data collection process, and served as a valuable approach for becoming familiar with the context and the communities' experiences with challenges, opportunities and knowledge exchange, as well as serving as good source of data. By observing how participants engaged with topics and negotiated meaning, the focus group offered insights into the underlying "frameworks of understanding" that shape the individual and collective perspectives within the communities. These frameworks encompass cultural norms, differences, and commonalities that influence interactions and relationships within the communities. This approach not only helps to capture the community's shared views but also allows for a detailed look into how people interpret and make sense of their experiences together (Bowling & Ebrahim, 2005; Kitzinger, 1994).

In addition to in-depth interviews and a focus group interview, participant observation was employed and played a valuable role in informing this study of the context of this study's focus; the refugee-host communities in Adjumani district. Participant observation is a research method where researchers actively engage with participants in their daily activities, interactions, events and rituals. This immersive approach allows researchers to gain insights into both the explicit aspects of culture, which people can readily articulate, and the tacit aspects, which are often unconscious or taken for granted (DeWalt & DeWalt, 2010).

As a researcher I was partially embedded in the communities. Living in a rural community that consisted of a mixture of hosts and refugees, working as an intern in the refugee settlements and conducting fieldwork in the settlements in the form of interviews, put me in a position where actively engaging with the communities and immersing myself in the culture came very naturally. This included joining in on agricultural tasks, attending arenas for collaboration and interaction, such as saving

groups or workshops, eating dinner with the families, taking part in the brewing of the local alcohol, attending rituals and festives such as Christmas or "end of the year-celebrations".

Guest et al. (2013) argues that *"doing participant observation mean being embedded in the action and context of a social setting",* and in this study, participant observation served two key purposes. Firstly, it allowed me to familiarise myself and gain an understanding of the social dynamics and daily life within the communities. Observing interactions firsthand provided valuable contextual details that complemented the data collected through in-depth interviews and focus group discussions (Guest et al., 2013). These observations informed the development of interview guides and topics for the focus group discussion, ensuring they were grounded in the lived experiences of the participants.

Secondly, participant observation offered a window into the unspoken dynamics and nonverbal cues that shape practices, relationships, and collaboration within the communities (Clark et al., 2021). By witnessing firsthand how individuals from different backgrounds navigate challenges, collaboration and interaction in real-life situations, I gained a deeper layer of understanding that interviews and focus groups alone might not have captured. This observational data and contextual understanding serves as valuable knowledge for interpreting and validating the findings from the other data collection methods.

By incorporating these three methods, and using them to influence and strengthen each other, I am aiming to create a triangulation of data sources, enhancing the credibility and reliability of the research (Krefting, 1990). By capturing individual stories, group dynamics, and real-time interactions, I am aiming to create a multi-dimensional understanding of intercommunity relationships, collaboration, and agricultural practices. This triangulation can enable me to identify patterns, validate findings, and present a comprehensive narrative that reflects the complexity and nuances of the refugee host communities' experiences (Krefting, 1990).

4.3 Method for analysing data

Qualitative research is often praised for its ability to produce rich and in-depth data. This rich amount of data can, however, also make the analysis process a challenging task (Clark et al., 2021). To assist in the endeavours of organising and analysing the data, as well as assisting throughout data collection and research process, this study employed a thematic analysis, an analysis method within qualitative research that Braun & Clarke (2006) argues is flexible and adaptable (Braun & Clarke, 2006). Thematic analysis allows researchers to identify, analyse and interpret recurring patterns, themes, within the data, and is built upon systemic organisation that was of great assistance in handling the rich amount of data in this research process (Braun & Clarke, 2006; Clark et al., 2021).

Thematic analysis can be conducted through inductive or theoretical, deductive, approaches. Inductive analysis allows themes to emerge directly from the data itself, with minimal influence from pre-existing theoretical frameworks. This approach ensures the themes are grounded in the participants' experiences. In contrast, a theoretical deductive analysis is guided by the researcher's existing theoretical interests, leading to a more focused exploration of specific aspects of the data (Braun & Clarke, 2006). This research project was conducted through a mixture of both an inductive and a theoretical deductive approach.

Initially, the key approach and motivation for this research project was in the preparation of the research, and throughout the research process, conducted through a deductive approach. Through a theoretical interest in how new practices, within agriculture, change and emerge through interaction and knowledge exchange between two groups of people, SPT was chosen as the theoretical framework and employed to serve as a lens to gain insight into these dynamics. Social theory, particularly theories of practice, can offer valuable insights into how social behaviours change and endure (Shove et al., 2012). While the influence of these theories on public policy remains limited, understanding the emergence, persistence, and decline of practices holds a significant potential. If, as Shove et al. (2012) and these theories suggest, "the source of changed behaviour lies in the development of practices", then policymakers could design interventions that influence the formation and transformation of everyday

routines and activities (Shove et al., 2012).

However, the interview guides, and analysis of the data, was to a quite large extent influenced by data gathered early in the fieldwork. Through early interviews with key informants, conducting participatory observation while being embedded in the communities and working through an internship in the settlements, and a focus group interview, the data itself was influencing and guiding the emergence of themes early in the analysis process, and further development of the interview guides. Although this aspect of the research and analysis process also was influenced by deductive theoretical interests, it was grounded in the participants' experiences, and thus inductive principles.

Thematic analysis is an iterative process, meaning researchers revisit and refine their analysis throughout different stages, often throughout the research process (Braun & Clarke, 2006). Braun & Clarke (2006) suggests six stages of thematic analysis, although it must be emphasised that analysis is rarely a linear process, which also applies to thematic analysis and these six stages (Braun & Clarke, 2006):

Familiarising Yourself with Your Data: The initial phase involves immersing oneself in the data. This includes transcribing the collected data, if you are working with verbal data which is the case in this study, followed by extensive reading and re-reading of the transcripts, interview notes, or other data sources. Throughout this phase, notes should be taken of initial ideas and observations, which will be of great assistance through the analysis.

Generating Initial Codes: This phase involves a systematic identification and labelling of interesting features of the data across the dataset. The segments of the data that are relevant to each code are then grouped together for further analysis.

Searching for Themes: The phase focuses on identifying the potential themes that emerge of the coded data. This is done by combining similar codes into broader categories, and these categories then serve as potential themes. Then all relevant data is grouped for each potential theme, allowing for an exploration of the emerging thematic concepts.

Reviewing Themes: This phase involves a critical evaluation of the identified themes. In this evaluation an assessment on whether the themes resonate with the extracted data, as

well as the complete data collection. This process assist in ensuring that the themes are accurately reflecting the patterns and meaning within the data.

Defining and Naming Themes: Throughout the analysis process, the specifics of each theme are refined, which makes this an often revisited phase. This involves developing clear definitions and labels that capture the meaning and essence of each theme. An aim here is to make sure that the themes are well-defined and distinct from each other, providing a coherent understanding of the data.

Producing the Report: The final phase involves presenting the thematic analysis by selecting compelling data extracts that illustrate the identified themes. These extracts are then analysed further to increase the understanding and provide concrete evidence to support the interpretations made. Finally, the findings are related back to the original research question and existing literature, situating the analysis within the broader academic context.

Based on a table of "Phases of thematic analysis" by Braun & Clarke (2006), with each phase maintaining the original title (Braun & Clarke, 2006).

As the name of the analysis method, and the six phases, suggests, thematic analysis is built upon the identification of themes, which are representing patterns of meaning with the data set (Braun & Clarke, 2006). Themes are, ideally, capturing something significant about the data in relation to the research questions, and can offer an insight into the lived experiences of research participants and the social contexts in which they exist. To determine and identify what it is that makes up a theme requires researcher judgment. There are no rigid rules, and the relevance of a theme does not lie in its quantitative prevalence, but in the themes ability to shed light on something important related to the research questions. Through this empowerment of the researcher to determine the theme is where the flexibility of thematic analysis is clearly apparent (Braun & Clarke, 2006).

In this research, a central part of the theme identification was influenced by the theoretical framework, SPT. To determine and shed light on what it is that makes up a practice, and which aspects of a given practice are changed, the three elements that Shove et al. (2012) argues makes up a practice, namely *materials, competences and meanings,* was employed in the phases of *generating initial coding* and *searching for*

themes, and throughout the analysis process (Shove et al., 2012). This is again where a deductive approach was employed, although, the identification, and further exploration, of distinct practices and elements of practices was influenced by the data.

Furthermore, an interest and curiosity of how interaction and collaboration facilitates the knowledge exchange, and thus the practices or elements of the practice, what it is that facilitates this interaction and collaboration, and what the challenges that potentially constrain this interaction, collaboration and knowledge exchange is, influenced the analysis process, including coding and identification of themes, and the research process as a whole. Social practice theories are in general changing the focus from agency, or individual activity, and structure to the social practices and the course of the elements to describe and analyse change and stability of practices (Reckwitz, 2002; Shove et al., 2012), which is principles followed in the relevant section of the analysis and theme identification. This study does, however, through the exploration of arenas for interaction and collaboration, and the occurrence of challenges, give attention to structures and induvial relations in the study context.

Thematic analysis proved to be a well-suited method for this study. Its flexibility allowed the identification of key themes emerging from the data, along with the exploration of the relationships that connected these themes (Braun & Clarke, 2006). This adaptability also facilitated tailoring the analysis to the specific needs of the research, aiding in the systematic organisation and identification of themes throughout the research process (Clark et al., 2021).

Given the exploratory nature of the research questions, which aimed to understand the complex dynamics of intercommunity relationships and collaboration, and the knowledge exchange and innovation within agricultural practices, thematic analysis provided a systematic and rigorous approach. It enabled the identification and exploration of key themes within the data in a way that facilitated a deeper understanding of these complex social dynamics (Braun & Clarke, 2006).

4.4 Ethical considerations

The consideration and inclusion of ethical concerns and principles is a crucial aspect of conducting social research. This is especially true in a research context with political instability and with vulnerable groups such as refugees, which is the case in this study (Clark et al., 2021).

An important aspect of ethical consideration, and an obligated part of the research process, is obtaining ethical clearance for the study context where the research is taking place (Israel & Hay, 2006). This research project was a part of a larger project, the NORPART-Project, and sought, and obtained, ethical clearance under Uganda National Council for Science and Technology (UNCST) from the local and national Office of the Prime Minister (OPM), in collaboration with the NORPART team. Additionally, on an individual level, an ethical clearance was sought and obtained from the Norwegian Agency for Shared Services in Education and Research (SIKT/NSD). As part of my course work in Uganda in October, through the NORPART-project program, I participated in a Field Orientation Course designed specifically for practitioners and researchers working in the refugee host context in Northern Uganda. The course covered ethical principles and practices of conducting social research, as well as preparing/familiarising me for/with the study context in Adjumani, Uganda. The internship at FH also required an ethical clearance through the organisation, which included a seminar on ethical interaction with vulnerable groups, in this case both host and refugees in the settlements.

The subjective nature of ethics can lead to variations in researcher approaches, highlighting the importance of established ethical principles (Clark et al., 2021). Building upon the well-defined framework developed by Diener & Grandall (1978), this study prioritizes the protection and well-being of participants throughout the research process. In the strive to uphold this, this research study contended to follow the ethical principles to be aware of developed in Diener & Grandall's (1978) framework; potential harm to the participants, lack of informed consent, privacy of the participants, deception, ethical concerns related to specific research situations such as cross cultural comparisons, and honesty and accuracy by the researcher (Clark et al., 2021; Diener & Crandall, 1978).

Informed consent is a cornerstone of ethical research (Capron, 1986; Clark et al., 2021; Diener & Crandall, 1978), and was of high priority during this research process. This principle indicates that researchers must provide the research participants with comprehensive information about the research project. This information should empower participants to make informed decisions about their involvement, based on their own values and goals (Capron, 1986). This also involves the principles of deception, and honesty and accuracy of the researcher, where deliberate misinformation to gain consent would be manipulation and far from adhering to ethical principals of social research (Capron, 1986; Diener & Crandall, 1978).

In this study, informed consent was ensured by providing participants with comprehensive information about the research project. This information included the study's objectives, data collection methods, and the participants' right to withdraw from the research at any point. It also included information about me as a researcher and student, which institutions I came from, and the NORPART-project. There were a few participants at the beginning of the fieldwork that gave the impression that they thought I represented the organisation where I had the internship, which is natural given I had been to settlements in that regard earlier and used some of the networks that were established at that time, even though the participants were given clear information about what the interviews would be used for and which institutions I represented. This was immediately clarified with an emphasis that I did not represent the organisation FH, and that none of the information they provided would be handed over to the organisation. This emphasis was after the very first interviews added to the form for informed consent given at the beginning of the interviews. Additionally, the interview participants were informed of their anonymity in the study, and that I will respect their privacy by keeping their data confidential and secure. Informed consent was given both in the form of a written consent form and verbal information and consent. All participants were first given the written form, but most participants preferred and indicated that verbal was sufficient and what they wanted.

