



Rapid Market Assessment & Commodity Value Chain Analyses

KAKUMA Refugee Programme

Turkana, Kenya



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Cover page photo: Woman in the streets of Kakuma (Photo: Samuel Hall, September 2015 ©).



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Nairobi, KENYA
Mogadishu, SOMALIA
Kabul, AFGHANISTAN

development@samuelhall.org
www.samuelhall.org

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Acronyms

AAH-I	Action Africa Help-International
AMIS	Agricultural Marketing Information System
CIRAD	Centre de coopération International en Recherche Agronomique pour le Développement
CNRS	Centre National de la Recherche Scientifique
DFID	(UK) Department for International Development
DRC	Danish Refugee Council
EDP	Energias de Portugal
EU	European Union
GER	Gross Employment Ratio
HCDA	Horticultural Crops Development Authority
IDP	Internally Displaced Person
IGA	Income Generating Activity
IOM	International Organization for Migration
IRC	International Rescue Committee
JRS	Jesuit Refugee Service
KAP	Knowledge, Attitudes and Practices
KEBS	Kenya Bureau of Standards
KEFRI	Kenya Forestry Research Institute
KISED	Kalobeyei Integrated Socio-Economic Development Program
KM	Kilometer
KWFT	Kenya Women Microfinance Bank
KWS	Kenya Wildlife Service
MFI	Micro-Finance Institution
MT	Metric ton
NER	Net Employment Ratio
NGO	Non-Governmental Organization
NRC	Norwegian Refugee Council
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
RDC	Democratic Republic of Congo ¹
RMMS	Regional Mixed Migration Secretariat
SC	Save the Children
SDGs	Sustainable Development Goals
SWOT	Strengths, Weaknesses, Opportunities, Threats
TUBAE	Turkana Bio-Aloe Organization
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
VAM	Vulnerability Analysis and Mapping
VC	Value Chain
WB	The World Bank
WFP	United Nations World Food Programme
WTI	Windle Trust International

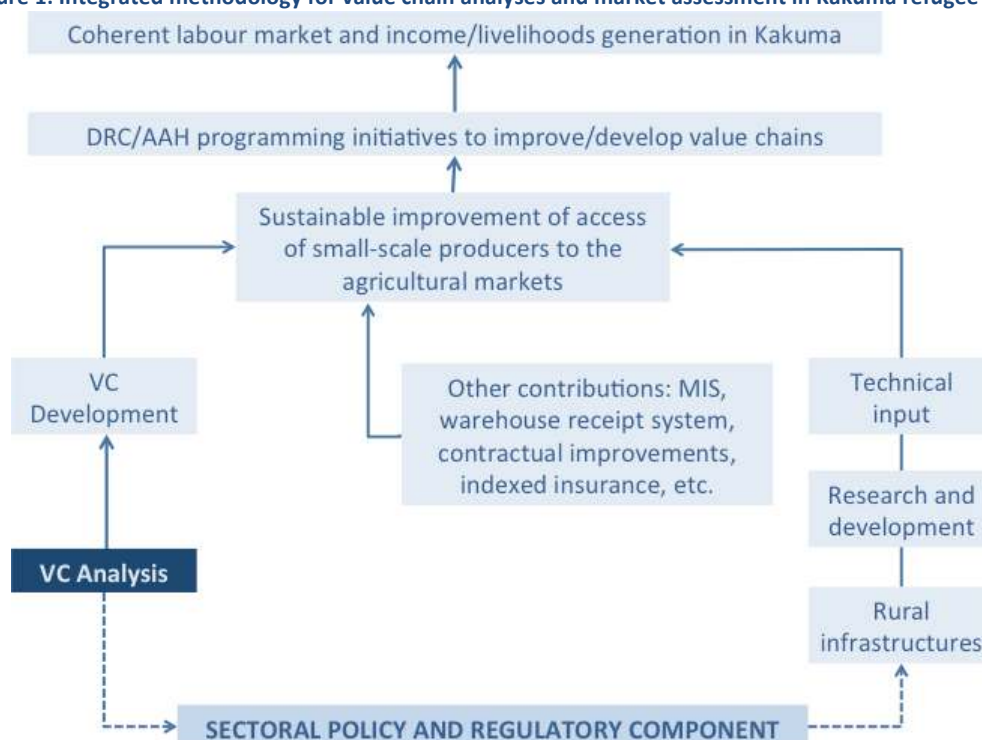
¹ The acronym has been adjusted to not create any kind of confusing with the Danish Refugee Council

Executive Summary

This report provides an evidence-based strategy for **increasing employment opportunities and skills development for protracted and recent refugees in Kakuma refugee camp**. By focusing on **economic integration and capacity development**, it directly contributes to the **durable and transitional solutions agenda**. This is a particularly timely and relevant exercise given that Kakuma refugee camp is expanding to accommodate more refugees at the Kalobeyei model settlement – a newly built structure 20 kilometers from Kakuma. Kalobeyei settlement is built on a new model of integration of refugees and host community aiming to support both short-term humanitarian and long-term development interventions. This new approach focuses on *‘sustainable integrated service delivery and skills development; spatial planning and infrastructure development; agriculture and livestock development and private sector and entrepreneurship.’*² With this in mind, the need to build sustainable services and expand economic opportunities for employment through job creation and skills development is necessary for both new arrivals that continue to arrive from South Sudan, and refugees in a protracted situation.

The intervention strategies outlined in this study are based on a combined **labor and market assessment and three rapid value chain analyses**. It is important to bear in mind that the objective of these rapid value chain analyses was not to develop detailed profitability analyses but rather to identify opportunities (segments of the value chain) where sustainable assistance could be provided to refugees. The graph below shows how these exercises feed into each other to identify opportunities for economic growth, skills needs and skills requirement for Kakuma refugees: *“The end goal of this comprehensive assessment is twofold: firstly, informing policies and decision-making processes at the local level; secondly, providing DRC and AAH with solid evidence-based recommendations to develop existing or innovative livelihoods generation schemes.”*³

Figure 1: Integrated methodology for value chain analyses and market assessment in Kakuma refugee camp



² The Kalobeyei Integrated Socio-Economic Development Program (KISEDPP) is a Turkana-based initiative involving major stakeholders such as the Turkana County Government, UNHCR and partner UN agencies, development actors, NGOs and private sector actors. UNHABITAT; 4 February 2016. <http://unhabitat.org/un-habitat-to-lead-in-planning-kenyas-first-integrated-settlement/>

³ Intermediary meeting with UNHCR, AAH-I and DRC in November 2015.

Refugees should not be regarded as a homogenous group. Major differences exist amongst refugees based on their country of origin and duration of displacement. Our data show that **communities in protracted refugee situations are more likely to develop stronger coping strategies** and acquire more stable social and financial networks, whether through remittances or the ability to engage in debt-related transactions:

- Surveyed Ethiopian and Somali households tend to have more diversified incomes – **remittances** are a crucial source of revenue (35% and 16% respectively), which confirms their relatively stronger economic integration in the camp *and* more extended financial networks;
- While **indebtedness** levels vary a great deal according to the country of origin, complementary qualitative findings suggest different attitudes towards debt: surveyed Somali refugees often report using temporary loans to invest in education or small businesses; refugees from the Democratic Republic of Congo consider loans a necessary coping strategy; while South Sudanese refugee households complain about the difficulty of getting loans, pointing to a lack of integration.

While an independent economy exists in Kakuma, especially around the service sector, relief assistance is still one of the main sources of income for many households with **38% of respondents claiming to rely on aid**.

Unemployment rates are high in Kakuma: **57% amongst male and 75% amongst female respondents**. Moreover, refugees have limited access to external markets; they lack skills and capital to start businesses. The **principal discriminants for employment are gender, country of origin, education and time since arrival in Kakuma**.

- The higher the education level of refugees, the more likely they are to be employed.
- There is strong correlation between employment levels and time spent in Kakuma. Refugees who have spent 7 or more years in Kakuma are more likely to be employed, at 48% compared to 21% for recent arrivals.
- Women are at a clear disadvantage when it comes to both education and employment. They are far more likely to not have attended school. While unemployment levels are high in general, there is a clear gender gap with 73% of female respondents unemployed versus 57% of their male peers.
- The highest level of unemployment was found amongst refugees from South Sudan (92%).

This calls for specific programming tailored at women and South Sudanese refugees.

The main (potential) sector of employment for refugees is the service sector. This is largely due the restrictions of movement faced by refugees in the camps, the lack of manufacturing possibilities and very limited agricultural initiatives due to water shortages. Key activities in the service sector for refugees include the sale of groceries, food, clothes, electronics, or the running of hotels and restaurants.

Most commodities are imported into Kakuma. In its current shape, the local market is not structured enough to meet the current and potential local demand. However, **a market can be created in Kakuma if the following conditions are met: 1) a shift from imports from Kitale or Nairobi to manufacturing commodities in the camp, and 2) a coordinated development plan associating refugee and host communities (e.g. Kalobeyei).**






Value Chain Analyses

The recommendations and roadmaps of this research strongly emphasize this necessary shift, while balancing the pros and cons for each studied value chain.




Roadmap – Tomato Value Chain	
Short-term	<ol style="list-style-type: none"> 1. Create a more enabling environment in collaboration with the Kenyan authorities; 2. Tackle water shortages (water pans and sub-surface dams, hydroponic agriculture, solar-powered boreholes and pumping); 3. Encourage agro-ecological management of vegetable crops (nets over tomato crops instead of using intensive chemical fertilizers and pesticides); 4. Advocate for environmentally friendly agricultural management techniques among donors, communities and other NGOs through partnerships and pilot tests with selected reputable agricultural research institutions. The survey team would recommend CIRAD (CNRS-affiliated center based in Nairobi), as it is the only agricultural research actor present in Kakuma (and the ASALs), which has experimented such techniques at scale. 5. Promote access to finance (MFI and private sector); 6. Build skills and change mindsets <ul style="list-style-type: none"> • Skills development of local tomato growers and producers, in coordination with CIRAD (or any other reputable agricultural research institution); • Vocational training focusing on basic technical skills and focusing on advanced skills (e.g. packaging), for refugees and host community members, in coordination with county authorities and under AAH-I/DRC supervision; • Training in administration, logistics, etc. towards semi-skilled jobs (e.g. marketing) for the educated local workforce, again in coordination with county authorities and under AAH-I/DRC supervision; • Sensitization campaigns targeting host communities (DRC, AAH-I).
Long-term	<ol style="list-style-type: none"> 1. Develop a sustainable tomato value chain through vertical integration of other segments of the VC; 2. Develop new unskilled and semi-skilled jobs through the transformation of tomatoes into tomato products; 3. Create new semi-skilled and skilled jobs through other segments of the value chain (packaging, marketing, logistics, administration, etc.); 4. Introduce a more complex segment of the agribusiness value chain (factory, transformation), with a potential snowball effect on other sectors; 5. Consider lobbying for quotas to ensure the fair participation of vulnerable or under-represented categories (women, youth, older people, refugees from South Sudan, etc.); 6. Improve relations with local host communities through job creation; 7. Take advantage of the strong potential for exports, using DRC and UNHCR channels and using the positive image associated with “refugee-led initiatives” internationally; 8. Develop a specific brand to associate Kakuma with quality products and positive socio-economic solutions; 9. Plan for an exit strategy and handover to local cooperatives within ten years when local actors should be able to produce business plans and have secured access to regional and international markets; 10. Develop innovative business models associating host communities and refugees, NGOs and local authorities, assistance and economic development, social inclusion and environmental concerns (through CIRAD’s approach, for instance).
Risks and challenges	<ul style="list-style-type: none"> ○ Rivalries over land, limited farming space; ○ Pest and disease infestations; ○ Environmental challenges (fertilizers, pesticides); ○ Recurring water shortages; ○ Absence of soil testing facilities; ○ Lack of cooling and post-harvest handling facilities; ○ Poor access to capital and finance; ○ Produce which does not meet the standards of regional and international markets; ○ Limited inclusion of women in the value chain.

Conclusion	<p>The suggested short-term measures do not require a high level of technical expertise or capital. With the support of local authorities, they could be extremely cost-effective and pave the way to: 1) a real commitment from local authorities and communities; 2) job creation and livelihood opportunities; 3) increased commitment from donors (especially through an ecologically and socio-economically inclusive approach).</p> <p>Longer-term measures (factory and vertical integration) will require significant pedagogic work from UNHCR, DRC and AAH-I. They have the potential to positively contribute to changing the perception of Kakuma and prompting a shift to a different economic model (production, transformation). Achieving this will require a 5-year plan, a strong commitment from donors, and a continuous political dialogue at both Nairobi and Kakuma levels. This cannot be done without UNHCR's full support and endorsement.</p>
Roadmap – Hides & Skins Value Chain	
Short-term	<ol style="list-style-type: none"> 1. Enhance the quality of Turkana hides and skins through improved breeding and animal husbandry practices; 2. Set up breeding space for animals in Turkana; 3. Develop partnerships with local abattoirs to improve hides quality; 4. Implement curing techniques to ensure the preservation of skins; 5. Establish partnerships with training providers.
Long-term	<ol style="list-style-type: none"> 1. Create a Kakuma brand and engage with the private sector; 2. Conduct market research to identify products that could be developed out of low-grade hides and skins; 3. Liaise with factories and industrial units in Nairobi; 4. Link Kakuma-made products to external markets.
Risks and challenges	<ul style="list-style-type: none"> o Recurring issues with legal/regulatory aspects (local authorities); o Malpractice (poor skinning) in slaughtering livestock; o Inadequate size and low prices of hides; o Lack of knowledge of the value of hides and skins and market information; o Lack of knowledge regarding good curing practices; o Limited potential for semi-skilled or skilled job creation.
Conclusion	<p>The suggested short-term measures are realistic but their potential outcomes are unclear: there is no real internal demand for hides and skins in Kakuma, and local hides are not competitive for Nairobi factories. Suggested longer-term measures are not realistic in the current environment as access to water and competitiveness remain major obstacles. The authors recommend against pursuing the development of the hides and skins value chain in Kakuma, as its actual short- and long-term impact is unclear in terms of livelihood opportunities.</p>
Roadmap – Aloe Vera Value Chain	
Short-term	<ol style="list-style-type: none"> 1. Liaise with local authorities and communities to promote an economically and environmentally sustainable VC; 2. Build on TUBAE's existing know-how, technical training (basic/advanced), access to seedlings and advocacy; 3. Develop commercially available Aloe Vera nurseries and seedlings; 4. Improve processing by building knowledge and skills for the handling of Aloe Vera.
Long-term	<ol style="list-style-type: none"> 1. Develop a 5-year collaboration plan with other relevant existing Aloe Vera value chain actors; 2. Develop packaging in a dedicated transformation unit; 3. Instigate commercial interactions with Nairobi; 4. Create a Kakuma eco-friendly label; 5. Provide advanced training for marketing and other business aspects.
Risks and challenges	<ol style="list-style-type: none"> 1. Need for further research into this niche value chain; 2. Inadequate conservation measures; 3. Limited access to commercial seedlings; 5. Limited access to markets.

Conclusion	<p>4. The Aloe Vera value chain a strong holds potential thanks to: 1) Kakuma's competitive advantage, 2) a growing international demand, and 3) an existing technical know-how in Turkana. Further research into this value chain is recommended. The development of the Aloe value chain in Kakuma (and neighboring wards) has the potential to strongly develop unskilled and semi-skilled jobs in the county for both refugee and host communities. The existing environmental threats on the different varieties of Aloe present in Kakuma and the natural competitive advantage of Northern Kenya (many different high quality species) add to the economic and ecological rationale. TUBAE has already developed technical studies that could be discussed fruitfully with local farmers. Strong international and local (Nairobi) demand could drive the market. It is recommended that UNHCR, DRC, and AAH-I coordinate their short- and long-term plan towards a better regulatory environment (advocacy/protection measures), a stronger dialogue with host communities, and technical information sharing with TUBAE and other implementing NGOs.</p>
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No development or programming without...	
	Dialogue and co-development with host-communities (<i>e.g. Kalobeyei</i>) to promote economic exchange and local integration of refugee communities
	Socio-economic, demographic, and environmental inclusion to assist the most vulnerable segments of the refugee population
	Progressive vertical integration to shift from trade deficit to socio-economic autonomy
	Horizontal diversification (skills, income) to increase the overall resilience of the local socio-economic network
	A learning agenda and pragmatic theory of change, to learn from pilot projects, successful and failed initiatives

LIMITATION: Considering the initial scope and limited timeframe available for this research, it was not always possible to conduct in-depth value chain analyses (*aloe vera*) or profitability analyses (*hides and skins*). However, the comprehensive desk review, dozens of focus groups and household surveys conducted during the research allowed the authors to identify key segments of the surveyed value chains where refugees (and host communities) may find unskilled or semi-skilled income generating activities. Should UNHCR, DRC, and AAH be interested in developing some specific strategies and programmes along these lines, it is recommended that they undertake more specific feasibility and cost-benefit analyses.

DASHBOARD	VC Assessment	VC Potential	Job creation potential	Roadmap for NGOs	Limitations	Recommended Action
Tomato <i>(value chain analysis & profitability assessment)</i> 	Large demand, massive imports, a few producers, absence of wholesalers, myriads of retailers, no transformation.	Strong on the production segment of the VC; on the longer-run, opportunities for a factory through public/private partnerships	Strong for unskilled workers, strong for women and youth. On the longer-run, possible semi-skilled and skilled job opportunities (transformation)	Advocacy, water schemes, environmental management (eco-fertilizers), access to finance, capacity development. On the long-run, potential for vertical integration (factory)	Potential for creation of unskilled jobs, but seasonality is an important factor. Important to diversify incomes (sensitive to drought and pests/disease). Doubts on longer-term developments (integration and transformation).	Profitable value chain with a strong potential, NGOs should develop short-term measures to promote the tomato value chain in Kakuma as it would create a lot of jobs while developing local economic resilience. Longer-term measures should be developed after a feasibility study based on the market potential and outcomes of the first measures (year 3)
Hides & Skins <i>(value chain analysis)</i> 	Significant variations in supply and demand, basic curing techniques, poor quality, no real market potential, no real potential in handicraft, and poor interest from tanneries.	None, but marginal qualitative improvements	Poor, unskilled men.	A few technical improvements for curing and hides quality	Unlike the Aloe value chain, the hides & skins VC does not seem to be competitive; and unlike the tomato value chain, there is no real internal demand. No foreseeable development.	It is recommended not to take any further action in this sector, as there are strong doubts on its development and market potential.
Aloe Vera <i>(rapid assessment)</i> 	No real market, risks of environmental depredations as no action has been taken so far.	Strong potential, considering the international demand and Kakuma's resources	Strong for unskilled workers, including women, youth, and older people. On the longer-run, possible semi-skilled and skilled job opportunities (transformation)	Environmental management, link with TUBAE, nurseries and seedlings, development of processing, eco-labeling, advanced capacity development	Further in-depth feasibility and profitability analyses to be conducted to complement this rapid assessment.	Probably the most promising of the 3 surveyed VCs, especially for its long-term potential (Kakuma eco-brand, skilled jobs, etc.). Actions are recommended in collaboration with TUBAE.

Introduction

Kakuma in 2015 and beyond

Located in Kenya's Turkana County, Kakuma refugee camp was established in 1992 by the United Nations High Commissioner for Refugees (UNHCR) to host around 100,000 refugees fleeing war in Sudan. Despite its original limited capacity, the camp has since grown exponentially in both size and diversity. It currently hosts more than 180,600 refugees⁴ from various countries including South Sudan, Somalia and Ethiopia.⁵ Government and host-community support include: 1) the preservation of and access to asylum and international protection; 2) access to adequate land and urban asylum space for a growing population of concern; and 3) access to effective basic services, including health care, quality education, markets and livelihood opportunities.

In an uncertain regional political, environmental and security context, Kakuma camp can expect to receive more refugees over the next few years (UNHRC projects the arrival of approximately 28,000 South-Sudanese for 2015 alone).⁶ People's wellbeing and livelihoods in Kakuma and its surroundings will be significantly impacted by this trend in the short and long-term. As a result, UNHRC has lobbied local government authorities to secure additional land for its assistance operations in Turkana County. The Danish Refugee Council (DRC) focuses on protection and livelihoods activities as well as vocational and professional courses, targeting mainly refugees from South Sudan. Action Africa Help International (AAH-I) works in Kakuma to enhance the self-reliance and sustainable livelihoods of refugees, notably through its Kakuma Refugee Assistance Programme.

Refugees' socio-economic prospects in Kenya remain strictly limited. Although the 2006 Refugee Act and the 2011 Immigration Act grant refugees the right to apply for a work permit, in reality, many judge that these legal permits are impossible to obtain while others are unaware of the possibility or lack the requisite information on procedures of application.

From an assistance-based to a development-oriented economy in Kakuma

Despite a constraining business environment and a lack of formal employment possibilities for refugees in Kenya, a vibrant economy exists in Kakuma camp serving both the refugee and host communities. A number of studies on refugee economies have highlighted how refugee communities are integrated into economic systems of the host community, making positive contributions to the wider economy.⁷ Kakuma camp is no exception, as shown in a previous study conducted by Samuel Hall for DRC, which highlighted the positive contributions of refugees to the overall economy of Turkana County.⁸

The existence of a dynamic economic market in Kakuma presents many livelihood opportunities for refugees as well as for the local population. A study by the World Food Programme (WFP) notes that while most of the markets in the arid lands are weakly integrated and thus would not benefit from any market-based

⁴ UNHCR Statistical Summary (March 2015), Refugees and Asylum Seekers in Kakuma. <http://www.unhcr.org/524d84b99.html>

⁵ UNHCR South Sudan Situation Emergency Response (2015) p.16.

⁶ UNHCR 2015 Planning Figures for Kenya - <http://www.unhcr.org/pages/49e483a16.html>

⁷ Betts, A. et al. (2014) Refugee Economies: Rethinking Popular Assumptions, Humanitarian Innovation Project, University of Oxford.

⁸ UNHCR/WFP (2014) Joint Assessment Mission – Kenya Refugee Operation; ReDSS / Samuel Hall (2015) "Devolution in Kenya: Opportunity for Transitional Solutions for Refugees?".

interventions, Kakuma is unique given its location ‘on transport corridors’⁹ and ‘exhibits the functionalities of major urban settlements.’¹⁰

As households in Kakuma generally do not have the possibility to engage in agricultural activities, they depend on markets. The WFP study recommends the improvement of market infrastructure and market functioning as a crucial step to improving livelihoods, market information systems and access to credit for refugees.¹¹

The need to support markets and move away from an artificial and unsustainable assistance-based economy has been recognized by many stakeholders. Actors such as UNHCR and WFP are exploring ways to build a more development-oriented economy that benefits both refugee and host community through a shift from in-kind to cash modalities.¹² While many stakeholders acknowledge the need to move away from humanitarian and relief work to support more sustainable livelihood initiatives, an in-depth analysis of refugee economic activity in Kakuma that links market demands with livelihood interventions is still lacking.

This approach is especially relevant, as Kakuma camp is expanding to accommodate more refugees in Kalobeyi settlement. Kalobeyi is built on a new model of integration of refugees and host community aiming to support both short-term humanitarian and long-term development interventions focusing on ‘sustainable integrated service delivery and skills development; spatial planning and infrastructure development; agriculture and livestock development and private sector and entrepreneurship.’¹³

Livelihoods programming in Kakuma and the significance of this study

Building sustainable services and expanding economic opportunities through job creation and skills development is crucial for both new arrivals and those in a protracted situation. Yet, a review of current livelihood interventions targeting refugees in Kakuma shows little emphasis placed on sustainability. Current interventions range from enterprise development to technical/vocational skills training and life skills programmes. Such vocational training centers, provided by Don Bosco and other stakeholders, provide training to refugee youth in a number of vocational sectors such as artisan courses, masonry, carpentry and electrical installations among others. While these courses are valuable in providing refugees with the necessary skills to access the informal sector, they have a rather ‘limited focus on sustainability.’¹⁴

The partnership between UNHCR, DRC, and AAH-I aims to optimize livelihood programming by making it more comprehensive and sustainable, as well as promote durable and transitional solutions agenda. AAH-I is an African-led non-governmental organization, which has over 20 years’ experience working with communities in conflict and post-conflict situations – including refugees, internally displaced people, host and marginalized communities. It has been a lead livelihoods implementing agency for the UNHCR Kakuma projects since 2015, and the interventions seek to promote self-reliance and change the dependency mind-set amongst refugees and host communities through empowering people to embrace sustainable livelihoods. AAH-I offers support to the agriculture and business sector and promotes financial inclusion for unbanked refugee and host community populations. Furthermore, they strive to develop value chains, facilitate private sector linkages and strengthen local entrepreneurs’ capacity.

