INTERNATIONAL SHEA MARKET STUDY

Promoting Rural Development in Northern Uganda - PRUDEV

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
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Contents

Executive summary

The collection of shea nuts is an important source of income for many people in North Uganda and the economic value of the trees (*Vitellaria paradoxa* subspecies *nilotica*) provides protection against cutting of the trees for other purposes. Although the exact amount of shea trees remains a topic for more research, many stakeholders in the sector agree that Uganda has a lot of untapped potential.

Uganda's current role in the international shea market is limited. Although exact data on international shea trade are not available, estimates suggest that more than 90% of shea on the international market originates in West Africa and that Uganda accounts for less than 1% of international trade.

The West African shea industry developed strongly in the past two decades, driven largely by rising demand from the chocolate industry. West African shea contains a large amount of stearic acid and, at a low price of around € 2 /kg Free-On-Board, provides a cheap alternative to the more expensive cocoa butter for the manufacturing of chocolate.

Compared to West African shea, East African shea nilotica is much more expensive at an estimated price level of around € 6 /kg Free-On-Board. This implies that direct competition with West African suppliers on price is impossible. Moreover, the chocolate industry is most interested in the stearin fraction of shea butter. As the stearin fraction in East African shea nilotica (32%) is smaller than in the West African shea (42%), the chocolate industry is not interested in sourcing shea in Uganda.

Shea from Uganda currently has most potential in international markets for cosmetics. In cosmetics, shea nilotica butter mainly serves as an emollient (i.e. moisturiser) for skin conditioning. Unfortunately, many European and Chinese cosmetic manufacturers do not know the differences between West African shea and East African shea nilotica. Most cosmetic manufacturers are not even aware of the existence of different subspecies. This is one of the major challenges for Ugandan shea exporters, as a lack of distinction in quality will result in a competition on price with the much cheaper West African shea.

For the cosmetic manufacturers who are aware of the existence of shea nilotica, the soft creamy texture of shea nilotica butter is a major quality aspect. The high oleic acid content of shea nilotica is the reason for this softness at room temperature, which makes East African shea nilotica butter easier to spread than West African shea butter. Besides skin conditioning, other cosmetic applications for shea butter include hair care products, lip balms and soaps.

Europe is the largest producer of cosmetics in the world with a production value of € 79 billion and is estimated to be one of the largest markets for shea butter for cosmetics. China is another large producer of cosmetics (€ 48 billion) and its cosmetic market is growing rapidly. Although detailed data on the Chinese market for shea are missing, various sources suggest that the Chinese cosmetics market offers many opportunities for shea butter.

A particularly promising segment within the European and Chinese cosmetics markets is the market for natural cosmetics. In Europe, natural cosmetics account for around 5% of the total cosmetics market and the growth rate for this segment is significantly higher than the growth rate for the total cosmetics market. Quantitative data for the Chinese natural cosmetics market are not available, but various industry sources suggest that China has an underdeveloped, but significant and fast-growing natural cosmetics market.

West African shea suppliers and many other suppliers of vegetable butters of different origin provide strong competition in cosmetics markets. West African shea has similar cosmetic benefits and is used in the same type of cosmetic products. However, the soft creamy texture of East African shea nilotica is often regarded as a comparative advantage. As East African shea nilotica is more expensive than West African shea and most other vegetable oils, shea nilotica suppliers can best target manufacturers of luxury cosmetics.

The main requirements for shea butter for cosmetics markets are high purity, low peroxide value (below 10 mEq/kg) and a low Free Fatty Acid (FFA) content (<8%). Hand-crafting, expelling and cold-pressing are all suitable processing methods for Ugandan shea nilotica to comply with buyer requirements regarding FFAs and peroxide values. However, only a small group of ethical cosmetics manufacturers explicitly promotes hand-crafting of their shea butter to position themselves as ethical suppliers. The largest group of cosmetics manufacturers only considers the specifications of the shea butter regardless of the primary processing method.

Buyers will need a Certificate of Analysis to verify that the shea product meets specifications of the supplier and their own quality requirements. As distinction from other vegetable butters and notably shea from West Africa is crucial for success on the international market, specifications must clarify to potential buyers that shea nilotica from Uganda is different from other vegetable butters. Besides the characteristics of the shea butter, cosmetics manufacturers will appreciate information that can help them to formulate with shea butter.

In the European market for natural cosmetics, many buyers appreciate or even demand an organic certificate to support their marketing story for consumers that explains how the ingredients in their cosmetic products were made. For suppliers in Uganda, certification of shea butter will increase market opportunities and strengthens the image of the supplier as a responsible company with a sustainable production system. As shea tree conservation is an important subject in the shea sector in Uganda, organic certification can play an important role in further substantiating the story of environmentally sustainable shea nut collection.

Requirements for final cosmetic products based on shea butter are much more demanding than requirements for shea butter as an ingredient for cosmetics. Both in Europe and in China, authorisation for introducing final cosmetics products to the market requires elaborate documentation on product safety and efficacy, of every ingredient in the product as well as the final product. The bureaucratic authorisation procedures require sound knowledge of legal requirements, which is usually provided by a partner in the respective market that will also function as the legally required Responsible Person that is fully liable for the product’s safety. This can vary from handling complaints to product call back operations.

Many cosmetics manufacturers appreciate transparent and sustainable supply chains. Suppliers have various possibilities to provide the needed transparency and sustainability. They can provide information on request, put their data into SEDEX or obtain a certificate from a third party. The most common certificate is Fair for Life.

Most manufacturers of conventional and natural cosmetics prefer to use refined shea butter as an ingredient for their cosmetics, as opposed to unrefined shea butter. In Europe, most of these cosmetic manufacturers source their raw materials including shea butter from European distributors. Those distributors include refiners, wholesalers of cosmetic ingredients and formulators. With their knowledge and equipment, refiners play a key role in European shea butter trade. They account for a large part of the trade in shea butter and in many cases provide toll-refining services to other wholesalers of cosmetic ingredients and formulators.

A good marketing story for shea nilotica should include information on cosmetic benefits and how these differ from shea butter from West Africa. Marketing stories can build on origin, properties or functionality, certification, suitability to marketing trends, sustainability, traditional use or production method. The traditional manufacturing techniques used in Uganda, as opposed to the mostly industrial processing techniques used in West African is an important element of the marketing story for East African shea nilotica, as it gives a more natural and personal character to the product. Moreover, the marketing story can build on the traditional medicinal uses of shea nilotica in Uganda. Trade fairs provide the best platform for telling the marketing story to potential buyers. In-Cosmetics and Vivaness are the most relevant trade fairs in Europe.

The Ugandan shea sector can use the information in this report to develop a strategy to enter international markets and design market-driven interventions. However, development of a sector strategy will require additional research on the local situation in Uganda to determine feasibility of the suggestions from this study. Although the development of the West African shea sector provides many useful lessons, it does not provide a blueprint for development of the Ugandan shea sector. Instead, Uganda must take its own place in the international market to support shea collectors in rural areas of North Uganda and conservation of the valuable shea trees.

Introduction

The East African shea tree, *Vitellaria paradoxa* ssp. *nilotica*, is a slow-growing hardwood fruit tree indigenous to northern Uganda, South Sudan, Sudan and to some smaller areas in Ethiopia, Central African Republic, Congo and Chad. Inside the fruits is a large hard seed which yields shea-butter, a food oil, cosmetic ingredient and/or substitute for cocoa butter. The shea tree is of great importance to the people especially of northern Uganda who process the nut for local consumption and for sale, which generates an important income in particularly for women.

Although the local people sell parts of their processed shea-butter or the collected nuts for further processing on the national, regional and international market, the full potential for marketing shea products especially for the export market is not yet tapped. The composition of Nilotica shea butter is different from the West African shea butter and therefore it is less demanded in the international chocolate and confectionary industry as substitute for cocoa butter. Currently, different Ugandan processors and buyers touch different market segments of shea products. They sell either kernels, high-quality cold-pressed shea-butter, medium-quality unrefined shea-butter, fractionated stearin and olein out of the shea nut or final shea products like lotions, skin care cosmetics and soaps.

Some Ugandan processors and traders sell to European countries, to the USA and Canada. Other products are exported to Asian countries, but the full potentials of trade to China, India, South Korea or Japan, countries with high demands for natural cosmetic products, are so far not known.

This analysis of the international market for shea nilotica aims to identify promising market opportunities in international markets and help Ugandan stakeholders to make better investments and decisions for their product development and businesses in the long term. This will improve income and livelihoods of local collectors of Shea nuts in northern Uganda.

The geographic scope of the study is limited to European and Asian markets with a focus on the European market. The study provides recommendations on how Ugandan Shea stakeholders can improve their access to international markets.

List of acronyms

ABS	Access and Benefit Sharing
AQSIQ	General Administration of Quality Supervision, Inspection and Quarantine
CAGR	Compound Annual Growth Rate
CAS	Chemical Abstract Service
CBE/CBI	Cocoa Butter Equivalents / Cocoa Butter Improvers
CBI	Centre for the Promotion of Imports from developing countries
COVOL	Cooperative Office for Voluntary Organisations
ECHA	European Chemicals Agency
EIF	Enhanced Integrated Framework
FAO	Food and Agriculture Organisation
FFA	Free Fatty Acids
FiB:	Research Institute of Organic Agriculture
FLO	Fairtrade Labelling Organisation
FOB	Free On Board
EU	European Union
GEF	Global Environment Facility
GIZ	German Agency for International Cooperation
GMP	Good Manufacturing Guidelines
GSA	Global Shea Alliance
HACCP	Hazard Analysis & Critical Control Points
HS	Harmonised System
IFOAM	International Federation of Organic Agriculture Movements
INCI	International Nomenclature for Cosmetic Ingredients
ITC	International Trade Centre
KFP	Klaus Fehling Partners
NGO	Non-Governmental Organisation
NMPA	National Medical Products Administration (of China)
NOGAMU	National Organic Agricultural Movement of Uganda
REACH	Registration Evaluation and Authorisation of Chemicals
SDS	Safety Data Sheet
SEDEX	Supplier Ethical Data Exchange
SET	Shea Nut Equivalent Tonnes

SME	Small and Medium Enterprises
TDS	Technical Data Sheet
UEBT	Union for Ethical Bio Trade
UEPB	Uganda Export Promotions Board
UNBS	Uganda National Bureau of Standards
USD	United States Dollar
UV	Ultra Violet

List of tables

List of figures

1. Product definition

1.1. Origin and properties

This study focuses on the international market for shea from Uganda in East Africa. East African shea is different from West African shea and its important to understand these differences in order to identify specific market opportunities for shea from Uganda.

Table 1 Comparison of East African shea to West African shea

	East African shea	**West African shea**
Botanical origin Originally, shea trees were classified as *Butyrospermum parkii*. Now the correct botanical name is: *Vitellaria paradoxum* synonym *Vitellaria paradoxa*. However, for cosmetic purposes shea butter is still known under its synonym *Butyrospermum parkii*.	*Vitellaria paradoxa* subspecies *nilotica*	*Vitellaria paradoxa* subspecies *paradoxa* Common name: Karite tree
Typical Fatty Acid Composition (FAC) Farmers in Uganda report the presence of local shea tree ethno-varieties. A study showed that there was no significant difference in stearic, palmitic and oleic acid composition between ethno-varieties. However, significant variation of fat content, vaccenic and linoleic acids was observed between some ethno-varieties, perhaps due to locality, climatic and tree-to-tree differences (Source: Fat content and fatty acid profiles of shea tree (*Vitellaria paradoxa* subspecies *nilotica*) ethno-varieties in Uganda) Shea butter consists of approximately 90% or more of triglycerides. Triglycerides are responsible for shea butter's emollient properties (source: State University of New Jersey).	Oleic acid (C18:1 (Omega-9)): 56-60% Stearic acid (C18): 25 - 38%, mean 32% Palmitic acid (C16): 3-6% Linoleic acid (C18:2) 5-7% Sources: USAID INDUSTRY ASSESSMENT AND POTENTIAL FOR PUBLIC PRIVATE PARNERSHIPS IN D EVELOPMENT OF TRADE IN SHEANUTS AND BUTTER (LULU) IN SOUTH SUDAN, CBI and specifications sheets of BeadforLife, ZRÓB SOBIE KREM and Paras Perfumers	Oleic acid (C18:1 (Omega-9)): 44-50% Stearic acid (C18): 30 to 52%, mean 42% Palmitic acid (C16): 3-5% Linoleic acid (C18:2): 5-7% Sources: USAID INDUSTRY ASSESSMENT AND POTENTIAL FOR PUBLIC PRIVATE PARNERSHIPS IN D EVELOPMENT OF TRADE IN SHEANUTS AND BUTTER (LULU) IN SOUTH SUDAN, CBI, State University of New Jersey, and specifications sheets of Natural Sourcing
Free Fatty Acids (FFA) A high FFA is an indication of damage of an oil or fat	4-5% (Source: GIZ Uganda)	8-12% (Source: GIZ Uganda)
Unsaponifiables	2.7% (Source: GIZ Uganda)	2-5% unsaponifiables (Source: State University of New Jersey)

