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Livelihoods and Resilience Sector Working Group

Agricultural Value Chains Strategic Positioning Paper







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1.0 Introduction

Since 2019, the Livelihoods and Resilience Sector Working Group (LRSWG), chaired by the United Nations High Commissioner for Refugees (UNHCR) and World Vision, has been working to "enhance [the] coordination and operational effectiveness of livelihood programming in Uganda."¹ In May 2022, the LRSWG developed its Livelihoods and Resilience Sector Strategy for the Refugee Response Plan 2022-2025. This plan is aligned with the Government of Uganda's <u>National Development Plan III</u> and the <u>Jobs and Livelihoods Integrated Response Plan for Refugees and Host Communities in Uganda</u>.

Due to the protracted nature of displacement for most refugees in Uganda, refugee response actors in Uganda have increasingly been focusing on self-reliance, resilience, and nexus livelihoods programming that aims to link the humanitarian response to longer term development activities. This programming aims to provide refugees with the necessary skills to support their families, by providing them with training for and/or access to livelihood opportunities. These livelihood opportunities are intended to allow refugees to produce food and generate sufficient income for their families' daily needs and to invest in their families' future, to help ensure resilience and self-reliance. These opportunities will also allow refugees to contribute to the overall growth and development of their host country, Uganda.

The increased focus on self-reliance and resilience has seen some refugee response actors moving away from focusing exclusively on value chains beneficial for food security and nutritional support towards also including those that can act as income-generating activities (IGAs) and can potentially create off-farm job opportunities. In this strategic positioning paper, the LRWSG makes recommendations to the livelihoods and resilience sector on the agricultural value chains that should be prioritised in refugee response areas to promote income generation and job creation.

Whilst this shift is not meant to discourage refugee response actors from providing support for nutritionally advantageous value chains, or to pilot and explore new and alternative value chains, it should encourage actors to widen their activities to include value chains that have a greater potential to generate incomes for households.

Over 90%² of the refugees in Uganda live in rural areas.³ As such, agriculture is a vital livelihood activity. However, most refugees lack access to the knowledge, know-how, tools, and technologies needed to move beyond subsistence production and generate income. Currently, there are about 45 agricultural value chains being actively promoted in the refugee response in Uganda. Some have been prioritised due to their food security and nutritional value, whilst others are prioritised due to geographic reasons, ease of growing, government prioritisation, refugee's preferences and existing knowledge, and donor focus. Increasingly, refugee response actors are considering the potential for income and job creation when selecting value chains to focus on. It is worth noting that many income generating value chains are also those with good nutritional value, for example soya beans and poultry, and can be supported to produce volumes for home consumption and surplus for sale.

¹ See <u>Working Group: Livelihoods - Uganda</u>

² <u>https://data2.unhcr.org/en/documents/details/100476</u>

³ See Living Conditions of Refugees In Uganda May Become 'Untenable', Warns Food Aid Head - Health Policy Watch

The LRSWG members can play a central role in promoting and accelerating refugee farmers' IGAs and self-reliance. By consolidating their expertise, and prioritising certain value chains, LRSWG members can play an increased role in helping refugee farmers increase their knowledge; increase the quality and marketability of their produce; improve and develop off-farm, post-harvest activities; and improve their access to new markets.

As such, this strategic positioning paper provides a roadmap to support LRSWG members' efforts to increase farmers' income, improve their self-sufficiency, and support their progress from subsistence towards commercial production, in line with the LRSWG Refugee Response Plan.

1.1 Methodology

Between July and October 2022, on behalf of the LRSWG, U-Learn undertook a Value Chain Assessment (VCA) desk review to distil key information from 29 VCAs that cover the 13 refugee-hosting districts of Uganda and were produced in the last five years (2018-2022). This review was validated by the LRSWG members during a technical meeting in November 2022 and subsequently <u>published</u>.⁴

Following the VCA desk review, additional research was undertaken to review relevant publications from different sources including, the Government of Uganda (GoU), intergovernmental organisations, development organisations and academia. There was also a comprehensive mapping of additional value chain publications not focussed on the refugee response. This additional research phase was followed by analysis, by the LRSWG technical group, and U-Learn, of the strength and weaknesses of each identified value chain in general in Uganda and then specifically in terms of income generation and job creation for refugees and host community members.

This analysis was validated by livelihood experts from among the LRSWG, at a technical workshop held on November 24, 2022, at the Fairway Hotel in Kampala. The workshop was attended by 19 technical representatives from different refugee response actors, including the United Nations, international and national NGOs, GoU's Office of the Prime Minister, and the Ministry of Gender, Land and Social Development.⁵

In the workshop, the livelihood experts discussed the benefits and drawbacks of each value chain and then collectively selected the top value chains, based on their knowledge and experience. Ten value chains were selected for LRSWG actors to prioritise when designing and investing in projects or supporting refugees and host community members in their crop decision making. The ten were primarily chosen due to their income and/or growth potential and job creation potential. However, other factors, such as nutritional value, the farmers' cultural and personal preferences, and government prioritisation were also considered. Workshop participants also identified the overarching agricultural livelihoods challenges faced by refugees, host community members and refugee response actors and reviewed a comprehensive list of value chain crops currently being supported. This positioning paper is the result of this multistage process.

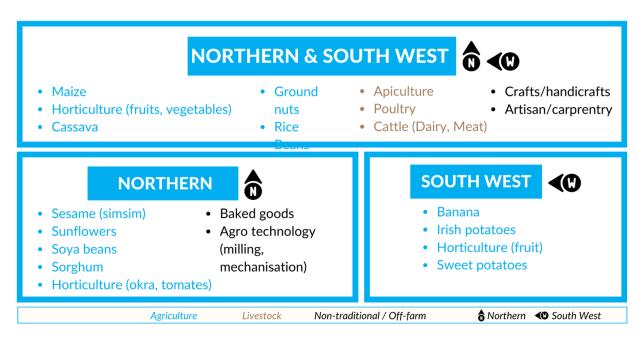
⁴ See U-Learn - <u>Value Chain Assessments in Refugee Hosting Districts in Uganda – A desk review</u>

⁵ Including the two working group chairs, three U-Learn staff (in person), and a U-Learn consultant (remote)

2.0 Prioritised Value Chains

Currently, refugee farmers grow over 40 types of crops, rear eight types of livestock, and undertake four types of off-farm activities. Figure 1 below highlights the main existing value chains in the Northern and Western regions, identified through the <u>VCA desk review</u>.⁶

Figure 1: Main value chains in the Northern and South West regions (from VCAs conducted in the last five years).⁷



Some crops dominate in specific regions, such as cotton and sesame in the North and potatoes and garlic in the South-West, but many crops, such as cassava and maize, grow in all regions. Some value chains are prioritised by GoU, for example, sweet potato, ground nuts, potatoes, beans, sorghum and cassava for food security,⁸ and coffee, tea, fish, cocoa, cotton, vegetable oil, beef and dairy for their agro-industrialisation potential and maize, and cassava for both.⁹

The LRSWG recommends the sector prioritise the ten value chains shown in Figure 2 and presented in alphabetical order.