While qualitative research methods are great for gaining in-depth and rich information, they also present unique ethical challenges (Clark et al., 2021; Orb et al., 2001). Interviews, and participation observations, have a, to some extent, a unpredictable

nature, which requires consideration of possible outcomes of the interview and potential risks for the participants (Orb et al., 2001). This adheres to the principle of avoiding potential harm to the participants (Diener & Crandall, 1978). Individuals, interview participants, who have experienced violence, or other traumatic events, may experience a trigger of these memories of traumatic experiences, or "open old wounds", which again might cause emotional distress (Orb et al., 2001). Researchers must be especially wary and prepared to handle this with sensitivity (Orb et al., 2001), which was highly relevant in this study context with in-depth interviews with refugees that had fled civil war in their country of origin; South Sudan. Ethical dilemmas that can be difficult to anticipate might also occur during the interviews, which can be mitigated by being aware and having knowledge of sensitive topics and potential conflicts of interest (Orb et al., 2001). My experience was that through being embedded in the communities was of great assistance in this regard.

However, the nature of this research project, and the following research questions, were not of a very sensitive nature. Nonetheless, the principle of avoiding potential harm to the participant was a core value in this study. The interview participants were informed prior to the interview to only answer the questions they felt comfortable answering, and this was repeated on questions that had the potential of being uncomfortable, such as questions on relations or challenges with the other group. This was especially important in the fieldwork of this research where the research assistant and translator could be considered to be of the host population and shared the tribal belonging of the host population, the Ma'di tribe. This research assistant and translator did, however, not live near any of the settlements where the research was conducted. My experience was that this has had little to no effect on the answers from the research participants, a reflection and statement based on the honesty of the participants on questions on relation and challenges, and on similarities between the interviews that needed translation and those that did not.

Given the study's focus on diverse cultural contexts within intercommunity relationships, I have taken cross-cultural ethical sensitivity into account, respecting cultural norms and practices of the participants. The study do not seek to make cultural comparisons, but rather focus on the cultures' effect on practices and collaboration. In line with the ethical principles by Diener and Crandall (1978), and broader ethical

considerations in social research, the study will also uphold honesty and accuracy. This involves transparently presenting the research process, findings, and interpretations to maintain research integrity (Clark et al., 2021; Diener & Crandall, 1978).

5. Analysis

Migration, that being forced, explorative or opportunistic, to new territories has played a central role in the history of humankind over the millenniums. Following this story of migration is an inevitable mixing of groups of people and their cultures. A narrative of the exchange of ideas and practices when this happens has evolved over the years. As shown with Shove et al. (2012) conceptualisation of practice as constituted of elements (Chapter 3.1), where culture influence the element of meanings, one could argue this mixing of cultures brings an opportunity of exchange of practices (Shove et al., 2012). This paper is seeking to explore and shed light on the occurrence of this in a setting where migration and displacement are taking place as a result of conflict and war, in other words; people seeking refuge.

Uganda represents a quite unique case, with policies that enable interaction between the local population and the refugees through freedom of movement and economic engagement, as opposed to the common practice of segregating the refugees in camps, refugee encampment, which to a greater extent isolates them from the societies that surround them, and thus reduce the opportunity for the exchange of practices (GoU, 2006, 2010). By being the district that is hosting the largest amount of refugees in the country, I also believe Adjumani represents a unique opportunity to explore the phenomenon, especially considering there is an about evenly split population of local hosts and refugees (UNHCR, 2023b).

Through the application of the theoretical framework SPT, this research is seeking to explore if this exchange of practices in the agricultural context is taking place, if so which practices, why these practices, what is the outcome of implementing these practices, and if it is happening in both groups; the host- and the refugee communities. The agricultural practices was identified throughout the data collection, where an increasing understanding of how the practices are constructed and maintained within the

social context was further explored through the three interrelated elements that Shove et. al (2012) argues make up a practice; *materials*, encompassing tangible entities and technologies; *competences*, involving skills and know-how; and *meanings*, encompassing symbolic significance, ideas, and aspirations (Shove et al., 2012).

These three elements was, naturally, important throughout the process of analysis of the data, where I employed the method of thematic analysis. Braun and Clarke's (2006) six-phase thematic analysis framework was employed to identify and analyse themes related to materials, competences, and meanings in agricultural practices. This analysis further explores how intercommunity relationships facilitate or constrain the exchange and innovation of these practices.

Through employing the first two steps, *familiarisation* and *initial coding*, of Braun and Clarke's (2006) thematic analysis framework of the initial individual and focus group interviews, I have identified specific agricultural practices that have been exchanged between the groups that I will focus on (Braun & Clarke, 2006). As I have been made aware of through key informants and interview participants, the premise for adopting new practices is different for the two groups. The refugees are in many cases, if not most, migrating from a different climate, as confirmed by a refugee participant *"That side [South Sudan] there is only one growing season compared to this side [Adjumani] there is two"* and that*"Compared to here, that side [South Sudan] is very hot and dry, sometimes it's difficult to grow" – Male farmer 40y, refugee community,Interview participant #10*. Following this difference, it is only natural that how and what the refugees practice has to change with the shift in geographical climate. Nonetheless, this research seeks to reveal novel agricultural practices, or novel elements of a practice, adopted by the refugees that possibly transcends the regional differences. Similarly, this research seeks to reveal novel agricultural practices, or novel elements of a practice, adopted by members of the host community after interactions with the refugee population.

5.1 The refugee population

Migrating to a new region with a different climate is naturally followed by changes in how agriculture is practiced, as explained above. Learning how to effectively make use of two growing seasons, what to plant when, is something several of the refugee participants have mentioned as new ways of practicing agriculture they have learned, as well as being something several of the participants from the host community have mentioned as practices they have taught the refugees. However, this is knowledge that is unlikely to be applicable upon repatriating back to South Sudan, a wish many of the refugees share (Khasalamwa-Mwandha, 2021).

A practice, or more correctly the element of competence that influence the practice, that most of the refugee participants have acquired and adopted through interaction with the host community is purposive seed planting in rows, which is done with several crops and vegetables, such as cassava, maize, cabbage, tomato and kale. This competence is replacing one the interview participants said they had prior to learning this, which was one where they were "broadcasting the seeds", in other words throwing the seeds semi-randomly in the field.

"There are those things of beans we have been broadcasting, but once I came here these people taught me to plant in rows by putting a rope. That is the new thing I learned here. On that side [South Sudan] I only see people broadcasting the seeds, even the cowpeas, people have been broadcasting there. But here I found that even the cowpeas will be in line, tomato in line, Sukuma wiki [kale] in line. I have also been practicing this here."

- *Female farmer 45y, refugee community, interview participant #25*

"So, the difference now, since there is a difference of how we from South Sudanese plant our things, compared to the host of Uganda, because back that side we are broadcasting. Now here, when we are planting things in line, because we see they are planting in line, it is easier to even weed."

- *Female farmer 32y, refugee community, interview participant #6*

If you look at the whole process of planting crops and vegetables as one practice, from seed and unprepared field to harvest of crop/vegetable, this adoption of purposive seed planting includes several changes in the process of the practice. This starts already in the preparation of the field where I've both been told and shown how they prepare the field for planting in rows. Some have even implemented new tools for the process, changing from a smaller (shorter) tool, hand hoe, for tilling the soil that you do one handed, to a longer hand hoe you can use two handed. Some of the refugee participant reported a change to ox plough, a change even some in host community reported they had experienced in their life time, and a few mentioned using a tractor.

"There mostly we are using hand plowing, but here if you have money you can use ox plow, or even tractor. And there that side, with beans we were broadcasting, but here we are planting in row, in line. This is what we have learned here."

- *Female farmer 51y, refugee community, interview participant #27*

"Yes, we have the new… last time when we are in our country we did not deal with the hoe. We can now do it with the hand one. The large one."

- *Male farmer 40y, refugee community, interview participant #10*

Further down the timeline of the process of the practice is the process of "weeding" the field, in other words clearing the field for weeds. The refugee participants who adopted this change told me that the weeding process is easier and is less work-intensive. Similarly, the same was reported for pesticide application and harvest of the crops/vegetables. This change to the practice is also bringing forth another aspect of change in relation to gender roles and culture. By making the process of clearing the agricultural field for weeds easier, and possible to do with tools, such as the hand hoe, the female interview participants reported that men are also joining the practice of weeding. Originally, it is the cultural norm that physical tasks, that being in the home or in the field, that requires having a bent back, or "squatting down", is mainly done by women. Before purposive seed planting in rows, weeding was done by hand, as the

hand hoe would risk destroying the crops as well. Now that they can do the weeding with hand hoes, the men are also joining in on the practice.

"And even, because here, in our culture, once this thing was broadcasted, our plants are broadcasted, it is only the women to weed. Since that one needs, you have to squat down. Most of the women are the ones doing it. Now this thing is now in line, even men come and do it in the time of weeding, everyone is doing it. So it will make an activity which every man and woman are doing it. Because most of the men consider this time for weeding is for women."

- *Female farmer 21y, refugee community, interview participant #21*

All of the participants who had adopted this competence gave me the impression that their main motivation for adopting this competence was that they experienced increased, or in their words "better", harvest. When asked what they would bring back to South Sudan from what they had learned here, purposive seed planting in rows was mentioned by most participants.

"The one [agricultural practice] that I will go with in South Sudan, it's one, because back there I have been broadcasting beans. So I would love to go and start planting beans in line, even the sorghum now you can plant in line."

- *Female farmer 45y, refugee community, interview participant #11*
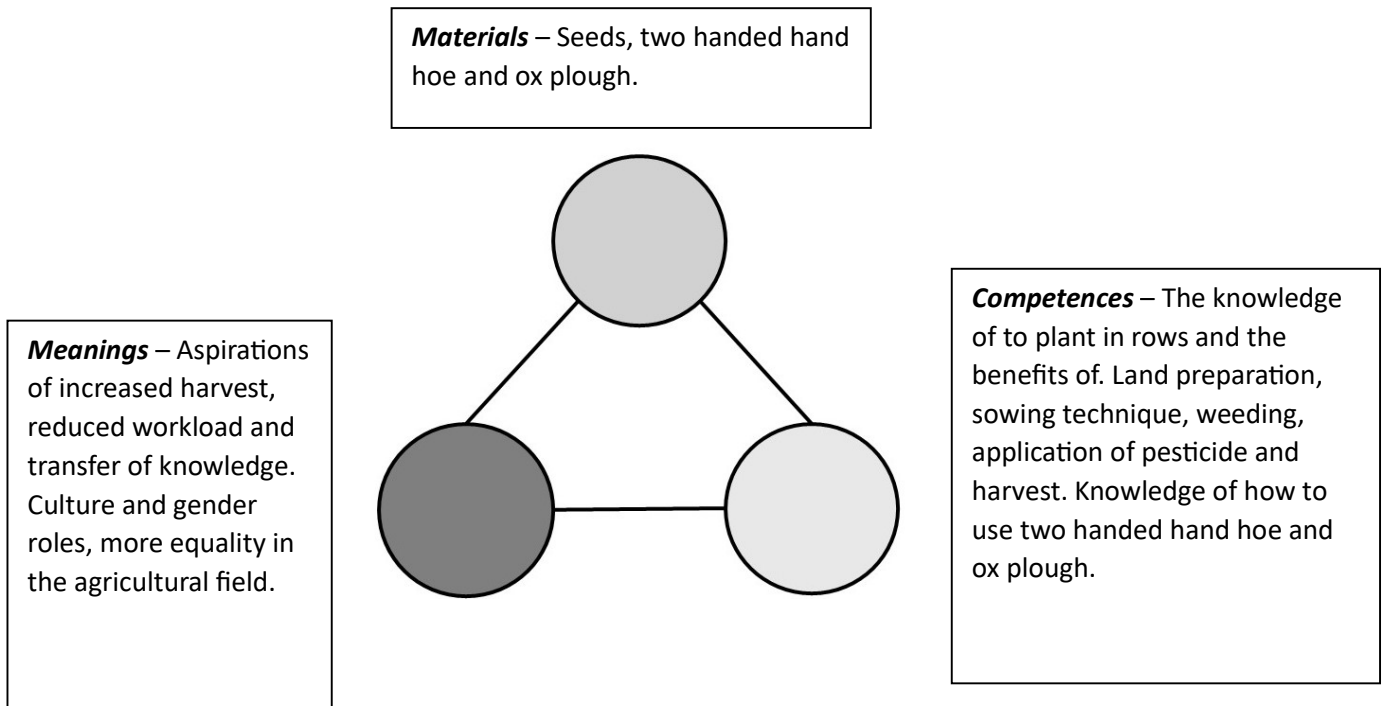
Figure 3: Elements of purposive seed planting in rows in refugee settlements in Adjumani, Uganda (Based on figure from Shove et al. (2012))

Materials – Seeds, this might be both the same seeds as in place of origin or new ones. Two handed hand hoe and ox plough.

Competences – The knowledge of planting in rows and the benefits of. This includes several competences such as land preparation, sowing technique and weeding/ application of pesticide and harvest in a field of plants in rows. Additionally is the knowledge of how to use two handed hand hoe and ox plough.

Meanings – There are three meanings connected to this which is mainly under aspirations, as well as one meaning connected to culture and gender roles. The first is an aspiration of increased harvest, which again leads to higher income and increased food security. The second one is reducing the amount of work that is required in process of the practice, which again frees up time for other activities or reduce the need outside help in the field and thus saving money. The third is the aspiration of transferring this knowledge to place of origin. The meaning connected to culture and gender roles is during the process of weeding the field. With this new competence, weeding is now done by both genders, which again is creating more equality in the field, freeing up the

women of a tedious and straining task, and likely also freeing up some time for the women.