Shea contains 3 times more unsaponifiables than classic oils and butters. The unsaponifiable fraction contains the bioactive substances, mainly triterpene alcohols, followed by hydrocarbons and sterols, which are all responsible for shea butter's bioactivity	Triterpene alcohols in Ugandan shea butter: 3.7% (Source: State University of New Jersey)	Triterpene alcohols in West African shea butter: 7.1-12.6% (Source: State University of New Jersey)
Physical state at room temperature	Very soft and creamy	Hard and solid butter
Colour	Pale to light yellow	Pale to light yellow
Aroma	Slightly sweeter than West African shea and slightly nutty	
Melting point The olein fraction of shea butter (rich in oleic acid) is liquid at room temperature while the stearin fraction (rich in stearic acid) is hard at room temperature which explains the difference in melting points between West and East African shea (Source: State University of New Jersey)	22-26 degrees Celsius (Source: BeadforLife Shea Nilotica Technical Data Sheet)	Higher melt point than Shea Nilotica. Needs to be softened or melted first to apply it to the skin (source: Joan Morais)

1.2. CAS and Harmonised System classifications

Chemical Abstract Service (CAS):

- Butyrospermum Parkii Butter / Butyrospermum Parkii Butter Extract / Butyrospermum Parkii Nut Extract / Butyrospermum Parkii Oil: 91080-23-8
- Butyrospermum Parkii Butter / Shea Butter Glycerides: 194043-92-0
- Butyrospermum Parkii Butter Unsaponifiables: 225234-14-0

Harmonised System (HS):

- Vegetable oil: 1515.90 (other fixed vegetable oils and fats, refined or not, not chemically modified)
- Nuts: 1207.92 (shea nuts / 'karite nuts'), but no trade is recorded under this code.
- 1207.99100: several African countries record trade of shea nuts under this code

1.3. Cosmetic benefits

Cosmetic benefits of shea are listed in CosIng (European Commission database with information on cosmetic substances and ingredients). CosIng lists 40 ingredients known as or derived from shea butter. For the purpose of this comparison, only cosmetic benefits of shea products with CAS number 91080-23-8 are listed here. CosIng does not distinguish between different subspecies of shea.

Table 2 INCI names and cosmetic benefits of shea

International Nomenclature Cosmetic Ingredient (INCI) Name	**Cosmetic benefit**
Butyrospermum parkii butter	• Skin conditioning • Viscosity controlling
Butyrospermum parkii butter extract	• Skin conditioning
Butyrospermum parkii nut extract	• Emollient (Emollients are cosmetic preparations used for protecting, moisturizing, and lubricating the skin)
Butyrospermum parkii oil	• Emollient • Skin conditioning
Butyrospermum parkii seedcake extract	• Skin protecting
Butyrospermum parkii nut shell powder	• Abrasive

Cosmetic manufacturers mainly use West African shea butter in cosmetic products because it is an economic way of adding an emollient. Emollients are defined as softening and smoothing the skin (CosIng, 2020).

Other cosmetics benefits:

- Good oxidative stability due to high level of saturated and monounsaturated fatty acids.
- Linoic acid to supply essential fatty acid to the skin
- The triglycerides in shea have 3 functions with regards to moisturizing:
    - Retains moisture
    - Reduces transepidermal water loss
    - Reduces the appearance of dry, scaly skin
- The bioactivities of the triterpene esters in shea:
    - Anti-inflammatory (source: Akihisa, et al. 2010):
        - chemical induction
        - UV induction: Cinnamate esters of triterpene alcohol are the main constituent of shea butter's unsaponifiable fraction, these esters have been reported to have strong ability to absorb UV radiation of the wavelength range 250-300 nm. This
          therefore makes the addition of shea butter's unsaponifiable components into sunscreens increase the absorption of UVB radiation by providing synergistic sun-protection (Source: Journal of Biology, Agriculture and Healthcare, 2017).
        - Urban dust induction
        - The unsaponifiables in shea include antioxidants and triterpenes (including (lupeol, α-amyrin, and β-amyrin) with anti-inflammatory action (Source: State University of New Jersey).
    - Collagen preserving:
        - Inhibit collagenases
        - Reduce MMP-3 gene expression
    - Reduce irritation
        - Insect bites
    - Enhance skin barrier (Source: Woelfle et al. 2010)

        - Thicker and better defined epidermis
- Formulation benefits
    - Increases viscosity and elasticity to stabilize the formulation for applications
    - Enhance sensory aspect (“skin feel”)
    - According to buyers, shea butter is an easy product to formulate with

Source: Global Shea Alliance, 2019

1.4. Benefits in food

Chocolate

The global chocolate industry uses the stearin fraction of shea butter in combination with Palm Mid Fractions (PMF) to produce Cocoa Butter Equivalents (CBE) and Cocoa Butter Improvers (CBI). CBE is a cheaper alternative to cocoa butter. CBIs improve the hardness and heat resistance of chocolate.

Substitution of palm oil

Palm oil is widely used in foods as a vegetable oil. As sustainability of palm oil production is under debate, many food manufacturers are looking for substitutes. Shea butter is such a potential substitute, as are sunflower oil, rapeseed oil, sesame oil and several other vegetable oils.

Margarine manufacturers are among the food manufacturers looking for palm oil substitutes. They use stearic acid to provide structure to the product. Stearic acid makes the margarine solid. Traditionally, manufacturers produced stearic acid by full hydrogenation of liquid oils (rapeseed,sunflower,soy). However, hydrogenation is a chemical process that needs to be labelled on the food product in the EU, while consumers are looking for natural products. This provides opportunities for stearin fractions from shea.

1.5. Medicinal benefits

The European Union and many other countries only allow the use of medicinal claims for ingredients when those ingredients are listed in the European Pharmacopeia. A pharmacopeia is a collection of monographs, which are descriptions of medicinal preparations including quality standards for ingredients. Shea is not listed in the European Pharmacopeia. This implies that it is not authorised to make medicinal claims for shea (Source: European Directorate for the Quality of Medicines & Healthcare). Listing of shea in the European Pharmacopeia will require clinical trials that prove that shea has a medicinal benefit. Such clinical trials can easily cost hundreds of thousands of euros and will only be done for ingredients with unique medicinal benefits. There are currently no signs that any company or organisation is going to invest in the necessary research to obtain approval for a medicinal claim for shea.

2. Production, trade, demand

The following table provides an overview of data on production and trade of shea (paradoxa and nilotica spp). These data are rough estimates from different sources and direct comparison

between these data is not possible. An analysis and interpretation of these data follow in the next sections.

Table 3 Overview of data on production and trade of shea (paradoxa and nilotica spp)

	Global	**West Africa**	**Uganda**
Production (collection in tonnes)	800,000	795,000	3,500
Exports (Shea Nut Equivalent Tonnes)	260,000	260,000	<1,000
Imports by Europe	60,000 tonnes / USD 200 million	60,000 tonnes / 200 million	30 tonnes / € 140,000

Source: Compiled by ProFound, 2020

2.1. Production

Global production

According to the Global Shea Alliance, approximately 800,000 tons of shea nuts are collected globally each year (Source: Global Shea Alliance's Industry overview, February 2020).

As the following table shows, shea butter is mainly produced in West African countries.

Table 4 Shea nut production by country in 2017

Country	**Production (tonnes)**
Nigeria	361,017
Mali	49,640
Burkina Faso	45,183
Ghana	33,878
Ivory Coast	31,492
Benin	14,366
Togo	12,668

Source: FAOstat, 2020

Between 2013 and 2020, global shea nut production has increased from around 600,000 tonnes to 800,000 tonnes. The major drivers behind this increase are new food and cosmetics applications in global markets which have led to investments in the expansion of supplies and processing (USAID, 2013; Global Shea Alliance, 2020). The following sections of the report provide more information about these developments.

Production in Uganda

In Uganda, Shea Nut trees only grow in Northern Uganda, in the districts of Kotido, Kaboong, Moroto, Abim, Otuke, Agago, Kitgum, Pader, Aleptong and in the West Nile region. (EABW Digital, 2019).

A USAID-funded study estimated that the potential shea nut production in Uganda range from 70,000 to 385,000 tons, translating into 15 to 80 million litres of oil per year. The same study estimated that actual trade (national and international) in shea nuts in Uganda ranges between

3,000 and 4,000 tons, approximately 800,000 litres of oil per year (Source: Resilient livelihoods and the shea butter tree in Uganda, 2014).

2.2. Trade

Global trade

Because African shea (paradoxa and nilotica ssp) is exported in various forms (as nuts, butter, components and finished products), exports of shea are usually calculated into Shea Nut Equivalent Tonnes (SETs). For example, it takes 3kg of shea nuts to produce 1kg of shea butter. To compare to total exports, this 1kg of shea butter is recorded in data as 3kg of shea nut equivalent.

Data on global exports of shea nuts and derivatives are limited and often unreliable. Estimates on global shea exports vary between 150,000-200,000 SETs and 350,000 SETs. This includes shea nut, butter and fractions (e.g. stearin). As West African suppliers dominate the export market and only produce paradoxa ssp (except for some nilotica production in Nigeria), it is safe to say that most of these exports comprise shea from *paradoxa* subspecies.

More than half of all global shea export is processed in West Africa and exported as shea butter, shea stearin and shea olein. The remainder is exported as nuts.

Burkina Faso and Ghana are more developed in shea butter processing. They both process shea nuts mechanically. According to the Global Shea Alliance, Ghana has the largest mechanical shea processing capacity.

Burkina Faso and Ghana exported between 8,000 and 10,000 tonnes of shea butter in 2013 or 24,000 - 30,000 shea nut equivalent tonnes. Based on EU import data for vegetable fats/oils, Ghana and Burkina Faso are still the major shea butter exporters in West Africa with exports to the EU amounting to 27,000 tonnes (80,000 SETs) and 8,000 tonnes (24,000 SETs) respectively. These vegetable oil exports appear to largely reflect shea butter exports, as they exclude vegetable oils from soya-bean, groundnut, olive, palm, sunflower, coconut, babassu, rape, colza, mustard, linseed, maize, castor and sesame.

Trade in Uganda

Major players in Ugandan shea sector:

- Guru Nanak Oil Mill (GNOM)
- KFP/KM International Trade
- NOGAMU – National Organic Agriculture Movement of Uganda
- Northern Ugandan Shea Processors Associations (NUSPA)
- CREAM– Community Organization for Rural Enterprise Activity Management
- Nilo Beauty Products
- Moo Yao
- Blessed Organic
- Livara
- Shea House
- Shea Care
- Pelere Group
- Shea Beauty Uganda
- Crop Vet

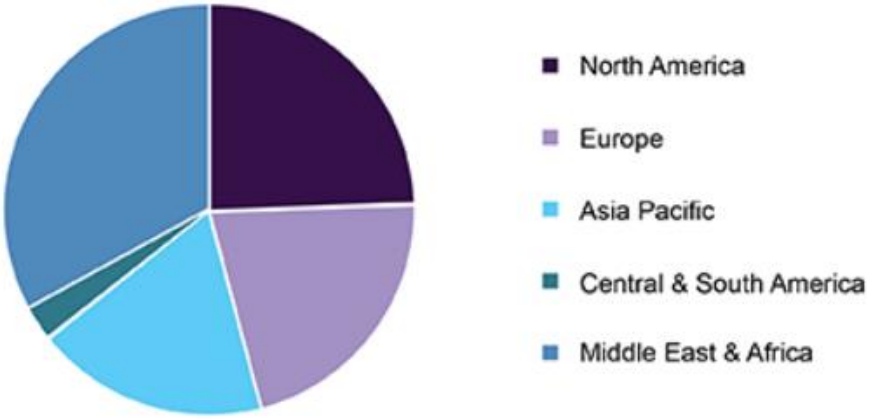
(Sources: Resilient livelihoods and the shea butter tree in Uganda, 2014; Uganda Export Promotion Board)

2.3. Demand

The global shea butter market size amounted to USD 1.12 billion in 2018 and is projected to expand at a CAGR of 6.6% between 2019 and 2025 (Source: Grand View Research, 2019).

The majority of the global shea nut production is used locally. The local market analysis commissioned by GIZ provides details on the local market in East Africa.