The prioritisation was based on the following criteria:

- Income generating potential
- Off-farm job creation potential
- Being already in existence (i.e., the value chain is not need of additional research or piloting)

⁶ See footnote 3

⁷ Ibid

⁸ See <u>Seeds – National Agricultural Advisory Services</u>

⁹ See THIRD NATIONAL DEVELOPMENT PLAN (NDPIII) 2020/21 – 2024/25

There are many ways to prioritise and select value chains beyond the three criteria used to select the ten chains the LRSWG is recommending. Other factors that are often considered include: **nutritional value**, for example this would prioritise orange-fleshed sweet potato, and the **high potential of new value chains that could be introduced to the refugee hosting areas**, but for which further research and/or piloting is needed, for example this would prioritise chia seed and upland rice. While these two reasons to select and prioritise value chains are valid, they were not included as the primary selection criteria in this strategic positioning paper.

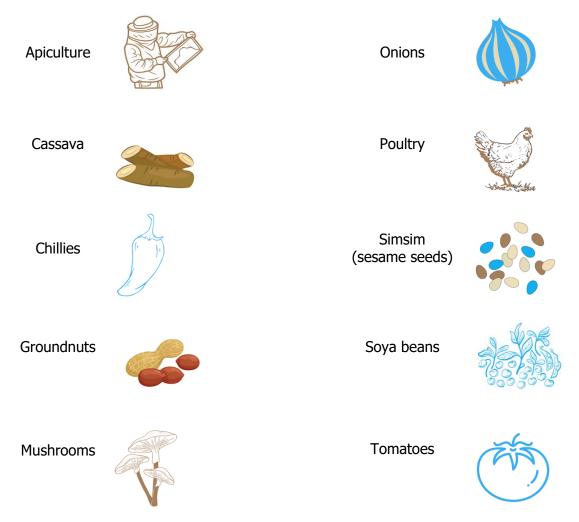


Figure 2: Prioritised value chains

2.1 Apiculture



Apiculture is currently being implemented in the following settlements: Rwamwanja, Kyaka II, Kiryandongo, Palabek and Rhino Camp and Adjumani Settlements.¹⁰ All ecosystems in Uganda are suitable for beekeeping and bees was a priority commodity in the GoU's Agriculture Sector Strategic Plan II 2015/16-2019/20.¹¹

Apiculture has various advantages:

- It has many outputs.
- It requires relatively little land.
- It benefits from a solid local and national market.
- It has great export growth potential as Uganda is currently one of only four African countries allowed to export honey to the EU.¹²
- Its products provide nutritional and medical value and can help to increase crop yields through pollination.
- It can be combined with other activities and responsibilities so is a useful IGA for those providing childcare such as childcare and home care.
- It does not have "complex" value addition demands, thereby making it "easy and cheap to take on".¹³
- It has good income generation potential, generally and especially from the higher value outputs such as pollen, venom, and wax.¹⁴
- It can support economically marginalised groups, including women and girls.
- Has a good secondary income generation potential, e.g., artisans are needed to build the hives.¹⁵

To maximise the potential of apiculture in the refugee context in Uganda, some challenges need to be addressed, including the current fragmentation of the value chain; the limited extraction and post-harvest knowledge and technology and the high cost of the extraction and processing equipment.¹⁶ In addition, product quality and quantity remains an issue and the available technical support and producer knowledge is limited. The overuse of agrochemicals in other value chains should also be addressed as it negatively impacts bees. These challenges may be turned into

¹⁰ LRSWG Value Chain Workshop, <u>KIRYANDONGO DISTRICT Investment Profile</u>; <u>ARUA DISTRICT</u>; <u>YUMBE DISTRICT</u>; <u>KYEGEGWA DISTRICT</u>; <u>ADJUMANI DISTRICT - Investment Profile</u> and Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished ¹¹ See Kyeqegwa MVCA Report Updated Sep 18 2020.pdf

¹² See Honey Export Business Opportunity For Bee-keepers – Harvest Money

¹³ LRSWG Value Chain Workshop

¹⁴ See Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished and <u>Value Chain Analysis of the Honey Sector Report | United Nations</u> <u>Development Programme</u>

¹⁵ See footnote 10 and <u>Meet 20-year-old Alison, a South Sudanese refugee living in Uganda, who now earns a living</u> selling beehives | EU Emergency Trust Fund for Africa

¹⁶ See Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished and footnote 10

opportunities for enhanced collaboration, knowledge exchange, capacity-maximisation, and innovation.

Apiculture is considered a promising value chain to support. Support to this value chain could include women's resilience activities; training; investments in tools, skills, and extraction and post-harvest technologies; and facilitation of production for export, including through access to markets.

2.2 Cassava



Cassava is currently grown in Rhino Camp, Kyangwali, Bidi Bidi, and Nakivale Refugee Settlements and the refugee hosting districts of Arua, Kamwenge, Hoima, Kyegegwa, Koboko, Yumbe, Adjumani, and Moyo.¹⁷ It is one of GoU's priority food crops (along with maize and bananas) and the only value chain chosen by LRSWG that has been prioritised by GoU for its "significant benefits

on food security and nutrition."¹⁸ According to the National Development Plan III, cassava "[i]n particular,... is prioritized due to the ease with which it can be produced massively, drought resistance, potential for multi-industrial use and food security".¹⁹

The advantages of cassava include:

- It has government prioritisation, which means it is likely to benefit from greater institutional support and collaboration opportunities.
- It is already widely consumed by refugee and host community households.²⁰
- The internal market for cassava, especially in the North, is robust and there is a strong local and export market.²¹
- It is a perennial crop that grows at all altitudes, can adapt to poor soil, and is fairly drought resilient.
- It can be intercropped, which is beneficial on refugees' small plots of land.²²
- It has many processing opportunities, such as chips, flour, starch, and paperboard, with chips and flour being the strongest end products in terms of market.²³

However, for cassava to be grown for more than just household consumption, significant amounts of land are needed for production, which is a notable obstacle for refugees. Additionally, processing must take place within 48 hours of harvesting and many refugees are unable to easily access processing facilities. Inconsistency in the quality and quantity of the outputs – processed

²² See <u>Identifying commodity-specific priority investments in selected districts of Uganda</u> and <u>Paving the way for better</u> jobs and improving livelihoods for refugees and host communities in Arua, Uganda

¹⁷ See <u>Arua District</u> ; <u>Koboko District</u> ; <u>Kyegegwa District</u>, <u>Adjumani District - Investment Profile</u>

¹⁸ See footnote 8

¹⁹ Ibid

²⁰ See <u>Consumer And Market Study</u>

²¹ This is in part due to the fact that cassava is not included in the WFP food rations in the North alongside the under supply that already exists in the market. Local export markets include Burundi, Rwanda, Kenya, and South Sudan - <u>Value Chain Analysis of the Cassava Sector Report | United Nations Development Programme</u>

²³ See Paving the way for better jobs and improving livelihoods for refugees and host communities in Arua, Uganda

or raw - along with poor post-harvest handling and processing that leads to product deterioration all have an impact on the crop's end value.