5.2 The local host population

When a district, such as Adjumani, receive and host such a large number of new residents, interaction and collaboration is implicit and necessary to secure the livelihood of both the local host population and the new residents, especially considering Uganda's policies of freedom of movement and economic engagement for refugees (GoU, 2006, 2010). When a region, in this case Adjumani in Northern Uganda, where agriculture is playing such a major role of the economic engagement and food security (UNDP, 2017) is introduced to large groups of people of different cultures migrating from regions with similar connections to agriculture, an opportunity for exchange of agricultural knowledge opens up. A novel practice, or more correctly a novel element of material that influence the practice, that especially have caught my attention is the introduction and adoption of a new variety of the crop sorghum.

Sorghum is a drought-resistant cereal crop, and is an important staple food in semi-arid African regions, which in this case is on both sides of the border; Adjumani district and South Sudan (Proietti et al., 2015). Sorghum comes in a range of varieties that comes with an equal range of different qualities (Taylor, 2003). This is also something I have been made aware of, through the interview participants and observation, is the case for the varieties that originate from the Northern Uganda region and the varieties that originate from South Sudan. Several of the interview participants from the host community told me that they have started planting the South Sudanese sorghum in their fields after interaction with the refugees, and amongst those who were not planting it themselves, the majority is buying it and using it for consumption in various ways. Because of the different qualities of the South Sudanese sorghum variety, switching to it entails changes in various parts in the process of the practice, as I have been informed of and will delve more into. The most mentioned differences are the taste and texture of the grain, the taste of the stem of the plant, the amount/size of grain (increased harvest), the color of the grain and height/straightness of the plant. While there were still some that preferred growing the local one, even a few amongst the refugee participants, there

was a unanimous agreement across the groups that the taste and texture of the South Sudanese one is preferred.

"In terms of preparing it, this one of Uganda, without the cassava chips, if you grind the flour, without the cassava chips flour, you will eat, but it is not okay. You will not feel it, that It is nice. At least, you mix with the cassava flour, all the chips, you grind them together. But the one of there [South Sudan], even without the cassava chips, it is nice, but it can even be mixed with the cassava flour. Because it is a bit sweet. Well, because it is sweeter, so it tastes better."

- *Male farmer 38y, host community, interview participant #16*

"There are three different sorghum I have seen here. There is one that is red with small seed, and there is one that is red with a bit bigger seed. Then there is the one from South Sudan that is white with the big seed. Now that one of Uganda which is big with red seed, once you prepare for food sometimes when eat you can even feel when you are defecating, it can pain you. It is hard [rough in texture]. But that one from South Sudan is soft, it is nice."

- *Female farmer 45y, refugee community, interview participant #25*

When it comes to the qualities of the South Sudanese sorghum that affects the practice and use of the plant/grain, the taste and texture seems to be the main reason for the adoption of the material. This in effect mainly affects the consumption of the end-product, as well as it opens up for some new challenges in connection to the production of the plant. Many, if not most, of the interview participants, both refugee and host, but in this case most importantly host, told me that the taste is much sweeter than the local one and easier and better to use as a food source. While the local variant is said to "need to be mixed with cassava to taste ok", the South Sudanese variant tastes sweet and good by itself. As a result they can make porridge and the local "kalo", which is doughy staple dish served as a side dish, without adding other staple ingredient such as cassava, maize flour or millet. Several of the participants also informed me that the local alcohol-

brew by the name "loguru" both ferment better and taste better because of the sweetness of South Sudanese sorghum.

"In terms of preparing it, it can be prepared for porridge and for sauce. But the one of South Sudan mostly I prefer them for local brewers for making the local alcohol compared to this one of here [Uganda]. The local alcohol, loguru. So it is more fermented, much better compared to this one."

- *Male farmer 37y, host community, interview participant #18*

"That one [of South Sudan], we are using it for the yeast. So, that is good for yeast. That yeast is a, can ferment, then we use it for the local alcohol, loguru. It comes from the yeast that is the content, one of the content, that is the reaction. Because it is the yeast which can make the loguru become bitter. So, then it is good with a sweeter sorghum. The one from South Sudan is mostly good for the yeast."

- *Male farmer 31y, host community, interview participant #19*

Additionally, the stem of the plant is sweet and consumed like sugarcane. Many of the participants referred to it as "it's like sugarcane" or "it tastes like sugarcane". Other than taste and texture, larger (in size) and more grains, which again results in higher harvest, is a motivation for growing this variant that was mentioned by many of the participants.

The sweet flavour of the South Sudanese sorghum is not only a blessing, which might be the reason as to why not everyone has adopted it. Both members from the refugee and host populations have said that this variant is significantly more targeted by birds. A few have also said that goats and kids steal the plant for its sweet stem. Some of the participants said they tackle these issues through mixing it with the local variant, while some said it is only migrating birds that eat the grain and that they have solved the issue through planting at later time (in July instead of May).

"One thing you have to think about is the season of planting it. That one [sorghum of South Sudan] at least you plant from June to July. But this one [of Uganda], April. And if you plant that one [of South Sudan] in April, the yield, meaning

it will be, you plant early, then those birds will attack early also, mostly. So at least you plant June, the time when it is getting harvest, those birds also move seasonally, attacking them. So that is the difference in how to plant it."

- *Female farmer 38y, host community, interview participant #28*

While there initially was some that claimed that the South Sudanese sorghum was more drought resistant, most of the participants have during further investigation on this said that they are both very drought resistant, and more equally so.

"And maybe in terms of the resistance, both in drought and rain, they are the same. They are all resistant."

- *Male farmer 38y, host community, interview participant #16*

There is also another aspect of the practice of planting sorghum that came with the refugees related to the competence of the practice, which is also applicable to the local variant. Several of the interview participants from the host community told me that they had witnessed that the refugees was first planting the sorghum in nursery beds, which is a smaller plot of prepared land for raising seedlings, and then transplanting the sorghum seedlings to the field. This is a practice that allows for easier surveillance of the crop, and was claimed by some to give better yield.

"There is one experience I got from the refugees. This people have their sorghum there. It is different from what we have here. When they put it in the nursery bed, it can be transplanted. They transplant it in the field. And we can just plant it like maize. It does better than the one of the local one we get here. We plant it and weed it."

- *Female farmer 30y, host community, interview participant #14*

Materials – New seeds of a new variant of sorghum.

Meanings – Aspiration of increased yield. Cultural change in term of food production/consumption, as well as in local alcohol production – Loguru.

Competences – Knowledge of how to prepare for consumption, new challenges and planting/transplanting in/from nursery bed
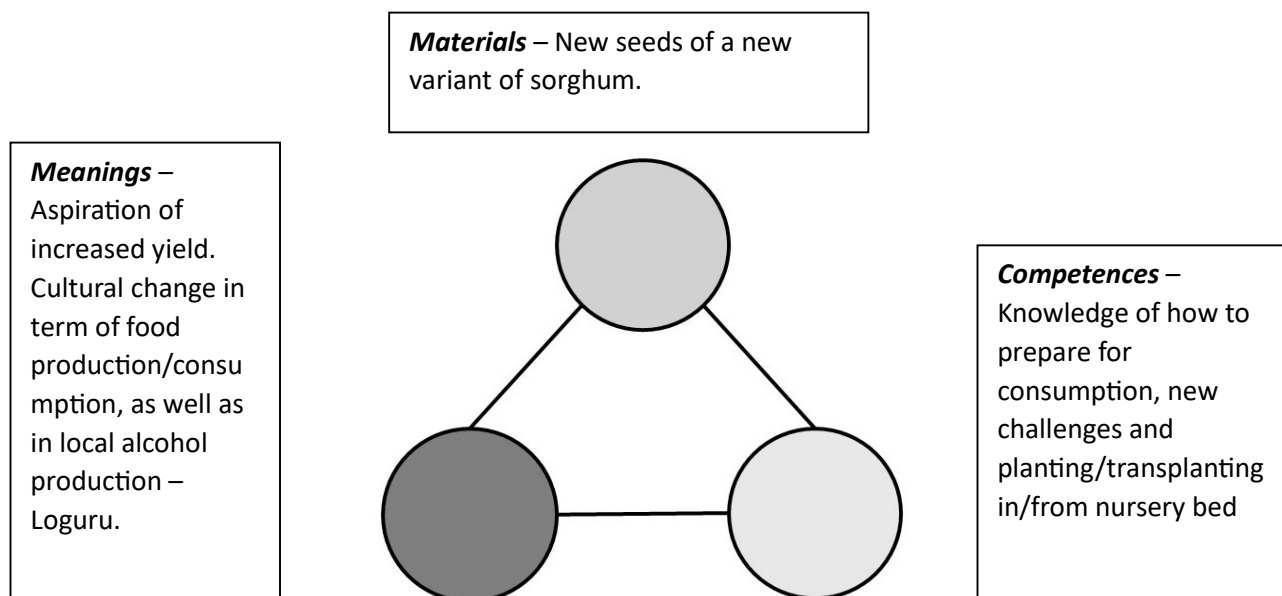
Figure 4: Elements of implementation of new sorghum variety from South Sudan in refugee settlements in Adjumani, Uganda (Based on figure from Shove et al. (2012))

Materials – New seeds of a new variant of sorghum.

Competences – A lot is similar to competences of local variant here. There are some changes to how to prepare for consumption and the outcome of what you prepare. There are also new competences related to the new challenges that arise such as when to grow and mixing with the local variety. In addition, while not being exclusively for that South Sudanese variety, is that knowledge of first planting the sorghum seeds in a nursery bed before transplanting them to the field, and the benefits of doing this.

Meanings – The aspiration of increased yield, which again can lead to increased food security. There is also a cultural aspect linked to this change, where the new variety better the flavour of the food in which it is used and reduce the need of adding additional staple ingredients. It can also be linked to the local alcohol production of the local drink "Loguru", where it is claimed to enhance the flavour and fermentation process.

5.3 Exchange of knowledge that leads to innovation and co-learning

"…after you teach them and then they become experts, they also teach you a bit more about it."   - *Male farmer 38y, host community, interview participant #16*

As illustrated above, when groups of people and their cultures are introduced to and interact with each other, new practices might be adopted as knowledge is exchanged. In this interaction, through collaboration and sharing of knowledge, the process of practicing a practice might in itself be a creative and innovative process (Shove et al., 2012). In this case, where the population of Adjumani district doubles with the introduction of refugees from South Sudan, competition over land and resources naturally follows, as well as competing in same market in buying and selling the agricultural end-products. In the face of this, amongst other challenges, innovation is necessary to increase competitive power and to face social challenges such as food insecurity (Kühne et al., 2011).

One practices where I experienced that innovation was happening through the exchange of knowledge was in the practice of growing crops and vegetables in the wetlands, also referred to as "swampy areas". In areas that are more or less without precipitation for 6 months of the year, such as Adjumani and much of South Sudan, which also rely almost exclusively on rainwater for irrigation of agricultural activities (UNDP, 2017), finding a way to produce agricultural products in these periods is of high value to secure nutritious food and income. To do this, many of the participants interviewed reported that they have turned to growing in the wetlands. Most of the participants from the host community were already practicing this before the arrival of the refugees, except one of the participants that told me that he learned the practice from the refugees. A few of the refugee participants were also practicing this practice while in South Sudan, but most of them were introduced to it after arriving and settling in Adjumani, as it seemed that many lived in areas without access to wetlands in South Sudan.

"In our area, there are some swampy areas, mostly for vegetables. This I learned from them. They planted the sugarcane in it and also vegetable. So we learned this from the refugees."

Prior to the arrival of refugees in area, the local community was mainly growing sugar cane and potatoes, as well as a few of the participants mentioning cowpeas, in the wetlands. With the arrival of the refugees, I've been informed by participants of both the refugee and host community that members of the host community taught members of the refugee community of the practice of growing in the wetlands, then with the mentioned crops. After some time of collaborating with the refugees and practicing in the same areas as them, some members of the host community witnessed that the refugees started growing different crops than they were in the wetlands. After being taught of the practice, some of the refugees started experimenting with growing vegetables in the wetlands, such as cabbage, kale, carrots and tomatoes. One refugee participant also reported that she was planting watermelon in the wetlands in South Sudan, and that she has taught the host community of it.

"The wetland was here before these people came. We are using it. After telling them that, these people is becoming the highest use of expertise, they are taking more advantages in using it. So maybe after you teach them and then they become experts, they also teach you a bit more about it. That's one thing we learned from them in using the wetland, from them, what they are planting. Sometimes those days we were planting sweet potato, cowpeas and maybe sugarcane. Then these people taught us vegetables, they are practicing vegetables in the wetland, so we are also going to do it, this thing of cabbage, Sukuma wiki (kale), and it is doing better in the wetland also. So that I learned from them."

-   *Male farmer 38y, host community, interview participant #16*

"In general, the Ma'di planted the sugar and even the sweet potato in the wetlands. But now the aspect of these vegetables. The major thing is that I have learned, that we Ma'di have learned from them, is this of growing cabbage there in the wetlands. That is what I picked from them. Those days when I'm growing, people are not planting those vegetables in the wetland, rarely, like tomatoes. The time even I'm growing, people are

rarely putting it in the wetland, so more specially we saw Sudanese who came with that
idea, and then some Ugandans, we adopted those things."