Figure 1 Shares of different regions in total USD 1.12 billion shea butter market in 2018



Source: Grand View Research, 2019

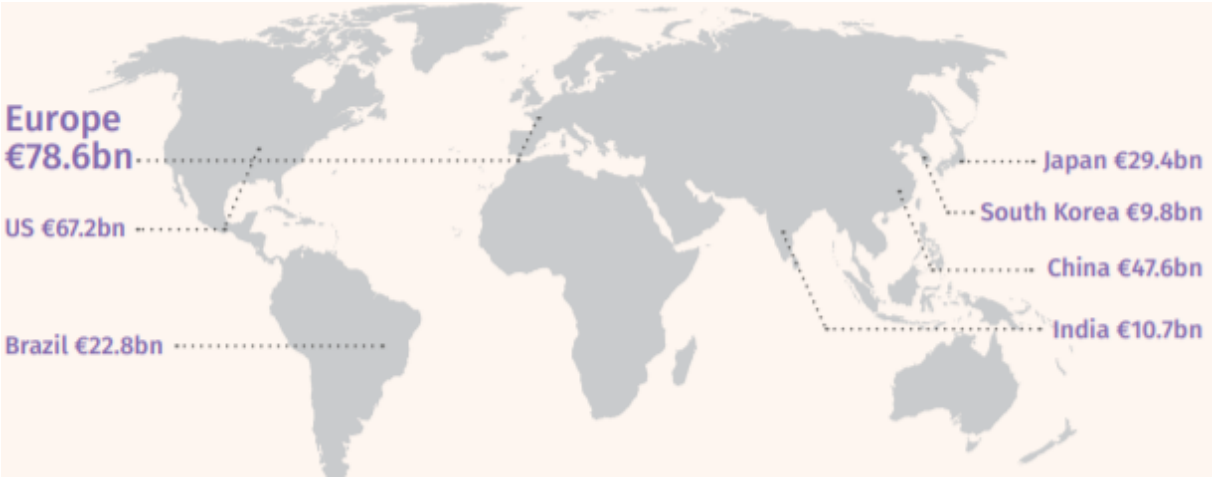
According to research by CBI, the current volume of shea butter imported to Europe ranges between 50,000 and 70,000 tonnes.

In 2017, around two thirds of global shea sales comprised refined shea butter and one third comprises unrefined shea butter (Source: WRCBtv, 2020).

The global shea nut market of 800,000 tonnes consists of two main application segments: cosmetics and food. The food segment accounts for approximately 90% of the shea market and the cosmetics segment for approximately 10% of the market. The large consumption of shea butter for cooking in local markets in Africa explains the large share of the food segment. In international markets, the division between food and cosmetics is almost even with both segments accounting for around half of the market. For shea nilotica from Uganda, the share of the cosmetics segment of the international market is even much higher. The following sections on demand provide explanations for demand from different segments for shea nilotica.

2.3.1. Demand from cosmetics manufacturers

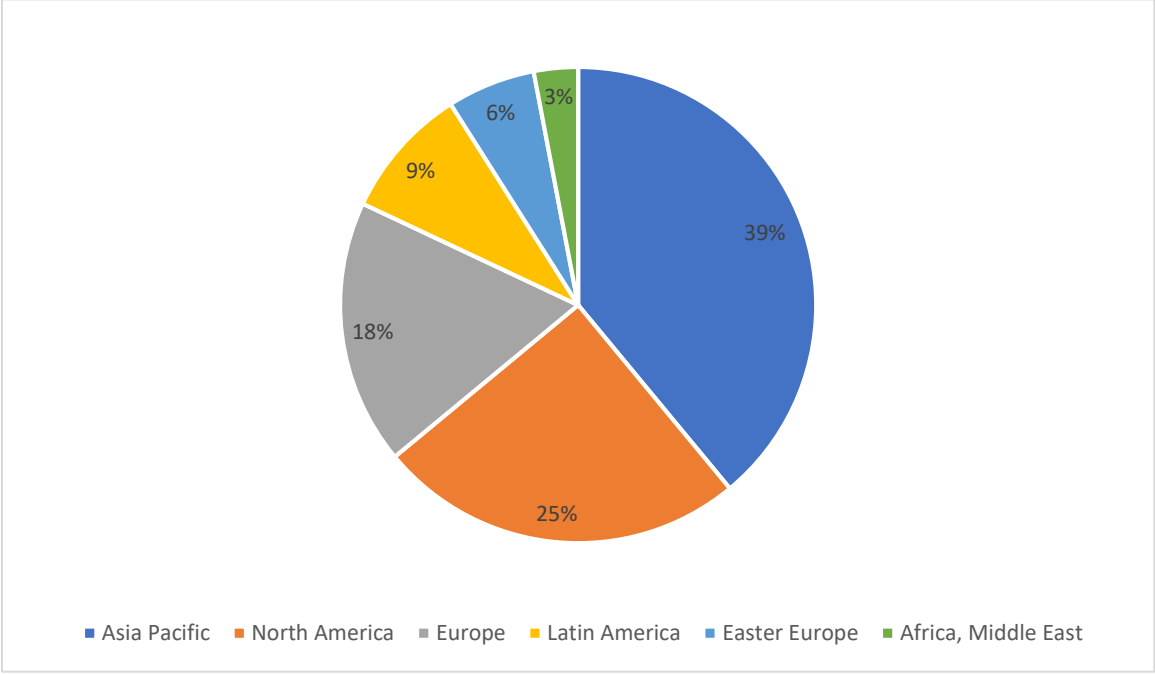
Figure 2 Largest cosmetics producers in the world, 2018



Source: Cosmetics Europe, 2019

Europe is the largest producer of cosmetics in the world. The European cosmetics industry produces for European consumer markets, but also supplies other international markets.

Figure 3 Shares of international cosmetics markets in global sales value in 2018



Source: L'Oreal Annual Report 2018

Major Asian cosmetics markets include China, India, Japan and Korea. China is the fastest growing market for beauty and personal care products in absolute terms (Source: Euromonitor, 2019).

2.3.2. Demand from Chinese cosmetic markets

China offers a market for both mainstream and luxurious cosmetic products. The luxury category shows faster growth rates than the mainstream segment, yet it still only represents about 33% of the entire cosmetic market. In 2018, total retail sales of cosmetic products in

China reached about US$60 billion, registering a growth rate of 13% with the year before (Source: Cosmetics Design Asia, 2019).

On the Chinese luxury cosmetics market, France has a particularly good reputation as origin for cosmetic products (Source: McKinsey & Company, 2019). The luxurious sector is in general dominated by foreign brands, of which the largest players are L'Oréal with a 17% market share, followed by Estée Lauder with 13% and Shiseido with 6% (Source: J.P. Morgan, 2019). Mr. Schall of the French vegetable oil processor Aldivia confirmed the strong reputation of French cosmetics suppliers on the Chinese market.

Despite the dominance of foreign brands, Chinese cosmetic brands are gaining market share. Chinese cosmetics companies are increasingly investing in product development, innovation, quality and in online advertising. By mid 2019, Chinese cosmetic brands held a market share of about 56% of the entire cosmetics market (Source: HKTDS Research, 2019).

There is also a market for green (natural) cosmetics in China. Between 2013 and 2018, the sales volume of cosmetics with natural ingredients grew by 5.3 times (Source: Daxue Consulting, 2019). In 2018, about 69% of Chinese cosmetics consumers indicated to be willing to pay a premium for a completely natural cosmetic product (Source: Cosmetics Design Asia, 2018). Over the years, Chinese cosmetic consumers have shifted away from being price-focused to favouring quality. The growing demand for green cosmetics also has to do with frequent cosmetics safety issues that occurred in China, having made consumers more aware of the safety of cosmetics and its ingredients (Source: Cosmetics Design Asia, 2019). European companies play a major role in the natural cosmetics market in China. For example, the French cosmetics company L'Occitane announced in 2018 that China was their second largest market for its natural-based cosmetic products.

The Chinese cosmetics market offers a wide variety of products containing shea butter from west African origin. Chinese cosmetic manufacturers using shea butter include Guangzhou Ciyan Cosmetics, Guangzhou Elov Cosmetics Co., Landier Cosmetic and Sun Sara. Specific import or processing data are not available.

The lack of knowledge on the Chinese market by various shea industry sources and the lack of Chinese organisations in the membership base of the Global Shea Alliance indicate that the Chinese market for shea is not as developed as the European market. According to Klaus Fehling of KFP in Uganda, Chinese traders have only shown interest in informal small-scale imports.

2.3.3. Cosmetics segments

The properties and benefits of Ugandan shea nilotica make this product valuable for application in the following cosmetic segments:

a. Skincare: Lotions, creams, baby oils and sun care
b. Haircare: Shampoos and conditioner
c. Decorative cosmetics: Lip balms and lipsticks
d. Toiletries: Soaps and cleansers

Skincare: Lotions, creams, baby oils and sun care

The skincare segment is the largest segment of the global cosmetics market accounting for around 25-40% of the total market (Sources: Euromonitor, 2019; L'Oreal Annual Report 2018; Statista, 2020). There are many opportunities for vegetable fats such as shea butter in this

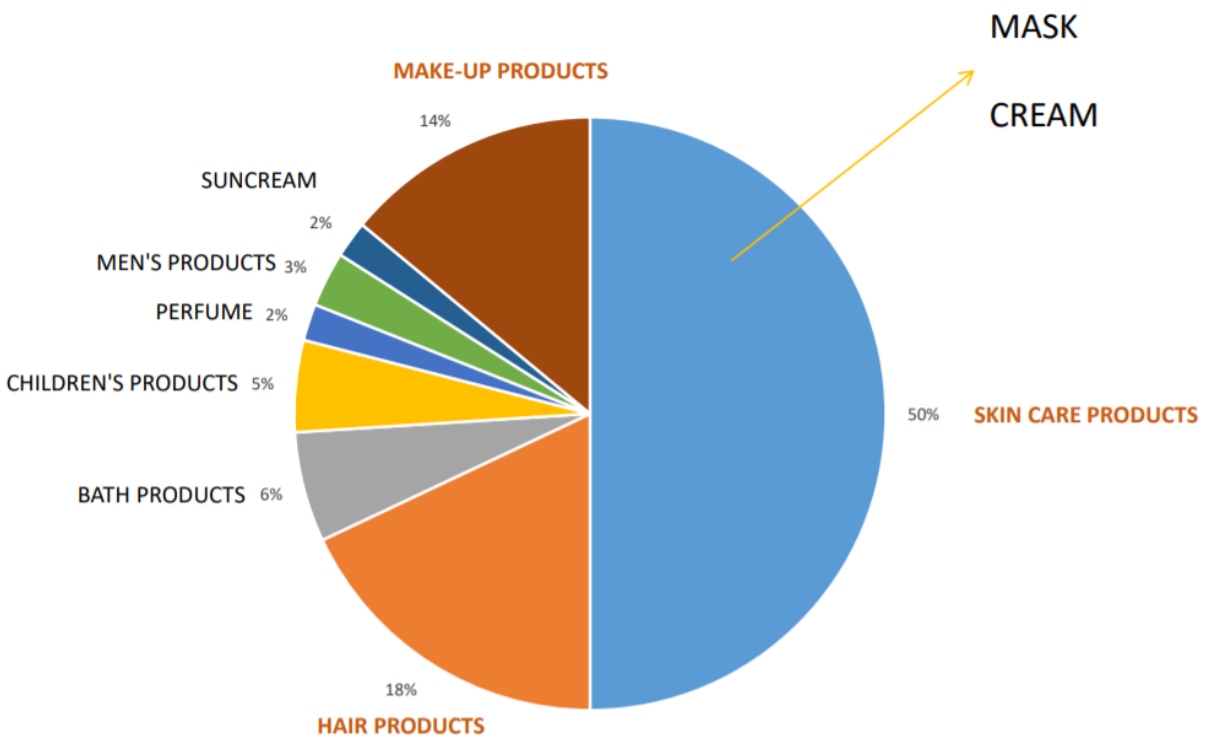
market segment, West African shea is already used in a wide range of creams, lotions and butters due to its emollient properties. This market segment will most likely also offer most opportunities for shea nilotica.

In Europe, the skin care market segment grows faster than the overall market. To illustrate, in 2018 the total cosmetics market grew by 5.5% compared to 2017, whereas the skin care market segment grew by 9% (L'Oreal Annual Report 2018).

In China, skincare even accounts for half of the total market and is the fastest-growing segment in the cosmetics market. In 2018, Chinese retail sales of skincare products reached an estimated Chinese Yuan 212 billion (~€27 billion), marking an increase of over 13% compared to 2017. Anti-aging products are also increasingly popular on the Chinese market. Chinese consumer favour large international brands skincare products over domestic brands.