⁹ WFP (2014), Dadaab and Kakuma Refugee Camps, Market Assessment Kakuma and Dadaab, p. 4.

¹⁰ WFP (2014), Dadaab and Kakuma Refugee Camps, Market Assessment Kakuma and Dadaab, p. 4.

¹¹ WFP (2013), Market dynamics and Financial Services in Kenya’s Arid Lands, p.iii- vi.

¹² Interview, UNHCR Nairobi, 20 March 2015.

¹³ UNHABITAT; 4 February 2016. <http://unhabitat.org/un-habitat-to-lead-in-planning-kenyas-first-integrated-settlement/> The Kalobeyi Integrated Socio-Economic Development Program (KISEDPP) is a Turkana-based initiative involving major stakeholders such as the Turkana Government, UN agencies, development actors, NGOs and private sector actors.

¹⁴ WFP, UNHCR, assessment of refugee camps in Kenya, p.22.

This study presents the findings of Samuel Hall’s rapid market assessment and value chain analyses in Kakuma. It identifies the challenges and opportunities of the Kakuma labor market and maps key economic sectors and value chains. Recommendations include a roadmap for programming focusing on three specific value chains: tomato, hides and skins, and Aloe Vera.

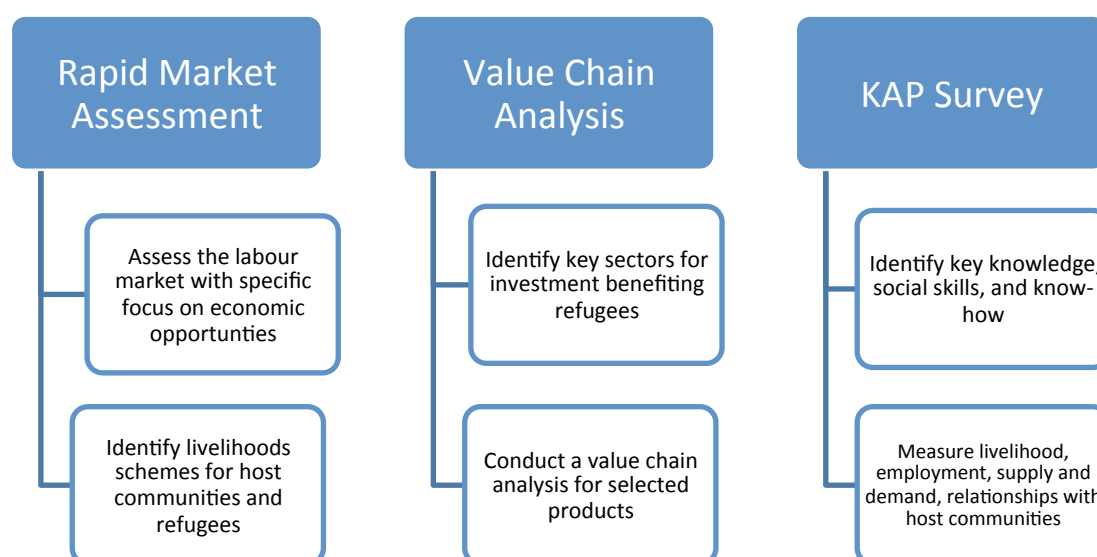
Methodology

Overall Approach

A rapid market analysis was conducted in Kakuma camp with the objective of understanding market conditions. The research team aimed to determine what goods and services are supplied and demanded by the community and how these could be linked to employment opportunities. The methodology included three inter-related research strands:

- A rapid market assessment in order to gather broad market data and create an opportunity mapping with specific focus on viable economic sectors for refugees;
- Value chain analyses of three value chains to gather sector specific information for priority sectors;
- A Knowledge, Attitudes and Practices (KAP) survey to identify key knowledge, social skills, and know-how shared by the target groups about particular issues.

Figure 2: Comprehensive market assessment in Kakuma



Research tools

The methodology comprised a mix of qualitative and quantitative tools. Aiming to offer a dual perspective on the supply and demand side of the labor market, interviews were conducted with consumers and traders, wholesalers and middlemen. In order to identify opportunities in the labor market, a rapid market assessment, including a KAP survey, was conducted. Three value chains were analyzed in detail.

Rapid Market Assessment to gather broad market data

To begin with, Samuel Hall conducted a rapid market assessment to gather broad data on wider market trends and refugee consumption patterns. The objectives of the rapid market assessment were threefold:

1. Assess the current labor market to identify applicable market-systems frameworks and growth areas in the various economic sectors with emphasis on the most viable sectors for refugee investment;
2. Identify the sustainable livelihoods interventions which are of interest to refugees;
3. Identify household consumption patterns, income and expenditures.

The market assessment had two distinct components:

- **A Household Economic Survey conducted at the household level:** The survey was designed to understand refugees' consumption patterns, their status in the labor market in terms of access to employment, preferences and perceptions of the opportunities they possess. The economic survey was conducted amongst both host communities and refugees. The research team surpassed the initial target of 200 host community and 200 refugee households, reaching a total of 435 households with an equal proportion of male and female respondents.¹⁵
- **A Knowledge Attitudes and Practices (KAP) Survey:** The KAP survey was conducted in parallel to the economic survey in order to identify shared knowledge, social skills, and know-how. In the context of Kakuma, the KAP survey complemented the economic components of the study (market assessment and value chain analyses) to help DRC and AAH-I identify key contextual and structural social, economic, cultural and institutional enablers and disablers.

Observational checklists in Kakuma's principal economic sectors provide a systematic account of market activity. The information collected includes products available and cost, types of shops in the market and approximate number of stalls/shop by product type. Data was also collected on availability of produce, goods, and services to allow identification not just of the existing market but also of key gaps therein which could provide opportunity for employment and investment.

Qualitative interviews and focus group discussions were conducted amongst male and female respondents recruited from commercial areas, which involved traders, wholesalers and consumers. The interviews identified levels of satisfaction with current market products and demand for new products. The focus groups contained a mixture of youths, women and men as well as refugees and members of the host community.

Local stakeholder interviews were conducted amongst NGOs staff and County government officials in order to gauge the perceived opportunities for refugee employment and challenges faced with current livelihood interventions. These interviews helped gather complementary evidence and test hypotheses – creating further stakeholder buy-in for the analysis and findings of the research.

Table 1 Targets Market Assessment	
Rapid Market Assessment/Opportunity Mapping	
Observational checklists	8
Quantitative surveys including KAP survey	435
Key informant interviews	19
FGDs	6

¹⁵ This allowed the research team to assert that men and women have profoundly different experiences in protracted refugee settings as evidenced by the gap in employment level by gender (43% vs. 26% for women).

Value Chain Analyses

Step 1: Selecting Potential Value Chains: Drawing on the initial market assessment, a list of promising sectors were selected, assessed and presented to DRC for discussion.

Table 2 Assessment of preselected value chain analyses

Value Chain	Potential for scale	Market Opportunities	Constraints	Sustainable	Gender Friendly	Overall Suitability
Aloe Vera	++++	+++	++	++	++++	Med
Camel Milk	++	+++++	+++	++	+++++	Low/Med
Chicken	++++	+++++	++	+++	+++++	Med
Handicrafts	+++++	+++	++	++++	+++++	Med
Hides and Skin	++++	++++	+++	++++	++++	Med
Honey	+	++++	+++++	++	+++	Low
Peanut Butter	++++	++	+++	+++	+++++	Low
Tomato	++++	+++++	+++	++++	++++	Med

Step 2: Selecting Value Chains: Based on a SWOT analysis, two value chains were chosen from a list of 10. The value chains were selected based on their sustainability, feasibility of intervention, gender-friendliness and potential to create employment. The value chains selected were the tomato VC and the hides and skins VC (including the handicrafts component of the latter). After a meeting with all the stakeholders (UNHCR, DRC, AAH-I) it was also decided to develop a rapid feasibility study of the *Aloe Vera* value chain.

Step 3: Focus Groups and Value Chain Interviews: In order to map the value chain actors and their geographic locations, interviews and focus group discussions were conducted with a mix of market actors ranging from producers to retailers.

Figure 3: Integrated methodology for value chains analyses and market assessment

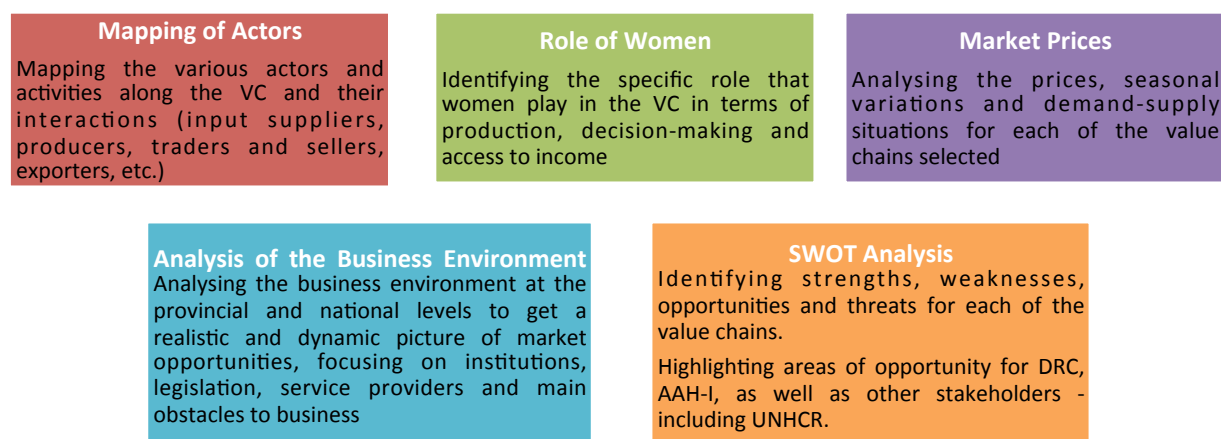


Table 3: Targets reached for the value chain analysis

Value chain analysis	Qualitative Information
Tomato Value Chain	17 KIIs and 3 FGDs
Hides and Skins + Handicraft	18 KIIs and 3 FGD
Aloe Vera	4 KIIs and 2 FGDs

Socio-Economic Assessment

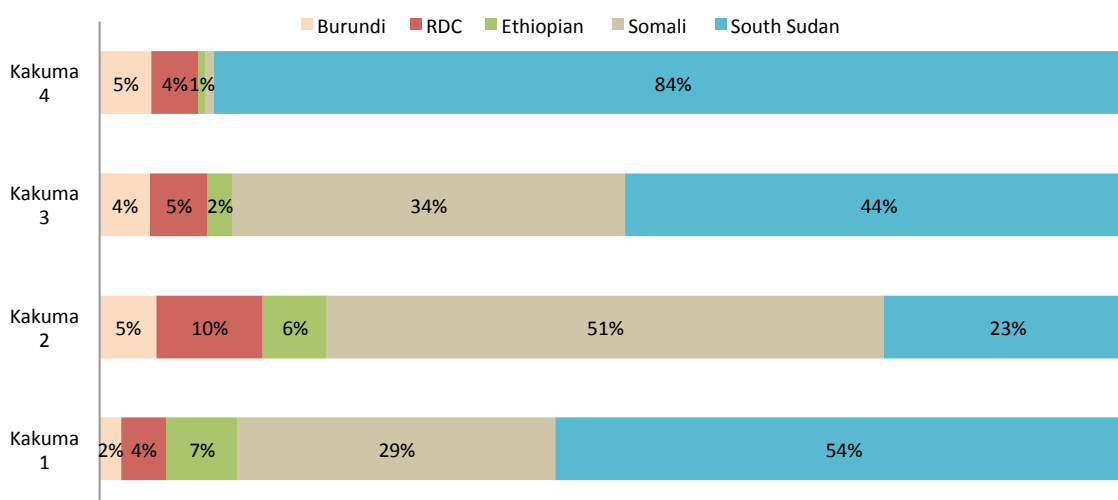
With one of the most protracted refugee situations in the world, Kakuma refugee camp is a melting pot of protracted refugees and recent arrivals, and a patchwork of countries of origin. South Sudanese refugees form the majority of Kakuma's population (50%), followed by Somalis (30%), and Congolese, Burundians, Ethiopians, Eritreans, Rwandan and Ugandan refugees (20%).¹⁶ Children and youth aged 0-17 represent more than half (58%) of the total refugee population.

In recent years, humanitarian and development organizations have focused on market-driven approaches to improve the effectiveness, impact and sustainability of their interventions. As pointed out in a 2013 Oxfam/WFP report: *"The practice of working through and supporting local markets is now widely considered best practice in the humanitarian field. Where market based programmes are possible, such interventions favour economic recovery and livelihood development."*¹⁷ The dual methodology adopted here, with a market assessment and a value chain analysis, follows this path to i) ensure that DRC/AAH-I's interventions do no harm to existing market systems, and ii) identify opportunities through market structures.

Kakuma Camp Composition

Kakuma refugee camp is composed of 4 areas known as Kakuma 1, 2, 3 and 4. Kakuma 4 is the newest camp established to host refugees fleeing the most recent war from South Sudan. While most of the camp hosts a very diverse population, Kakuma 4 is predominantly inhabited by refugees from South Sudan (84%).

Graph 1: Breakdown of refugees by country of origin and camp



The history of the camp explains some of the socio-economic variations between areas. For instance, recent arrivals from South Sudan lack the networks and adaptive strategies developed by refugees in protracted situations. The multilingual and multi-cultural environment of Kakuma is unique and *"there is no doubt that such an enriching milieu can also pose challenges in terms of programming, language comprehension and instructions for NGOs"* (NGO Field Officer, Kakuma).

Table 4: Kakuma Camp population by country of origin (official UNHCR)

	South Sudan	Somalia	Ethiopia	DRC	Burundi	Other
Kakuma	50.1%	30.3%	4.2%	5.2%	3.6%	6.6%

Source: UNHCR, August 2015 (<http://data.unhcr.org/horn-of-africa/region.php?id=12&country=110>)

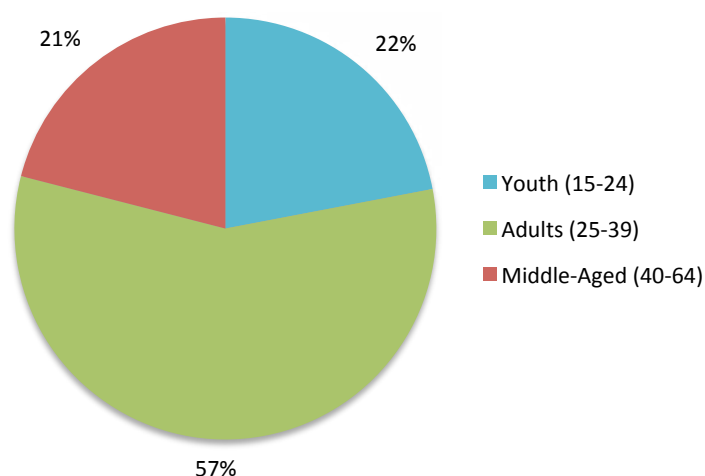
¹⁶ UNHCR Population statistics, 25 August 2015.

¹⁷ Oxfam, WFP July 2013 *'Engaging with Markets in Humanitarian responses'* Executive Brief,

Respondent profiling

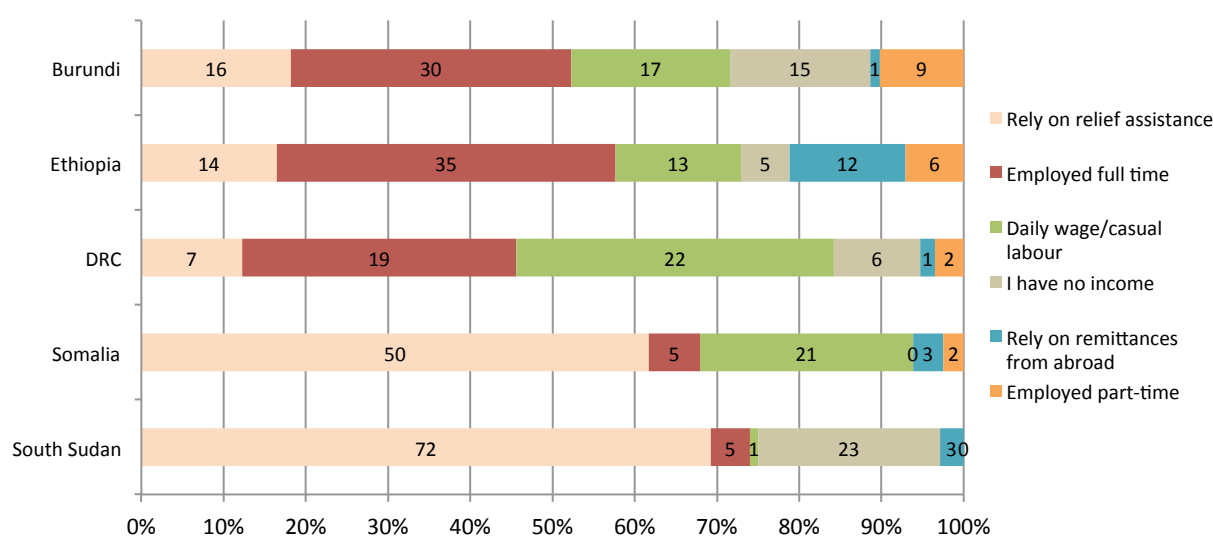
One respondent in five was a youth (15-24 years old), one in five was above the age of forty while the remainder qualified as adults between the ages of 25 and 39.

Graph 2: Profile of respondents by age group



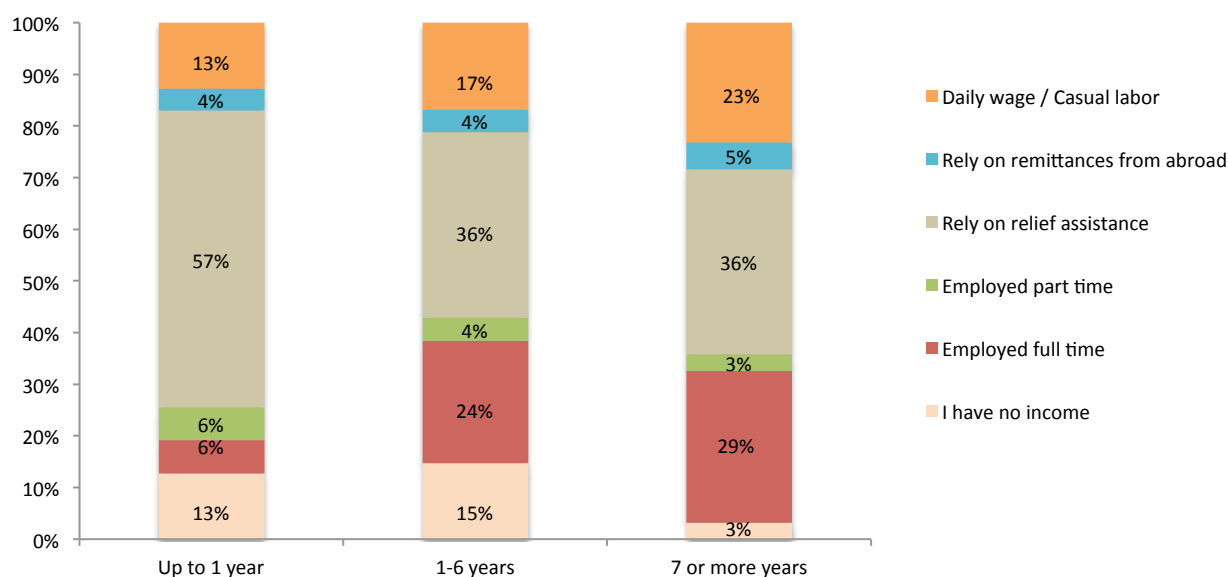
Relief assistance remains one of the main sources of income for many households, with 38% of respondents claiming to rely on aid. Nonetheless, an internal economy has developed providing goods and services and income generating activities to refugees independent of the aid economy.

Graph 3: Nature of households' main source of income by country of origin



Economic vulnerabilities in Kakuma are also closely linked to the time refugees have spent in Kakuma. As the graph below shows, the longer refugees have been living in Kakuma the less likely they are to rely on relief assistance. 57% of recent arrivals rely on relief assistance compared to 36% of protracted refugees. Similarly, only 6% of newly arrived refugees are in full time employment, compared to 29% of refugees in protracted situation.

Graph 4: Nature of household source of income by duration in Kakuma



In order to understand which groups in Kakuma are at a higher vulnerability level, the following table shows respondents' answers regarding their source of income by country of origin.

Table 5: Nature of households' main source of income by country of origin

Nature of income/livelihoods	South Sudan	Somalia	RDC	Ethiopia	Burundi	Total (including other countries)
Rely on relief assistance	69%	53%	12%	16%	18%	38%
I have no income	22%	9%	11%	6%	17%	12%
Employed full time	5%	6%	33%	41%	34%	23%
Employed part-time	0%	2%	4%	7%	10%	4%
Rely on remittances	3%	4%	2%	14%	1%	5%
Daily wage/casual labor	1%	26%	39%	15%	19%	18%
Total	104	81	57	85	88	435

While it is difficult to objectively assess the main source of income given a certain reluctance to freely disclose information related to income and remittances, responses can be taken as indications of variations of sources of income and vulnerability across countries of origin:

- Income generating activities (IGAs):** Though limited, IGAs constitute a source of income supplementing household revenue: 23% of refugees reported being in full-time employment and 18% reported relying on casual labor. The main IGAs in Kakuma range from incentive work with NGOs, petty trade, casual labor and manual work such as mechanics, electricians and carpentry.¹⁸ Previous studies suggest that most gainfully employed refugees are NGO staff (27%).¹⁹ Samuel Hall field observations reveal that the primary sector for employment in Kakuma is services and retail. This includes sale of groceries, food, clothes, electronics, or the running of hotels and restaurants.²⁰
- Relief assistance:** Given the strict encampment policy imposed on refugees, livelihood opportunities within and outside the camps are limited, which makes it very difficult for most refugees to survive without assistance from UNHCR and its partner agencies. The two largest refugee communities in the camp receiving aid are Somalis and South Sudanese: respectively 69%

¹⁸ Ochieng, E. (2013), *Promoting life-skills and livelihoods in Kakuma, market analysis study*, submitted to Swisscontact and NRC for the Swiss Agency for Development and Cooperation (SDC).

¹⁹ Ochieng, E. (2013), *Promoting life-skills and livelihoods in Kakuma*, p.16.

²⁰ Kakuma field observations, September 2015. See also WFP (2014), *Dadaab and Kakuma refugee camps, Market Assessment*, p.55.

and 53% of the surveyed Somali and South Sudanese households reported mainly relying on relief assistance.

- **South Sudanese communities:** The South Sudanese community is far from homogenous. Some families just arrived, while others have resided in the camp since 1992. But as a whole this community seems particularly vulnerable, with 91% of the surveyed households being either massively dependent on relief assistance (69%) or without any reported income (22%). This discrepancy between South Sudanese and other communities could indicate a lack of marketable skills, or point to an inferior level of social and economic integration particularly of recent arrivals.
- **Full-time and part-time employment levels:** Ethiopians and Burundians on the other hand reported higher levels of employment (at 47% and 44% respectively).

Ethiopians are generally better integrated socially and economically.

KII, NGO Field Officer, Kakuma

- **Remittances:** It is generally difficult to gather accurate data on remittances, as most households are reluctant to answer this type of sensitive question.

Our families do not disclose this information to researchers. They will not tell you if they have close ties to other relatives living in Somalia or Europe or Canada.

Focus Group Discussion with Somali community leaders

15% of Ethiopian households did report benefitting from remittances, a finding confirmed by qualitative interviews.

Household Income and Expenditures

Table 6: Household Income and key expenditures (KES)

	Household Income (Monthly)	Food (Weekly)	Education (Weekly)	Debt (Weekly)	Community Contributions (Yearly)
Mean	7,320	1,995	955	1,490	653
Median	6,000	1,830	350	950	500

Income

As indicated in the table above, the average household income is 7,320 KES monthly, while the median household income is 6,000 KES. This may reflect the lack of diversification of IGAs in the labor market. Indeed, refugees are left with a few options for livelihood activities. The primary sectors of employment are services and retail, with very few opportunities in other sectors such as manufacturing or agriculture.

Debt

The mean debt expenditure (1,450 KES a week) is considerably higher than the median (950 KES a week). This highlights that some families are much more vulnerable than others, or that they do not have the networks to allow for loans. Debt is often used as a coping strategy when families run out of money. While borrowing money can be a positive coping strategy (investment), the Kakuma context suggests that most indebted families take out loans as coping strategies when they are in need.

Eventually, those short-term coping strategies turn into a debt trap for households who have no income to repay their debts.