The livelihoods and resilience sector can maximise its role cassava production and processing by facilitating new or improved marketing channels for cassava products, such as chips, in Uganda and neighbouring countries, and by investing in activities that improve processing methods.

2.3 Chillies

Chillies are currently grown in Rhino Camp, Adjumani, Nakivale, and Isingiro refugee settlements.²⁴

Advantages of chillies include:

- They have high potential for income and profit generation as demand is currently not met.²⁵
- There is a potentially significant export market.²⁶
- Even poor-quality produce can be sold, as a ground or dried product.
- They have a short production cycle and do not require much pesticide use or expertise.²⁷
- They can be grown on small portions of land and can be intercropped.²⁸

However, a large amount of water is needed to grow chillies, and due to the high spoilage rate, some capacity-building will likely be required in post-harvest storage, transportation, and processing. There is also a need for investment in high quality seeds and product handling and transport. Additionally, there is a lack of clear understanding of the market and the market access requirements.²⁹

Despite the challenges, there are opportunities for the sector, including increasing value additions opportunities as well as the uptake of improved varieties that will help increase both yields and resistance to pests and diseases.

2.4 Groundnuts



Groundnuts (commonly known in Uganda as G-nuts) are currently grown in Rwamwanja, Bidi Bidi and Palabek refugee settlements and in Adjumani, Arua, Moyo, Lamwo, Kyegegwa districts. They are a high value, staple crop with commercial value and commercial potential in Uganda.³⁰ Groundnuts are

²⁹ Ibid

²⁴ LRSWG Value Chain workshop

²⁵ Ibid and <u>Commercialising chilli production</u>

²⁶ See footnote 12 and <u>The Uganda vegetables and fruit sector</u>

²⁷ See footnote 12

²⁸ Ibid

³⁰ Ibid; <u>Arua District</u>; <u>Moyo District Investment Profile</u>; <u>Lamwo District</u>; <u>Kyegegwa District Investment Profile</u>; <u>Adjumani</u> <u>District - Investment Profile</u>; <u>Feed the Future (USAID) Uganda Inclusive Agriculture Markets Activity – Palabek Refugee</u>

currently the third most common cultivated crop by smallholder farmers in Uganda.³¹

Advantages of groundnuts include:

- High yields can be achieved on relatively small amounts of land.
- They require less maintenance than other crops.
- They increase the nitrogen available in the soil.
- They grow well in a variety of different soil types.
- They have high nutritional value.
- There is a good market for the raw product (after sun drying, cleaning, and shelling) or processed (as an oil or paste).
- There is potential for more export, with some already exported to Kenya.

Several obstacles will have to be tackled to leverage this value chain for income and profit generation. Obstacles include the fact that farmers are currently unable to produce enough groundnuts to achieve a significant profit and lack the capacity to optimise yields. Groundnuts are also less resilient to climate change than other crops. For example, the groundnut yield is impacted by a lack of rain, and irrigation may be required as Uganda's rainfall patterns change. In addition, groundnuts are highly vulnerable to diseases and pests throughout all production stages, and poor post-harvest handling can result in contamination by aflatoxins.³²

To optimise this value chain, the livelihoods and resilience sector can support improvements in groundnut production, quality, and value addition, including by focusing on improving access to quality inputs, promoting processing, and facilitating market linkages.

2.5 Mushrooms



Mushrooms are already being cultivated in Kiryandongo, Rwamwanja, Adjumani, Rhino, Imvepi and Bidi Bidi refugee settlements.³³

Advantages of mushrooms include:

- They are quick to mature, relatively simple to grow, and high yielding.
- They are not labour intensive and do not require large amounts of land.³⁴
- There is strong market potential as the market is significantly underdeveloped.³⁵
- Production has low start-up capital and input costs.³⁶
- They have high nutritional value.
- They can be dried, which increases their post-harvesting longevity and reduces spoilage.

<u>Settlement Market Systems Assessment Report</u> and Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished

³¹ See Agricultural finance and the youth. Prospects for financial inclusion in Uganda, 2020

³² See footnote 12

³³ Ibid and <u>Refugee Empowerment in Uganda through Regenerative Approaches: Rwamwanja Rural Foundation</u>

³⁴ Ibid

³⁵ See <u>Mushroom Growing – EcoAgric Uganda</u>

³⁶ See footnote 12

Due to the particularity of mushroom growth medium (it must be high decaying plant matter), there is currently a lack of mushroom providers in Uganda. Anyone wishing to engage in this value chain will need to also expand or support the expansion of the growth medium supply chain. In addition, there is a scarcity of the required raw materials and other inputs, for example, quality spawn is not always available.³⁷ Mushrooms are prone to disease and can easily spoil if not dried, so post-harvest handling is an important step in the value chain.³⁸

To optimise this value chain, the livelihoods and resilience sector can support improvements in input access, product quality, post-harvest processing, and market linkages.