The Chinese market shows a clear shift towards more high-end skincare products. High-end skincare cosmetics saw a market increase from 25% in 2013 to a 32% in 2018. (Source: HKTDS Research, 2019)

Figure 4 Segmentation of Chinese cosmetics market by sales value



Source: REACH24H CONSULTING GROUP at In-Cosmetics Korea, 2019

Skincare product example for Europe (Tree & Earth face cream):

Properties and benefits of shea nilotica according to manufacturer:

- *We only use nilotica Shea butter in all of our creams and formulations.*
- *We love all shea butter but nilotica shea butter from East Africa is that bit more creamy, soft and luxurious with a milder, slightly nutty aroma.*
- *Nilotica shea butter contains a high percentage of shea olein and therapeutic unsaponifiable lipids which helps to moisturise the skin and maintain and improve elasticity*
- *Due to its anti-inflammatory properties nilotica shea butter is excellent for soothing irritated, inflamed skin and may also help reduce swelling and ease muscular aches and pains.*
- *Naturally high in vitamin A & E nilotica shea butter aids in cellular regeneration and is therefore particularly useful for mature skin and an excellent butter for soothing and reducing the appearance of stretch marks.*

Skincare product example for China (iHerb):

Properties and benefits of shea according to website:

“Softens & Hydrates Dry Skin. Formulated with natural Shea Butter to help in the treatment of dry skin. Ideal for wrinkles and stretch marks.”

Sun care product example for Europe (Unica Green Valley - Deeply moisturizing & So Soothing Body Cream & After Sun):

Properties and benefits of shea nilotica according to manufacturer:

"Nilotica Shea contains a high percentage of shea olein and therapeutic unsaponifiables, thus it is softer and creamier than regular Shea Butter. This enables it to be more readily absorbed into the skin. Nilotica Shea helps to moisturise the skin and retain the skins' elasticity. It also aids cellular regeneration. This is particularly useful for mature skin and stretch marks. Nilotica Shea is excellent for soothing irritated, inflamed skin and is of benefit to damaged, dry hair and scalp irritations. It also possesses anti-inflammatory properties and may help reduce swelling and ease muscular aches and pains. It is high in vitamins A & E."

Sun care product example for China (Doorzo):

Properties and benefits of product according to website:

"Natural shea butter sunscreen, combined with 3% pure natural shea butter essence, is mild and non-irritating, and will not do any harm to the skin. SPF30 / PA +++ protects the skin from UV rays. Product is moisturizing and non-greasy. No UV absorber, pure physical sun protection. No need to remove makeup, just wash with regular cleanser."

Haircare: Shampoos and conditioner

The haircare segment is the second largest segment of the global cosmetics market accounting for around 20% of the total market (Source: L'Oreal Annual Report 2018; Statista, 2020). Vegetable butters such as shea are used considerably in this segment, especially in

conditioners. According to a cosmetic manufacturer, West African shea butter has great benefits to hair care.

In China, the haircare market growth slowed, as this niche segment is becoming saturated (Source: HKTDS Research, 2019).

Haircare product example for Europe (La Saponaria - Leave in conditioner in Moringa & Lino):

Properties and benefits of shea according to manufacturer:

"Excellent as a conditioner for dry and stressed hair to make it softer, or on the scalp in case of dryness, irritations, dermatitis and dandruff.

It can also be used instead of lacquer to fix the curls or replace the fixing wax on short hair."

Haircare product example for China (Suning):

Properties and benefits of product according to website:

"Enriched with highly effective natural ingredients to deepen the core of the hair to repair damaged hair structure and to provide a natural protective layer for the hair."

Decorative cosmetics: Lip balms and lipsticks

Decorative cosmetics, or make-up is the third largest segment of the global cosmetics market accounting for around 20% of the total market (Sources: L'Oreal Annual Report 2018; Statista, 2020). According to a cosmetic manufacturer, West African shea is used extensively in this product segment.

Make-up products such as lip balms show large growth potential in China (Source: HKTDS Research, 2019).

Decorative product example for Europe (BeadforLife lip balm):

Properties and benefits of product according to manufacturer:

"Moisturize your lips with BeadforLife's premium Peppermint Lip Balm. Made with all-natural Shea butter, this Lip Balm has an invigorating scent and a cool sensation. Created for both men and women, our lip balm will leave your lips soft and hydrated. Each Lip Balm is sold individually."

Toiletries: Soaps and cleansers

Soaps also represent a significant market for vegetable butters, such as shea butter. Use in this segment depends on the price level of the ingredient. While some artisan soaps contain more than 25 percent shea butter, commercial brands avoid this because of the high costs (Source: UL Prospector, 2020).

Toiletry product example for Europe (The Body Shop: shea soap)

Properties and benefits of shea according to manufacturer:

"Work this vegetable based bar into a rich lather for skin that feels thoroughly cleansed. Community Trade shea butter from Ghana will leave you feeling more soft and hydrated.

- *Soap*
- *Cleanses & nourishes*
- *Non-drying*

- *Leaves skin soft*
- *Vegetable based bar"*

Toiletry product example for China (Suning):

Properties and benefits of product according to website:

"Shea Moisturizing Essential Oil Soap. Hand Cleansing Soap."

2.3.4. Demand from chocolate manufacturers

Demand for CBEs reached around 190,000 tonnes in 2018 (Global Shea Alliance, 2019). However, due to the relatively low stearin fraction in shea nilotica and the relatively high price of Ugandan shea nilotica compared to the West African shea, the chocolate industry only uses West African shea for CBEs and CBIs.

The use of Ugandan shea nilotica for chocolate will only become interesting when the price of the stearin fraction becomes competitive with the price of the stearin from other sources such as West African shea. This was confirmed by Klaus Fehling of KFP who spoke with Bunge Loders Croklaan during their visit to Uganda. Bunge is one of the largest players in the market for vegetable oils derived from shea for the food industry. During their visit to Uganda, they indicated that the low stearin content only allowed them to offer a low price, which was not attractive to Ugandan exporters.

2.3.5. Demand from margarine manufacturers

Similar to the chocolate industry, margarine manufacturers only use West African shea which has a higher content of stearic acid and lower price than shea nilotica.

2.3.6. Demand from cooking oil manufacturers

In Africa, a lot of shea finds its way to the market as cooking oil. In the international market, shea is not yet commonly used as a cooking oil. The main reason is the high price of shea butter compared to other cooking oils such as sunflower oil and rapeseed oil.

3. Trends

3.1. Trends in cosmetics markets

Continued popularity of natural ingredients

Especially in Europe, there is a strong public perception that natural ingredients are safer and healthier than synthetic substitutes. As a result, natural cosmetics sales grow more strongly than conventional cosmetics in Europe. Between 2014 and 2018, the value of the European natural cosmetics market increased by 7% annually to € 3.6 billion. This represents around 5% of the total cosmetics market in Europe. For comparison, the total European cosmetics market grew by only 1.3% from 2017-2018 (Cosmetics Europe).

In Asia, natural and organic cosmetics sales increased even faster than in Europe. The growth rate for this market segment in 2017 was 21%. China is the main market within Asia (Ecovia Intelligence, 2018). Between 2016 and 2018, the total Chinese market for organic products (cosmetics and other products) increased by 17% annually (FiBL & IFOAM, 2018/2020).

Globally, the natural cosmetics market is growing at a similar rate as the total cosmetics market (around 6% in 2018) (Sources: Grand View Research, 2020; Euromonitor, 2019; L'Oreal Annual Report 2018). Europe currently accounts for almost 40% of the global natural cosmetics market (Sources: Grand View Research, 2020). Within Europe, Germany, France and the United Kingdom have the most natural product launches and a strong focus on innovation. Switzerland, Scandinavia and Italy are also important markets for natural cosmetics.

Conventional cosmetics brands increasingly use natural ingredients at low percentages to make a marketing claim. Increasing interest in natural ingredients offers many opportunities for shea butter, in both natural and conventional cosmetics. While conventional cosmetics brands consider all types of shea butter as natural ingredients, some natural cosmetics brands apply a stricter definition of natural ingredients. They prefer minimally processed, 'raw' shea butter such as cold-pressed shea butter including hand-crafted shea butter. Refer to the section on requirements (4.1.6) for more details and the section on processing methods (11.2.6) for a definition of hand-crafted shea butter.

Anti-ageing cosmetics remain fast growing segment

Anti-ageing remains one of the fastest-growing product categories within cosmetics. In-cosmetics, the global trade fair for cosmetic ingredients, includes 2,746 anti-ageing agents in its 2019 ingredients database, one of the main categories of ingredients. Other large ingredient categories can be used to achieve particular anti-ageing effects as well, such as:

- anti-inflammatories (2,418 ingredients)
- anti-wrinkle agents (1,008 ingredients)
- conditioning agents (3,285 ingredients)
- moisturizing agents (3,930 ingredients)
- regenerating / revitalizing agents (1,057 ingredients)

The growth of this segment is likely to continue as European consumers give more attention to feeling good and looking radiant. For example, Cosmetics Design Europe reported that a survey in the United States showed that women over 40 are concerned about their ageing hands. These female consumers look for solutions to improve the appearance of their hands.

To fit this need to feel and look healthier, cosmetic brands are changing the way they market anti-ageing products into more positive language. For example, products are marketed that 'capture youth', 'preserve youth', or that help consumers to 'age well'. Brands use terms such as 'beautiful ageing', 'radiant skin', 'rejuvenating' and 'returning skin to a balanced, healthy state'.

An ageing population, all across Europe, also drives demand for anti-ageing cosmetics, especially when combined with the wish to feel and look healthy and young. In addition, cosmetic brands are including younger consumers in the marketing of their products, for example developing product lines for 20 or 30-year-olds. These are commonly marketed at preventing signs of ageing.

Rapidly growing online retail sales to push prominence of shea butter in cosmetics

In 2018, global online retail sales increased by around 20% and accounted for 10% of global sales (Source: Euromonitor, 2019). Consumers appreciate the availability of a wide range of cosmetic products online including shea butter products such as lotions, creams, hair care products, and others, along with the ease of comparing the prices of various cosmetic products on the same platform. This is resulting in the easy access of shea butter among consumers. In addition, the increasing market penetration of shea butter products through online-based retailing is expected to fuel the growth of the shea butter cosmetic products sector and particularly sales of Do-It-Yourself packs. DIY packs containing shea butter and other cosmetic ingredients enable consumers and small cosmetics manufacturers to make their own shea butter based cosmetics, such as scented lotions.

The performance of e-commerce is particularly strong in China. Local brands are most active in e-commerce using traditional shopping platforms, but also social media, live streaming and video sharing websites.

3.2. Trends in food markets

The key factors driving growth of the shea butter (paradoxa ssp) for food market include the growing demand for cocoa butter alternatives in chocolate and confectioneries, increasing consumption of chocolate and bakery products, rise of product premiumization in the food and beverages industry (Source: Transparency Market Research).

Gradually rising preference for shea butter (paradoxa ssp) as Cocoa Butter Equivalent

Cocoa butter is used in chocolates and confectioneries as a fat source, to give the products luster, texture, and snap. The demand for cocoa butter is increasing with the growing demand for chocolates and confectioneries. However, cocoa butter is witnessing supply constraints due to the declining yields of cocoa in major producing countries. Therefore, the price of cocoa butter is increasing rapidly, which is compelling manufacturers of chocolates and confectioneries to opt for other alternatives or equivalents to cocoa butter.

Shea butter (paradoxa ssp) is being increasingly used by manufacturers as a potential replacement for the costlier cocoa butter for application in chocolates and confectioneries. Leading manufacturers such as The Hershey Company and Mondelez International, Inc. are using shea butter as an alternative source of fat to replace cocoa butter.

Increasing Chocolate Consumption to Fuel the Growth of Shea Butter (paradoxa ssp) Market

The consumption of chocolate follows dichotomy in world regions due to its Western origin. While some regions present timid demand for chocolate, growing economies and globalization have increased its consumption in the recent past. Over 50% of chocolate consumption occurs in Europe, and around 20% in the United States.

Asian countries are emerging as significant chocolate consumers due to changing socio-economic demographics. The growing demand for chocolate is fuelling the demand for fat sources such as shea butter (paradoxa ssp). Shea butter is used to provide and enhance the texture, consistency, and other properties of chocolate, and thus, is anticipated to witness proliferating demand with the ever-growing chocolate market.

Growing Application of Shea Butter (paradoxa ssp) in the Bakery Industry Is a Strong Booster

Shea butter (paradoxa ssp) is used as a raw material for margarine and shortening for the manufacturing of several bakery products such as dough, puff pastries, croissants, and others. Margarine is an alternative to butter made from vegetable oil and water.