KII, UNHCR Field Officer

In the long term, repaying debts may also prevent families from making other investments, for instance in education or health.

Food Consumption

The typical household spends 1,830 KES (median) per week on food, compared to a mean of almost 2,000 KES. Such homogenous profiles indicate that households tend to spend relatively similar amounts on food, which can be explained by the limited variety of available food products in the local market.

Education

The gap between the mean and the median is particularly important in education-related expenditure. The typical household spends 350 KES weekly on education (median), while the mean reaches 955 KES weekly. This may indicate that some households prioritize education and are *able* to do so, as a way of investing in the future of their children. Other families are reluctant to send their children to school, as they consider that the opportunity cost of sending children is too high.

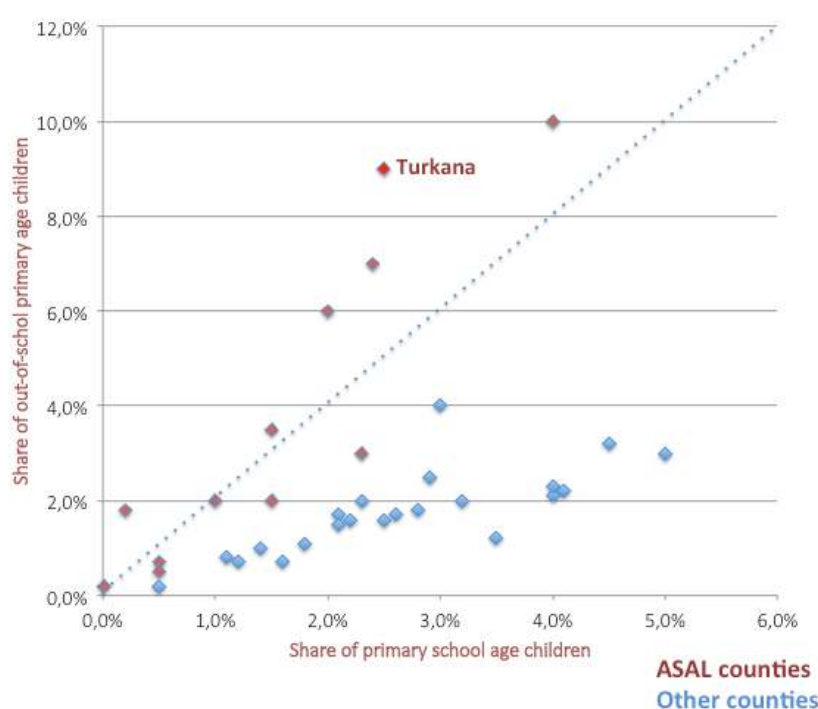
Why would (refugee families in Kakuma) invest time and money in secondary education if their children cannot get a work permit and if the local labor market exclusively provides opportunities for unskilled workers? The regulatory and political framework still creates a strong disincentive.

KII, UNICEF Education Specialist, Nairobi

UNHCR²¹ found that in 2015:

- 39.9% of children were enrolled in pre-primary education;
- 73.3% of children were enrolled in primary education;
- 2.3 % of children were enrolled in secondary education.

Graph 5: Kenya's primary school age population vs. out of school population (by county)²²



However, it is important to bear in mind that in a county where, on average, only 3% of the population have a secondary level of education or above, Kakuma fares *better* than most neighboring wards on key socio-economic indicators – including education. As seen in a Society for International Development report,²³

²¹ UNHCR Kakuma (2015) Education Update September 2015. The figures are net education rates provided by UNHCR.

²² Based on the EMIS Census 2009 – in Brookings Institute, 2010.

²³ KNBS and SID, *Exploring Kenya's Inequality – Pulling apart or pooling together?* Kenya, Nairobi, 2013 <http://inequalities.sidint.net/kenya/county/turkana/#education>

Turkana Central constituency has the highest share of residents with a secondary level of education (or above) of 7%. Turkana Central constituency is 4% above the county average.

Remittances

Caveat: While remittances are clearly an important aspect of the refugee economy in Kakuma, it should be noted that some communities might undervalue the amount they receive given the fear that this will have an impact on the aid they receive from NGOs.

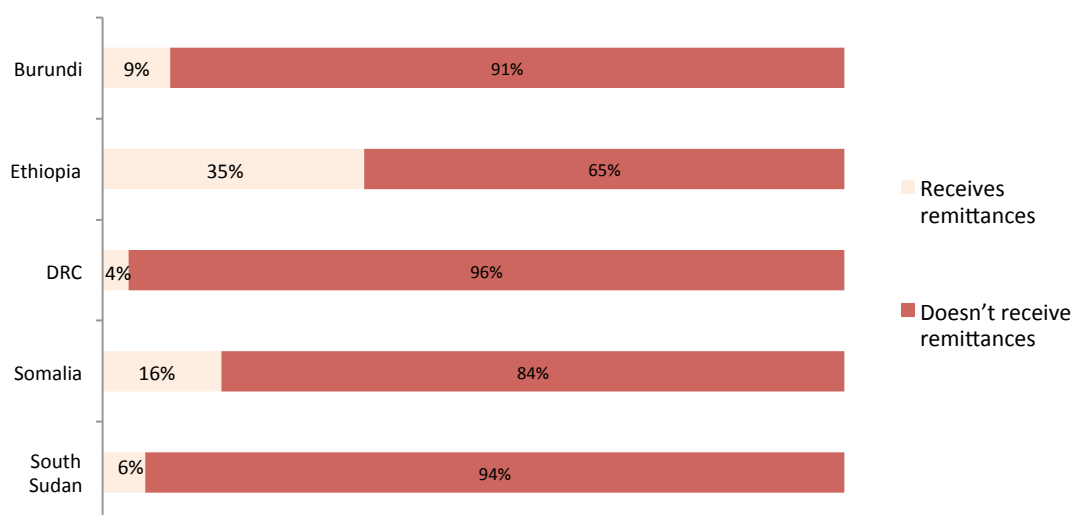
In Kakuma, as in most refugee camps, households derive income from a wide range of sources including families and friends who live abroad. Income from remittances is very common amongst certain communities. The two communities, which receive the highest number of remittances in Kakuma are Somalis (16%) and Ethiopians (35%). This is not surprising given that both Somalis and Ethiopians belong to larger networks of diaspora communities stretching from East Africa to the Middle East, USA and Europe. Previous studies by Samuel Hall highlight that Kakuma's refugees receive money from abroad from relatives who have been previous refugees and got resettled or from relatives who work as clandestine migrants. M-PESA agents at Kakuma estimate that refugees receive 100,000-150,000 USD per month.²⁴ For this study, four banks were found to regularly conduct remittance transfers: Dahabshiil, Amql, Dalson, and Iftin.

Our institution is a very important economic interface for people here. Every Somali has relatives abroad. It is a strongly linked community [...] and Dahabshiil connects the dots.

Dahabshiil, Manager, Nairobi

On the other hand, only 6% of refugees from South Sudan and 4% of refugees from RDC claim to receive any money from remittances. This can be an indicator of the limited networks they possess abroad. It also highlights that they are at a higher risk of vulnerability as they have a more limited range of sources for income to rely on in case of shock.

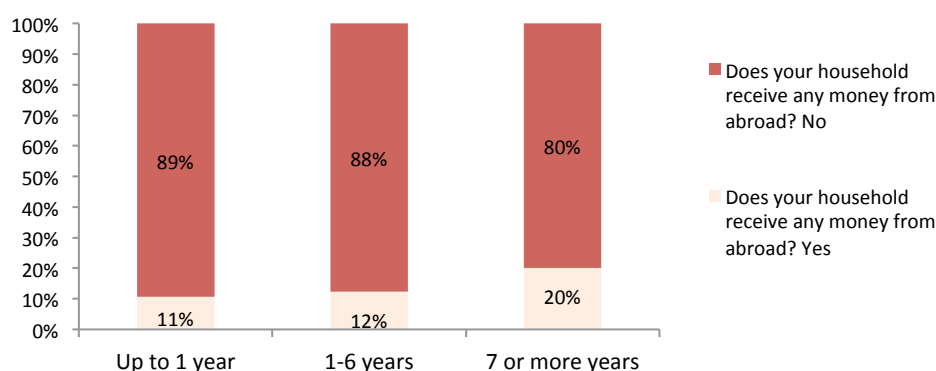
Graph 6: Remittances received based on country of origin



A slight difference was noted in terms of length of stay: 20% of refugees in protracted situation receive remittances compared to only 11% of recent arrivals. This could be attributable to the fact that refugees in protracted situation are more likely to have networks of family and friends settled abroad.

²⁴ See Oka, R. (2011), *Unlikely cities in the Desert: the Informal Economy as causal agent for Permanent 'urban' sustainability in Kakuma refugee camp, Kenya*, Urban Anthropology, p.245.

Graph 7: Remittances received based on the number of years spent in Kakuma

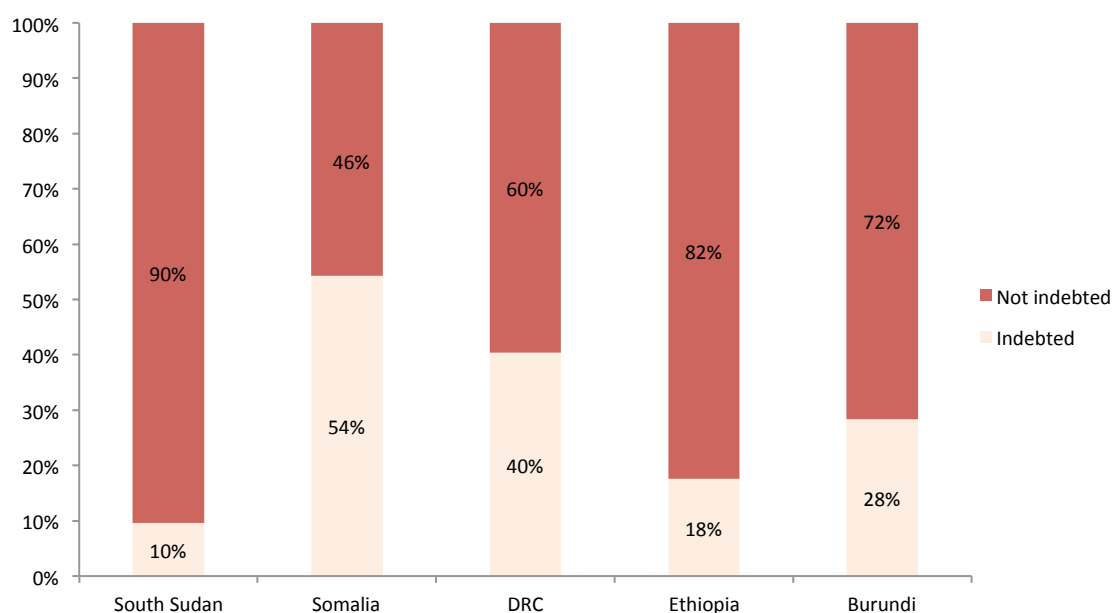


Debt

Debt is part of the economy of Kakuma. According to a WFP market assessment in Kakuma, there are different forms of debt-related transactions - money can be borrowed in kind or cash from friends, relatives, or from shopkeepers, and *'it is common to take food items and other non-food items from the local shops or from friends and neighbors on credit [...] From the shops, they can borrow food and other items while from relatives they borrow food only. The food is paid for in kind to relatives and neighbors, after they receive their rations from WFP, and paid for in cash to the local shopkeepers.'*²⁵

The graph below highlights the level of indebtedness incurred by each community. South Sudanese and Ethiopians are the least indebted communities, while over half of Somali households interviewed carry debt.

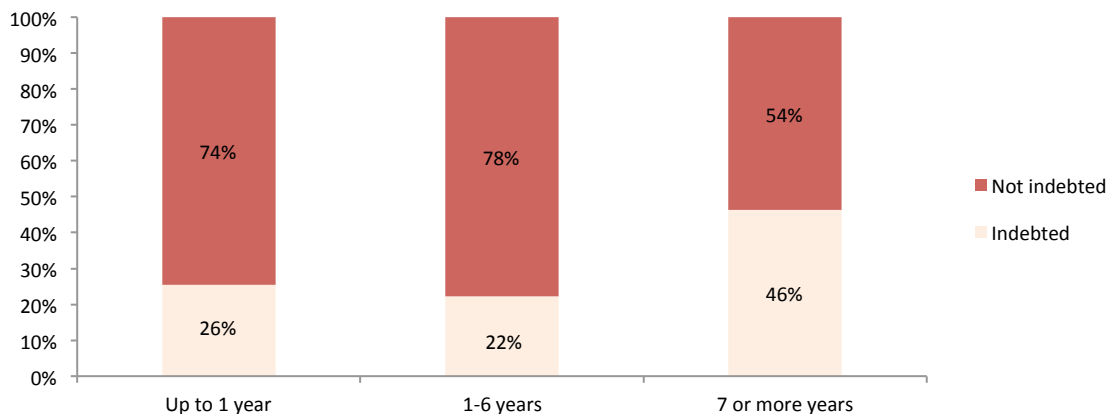
Graph 8: Household indebtedness levels



²⁵ WFP (2014), *Dadaab and Kakuma refugee camps, Market Assessment*, p.52.

Graph 10 highlights the level of indebtedness incurred by recent arrivals versus refugees in protracted situation. Close to half of refugees in protracted situation are indebted versus only a quarter of recent arrivals. This highlights a gap in terms of financial networks.

Graph 9: Debt and duration of stay



Finally, based on the quantitative *and* qualitative findings of this study, this broad picture points to different indebtedness profiles in Kakuma:

- **Positive debt (debt for investment):** This type of “virtuous” indebtedness is common amongst Somali communities. It allows individuals to invest. Research shows how the well-established trading communities have ‘the enhanced ability to handle goods and services, manage the flow of capital and credit within and between camps from offering small-scale retail credit to banking and remittances services.’²⁶
- **Lack of indebtedness:** The two least indebted communities are South Sudanese and Ethiopians. The lack of indebtedness among Ethiopian refugees can be attributed to the fact that they have the most diversified level of income in the camp, enjoy the highest level of employment and most importantly, they are the highest recipient group of remittances from abroad. By contrast, the South Sudanese are one of the least indebted communities not due to diversified levels of income but rather due to the fact that they possess limited networks in Kakuma - refugees’ bankability also depends on their integration and duration of stay in the camp.

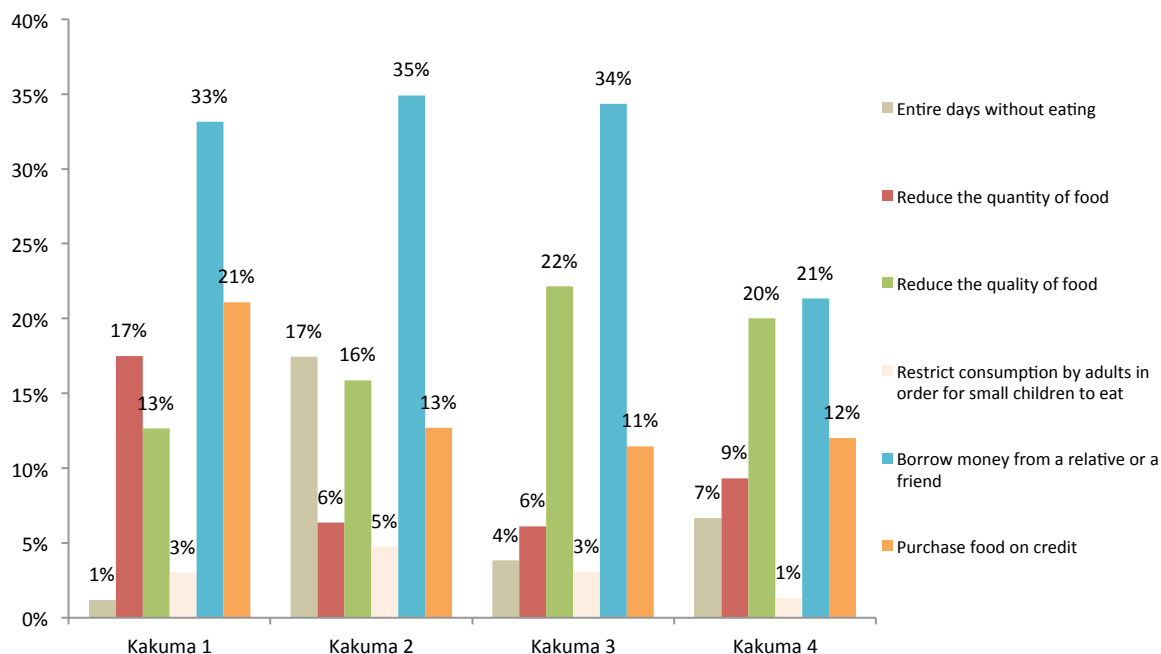
Coping strategies

Finally, assessing the way refugees cope with food shortages is a strong indicator of household vulnerability.²⁷ In a context of insufficient livelihood opportunities, Kakuma refugees’ inability to meet their food needs forces them to resort to several coping strategies:

²⁶ Oka, R. (2011), *Unlikely cities in the Desert*, p. 238.

²⁷ See Farrington, J. (2004) ‘Risk and vulnerability.’ Background Paper prepared for DFID and Dercon, S. (2005) ‘Risk, vulnerability and poverty in Africa.’ In *Journal of African Economies*, 14(4), 483– 88. <http://jae.oxfordjournals.org/cgi/reprint/14/4/483>

Graph 10: Food coping strategies used in Kakuma

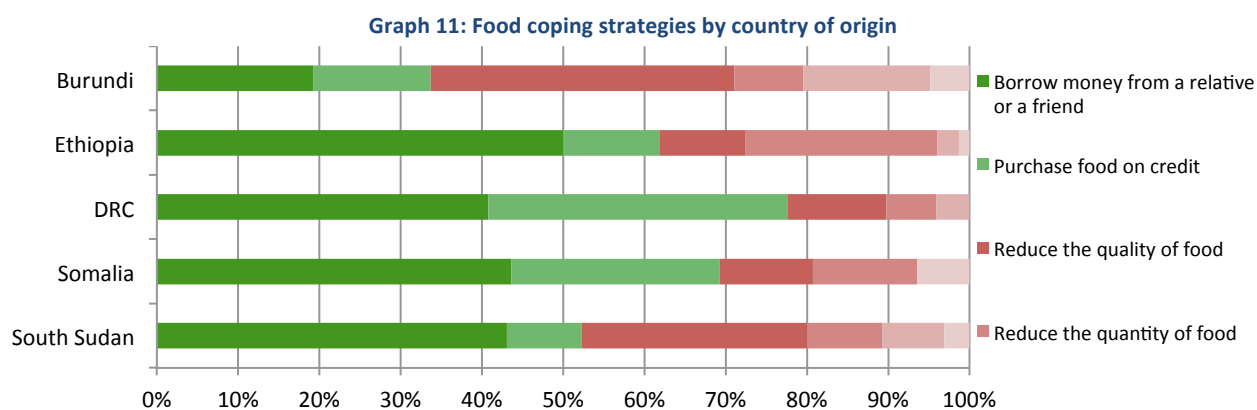


Refugees in all four camps reported resorting to harmful coping strategies such as spending entire days without eating, reducing the quality and quantity of food. This highlights that insufficient access to quality food is still an issue for refugees in situations of prolonged displacement. However, there is a strong correlation between access to networks and the duration of displacement. Compared to Kakuma 1, 2 and 3, refugees in Kakuma 4 are less likely to borrow money from a relative or a friend when in need. Given that Kakuma 4 is one of the newest camps, recent arrivals lack the networks and some of the adaptive advantages that refugees in protracted situations possess. As such, refugees in Kakuma 4 might be more vulnerable in terms of socio-economic or climatic shocks both at a household and community level. From a programmatic perspective, this could mean that more assistance is required for refugees in Kakuma 4.

The six main coping strategies below can be divided into two broader categories:

- **Immediately harmful coping strategies** (in red in the graph below) include solutions that directly impact the well-being of the family: reducing the quality or the quantity of food. Overall, they are prioritized by 43% of the surveyed households;
- **Potentially harmful coping strategies** (in green in the graph below) include mitigating solutions that might impact the wellbeing of the family in the long run. Overall, they are prioritized by 57% of the surveyed households;

When disaggregated by country of origin, these data show clear differences between refugees from the DRC, Ethiopia and Somalia (more prone to favoring coping strategies potentially harmful in the long run) and refugees from Burundi and South Sudan (who resort to immediately harmful coping mechanisms).



The preliminary analysis of the socio-economic environment in Kakuma validates the assumption that communities in protracted refugee situations are more likely to have developed stronger coping strategies and to have acquired more stable social and financial networks. Moreover, considering the pivotal role of debt-related transactions, it is important to note that indebtedness can have a positive role, enabling communities to save, invest and contribute to economic development. However, this is only viable with real economic integration and for communities that have access to credit. Finally, while there is certainly a refugee economy in Kakuma independently of aid provisions, aid still constitutes an important source of income in the camps with 38% of refugee households relying on it for survival. The more vulnerable communities should be targeted through alternative development tools such as capacity building and financial instruments promoting entrepreneurship.

Labour Market Assessment

A key factor affecting food availability in Kakuma are road conditions and local transport capacity. Based on the 2014 WFP Vulnerability Analysis and Mapping (VAM) market assessment, the average resupply times are 1.8 days during the dry seasons and 3 days during the rainy seasons. This market assessment was conducted in October 2015, before the rainy season.

Economic integration

To qualitatively assess Kakuma's market profile, we used definitions extracted from the WFP VAM Notebook and asked different key players to grade key dimensions of a well-integrated market – namely, the market system, market structure, market concentration, market accessibility and connectivity, market integration and relevant government policies and regulations.

The market structure describes the market in terms of who is participating, the magnitude of their participation and their level in the market chain (e.g. large-scale traders, small-scale individual traders, large companies or farmers' associations/cooperatives, etc.). The market concentration tells us about the participants' ability to dominate and influence important market processes such as commodity supply, commodity demand, price fixing, etc. Market accessibility and connectivity is defined in terms of the infrastructure that links the market to other markets, to production areas and to consumers.

It clearly emerged from the interviews conducted that the market in its current shape is not structured enough to meet the important local demand.

In Kakuma, most goods, commodities, vegetables, food- and non-food items, etc. are imported. Mostly from Kitale and sometimes even Nairobi or neighboring counties. So, the most prominent market players are the few intermediary traders who often own or are friends with the transportation business.

KII Kakuma, Retailer, Fruits and Vegetables.

There are a lot of small or medium-size retailers in the food sector and not a single large-scale and structure player. It is sad because smaller players are risk adverse and always use the same approaches. In the long run, the local market cannot generate money without any intermediary capacity: you need producers, not only retailers; you need large companies, not only middlemen and wholesalers; you need more associations and cooperatives open to new technologies.

KII Nairobi, former WFP field officer in Kakuma.

There is no doubt that Kakuma offers more guarantees and potential than, for instance, Dadaab, in terms of economic development. But the problem remains the same: economic actors there are not autonomous because the market structure is non-existent. It strongly undermines any possible short- and medium-term economic development. It is sad when you consider the potential demand and also the possible interactions with what we call "host communities" – whatever their exact status is.

KII Nairobi, WB Economic Analyst.

According to the last WFP-VAM, most markets in the arid lands are weakly integrated both amongst themselves and with the main supply market in Kenya. Kakuma however is located along the North-western transport corridor which links Nairobi with Lockichoggio and South-Sudan.²⁸ As a result, the camp economy has gained prominence acting as a major urban centre for refugees and host community alike.²⁹ Indeed, the camp boasts a vibrant market of food and non-food items, including a variety of shops, social amenities and services such as restaurants, cafeterias, tailoring services, mechanics, carpentry and beauty and telephone

²⁸ WFP (June 2014), *Dadaab and Kakuma refugee Camps, Market Assessment*, p.4

²⁹ Ibid, p.4

services.³⁰ While most customers in the camp are refugees from the same or nearby sub camps, some host community members use the camps market because of its cheaper prices.³¹

Our field observations and interviews with traders show that there is large supply of dry food products, water and soft drinks, cereals, vegetables, meat products sold in Kakuma, while only a minority of vendors sell fish, building materials (high quality sand and stones), and fruits.³² Most of these products are brought from Kitale, which is the most important source of commodities in Kakuma. Given the strong dependence on products supplied from Kitale, markets are heavily influenced by seasonality and price fluctuations between the wet and dry seasons.