- *Male farmer 46y, host community, interview participant #30*

Furthermore, there are also different methods connected to the practice of growing in wetlands in comparison to the traditional way. The most visible is the one of how you structure the ground before planting, a practice I was both told and shown. The soil of where you plant in the wetlands needs to be raised, but should also create some space between each crop so that the water can move in between. Meaning you create a structure of ridges of raised soil and the water will then move in a zigzag-movement between each individual plant.

"I told them to at least raise some ridges, so that the soil will be up, then
they plant it like that. Just then that they should open also a waterway, so that the water
can move around. Those thing like ditches, I teach them on those ones, so they are doing
it."

- *Male farmer 31, host community, interview participant #19*

The motivation for this practice of growing in the wetlands may be more than food- and income security, and varies to some degree between the groups. It was a reoccurring theme during the interviews with the refugees that secure access to enough land was an ongoing struggle. Although the underlying motivation here is food and income security, getting access to land, through the wetlands, becomes a motivation to achieve this. There were also claims of increased harvest of the vegetables in the wetlands from the interview participants who were practicing it.

"Here we have been not planting carrot in the wetland. These people came
here practicing carrot in the wetland. And it yields much better compared to the one in
lowland. When you plant here [at my farm], here does at least fair compared to that one

in the wetland. That's good. Even the roots will be tall. We can sell one at one thousand [Ugandan shillings]."

- *Female farmer 38, host community, interview participant #28*

 Another important aspect, which cuts across the groups, is having an activity and staying occupied during the dry seasons. It is very dry in Adjumani district during the dry season, a reality I got to experience through arriving in Adjumani during rain season while most of my stay was during the dry season, and growing anything with limited access to water for irrigation is near impossible. In a district where the main economic activity is connected to agriculture (Kang et al., 2023; UNDP, 2017), staying occupied in a period of low agricultural activity is challenging, and many turn to drinking alcohol. My own encounters with drunk people during daytime ventures drastically changed from the rain season to the dry season.

"When the dry season hits and such. Because, uh, now, you know, because people want money. And there's no backup somewhere. They [host and refugee] sell everything, and have nothing to eat at the end of the day. And this money, sometimes even, they end up just drinking it."

- *Agriculture officer (OPM) in Adjumani District, key informant*

Material - The different material in this case is the ground which upon you plant the crops.

Competences – The knowledge that you have the possibility to plant crops and vegetables in the wetland. Which crops and vegetables to plant, and when. Techniques for planting.

Meanings – Aspiration of more consistant access to food and income. Having a meaningful activity in dry seasons.
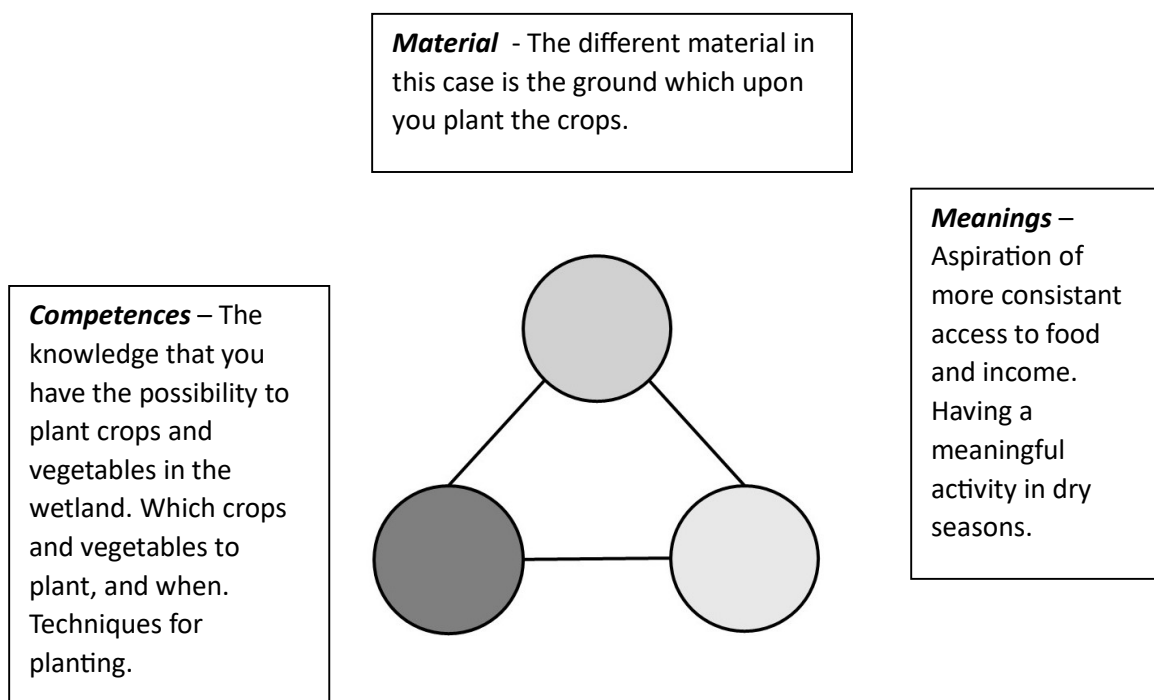
Figure 5: Elements of planting crops and vegetables in wetlands in Adjumani, Uganda (Based on figure from Shove et al. (2012)).

Material - The different material in this case is the ground which upon you plant the crops.

Competences – The knowledge that you have the possibility to plant crops and vegetables in the wetland. Then which crops and vegetables that are suitable and when to plant them, in addition to the benefits of doing so. Furthermore, how to plant and which techniques to use for the plant to reach its potential and not drown/rot.

Meanings – First and foremost is the aspiration of more secure access to nutritious food and income all year round. Then having the opportunity of being active and occupied during the dry season with meaningful activities is of high value for most.

5.4 Arenas for interaction and collaboration, and opportunities of coexistence

To achieve successful exchange of knowledge, and adoption of this knowledge, is dependent on the development of a foundation built upon interaction and collaborative efforts amongst the parties involved. Uganda's progressive refugee policies creates a

good foundation for this interaction to take place between the host and refugee communities in Adjumani. However, it is important to recognise that freedom of movement and economic activity alone do not guarantee interaction and collaboration between the groups.

My experiences living in and near mixed communities, working as an intern in the settlements, and through interviews with participants on both sides, suggest that NGOs and governmental organizations play a crucial role in facilitating interaction and collaboration between the groups. For instance, these organisations organise joint training programmes, that being agricultural, vocational or food preparation training, that brings the groups together and foster interaction and collaboration. In the joint agricultural training programmes, members of the host and refugee communities are organised in mixed groups that do the training together, and are in some projects given a shared plot of land to practice what has been learned, which again is fostering a highly collaborative setting.

"The first refugees, the first time they came, they settled here. So at that time we formed as a group and trained together. At that time the first enterprise was the ground nut. After forming this group and these training, we started to work together on an induvial basis. Sometimes I maybe go and work on that one farm of one of them. Then that one goes and maybe work on my farm"

- *Male farmer 37y, host community, interview participant #18*

Another valuable initiative that facilitates for interaction and collaboration, and just as important; trust, is saving groups. Saving groups is a practice where a group of members of a village, or that is grouped through different means, meet weekly to collectively save up money, discuss what the money should be used for and potential loans of the fund to the members of the group, as well as being a social gathering. As one of my key informants that is the leader for livelihood projects in the NGO Food for the Hungry said:

"One of the most important initiatives we do to increase intercommunity relationships is with the sharing groups. Some of the sharing groups consist of only refugees or only local host, but many are also mixed. These saving groups meet every week, and saving together create trust between them. Also by meeting often they can exchange ideas and build bonds."

- *Key informant, NGO worker – Food for the Hungry*

Through these trainings and groups, the refugee and hosts are able to, and as I have been informed do, build bonds and networks. These networks are often used when extra labour is needed in the farm fields, for the refugees to rent land, and sometimes to sell the agricultural produce in bulk together. To call someone to help out on the farm, which is done interconnectedly between the groups, is locally called "leja leja", and is in practice done in the form of doing work for something in return. This can be cash, a part of the agriculture produce that is harvested or seeds. These networks and collaborations on each other's farms was pointed out by several of the interview participants from the host community as a positive effect of the arrival of the refugees, as the increased labour resulted in increased effectivity and productivity in the agricultural practices.

"We are cooperating through this leja leja, which in the local language is when you work for someone for money. So we have been working in the fields of the host and sometimes also the other way, they help out on our field. So it can be seed, food or cash in payment."

- *Female farmer 51y, refugee community, interview participant #27*

"In a group level, we have been working together in terms of this thing of the vegetables. Even we sell it collectively. In a group level, when we are in a group, we sell it together. We do all of this together. Then come into the agriculture rituals, some process you may do alone and others you also need their help. They come and do, maybe you give them this fresh cassava or you give some cash for them, and we also go and do there [at their farm]. Because some of the products they are not having in, so you may need the product you work for. So you work for the product."

These points about collaboration and arenas for collaboration is tightly linked with what is perceived by the communities as the opportunities and benefits of the situation of living together in the geographic area. In addition to appreciation for the novel practices acquired and adopted by each group. Food insecurity was also present in Northern Uganda and Adjumani District prior to the arrival of the refugee (Ally et al., 2023; Nabuuma et al., 2021; Zhang, 2004), and with the refugees came increased presence and assistance of both NGOs and governmental organisations. This is an opportunity that was expressed by many of the interview participants from the host community, that reported that with the refugees came development partners, training programmes, infrastructure, social services and seed systems they didn't have prior to the arrival of the refugees. The aid that follows the high increase of refugees in the district is not exclusively for the refugees, decided by the host district there is also a share of the aid that must go to the host community. In the case of Adjumani district this at 30-70 percent in favour of the refugees, which is considered the most vulnerable of the groups with higher levels of poverty (Khasalamwa-Mwandha, 2021; WBG, 2019). A measure done both to strengthen the coexistence and interaction between the groups.

"It is a 30-70 percent ratio, the refugee take the bigger ratio due to their high vulnerability level to access different income sources. This is a local claim, set by refugee hosting district. It is put in place to enhance coexistence between hosts and refugees but as a measure of sustainability."

- *Key informant, NGO worker – Food for the Hungry*

"One opportunity is giving land for them and that attracts some partners, and this partner give some knowledge on agriculture together, so we pick some knowledge of farming because of them because if they could not be within some of those knowledge it is very hard to get it."

- *Male farmer 45y, host community, interview participant #29*

Language is an aspect that in the beginning was considered a challenge or a barrier, but has now in a later stage, by a large portion of the interview participants of both communities, changed to be considered an opportunity. Members of the host community told me of the challenges that occurred in the beginning of the arrival of the refugees where communication were complicating cooperation in the field, while some members of the refugee community told me of a higher chance of being taken advantage of prior to learning the language, as well as other communication problems. Now after the refugees have been staying in the area for some time, most of the refugees came either the wave in the mid 1990s or between 2012-2016 when the currently ongoing civil war broke out (UNHCR, 2018a, 2018b), a large portion of the refugees now speak Ma'di and some have learned English, while several of the participants from the host community reported having learned Arabic. For the refugees, learning the local language, Ma'di, increases integration and cooperation with the host community, opens the possibility to find work, either on the farms of the host community or in the training programmes initiated by the NGOs, as well as other small businesses. I met three refugees working as a trainer for the joint vocational training programmes, in tailoring, carpentry and hairdressing. For members of the host community, many of the opportunities of learning Arabic is like those of the refugees learning the local language, such as collaboration and work within the NGOs, but it also opens up for finding additional work on the other side of the border in South Sudan. I met several people that were from the host community in Adjumani who were working on both sides of the border and/or doing some business in South Sudan.

"We are trying to learn even that language, yeah Arabic. Even these refugees have learned a lot Ma'di. There was in the beginning language barrier, but reaching to this extent even majority of them speak Ma'di. Even this is especially Dinka's people can speak they can speak Ma'di."

- *Male farmer 45, host community, interview participant #29*

"It is more difficult before beginning to learn the language. Because it is hard for us to maybe talk against them. And maybe more difficult for them to cheat us after we know the language."

- *Female farmer 19y, refugee community, interview participant #32*

However, it must be pointed out that language is still a barrier and a challenge for many (Khasalamwa-Mwandha, 2021), including the interview participants in this study. Many are in need of a translator for collaboration and smoother interaction. This is something that is happening at the joint programmes, and is thus reducing interactions outside of what is arranged by NGO and government programmes.

"Language barrier is the biggest challenge. Sometimes we get a translator, but it's a challenge. There are opportunities for them to learn the language, which is good, but often it's a challenge."

- *Female farmer 38y, host community, interview participant #3*

The last opportunity I will go into is in regard to the refugees and access to land, a topic in which there are also a lot of challenges, which I will go into in the next section regarding challenges of coexistence and collaboration. Upon arrival and admittance as a refugee, each family is given a plot of land in the settlements, land that is negotiated from the host community by the government. The size of the plot varies between the settlements and between the household (Berke & Larsen, 2022; Khasalamwa-Mwandha, 2021; UNDP, 2018). The majority of the interview participants, in the two settlements I conducted the research; Maaji and Mungula, reported that the plot they got and are residing on is 20 x 30 meters, while a few of the participants reported a different size, such as 10 x 20 meters and 30 x 30 meters.