2.6 Onions



Onions are currently grown in Adjumani, Palabek, Kiryandongo, Palorinya, Bidi Bidi, Imvepi, Rhino Camp, Omugo refugee settlements and Moyo, Obongi, Terego, Madi Okollo and Koboko districts.³⁹

Advantages of onions include:

- There are already internal and export markets where a clear supply and demand gap has been identified.⁴⁰
- They are relatively quick to grow, around two months.
- They do not require large amounts of land to generate a profit.⁴¹
- They are hardy. They can be grown in various climates, in both the rainy and dry seasons, and can tolerate low temperatures.⁴²
- They are a popular, high-value crop.⁴³

Spoilage rates for onions are high as the newly harvested bulbs are easily damaged, which induces rot. The bulbs need several weeks to dry before storing, which can be a challenge for refugees due to the lack of available space and drying facilities.⁴⁴ Onions are considered to be labour intensive to farm well.⁴⁵

³⁷ Ibid and footnote 34

³⁸ See footnote 12

³⁹ See <u>Okra, onions, peas: Could permagardens help solve refugee malnutrition? | Devex; Planting Seeds of Hope in Uganda | Action Against Hunger</u>; World Vision, ZOA, SNV, and RICE West Nile. Security, Protection and Economic Empowerment (Supreme) Project In Terego, Madi Okollo, Obongi, and Moyo Districts-Agricultural Value Chain Study Final Report. Rhamz International Ltd. (2021) Unpublished; Agricultural farming proves an effective long-term strategy to boost livelihoods and alleviate hunger among refugees | Uganda | World Vision International; Sewing seeds of hope – MAF supports South Sudanese refugee farmers - Mission Aviation Fellowship; World Water Day: Growing Vegetables Amid Water Scarcity in Refugee Settlements in Uganda - East-West Seed Knowledge Transfer; A refugee watering her onion garden in Rhino Camp settlement Uganda Radionetwork; Palorinya Mass Farming Project; KOBOKO DISTRICT ⁴⁰ See Market-based development of the horticulture value chain for refugees and host communities in Isingiro District, Uganda

⁴¹ See Growing Onions As A Business – Harvest Money

⁴² See How to grow Onions and Earn 26M in 2 Months » Ugandanz News Website

⁴³ See <u>Danida – NURI Upside – Climate smart agriculture training manual – refugee women groups</u>

⁴⁴ See <u>All you need to know about growing onions | Monitor</u>

⁴⁵ See footnote 41

2.7 Poultry



Some refugee households already keep poultry; however, they are mainly kept for household consumption. Poultry is recognised by refugees as being a productive asset, but since their displacement, many have lacked the money to buy and keep chickens. Refugees undertake poultry farming in Palorinya, Bidi Bidi, Imvepi, Kiryandongo, Rhino, and Rwamwanja refugee settlements.⁴⁶

Advantages of poultry include:

- They are cheaper to take care of than other livestock.⁴⁷
- There is a ready market for most poultry-based products, especially in the West Nile region.⁴⁸
- They require limited land.
- Local and imported poultry both have a relatively short production cycle.⁴⁹
- They can provide a reliable source of income and, with investment, can give refugees the opportunity to start and grow a business.⁵⁰
- Poultry by-products (e.g., manure) can be used as fertiliser in agricultural production.
- Poultry is currently a cheaper source of protein.⁵¹
- Many refugees already own poultry for household consumption or have knowledge on how to keep them from their home countries this makes it easier to scale up their poultry ownership to become an IGA.

Expansion of poultry farming to commercial capacity is constrained by the lack of veterinary services and medicines, particularly in refugee settlements. This lack of veterinary support makes poultry farming risky, as complete loss can occur if there is a disease outbreak.

To optimise this value chain, the sector can facilitate refugees' access to birds ready to start producing eggs to avoid the slow, higher risk start-up⁵² and improve access to veterinary services and medicines.

- ⁵¹ See footnote 19
- 52 Ibid

⁴⁶ See <u>How will chicken farming assist refugees in northern Uganda?</u> <u>On the Rock Poultry Project - Bright Hope World</u> <u>Partnerships and</u> Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished

⁴⁷ See <u>How a Chicken project is renewing hope in Uganda - Mission ONE</u>

⁴⁸ Mercy Corps. Market Assessment: 1st Phase of the DREAMS Market Assessment. (2022). Unpublished and ZOA Uganda. Final Labour Market Report: Short course/Labour Market Survey, Business Planning and Course development with BTVET institutes under the ZOA Uganda program in West Nile. Mubarak, B and Nkamuhebwa, W. Unpublished ⁴⁹ See <u>How will chicken farming assist refugees in northern Uganda?</u> On the Rock Poultry Project - Bright Hope World Partnerships

⁵⁰ See footnote 19 and Chickens for a better future in Uganda's refugee settlements | Caritas International Belgium

2.8 Simsim (Sesame)



Uganda is currently the second largest producer of simsim (also known as sesame) in Africa. Almost 94% of Uganda's simsim is produced in northern Uganda.⁵³ Simsim is categorised as an oil crop and is well suited to the climate in Arua, Moyo, Lamwo, Terego, and Yumbe districts. It is a staple food in Adjumani, which has surplus production. Simsim is already being grown by refugees in Rhino Camp and Imvepi refugee settlements.⁵⁴

Advantages of simsim include:

- It is currently prioritised by GoU as an export crop.
- It has a good internal market, with around 65% of the total produced being sold to markets rather than being for household consumption.⁵⁵
- It has high profitability and there is significant growth potential for both the oil and unprocessed seeds, due to the internal and export market demand and the current low supply.⁵⁶
- It is drought tolerant and well-suited to the low rain, warmer climate of northern Uganda.⁵⁷
- It is relatively quick, cheap, and easy to grow and has at least two cropping cycles per year.⁵⁸
- It can be easily processed into an oil or a paste as well as sold unprocessed.⁵⁹

Challenges to simsim production include the facts that it requires larger amounts of land for cultivation than most refugees have access to, and that seed quality limits output. It also has a high chance of spoilage if there is excessive rain, which might be likely given the increasingly unpredictable weather patterns.⁶⁰ Currently, poor harvest and post-harvest handling practices result in about 25% of production being lost.⁶¹

The sector can support this value chain by increasing refugees' access to capital, facilitation of improved technology, and improvement in value chain governance to support off-taking, value addition at local level and marketing, which will contribute to farmers' market diversification.

⁵³ See Improved simsim offers good yield | Monitor

⁵⁴ See Document - Markets and Value Chain Development Assessment Report: Adjumani

⁵⁵ See Footnotes 12; 40; United Nations Development Program (UNDP). Draft Market Value Chain Assessment for the Farm and Non-farm Enterprises in Northern-Uganda. Adjumani, Lamwo and Obongi. Volume II, Value Chain Analysis. J. Okelai, The JP Management Foundation Ltd. (2021) unpublished

⁵⁶ See footnotes 12, 22, 52, 63 and Cash in on huge market for sim | Monitor

⁵⁷ See footnote 12

⁵⁸ See footnote 12 and <u>Simsim, the wonder crop minting money in dry North | Nation</u>

⁵⁹ See footnote 12

⁶⁰ Ibid and footnotes 40 and 52

⁶¹ Ibid

2.9 Soya beans



Soya beans are already being grown, primarily for commercial purposes, in Lamwo, Yumbe districts and Palabek, Rhino Camp and Bidi Bidi refugee settlement.⁶² They are also an emerging crop for refugees in Adjumani.⁶³ In Uganda they are categorised as an oil crop.