- **Non-local goods:** A number of items are in demand but local production for these items is either non-existent or insufficient. According to WFP, these items include vegetables and fruit (onions, tomatoes, carrots, sukuma wiki, mangoes, oranges), dry food stuff (rice, sugar, wheat and corn, flour, salt, tea leaves), and soft drinks and mineral water.³³
- **Locally produced items:** Livestock (live animals, meat, hides and skins), milk and fish constitute ‘the only large scale locally produced commodities in the arid lands.’³⁴
- **Most consumed items:** Interviewed households spend the lion’s share of their food expenditure on cereals, meat, sugar and vegetables.³⁵ The table below highlights the average household expenditure on a number of items per week.

Table 7: Average household expenditure on food (based on the SH survey)

Cereal	Vegetables	Goat meat	Rice	Sugar	Fish	Oil, fat, and butter	Camel meat	Eggs
788 KES	420 KES	309 KES	317 KES	275 KES	145 KES	124 KES	88 KES	61 KES

- **Luxury goods:** When asked to name a specific item they would like to buy for their households more often if possible, most respondents insisted on food items (87%) such as fish (13%), goat meat (12%), cereal (9%), poultry (8%) and rice (8%). Qualitative focus group discussions highlight both the lack of those products and an understanding of their nutritional quality.

I wish NGOs could help us with better items. Our diet is not good and our children always eat the same things. We need fish and meat to help them grow.

KII Father, 34.

Key labour market dynamics

This section looks at the major sectors of employment in Kakuma and attempts to create a working profile of each demographic, characterised by attitudes towards the labour market. In addition it draws comparisons between demographic groups to illustrate gaps in perception and understanding with regards to employment.

Employment by sector

Much has been written on camps as major semi-urban, semi-permanent hubs acting as centres for services, shops, and social amenities serving both the refugee and host community alike.³⁶ In Kakuma, given the restrictions of movement faced by refugees in the camps, the lack of manufacturing possibilities and very

³⁰ Ibid, p.6

³¹ WFP (June 2014), *Dadaab and Kakuma refugee Camps, Market Assessment*, p. 5.

³² Ochieng, E. (2013), *Promoting life-skills and livelihoods in Kakuma*, p.6-8.

³³ Ibid, p.21.

³⁴ WFP (June 2014), *Dadaab and Kakuma refugee Camps, Market Assessment*, p. 5

³⁵ These findings are in line with the food security and outcome monitoring (FSOM) reports suggesting that the commodities households spend most of their money on include sugar, milk, other cereals and some meat and vegetable

³⁶ Oka, R. (2011), *Unlikely cities in the Desert*.

limited agricultural initiatives due to water shortages, the main sector of employment for refugees is the services sector. However,

When I say services I do not mean that Kakuma has engineers, teachers, doctors, and lawyers.

NGO, Deputy Country Director, Nairobi

According to recent studies,³⁷ the most significant IGA for refugees in the camp is with the NGO sector (27.1%), which not only provides formal jobs but also higher salaries, while the main self-employment sectors in the camps are groceries (35.4%) and retail business (25.4%).³⁸ There is a clear distinction, in this regard, between the formal market (where NGOs are seen as the main if not the only employer) and the informal one.

- In practice, NGOs provide employment for refugees as Incentive Workers and pay a fraction of what would be paid for Kenyan national staff, as refugees do not have work permits to enable them get “formal employment” in the country.
- Under the informal umbrella, the field observations conducted by the review team indicate that there is a diverse range of services and facilities in the camp with a particular focus on hospitality, cafes, hotels, and hairdressing or beauty parlours. While petty trade is one of the biggest sectors of employment in the camps, new camps such as Kakuma 4 have less established or no formal markets.³⁹ Thus, differences between camps must be taken into account for programmatic purposes.

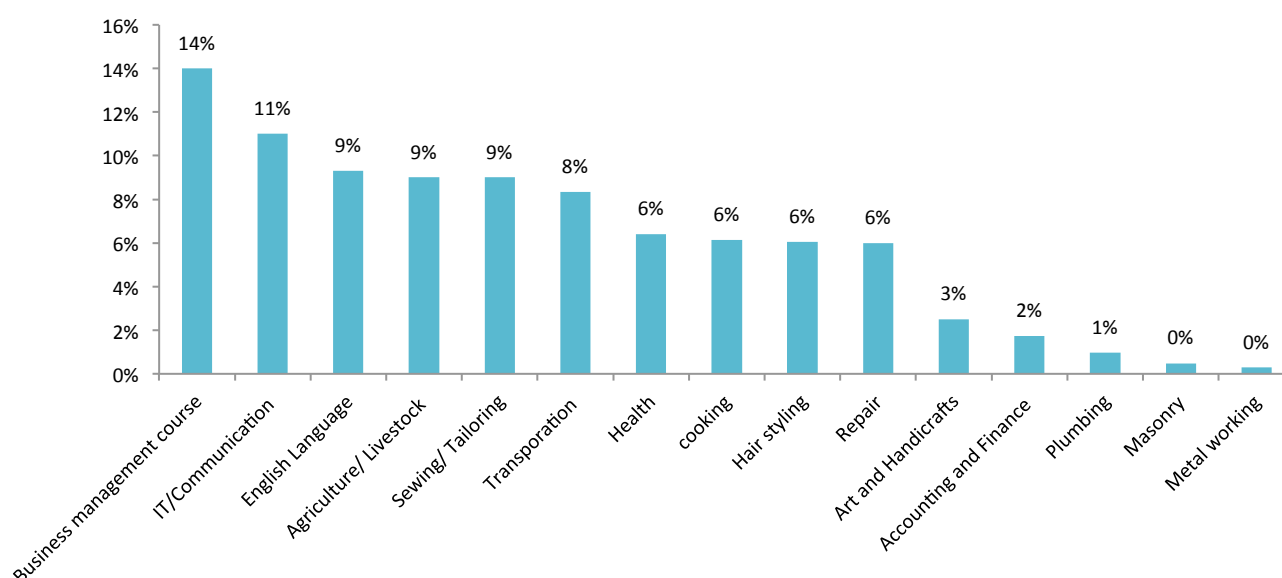
When asked to name skills that could lead to jobs on the local labour market, a significant proportion of respondents focus on skills required by most local and international NGOs. This confirms that

the local job market is skewed towards artificially inflated demand for the skilled happy few who work for NGOs, while the real labor market's characteristics are unskilled jobs, informality and low wages.

NGO, Deputy Country Director, Nairobi

According to respondents, the skills most likely to lead to income-generating activities business management skills, IT and communication, English, followed by agriculture and livestock related activities, tailoring, transportation and health, cooking and hair styling and finally repair.

Graph 12: Skills or sectors perceived as a good source of employment in Kakuma



³⁷ Ochieng, E. (2013), Promoting life-skills and livelihoods in Kakuma, p.16.

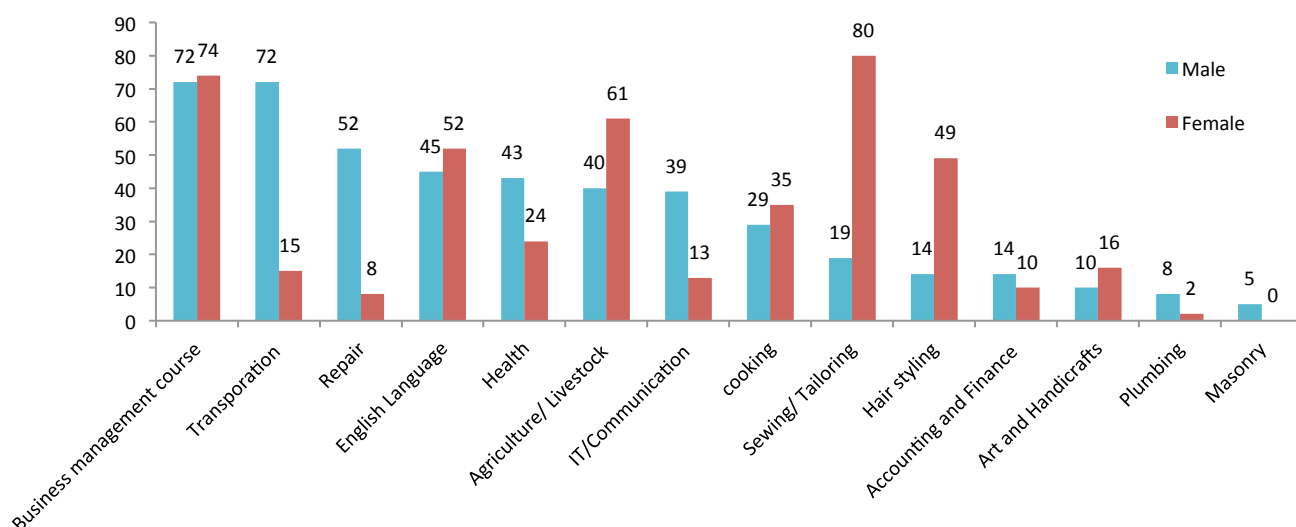
³⁸ Ibid, p.16-p.21.

³⁹ WFP, UNHCR, assessment of refugee camps in Kenya, p.22.

When disaggregated by gender:

- There is no significant differences between male and female respondents when it comes to demand for advanced theoretical skills;
- By contrast, according to most survey respondents, there are stereotypically male skills (transportation, repair, plumbing, masonry) and female skills (sewing, tailoring, hair styling, art and handicrafts);
- Lastly, if agriculture- and health- related skills are perceived as offering job opportunities to both male and female job seekers, these sectors are not homogenous and require different sets of skills specifically tailored to either male *or* female workers.

Graph 13: Skills or sector perceived as a good source of employment in Kakuma



Employment country of origin

When analysed by country of origin, some trends appear in relation to the sector and country of origin. Somalis are over-represented in business with 19% of Somalis working as wholesale traders and 33% in business. Over half of the Congolese who mentioned being employed work for NGOs – a figure larger than any other group. Ethiopians mostly work in the services sector and for NGOs (25%).

Table 8: Employment by sector and country of origin

	Somalia (n=27)	RDC (n=25)	Ethiopia (n=48)	Burundi (n=40)
Agriculture	4%	-	2%	3%
Livestock	-	-	-	8%
Construction	4%	-	4%	5%
Manufacturing	-	-	-	8%
Mechanical services	-	-	6%	5%
Wholesale Trade	19%	-	4%	-
Retail trade	7%	-	4%	-
Sewing, embroidery, tailoring	11%	12%	-	3%
Electricity	4%	-	-	5%
Plumbing	-	-	-	5%
Household work	-	-	6%	-
Health and social work	26%	8%	6%	3%
Teaching	4%	12%	17%	3%
NGOs	11%	56%	25%	10%
Hotels and restaurants	4%	-	13%	3%
Fishing	4%	4%	-	-
Business services	33%	8%	4%	10%
Services (cooks, waiters, hairdressers, childcare...)	11%	8%	6%	5%

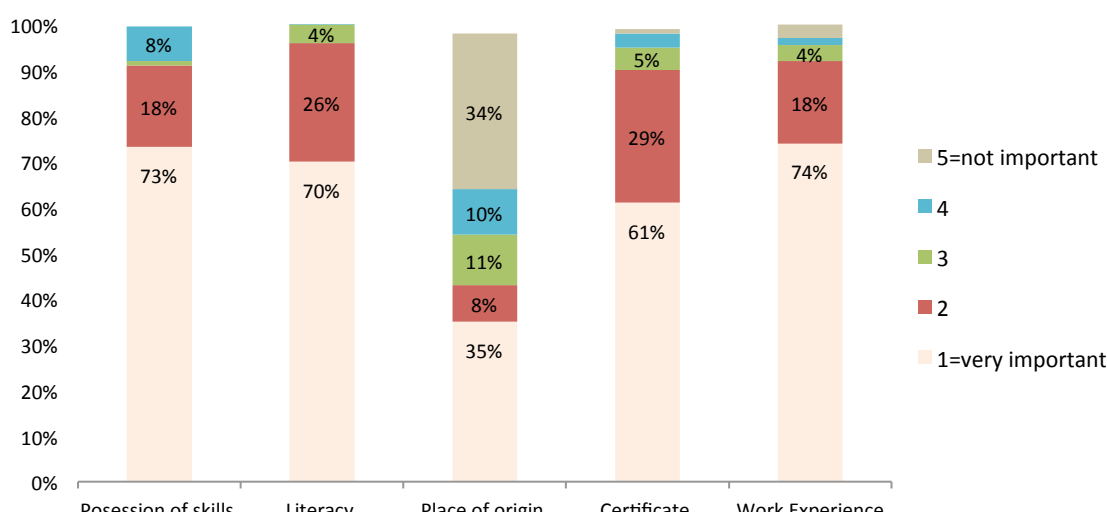
Key factors for finding employment in Kakuma (according to survey respondents)

When asked to rate the importance of certain factors in finding employment, possession of skills is rated as the most important, followed by literacy and work experience. Respondents rated 'country of origin' as the least important factor for finding a job. A person's place of origin is not perceived as a barrier to employment. Actual skills and experience are favoured over diplomas and certificates, and most respondents have a relatively good understanding of employers' skills requirements:

It is not about certificates and diplomas. We need problem solvers, doers, people who can do the job.

Employer, wholesale trade, Kakuma

Graph 14: Perceptions of most important factors for finding employment in Kakuma



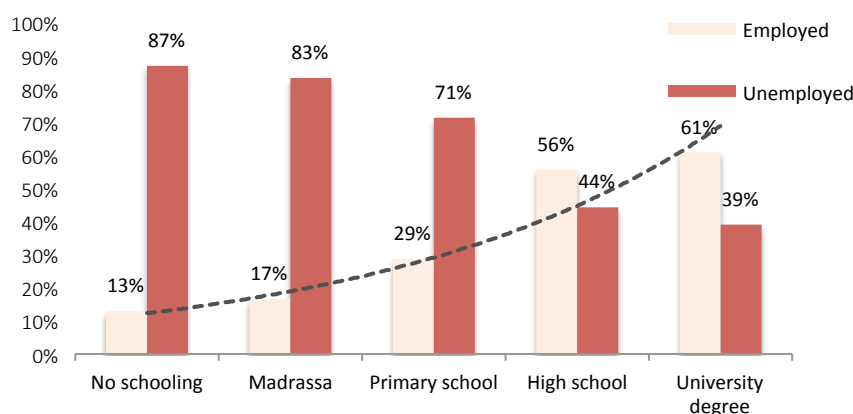
Key factors for finding employment in Kakuma (objective assessments)

This section sheds light on the drivers of and obstacles to employment in Kakuma.

Education

The composition and education of households are the primary determinants of their income. There is a strong correlation between employment and education levels, which suggests that one of the most important drivers of employment is education. Employment here refers to both wage and self-employment. The higher the education level of refugees, the more likely they are to be employed; 61% of refugees with a university degree are employed versus only 13% of those without a degree. Education opportunities are extremely limited in Kakuma thus providing further challenges in the employment of refugees, specifically youth.

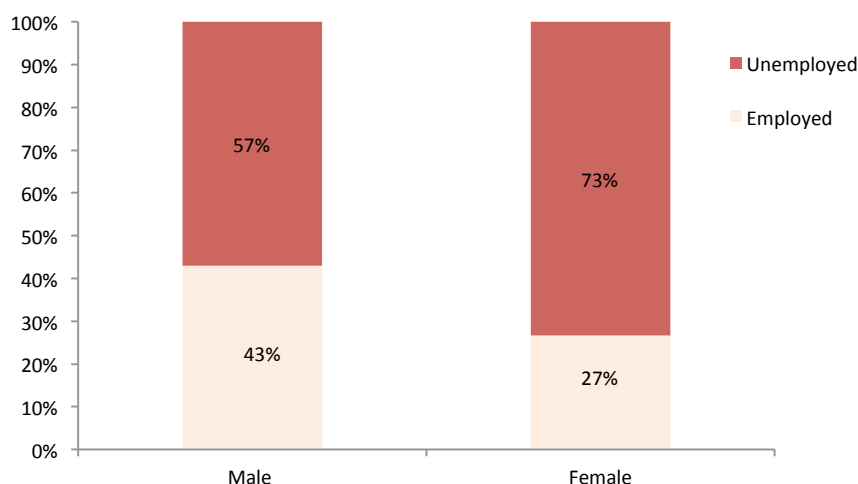
Graph 15: Employment status and level of education



○ Gender

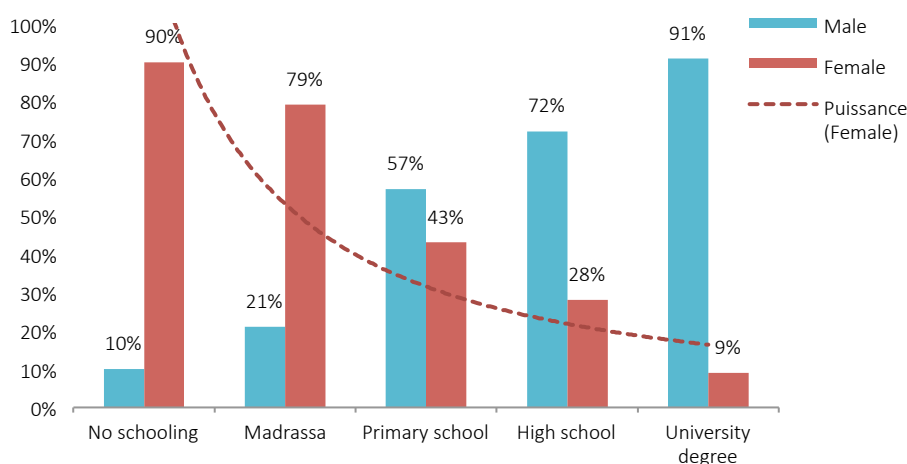
Women are at a disadvantage when it comes to both education and employment, as they are far more likely to not have attended school. While unemployment levels are high in general, there is a clear gender gap with 73% of female respondents declaring to be unemployed versus 57% of male respondents. Thus, for programmatic purposes, it is key to promote female-friendly trades.

Graph 16: Unemployment level by gender



Enrolment of girls compared to boys is skewed, with fewer girls enrolled in schools especially in the upper primary and secondary levels. The gender gap is only 14% when it comes to primary education. However, this increases drastically for high school and university with a 43% gap between men and women. While the 2012 Kakuma education assessment reveals very low enrolment in tertiary education, female participation in tertiary opportunities is even lower with “only about 7% of youth aged 18-25 in the camp enrolled in tertiary programmes and with female participation at only 20%.”⁴⁰ As individuals with higher education are more likely to obtain employment than others, particular emphasis must be placed on education and training programs to increase female participation and youth.

Graph 17: Education levels by gender

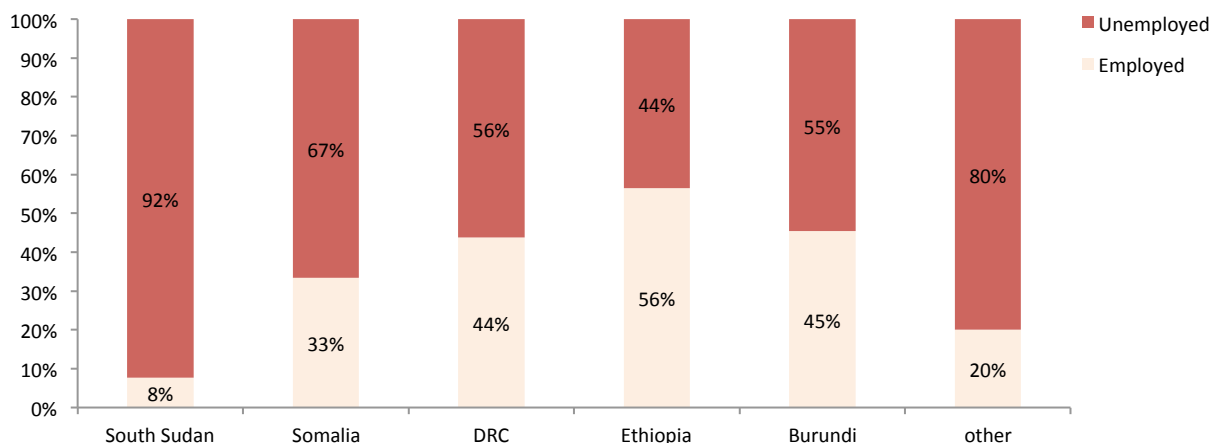


○ Country of origin

⁴⁰ Kakuma Refugee Education Strategy 2013-2016, p.7.

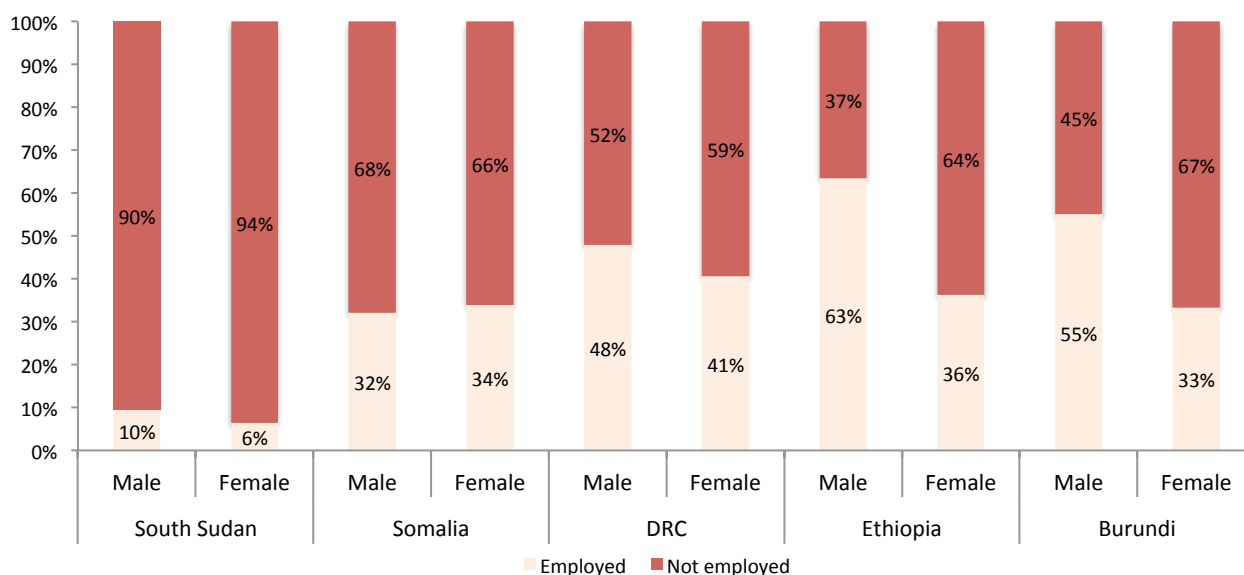
Unemployment levels vary greatly across communities in Kakuma. The highest level of unemployment is amongst refugees from South Sudan (92%), while over half of the Ethiopian respondents are employed. This is due to a number of factors. Lack of employment can be an indicator of low social integration. South Sudanese refugees should be taken into account for programmatic purposes.

Graph 18: Employment levels by country of origin



Important variations exist across countries of origin and respondent gender. Female employment amongst Somali communities is at 32%, almost matching male employment of 34%. Congolese refugees also display relatively similar employment rates across gender, whereas those from Ethiopia and Burundi have a considerably lower female employment rate.

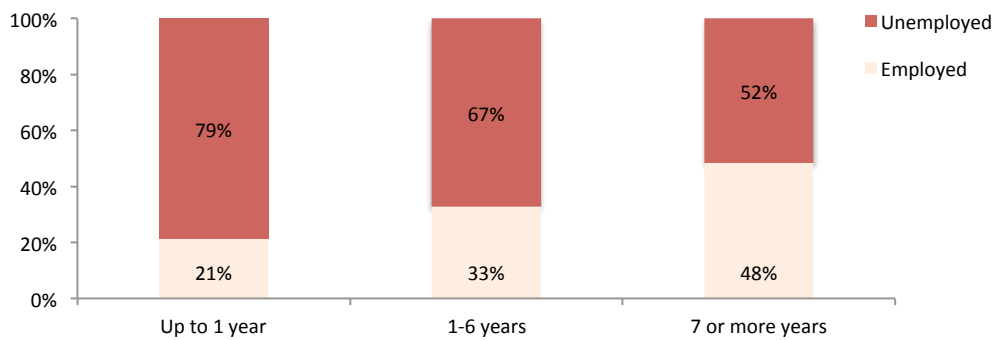
Graph 19: Employment levels broken down by country of origin and gender



○ Protracted refugees versus recent-arrivals

There is strong correlation between employment levels and time spent in Kakuma. Refugees who have spent 7 or more years in Kakuma are more likely to be employed at 48% compared to 21%. The time spent in the camp is one of the key determinants of employment.