"I am just doing small small vegetable on the plot. The plot is 20 by 30 [meters], only [for growing] the vegetables."

-    *Female farmer 46y, refugee community, interview participant #24*

On this given plot, which in it self is an opportunity, especially when compared to different refugee situations, they build a semi-permanent house and toilet, and on the remaining land they grow something small scale, often in nursery beds, and rear some small household animals like chicken. As I have been informed by the participants, and others, this is not enough land to grow what is needed to feed a family, probably not even a single person. To tackle this insufficiency many turn to the host community for additional land. Some very few have had the fortunate opportunity of being given, or more correctly borrowed, land for free or through working on their farm or sharing the harvest, but most of the participants that had additional land was renting it from the host community.

"For opportunity some other can give you land for free and you can use and use until the land is tired, I have had that opportunity."

-    *Female farmer 26y, refugee community, interview participant #23*

"I only have a plot on 30x30 meters where we are residing, but mostly when I get some money I rent land for agriculture. I am renting one acre at the moment from host communities."

-    *Female farmer 32y, refugee community, interview participant #6*

5.5 Challenges of coexistence and collaboration

The situation of coexistence between host and refugee communities in Adjumani District, and other districts in Northern Uganda, is quite unique in the refugee context. While positive outcomes in the form opportunities and benefits, as a result of this mixture of people and cultures, have emerged for both communities, as previously presented, challenges and conflicts are bound to arise in contexts like these. Some of which can put strains on the relationship and collaboration between the communities. One of the most significant of these challenges and conflicts that was identified during

the fieldwork was on the topic of land tenure and access to land for agricultural production.

The host communities are the owners of the land, both of the land acquired by the government for refugee settlements and the land the refugees seek to rent or borrow from individual hosts, which puts them in a position of power in relation to the land the refugees utilise. The refugees primarily negotiate land individually through social networks, often relying on verbal agreements (Khasalamwa-Mwandha, 2021). As I have been informed by the interview participants from the refugee community, these verbal agreements are fragile and are in many cases broken by the landowner. Nearly every single interview participant from the refugee community reported that they had experiences of being thrown off the land they hired prematurely, even most of the refugees that were South Sudanese Ma'dis. From the stories that were told it seemed that in a quite significant number of instances the refugees were given "virgin land" for hire, that is land that is not cleared for agricultural production where the natural landscape with bushes, trees and stones are still in place. Then after clearing the land and preparing it for agricultural production, the owner of the land evict them off the land, or in their words "chased" or "taken" off the land, sometimes even after planting the seeds.

"We have a host community who are friends with us. They can give me land, then they say maybe use this year. Then they want to use. So the challenge is that I am preparing the field and then... Then sometimes you find they will just take it off me. But sometimes the good one will say, you use maybe this year, then they will also [allow me to] use it. But others will just come and take it off after preparing it. Sometimes even after I have already put a seed in it."

- *Female farmer 31y, refugee community, interview participant #31*

"So in term of relationship about the land, sometimes they will give you virgin land with a lot of bushes and then you. Then you plough it and make it ready for planting, and maybe after one two years, they throw you away from the land. They say now you

leave the land. In this area there is a lot of trees, and maybe now after clearing all these things the owner says he needs the land. Now this is the challenge."

- *Female farmer 32y, refugee community, interview participant #6*

The prevalence of this was surprisingly high, where 15 out 17 interview participants from the refugee community told me that they had direct personal experience with this, that this is something that has happened to them. This prevalence was confirmed by my key informants from the OPM and the NGO, that also said that this is something they continuously work to prevent through information, advocation of physical contracts and relation building between the groups.

"They go and rent from the host communities. And these host communities also turn around and chase them away. You know, you may come to me, you want land? Yeah, I'll give you the land. Maybe for one season or two. We may agree for two seasons. But I only offer you land for one season, then I chase you away. Before our terms are done, I chase you away prematurely. So that's how they suffer."

- *Agriculture officer (OPM) in Adjumani District, key informant*

This has, and quite obviously so, put a strain the relationship the refugees have with the host community, where most of the affected refugee participants answered this situation when asked what the challenges with collaboration with host community are in the context of agriculture. Some of the participants reported that this had created fear for them, and one participant reported that she circumvented renting land from the host community out of fear after hearing and seeing this happening. The fear of being thrown off the land has also created some fear in regards to standing up to hosts in certain situations, such as if the animals of the landowner are eating the crops in the rented field.

"I have like two challenges. One is getting this land for hire, it is sometimes not easy, because when you don't have money it is hard for you to get. Sometimes you will

get, but if you don't pay the money they pick you off. And then you may open, and once you plant your things in it the stray animal of the host may eat your plants. Then also the thing where they say you leave the land, because after seeing the animals eat the field they want animals to feed on it. So after clearing the land. When the stray animals, cattle of the host enter the field, the host don't want us to complain, so if you complain that the cattle are eating your plants, they may throw you off the land."

- *Female farmer 26y, refugee community, interview participant #23*

"One is, I have been seeing some people are renting the land, then after opening the land, the land will be taken off or when getting good harvest, the owner of the land will take it off. So that thing, personal for us, I have developed fear for us, because I may look for a money bank, I want to rent, and then they will take the land away. So that's why I am just concentrating on the small plot, so that one gave me some fear."

- *Female farmer 46y, refugee community, interview participant #24*

Another aspect of this that was reported was that some of the participants had experienced being rented the land by someone other than the landowner, again resulting in being thrown off the land.

"The challenge is that sometimes when you are buying the land, and after buying the land, you thought you bought it from the owner, but it was not the owner and the real owner comes and takes the land away from you. Sometimes to be the real person selling the land, then later he finds, he say now he again need to use the land here."

- *Female farmer 19y, refugee community, interview participant #32*

However, even after these experiences most of the participants reported having good relationships with the host community, and most of the affected of these situations have continued renting land from the host communities and working on their farms.

When it comes to the host communities, there was fewer participants that reported of challenges when asked about challenges of collaboration with the refugees. While there were a few that mentioned language as challenge or barrier, the most frequent challenges were of the refugee's work ethic/capacity, their influence on the market prices of agricultural products and unwanted behaviour.

The interview participants from the host communities that reported challenges with the refugees work ethic/capacity were mostly concerned with the speed and amount of work the refugee were willing or capable to do in a day. There were several that labelled them as lazy or slow.

"We are maybe facing challenges when we were in the group, when we were mixed in together, in terms of maybe work, once the plot was given for us in the group, there would be a lot of challenges and it is very hard sometimes. Every man and woman, it is very hard to force it, so they are lazy in general. They are lazy, working, maybe for a long time. The refugees, not all of them but the majority. We can't work because for us we are used to working in large plots. And then now these people sometimes work with delay. Maybe you have a plan of working one acre for two days, but it can take these people like one week, so it is a challenge for me the delayment."

- *Male farmer 32y, host community, interview participant #22*

"The challenges are the refugees. Because it's [we are] not having much challenge but there's time when they are together with these refugees. Since for us we have here enough land, maybe we open big land, we were together but there are challenges. They can't work for long. So, many of them delay their activities."

- *Female farmer 38y, host community, interview participant #3*

Just as this large influx of people creates competition over resources, the freedom of economic activity also means that the groups are competing in the same market. Some of the interview participants from the host community expressed concerns and

frustration over how competing in the same market as the refugees has affected the prices of agricultural products in the shared market. The participants reported that prices for agricultural inputs, such as seeds, had increased, especially around planting seasons, while the prices for agricultural produce had decreased.

"So the major challenge for us that we are facing with them in agriculture things, is market. In the market there is general price fluctuation. Maybe you take this one thing for sale, you may start with a price good, and then you find that they are selling them cheaper. For example, when you may go to sell tomatoes for 1000, and then you start seeing the refugees sell theirs for 500. So that one is a bit of a challenge, because we sell at the same market."

- *Male farmer 31y, host community, interview participant #19*

"The first things is term of seeds, since there is now many of the refugees. In time of planting, if you have to buy seeds it is very expensive because of the population. If you want to buy seeds in June, the price is very high."

- *Female farmer 40y, host community, interview participant #5*

While not directly connected to agriculture, unwanted behaviour affects the relationship between the groups, which also might affect the collaboration and interaction they have in the context of agriculture. Reports of unwanted behaviour of the "opposite" community, mostly in the form of acts violence and stealing, came from participants of both groups. Participants of the host community reported that some of the refugees were quick to resolve to physical conflict which made collaboration more challenging, especially members one of specific tribe; the Dinkas, as well as some reported cases of sexual violence.

"And then the bad thing, the bad way of it, is it is only for them just they like fighting. Sometimes you fight yourself with them, that is the major way they are. We are maybe not sometime having much challenge on it [coexistence with the refugees], it is

just this fighting. And if they start fighting yourself and then blood come out, that is the challenge only for me I was facing around with them.”

- *Male farmer 45y, host community, interview participant #29*

“One challenge is the Dinkas, they are too quarrelsome, they are troublesome, eh. They like fighting so much, it is the biggest challenge the Ugandans face with the refugees. Even the young Dinka are troublesome, they fight other people.”

- *Female interview participant, host community, focus group interview*

Amongst the refugee participants the most mentioned situation of violence was happening while collecting natural resources such as grass for the roofing of the grass thatch huts, which is the place of residence, timber for cooking or coal scraps. I'm not delving deep into this, but as informed my research assistant and refugee interview participants the Buganda tribe of West Uganda control most of the coal production and market in Uganda. In the spots they produce the coal they either give the refugees some coal in exchange of working with filling the sacks or allow them to collect the remaining coal scraps after they are done. Several of the refugee participants reported that while walking back to the settlements with these goods, they were attacked by the local Ma'di host population. That they had to give the coal, or they would be beaten.

“One is the issue of even the firewood. You go and maybe cut, they come and pick it off. Like there's another challenge, the last time even we got one, we came here, did you see somebody giving them, did you see the bagandas? Those from them, they have charcoal things here. After giving you, maybe you want to come home, they attack you on the way. The ma'di people here attack you on the way. They attack you on the way, they pick the charcoal away.”

- *Female farmer 35y, refugee community, interview participant #26*

"Then the another one is maybe this year we have been fetching the grass for constructing house, that one even totally. Once they get you in the bush, they will beat you and kill you in the bush while you are fetching those grass."

- *Female farmer 30y, refugee community, interview participant #13*

Lastly, the interview participants gave the impression that the relation with hosts was less challenging amongst the refugee's that also were of the Ma'di tribe, meaning South Sudanese Ma'dis. Other studies in northern Uganda also suggest similar situations in other settlements where the South Sudanese refugees are of the same tribal background as the host have better or easier relations and interaction (Gidron et al., 2022; Opono & Ahimbisibwe, 2023). The refugees with the Ma'di background reported fewer challenges with the host communities, and had no mention of any violent confrontations or situations. While there were also South Sudanese Ma'dis that had experiences with being prematurely evicted from rented land, the only one that had no experience with this was a Ma'di. The collected data also suggest that it is easier to acquire and rent land with better terms if you were Ma'di. Some of the participants had experience with borrowing land for free/for some of the produce or for work, but the price range for renting ranged between 100.000 – 150.000 Ugandan Shilling for one acre, and there were only "non-Ma'dis" mentioning the higher range price.

"Maybe the time when we have been working together in case now when you are lacking something they can also support you with it. And if they are also lacking something we support them with maybe in terms of kind things. Maybe the food stuffs."

"For us, it doesn't have much challenge with them, because since we have been doing this farming, no one came and interrupted me because of land issues. They are giving me land, and I am just working there."

- *Female farmer 33y, refugee community (Ma'di), interview participant #33*

6. Discussion

Following the presentation and analysis of the findings in Chapter 5, the paper is in this chapter stepping into a critical phase of the analysis, the discussion, which in Braun & Clarke's (2006) six phases of the thematic analysis is referred to as the final phase; *Producing the report* (Braun & Clarke, 2006). In this chapter, I will interpret and discuss these findings in the context of the relevant literature and research questions, as well as the implications, applications and limitations of these finding, ultimately aiming at contributing to a deeper understanding of the dynamics of intercommunity relationships and collaboration, knowledge exchange, and innovation in agriculture and food security in refugee host communities. This is discussed through the agricultural practices where knowledge exchange was demonstrated, the prerequisites for this interaction to take place, and the opportunities enabled through this.

The thesis explores three research questions. The first research question addresses how intercommunity interaction, relationships, and collaboration influence agricultural practices in the refugee- and host communities. This is the overarching research question, discussed in section 6.3, and is supported by the two following research questions. The second research question asks how materiality, competence and meaning within agricultural practices are expressed and shared between host and refugee communities. This is addressed and discussed in section 6.1. The third, and last, research question explores how challenges and opportunities related to intercommunity dynamics and the social aspects of agricultural practices influence the processes of adoption and innovation of these practices. This is discussed in section 6.2.

6.1. Materiality, competence and meaning in agricultural practices

With over 70% of the population in Adjumani being actively engaged in full-time peasant farming, and with refugees often originating from an agricultural background which engagement in agriculture is strengthened by the Ugandan government's strategy of self-sufficiency through the allocation of land and training programs, it is safe to assume that agricultural practices make up a significant part of the social context within these communities (GoU, 2006, 2010; Kang et al., 2023; Khasalamwa-Mwandha, 2021; UNDP, 2017). In this study's aim to investigate and understand the configuration of

practices that make up the social context of refugee host communities in Adjumani, having a focus on the agricultural practices, and practices related to these such preparation and consumption of the agricultural end-product, seems to be of the essence (Shove et al., 2012). These practices are not just livelihood activities, but are deeply embedded in the social fabric of the communities (Kang et al., 2023; Khasalamwa-Mwandha, 2021; Opono & Ahimbisibwe, 2023).