Advantages of soya beans include:

- They can almost double the initial investment.⁶⁴
- They can be sold processed as oil or unprocessed increasing the output opportunities.
- They will grow in most soils.
- They are especially suited to smallholder farmers as they can be produced in both cropping seasons, have a high cropping capacity, and are not labour intensive.
- They can be easily harvested, stored, and prepared for market.⁶⁵
- They increase soil fertility, through nitrogen fixation.
- They reduce pests and diseases that affect other crops.⁶⁶
- There is a strong export market potential. For example, Kenya "has potential to absorb more soyabean cake from Uganda."⁶⁷

Pest and disease management remains a challenge for soya bean production, and the use of poor seed varieties can lead to loss.⁶⁸

To optimise this value chain, the sector must address existing challenges by supporting the provision and accessibility of, and investing in, high quality seeds and by facilitating access to post-harvest equipment and technologies, such as those for oil processing. The sector should also strengthen the capacity of farmers and agricultural extension service providers to carry out resilient and sustainable agricultural practices, for example, by providing training and ongoing support.

2.10 Tomatoes



Currently, most of the tomato production in refugee settings is for household consumption only. However, there is scope for expanding this value chain for commercial purposes. In Adjumani, tomato production is mainly undertaken by refugees. Tomato production has been prioritised by the local government in Kyegegwa, where over 90% of refugees grow tomatoes in their backyard

⁶² See footnote 12 and <u>YUMBE DISTRICT</u>

⁶³ See footnote 40 and ADJUMANI DISTRICT - Investment Profile

⁶⁴ Document - Uganda - Agriculture Value Chain Study presentation

⁶⁵ See footnote 12 and <u>Uganda Impact Assessment of the Small and Medium Agribusiness Development Fund (SMADF)</u>

⁶⁶ See footnote 40

⁶⁷ Ibid

⁶⁸ See footnote 40

gardens.⁶⁹ Tomatoes are also grown in Imvepi, Oruchinga, Palorinya, and Kiryandongo refugee settlements.⁷⁰

Advantages of tomatoes include:

- They are part of a short value chain.
- They grow on small plots on a variety of terrains.⁷¹
- They are in high demand.⁷²
- There are at least two growing seasons per year, subject to rainfall.⁷³
- They can double the initial investment.⁷⁴
- The market price is more stable than for some other crops, such as maize.
- There is a clear internal market demand, especially in the North, which currently imports most of its tomatoes. For example, Adjumani produces only 40% of its local demand and purchases the deficit from neighbouring districts.⁷⁵
- The export market is well established, with Kenya being the primary importer, followed by the Democratic Republic of the Congo. Exports to Burundi, Rwanda, and South Sudan are also established.⁷⁶
- If post-harvest challenges, such as spoilage, can be resolved, there is potential to increase exports to neighbouring countries.⁷⁷
- Processing opportunities, for example paste and ketchup, have not yet been sufficiently explored.
- Seeds are readily available.
- They are an important income source for women, who carry out over 65% of all tomato trade activities, and for youth.⁷⁸

However, tomatoes require a lot of water to grow, and are highly susceptible to pests and disease. Farmers' use of pesticides is often inexpert and can result in pesticide resistance, local pollution, health risks, and contamination in the tomatoes.⁷⁹

Major constraints to this value chain are post-harvest handling, storage, and transport. Farmers often lack the necessary skills or equipment for value addition or post-harvest processing, and

⁶⁹ Ibid and Kyegegwa MVCA Report Updated Sep 18 2020.pdf

⁷⁰ See <u>Planting Seeds of Hope in Uganda | Action Against Hunger; From Relying on Food Rations to Growing Acres of Food | Oxfam in Uganda ; Palorinya Mass Farming Project; Greenhouse farming changes lives in Oruchinga Refugee settlement | by UNDP Uganda | Medium</u>

⁷¹ See footnote 40

⁷² See footnote 42

⁷³ See <u>The Uganda vegetables and fruit sector</u>

⁷⁴ See footnote 63

⁷⁵ See MOYO DISTRICT Investment Profile

⁷⁶ See footnote 40 and Ibid

⁷⁷ Uganda Exports of tomatoes, fresh or chilled to South Sudan - 2023 Data 2024 Forecast 2014-2020 Historical

⁷⁸ See footnote 10

⁷⁹ Ibid and footnote 10

this combined with poor post-harvest handling and storage, there can be significant spoilage (currently around 25%).⁸⁰

To boost this value chain, the sector can invest in the facilitation of greenhouse technologies, irrigation (as most tomatoes are currently rainfed), the creation of aggregation centres, improvement of post-harvest handling and packaging, and the provision and adoption of good quality inputs, such as fertilisers and hybrid seeds.⁸¹

The ten priority value chains all have significant potential to provide refugees and host communities with the ability to generate sufficient income to reduce their reliance on humanitarian assistance, support their fuller integration into the wider economy, and enable them to live self-sufficient and dignified lives.

However, there are overarching challenges that, unless addressed, will hamper the realisation of this potential. Many of these challenges are beyond the scope of LRSWG members and overcoming them will require a concerted effort by all stakeholders, including local and national government, donors, private sector actors, and development partners. Realising the potential of the ten priority value chains will have benefits for refugees and host communities alike.

3.0 Overarching Challenges and Opportunities Across the Prioritised Value Chains

For agriculture to become a viable IGA for refugees or host community, they need to be able to produce surplus outputs of sufficient quality. They also need to be able to sell their surplus for a price that gives them enough money to pay for their day-to-day expenses, have a savings buffer for unpredicted shocks, and to invest in their agricultural production.

The VCA desk review, as well as the analysis of other resources, highlighted consistent challenges across the various value chains. These challenges were presented to the November workshop participants, with the objective of identifying sector led and priority actionable and achievable solutions to those challenges which could be addressed by LRSWG members.

Some of the identified challenges were excluded from the in-depth discussion by workshop participants as they were either already being researched, would merit further research and/or learning or were recognised to be beyond their capacity of scope.

- Private sector engagement. Excluded as it is being addressed in a separate LRSWG workstream.
- Knowledge management and gender. Excluded as they are cross-cutting issues.
- Structural issues, such as market infrastructure, physical infrastructure, climate change, energy and water, extension service access, and geography and topography. Excluded as they were deemed to be beyond the scope and/or capacity of LRSWG members.