Graph 20: Employment level broken down by time spent in Kakuma



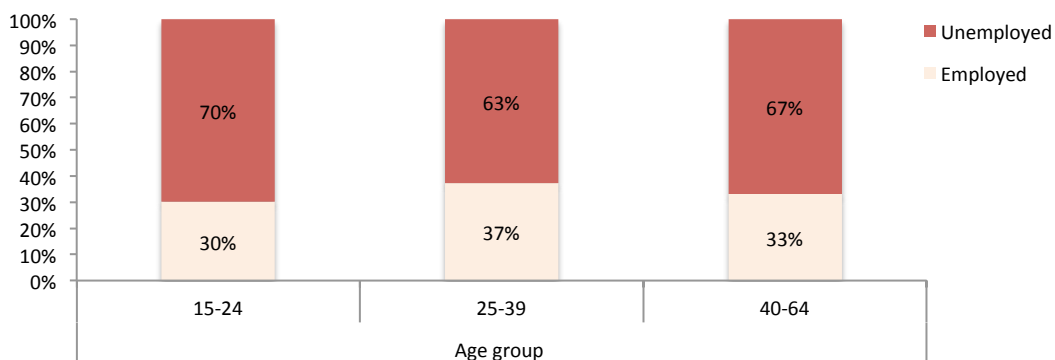
○ Age

With limited employment opportunities, unemployment levels in Kakuma are high across all age groups. Levels of unemployment are fairly similar across all age groups though slightly higher amongst youth between the ages of 15-24 (69%), compared to those aged between 25-39 years old (63%). However,

It is not because the situation is difficult for all age groups that specific youth employment programmes or job creation initiatives targeting older people should not be designed, coordinated, and implemented in Kakuma. People can learn new things at all ages and everyone needs an income – but you don't necessarily train everyone the same way and for the same type of jobs.

HelpAge, Programme Officer

Graph 21: Unemployment levels by age group



Challenges...

The challenges to finding IGAs are multiple and often inter-linked. They are fundamentally related to structural issues inherent to encampment policies. Beyond and related to those structural issues, refugees have limited access to external markets and lack skills and capital to start businesses. However, a market can be created in Kakuma provided that its inhabitants obtain the necessary skills and knowledge. A shift should take place from bringing commodities into the camp to making and manufacturing them in the camp.

1. **Limited access to and understanding of external markets:** One of the biggest challenges facing refugees is their limited access to external markets. Interventions can play a key role in promoting an understanding of regional and national market requirements (by focusing on quality standards, local labels; by developing analyses of both the supply and demand sides in Kakuma but also Lodwar, Nairobi and beyond).
2. **Lack of basic skills:** A review of current livelihood interventions targeting refugees in Kakuma shows that little emphasis is placed on sustainability. Currently, a number of livelihood interventions focus on enterprise development, technical/vocational skills training and life skills. Vocational training centers provide training to refugee youth in fields such as masonry, carpentry and electrical installations. These courses have a 'limited

focus on sustainability’⁴¹ - once refugees learn a skill, there are not many attempts by NGOs or training centers to help them find employment or link them to external markets to sell their products. Emphasis should be placed on marketable skills.

3. **Lack of start-up capital:** Access to credit for petty business is reportedly a major challenge facing refugees in camps.⁴² Once refugees learn skills, many are unable to utilize them given their lack of access to capital. Many communities lack the financial networks to borrow capital and start a new business. This is particularly true for South Sudanese and other new arrivals in the camp who might find it difficult to borrow money.

...and opportunities

1. **Creating Internships/Training programs:** Too often, refugees are taught a skill but no further help is provided to link them to markets or to provide them with capital to start a business.⁴³ In order to increase refugees’ chance to find employment, skills for life initiative, an initiative run by Swiss contact and NRC, created a model to improve livelihood opportunities in the camp by linking employers with employees through placements and internships training programs.⁴⁴
2. **Tapping into the private sector:** Currently, there are no private sector initiatives in Kakuma devoted to internship programs or vocational/skills development for refugees. Nonetheless, a number of financial institutions including Equity Bank and KWFT reported the possibility of providing youth with startup skills and financial services.⁴⁵
3. **Improving (coordinated) selection criteria:** Interventions and vocational training have traditionally not targeted specific populations but rather recruited whoever was interested ‘regardless of talent for the area of work’.⁴⁶ Thus, agencies have called for the need to have a better ‘selection criteria’ to align programs with candidate’s interests and needs.
4. **Linking refugees with external markets including online markets:** In order to circumvent refugees’ inability to leave the camps, interventions should be facilitating linkages between products made by refugees and outside markets, including through online sales. Similar initiatives have been successfully implemented in Zaatari camp in Jordan, opening up camp products to national and international markets. Creating certified products through KEBS could pave the way to greater economic participation of refugees.
5. **Developing translation hubs:** Given the number of languages spoken, NGOs operating in the camp could develop translation hubs within the four areas of Kakuma. Improving translation skills of refugees and giving them access to online resources could be a long-term beneficial investment and bring socio-economic dividends in refugees’ relationships with neighboring host communities.
6. **Producing commodities for use in the camping:** At the moment, most commodities are brought into the camp from outside instead of being manufactured within the camp. An important shift must take place – to train and develop people’s skills to manufacture products directly in Kakuma.⁴⁷

⁴¹ WFP, UNHCR (2014), *Joint assessment mission – Kenya Refugee operation*, p.22.

⁴² Interview, Swiss-contact, 26 October 2015.

⁴³ Interview, Swiss-contact. 26 October 2015.

⁴⁴ Ochieng, E. (2013), *Promoting life-skills and livelihoods in Kakuma*, p.8.

⁴⁵ Ochieng, E. (2013), *Promoting life-skills and livelihoods in Kakuma*, p.26.

⁴⁶ Ibid, p. 8.

⁴⁷ Interview, consultant on Kakuma, 23 October 2015.

Value Chain Analyses

This section of the report will highlight sectors that hold potential for livelihoods creation based on an analysis of labour demand and supply and available natural resources in Kakuma. Three value chains are examined in detail, targeting different sectors and skill-sets.

	Target group	Short-term Opportunities Assumptions	Long-term Opportunities Assumptions
Tomatoes	Unskilled labour	Contributes to food security in Kakuma? Great demand- supply fails to meet the demand?	Tomato paste/ tomato jam?
Hides and Skins & Handicraft	Semi-skilled labour	Untapped area given the abundance of hides and skins in Kakuma? Female-friendly employment opportunities in handicraft?	Primary and secondary processing? Creating leather products and developing labels, exports to regional markets?
Aloe Vera	Unskilled and semi-skilled labour	Protecting the local environment? Developing multiple sub-segments of the value chain? Linking with NGOs and private sector to boost the demand?	Promoting environment and associated jobs in the sector? Developing other Aloe species and uses? Promoting a “Kakuma label”?

The chosen value chains were selected following the market assessment as well as multiple key informant interviews in Kakuma that shed light on the business environment and constraints for individual sectors.

This part of the report asks the following questions: How well does each of the value chain function? Can they be improved? If so, how? And by doing so, what opportunities exist for creating employment opportunities for women, men and youth in Kakuma? A three-step approach is used:

Figure 4: Integrated approach for value chains analyses



To summarise the findings of the three surveyed value chains – tomato, hides and skins, and *Aloe Vera* – **there are strong market development opportunities in Kakuma, as well as tangible job creation opportunities for both unskilled and semi-skilled refugees**; however, none of the surveyed value chain has been optimised and their respective potential strongly differs.

When asked to assess the performance of each surveyed value chain, sellers (traders, retailers) consider time management, quality, delivery, and lack of flexibility the main obstacles to the development of their activity.

The absence of cooling facilities in Kakuma, the difficult physical access to the camp by road, and the risk of pest outbreaks are the main problems tomato traders have to deal with.

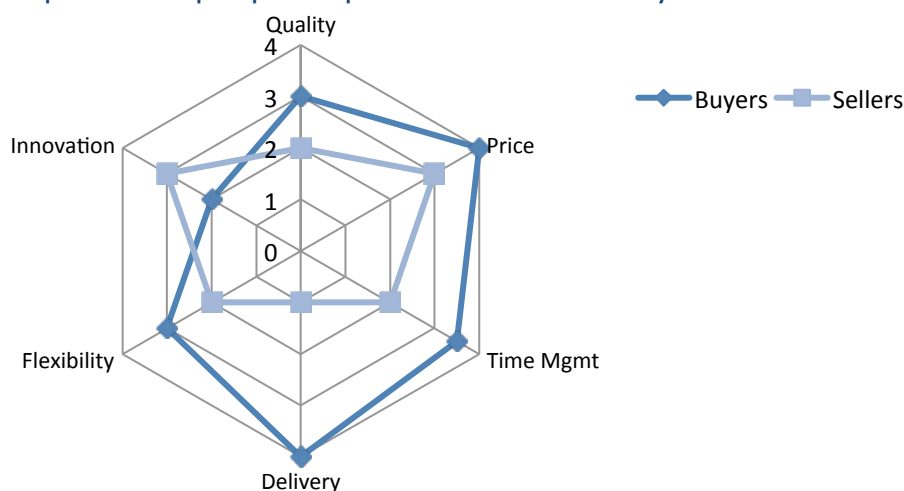
KII, Najma Mohamed (tomato retailer), Kakuma, September 2015

Consumers rank innovation poorly, as there is **almost no transformation or added value in the three surveyed value chains**:

If you want to find leather products, you need to order it from Kitale or Nairobi.

Focus Group Participant, September 2015

Graph 22: Crossed perceptions of performance in the three surveyed value chains



As mentioned in the following sections, **creating long-term livelihood and employment opportunities for refugees and host communities in Kakuma requires a paradigm shift from “importing” (dependency) to “producing and transforming” (autonomy).**

Methodology Reminder

- Tomato Value Chain: 17 KIIs and 2 FGDs
- Hides and Skins / Handicrafts Value Chain: 18 KIIs and 3 FGDs
- Aloe Vera Value Chain: 4 KIIs and 2 FGDs

The Tomato Value Chain

Overview of the tomato value chain

Demand for tomatoes is high in Kakuma as most households use it as a basic cooking product. Vegetables and fruits are valued commodities in the camp as food rations received from WFP do not include them. Most tomatoes are brought from Kitale to Kakuma as local production of tomatoes is severely limited by a number of reasons: harsh climatic conditions, soil infertility and scarcity of farming land. Availability fluctuates according to season and rainy season (during which transport from the main supply base in Kitale is difficult).⁴⁸

Water shortage is the most fundamental challenge facing Kakuma and thus impacting the production of tomatoes. With approximately 300mm of rain annually, Kakuma qualifies as “very arid and very hot” on the aridity index. In addition, rainfall is erratic and unreliable.⁴⁹ The majority of the soils are shallow sandy soils, with low overall fertility characterized by serious nitrogen deficiency and accumulated salt contents. As such, farming is a challenging enterprise in this location.

Agriculture in Kakuma

The potential for agriculture in Kakuma is yet to be fully explored. A few NGOs including AAH-I and DRC have supported farmers in the camp to grow a variety of vegetable crops from leafy vegetables, to fruits including tomato and watermelon. Land limitations have always been a constraint in Kakuma restricting the potential of scale-up of agriculture, but the creation of Kakuma 4 means that more land has become available for agricultural initiatives. While the shortage of water remains a key constraint, new methods of farming (such as drip and spate irrigation) are being explored to allow for a real upscale of agriculture.⁵⁰ A study by NRC has pointed out that water harvesting, the building of dams and water-pans during the rainy season as well as digging boreholes can drastically improve the potential of agriculture in Kakuma. Irrigation projects such as building water pans have not yet been undertaken in Kakuma but certain projects by IOM in Nanam and Oropoi hold potential for the Kakuma context.⁵¹

While most tomatoes are brought from Kitale, a small number of farmers grow tomato in the camps mainly for personal use and small-scale sale. Only about 3% of dry land farmers in Kakuma are currently growing tomatoes on their farms. They face difficulties in accessing the markets and challenges related to acquiring suitable land for cultivation.⁵²

⁴⁸ WFP (2014) Dadaab and Kakuma Camps Market Assessment

⁴⁹ Ministry of Agriculture (1987) Assessment on Soil Conditions in Some Water Spreading and Small Irrigation Schemes in Turkana. Republic of Kenya.

⁵⁰ Interview, AAH-I, 24 September 2015.

⁵¹ Ochieng, E. (2013) *Promoting life-skills and livelihoods in Kakuma*, p.26.

⁵² AAH-I (2015) “Gross Margins Analysis of Agricultural Crop Farming Enterprises: A Case Study of Kakuma Refugee Camp, Turkana County.” Submitted to UNHCR.

Figure 5 : Vegetable stand in Kakuma 1 market



The price of the average kilogram of tomato in Kitale is KES 50 per kilo.⁵³ The price is twice as high in Kakuma. The price build-up is attributed to transport and logistical costs. Substituting tomato imports by enhancing refugee farming could result in a drastic reduction in the price of tomatoes at the retail markets.

The following section will explore why the majority of farmers have been unable to grow tomatoes and explore ways in which they can do so within the constraints of the farming environment in Kakuma.

Mapping the Tomato Value Chain

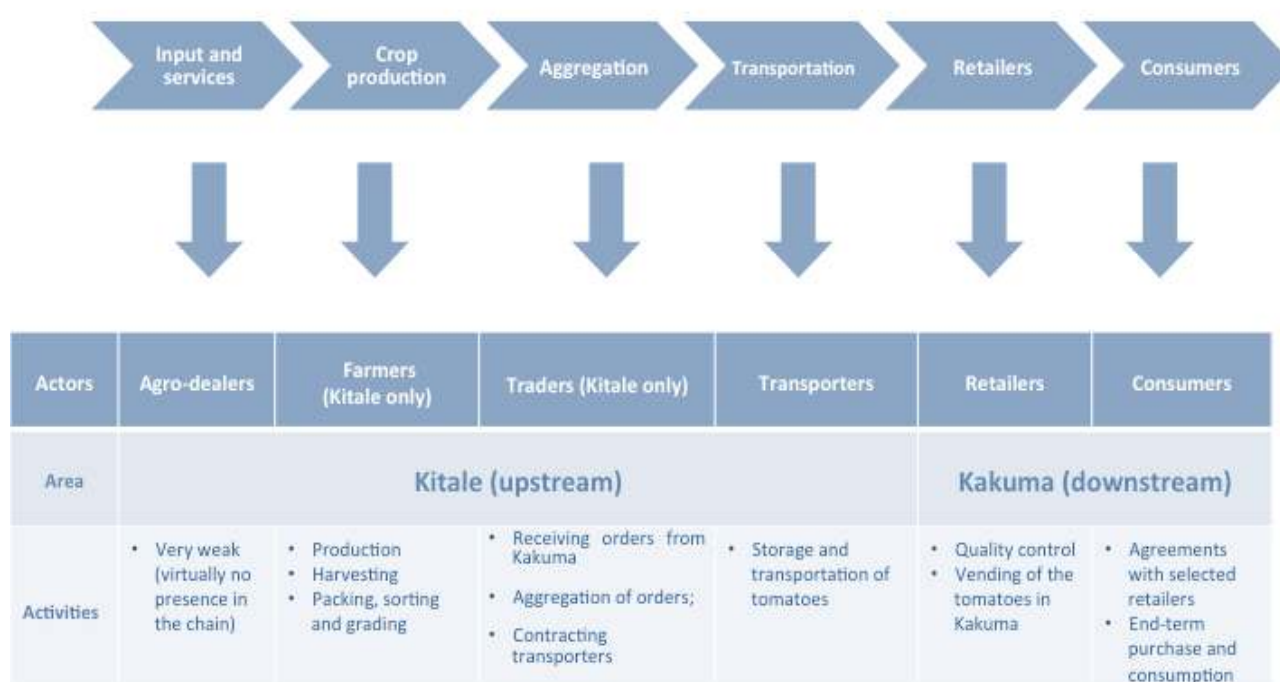
The main players of this value chain are the primary producers or growers, with the overwhelming majority of these growers being in Kitale and a handful in Kakuma. In Kakuma, the most active (if not the only) segment of the value chain consists of retailers, which satisfy a large, and increasing demand from local consumers. The main connectors are transport and logistics traders who are responsible for transporting tomatoes from Kitale and delivering them to the retailers in Kakuma:

Trucks and sun are essential to the tomato market in Kakuma. Without the trucks coming from Kitale, there is no supply, even if the price is much higher than in Kitale itself. In bad weather, trucks get stuck in the mud and access becomes very complicated.

Kakuma Retailer

The diagram below provides an overview of the tomato value chain in Kakuma and its key actors:

Figure 6: A simplified value chain map of the actors in the tomato value chain, Kakuma refugee camp, Kenya



⁵³ Ministry of Agriculture 2015 data, available from the AMIS (Agriculture Market Information System) database.

○ Input traders

Inputs required for tomato production include seeds, fertilizers and pesticides. Pesticides can be particularly expensive and are often unavailable, and attempts at farming tomato in Kakuma have been partly unsuccessful due to lack of input and pesticide control. Farmers interviewed for this study explained that their attempts at growing tomatoes failed after 2014 due to problems with pests, which forced them to switch to other crops.⁵⁴ While input can be found in the main markets of Kakuma, there is no specialist agro-horticultural business. As mentioned by most focus group discussion participants and NGO representatives,

Improving the existing access to pesticides and fertilizers is key to the development of a competitive and productive tomato value chain in Kakuma.

NGO, Programme Manager, Nairobi

○ Producers

A few refugee farmers grow tomatoes in Kakuma, typically on small land holdings, receiving yields of about 14 MT per hectare (or 6 MT per acre).⁵⁵ This is not enough to meet the demands of the local market. The vast majority of tomatoes sold in the open retail market in Kakuma originate from Kitale, a western Kenyan city 425 kilometers from Kakuma. Interviews with traders highlighted that the quality of vegetables and fruit from Kitale is generally high and meets the demands of consumers.

○ Wholesalers

The efficiency of a fruit and vegetable supply and value chain highly depends on the role played by its wholesalers. In theory, wholesalers do not only purchase tomatoes from producers and importers for sale to retailers, but they also play a key stabilizing role in strengthening traders' response capacity and price volatility. However, in the tomato sector, *"the lack of wholesalers dealing with fruits and vegetables is due to the risks associated with their perishability."*⁵⁶ Aggregators cannot replace wholesalers as key stabilizing actor in the value chain. Local traders confirmed this observation:

You cannot have large-scale intermediary traders here. It is too risky. So there are dozens and maybe hundreds of small retailers who directly purchase their tomatoes from truck drivers, after discussing with aggregators or local producers. In my view, it reduces the number of actors, which is good, but it also increases the dependency link between truck drivers and retailers.

KII with a tomato retailer, Kakuma

○ Retailers

Based on interviews and field observations, most sales of fresh tomatoes go through retail markets. As open-air retailers handle large volumes of produce, competition is high and sale prices are uniformly set at KES 100-110 per kilogram, supposedly the market value. Restocking of tomatoes is done at least once a week unless there are externalities such as road closures or security incidents that prevent re-supply trucks getting to Kakuma from their usual base in Kitale.

⁵⁴ FGD, Farmers Kakuma, 12 October 2015.

⁵⁵ Data from AAH-I (2015) "Gross Margins Analysis of Agricultural Crop Farming Enterprises: A Case Study of Kakuma Refugee Camp, Turkana County."

⁵⁶ 2014 WFP "Vulnerability Analysis and Mapping" (VAM)

Expenditure, cost and price

According to an assessment by UNHCR-WFP, food expenditures constitute 57% of total living expenses of Kakuma's refugee population, and 7% of food expenditures is spent on vegetables.⁵⁷ Tomatoes are considered the most important vegetable commodity.⁵⁸ Based on the household economic survey, the average refugee household consumes 19 kilograms of tomatoes per month, for an annual expenditure of nearly KES 23,000 for every household.⁵⁹

Tomato traders reported that the price of tomatoes had been stagnant over the past 5 years - between KES 100 and 110 per kilo, despite some fluctuations in supply depending on the season and road conditions. But while seasonality and access are parameters that can influence the price, they have played a relatively predictable – if not marginal – role over the past five years. Pest outbreaks have had more damaging impact. Between January and February 2015, for instance, tomato prices in Tanzania soared by 375% in just a month (from \$9.4 to \$35 for a carton of tomatoes), due to a tomato leaf miner pest outbreak. The pest hit the horticulture sector, locally cutting some harvests by more than 80% and leading to exponential price increases: in Morogoro, tomato gate prices were multiplied by ten, according to local farmers. The risk of seeing similar pest outbreaks in the future is real, and constitutes many respondents' main concern:

We did develop this value chain in the past, but the lack of pesticides killed the production. Prices went up, poor people could not afford tomatoes for a short while, and of course local producers were ruined.

Retailer, Kakuma.

There are a number of factors leading to the current price build-up from between KES 40-50 per kilo at the point of sale to KES 110 a kilo at the point of disembarkation in Kakuma. It is partly due to the long distance covered and the poor state of the road. About 50% of the cost of the average kilogram of tomato is directly traceable to the costs incurred in getting it delivered from a source 425 km away.⁶⁰ In addition, transport companies have to pay transit levies to authorities from three different counties (Trans Nzoia, West Pokot and Turkana) as well as other non-tariff barriers such as police roadblocks.

Figure 7 Change in price of 1Kg of tomatoes



⁵⁷ UNHCR-WFP (2014) Joint Assessment Mission – Kenya Refugee Operation.

⁵⁸ WFP (2014) Dadaab and Kakuma Refugee Camps Market Assessment.

⁵⁹ Household economic survey conducted by Samuel Hall team in October 2015 in Kakuma camps.

⁶⁰ For comparison purposes, tomatoes in Nairobi on average are sold at between KES 50 and 60 per kilogram

Tomato Sale

Based on analysis of tomato sale in Kakuma,⁶¹ the trade is estimated to be worth at least KES 162 million annually.⁶² Table 10 provides a snapshot of tomato sale in Kakuma. Based on a selection of six random traders, the data shows that on average the retailers sell 29 to 30 kilo of tomatoes a day, worth approximately KES 2,900. Assuming profit margins of about 20%, the average trader can make, in a year, a profit of nearly KES 188,000.

Table 9 Volumes of tomato crop sale in retail outlets in Kakuma

Trader	Quantity sold in a day (in kg)	Daily sales reported (in KES)	Price per kg (in KES)	Monthly sales (in kg)	Average monthly sales (KES)	Average annual sales
Fatuma	17	1,833	110	500	55,000	660,000
Habiba	17	1,833	110	500	55,000	660,000
Hamdi	20	2,200	110	600	66,000	792,000
Ibrahim Kiniso	67	6,000	90	2,000	180,000	2,160,000
Muna Mohamed	30	3,300	110	900	99,000	1,188,000
Mzee Fizi	30	2,700	90	300	27,000	324,000
Najma	20	2,200	110	600	66,000	792,000
Total	29	2,867	104	771	78,286	939,429

Harvesting, packaging and grading the tomatoes

At the market, two types of tomatoes are sold:

- Grade 1 - good or normal sized tomatoes
- Grade 2 - half-spoilt or small-sized tomatoes

They are sold for a maximum of KES 120 and 100 respectively.⁶³

There are no significant losses reported as a result of poor packaging. Most retailers receive their consignments in sacks, while a few traders get theirs in wooden pallets. However, some traders report some losses as a result of packaging due to loading of cartons.⁶⁴

Logistical arrangement and transportation

Kakuma camp is supplied through the North-western corridor (Nairobi-Kitale-Lodwar-Kakuma-Lokichoggio). Road conditions are *“by far the most important constraints to trade in the arid lands.”*⁶⁵ During the rainy seasons, major disruptions along the distribution channel are frequent, which leads to a significant price upsurge on the commodity market especially affecting perishable goods.

On the tomato market, you can sometimes pay 40% or 50% more for the same quality during the rainy season. Sometimes, the prices rise overnight.

(KII with a Tomato retailer, Kakuma)

⁶¹ This is based on the 64 established trading outlets that deal with the sale and distribution of tomatoes in the Kakuma refugee camp

⁶² This is based on the following deductions: about 30 MT of tomatoes are supplied and traded weekly through outlets in the refugee camp, and each kilo retails on average about KES 100, with no major price fluctuations reported

⁶³ Interview, Najma Mohamed (tomato retailer), Kakuma, September 2015

⁶⁴ FGD, Kakuma, 2015.

⁶⁵ Ibid

During the dry season, resupply times are reasonable and most retailers are able to resupply twice a week. Tomato traders stock their commodity on a weekly basis given the lack of cooling facilities.