In line with SPT, as conceptualised by Shove et al. (2012), this study investigates the configuration of agricultural practices by examining the elements that constitute these practices; materials, competences, and meanings (Chapter 3.1). These elements serve as a lens through which the study seek to understand the ways in which agricultural activities are expressed, shared, learned, and habituated with cultural significance. Throughout the various stages of this research, including the preparatory phase, data collection, and data analysis, the focus has been on how these elements are expressed and interact in the local agricultural context (Chapter 4.1 & 4.2). Through the interaction, and connection, of these elements, and in the act of performance, the practices are revealed in the form of routinised behaviour (Shove et al., 2012). Following this, these elements have, through the findings of this study, been shown to be expressed in diverse ways across the variation of agricultural practices that are of focus in this research paper (as shown in Chapter 5, Figure 3, 4 & 5).

The element of materials in SPT highlights the significant role resources and physical conditions play in the configuration of practices, and refers to tangible objects, land, tools and technologies (Schatzki, 2001; Shove et al., 2012). The findings of this study show that materials are expressed with variation between the host and refugee communities regarding these agricultural practices, and that the access to land for agricultural production significantly influence the configuration and performance of practices in the social context. This is in line with the findings of the studies by Khasalamwa-Mwandha (2021), Kang et al. (2023), Ally et al. (2023), Berke & Larsen (2022) and the UNDP report on *"land Dynamics and Livelihood in Refugee Hosting Districts of Northern Uganda"* (2018). Members of the refugee communities are allocated a plot of land dedicated to both a place of residence and agricultural activities. However, this allocated plot of land is not sufficient to cover dietary needs (Berke & Larsen, 2022; UNDP, 2018).

Practices are to a large extent contingent on the structural conditions, as exemplified in how the formalised allocation of land to refugees creates conditions for and against certain types agricultural activities and crops. This is supported by other research from the same refugee-hosting context (Kang et al., 2023; Khasalamwa-Mwandha, 2021), which shows how agriculture is constrained by limited access to land.

Access to land influences what and how the refugees cultivate on the insufficient plot, and may stimulate alternatives for covering dietary needs. In one of the practices of focus, cultivation of plants in wetlands, also referred to as "swampy areas" (Chapter 5.3), the materiality is also expressed through access to land, as well as being expressed through the conditions of the ground/soil and the type seeds applied, highlighting adaptation to environmental conditions. Furthermore, this materiality is expressed in the practice of growing the cereal crop sorghum through seeds to a new variety, for both groups, but in this case most importantly the host group, and in the practice of purposive seed planting in rows through tools for land preparation, two-handed hoe and ox plough.

One of the most prominent actions done to solve the issue of land scarcity, as also suggested by Khasalamwa-Mwandha (2021), is through taking advantage of the social networks established with the host communities to rent additional land. An interesting effect of this is that it increases the interactions between refugees and hosts. Following the emphasis on the significance of social contact and relationship (social network) for the spread of practices (Shove et al., 2012), one could argue that the issue of land access leads to increased interaction, and thus increasing the potential for knowledge exchange and spread of practices. This does, however, need further research, as this study explores whether interaction, relationships and collaboration lead to knowledge exchange without focusing on the extent to which this exchange happens in the different arenas.

The element of competence in SPT highlights the necessity of specific knowledge in every practice, referring to skills, techniques, know-how and a shared understanding, specific to a particular context and practice, of what constitutes good and appropriate performance (Shove et al., 2012). While, as Shove et al. (2012) argue, a practice is formed and constituted through the interrelation of all of the three elements (Chapter

3.1), competences often have a significant connection to materials, such as how to use specific tools or how to apply agricultural inputs. As shown in the section above regarding materials, the findings of this study show that the competences of the refugees are expressed through knowledge of what and how to grow on the (insufficient) allocated plot of land.

Further connection between materials and competence is shown with the practices of focus in the knowledge exchange between the groups. In the practice of purposive seed planting in rows, the competences are expressed through knowledge of how to prepare land for sowing and the tools used in the process, as well as the process of sowing and what is gained through this technique. In the practice of growing in the wetlands, which this study suggests has both been a process of dual knowledge exchange and innovation, implicates knowledge of what to plant where and when, and how to prepare the wetlands for growing in them - even the knowledge that this is possible and what is gained through the practice. In the practice of growing sorghum, a new variety has for the host communities introduced both benefits (increased harvest, improved taste and texture) and new challenges (more prone to being attacked by birds and theft), which require knowledge to tackle the challenges to reap the benefits. This is expressed through knowledge of how to plant, including the technique of first planting in nursery beds and mixing different varieties, and when to plant, concerning migrating birds. Additionally, the knowledge of how to use and prepare the different agricultural end-products in consumption, such as how to use sorghum in the local dish "kalo" or in brewing the local alcohol "loguru".

The element of meaning in SPT highlights how practices are embedded in cultural norms, interpretations and symbolic association, and further refers to ideas, symbolic meanings, values and aspirations (Schatzki, 2001; Shove et al., 2012). Aspirations, which the findings of this study indicate play a significant role in the adoption of the practices accessed through knowledge exchange, have a strong connection to competences (Reckwitz, 2002). Aspirations are often informed by motivational knowledge, as for example, especially relevant to this case, knowledge that a certain practice leads to increased harvest influences aspirations of increased food security. Through this, together with the shown connection between competences and materials,

an example of a more concrete picture of how the link and interrelation of the three elements together make up a practice is revealed. The knowledge (competence) of how to make better use of the material surroundings (material) leads to motivational knowledge of increased output, which further leads to aspirations (meaning) of increased output that in itself motivates repeated performance of the actions involved. This cycle of materials, competences and meanings is then, through repeated performance, reinforcing the practice itself, in the end resulting in routinised behaviour.

In this study the meanings are shown to be expressed through a variety of aspirations. First, which is one of the most mentioned aspirations, that is also connected to all of the three practices of focus, is the aspiration of increased harvest, which is an aspiration with strong ties to aspirations of increased food security and better livelihood (through increased income). In the practice of growing in wetlands, this aspiration includes more continuous and stable access to food, through also being able to grow in the dry season. This also serves the meanings of purpose; having continuous meaningful activities throughout the seasons. In the practice of purposive planting seeds in rows, the aspirations include an aspiration of reduced workload, which frees up time to either do other productive or enjoyable activities. Lastly, following the wish of many of the refugees to repatriate (Khasalamwa-Mwandha, 2021), is the aspirations of transferring this knowledge to place of origin, in this case to South Sudan.

Furthermore, the meanings are also expressed through cultural aspects. This is expressed through preparation and consumption of the agricultural end-products, especially concerning the cereal crop sorghum where the findings show how the plant is used in food preparation and consumption, and alcohol production, as well as how the stem of the plant can be consumed like sugarcane.

Additionally, the findings show how the meanings are expressed in the practice of purposive planting in rows as cultural norms. The findings suggest that gender roles (norms) are challenged through the introduction of new tools (materials), two-handed hoe and ox plough, and the competences involved in planting in row, where the male population now to a larger degree participate in weeding of the fields, which, in the refugee communities, are traditionally seen as a task for the female population. Following Giddens (1984) understanding of structure as organised sets of rules and

resources that contribute to the production and reproduction of social systems (Giddens, 1984), and the argument by Shove et al. (2012) that *"activities are shaped and enabled by structures of rules and meaning, and these structures are, at the same time, reproduced in the flow of human action"* (Shove et al., 2012) (Chapter 3.2), the findings suggest that the adoption of the new practice, human action, is challenging the structures of rules and meaning, and thereby showing how structures are formed by action - practices (Giddens, 1984; Shove et al., 2012).

Regarding the extent to which these practices, and the elements that constitute them, are shared and adopted among the refugee and host communities in Adjumani, the findings demonstrate and suggest that knowledge exchange and adoption of practices is taking place in this context. The findings of the paper show, as presented in the analysis chapter (Chapter 5) and the discussions of the elements above, that through knowledge exchange, the elements of the practices purposive seed planting in rows and new variety of sorghum have been shared and adopted. Additionally, the practice of cultivating plants in wetlands not only illustrates further knowledge exchange but also shows that through a dual knowledge exchange innovation is taking place, highlighting adaptability and cooperative engagement between the communities. This intercommunity sharing and adaptation of agricultural practices underscore a dynamic interplay of materials, competences, and meanings, potentially contributing to enhanced agricultural productivity and intercommunity collaboration.

6.2. Challenges and opportunities in intercommunity dynamics and the social aspects of agricultural practices

Building on the discussion of social embeddedness and the interplay of materials, competences, and meanings in agricultural practices (Chapter 6.1), this section explores the challenges and opportunities in intercommunity dynamics within the refugee host context of Adjumani. In this study's endeavour to explore the challenges in intercommunity dynamics that might constrain the relationship between the refugee and host communities, and thereby the potential for knowledge exchange, a significant challenge not yet fully addressed in the existing literature is suggested through the findings; the prevalence of breached land use agreements.

As presented in the discussion on agricultural practices (Chapter 6.1) and in the background on land access (Chapter 2.3), the challenge of insufficient land access for the refugees in the settlements is a significant issue that is widely discussed and given much attention in relating literature (Berke & Larsen, 2022; Bjørkhaug, 2020; Kang et al., 2023; Khasalamwa-Mwandha, 2021; UNDP, 2018). A common strategy to deal with this challenge, which is also discussed in the previous section (Chapter 6.1), is for the refugees to take advantage of social networks to rent land from members of the host community, and it is in this act and interaction is where the challenge I refer to as a significant challenge occurs. When the refugees rent land from the members of the host community, it is mostly done through verbal agreements, and the findings of this study indicate that these agreements are fragile and often broken by the landowner. In contrast to the issue of land access, this is a challenge that appears to be a gap in the existing literature. While a few studies acknowledge that this "renting of land" takes place in this context (Kang et al., 2023; UNDP, 2018), this challenge seems to be unaddressed, except for one sentence in the study by Khasalamwa-Mwandha (2021) stating that *"… the breach of land use agreements was reported as a regular occurrence"* (Khasalamwa-Mwandha, 2021).

The findings of this study suggest that the challenge of breaches in land use agreements is of significant prevalence. Being prematurely evicted from the rented/borrowed land, meaning a breach in the contract, is something that the majority of the refugee participants in this study, 15 of 17, reported they had direct personal experience with. The findings further indicate that in a quite significant number of instances the refugees were given "virgin land" for hire, and would find themselves being thrown off the land after clearing the land in preparation for agricultural production, in some cases even after planting the seeds. This occurrence has created some fear in the refugee communities, including in standing up to the hosts in certain situations, such as if the animals of the landowner are eating the crops on the rented land, in fear of being thrown off the land. This, the challenge of breaches in land use agreements, can lead to increased insecurity and vulnerability for the refugees, and can strain the relationships between the groups, thereby constraining the possibility of knowledge exchange. However, it must be stated that the findings also suggest that even when faced with this challenge, most of the refugee interview participants reported good relations with the host community, and most continued renting land from host members.

Echoing the findings of the WFP analysis (2016) on the effectiveness of food assistance in the refugee context in Uganda, which suggests an increase in the prices of goods and services (WFP, 2016), the findings of this study show that there were concerns and frustration over how competing in the same marked has affected the prices of agricultural products, both agricultural- inputs and end-products. However, aligning with the findings of Khasalamwa-Mwandha's study (2021), which suggests economic benefits from the presence of refugees in Adjumani District through significant increases in infrastructure development and improved services through humanitarian and development initiatives, the findings of this study show that the economic benefits and opportunities, through improved infrastructure and service, new seed systems and the presence of development and aid partners, was significantly more expressed by the host participants than the challenge of changes in market prices.

The findings of this study also found that there were incidences and challenges regarding unwanted behaviour of the "opposite" communities, mostly in the form of acts of violence, theft and trespassing of grazing animals. Similar observations have been made by Khasalamwa-Mwandha (2021) and Ahimbisibwe (2018). Such violations of regulations and norms was a challenge expressed by members of both communities, refugees and hosts. Furthermore, there were frustrations expressed by host participants of the work ethic and capacity of the refugees, frustrations over the pace and amount of work the refugees were willing or able to accomplish within a day. Such sentiments have received little attention in existing literature related to refugee-host relations in Northern Uganda.

While the opportunities related to intercommunity dynamics and the social aspects of agricultural practices have been shown and discussed through various examples throughout the discussion so far, such as knowledge exchange and adoption of new practices (Chapter 6.1) and the economic benefits of the refugee presence discussed above, there was especially one unexpected opportunity identified in the research process that fosters interaction and collaboration, and thus knowledge exchange; the building of networks through "arenas for interaction and collaboration".