⁸⁰ Footnote 40

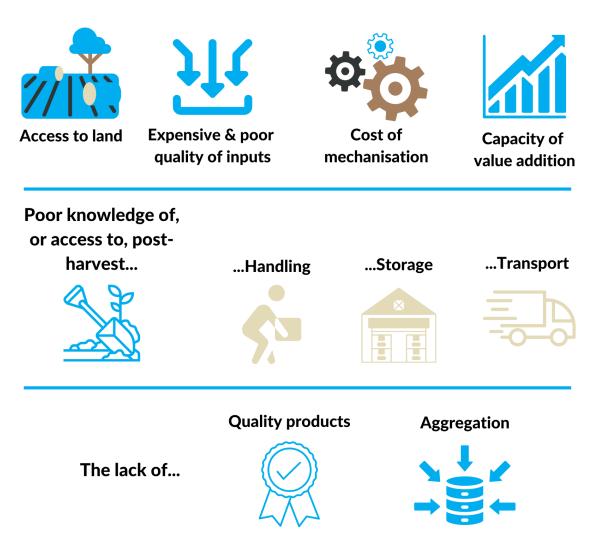
⁸¹ See footnote 10

• Cross-sectoral issues, such as market linkages, access to finance, and climate smart agriculture. Excluded as these have already been widely adopted.⁸²

What remained were nine challenges that the LRSWG sector can and should tackle to be able to meaningfully and effectively promote durable livelihood solutions for refugees and host communities, advance self-reliance, and contribute to individual, community, and systemic resilience.

Figure 3: Identified challenges

Some challenges to be tackled by the sector:



⁸² Extensive work has already been done by the Cash Working Group and U-Learn on refugees' access to finance, for example, <u>Financial Services in the Uganda Refugee Response – An assessment of users' perspectives</u> <u>infographics</u> and the <u>CCA technical brief</u> also see additional U-Learn Uganda's publications available on their <u>website</u>

3.1 Access to land



Access to affordable land that is large enough and of sufficient quality for commercial production, has been a consistent challenge for refugees in Uganda.

The plots of land the refugees are given on arrival have shrunk with each new influx and what land they have can have poor quality soil or be unsuitable for larger scale farming. This is especially the case in the North, where the land is

often difficult to cultivate and/or exhausted. In the North, land for refugees is primarily provided by the host community who own it through the customary land tenure system. Land for farming is generally available in refugee hosting areas, however, refugees' access to fertile arable land remains limited as there are no clear procedures for accessing farmland and land-related disputes are common. In the South-West, the land available to refugees has been gazetted by GoU and any additional land is privately owned and expensive to rent. It is worth noting that refugees are legally allowed to own land in Uganda as leaseholders. This means renting land should not be the only option considered for and by refugees, although it is currently the most common.⁸³

LRSWG members should work with the Office of the Prime Minister and District and Local Governments to facilitate refugees' access to more and better quality land. Without this land, most refugees will be limited to household production level agriculture with, at best, a small surplus for local sale.

Achievable and actionable solutions to access to land include:

- Production of standardised rental agreements (in terms of the length of the rental contract and conditions) that refugees can use with host community landowners.
- Support to refugees in their contract negotiations to ensure they are getting into equitable and realistic arrangements.
- Use of shared output agreements with host community landowners, which has the bonus of also encouraging peaceful co-existence between refugees and host community members.
- Provision of, or facilitation of access to, dispute resolution mechanisms for land related matters.
- Support to refugees to confirm the provenance and legal ownership of land before any engagement or agreement. This is especially relevant in the North.

⁸³ Part XI (65) Refworld | Uganda: The Refugees Regulations, 2010

3.2 Expensive & poor quality inputs



Uganda's agricultural inputs distribution system is "highly fragmented and characterized with weak relationships" which impedes refugees' access to inputs that could help improve the quality of the seeds they are using, the soil they are farming and/or reduce the loss of their outputs due to disease or pests. ⁸⁴ The inputs available to refugees are often expensive, due in part to the lack of extension services in the settlements and the costs associated with travel to

larger towns where the products are often more available and cheaper.⁸⁵

The seeds refugees can access are often poor quality, as they are often left over from previous seasons or they are unable to purchase the better quality due to the limited availability, especially in the settlements, and their increased cost. The impact of this lack of access to quality seeds is compounded by the lack of access to affordable fertilisers and pesticides, and poor post-harvest handling capacity, resulting in small yields and/or low-quality yields. These yields impact refugees' ability to produce a surplus for sale, negotiate a good price for any surplus and increase their incomes. It also, alongside poor post-harvest storage and handling, affects refugees' ability to produce a quality seed surplus to use in the following year resulting in further deterioration year on year.

When refugees have access to pesticides and fertilisers, their knowledge on the safe and appropriate use of these products can be limited. This can result in inappropriate or over use which can damage the soil and/or can reduce their impact.

Issues related to accessing quality inputs are often resolved through the distribution of these inputs to farmers by NGOs. However, this is a short-term solution, and it has been recognised that these distributions can disrupt or skew the market and disincentivise potential input providers.⁸⁶ In addition, refugees' ability to use donated inputs ceases when the donations from the NGO stops.

The most achievable and actionable solutions include:

- Promoting and supporting refugee and host community farmers to learn, adopt, and incorporate integrated pest management practices into their farming activities.
- Investing in strengthening extension services on the safe and effective use of pesticide and fertilisers.
- Supporting refugees' access to collective purchasing and/or financing through the creation and support of farmers groups, cooperatives, and village savings and loan associations.
- Building the knowledge and capacity of refugees to carry out organic farming to reduce dependence on fertilisers and pesticides.

⁸⁴ See <u>Feed the Future Uganda inclusive agricultural markets activity</u>

⁸⁵ Ibid and footnote 19

⁸⁶ See footnotes 12, 19 and 22; <u>Refugee Markets Brief: The power of markets to support refugee economic opportunities in West Nile, Uganda</u> and <u>Piloting Private Service Provision to Refugees and Host Communities in Uganda</u> <u>Marketlinks</u>

3.3 Cost of mechanisation



Mechanisation of on- and off-farm activities is generally low in Uganda and especially in refugee settlements. There is a significant lack of awareness of, and access to, relevant and timely mechanised interventions.⁸⁷

The "acute information gap" surrounding mechanisation is combined with the low availability of, or problems around, equipment deployment.⁸⁸ Additionally, most refugee farmers are unable to purchase such equipment

individually but are also excluded collectively from hiring or maintaining machinery due to the associated costs. Poor quality and poorly maintained mechanised equipment can also damage the product, reducing its end value.⁸⁹

However, mechanisation could be significant in terms of increasing smallholder farmers' productivity and profitability. For example, most agriculture in Uganda is rain-fed which reduces water reliability and it is inefficient to collect supplementary water; as such, solar-powered irrigation systems could be extremely beneficial.