The production of margarine requires solid fats. Hence, manufacturers have used the process of hydrogenation to harden vegetable oil. However, the hydrogenation of vegetable oil results in the generation of trans unsaturated fatty acids, which have a negative impact on cardiovascular health. This is pushing manufacturers towards using shea butter (paradoxa ssp) for the processing of margarines and shortenings.

Shea butter (paradoxa ssp) is stable solid at room temperature, and hence, it eliminates the need for hydrogenation, and also prevents the generations of trans unsaturated fatty acids. Thus, it is a healthy alternative for margarine production and for application in the bakery industry. Hence, the growing bakery industry is expected to boost the demand for shea butter.

Growing Premiumization of Food and Beverage Products Fuelling the Demand for Shea Butter

Urbanization and modernization in emerging economies have strengthened the food and beverage industry. The concept of 'premiumization' has caught on in the food and beverage industry, ranging beyond pricing to include far-fetched quality and a superior experience. Premiumization has driven consumer taste for high quality and value-added products with good superiority ingredients that promise enhanced health benefits.

Consumers are ready to pay a premium price for products offering perceptible health benefits – the only criterion being the potential of a unique offering that meets their basic dietary and health needs. Premiumization is leading to the growing demand for bakery and confectionery products, and thus, is proliferating the growth of the shea butter market. Besides, manufacturers are turning towards shea butter with the aim of provide consumers with better quality ingredients and products. In this particular food segment, there may be some opportunities for shea nilotica as well. Some premium food manufacturers appreciate the exclusivity of unique products such as shea nilotica. Note that this concerns a niche within a niche.

4. Market requirements

You can only export your shea butter to international cosmetics markets if you comply with the legal requirements in those markets. Depending on the final use, shea butter must comply with requirements for food or cosmetics. Distributors in international markets supplying both food and cosmetics markets will require their suppliers to comply with legislation for both sectors.

Purity is a major requirement in all markets

Adulteration (the intentional addition of undeclared substances to a product) is a common concern in the natural ingredients trade. In many cases, the product becomes useless for the buyer. It will not have the properties anymore to perform the required function and purification is often impossible or too expensive. Strict controls are in place in most countries to detect potential adulterants. In case of detection, suppliers have to pay for the damage. They will not be paid for their products and loose business with the buyer.

European buyers generally send samples to laboratories to analyse their purity. These laboratories continuously improve their techniques for detection of adulterants. If there are undeclared substances in your product, it is very likely they will be detected.

4.1. Requirements in cosmetics markets

4.1.1. EU Cosmetics Regulation

The Cosmetics Regulation 1223/2009 covers the safety and efficacy of cosmetic products including claims. The regulation requires European cosmetics manufacturers to prepare a 'Cosmetic Product Safety Report' and 'Product Information File' for their products.

The regulation includes requirements (physical-chemical, microbiological and toxicological) for substances/ingredients to be included in each 'Cosmetic Product Safety Report' and 'Product Information File'. European cosmetics manufacturers and ingredient producers are increasingly making compliance with this regulation the responsibility of their suppliers. Suppliers need to provide well-structured product and company documentation on traceability, sustainability and quality (physical-chemical, microbiological and toxicological), which acts as an insurance to buyers. Suppliers need to provide detailed:

- Technical Data Sheets (TDS)
- Certificates of Analysis (CoA)
- Safety Data Sheets (SDS)

These data sheets are becoming increasingly large and complicated because of all the information that they need to comply with legislative requirements. European standards for SDS are likely also used in other regions.

The regulation also requires cosmetics manufacturers to substantiate claims. Therefore, data on efficacy (performance) increases the value of your shea product. Manufacturers are very interested in data that substantiate claims of certain cosmetic benefits resulting from a certain concentration of shea (or component of an ingredient) in a finished product. Private laboratories or universities can provide data on efficacy.

Note that the Annex VI of the EU Cosmetics Directive (EC 1223/2009) provides a list of UV filters allowed in cosmetic products and that this list does not include shea. UV filters are substances which are exclusively or mainly intended to protect the skin against certain UV radiation by absorbing, reflecting or scattering UV radiation. This implies that shea cannot be marketed as a UV filter in the EU. Listing of shea as a UV filter will require clinical trials that

prove that shea has a strong UV filtering capacity. Such clinical trials can easily cost hundreds of thousands of euros and will only be done for ingredients with a very strong UV filtering capacity. There are currently no signs that any company or organisation is going to invest in the necessary research for listing shea as a UV filter.

4.1.2. REACH regulation in EU

REACH (Registration Evaluation and Authorisation of Chemicals) legislation is designed to manage the risks of chemicals manufactured and used in the European Union. Cosmetic ingredients (including natural ingredients) are considered chemicals. In principle, these need to be registered with the European Chemicals Agency (ECHA) by the importer or manufacturer of the ingredient.

However, shea butter is exempt from registration, because it is considered a non-chemically modified vegetable oil. In contrast, shea extracts, are subject to REACH and must be registered by the importer unless volumes remain lower than 1 tonne per importer per year. Registration is a costly process for which European business partners will usually require suppliers to supply safety data.

Registered shea extracts subject to REACH as listed by ECHA:

- Shea butter oleyl esters
- Shea butter cetyl esters
- unsaponifiable fraction (CAS: 225234-14-0)
- Lipex SheaLight (ethyl esters)

4.1.3. Relevant legal requirements in China

Like in other countries, China only allows sales of cosmetic products that have been shown to be safe for use. Shea is allowed for use in cosmetics, as it is listed in the Inventory of Existing Cosmetic Ingredients in China (IECIC) (Source: CosmeticsDesign Europe, 2019).

Chinese Cosmetic Supervision and Administration Regulation (CSAR)

Introduction of final cosmetics for ‘non-special use’, such as pure shea butter, to China requires filing with the National Medical Products Administration (NMPA). ‘Special use’ cosmetics require a more demanding pre-market registration.

Special uses:

- Hair dye
- Perm
- Skin whitening
- Sun screening products
- Other cosmetics which claim new functions

For cosmetics for non-special uses, the supplier must have a Responsible Person (i.e. importer) in China. The Responsible Person must be authorised as such and file the product with NMPA, which requires compilation of a dossier (incl. safety assessment and substantiation of efficacy claim). The name and address of the Responsible Person must be on the product label. The label must also list shea under its Chinese INCI name: 牛油果树 (

BUTYROSPERMUM PARKII）果脂 (Source: REACH24H CONSULTING GROUP at In-Cosmetics Korea, 2019).

Note that China still requires animal testing for cosmetics, although the NMPA is looking into measures that would refrain from animal testing for imported non-special use cosmetics (Chemical Watch, 2019).

Labelling of your cosmetic product should be in according with the Regulations on Cosmetic Labeling (former AQSIQ Decree #100) and the Natural Standard for General Labelling for Cosmetics (GB 5296.3-2008). Ensure to review your claims and marketing strategies accordingly, before you market natural cosmetic products in China. For instance, claims like 'anti-allergic' or 'extraordinary' are not allowed in the names of cosmetic products (HKTDC Research, 2019).

Note that cosmetic regulations specific to natural/green products are not available. Both cosmetics regulations and taxes on imported goods are frequently updated in China, so it is important to keep a close look at current practices.

4.1.4. Quality management for shea products for cosmetics

European buyers of shea products for cosmetics expect suppliers to follow Hazard Analysis & Critical Control Points (HACCP) principles in their processing facilities. Using these principles prevents hazards for food safety, but also helps ensure product safety for cosmetic applications. While HACCP certification is not obligatory, it will give suppliers a competitive advantage.

Good Manufacturing Practices (GMP) are not obligatory for cosmetics ingredient producers, but compliance can provide a competitive advantage. The European Federation for Cosmetic Ingredients has developed GMP guidelines to help producers implement GMP in their companies.

4.1.5. Product specifications

International buyers have specific requirements for the composition of shea products. Depending on their food or cosmetic formulations, they need certain specifications such as a high or low oleic acid content. Buyers will usually request a Certificate of Analysis to verify that the shea product meets their quality requirements.

Table 5: Template for Certificate of Analysis for unrefined shea butter*

Type of specification	**Example of specification for unrefined shea butter**
Physical properties	
Appearance	Creamy
Colour	Pale, light yellow
Odour	Sweet, nutty
Saponification value	170-190 mg KOH/g
Iodine value (Wijs)	50-70
Melting point	32-40 degrees Celsius
Peroxide Value	<5 meg/kg

Refractive Index	1.4620-1.4650
Chemical composition	
Oleic acid content	55-57.5%
Stearic acid	30-32%
Palmitic acid	4-5%
Linolenic acid	5.5-6.5%
Free Fatty Acids	<8%
Unsaponifiables	1-10%

*Values in this template merely serve as an example and do not apply to all shea butter

Most cosmetic and food manufacturers prefer colourless and odourless ingredients with a long shelf-life. The peroxide value is used to quantify the primary oxidative products in shea due to substantial amount of unsaturated fatty acids. According to the UNBS (2004) draft standard for shea butter, the peroxide value must be less than 10 mEq/kg. However, most European suppliers specify a peroxide value below 5 mEq/kg.

In terms of Free Fatty Acids, importers of unrefined shea butter for refining usually require a FFA content of less than 8%. Many importers even require a value below 6% (Source: Ampem and Fadamulla, 2014). Refiners then reduce the FFA content to almost zero. Importers of unrefined shea butter that will not be refined further have stricter specifications for Free Fatty Acids. Hand-crafted shea butter typically has an FFA content of 2-3%.

Table 6: Template for Certificate of Analysis for refined shea butter*

Type of specification	**Example of specification for refined shea butter**
Physical properties	
Appearance	Creamy
Colour	White
Odour	Odourless
Saponification value	170-190 mg KOH/g
Peroxide Value	<5 meg/kg
Chemical composition	
Oleic acid content	55-57.5%
Stearic acid	30-32%
Palmitic acid	4-5%
Linolenic acid	5.5-6.5%
Free Fatty Acids	0.1%

*Values in this template merely serve as an example and do not apply to all shea butter

The unsaponifiable fraction of shea contains latex (or Karitene), which is an unwanted fraction for many conventional cosmetics and food manufacturers. Refining (mostly by precipitation in acetone) removes latex.

4.1.6. Quality requirements for natural and organic cosmetics segments

Manufacturers of natural cosmetics require natural ingredients. They often prefer shea butter that has not been treated with chemical solvents. When solvents are used to purify shea, such as removing latex, these solvents must be natural or derived natural substances (NaTrue Criteria Annexes, 2019). According to the NaTrue standard, natural substances are substances of botanic, inorganic-mineral (not organic-mineral e.g. mineral oil). Only extraction with the following extraction agents is permitted for recovery of natural substances: carbon dioxide, ethanol of plant origin, fats/oils of plant origin, glycerine of plant origin, Natural Deep Eutectic Solvent and water. As such, hexane extraction of shea butter would not be allowed for NaTrue cosmetics. However, an exception is made for 'Raw materials from seeds, grain germs, roots, fruits and algae' and technically shea nut kernels are seeds. If there is no other option offered by the latest technology to recover such substances, other extraction agents and solvents that may be needed are approved for this purpose only.

Organic certification strengthens the claim that a product is natural. Only when the organic version of an ingredient is very scarce will natural cosmetics manufacturers use the conventional version. As organic shea is already widely available, most natural cosmetics manufacturers require an organic certificate for shea.

Similar to conventional cosmetics manufacturers, natural cosmetics manufacturers often prefer refined, deodorised and decolourised shea butter. Some natural cosmetics manufacturers prefer unrefined shea butter. The latter manufacturers specifically target consumers who want raw and minimally processed products, as they perceive unrefined shea as more natural than refined shea. Especially hand-crafted shea butter matches very well with the expectation of this specific target group regarding the production process.

4.2. Requirements in food markets

4.2.1. Food safety – traceability, hygiene and control

Food safety is a key issue in European Union food legislation. The General Food Law is the legislative framework for food safety in the European Union.

To guarantee food safety and to allow appropriate action in cases of unsafe food, food products must be traceable throughout the entire supply chain. Every company must have a traceability system in place with information on their supplier of each lot of products. When all companies do this, the product becomes traceable from consumer back to the producer.

Important for the control of food safety hazards throughout the whole supply chain is the implementation of food safety management based on Hazard Analysis Critical Control Points (HACCP) principles. HACCP planning consists of consecutive steps to:

- identify food safety hazards;
- determine how you can control them (the so-called Critical Control Points or CCPs) and
- setting corrective measures for when you cannot guarantee safety of the foods produced.

Also important is subjecting food products to official controls. If European companies or authorities find out that the safety of shea cannot be guaranteed, they will take the product off the market. The shea products will then be registered in the European Union's Rapid Alert System for Food and Feed. In most cases, European importers will not pay for the product or

demand their money back. Additionally, a food safety issue will damage your reputation on the market.