Figure 8 The road from Kitale to Kakuma: 425km



Analysis of end-market preferences

According to retailers, consumer households prefer tomatoes from Kitale, as they consider them to be of better quality.⁶⁶ Whilst consumers are satisfied with the quality of the tomatoes available, their objection is with the “exorbitant” prices of KES 100 to 120 per kilo. In a hot environment that lacks cooling facilities, shelf life is a significant distinguishing factor. Local tomatoes have an advantage over imported ones in this regard but struggle to meet the quality requirements of local retailers.⁶⁷

Overall, there is no data that shows whether the tomatoes sold by retailers meet the phytosanitary requirements imposed by the Kenyan regulator HCDA⁶⁸ with regards the acceptable quantities of nitrates, pesticides or other contaminants. Transactions are informal and hard to trace in the absence of invoices.

Rapid profitability analysis (*production in the open*)

Based on qualitative interviews conducted with tomato producers and traders, a Kakuma resident farming tomatoes can expect to gross approximately KES 420,000 from a potential yield of 6MT per acre and year. Inputs such as seeds, fertilizers, agrochemicals, ploughing, harrowing and associated land preparation costs, and services (labor costs, packaging, etc.) cost approximately KES 240,000. There are thus substantial potential profits to be made for participants of this particular value chain who succeed in moving from subsistence farming to a commercial enterprise: KES 180,000 per acre and year, assuming 2 cropping seasons (and between 270,000 and 300,000 with 3 cropping seasons, due to economies of scale).

The table below provides an estimate of the Average Cost and Return Per Acre (and year) of Tomato Farmers in Kakuma. It is based on interviews with traders and secondary desk literature review. With those – important – caveats in mind, it is worth noting that tomato production in Kakuma was found to be profitable with an estimated total cost of production and gross margin of KES 240,000 and KES 235,200 respectively.

- The relatively high cost of water could be reduced by developing better water management schemes at the camp level;
- Fertilizers should be replaced by modern techniques to reduce the volume of variable cost and mitigate the risk of pest and disease;
- The very low cost of storage (1%, but with basic techniques) is alarming, as it shows that tomato producers/retailers do not benefit from any storage facility and have to sell their products immediately after they aggregate them. It is a major concern that clearly tends to decrease the overall profitability of the tomato value chain in Kakuma;

⁶⁶ FGD with tomato consumers in Kakuma (Jean Claude et al., September 2015)

⁶⁷ Interview, Najma Mohamed (tomato retailer), Kakuma, September 2015

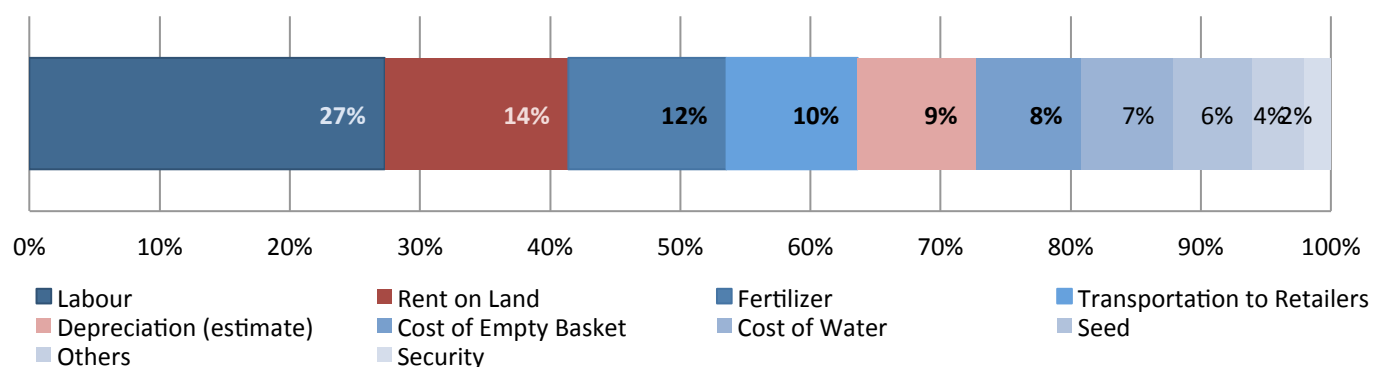
⁶⁸ Horticultural Crops Development Authority.

- “Rent cost” are purely indicative as our focus groups showed that this line can vary a great deal – this could also be discussed and managed with local authorities to promote shared economic investments and dividends between host and refugee communities;
- Based on a rapid benchmark with other tomato farming activities in comparable settings (East Africa, rural areas, basic capacity, and limited access to market),⁶⁹
- Considering the risks of this activity (pest, disease, security, drought, etc.), it is important to incentivize households to adopt resilient, alternative and diversified sources of income.

Table 10 Average Cost and Return Per Acre of Tomato Farmers in Kakuma

	Percentage of Total Cost (estimate)	Value in KES / acre and cropping season
Variable Cost		
Seed	6%	14,400
Labor	27%	64,800
Fertilizer	12%	28,800
Transportation to Retailers	10%	24,000
Security	3%	4,800
Cost of Empty Basket	8%	19,200
Cost of Water	7%	16,800
Storage	1%	2,400
Others	4%	9,600
Total Variable Cost	77%	184,800
Fixed Cost		
Rent on Land	14%	33,600
Depreciation (estimate)	9%	21,600
Total Fixed Cost	28%	55,200
TOTAL COST OF PRODUCTION	100%	240,000
Returns		
Gross Revenue (GR)		420,000
Gross Margin (GR – TVC)		235,200
NET FARM INCOME (GM – TFC)		180,000
Return on KES invested (GM/TVC)		1,27

Graph 23: Average Cost breakdown (Fixed and Variables) for Tomato Farmers in Kakuma



⁶⁹ See for instance : Haruna, U., Sani, M. H., Danwanka, H. A. and Adejo, E. (2012), *Economic Analysis Of Fresh Tomato Marketers In Bauchi Metropolis Of Bauchi State, Nigeria* in the Nigerian Journal of Agriculture, Food and Environment. 8(3):1-8 and available at: http://njafe.org/Njafe2012V8N3/1_Haruna_et_al.pdf and Usman, J. and Bakari, U.M. (2013), *Profitability of Small Scale Dry Season Tomato (Lycopersicon esculentum Mill.) Production in Adamawa State, Nigeria*, in the ARPN Journal of Science and Technology available at: http://www.ejournalofscience.org/archive/vol3no6/vol3no6_6.pdf.

Challenges and opportunities

What are the main challenges faced by tomato farmers?

Production of tomatoes here in Kakuma is limited for a number of reasons. The gardens here are too small, and the farmers also grow other types of vegetables. What little there is produced here is not good quality

Interview, tomato retailer.

Pesticides. Very difficult to find, and they are quite expensive.

FGD, tomato farmer, Kakuma.

Now you will not find tomatoes in Kakuma. Since 2014/2015, we have had serious pests in Kakuma. Farmers are planting on smaller plots as a result. Pests are destroying everything.

FGD, tomato farmer, Kakuma.

Lack of materials, and buying seeds – initial capital is difficult. Once you start the challenges are water.

FGD, tomato farmer, Kakuma

Challenges

The following challenges were identified as prime obstacles to efficient tomato farming in Kakuma:

- **Water Shortage:** Water is extremely scarce in Kakuma. Very arid and hot, rainfall in the county is erratic and unreliable.⁷⁰ The majority of the soils are shallow and sandy, their fertility hampered by serious nitrogen deficiency and accumulated salt contents.
- **Limited farming space:** Lack of appropriate farming space and land is one of the major problems facing farmers. Nonetheless, new opportunities for farming should present themselves as a result of the creation of Kakuma 4 and Kalobeyei, which added to the available land.
- **Pest and disease infestations:** Farmers face serious challenges growing tomatoes due to disease infestations. Many farmers reported stopping growing tomatoes after 2014 due to serious pest problems and their inability to access pesticides. There are currently no outlets where farmers can buy pesticides in Kakuma.
- **Environmental challenges:** Heat-stressed plants are more vulnerable to attacks from wilts and fungi than those in milder temperatures. High heat can also cause tomato diseases to spread more rapidly.
- **Soil testing facilities:** There are no soil-testing facilities in Kakuma. Farmers are therefore unable to undertake soil diagnostics to assess nutritional deficiencies and improve yields through appropriate fertilization. Lack of information about the components of the soil results in poor quality of fresh tomatoes.
- **Post-harvest handling facilities:** A post-harvest handling component in the tomato value chain is missing. No warehousing and cold storage facilities or services are provided along the value chain.
- **Access to capital and finance:** The majority of the farmers and traders interviewed cited access to finance and capital as impediments to businesses. Farmers require credit to purchase improved seeds as well as inputs such as fertilizers and herbicides. Due to limited financial means, farmers are forced to cultivate smaller pieces of land or abandon the trade altogether.
- **Low quality tomato:** Retailers ranked poor quality of locally produced tomatoes as a constraint for promotion, sales and distribution thereof. The locally produced tomatoes were classified as a sub-grade variety and described as very small in size. The produce's poor quality is attributed to the use of low quality seeds (due to the absence of agro-vet shops selling farm inputs) as well as the inherent lack of soil fertility.
- **Male dominated activity:** In the world of Kakuma, farming is a pre-dominantly male activity. This should be taken into account when conducting livelihood programming in Kakuma. *"We have some women, but according to our culture, they don't work. If we have a long group meeting, they come and cook for us."*⁷¹

⁷⁰ Ministry of Agriculture, Kenya. (1987) *Assessment on Soil Conditions in Some Water Spreading and Small Irrigation Schemes in Turkana*. Republic of Kenya.

⁷¹ FGD, Kakuma, 12 October 2015.

Key recommendations

- **Favoring an enabling environment by discussing with Kenyan authorities (Nairobi and Kakuma levels)**

Based on a WFP study in Kakuma, 83% of all refugee businesses comply with local government rules when acquiring permits and pay all necessary fees and duties in order to conduct business operations inside the camp.⁷² As highlighted by a ReDSS/Samuel Hall study on devolution in Kenya, while refugees are seen as political threats in Nairobi, the local counties of Garissa and Turkana view refugees as economic agents capable of bringing change to disadvantaged economic areas.⁷³

In this regard, a twofold effort with national and county level authorities aiming to promote a better land management in the neighborhood of the camp would help: 1) identify possible arable fields for growing tomatoes and supplying the camp with locally produced crops; 2) optimize the relationships between refugees and surrounding populations, through a collaborative approach. This advocacy/policy level initiative should prioritize participatory messages and explanations on the potential economic added value of growing tomatoes in and out of the camp.

Lastly, it is important to note that, especially in a highly politicized context, no development project should be undertaken in Kenyan refugee camps without the participation and involvement of local “host” communities. It is not only a political selling point but also a requirement should the DRC/AAH-I initiative aim for a long-term social and economic impact in the Kakuma area. The advocacy efforts should thus strongly involve both refugee and host communities in the implementation of the following recommendations: water management, sustainable horticulture, and skills/capacity building.

- **Tackling water shortages**

Water shortages continue to impact both refugees and the host community in Kakuma. Nonetheless, the discovery of underground water in Turkana can change the dynamics of farming. With the construction of boreholes, groundwater can be accessed. Moreover, investing in appropriate agrochemicals and improving irrigation practices can help enhance growth and development of the crop in Kakuma.

- **Water pans and sub-surface dams:** Subsurface dams can enable the storage of water below ground level. This method is suitable for semi-arid climate in order to store seasonal available water to be used during the dry months for livestock and irrigation purposes.
- **Hydroponic agriculture:** The use of hydroponic agriculture can ensure that refugee farmers are able to grow tomatoes using mineral nutrient solutions in water, without soil. This could eliminate, to a large extent, the problem of acquisition of land for farming.
- **Solar-powered boreholes:** Solar-water systems have been successfully piloted by NRC in Dadaab and have replaced some diesel generators.⁷⁴ Similar attempts should be undertaken in Kakuma to increase the quantity of water availability in the camps.
- **Solar-water pumping:** Solar pumping systems can lead to an increase in irrigation water for agriculture and reforestation in Kakuma. EDP (*Energias de Portugal*), a leading company in renewable energies, has established a partnership with UNHCR to bring renewable solutions to Kakuma. EDP piloted spit irrigation through solar pumping, which benefited 200 refugees in growing vegetable and fruits in the camp.⁷⁵ Up-scaling this method could lead to an increase in agriculture productivity in Kakuma.

⁷² WFP (2014).

⁷³ ReDSS/Samuel Hall (2015), “Devolution in Kenya: Opportunity for Transitional Solutions for Refugees? Analysing the impact of devolution on refugee affairs in refugee hosting counties”.

⁷⁴ <http://reliefweb.int/report/kenya/more-water-solar-power-dadaab-kenya>

⁷⁵ <https://www.edp.pt/en/sustentabilidade/acessoEnergia/projetos/kenia/Pages/Kakuma.aspx>

○ Using agro-ecological management

Pests and diseases emerged as one of the main factors preventing farmers from growing tomatoes in Kakuma. More sustainable methods of pest control should be used in Kakuma. The CNRS' affiliated and Nairobi-based research center CIRAD (*Centre de coopération Internationale en Recherche Agronomique pour le Développement*) strongly advocates for pest control through:

- The planned introduction of diversity into the cropping systems and the re-arrangement of farming structures. A case study shows that the optimization of biological regulations of tomato fruit worm populations can be achieved through planting trap plants (such as maize) either inside or outside the crop plots: *"Pest communities and their auxiliaries have been studied in a range of complex cropping systems combining food (millet, cowpea), fruit and market garden crops (jujube, melon, moringa, tomato, okra, etc.)."*⁷⁶
- The installation of nets over tomato crops as opposed to intensive chemical control, which pollutes the environment and is harmful to local populations as well: *"The nets, which are simple and easy to use, reduced the insecticide quantities sprayed on cabbage and tomato crops by between 70 and 100%. They also improved vegetable quality and yields. They can be re-used for up to five years on different crops."*⁷⁷

NB: Both approaches could help create jobs and additional income for other economic agents. The replication of pilot nets, for instance, can only be made possible if local carpenters are trained and able to follow basic construction guidelines. Likewise, the plastic industry could strongly benefit from the introduction of nets. Other horticultural actors could benefit from cropping system diversification.

This dual approach would not only be impactful from an ecological and economic angle, as it would represent a strong asset for both DRC and AAH-I with regards to donors' requirements:

We are perfectly aware that most NGOs work in volatile environments with challenging socio-economic situations. However, in East-Africa, in Kakuma and Dadaab for instance, NGOs deal with protracted refugee situations and I think they could start considering more sustainable approaches, using longer-term and eco-friendly solutions. If they can show that they fully integrate the environmental component in their approach, the EU and other donors are more likely to collaborate with them through multi-year funding cycles."

EU Representative, DEVCO

○ Developing a sustainable and autonomous tomato value chain in Kakuma?

In the longer-run (3-5 years), the research team sees a real opportunity for developing a comprehensive tomato value chain in Kakuma, following a twofold approach:

- **Growing tomatoes locally:** Through the implementation of the aforementioned recommendations, DRC and AAH-I could progressively meet a significant percentage of the high local demand for tomatoes. This would require a clear agreement with government authorities, an actual land management, an ambitious water management plan, an economically and environmentally viable approach, and a capacity building plan targeting both governmental counterparts and local communities.
- **Integrating (vertically) other segments of the value chain:** The only existing segment of the value chain present in Kakuma is the *retail* one, highly dependent on transportation actors. In collaboration with other governmental, non-governmental, and private stakeholders, DRC and AAH-I could develop pilot factories in Kakuma to transform locally produced tomatoes into other tomato products: ketchup, tomato sauces, tomato paste, canned tomatoes, sun-dried tomato, tomato juice, tomato *pomade*, tomato purée, tomato seed oil, etc. The development of a small industrial unit hiring both refugees and local community members would have multiple advantages:

⁷⁶ CIRAD, Agro-ecological management of fruit and vegetable crops.

⁷⁷ See <http://www.bionetagro.org>

- Skills development
 - Development of new unskilled (up to semi-skilled) jobs through the multiple sub-segments of the transformation of tomatoes into subcategories of tomato products;
 - Potential creation of new semi-skilled and skilled jobs through other segments of the value chain (packaging, marketing, logistics, administration of the unit);
- Participation and inclusion
 - Possibility of quota of employment to ensure the fair participation of vulnerable or under-represented categories (women, youth, older people, certain countries of origin, etc.);
 - Positive partnership with local host communities through job creation and income generation;
- Sustainable economic development
 - Strong potential for exports, using DRC and UNHCR channels, using the positive image associated with “refugee-led initiatives” internationally;
 - Development of a specific brand to associate Kakuma with quality products and positive socio-economic solutions;
 - Possible exit strategy and handover to local cooperatives on the longer run (10 years), once local actors (refugees and host community members) are able to produce business plans and have a secured access to regional and international markets;
- Indirect positive impact
 - Introduction of a more complex segment of the agribusiness value chain (factory, transformation), with a potential snowball effect on other sectors;
 - Innovative business model associating host communities *and* refugees, NGOs *and* local authorities, assistance *and* economic development, social inclusion *and* environmental concerns.

○ **Building skills and changing mind-sets**

While the development of new segments of the tomato value chain requires new technical and administrative skills, it is also important to bear in mind that the development of a more integrated and profitable tomato value chain in Kakuma will require a mind-set shift from all stakeholders. In this regard, a comprehensive and in-depth capacity building and sensitization plan should be developed by DRC, AAH-I and their natural partners (UNHCR, as well as NCR, ILO, etc.):

- Skills development of local tomato growers and producers, in coordination with CIRAD;
- Vocational training focusing on basic technical skills for the local workforce (refugees and host community members), in coordination with county authorities and under AAH-I/DRC supervision;
- Vocational training focusing on advanced skills – e.g. packaging – for the local workforce (refugees and host community members), in coordination with county authorities and under AAH-I/DRC supervision;
- Training in administration, logistics, etc. towards semi-skilled jobs – e.g. marketing – for the educated local workforce (refugees and host community members), in coordination with county authorities and under AAH-I/DRC supervision;
- Sensitization campaigns towards host communities (DRC, AAH-I);
- Sensitization and advocacy campaigns towards local authorities (UNHCR, DRC, AAH-I).

Table 11 Key areas of opportunity identified

OBJECTIVE	ACTOR	DESCRIPTION	BENEFICIARY TYPE	AGENDA
Strengthening the regulatory and legal environment	UNHCR, DRC, AAH-I	Fostering a positive dialogue between local authorities, local communities, and refugee communities towards the development of the production segment of the tomato VC – through regulatory incentives.	Refugees / Host Communities	Immediate action, long-term impact
Improving water pumping and irrigation	DRC, AAH-I, EDP	Improving irrigation systems through: 1) Water pans and sub-surface dams; 2) Hydroponic agriculture; 3) Solar-powered boreholes; 4) Solar-water pumping.	Refugees / Host Communities	Immediate action, long-term impact
Ensuring quality control of input, especially for fertilizers and pesticides	DRC, AAH-I, CIRAD	Establishing a central nursery and experimental fields would improve input in terms of quality and price.	Refugees / Host Communities	Immediate action, short- and long-term impact
Improving access to pesticides and developing other forms of environmentally friendly methods of pest control	DRC, AAH-I, CIRAD	Providing farmers with forms of pest control and encouraging the development of pest control shops, preferably led by the private sector. Interventions should center on the use of controlled pesticides and fertilizers and other environmentally friendly pest control methods (see CIRAD: http://www.cirad.fr/en). This would lead to improved yields and environmental sustainability.	Refugees / Host Communities	Immediate action, short- and long-term impact
Promoting access to finance	DRC, AAH-I + MFI (Microfinance Institutions) + private sector actors	Many farmers are unable to start farming due to lack of access to credit. Interventions should offer financing to future entrepreneurs through the provision of microcredit.	Refugees / Host Communities	Medium-term and mid-/long-term impact
Developing vertical integration of the value chain	UNHCR, DRC, AAH-I + ILO, NRC, Ministry of Labor.	Enhancing the economic sustainability and autonomy of the tomato value chain through the creation of additional segments: production, processing, packaging, marketing, etc.	Refugees / Host Communities	Long-term action, long-term impact

Creating a brand “made in Kakuma”	UNHCR, DRC, AAH-I + UNIDO with the support of local authorities, the Kenyan government and private sector actors	Following international standards and obtaining quality labels, Securing export routes (nationally, regionally, and internationally) and creating a proper label.	Refugees / Host Communities	Long-term action, long-term impact
Improving information sharing	DRC, AAH-I with the support of local authorities, the Kenyan government and private sector actors	Improving the service delivery and information provision regarding production methods, quality and quantity. Project implementation partners can partner up with information networks such as the government-run AMIS (Agricultural Marketing Information System) or the privately run M-Farm, and use these platforms for wider-scale dissemination of pricing information and sales opportunities outside Kakuma.	Refugees / Host Communities	Immediate action short- and long-term impact
Capacity development	DRC, AAH-I with the support of CIRAD	Enhancing the basic technical skills of the local workforce (both local and refugees) in coordination with the county authorities; offering vocational training in advanced skills (packaging); providing training in administration, logistics, etc. towards semi-skilled jobs – e.g. marketing – for the educated local workforce. In parallel, sensitization and advocacy campaigns should target host communities and local authorities.	Refugees / Host Communities	Medium-term and mid-/long-term impact

Hides and Skins Value Chain

Given the substantial amount of sheep, camels and goats slaughtered every day in the camps, animal hides and skins are available in abundance. Kakuma camp hosts the largest market for livestock producers in Turkana County.⁷⁸ This represents a major opportunity for the sale of hides and skins, as well as primary processing thereof.

Snapshot of leather production in Kenya

Kenya is the third largest livestock holder in Africa.⁷⁹ The government of Kenya has identified leather and leather products as one of the most promising pillars of industrialization with plans underway for the construction of a special economic zone dedicated to the leather industry around Athi River.⁸⁰ The aim is to centralize tanneries in one location in order to improve waste management.⁸¹ According to a recent World Bank study on leather in Kenya, Kenya's leather sector competitiveness is derived from amongst other things, 'its abundant natural resources of cattle, goats, and sheep'⁸² With this immense and potentially productive resource, the general worth of the livestock sub-sector in Kenya is estimated at slightly over US\$ 9 billion⁸³ and a livestock population of more than 40 million heads.

Annual production of hides and skins from livestock off-take trade is 8.5 million pieces⁸⁴ (including cattle hides, sheepskins, goatskins, and camel hides) and the annual export volumes of 2,250 tons of semi-processed leather are worth slightly over \$1m.⁸⁵ However, while Kenya has great availability of and access to raw materials, it is currently lagging behind other countries in terms of production capacity for finished leather products.⁸⁶ Estimates show that 90% of hides and skins produced in Kenya are exported to external markets in both raw and semi processed form, with 89% of the exports in wet-blue state.⁸⁷ Only 2% of products are sold in finished leather form.⁸⁸ In order to compete with other emerging markets, Kenya must improve the quality and design differentiation of its leather products.⁸⁹

Table 12: The leather industry in Kenya



⁷⁸ ReDSS/Samuel Hall (2015) "Devolution in Kenya: Opportunity for Transitional Solutions for refugees? Analysing the impact of devolution on refugee affairs in refugee hosting counties' p. 33.

⁷⁹ Ibid, p. 3.

⁸⁰ Interview Alpharma Tannery, February 2016.

⁸¹ Interview Alpharma Tannery, February 2016.

⁸² World Bank Group (2015) *Kenya leather industry, diagnosis, strategy and action plan*, p.19.

⁸³ Projections. Mwinyihija (2010) postulates that the livestock sub-sector is worth 1.5% of the national GDP which is currently at US\$ 61 billion, based on World Bank data see <http://www.worldbank.org/en/country/kenya>.

⁸⁴ Mwinyihija, M. (2010) *Hides, Skins and Leather Value Addition Initiatives: the Kenyan Scenario*. Ministry of Agriculture, Kenya.

⁸⁵ *Daily Nation* edition of Wednesday, May 23, 2012 (available at <http://www.businessdailyafrica.com/Kenya-builds-six-more-tanneries-as-leather-exports-grow/-/539546/1411794/-/tbfe2mz/-/index.html>)

⁸⁶ World Bank Group (2015) *Kenya leather industry*, p. 2.

⁸⁷ Ibid, p.2.

⁸⁸ Ibid, p.2.

⁸⁹ Ibid, p.2-3.