Achievable and actionable solutions to address the cost of and limited access to mechanisation include:

- Educating refugees on innovative methods to reduce the need for mechanisation including, for example, effective water management techniques, such as rainwater harvesting.
- Supporting access to finance and/or digital services to enable refugees to rent or buy required equipment.
- Promote block farming to increase farm sizes to better support mechanisation.

3.4 Capacity of value additions



Value addition of refugee farmers' outputs is lacking and is especially evident at the producer level. As such, many refugee farmers are missing out on potentially significant income gains. Refugee farmers' lack of capacity for and access to value addition comes from a lack of knowledge of the opportunities for and benefits of value addition, as well as a lack of experience in the standardisation of products and on how to secure relevant product certification.⁹⁰

Cost constraints to value addition can be addressed by reducing the cost of the necessary amenities (e.g., water and energy) through providing access to cheaper, more sustainable energy solutions, such as solar. Other constraints to value addition can be addressed by encouraging greater private sector engagement. Extension services via village agents, for example, can be

⁸⁷ See <u>NU-TEC: Northern Uganda - Transforming the Economy through Climate Smart Agriculture</u>

⁸⁸ Ibid

⁸⁹ See <u>Support to the Development of National Strategies for Post-Harvest Loss Reduction</u>

⁹⁰ See footnote 12

utilised to increase value addition awareness. Improved access to the services of certification institutions and systems, such as Uganda National Bureau of Standards, will also be beneficial.

Access does not have to be the creation of value addition services in refugee settlements, if refugee farmers are supported in accessing the value addition services outside the settlement. Some of the aggregation and post-harvest solutions discussed below will support this access.

3.5 Poor knowledge of, or access to post-harvest handling

Rudimentary methods of drying (which can result in over- or under-drying) and processing (e.g., shelling and threshing) decrease product value and increase spoilage. Rudimentary methods can lead to discolouration, contamination, pest damage, mould, and disease.

In Uganda, generally, and more severely in the refugee settlements, there is a lack of processing opportunities for many crops and those that do exist are not effectively used.⁹¹ This lack of processing can result in significant losses for some crops, such sunflowers, maize, and cassava.⁹² Although some crops fare better than others, poor processing usually reduces the value of the processed products.⁹³ This lack of, or poor access to, processing opportunities reduces the quality and value of the farmers' outputs.⁹⁴

Solutions to post-harvest handling challenges include:

- Market development incentives to increase private sector engagement in or near refugee settlements.
- Improved access to financing, for farmers, the private sector etc, could support the growth of processing opportunities in or near refugee settlements.
- Capacity development, awareness-raising, and education for refugees on improved post-harvest handling techniques, especially those related to increasing product longevity, reducing spoilage, and minimising pests and contamination.



- Education and access for refugees on and to new and innovative post-harvest handling technologies.
- Training for refugees on how to appropriately and safely handle processing chemicals to reduce spoilage and contamination and improve quality.
- The <u>National Strategy for Post Harvest Loss Reduction in Grains</u> focuses on reducing post-harvest losses in grains, so coordinating or accessing some of these opportunities could be beneficial.⁹⁵

⁹¹ See footnote 22

⁹² See footnote 86

⁹³ See footnote 88

⁹⁴ See Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished

⁹⁵ The strategy was prepared by MAAIF with the support from the FAO, WFP and IFAD, and including cereals such as maize, sorghum, millet, rice and wheat; pulses such as beans, peas and groundnuts, and oil crops such as sesame and sunflower

3.6 Poor knowledge of, or access to post-harvest storage



The lack of post-harvest storage is a widespread obstacle in Uganda, including beyond refugee settings. Currently, there are "no government storage facilities and only 8 private sector warehouses - all of which are located in major towns."96

This lack of appropriate storage facilities increases the risk of spoilage and vulnerability to pests and diseases. With limited access to storage facilities and capabilities, refugees are often required to sell their produce as quickly as possible, reducing their ability to negotiate a good price.⁹⁷ Storage is needed to help ensure refugees have access to quality seeds for the following year's production. Storage is also critical to ensure farmers have access to seeds and surplus during periods when shortfalls in production occur due to external

forces, such as weather, pests, and disease.

Solutions should include:

- Better transport to markets and improved access to secure storage facilities and products, collective storage, or solar-powered cold storage, would boost refugees' storage capabilities.
- Mapping existing storage or bulking facilities that refugees can easily access would enable refugee response actors to focus their efforts on creating storage facilities in areas that they are lacking.
- Education and awareness raising on issues such as contamination and access to contamination testing could help reduce some of the negative impacts of the current lack of storage.

3.7 Poor knowledge of, or access to post-harvest transport



There is limited motorised transport to markets and some producers are forced to carry produce on foot. Any available motorised transport is often prohibitively expensive.⁹⁸ The limited amount of affordable transport is due in part to infrastructure gaps, such as poor road quality, the limited network of feeder roads, and long distances to market.

The solutions to the lack of access to post-harvest transport could include:

supporting the creation of bulking and aggregating points that increase farmers' negotiating power while enabling them to share the cost of transport and improving farmers' post-harvest storage capacity to extend their selling window.

⁹⁷ See footnote 22 and Feed the Future (USAID). Uganda: Refugee Rapid Market Systems Assessment in Nakivale, Rwamwanja and Palabek Settlements. (2022). Unpublished

⁹⁶ See EPRC - Uganda's food loss and waste dilemma: The role of post-harvest handling - Economic Policy Research Centre

⁹⁸ See footnote 88

• Working with local governments to improve the road quality between refugee settlements and markets would also help towards reducing the transport costs.⁹⁹

3.8 Lack of quality products



The lack of quality products produced by refugee farmers is related to their lack of land and quality inputs and poor post-harvest handling techniques. Reduced quality produce has a lower market value. This lower market value diminishes refugees' ability to achieve a fair price, further curtailing their livelihood potential. Poor post-harvest handling and processing lead to product deterioration and loss of value for farmers. It is estimated that "up to 40 percent of the crops harvested in the country are lost to disease, pests, rot...caused by poor post-harvest handling and storage."⁹⁶

In addition, the reliability of, and accessibility to, quality products demotivates the private sector in its engagement with the refugee agricultural space resulting in, for example, an increase in costs for refugee farmers who may be required to transport their goods further, or a lower purchase price as at farm gate aggregators often offer a lower purchase price etc.