4.2.2. Food Safety Certification for foods

Food safety is a top priority in all food sectors. You can therefore expect buyers to request extra guarantees in the form of certificates. Many buyers require certification of a food safety management system based on HACCP.

The most commonly used food safety management systems in European countries are:

- Food Safety System Certification (FSSC22000)
- British Retail Consortium (BRC)
- International Food Safety (IFS)
- Safe Quality Food (SQF)

FSSC 22000 is most relevant for suppliers of ingredients which will be further processed. BRC, IFS and to a lesser extent SQF require more advanced management systems. They are particularly relevant for suppliers of end-products to retailers.

4.3. Voluntary standards

Consumer concerns about global issues such as climate change and bad working conditions in countries where their products originate are stimulating international buyers, particularly European buyers to become stricter in their requirements for the sustainability of production.

It is important to realise that international buyers have different definitions, priorities and ambition levels with respect to sustainable sourcing. There is no single way to address these matters. However, many buyers require transparency from their suppliers on sustainability issues. Some buyers will ask their suppliers to fill out forms to conduct a self-audit. The Supplier Ethical Data Exchange (SEDEX) is a tool to provide the requested transparency. Other buyers require compliance with their standards or third-party standards, such as the EU organic standard or a fair trade. Traceability is part of many of these voluntary sustainability standards.

4.3.1. Fair trade

The market for fair trade certified vegetable oils including shea in European countries remains very small. However, increasing consumer awareness of social responsibility and connectedness to producing communities has had a positive impact on this niche segment.

Fair for Life of Ecocert is the fair trade scheme with most participants from the shea industry. Fairtrade International and UEBT (certification scheme since 2015) are other fair trade schemes. FLO-Cert is the certifier for Fairtrade. Products which carry the Fairtrade label indicate that producers are paid a Fairtrade Minimum Price, including some vegetable oils such as shea butter. Currently, 2 shea producers from Ivory Coast have a Fairtrade certificate (FLO-Cert, 2020).

4.3.2. Organic

According to European legislation, “organic production is an overall system of farm management and food production that combines best environmental and climate action practices, a high level of biodiversity, the preservation of natural resources and the application

of high animal welfare standards and high production standards in line with the demand of a growing number of consumers for products produced using natural substances and processes."

To market shea in European countries as an organic product, you need to implement organic farming techniques and have your facilities audited by an accredited certifier. These requirements area specified in the EU Regulation 848/2018, which entered into force in 2018. The objective of this new legislation is to simplify the old organic legislation. However, rules for organic production and testing have also become stricter.

4.3.3. Natural and organic cosmetics

Natural cosmetics is a growing market segment which represents another opportunity for suppliers of natural ingredients. What classifies as natural and organic cosmetics is currently defined by private-sector standards, specifically NaTrue and Cosmos. NaTrue distinguishes between three levels of natural and organic cosmetics: natural cosmetics (level 1), natural cosmetics with organic portion (level 2) or organic cosmetics (level 3). What percentage of a cosmetics product must consist of natural substances depends on the level and type of product. For example, a level 1 skincare product with water/oil emulsion must contain at least 30% natural substances. Note that NaTrue and Cosmos are well established certifications on the European market, but are not yet widely recognised nor used in Asia (Cosmetics Design Asia, 2018). Standards for organic cosmetics are based on organic legislation for food.

Essentially, cosmetics can be certified natural if they contain a certain amount of natural ingredients. They also need to follow the guidelines that the aforementioned standards set for permitted ingredients. The standards also specify guidelines for the processes and additives that companies can use to develop natural cosmetics. As a supplier, you need to follow these guidelines to enable your buyers to use your ingredients in natural cosmetics.

The European shea importer Natures Care indicated that natural cosmetics manufacturers prefer shea butter that has been processed without the use of solvents that are not perceived to be natural, such as hexane and acetone.

4.4. Packaging

Prepare bulk shea butter for transportation in the following manners:

- 10 or 25 kg plastic-lined cardboard cartons
- 25 kg plastic buckets
- 50 – 200 litre metal or plastic drums
- 900 kg IBC (Intermediate Bulk Container), flexitank or isotanks

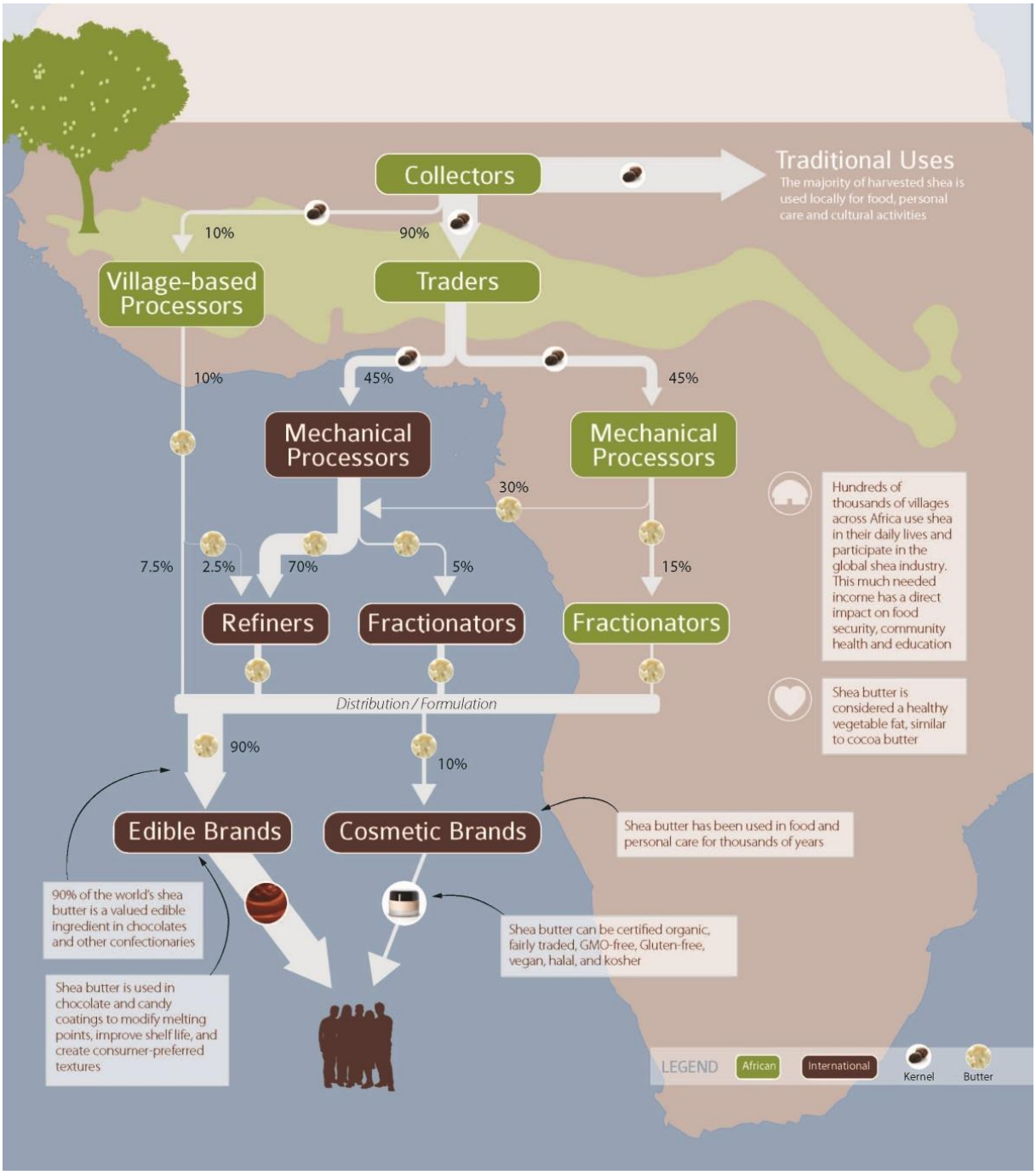
4.5. Access and Benefit Sharing

Uganda signed the Nagoya protocol in 2014 (Source: Convention on Biological Diversity, 2020). The Uganda National Council for Science and Technology (UNCST) is the competent authority in Uganda for ABS regulation: National Environment (Access to Genetic resources and Benefit Sharing) regulations, 2005.

Various industry sources have indicated that ABS is not relevant for shea trade. Instead of using ABS agreements, the industry uses fair trade schemes to improve benefits for the producers.

5. Distribution channels

Figure 5 Map showing global trade flows for shea in terms of volume



Shea can be exported as nuts, as unrefined or refined butter and as fractionates, such as stearin. In general, shea butter extraction is moving towards the country of origin. In West Africa, an estimated 5 or 6 large scale facilities are responsible for most industrial extraction of shea butter (Source: AAK, 2020).

5.1. Kernels for international extraction companies

Few international companies such as AAK still have extraction facilities outside of Africa. The transport of kernels is relatively expensive compared to the transport of butter. The international extraction facilities need large volumes of thousands of tonnes of shea kernels to make the import cost efficient. They usually have very strong relationships with existing suppliers and limited interest in new suppliers.

5.2. Unrefined shea butter for cosmetics manufacturers

A small group of cosmetics manufacturers in both end-markets and countries of origin uses (hand-crafted or cold-pressed) unrefined shea butter. These manufacturers often supply pure shea butter for skincare or creams with shea as the main ingredient. These shea butters need to be filtered in the country of origin, to remove impurities.

5.3. Unrefined shea butter for refining

Most cosmetics manufacturers prefer to use refined vegetable oils and butters like shea butter that has been deodorised and bleached, and sometimes with an adapted texture (e.g. more fluid). Using refined oils reduces the risk of variations between different batches. Refining also improves the shelf life and stability of the cosmetic product it is used in.

Refining commonly takes place in Europe by companies such as AAK (refining of own product), ZOR (part of Cargill; refining of own product and toll refining), Special Refining Company (toll refining), Berg + Schmidt and Natura-Tec. The availability of shea refining capacity in China remains unknown.

Refiners often work with batches of 6-7 tonnes and are only interested in the supply of full container loads (20 tonnes).

In addition to supplying shea butter directly to these refiners, Ugandan suppliers can also supply unrefined shea butter to other wholesalers of cosmetic ingredients and formulators which use tolling services of these refiners to refine shea butter and then supply the refined shea butter to cosmetics manufacturers.

Most cosmetic manufacturers are not interested in importing unrefined shea butter and then using toll refining services to refine shea butter on their behalf. Many cosmetics and food manufacturers have too limited understanding of refining options and respective costs, including product losses, to manage toll refining. As shea is only one of many raw materials that they use in their products, they are generally not interested to improve their understanding of toll refining shea.

5.4. Refined shea butter for cosmetics manufacturers

Offering refined, bleached and deodorised shea butter to the market sounds attractive because you would by-pass European refiners. However, establishing a high-tech refinery requires very large capital investments (hundreds of thousands or even millions of Euros) and highly skilled personnel to use the technology. In addition, most European cosmetic manufacturers prefer to source their ingredients from established European refiners and are not open to source directly from Africa. West Africa, which has the most developed shea industry, does not have refiners either. This is a strong indication that refining of shea in Uganda is not feasible and that refining in Europe is a better strategy.

The only feasible option to offer refined shea butter directly to cosmetics manufacturers is by using European toll refiners to refine shea butter on behalf of the supplier. This requires a

thorough understanding of the needs of end users, refining options and the cost structure for refinement. High tech vegetable oil refining factories in Europe can offer various refining options. Some of them can purify shea butter using bleaching earth such as Tonsil. Bleaching earth removes colour from shea butter and slows down oxidation. Another service of refiners is to fractionate shea butter into different substances such as stearin. One of the methods to fractionate shea is to dissolve the product in acetone and then apply centrifugation.