As presented in the Introduction (Chapter 1.) and Background (Chapter 2.3), the

Ugandan government's refugee policies and settlement approach, is a strategy employed to increase the refugees' self-sufficiency and create peaceful coexistence between hosts and refugees (GoU, 2006, 2010; Khasalamwa-Mwandha, 2021; WBG, 2016a). This strategy involves a program and rules of integrated service provisioning, that seek to include both refugee- and host communities in service provision, humanitarian aid and training programs provided by NGOs and governmental organisations (Khasalamwa-Mwandha, 2021; WBG, 2016a). The findings of Khasalamwa-Mwandha's study (2021) suggest that these efforts to promote coexistence actively promote positive interaction and understanding between refugees and host communities through joint training programs, cultural events, and dialogue sessions (Khasalamwa-Mwandha, 2021). Echoing this, the findings of this study suggest that NGOs and governmental organizations play a crucial role in facilitating interaction and collaboration between the groups. Through what I in this paper refer to as "arenas for interaction and collaboration", which refers to arenas such as joint training programmes, collaborative projects and saving groups, the groups are brought together, which, as argued in Khasalamwa-Mwandha's study (2021), foster positive interaction and understanding between refugees and host communities. This is further verified in the studies by Nambuya et al. (2018) and Opono & Ahimbisibwe (2023), where both studies suggest that the interaction in joint training and collaborative projects build positive relations between the groups (Nambuya et al., 2018; Opono & Ahimbisibwe, 2023).

The findings in this study indicate that in these arenas for interaction and collaboration, a significant network-building is taking place. This is yet another topic that is not yet explored in detail by existing literature. While Khasalamwa-Mwanda (2021) states that joint livelihood activities and projects is *"...further expanding the social networks for the refugees that enable access to other resources"* (Khasalamwa-Mwandha, 2021), it is not further explored in the study. The findings of this study suggest that these networks are actively used in the context of agriculture, and show that these networks are regularly used for when extra labour is needed on the farms and fields, for the refugees to rent land, and sometimes to sell the agricultural produce in bulk together (see chapter 5.4). To call someone to assist on the farm, an activity most of the participants on both sides reported they actively engaged in and is done interconnectedly between the groups, which locally is referred to as "leja leja". This practice is done in the form of doing work for something in return, usually cash, a part of the agricultural end-product

or seeds. This illustrates that these networks function in the daily agricultural activities, enhancing collaboration between the refugee- and host communities.

These findings, and indications given by the interview participants, suggest that these networks play a significant role in interaction, relations and collaboration between the groups. I would further argue that this interaction, working together on each other's farms, significantly increases the potential for knowledge exchange and the spread of practices. However, the full potential of these networks and the extent of their impact require further research. Future studies on the topic should aim to delve deeper into the dynamics of these networks, exploring how they are formed, function, and contribute to the long-term sustainability of refugee-host community relations and agricultural productivity.

6.3 Influence of intercommunity interaction, relationships, and collaboration on agricultural practices

This section addresses the primary research question of this study: *How do intercommunity interaction, relationships, and collaboration influence agricultural practices in the refugee- and host communities in Adjumani, Uganda?* The two sub-questions, discussed in the two previous sub-chapters (Chapter 6.1 & 6.2), are developed to inform this overarching research question, which is attempted through the analysis and discussions of them. The insights gathered from the analysis and discussions on materiality, competence and meaning in agricultural practices, and on the challenges and opportunities in intercommunity dynamics and the social aspects of agricultural practices, will now be synthesized to address the overarching research question.

The findings of this study suggest that informal networks are among the most significant channels for interaction between the hosts and refugees, as discussed in the previous section (Chapter 6.2). These networks are shown to often be built through the more formal channels, the arenas for interaction and collaboration. In addition to being facilitators for network-building, these arenas also serve as important channels for positive interaction and relations between the groups, which aligns well with the studies of similar context by Khasalamwa-Mwandha (2021), Nambuya et al. (2018) and Opono & Ahimbisibwe (2023). Further down the chain of proposed "cause and effect"; the

arenas for interaction and collaboration are set in motion and facilitated by the Ugandan government's refugee policies and settlement approach, which includes a strategy of integrated service provisioning – that all provisions, training and aid should include populations of both host- and refugee communities (GoU, 2006, 2010; Khasalamwa-Mwandha, 2021; Nambuya et al., 2018; WBG, 2016a).

Although Khasalamwa-Mwandha (2021) acknowledges the importance of these arenas for interaction and relation-building in the study, it is further argued that Ugandas settlement strategy results in a clustering of the refugees and *"...fails to bridge networks with the local communities"* (Khasalamwa-Mwandha, 2021). The findings of this study challenge this statement by suggesting that the settlement approach, together with the strategy of integrated service provisioning, is facilitating network-building between the groups. Through these networks the refugees and hosts increase their interaction, such as through "leja leja". As presented and discussed (Chapter 2.3 and 6.1), the allocated plot of land for the refugees is insufficient to cover dietary needs, and these networks are important channels for the refugees to rent additional land. This aligns with the findings of Khasalamwa-Mwandha's study (2021) in a similar context, but the study does however further argue that this lack of access to land is a significant constraint to local integration. While the findings of this study are not sufficient evidence to challenge this, it provides another view on the matter; that the lack of access to land impels the refugees to rent land from the members of the host community, which increases the interaction between groups. And as stated by Nambuya et al. (2018), *"There can be no integration without interaction".*

However, interaction is not synonymous with integration, and all interaction is not necessarily positive interaction. In this act of renting land, a prominent challenge is also identified in this study, the prevalence of breached land use agreements. These breaches are shown to potentially increase insecurity for the refugees, and constrain relation-building. Despite this, the findings suggest that most of the refugees have good relations with the host communities. This aligns well with other studies in similar contexts in Northern Uganda. In the study by Nambuya et al. (2018) about 70% of the refugee respondents, out of 328, reported positive relations as the outcome of the interactions with the host communities, with 10% reporting the opposite (Nambuya et al., 2018). This suggested positive interaction and relation between the hosts and refugees in the

region is further exemplified in the studies by Kang et al. (2023), Khasalamwa-Mwandha (2021) and Opono & Ahimbisibwe (2023).

In SPT, the significant role social networks play in the spread of practices is emphasised. The pathways through which practices evolve, spread and recruit new practitioners, depend to a great degree on social ties that bind individuals together (Shove et al., 2012). In this study these social ties are shown through these networks and arenas for interaction and collaboration. The social ties are further strengthened through the coexistence in a context where agricultural practices make up a significant part of the social context for both groups. This study explores how these social ties – interaction, relations and collaboration, influence the agricultural practices in refugee-host communities in Adjumani. This is explored through the study and analysis of three specific agricultural practices and the elements of which these practices are constituted; purposive seed planting in rows, cultivation of the cereal crop sorghum and cultivation of plants in wetlands.

These three agricultural practices were chosen to examine whether knowledge exchange is taking place in the meeting between cultures, and not something that was learned and adopted through the training programs. The findings indicate that these practices were performed and shared through how the communities themselves expressed the elements of the practices; the materiality, competences and meanings.

Through the discussion (Chapter 6.1) and analysis (Chapter 5) of these practices and the elements, the findings demonstrate and suggest that social ties between the groups has led to knowledge exchange and adoption of new practices. The refugees have learned and adopted a new way of planting the seeds, which has affected several of the aspects involved in the cultivation of crops. New tools have been adopted – two handed hoe and ox plough, and new competences have been acquired - land preparation, sowing technique and weeding/ application of pesticide. This has resulted in changes in the meanings tied to the practice – cultural norms tied to gender roles are challenged, where the action of weeding the field is now done by both genders, as opposed to the traditional culture of being a female activity (Chapter 5.1, Figure 3.). According to the participants, this practice as a whole has led to increased harvest and reduced the amount work required in the field.

While the host communities were cultivating the cereal crop sorghum prior to the arrival of the refugees, the interaction between the groups has led to the incorporation of a new variety of sorghum for the host communities. With this new variety (material), new competences has also been adopted; how to plant/transplant from nursery bed, when to plant to reduce attacks from migrating birds, and how to prepare and use the new variety in consumption. How the new variety is prepared and consumed affects the cultural meanings tied to the crop, such as in local side dish "kalo" or the local alcohol brew "loguru" (Chapter 5.2, Figure 4.). The host participants reported of increased harvest in this new variety, as well as better taste and texture.

Lastly, the practice of cultivating crops and vegetables in the wetlands was initially introduced as a new practice for most of the refugees through interactions with the host communities. The refugees adopted the practice and the competences it entails, such as making ridges for water flow and when to plant where. The meanings tied to this practice are aspirations of more continuous and stable access to food and through the meanings of purpose, having continuous meaningful activities throughout the seasons. Adjumani is a very warm and dry region during the dry seasons, which is half of the year divided over two season. This is also a social context where the majority of the population are full-time farmers that almost solely rely on rainwater for irrigation (UNDP, 2017). This makes growing crops and vegetables a very difficult task, which also results in a lack of activities to stay occupied in the dry seasons. Growing in the wetlands assist with both these challenges.

While the refugees at first was on the receiving end of this knowledge exchange, the reports from members of the host communities indicate that the refugees further developed the practice through innovation. Prior to the arrival of the refugees, the host communities were mostly growing sweet potato, sugar cane and cowpeas. The refugees, after adopting the practice, started cultivating vegetables in the wetlands, such as cabbage, kale, tomatoes and carrots. This was further picked up by the host communities, showing a dual or reflective knowledge exchange in the practice, highlighting adaptability and cooperative engagement between the communities.

Thus, the findings of this study suggest that through these networks, social ties,

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knowledge exchange and adoption of new practices is taking place between the groups. This further suggest that there is a significant link between intercommunity interaction, relationships and collaboration, and their influence on the agricultural practices practiced by both the refugee- and host communities in the respective refugee settlements in Adjumani, Uganda.

However, this study is not without its limitations, which emphasises the need for further research. There is a need for further research on the dynamics of the presented networks between refugee and host communities in the region. Future studies on the topic should aim to delve deeper into how these networks are formed, function, and contribute to the long-term sustainability of refugee-host relations and how they influence agricultural productivity. Additionally, the prevalent issue of breaches in land use agreements warrants closer examination. Further research should aim to understand the underlying causes of the fragility of these verbal agreements, investigating potential cultural, legal, or economic factors that may contribute to their vulnerability. To enhance the understanding and value of the opportunities gained through the implementation of progressive refugee policies and the settlement approach, the findings of this study calls for further research in similar contexts in other geographical regions.

6.4 Policy recommendations

This section builds on the findings of the study, as presented and analysed in the Analysis chapter (Chapter 5) and discussed in the previous sub-chapters (Chapter 6.1, 6.2 & 6.3). It aims to translate these findings into actionable recommendations for policymakers, non-governmental organisations, humanitarian aid and donor strategies, and governmental programs seeking to promote positive interaction and collaboration between refugee and host communities, ultimately leading to harmonious coexistence and improved agricultural productivity and food security within and surrounding refugee settlements.

Addressing Land Use Agreements
The findings of this study identifies the prevalence of breaches in land use agreements as a potential constraint to positive intercommunity interaction and relations, that also

influence the vulnerability and food insecurity of the refugees. Establishing formalised legal frameworks and standardised agreements enforced by local authorities could assist in mitigating the prevalence of this issue, and promote trust between communities. This could also involve the provisioning of mediation services to facilitate fair and transparent agreements.

Arenas for interaction and collaboration

The findings of this study indicate that arenas for interaction and collaboration, such as joint training programs, collaborative projects and intercommunity saving groups, are contributing to positive interaction, and the building of relations and networks between refugees and hosts. As demonstrated in this study, this can further promote knowledge exchange and innovation in agricultural practices, potentially leading to improved food security and livelihoods. Policymakers, NGOs, governmental programs and donor agencies, not just in the context of Northern Uganda, but also in other regions with similar socio-economic contexts, could potentially foster these opportunities through the implementation or scaling up projects or programs of intercommunity interaction and collaboration. This could involve allocating resources to support existing programs, developing new initiatives, or providing technical assistance to local organizations.

The settlement approach

While hosting the largest refugee populations on the continent, the Ugandan government's refugee policies and settlement approach, characterised by land allocation, integrated service provision, and freedom of movement, are widely praised as being among the most progressive on the matter in the world (Akello, 2009; Khasalamwa-Mwandha, 2021; Marco d'Errico & Donato, 2024; WBG, 2016a, 2016b). This strategy facilitates interaction and collaboration with the host communities, increased self-sufficiency, economic opportunities and increased agency. As demonstrated in this study, these interactions contribute to knowledge exchange and innovation in agricultural practices, potentially leading to improved food security and livelihoods.

Therefore, other host states with similar socio-economic contexts are encouraged to consider adopting and adapting elements of the Ugandan model and the settlement

approach. This does however require considerations of the local contexts and potential challenges, such as land and resource availability. Further research on the long-term sustainability of the Ugandan model and its adaptability to different settings will be important for informing a successful adoption of similar approaches in other regions.

7. Conclusion

This paper has explored and sought to gain insights into the dynamics of intercommunity relationships and collaboration, knowledge exchange, and innovation in agriculture and food security in refugee-host communities in Adjumani, Northern Uganda. The findings of this study demonstrate how interaction, collaboration and relationships between the refugee- and host communities have influenced the agricultural practices that make up a significant part of the social context in these communities.

Central to the findings is the significant role social networks have in facilitating interaction and collaboration. The study indicates that these networks have contributed to knowledge exchange and adoption of new practices between the groups, a phenomenon illustrated through the examination of the three agricultural practices of focus: purposive seed planting in rows, cultivation of the cereal crop sorghum, and cultivation of plants in wetlands.