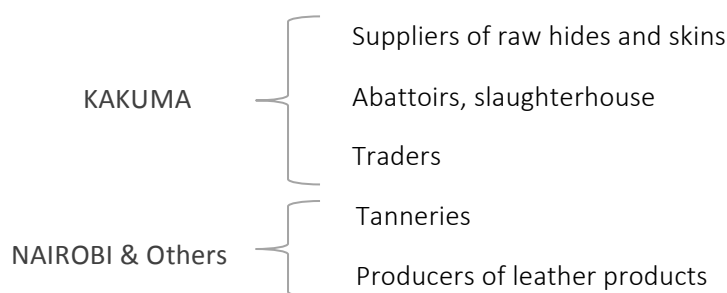
Mapping the Hides and Skins value Chain in Kakuma

Turkana North, where Kakuma camp is located, boasts of roughly 650,000 cattle, 1.9m goats, 1.3m sheep and 270,000 camels.⁹⁰ The hides and skins value chain is an important strategic sector for the economic empowerment of refugees in Kakuma. Currently, employment opportunities remain limited in this sector in Kakuma given that exports are constrained to raw hides. No attempt has been made to develop those into ‘wet-blue’ leather or finished leather products that can compete in the national or international market.

Kakuma’s hides and skins value chain has two distinct components: 1) livestock breeding and 2) raw hides and skins production. Five distinct actors are involved in the value chain: 1) livestock owners, 2) middle-men, 3) butchers, 4) hides and skins collectors and 5) hides and skins traders. Butchers purchase animals from middlemen who buy them from livestock owners. The latter are members of the host community. Hides and skins are sold by butchers to hides and skins collectors or directly to traders. Some traders are refugees; others are part of the host community. They salt the hides and transport them to tanneries in Nairobi or Nakuru. Ever fewer traders monopolize the business.⁹¹ There is currently no leather processing in Kakuma.

Kakuma suffers from a lack of productive transformation steps, such as processing and packaging. This strongly undermines the potential income generation. If you only slaughter and skin camels and goats, you don’t make money and margins are low.

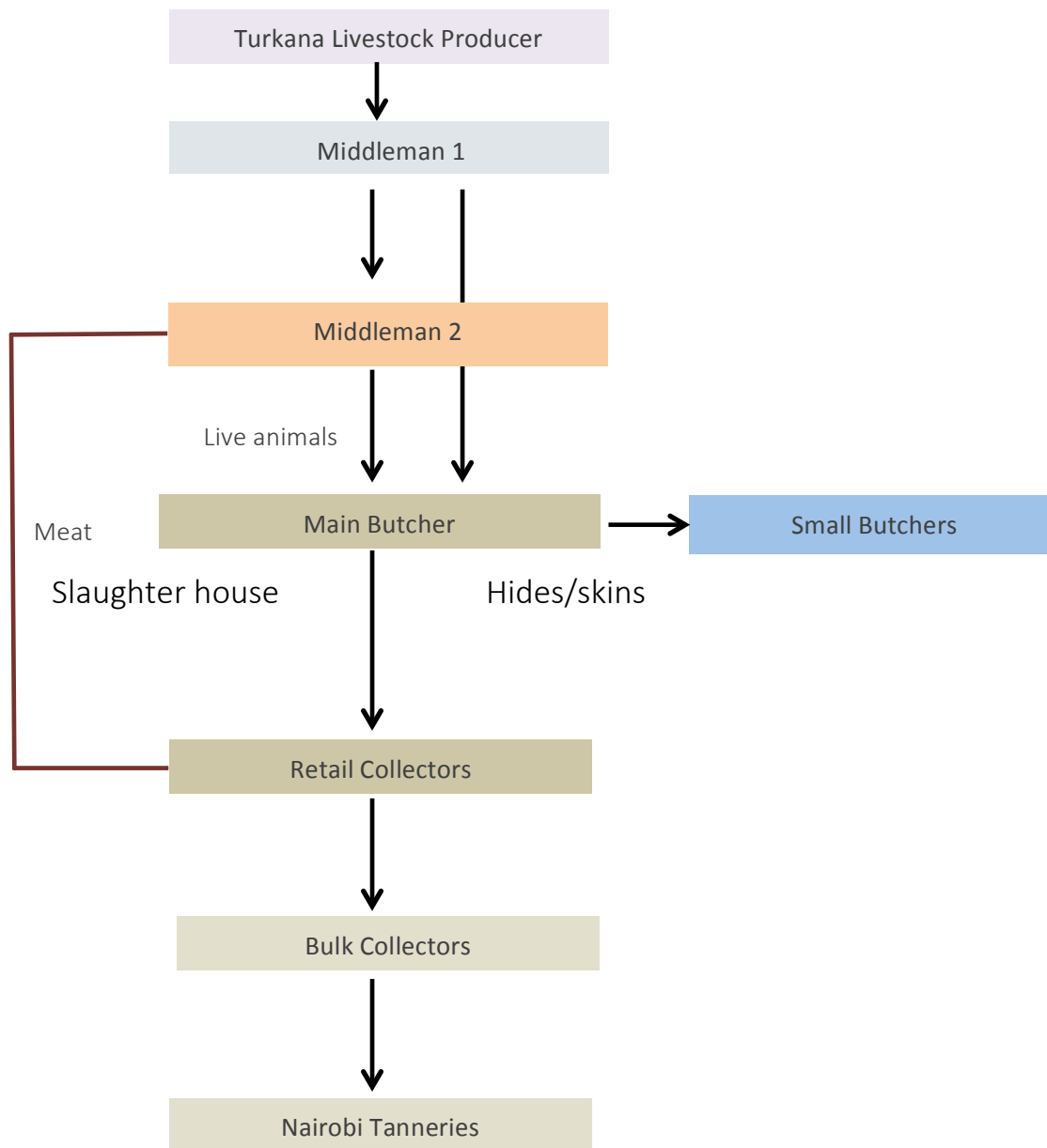
Leather trader, Kakuma



⁹⁰ This data can be found from the Kenya Open Data Portal, available from: www.opendata.go.ke/Agriculture/Livestock-population-by-type-and-district.

⁹¹ Interview, Hides and skins trader Kakuma, September 2015.

Figure 9: Stakeholder mapping



Hides and skins are transported from Kakuma to Nairobi after a period of 10-15 days, which allows for better aggregation and accumulation from disparate retail collectors. Bulk collectors hire lorries to travel on the Kakuma-Lodwar-Nairobi route and are paid KES 60,000 each way from Kakuma to Nairobi or Nakuru.

Livestock owners: In Kakuma, livestock ownership is exclusively in the hands of the host community. Owners sell their animals to refugee communities through middlemen.

Butchers: There are currently 10 slaughterhouses in Kakuma. These slaughterhouses have facilities for camels, cattle, sheep and goats. While the number of animals differs according to season, the main slaughterhouse in Kakuma 1 reportedly handles some 80 goats and 5 camels every day.⁹² Butchers use the meat, while the skins and hides are sold to collectors.

Collectors (bulk and retail): There are a number of hides and skins collectors who buy the hides and skins from butchers or directly from livestock owners.

Hides and Skins traders: Traders buy hides and skins from collectors and transport them to Nairobi, where they are sold to tanneries. Hides and skins are normally stored for 10 to 14 days before being transported to Nairobi. Only a few traders monopolize this sector in Kakuma. Collectors of hides and skins have complained the price of raw hides and skins is kept artificially low by traders. They have limited market information regarding the prices of hides and skins.

Picture 3: Hides in Kakuma



Monopolies

What prevents me from achieving better prices is the lack of access to reliable market information on the current price trends of hides and skins in the country. Our only source so far is Bob [hides and skins trader] and unfortunately I cannot verify what he tells me.

Hides and skins collector, Kakuma.

The hides and skins sector is monopolized by one main bulk collector. Small collectors feel like he is the one dictating the price in order to exploit them.

Butcher, Kakuma

Initially, there were many buyers. But nowadays it has been monopolized by one man, Bob, who decides the price. There is a claim that prices that were usually paid by the tanneries have gone down. But then why do they still come every morning to get more?

Butcher, Kakuma

For close to three years, he has been paying us Ksh 50 for a piece of hide. I have a feeling he's doing so because he knows he is the only option available to Kakuma collectors.

Collector, Kakuma

⁹² Interview, Kakuma butchers, October 2015.

Volumes, price build-up and value addition

Based on research conducted for this study, the average household in Kakuma consumes 40 kilograms of goat meat and 9 kilograms of camel meat annually. It is estimated that on a yearly basis nearly 171,000 goats⁹³ and over 1,303⁹⁴ camels are slaughtered in the camp.

Table 13 Consumption volumes of livestock in Kakuma

	Goats	Camels
Annual consumption of meat by households (in Kg)	1.2m Kg	275,000 Kg
Number of animals slaughtered annually	171,000	2,750
Value at the retail market in Kenya Shillings	5.13m	521,237

The prices of hides and skins vary greatly depending on quality with retail collectors paying between KES 20 and 30 per piece of goatskin.⁹⁵ This piece is salted and dried at a cost of KES 15⁹⁶ and resold to bulk collectors. The bulk collectors then buy goat hides and skins at KES 50 per piece, while camels and cattle fetch KES 50 per kilogram. At the tannery in Nairobi, the costs of hides and skins reach up to KES 80 for a piece of goatskin, while cattle and camel pieces reach up to KES 85 per kilogram.⁹⁷

Table 14 - Average price range of livestock and livestock products in Kakuma camp

	Price of live animals (range, in Kenya Shillings)	Price of hides and skins a piece (in Kenya Shillings)
Goats	3,000-6,000	20
Cows	27,000-40,000	400
Camels	50,000-70,000	400

Previous studies have shed light on the importance of value addition in this sector. Estimates show that the added value of finished leather compared to raw hides and skins is around 243%.⁹⁸ According a member of the Leather Development Centre, merely processing raw hides and skin to wet blue stage adds 80% to the value of raw hides and skins, while moving to crust adds another 200% and another 400% are gained by the time the products reach finished leather stage.⁹⁹ This clearly points to significant opportunities in terms of: 1) development of other complementary segments of the hides and skins value chain in Kakuma; 2) potential additional income generation for refugees and host communities; 3) potential creation of unskilled, semi-skilled and skilled jobs.

Quality of hides and skins and consumer preferences

The major attributes for hides and skins are **size and quality**. Good quality hides and skins are sold at a higher price and are devoid of burns, knife marks, or indiscriminate branding marks.

Buyers want hides and skins of good quality. Hides which are free from marks and other unnecessary flaws. They also abhor hides and skins which are undersized. I usually receive such information from the tannery when am taking my collections there.

Hides and skins trader, Kakuma.

During the pre-slaughter, the livestock producer does his/her own branding which affects the quality of the skin. The quality of the hides is also affected by indiscriminate flaying of the skin by people who are not properly trained. All the butcher cares for is the meat and the skin. So we actually don't have a say in the quality of the hides/skins we get from the producer. There is absolutely nothing we can do to meet the requirements of the buyer."

Hides collector, Kakuma

⁹³ One goat produces about 7 kilograms of meat at the butchery

⁹⁴ One camel produces about 211 kilograms of meat at the butchery.

⁹⁵ Ibid

⁹⁶ Interview, Hides and skins collector, Kakuma, September 2015.

⁹⁷ Interview, Hides and skins collector, Kakuma, September 2015.

⁹⁸ Mwinyihija Mwinyikione, 'Performance Brief – Leather and Leather Products Division', Unpublished paper.

⁹⁹ http://www2.weed-online.org/uploads/case_study_leather_sector_in_kenya.pdf

Constraints in the hides and skins value chain

A number of challenges were identified including poor quality, hot climate leading to high spoilage, and lack of markets. Indeed, many limitations persist in the supply chain with regards to preserving quality hides through appropriate curing methods and equipment, technology and awareness. This section will address these challenges in greater details.

Poor quality of the hides: one of the most important attributes of hides and skins is their quality. The quality of those from Turkana is very low (grade 7, the lowest possible). Quality is graded through examination of the product for knife cuts, branding marks and shape.¹⁰⁰ Stakeholders interviewed for this research reported their reluctance in buying hides and skins from Turkana due to the fact that the animals were not taken care of well and their leather contained defects from branding and trauma. Moreover, diseases affect the skin of the animal and contribute to the poor quality of the hides.

We buy primary hides from ranches. The quality of hides in Turkana is low - animals belong to pastoralists, they move around a lot. There are scratches everywhere and the animals have diseases. They don't salt the skins as soon as the animal is killed. Skins need to be salted in the first hour to preserve them. But pastoralist don't look at the hides, they look at the meat. If you turned it into good quality, you could make more money than the whole animal is worth!

KII Mas trading tannery, Nairobi

The major challenge is finding good quality hides and skins. Many people along the production chain are still not aware of their value.

Hides and skins trader

There are only a few buyers who are looking for grade 7 products. If we get low quality orders, we will buy it from Turkana. We then mainly sell it to India. They make footballs and safety gloves and other small things.

Interview, MAS Trading Tannery

Malpractices in slaughtering livestock: The operators at the slaughterhouses remove hides and skins from animal carcasses manually, which can cause extensive damage such as cuts and holes. The abattoirs in Kakuma lack the facilities to hang camel carcasses for skinning. Using a machine-flayed hide can ensure better quality hides with fewer cuts and holes which can catch higher prices than a typical hand-flayed hide.

Size of hides: The comparatively small size of Kenyan hides and skins (between 20 and 28 square feet for full cattle hide¹⁰¹) presents another problem for commercialization and scaling out. Larger hides offer better cut value and hence more flexibility to produce a wider range of products, including upholstery leather.

Knowledge gaps: There are various knowledge gaps in the hides and skins value chain for both livestock owners and collectors.

- ⇒ **Lack of knowledge/awareness of the value of hides and skins:** Livestock owners lack the knowledge to provide adequate and proper nourishment during the years of growth and development of the animals in order to prevent skin scarring. Moreover, livestock owners do not consider the timing of sale that is more conducive to maximizing sales price - too often, very old animals are sold in the markets. Those do not produce the best hides.
- ⇒ **Lack of knowledge regarding market information and prices resulting in monopolies by traders:** The hides and skins sector in Turkana is currently dominated by a few traders given the lack of market choices. Collectors of hides and skins have little market information regarding the actual prices of hides and skins in Nairobi and whether they can leverage higher prices.

Lack of market information is the greatest challenge as to why we don't achieve good prices for our hides/skins. So far, we don't have any reliable source of information on current market price. We only know what Bob tell us. We don't have a direct relationship with tanneries. We have to see everything to Bob.

FGD, Hides and skins collectors

¹⁰⁰ <http://www.lrrd.org/lrrd24/8/wayu24135.htm>

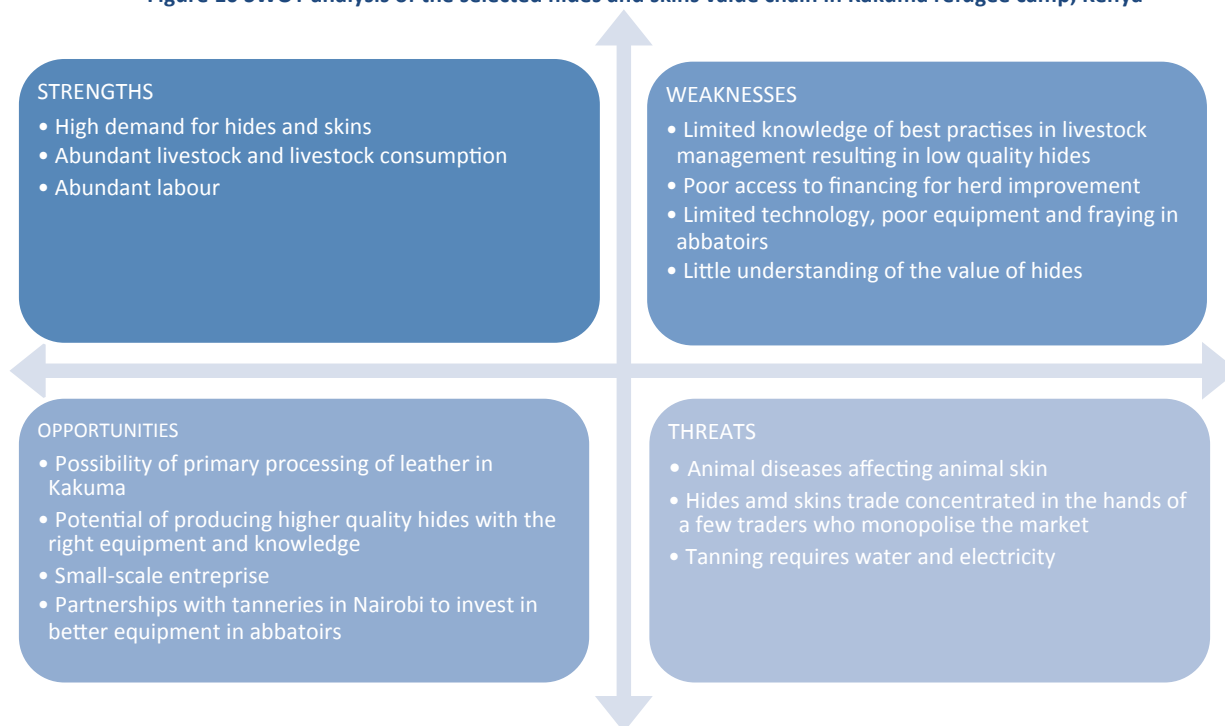
¹⁰¹ Kenyan hides and skins for sale, available at the global marketplace Alibaba, Kenya. See www.alibaba.com.

⇒ **Lack of knowledge regarding good curing practices:** Hides and skins are not generally cured using appropriate methods. Ground drying and suspension drying are often used for curing thus resulting in inferior quality hides.¹⁰² There is little awareness of wet salting methods.

Low prices of hides and skins: The current selling price of hides and skins at the market in Kakuma is not an incentive for better curing and handling. Pastoralists receive a small return and thus have little incentive to improve the quality of their product.

Uncollected hides and skins: Interviews showed that many hides and skins remain uncollected. Employment and income that could be generated as a result are lost due to untapped potential in this value chain.

Figure 10 SWOT analysis of the selected hides and skins value chain in Kakuma refugee camp, Kenya



Opportunities in the hides and skins value chain

Although the Kakuma hides and skins value chain is constrained by many challenges, this section will highlight potential opportunities that might lead to better income generation for refugees and host communities alike. Opportunities exist especially in improving the quality of hides and skins through simple training in handling, flaying, preservation, storage and quality control.

Promoting the quality of hides and skins from Turkana: One of the biggest constraints in the hides and skins value chain from Turkana is poor quality. The quality of hides and skins can be improved through the implementation of appropriate flaying techniques using modern technology.

Developing partnerships between tanneries and abattoirs to improve hides quality: Many stakeholders expressed an interest in improving the quality of hides from Turkana. This can be achieved through partnerships between private tanneries and abattoirs to improve their flaying techniques. Alpharma tannery expressed an interest in establishing such a partnership between their tanneries and Kakuma abattoirs. This would involve the installation of hide pulling and skin rollup equipment in order to ensure less damage inflicted on the hides and skins. This investment is between \$50,000 – 100,000 according to Alpharma to cover new equipment:

¹⁰² <http://www.lrrd.org/lrrd24/8/wayu24135.htm>

I would be interested in working with abattoirs in Turkana. We can come and we can work with them. I need good raw materials. I can enhance the quality. The butcher will have better returns. We can buy back everything. Currently, we have partnerships with 40 abattoirs in all over the country: in Nairobi, Baringo, Eldoret, Kisumu etc.

KII, Alharma tannery.

Alharma

Alharma is currently one of the most dominant tanneries in Kenya. Spearheading innovation and best practices in the sector, Alharma moved from wet blue leather to the production of crusted and finished leather produces. In order to ensure higher quality hides and move away from practices that reduce the quality of leather (drying, salting, flaying, etc.), Alharma has invested in alternative business processes and skills development. For instance, the company installed hide-pulling and skin rollup equipment in partner abattoirs, creating incentives to abandon practices that damage the hides and skins.¹⁰³ The company pays a 20% bonus for high quality produce obtained through the use of its equipment.

Setting up breeding space for animals in Turkana: Currently, animals in Turkana belong to pastoralists who let them roam freely. Injuries and scratches are common, resulting in lower value skins. As land in Turkana is communal, setting up an enclosed breeding area where animals can roam freely but won't be scratched is an idea advocated by many tanneries in Nairobi.

We have a lot of land in Kenya that is commonly owned. We should have breeding spaces for animals in a common area in Turkana where animals can roam but won't be scratched. That way the skin would be preserved. It's an idea we are talking about with various stakeholders and the government.

Interview, MAS Trading Tannery

Implementing curing techniques to ensure the preservation of the skins: In order to improve the quality of hides and skins, better preservation through wet salting technology should be implemented.¹⁰⁴ This simple and effective technology preserves the product using salt as soon as animals are slaughtered. According to the Kenya Agricultural Research Institute:

*"In wet salting, the fresh skin is cleaned of any blood or dirt, and washed with clean water. The skin is laid out with the inside facing upwards and salt equivalent to 40% of its weight is sprinkled on to it, until it is covered in an even layer. The salt reduces the skin's moisture content and prevents bacterial putrefaction. The skin can be folded with the salted side inside and kept in this way for long periods before tanning (Leach 1995; Leach and Wilson 2009). It is not time-consuming and requires small space as compared to sun and suspension drying methods. In a tannery, wet salted hides and skins can be rehydrated and ready for further processing within hours. The different salts used by producers and traders in Northern Kenya to cure hides and skins include table salt, chalbi salt, marine salt, red Magadi (livestock salts), and industrial salt."*¹⁰⁵

Partnerships with private sector actors: More generally, the following recommendations focus on a more market-driven approach to ensure the long-term sustainability and autonomy of a hides and skins value chain for refugees and host communities living in Kakuma.

○ Creation of Kakuma Brand and Private Sector Engagement:

The existence of small-scale, handmade African handicrafts in Kenya has mushroomed in the last few years. Small-scale enterprises such as Sandstorm Kenya and Rift Valley have come to the fore with a strong competitive advantage derived from a strong tradition in Kenya that values craft ware design and handcrafted manufacture production.¹⁰⁶ A brand "Made in Kakuma" could be created in order to market leather products. Interviews with stakeholders showed that the best opportunities may lie in improving the leather quality from Turkana and marketing products through creative branding carrying a specific Kakuma style into finished leather products such as shoes and bags.

¹⁰³ Ibid, p. 38.

¹⁰⁴ <http://www.lrrd.org/lrrd24/8/wayu24135.htm>

¹⁰⁵ <http://www.lrrd.org/lrrd24/8/wayu24135.htm>

¹⁰⁶ Interview with Alharma tannery; World Bank (2015), *Kenya Leather industry, diagnosis, strategy and action plan*, p.59.

○ Selling Kakuma made products to external markets:

Our team conducted a number of interviews with private sector actors to test the possibility of selling products from Kakuma to external markets. Stakeholders such as Nairobi's handicrafts-exporting Amani Café expressed an interest in buying and promoting products from Kakuma as long as the quality meets high standards.

We produce high quality products keeping with high standard products and design work. We don't want to reach lower end markets. We are open to partnerships with Kakuma as long as the quality is there. Bring it in and let's have a look at it!

Interview, Amani Café

○ Establishing partnerships with training providers:

Training providers could and should work alongside NGOs to develop the capacity of refugees in producing leather products. Candidates include the Kenya Leather Development Council which provides technical expertise in primary and secondary leather processing and would be interested in teaming up with local partners to develop skills and best practices in the leather sector in Kakuma. Bata Company's Community Service Responsibility Department also expressed an interest in training refugees on leather processing techniques.¹⁰⁷

Establishing a mini- tannery in Turkana: a feasible opportunity?

Many stakeholders brought up the possibility of establishing a tannery in Kakuma which might lead to the creation of employment and increase the value-add of hides and skins from Turkana. The Turkana county government is exploring the possibility of setting up a tannery. Interviews with current tanneries showed that while the establishment of a tannery in Kakuma is desirable, a number of fundamental challenges remain in place:



- Water scarcity: One of the fundamental challenges to setting up a tannery in Turkana is water scarcity. A small size tannery uses on average 60,000 liter of water a day.¹ Turkana is in one of the highly arid zones, with low levels of water. The county receives between 150mm and 400mm of rainfall annually with average precipitation being 250mm. Moreover, the rainfall pattern is unpredictable and at times Turkana receives no rain for a whole year. This can present tremendous challenges to a tannery project.¹ Alpharma tannery has pioneered water recycling¹ techniques which might be replicated in Turkana [...] with the caveat that these water treatment plans can be "almost as expensive as setting up a tannery."¹
- High temperatures: Turkana is one of the driest counties in Kenya with temperatures ranging between 25-40C. Skins rapidly degrade in the heat.
The temperature and humidity are too high in Turkana – the skins get ruined. Nairobi conditions are perfect.
Interview, Alpharma tannery, Nairobi
- Low Quality: Hides and skins from Turkana are known to be of low quality. The question is whether the production of low-grade leather products such as shoe linings or gloves warrants the investment in a tannery.