5.5. Distribution channels in target markets

Figure 6 European distribution channels for Ugandan unrefined/refined shea butter

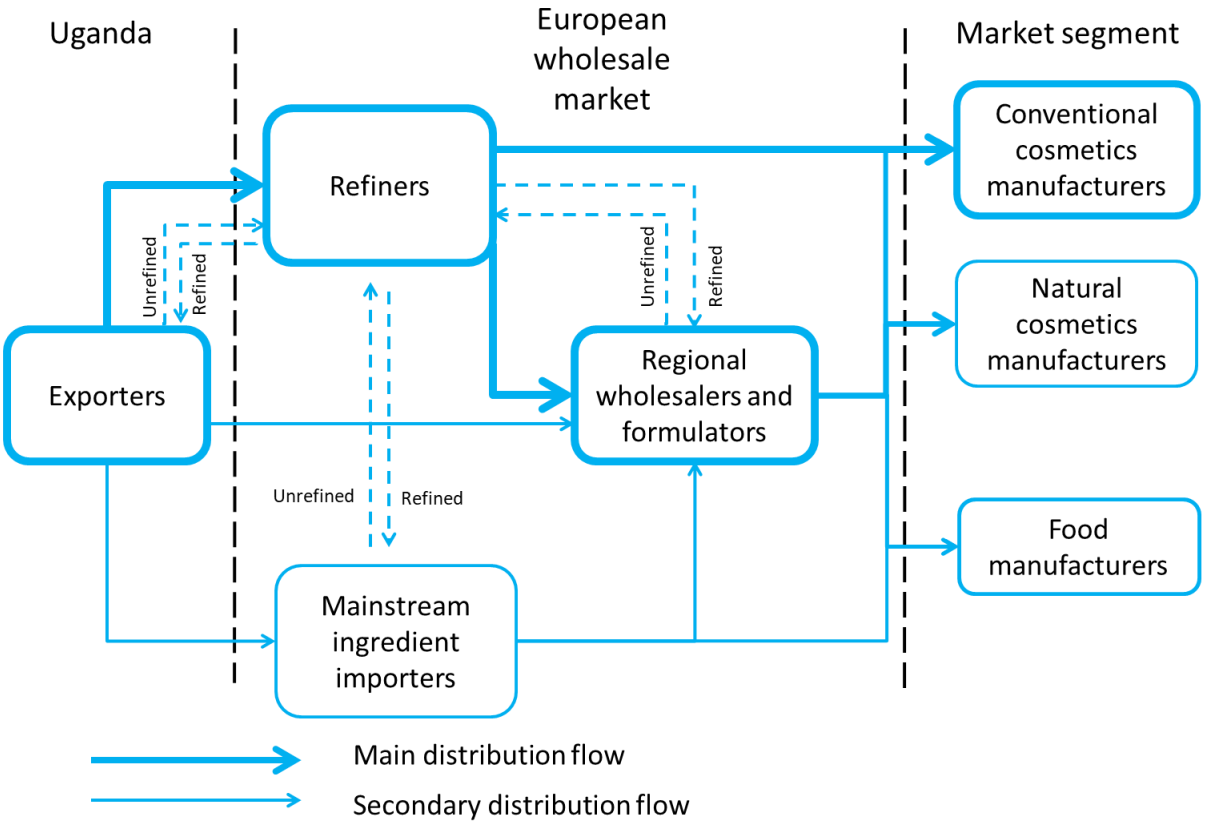
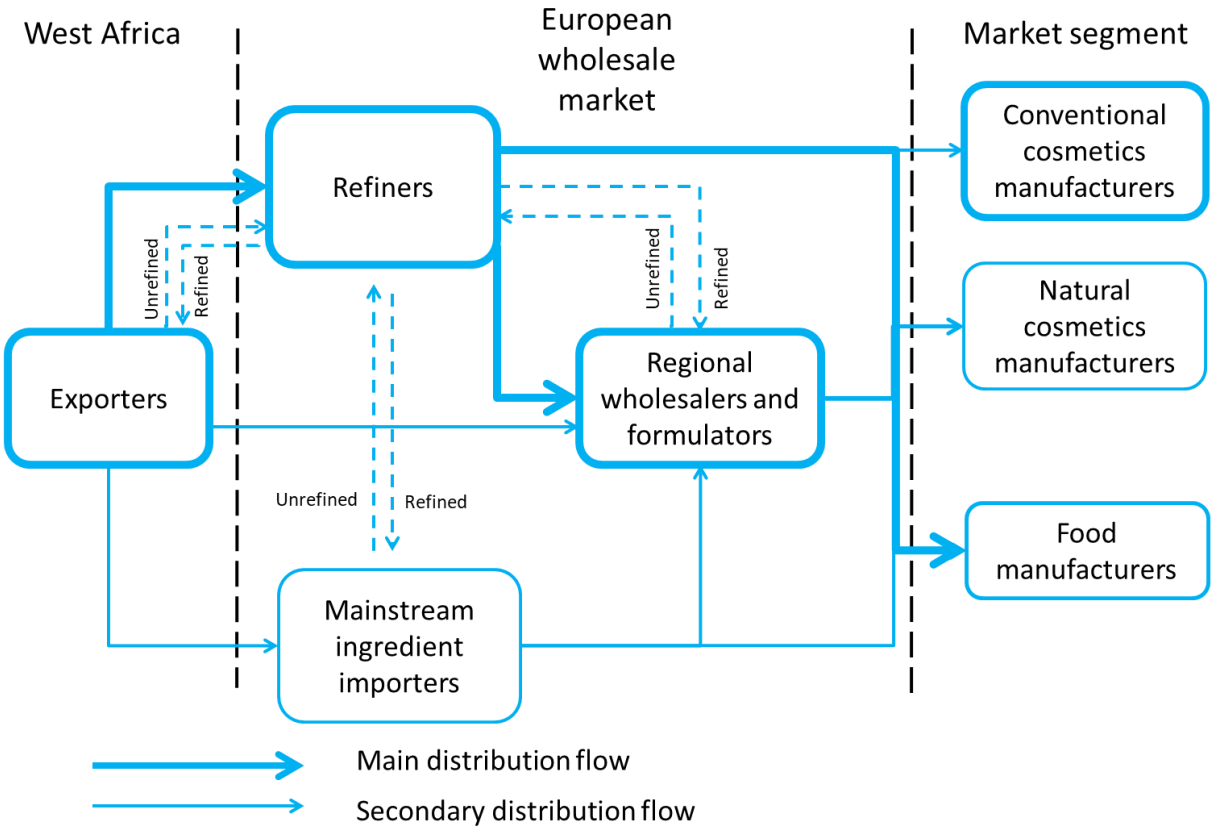


Figure 7 European distribution channels for West African unrefined/refined shea butter

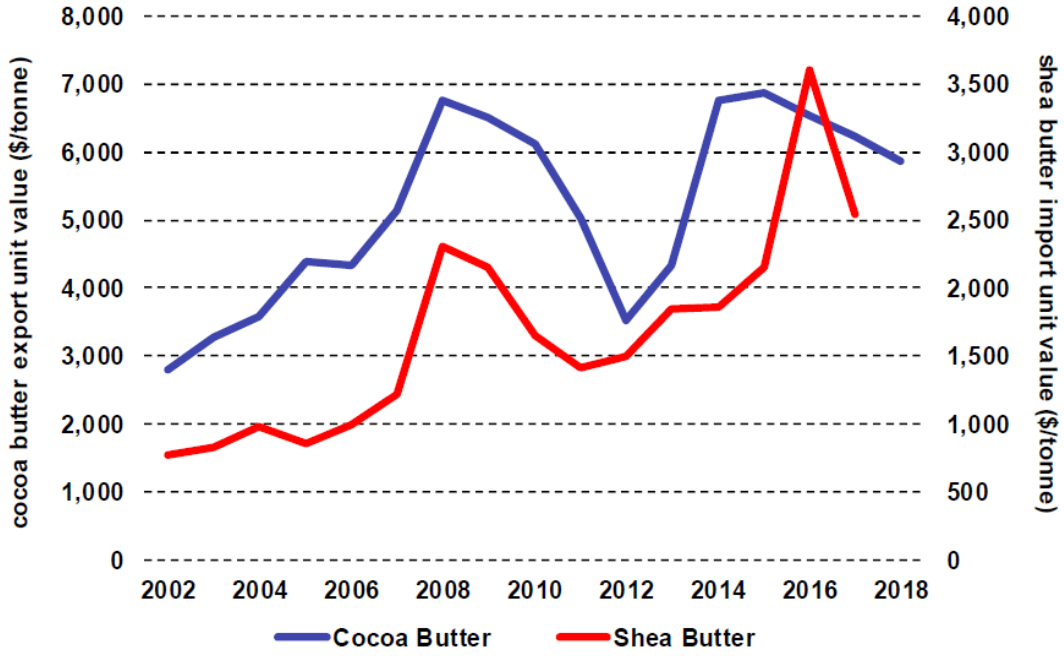


In Europe, trade is relatively concentrated with few players responsible for the import of large amounts of shea butter. Many of these players are only interested in buying full container loads (20 or 40 tonnes). In China, the distribution of cosmetic products and cosmetic ingredients appears to be much more fragmented than in Europe with many small players.

6. Prices

The international market price for shea butter is affected by the price for cocoa butter, because shea butter's main use is as a cocoa butter equivalent.

Figure 8 Shea butter and cocoa butter prices



Source: Global Shea Alliance, 2019

As above figure illustrates, shea butter prices fluctuated significantly. A European trader indicated that prices were as low as € 1.10 /kg in 2018 and as high as € 2.50 /kg again in 2019. The West African Ebola outbreak in 2014-2016 pushed prices up and the success of cocoa harvests is another major factor determining price developments.

The FOB price of shea nilotica butter from Uganda was estimated at around USD 6-7 /kg in March 2020 by a major importer. This is much higher than the price of shea paradoxa butter from West Africa. Conventional West African mechanically processed shea butter was traded at prices as low as € 1.85 /kg in March 2020.

It appears that the upscaling of collection, trade and processing in West Africa has resulted in economies of scale and lower export prices. This has not (yet) been achieved in East Africa where prices are significantly higher. Only few manufacturers, mostly cosmetics manufacturers, are willing to pay the price premium to obtain a more exclusive shea butter.

Olein from fractionated shea butter currently fetches low prices as there is a surplus available on the market (Source: AAK, March 2020).

Hand crafted shea butter was traded at prices around € 2 /kg in March 2020. The price premium is mostly paid by European companies that are interested to use the story behind hand crafted shea for their promotion. Refer to the section on marketing stories for details.

Organic and fair trade certification can add value to shea butter, especially for cosmetic uses. To illustrate, prices for unrefined West African shea butter that is organic certified were up to around € 3 per kg in March 2020. However, these certified butters have higher costs in the chain and are produced in lower volumes (Source: CBI, 2019).

Prices of shea nuts and butter do not only depend on the quality characteristics of the products. Volumes are another major factor in price setting. Most international trade in shea takes place in 20 or even 40-foot containers. These contain 20 or 40 tonnes of shea butter respectively. The large scale of this trade allows for smaller margins and lower prices. When importers need

less than 20 tonnes, prices go up. Transport costs per kg are higher for pallets than for full containers. In addition, administrative costs of the importer for arranging the contracting, financing and logistics of the order are higher per kg when volumes are smaller. This explains why the costs of shea can double for very small volumes compared to very large volumes.

Prices in wholesale markets are highly dependent on volumes traded. Prices for small volumes are much higher than for large volumes. The websites of the US distributors Nature in Bottle and From Nature With Love provide indications of wholesale shea nilotica prices for different volumes (1-25 kg).

7. Doing business in international markets

Interviews with international buyers will provide more information on experiences, potentials and challenges for the cooperation and communication with partners from East Africa from the perspective of the international key stakeholders.

7.1. Doing business

Assessment of new suppliers

International buyers who are looking for a new shea supply chain usually make a rigorous assessment of a potential supplier before placing an order. They first need documentation from the supplier such as a Certificate of Analysis, specifications and organic or fair-trade certificates. When the supplier is not able to provide detailed documentation, the buyer will often send a questionnaire to obtain the relevant information. Such a questionnaire can contain questions on harvesting practices, measures to protect the ecosystem, benefits to collectors, storage conditions, etc.

Buyers will also request samples to analyse and verify that the shea butter meets their needs.

Sample analysis for shea from new suppliers

Importers buying from known suppliers that have shown to be reliable partners in the past often request a quality specification from the supplier and proceed with shipment when the specification meets their requirements.

New suppliers mostly need to provide pre-shipment samples to buyers before they can proceed with shipment. The buyer will analyse the sample and only authorise shipment when results of the analysis confirm that the product meets their requirements. Costs for sending the sample are often for the supplier, while costs of the analysis are often for the importer.

Price negotiation

Importers are generally well-informed about shea prices. Especially larger importers request prices from different suppliers on a daily or weekly basis. When they receive a price quotation that is unrealistically high, they feel that the supplier is trying to deceive them. They appreciate it when suppliers provide realistic prices in line with current market prices.

8. Promotion

West African shea is a well-known product, but Ugandan shea nilotica is a new ingredient for many buyers. At the Vivaness 2020 trade fair in Germany, more than half of the exhibitors with shea in their products was not aware of the two subspecies. As such, promotion of the product is crucial to its success on international markets. Marketing stories are key to demonstrate how shea nilotica differs from West African shea. Getting in touch with (potential) buyers at international trade fairs, is the best way to explain to buyers the potential of shea nilotica.