Certain crops and products lose quality relatively quickly after harvest, including cassava, rice, certain fruits, and dairy. The lack of on-site or nearby processing and affordable, reliable transport to processors or markets means that much of the refugee farmers' surplus loses quality and value and cannot be easily aggregated. These difficulties in maintaining the quality of their products also discourages refugees from producing surplus and/or diversifying their crop varieties.

Some post-harvest quality issues are related to poor or inadequate processing caused by a lack of knowledge or inexperience and/or poor quality processing equipment.

Many of the solutions identified above, in post-harvest handling, storage, and transport, will help to reduce quality loss. These solutions can be supported by research and the provision of information to refugee farmers on yields and varieties that better retain their nutritional and market value. This support can be further enhanced with the addition of extension services to support an increase in refugee farmers' knowledge and experience of how to enhance or maintain product quality post-harvest.

3.9 Lack of aggregation



Aggregation is a way for smallholder farmers to come together to bulk their individual outputs to increase their negotiating and selling power and make their produce more readily and economically available for transport and processing. It can make the product more attractive to larger buyers. Currently, however, the lack, and correlated cost, of aggregation, for farmers and aggregators, is high. This cost reduces the purchase price of farmers' products at the aggregation point and therefore also reduces farmers' profit.

⁹⁹ See footnote 12

This lack and cost of aggregation is, in part, due to poor aggregation structures and coordination but also, in some settlements, due to the geographic immensity of the settlements which mean that long distances must be covered even before transporting the produce out of the settlement.

Opportunities exist to create refugee-led aggregation businesses, cooperatives, and other structures, and to accelerate the creation of secure and dry bulking and collecting stations in the settlements.¹⁰⁰ It is also important for livelihoods and reliance sector actors to assist with the reduction in aggregation costs through, for example, supporting improved coordination amongst refugee farmers, facilitating negotiations around off-taking agreements, and improving refugee farmers' access to markets.

4.0 Conclusion

The livelihoods and resilience sector is vital to the Uganda refugee response and, within the sector, agriculture is a fundamental activity. How the sector supports refugees in their agricultural endeavours directly affects the long-term self-reliance of the refugee population.

This paper consolidated the sector's specialised knowledge and practical experience gained through their interventions, in order to guide and support the programme planning and activities over the coming years. For the sector to further embed and augment the positive impacts it has already had, it should prioritise the value chains identified in this paper and provide solutions to some of the challenges faced by refugees when trying to make agriculture an income generating activity.

Many of the challenges and solutions identified in this paper are also applicable outside the livelihoods and resilience sector and outside the refugee response. With refugee response actors' increased engagement of and collaboration with development and government actors, the private sector, and donors, a holistic approach to refugees' self-reliance can be achieved.

¹⁰⁰ See <u>Value Chain Assessments in Refugee Hosting Districts in Uganda</u>

5.0 Annex

5.1. Defining key concepts¹⁰¹

Value Chain Assessment	A value chain assessment (also called a value chain analysis) is a study or analysis to understand the value chains in a market system, and particularly
Market System	Value chains operate within a market system , which is a network of the above listed actors and consumers involved in producing, exchanging, and consuming a particular item or service.
Value Chain Actor	A value chain actor is any person, such as a producer, farmer, trader, aggregator, transporter, processor, buyer, or input supplier, that contributes to the value of the product or plays a part in the value chain process. ¹⁰³
Value Chain	A value chain can be defined as the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use." ¹⁰² Value chains are not tangible realities but rather are a way of understanding production networks, stakeholders, and value addition. Though some organisations use the term "commodity" or "sector" to discuss a specific value chain (such as sesame), most organisations use the term value chain, itself, which is therefore how it is used throughout this desk review.

5.2. Value chains that need additional information or research

Prior to the workshop, the LRSWG chairs and U-Learn pre-assessed the value chains identified in the desk review (and other studies identified during the secondary research phase) and allocated them to one of three categories: to be prioritised, not to be prioritised and unclear. Then, at the workshop, a final selection was done, and ten value chains were selected for prioritisation when investing in projects for income generating potential in the next few years due, primarily, to their income and/or growth potential when planning or supporting refugees in their crop decision making. Other factors, such as nutritional value, cultural/personal preferences, Government prioritisation were also to be considered.

During the discussion, a fourth category was identified for those value chains that need additional information or research to enable the LRWSG to categorise them appropriately.

¹⁰¹ See U-Learn - <u>Value Chain Assessments in Refugee Hosting Districts in Uganda – A desk review</u>

¹⁰² See <u>A Handbook for Value Chain Research</u>

¹⁰³ See Making Value Chains Work Better for the Poor: A Toolbook for Practitioners of Value Chain Analysis.

These were:

Chia Districts: Arua Reason to prioritise: • Excellent export opportunities Reason not to prioritise: • Lack of data	Sorghum Districts: Kamwenge, Yumbe, Adjumani, Moyo, Arua, Isingiro, Hoima Reason to prioritise: • Major food crop in West Nile Reason not to prioritise: • Lack of data
Garlic Districts: Kamwenge, Lamwo Reason to prioritise: • easy to grow, can be grown in many different soil types and climates Reason not to prioritise: • need a frost to propagate • lack of data	Insects Reason to prioritise: • Good protein • Small space needed • Good for animal feed and as fertiliser Reason not to prioritise: • Expertise needed • Lack of data
 Upland Rice Reasons to prioritise Large market in the west (North has other grains) High value crop Resilient Short maturity Low production costs Ready market Smaller land allocation needed Reasons not to prioritise Struggling with quality = impacts profit Limited access to seeds Very little commercial seeds presences in North Farmer lack knowledge for good cultivation Loss of value PH due to over drying and single stage mills 	 Vanilla Reason to prioritise: High value crop - one of world's highest Good export opportunities Good to encourage reforestations Reason not to prioritise: Crop needs shade and a support tree to climb Low productivity and value capture at the farm level Requires significant labour (especially during the manual pollination period, but also during the looping and rooting of vines, weeding and harvesting). Lack of data
Herbs Reason to prioritise: • Drying is easy/possible for longevity Reason not to prioritise: • lack of data	Sweet Potato District: Kamwenge, Hoima, Kyegegwa, Adjumani, Moyo, Arua, Obongi, Lamwo, Isingiro Reason to prioritise:

	 Major food crop in WN Orange ones = good nutritional value Good opportunity for market expansion Reason not to prioritise: lack of data
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5.3. Acronyms

GoU	Government of Uganda
IGA	Income generating activity
LRSWG	Livelihoods and Resilience Sector Working Group
VCA	Value Chain Assessment
WN	West Nile
РН	Post-Harvest
EU	European Union
NGO	Non-Governmental Organization
USAID	United States Agency for International Development
FCDO	Foreign, Commonwealth & Development Office



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