¹⁰⁷ Interview 2015 with a representatives of Bata shoes, Nairobi.

The hides and skins value chain remains undeveloped in Kakuma, with little value addition to increase the value of the hides. The primary challenge is improving the quality of hides. In order to improve the quality of hides as well as associated income generation, the research team recommends the creation of linkages between slaughterhouses and tanneries. Through such linkages, the quality of hides and skins can be raised to consistently meet customer demands. Benefits can be created to improve the income of livestock owners, butchers, traders as well redistribute the margins across the entire chain.

While hides and skins are available in abundance, interviews with tanneries in Nairobi revealed that few have links with hides and skins suppliers from Turkana. Many pointed out that this is due to the poor quality of the hides coming from the North which, once processed, will not fetch a high price. Since tanneries do not see the value of buying hides and skins directly from Turkana, investments should be made to improve the value of those hides. Tanneries should also be encouraged to turn to Kakuma for raw materials for cheap products.

Key recommendations for improving the quality and the value of Turkana Hides and Skins:

1. **Improving the quality of Turkana hides and skins through improved breeding.** This could be achieved through the creation of a breeding space in Turkana. As livelihoods in Turkana are primarily based on extensive livestock production, improving the value of animal hides and skins can create direct benefits to the income of pastoralist.
2. **Improving the quality of Turkana hides and skins through improved flaying techniques.** Currently, after slaughter, animal skin is removed by hand with a knife resulting in poor quality of raw skins. Improved flaying techniques can be implemented through the creation of links between tanneries and abattoirs to advance the abattoirs slaughtering techniques and skills development. Prices paid by tanneries per piece of hides and skins vary according to quality. Following the example of Alpharma tannery, tanneries should invest in the installation of hide pulling and skin rollup equipment in order to ensure less damage is incurred on the hides and skins.
3. **Identifying cheap products that could be developed out of low-grade hides and skins.** Many tanneries do not know what could be made out of low-grade hides and skins. More research should be conducted to identify what products could be manufactured from Kakuma hides (such as industrial gloves, or footballs where only small pieces would be needed¹⁰⁸). Tanneries should be encouraged to pursue those markets for lower-grade products.
4. **Building knowledge of best practices on curing skins:** There is little knowledge of skin curing processes amongst hides and skins collectors and pastoralists. Most pastoralist preserve hides using sun drying and suspension drying techniques leading to inferior quality products.¹⁰⁹ Introducing simple preservation techniques such as wet salting would improve the quality of hides.¹¹⁰

¹⁰⁸ For e.g. See Alive and kicking (<http://aliveandkicking.org/>), helping poor people by stitching footballs under good conditions, etc.

¹⁰⁹ Interviews in Kakuma; Wayua F O and Kagunyu A 2012: Constraints and opportunities in the hides and skins value chain in pastoral areas of northern Kenya. *Livestock Research for Rural Development. Volume 24, Article #135.*

¹¹⁰ Ibid.

Table 15 – Intervention needs assessment

Area of intervention	Actor	Objective	Specific intervention	Beneficiary type
Traditional Market Promotion	AAH-I / DRC	To encourage refugees in the pursuit of traditional economic activities	Design a business management training course tailored to local traditional sectors of employment such as handicrafts	Refugees / host community
Private Sector Development	AAH-I / DRC	To equip new market entrants with business administration skills; increase access to markets	<ul style="list-style-type: none"> - Link refugees with artisanal shops in Nairobi such as Amani and Spinners web; - Provide training courses in business administration. 	Refugees / host community
Marketing	AAH-I / DRC	To increase marketing abilities of refugees	<ul style="list-style-type: none"> - Raise awareness of product design preference of target markets; - Create brand strategy for Kakuma products - Create strong dedicated distribution channels with private sector support - Promote products both online and offline. 	Refugees / host community

Based on the findings of this research, this section will present recommendations on what opportunities exist to increase the economic participation for refugees in the Hides and Skins value chain. The overarching theme is that DRC and AAH-I should move beyond traditional interventions. The most significant disadvantage facing refugees in Kakuma is their lack of access to markets and lack of sophisticated marketing abilities. DRC and AAH-I should: 1) strengthen existing relationships with local authorities (county and Nairobi levels); 2) systematically engage with host communities; 3) integrate socio-economically vulnerable groups (women, youth, older people) and 4) build partnerships with private sector actors, to move beyond the low-level quality production standards that currently prevail in Kakuma.

Table 16 Key areas of opportunity identified

OBJECTIVE	ACTOR	DESCRIPTION	BENEFICIARY TYPE	AGENDA
Strengthening the regulatory and legal environment	UNHCR, DRC, AAH-I, local authorities and the Kenyan government	Fostering a positive dialogue between local authorities, local communities, and refugee communities towards the development of the production segment of the VC – through regulatory incentives – with a specific focus on legal aspects (livestock ownership for refugees).	Refugees / Host Communities	Immediate action, long-term impact
Improving the quality of hides and skins in Turkana	DRC, AAH-I	Establishing good practices in removing hides and skins from animals to ensure better quality of hides is safeguarded. Using machine instead of manual flaying can ensure better quality hides with fewer cuts and holes.	Refugees / Host Communities	Immediate action, mid- and long-term impact
Tackling the lack of market choices and dependence on monopolistic traders	DRC, AAH-I	Currently, a few hide and skin traders monopolize the market, by buying hides and skins and transporting them to Nairobi. In order to move away from this monopolistic model, it is key to establish marketing cooperatives. It is also important to create awareness of options to decrease dependence on a few hides and skins traders.	Refugees / Host Communities	Long-term action, long-term impact
Developing semi-skilled and skilled professionals, and building capacity through sensitization and awareness raising	DRC, AAH-I, and vocational training firms	Vocational training should first focus on basic technical skills for the local workforce (refugees and host community members). In the longer-run, training should be provided in technical skills (such as processing and manufacturing). Sensitization and advocacy campaigns should target both host communities and local authorities.	Refugees / Host Communities	Medium-term and mid-/long-term impact
Improving the product quality by establishing better linkages with herdsmen and abattoirs through incentive systems	DRC, AAH-I with tanneries, the county government, unions and associations	Encouraging tanneries to invest in the installation of hide pulling and skin rollup equipment as well as creating incentives for supply partners to abandon flaying and other malpractices harming the animal hides and skins.	Refugees / Host Communities	Mid-term action, mid- and long-term impact

Developing and securing linkages to external markets (regionally and internationally)	DRC, AAH-I, with the support of UNIDO, ILO, and other relevant economic development actors	The demand for handicraft in Kakuma is extremely reduced. Producers have limited access to external markets and poor knowledge of market opportunities. Interventions should target the creation of proper market strategies for refugees and promote an understanding of international and national market requirements. In the long run, handicrafts producers should be linked to external markets, including online retailers.	Refugees / Host Communities	Long-term action, long-term impact
Improving the quality of handicrafts and ensuring they are 'marketable'	DRC, AAH-I, with the support of UNIDO, ILO, and other relevant economic development actors	The quality of handicrafts coming out of Kakuma is often poor. Products cannot compete with rival high-quality products. There is a significant national demand for beads and jewelry (using bones and leather) in Kenya– improving the quality of Kakuma products is key to reaching those markets. Specialized training should be provided to improve the artistic quality of value of handicrafts produced in the camps.	Refugees / Host Communities	Long-term action, long-term impact
Using bone/leather of animals for art crafts	NGOs	Bones are frequently used in the handicrafts sector in Kenya. Producer groups could tap into this market were they aware of it, and the added supply could lead to more use of bones in handicrafts.	Refugees / Host Communities	Long-term action, long-term impact

Rapid Assessment of the Aloe Value Chain

With more than 200 active components, *Aloe Vera* (*Aloe turkanesis*) is an extraordinarily useful plant that contains vitamins (including B12), minerals, amino-acids, enzymes, and polysaccharides. It is used “to treat malaria, flesh wounds, and eye infections and to moisturize dry skin.”¹¹¹ Aloe Vera is a native plant of the hills of Turkana, amongst other arid areas. This section provides a snapshot of some of the current production initiatives in Turkana and the potential for their scale-up to include Kakuma refugees.

Some communities have already developed micro-initiatives. At a macro-level, it can also offer perspectives in terms of employment and even export, both other counties and internationally, for cosmetics and medical products.

NGO representative, Nairobi

Aloe production, processing and commercialization have been advocated for years by local NGOs to improve and diversify the livelihood opportunities of host communities.¹¹² Organizations like KEFRI and Practical Action have actively promoted commercial Aloe. Findings in this section are mainly based on consultations with Turkana Bio-Aloe Organization (TUBAE) staff. TUBAE is a local NGO in Turkana working on promoting Aloe Vera as a means of alleviating poverty and diversifying pastoralist livelihoods. The organization works on using endangered Aloe species (*Echuchuka*), which can be found in Turkana County, through artificial propagation, value addition, and marketing of other dry land products.

The context of Aloe Vera and Aloe Production

Aloe Vera is a native plant found in the hills on the Turkana/ Ugandan border and has been valued for many years for its ethno-medicinal qualities. Aloe thrives in dry and warm conditions. There are more than 57 species of Aloe in Kenya and at least 8 Aloe species in Turkana.¹¹³ Most Aloe is found in the wild, and only a few types can be cultivated. *Aloe barbadensis* (*Aloe Vera*) is one of the few Aloe species that can be and has been successfully cultivated by groups such as TUBAE in Turkana to produce Aloe-based products.¹¹⁴ It is currently being used for commercial production across the world thanks to its active ingredients, high leaf gel content and strong growth.

However, the existing Aloe population in western wards (Letea, Kakuma, Kalobeyei, Lokichoggio, Songot, Nakabale, Loima, etc.) is now threatened by local mafias, which hire local community residents to harvest Aloe in the wild and at a very cheap price without any associated cost:

This is an ongoing, massive and systematic destruction, which may well lead to the extinction of the Aloe turkanesis in the next decade.

KII UNEP, Nairobi

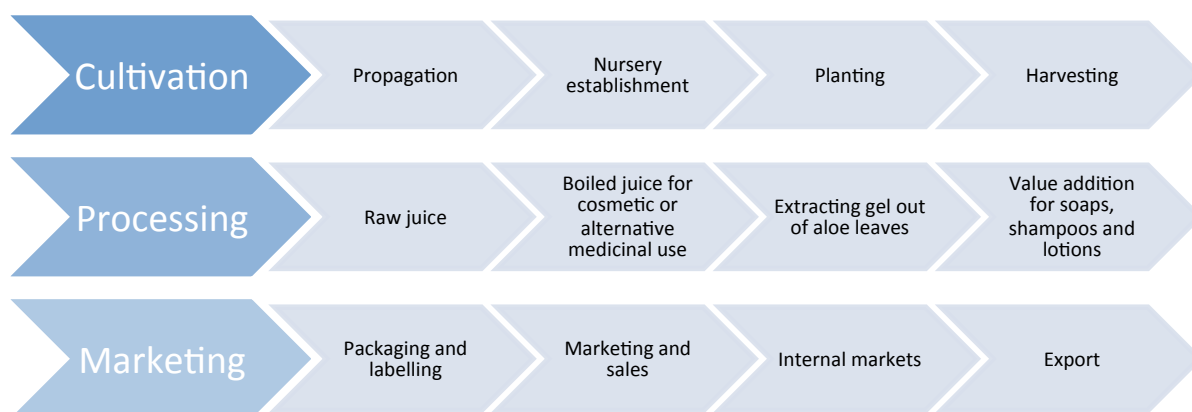
¹¹¹ Watson DJ and van Binsbergen J. 2008. *Livelihood diversification opportunities for pastoralists in Turkana, Kenya*. ILRI Research Report 5. ILRI (International Livestock Research Institute), Nairobi, Kenya. p.6.

¹¹² Watson DJ and van Binsbergen J. 2008. *Livelihood diversification opportunities for pastoralists in Turkana, Kenya*. ILRI Research Report 5. ILRI (International Livestock Research Institute), Nairobi, Kenya. p.5.

¹¹³ Interview, TUBAE.

¹¹⁴ TUBAE (2013), *Aloe Vera value chain analysis for proposal for project preparation and development plan for nature based enterprises project*.

Figure 11 Mapping the Aloe Vera Value Chain



Step 1: Cultivation

Aloe Vera can be cultivated in nurseries as done by TUBAE group in Turkana. It is normally planted with propagation period of up to 2 months. Although it is not necessary to use ploughed land as Aloe can survive under adverse conditions of tropical arid and semi-arid areas, it is advisable to start with ploughed land. In terms of field management, pest and disease control must be monitored closely. Usually, leaves “attain maturity in 8 months and fields can last up to 5 years after planting. Mature leaves are cut leaving four young leaves per plant for subsequent harvesting.

Step 2: Production process

There are two main methods used in the manufacturing of Aloe Vera products: 1) filleting or 2) ‘whole leaf’ processing.

- **Whole leaf:** This method involves taking the entire Aloe leaf and chopping it into many small pieces, which are then turned into pulp and filtered to extract gel. The outcome is a less pure substance as parts of the rind can pass through the filter. It is also possible to filter with charcoal or the use of heat to remove any impurities. However, this results in the loss of nutrients.
- **Filleting:** Filleting involves cutting the most valuable piece out either manually (with a knife) or through the use of a machine. While using machines will produce more volume, quality is compromised given that machines can only be programmed to cut one size, thus resulting in loss of mucilage and inner gel. Hand filleting ensures the highest quality, while keeping the nutrients in the leaf. This method is commonly used in small-scale enterprises across Africa.

Step 3: Value addition

Aloe plants deliver various raw products that can be used in producing commercial products such as Aloe juice or cosmetic products.

Figure 12: Aloe products



- **Aloe gum/ sap:** Small-scale producers in rural areas in East Africa often use Aloe sap/aloe gum. Aloe gum has less value on the market as it has only 1% of active ingredients. However, it is widely used for the production of body care and cosmetic products.
- **Juice:** The Production of Aloe Juice is inherently more complicated. The green peel, out of which the juice is made, is an active ingredient and rich in nutrients and fiber. An analysis by TUBAE summarizes the process of juice production.

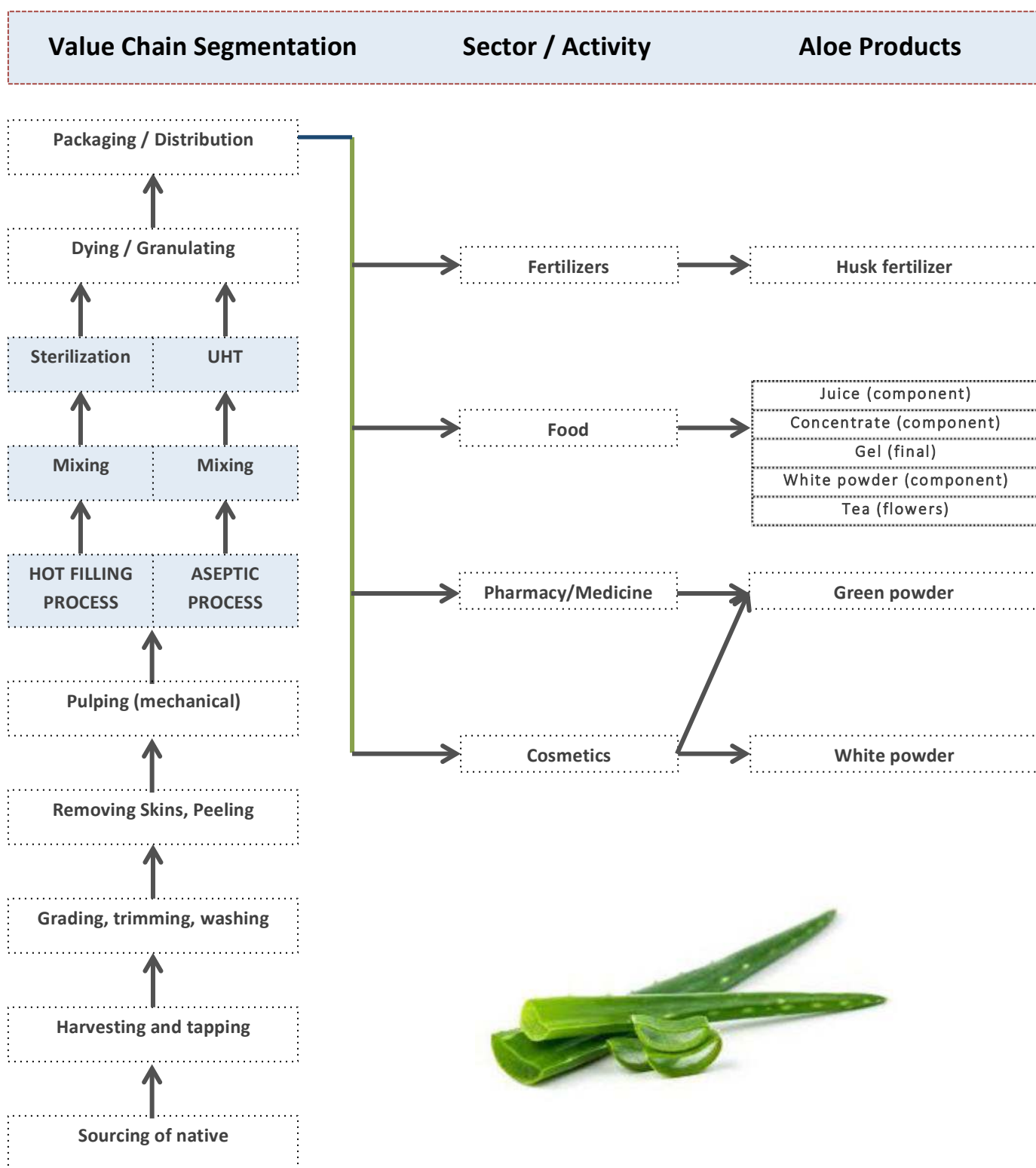
The best solution for ensuring the maximum biological potency of aloe is to process, stabilize, and preserve the leaf within 3 to 6 hours of its removal from the plant. A good gel is created by hand removing the inner fillet of whole Aloe Vera leaves, and then subsequently sending into a cold pressed production facility.¹¹⁵

Transport time is critical for the production of the higher value aloe gel compared to the lower value crude aloe sap and gum. Such processing requires the presence of an aloe-processing factory/plant in the proximity of aloe producing areas. Practical challenges include storing the product without chemically altering its ingredients.

The below figure details the different segments of the value chain, with a focus on two different processes (hot filling and aseptic processes) which both require significant investments. Should the development of the aloe value chain in Kakuma be privileged by DRC and its AAH-I, the most pragmatic and cost-effective approach would be to build on the existing work done by TUBAE in order to: 1) learn from TUBAE's experience and expertise in most segments of the aloe value chain; 2) develop complementary segments or enhance existing ones; 3) optimize the potential for skilled and unskilled job creation in Turkana county.

¹¹⁵ TUBAE (2013), Aloe Vera value chain analysis for proposal for project preparation and development plan for nature based enterprises project.

Figure 13: Aloe value chain segmentation and products



A number of key challenges were identified in Aloe production and processing in Turkana, but opportunities exist for up scaling of Aloe production with commercialized and professionally packed products to appeal to consumers and reach external markets. There is high interest in developing the value chain in Turkana, and this can be made possible with the required inputs, improved husbandry and effective marketing of final product.

In collaboration with the county government, DRC and AAH-I might establish Aloe Vera plantations as a sustainable source and point of sap tapping. However, should DRC and AAH-I decide to develop livelihood and income generation schemes through the Aloe value chain, they should bear in mind that this strategy requires a long-term approach to bear fruit. Short-term outcomes would only focus on unskilled jobs with no actual sustainable economic development; by contrast and more interestingly, DRC, AAH-I and their partners could seek to develop a medium- and long-term development plan through advocacy, coordination, and specific efforts on each segment of the Aloe value chain.

Advocacy: Liaising with local authorities and communities to promote an economically and environmentally sustainable value chain in Turkana. DRC/AAH-I should encourage the County government to formulate a policy favoring protection measures towards local Aloe varieties. The on-going and systematic destruction of Aloe plants could be slowed and counteracted by the county and national government through the concerned ministries, i.e. the Ministry of the Environment, the Ministry of Forestry and the Kenya Wildlife Service (KWS). A pedagogic and participatory approach should be adopted with host communities, through awareness raising sessions and collaborative platform. The following points should be communicated: 1) it is in everyone's interest to promote sustainable and environmentally viable cultivation modalities; 2) both host and refugee communities can benefit from the development of the Aloe value chain (unskilled and skilled jobs, diversified income).

Coordination with other VC actors: Developing a 5-year collaboration plan with relevant existing Aloe Vera value chain actors. It is always counterproductive to reinvent the wheel or work in isolation. DRC/AAH-I should seek to develop a multi-year coordination and collaboration plan with relevant actors along the value chain:

- TUBAE to assess knowledge gaps (training, technical skills, marketing, etc.) and learn share contextualized expertise;
- CIRAD and CNRS to identify scalable innovations that could increase the productivity of Aloe Vera plantations while ensuring that funded activities are ecologically sustainable. In this regard, many actors highlighted a lack of technical and scientific knowledge. DRC-AAH should advocate for the establishment of a research center in the Turkana area, focusing on Aloe and other plants, stating that the research center would benefit the entire county (both refugee and host communities).
- TUBAE to ensure that the development of a local Aloe value chain is conducted in an economically, technically and socially acceptable way: *"TUBAE will do their best to protect develop, and improve the Aloe value chain in Turkana. In particular, they could help AAH or DRC on technical aspects and help them liaise with local host communities"* (Value Chain trader, Nairobi, January 2016).

In collaboration with the county government, DRC and AAH-I should encourage the formation of Aloe producing groups or cooperatives to create a stronger safety net (increased resilience to shocks for members), generalize good practices (environmentally sustainable), develop innovative approaches (especially on fertilizers and pesticides) and decrease costs (mutualized purchase, increased bargaining power).

Cultivation Phase: Developing access to Aloe seedlings (and especially *Aloe turkanesis*) should be a priority. There are reportedly no specialized producers offering Aloe Vera seedlings for sale in Turkana. Groups involved in Aloe production mentioned the need to access Aloe Vera purposely bred to fit the local climatic conditions and meeting the specific needs of farmers.¹¹⁶ Promoting access to environmentally sustainable fertilizers and techniques may require a progressive change in people's mindsets: from detrimental approaches favoring the intensive use of chemical fertilizers to innovative methods that combine better yields and sustainable techniques. Opening a dialogue with agronomic research centers (CIRAD) would lead to promising results.

Processing Phase: Building knowledge, skills on handling Aloe Vera. One of the challenges faced by organizations working on the ground is the lack of knowledge of appropriate handling of Aloe Vera during the extraction, filtering and packaging processes. Trainings are required to develop the skills of farmers in planting and maintaining Aloe Vera plants. Knowledge building needs to include best practices in processing Aloe for three phases: a) separating Aloe sap from Aloe leaves, b) turning Aloe Vera sap to powder and c) turning Aloe into value added products such as soap, shampoos and lotions.

Post-Processing: Developing packaging and marketing. Interviews with TUBAE staff showed that one of the key challenges related to Aloe Vera production is the absence of market information and the poor organization of production and processing.¹¹⁷ In this regard, packaging and marketing are fundamental challenges facing the enterprises affiliated with TUBAE. Opportunities can be found in a) producing organic and fair trade Aloe products from Turkana and b) supporting better packaging and marketing to increase the value of these products: *"Our report of market findings shows that because of market preference, local products cannot compete with others due to poor packaging. Our net profit is low because of that."*¹¹⁸

The internal demand in Kakuma for complex Aloe products is extremely reduced, whilst producers have limited access to external markets as well as little knowledge of market opportunities. Interventions can play a key role in preparing market strategies for refugees and host communities while promoting an understanding of international and national market requirements (such as good quality standards and international protocols).

The assumption of this rapid assessment is that Aloe can be an important source of livelihoods for refugees in Kakuma and an entry point for better collaboration with host community organizations. Traditionally, Aloe Vera was seen as belonging to the host community. A win-win situation should be considered through the creation of a platform linking refugee with host communities with the aim of encouraging sustainable cultivation and processing of Aloe products. At a time when massive destruction of Aloe plantations is taking place, DRC and AAH-I may help local authorities develop adequate conservation measures and longer-term production and marketing schemes. Beyond job and income generations, the long-term development of the Aloe Vera value chain in Turkana would not only contribute to the social and economic wellbeing of refugee households, but also promote one of Turkana's most salient cultural and environmental emblems.

¹¹⁶ Interview, TUBA.

¹¹⁷ TUBAE (2013), Aloe Vera value chain analysis for proposal for project preparation and development plan for nature based enterprises project.

¹¹⁸ Interview with TUBAE, January 2016.

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