The findings suggest that "arenas for interaction and collaboration", which refers to arenas such as joint training programs, collaborative projects and saving groups, are important for the building of these social networks, and that these arenas are further set in motion and facilitated by the Ugandan government's refugee policies and settlement approach.

The study, confirming existing literature on the subject, shows that the allocated plot of land for the refugees is insufficient to cover dietary needs, and suggests that these social networks are important channels for the refugees to rent additional land. In this act of renting land, a prominent challenge is identified in this study, the prevalence of landowners breaching land use agreements. These breaches could potentially increase food insecurity for the refugees, and constrain relation-building.

Overall, this study has demonstrated that Ugandas refugee policies and settlement approach are facilitating network-building between the refugee- and host communities, and that through these networks knowledge exchange and adoption of new practices are taking place between the groups.

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Appendix

Appedix 1:

Consent Form

Would you like to participate in the research project ?

Title of Study: Unity Through Agriculture? - Exploring the dynamics of intercommunity relationships and collaboration, knowledge Exchange, and innovation in agriculture and food security in refugee host communities in Northern Uganda

Researcher: Sondre Gripne Steine

Introduction

You are being invited to participate in a research study about the dynamics of intercommunity relationships and collaboration, knowledge exchange, and innovation within the realm of agriculture and food security in northern Uganda. This study is being conducted by Sondre Gripne steine, a master student at the Norwegian University of Life Sciences

Purpose of the Study

The purpose of this study is to understand how refugees and host communities collaborate on agriculture and food security in northern Uganda. The study will also explore the challenges and opportunities for collaboration, as well as the potential for knowledge exchange and innovation.

The research study and the data will be used for my master's thesis, which might at a later stage be translated into a published article. The data collected will not be used or accessible to anyone other than me, and will not be used for other research purposes.

Procedures

You are selected for this study because you are member and/or an actor within the host/refugee community, and because you participate in activities connected to agriculture and food security.

If you agree to participate in this study, you will be asked to participate in an interview. The interview will last approximately 30-60 minutes and will be conducted privately. During the interview, you will be asked questions about your experiences with agriculture, your interactions with the host/refugee community, and your aspirations for the future.

During the interview I will be taking notes in my notebook, and if you consent to it I will also be taping audio recordings. Notes and records will be stored in a safe space.

Risks and Benefits

There are no known risks associated with participating in this study. You are free to withdraw from the study at any time without penalty.

Confidentiality

All of the information that you provide during the interview will be kept confidential. Your name will not be used in any transcripts, published reports or presentations.

Short overview of privacy

We will only use the information about you for the purposes we have described in this document. We will treat personal data confidentially and in accordance with data protection regulations. You can read more about privacy below *.

Consent

I have read and understood the information provided above. I agree to participate in this research study.

Signature:

Date:

With warm regards

Student: Sondre Gripne Steine   Supervisor: Lars Kåre Grimsby

*In-depth about privacy – how we store and use your information

- It will only be me, Sondre, and my supervisor, Lars Kåre, that will have access to personal information.
- I will replace your name and contact information with a code that is stored on a separate name list separate from the other data, and it will be stored on a password-protected server.
- You will not be identifiable in the thesis or a publication.

What gives us the right to process personal information about you?

We process information about you based on your consent.

On behalf of the Norwegian University of Life Science, the privacy services at Sikt – a Norwegian knowledge sector service provider approved by the Norwegian Data Protection Authority, have assessed that the processing of personal information in this project is in accordance with the data protection regulations.

Your rights

As long as you can be identified in the data material, you have the right to:

- request access to the information we process about you, and to receive a copy of the information,
- have any information about you that is incorrect or misleading corrected,
- have your personal data deleted,
- lodge a complaint with the Norwegian Data Protection Authority about the processing of your personal data.

We will provide you with a reason if we believe that you cannot be identified, or that the rights cannot be exercised.

What happens to your personal data when the research project is completed?

The project is scheduled to be completed at the end of June 2024. Any identifiable data will then be deleted.

Questions

If you have any questions or would like to use your rights, take contact with:

- Sondre Gripne Steine: xxxxxxxxxx

- Lars Kåre Grimsby (supervisor): xxxxxxxxx
- Our data protection officer - Hanne Pernille Gulbrandsen: xxxxxxxx

If you have questions related to Sikt's assessment of the project, you can contact us by e-mail: personverntjenester@sikt.no, or by telephone: +47 73 98 40 40

Appendix 2:

Interview guide - Group discussion

1. What is the role of agriculture in your lives, and how does it contribute to the well-being of your family or community?
2. Can you describe the agricultural practices that are commonly used in this community?
3. What are the challenges and opportunities for agriculture in this community?
4. How do refugees and host community members collaborate on agriculture?
5. What are the benefits and challenges of collaboration?
6. What is your experience with the agricultural practices of the other community?
   a. How have these interactions influenced your own agricultural practices?
7. What are your hopes and aspirations for the future of agriculture in this community?

Questions that will be important to keep in mind for follow-up:

Can you tell me more about that?

Can you give me an example?

How has that affected you or your community?

What are your thoughts on that?

Appendix 3:

Interview guide – Individual – Host community participants

Background information:

1. What is your name, and how long have you been living in this community?

2. **What is your occupation?**
a. **If farmer: What kind of agricultural practices do you practice?**
b. **If other than farmer: Are you involved in agricultural practices, for subsistence or other reasons? If yes which?**
c. **How long have you been engaged in agricultural practices, and what kinds of crops or livestock do you primarily work with?**
3. **How much land do you have access to?**
4. **How many are you in your household?**
5. **Could you describe the landscape and climate of your home region, and your experience of practicing agriculture there?**
a. **Can you describe the challenges and opportunities they face in practicing agriculture in Northern Uganda (Adjumani)?**

Agriculture in the community:

6. **Can you briefly describe your involvement in agriculture and other means of securing food in this community?**
7. **What is your experience with practicing agriculture in this community?**
8. **Can you describe if and how you use the agricultural knowledge and practices you learned growing up? (divide) (specific)**
9. **What types of seeds do you use for planting and how do you get the seeds?**
10. **What crops do you plant where?**
11. **Can you describe any challenges you face in practicing agriculture here in Uganda (Adjumani), particularly regarding access to resources, the climate, or dynamics within the community that affect your agricultural activities? How have you tried to overcome these challenges?**

Collaboration and interaction:

12. **Can you describe any interactions and/or collaborations you have had with refugees in the context of agriculture?**
13. **What is your experience with the agricultural practices practiced by refugees?**
a. **How has this interaction affected your agricultural knowledge and practices?**
b. **What are your thoughts on the applicability of these practices and knowledge in Uganda?**
c. **In your interaction with the refugees, have they shared any unique agricultural practices or crops that they use?**
d. **Could you tell me about your experience with incorporating any of these into your own practices, if you have tried?**
e. **** Can you provide specific examples of how the interaction with the refugee community has influenced your agricultural practices or knowledge?**
14. **Could you describe any ways you collaborate or work together with members of the refugee community on different stages of the agricultural process? This could include land preparation, planting, harvesting, or even transporting and selling produce.**

15. **What is your experience with bringing/using your agricultural knowledge and practices in collaboration with refugees?**
16. **Have you shared or learned any valuable skills or practices from the refugee community related to agriculture? Which? This could include things like water management techniques, pest control methods, or traditional food preservation methods.**
17. **What do you perceive as challenges and opportunities for collaboration between host communities and refugees in the context of agriculture?**
18. **Looking ahead, what are your aspirations or future plans related to agriculture? How do you envision utilizing your agricultural knowledge and skills, and are there specific goals you aim to achieve?**

Appendix 4:

Interview guide – Individual – Refugee participants

Background information:

1. **What is your name, and where do you come from?**
2. **When did you arrive in Adjumani/ settlement?**
3. **How many are you in your household here?**
4. **How much land do you have access to?**
5. **What was your occupation in (country of origin)?**
   a. **(If farmer) What kind of agricultural practices were you practicing in (country of origin)?**
   b. **(If other than farmer) Were you involved in agricultural practices, for subsistence or other reasons? If yes which?**
   c. **How long have you been engaged in agricultural practices, and what kinds of crops or livestock did you primarily work with?**
6. **How was the landscape and climate like where you come from, and what is your experience of practicing agriculture there?**

Agriculture in the refugee settlement (and surrounding area):

7. **Can you briefly describe your involvement in agriculture and other means of securing food here in Uganda (Adjumani)?**
8. **What is your experience with practicing agriculture here in Uganda (Adjumani)?**
9. **Can you describe if and how you use the agricultural knowledge and practices you brought with you here?**
   a. **(* If insufficient) Can you provide specific examples of how you've applied your agricultural knowledge here in Uganda (Adjumani)?**
10. **What types of seeds do you use for planting and how do you get the seeds?**

11. **Which crops do you plant where?**
    a. **Has there been a change in which crops you use here compared to country of origin?**
12. **How has the way you practice agriculture changed after coming to Adjumani?**
    a. **(if needed) Are there specific new practices you have started to use after coming to Adjumani?**
13. **Can you describe any challenges you face in practicing agriculture here in Uganda (Adjumani)? (add if needed: particularly regarding access to resources, the climate, or dynamics within the community that affect your agricultural activities?)**
    a. **How have you tried to overcome these challenges?**

Collaboration and interaction:

14. **Can you describe any interactions and/or collaborations you have had with the host community in the context of agriculture?**
    a. **Do you collaborate or interact with host community for agricultural inputs? (explain; seeds, fertiliser, equipment, pesticides)**
    b. **Could you describe any ways you collaborate or work together with members of the host community on different stages of the agricultural process? This could include land preparation, planting, harvesting, or even transporting and selling produce.**
15. **What is your experience with the agricultural practices practiced by the host community?**
    a. **How has this interaction affected your agricultural knowledge and practices that you practice here?**
    b. **What are your thoughts on the applicability of these practices and knowledge in (country of origin)?**
16. **What is your experience with bringing/using your agricultural knowledge and practices in collaboration with the host community?**
17. **Have you shared or learned any valuable skills or practices from the host community related to agriculture? Which? This could include things like water management techniques, pest control methods, or traditional food preservation methods.**
18. **What do you perceive as challenges and opportunities for collaboration between host communities and refugees in the context of agriculture?**
19. **Looking ahead, what are your aspirations or future plans related to agriculture? How do you envision utilizing your agricultural knowledge and skills in the settlement, and if applicable, upon potential repatriation to your home country? Are there specific goals you aim to achieve?**

Appendix 5:

Interview Guide for Officials (OPM) and Community Leaders

Background Information:

- **For Officials (OPM):**

  - What is your role and responsibilities within the Office of the Prime Minister?

  - Could you briefly tell me about the main policies and initiatives implemented by the government to support refugee integration and agricultural development in host communities?

  - What are the challenges and opportunities you see in facilitating collaboration between refugee and host communities in the context of agriculture?

- **For Community Leaders:**

  - What is your position and responsibilities within the agricultural group/community?

  - Could you briefly tell me about the typical agricultural practices and livelihoods of the community you represent?

  - What are the existing mechanisms for knowledge sharing and collaboration within the community related to agriculture?

Refugee Integration and Agriculture:

- **For Officials (OPM):**

  - How does the government address the specific needs and challenges of refugees and hosts regarding agricultural practices and livelihood development?

  - What role do agricultural extension services and other related agencies play in supporting refugee integration and agricultural development?

  - Can you describe any successful examples of collaboration between refugees and host communities in the context of agriculture?

- **For Community Leaders:**

  - How has the arrival of refugees impacted the agricultural practices and livelihoods of your community? (If a refugee community leader: How has the interaction with the host community impacted the agricultural practices and livelihoods of your community?)

  - Are there any specific initiatives or programs in place to facilitate collaboration between refugees and hosts in agricultural activities?

  - What are the perceived benefits and challenges of refugees (hosts) sharing their agricultural knowledge and practices with the community?

Knowledge Sharing and Collaboration:

- **For Officials (OPM):**

  - What strategies or tools are used to promote knowledge exchange and collaboration between refugees and host communities in agriculture?

  - How do you address potential cultural differences and language barriers that may hinder collaboration?

  - What are the main obstacles to achieving sustainable and inclusive agricultural development in communities hosting refugees?

- **For Community Leaders:**

  - Can you describe any specific examples of knowledge sharing or collaboration between refugees and hosts in relation to agriculture?

  - What are the key factors that contribute to successful collaboration between the two groups in this context?

  - What role do you see your agricultural group playing in promoting collaboration and knowledge exchange in the future?

Future Aspirations and Opportunities:

- **For Officials (OPM):**

  - What are the long-term goals of the government regarding refugee integration and agricultural development in host communities?

  - What innovative approaches or initiatives are being considered to overcome current challenges and foster sustainable agricultural practices?

  - How can research and data contribute to improving policies and interventions related to refugee integration and agricultural development?

- **For Community Leaders:**

  - What are your hopes and aspirations for the future of agriculture in your community, including the role of refugees?

  - What do you think are the key elements necessary to achieve sustainable and inclusive agricultural development in the context of refugee integration?

  - How can researchers and policymakers better engage with your community to support your needs and aspirations in relation to agriculture?