8.1. Marketing story

Because shea nilotica has a similar name to West African shea, and the same INCI name, it is difficult to distinguish the two products on the market. Marketing stories, based on testing, can help here. These can explain to potential buyers what the properties and benefits of shea nilotica are when compared to West African shea.

Consumers are increasingly interested in the story behind the cosmetic products they use. Ingredients can be an important component of such stories.

Buyer perspective on shea nilotica

Buyers have differing views on the marketing potential of shea nilotica. Many indicate that having the same name as West African shea butter limits its marketing potential, as shea nilotica is automatically compared to the variety from West Africa, which is an established, cheaper, commodity product. Buyers indicate that shea nilotica should not be marketed as a substitute of West African shea butter, as it will not be able to compete in that market. They added that launching the East African variety as 'shea nilotica' has caused confusion on international market about the two varieties.

Using a different name for the butter could help to differentiate it on the market. Several buyers have suggested to market shea nilotica under a different (INCI) name. Examples of alternative names include Nilotica butter, or Muyao butter (the name in Swahili).

When comparing the properties of the two butters, some buyers are very positive about shea nilotica. Indicating for example that shea nilotica "*has a higher oleic acid and fewer waxy acid content so it is softer, melts more easily and absorbs more completely"* than shea from West Africa.

At the same time, a formulating expert indicated that shea nilotica is too similar to West African shea to differentiate the two butters. The fatty acid profile is different, with shea nilotica having a higher oleic acid content. However, for many formulators this is insufficient. A good marketing story for shea nilotica should also include information on cosmetic benefits and how these differ from shea butter from West Africa.

Education of buyers on the properties and benefits of Ugandan shea nilotica is necessary to convince them of the unique properties and the higher value compared to West African shea for certain applications.

Elements of a marketing story

Although testing results are needed to profile the cosmetic properties of shea nilotica, the butter already has several elements to build this story. Marketing stories can for example be built around an ingredient's:

- origin (from the wild or produced in a specific region),

- properties or functionality, e.g. fatty acid profile for vegetable butters, ease of use in formulation, effect of the ingredient on skin/hair,
- certification,
- suitability to marketing trends,
- sustainability, such as benefits to local communities,
- traditional use or
- production method.

Shea nilotica butter is often produced using traditional methods and has a history of use in cosmetics. Traditional manufacturing techniques give a more natural and personal character to the product. Moreover, the butter can build on the traditional medicinal uses of shea nilotica. Although they cannot make any medicinal claims on their products, cosmetics manufacturers use the information on traditional medicinal uses in descriptions of their products and stories behind those products. Some of the traditional medicinal uses of shea include:

- Medicinal ointments due to its anti-inflammatory properties
- Skin rashes, skin peeling after tanning, scars, stretch marks, frost bites, burns, athletes' foot, insect bites and stings, arthritis, and muscle fatigue
- Promoting healing and disinfection, and soothing skin allergies like poison ivy and insect bites
- A rejuvenator for soothing and healing rough and chapped skin

Source: Medicinal and Nutritional Benefits from the Shea Tree (Vitellaria Paradoxa)

Moreover, its production by women, and in areas were few other income options exist, is used extensively in international marketing. Cosmetics manufacturers use marketing stories on how production of shea butter empowers women.

For the Ugandan shea nilotica, its value as a source of income and to protect the shea park landscape is an additional relevant element for a marketing story. The supplier must then be able to show how the sustainable collection of shea nuts contributes to the shea park landscape conservation. This requires natural resource management plans linked to a traceability system for registration of resource use.

Examples of marketing stories for shea nilotica

From Pure is Beauty: https://www.pureisbeauty.com/organic-shea-nilotica-butter

What is Shea Nilotica Butter?

Unlike the more common West African shea butter, which is often hard and waxy, this North Ugandan raw, unrefined shea nilotica butter is creamier and softer and has more beneficiary properties than any other shea butter variety. Due to these qualities, it is considered more luxurious compared to the West African shea. It melts and spreads nicely on the skin which makes it wonderful multi-purpose product for the whole family including little children.

Shea Nilotica has higher olein content than West African shea butter, making it less waxy. Shea Nilotica also suits better to be applied on the face compared to West African shea. It is also much easier to spread and very much suitable for applying on the larger areas of the body.

Organic shea nilotica butter is rich in essential fatty acids (especially Omega -9) and vitamins A, E, F and K. It contains high content of anti-inflammatory components and is especially recommended for dry and atopic skin.

From LXMI: https://lxmi.com/

NILOTICA RESERVE ™

We exclusively formulate with USDA-certified-organic Nilotica Reserve™ — the best quality Ugandan "Nilotica" (NILE-ot-i-kah) — which is a rare relative of shea. It is underutilized in the cosmetic market despite its superiority, due to sourcing challenges and costs. Nilotica Reserve™ has sky-high essential fatty acids, enhanced vitamin and nutrient potency, and a luxurious texture. It is harvested seasonally from 20-year old trees, only at the source of the Nile.

From the Soap Kitchen: https://www.thesoapkitchen.co.uk/shea-butter-east-african-nilotica

Shea Nilotica or East African Shea is a premium shea butter which comes from the fruit of the Vitellaria Nilotica, a sub species of the Karite tree which grows across Northern Uganda. Softer in texture that West African shea with a mild aroma and light yellow colour, Shea Nilotica is one of the finest shea butters available. It has a significantly higher olein content and glyceride of oleic acid content making it softer and creamier than its West African counterpart. High in unsaponifiables, antioxidants and cinneamic acid, it is also known to be a natural sunscreen. Because it is smoother and more buttery than West African shea it is easily spreadable and readily absorbed into the skin and hair.

8.2. Trade fairs

Trade fairs offer excellent opportunities to meet buyers and discuss the unique properties of Ugandan shea nilotica. Face to face contact is a powerful way to communicate with your buyers and potential buyers. International trade fairs attract buyers, formulators and marketers of cosmetics and foods from across the world. Buyers come to trade fairs to learn about the latest trends and to find new ingredients and suppliers.

New Ugandan exporters are advised to visit trade fairs before they exhibit. Visiting allows companies to learn about the market, build up a network of potential partners and prepare for exhibition.

Major European trade fairs for cosmetic ingredients:

- In-Cosmetics: Event for personal care ingredients. Annually around April. Takes place in a different European cosmetic production and Research & Development centre every year.
- Vivaness: International Trade Fair for Natural and Organic Personal Care. Annually in February. Next edition: 17-20 February 2021. Takes place in Nuremberg, Germany.

Major Asian trade fairs for cosmetic ingredients:

- In-Cosmetics Asia. Event for personal care ingredients. Annually around November. Next edition: 3-5 November 2020. Takes place in Bangkok, Thailand.
- Personal Care and Homecare Ingredients (PCHI): 25,637 trade professionals from 80 countries, 634 exhibitors from 27 countries and regions. Next edition: 2-4 June, 2020. Takes place in Shanghai, China.
- CosmoProf Asia. International beauty trade show in Asia. The fair is divided into two parts: Cosmopack Asia, which focuses on the entire beauty supply chain, from ingredient to manufacturing, and Cosmoprof Asia, the part dedicated to retail and

distribution channels, and trends. Next edition: 10-13 November, 2020. Takes place in Hong Kong.

Major Chinese trade fairs for cosmetic products:

- China International Beauty Expo (CIBE). International trade fair for health and beauty. Exhibitors are well-known national and international companies from the industry. Fair takes place in Guangzhou, Shanghai, Beijing and Shenzhen.
- China Beauty Expo. Beauty trade show and one-stop sourcing platform for beauty products, suppliers and services. Visitors include retailers, beauty salon owners, manufactures and buyers. Next edition in Shanghai, 19-21 May, 2020.

Major European trade fairs for ingredients for food:

- ANUGA. World's largest trade fair for food and beverages (7,590 exhibitors and about 170,000 visitors). Biennially in October. Next edition: 9-13 October 2021. Takes place in Cologne, Germany.
- SIAL: World's largest food innovation exhibition (7,200 exhibitors). Biennially in October. Next edition: 18-22 October 2020. Takes place in Paris, France.
- Food Ingredients / Natural Ingredients: Innovation at the heart of Fi Europe & Ni. 1,700 exhibitors and 27,000 visitors. Biennially around December. Next edition: 1-3 December 2020. Takes place in Frankfurt, Germany.
- Vitafoods: Vitafoods Europe connects health and nutrition business leaders through the entire supply chain. 1,200 exhibitors and 24,000 visitors. Next edition: 12-14 May 2020. Takes place in Geneva, Switzerland.

Major Asian trade fairs for ingredients for food:

- Health Ingredients and Food Ingredients Asia-China: China's leading event for the health and food ingredients industry. 1,800 exhibitors and 74,000 visitors. Annually in June. Next edition: 22-24 June 2020. Takes place in Shanghai, China.
- THAIFEX – ANUGA Asia: 2,745 Exhibitors from 42 Countries and Regions and 67,136 visitors from 134 Countries. Next edition: 26 - 30 May 2020. Takes place in Bangkok, Thailand.
- Food Ingredients Asia: Meeting place for Southeast Asia's food industry. 850 exhibitors and 19,000 visitors. Fi Asia rotates annually between Jakarta and Bangkok. Next edition: 9-11 September.

International Conferences:

- Cosmetics Europe Annual Conference: 10-11 June 2020. Takes place in Brussels, Belgium.
- International Skin Care Conference: 5-6 November 2020. Takes place in Bangkok, Thailand.

8.3. Online promotion

The digital landscape is very important when it comes to successful sales and promotion of products on the cosmetics market. It is particularly important in China. This includes presence on social media, e-commerce platforms and reviewing platforms. Some of the largest e-commerce platforms in China are Tmall and JD.

Accounts on social media platforms and Key-Opinion-Leader (KOL) marketing are increasingly being used by cosmetic companies for the promotion of their products. This means that companies increasingly use celebrities or influencers to promote their brand on social media, such as Facebook (Europe), Weibo (China) and TikTok (China). An example of a popular influencer on the Chinese cosmetic sector is Li Jiaqi ('the number 1 seller of lipstick') (Jing Daily, 2019).

Social media platforms that allow for consumer discussions are also increasingly important on the Chinese market to connect with consumers. A popular social media and e-commerce platform is Xiaohongshu (Little Red Book), where users can leave reviews and blogs, which is also used by influencers. In addition, the use of the application Beauty Evolution **美丽修行** is also growing rapidly by Chinese consumers. This platform allows users to do product ingredient inquiries and share product user experience (Clean Beauty Asia).

Almost all users of the Beauty Evolution application also follow Cheng Fen Dang **成分党**. Cheng Fen Dang is a movement that consists of influencers who are professionals specialised in examining ingredients used in cosmetics. They give their view on brand formulations, product efficacy and safety. Some of these professionals have their own Weibo or WeChat official accounts to evaluate beauty ingredients. Examples include Cheng Fen Dang blogger @kenjijoel and San Mu's WeChat account Yan An Tang (Jing Daily, 2019).

These digital developments show the growing importance of transparency and clean product formulations when you want to successfully enter the Chinese cosmetics market.

9. Potential partners for GIZ

Many international organisations are working in the shea sector either in Central and East Africa or in West Africa. Below list contains brief information on some of the most relevant organisations for a potential partnership with GIZ.

9.1. International donors

U.S. Agency for International Development (USAID)

USAID leads the U.S. Government's international development and disaster assistance through partnerships and investments that save lives, reduce poverty, strengthen democratic governance, and help people emerge from humanitarian crises and progress beyond assistance.

Over the years, USAID has invested in several shea butter projects, of which the most recent programme is Sustainable Shea Initiative in West Africa with the Global Shea Alliance, which runs from 2016-2021 with a budget of USD 18 million. This project promotes the sustainable production and market expansion of the shea industry in Ghana, Benin, Ivory Coast, Togo, Mali, Nigeria, and Burkina Faso, and provides needed skills training and infrastructure to

support women shea collectors. The private sector leads the programme. Burt's Bees is one of the US companies involved in the programme.

Between 1995 and 2002, USAID funded the Shea Project in Uganda. That programme ended when security conditions in Northern Uganda deteriorated.

Enhanced Integrated Framework (EIF)

EIF is a multilateral partnership dedicated to assisting least developed countries use trade as an engine for growth, sustainable development and poverty reduction. EIF works at all stages of the trade journey; it offers expert research and analysis that informs policy, government trade facilitation and targeted sector support based on research findings.

EIF works directly with the Government of Uganda to develop trade policies conducive to global trade. EIF also supports the development of small Ugandan businesses as part of the country's decentralized business services.

In 2020, EIF partnered up with the Global Shea Alliance (GSA) to launch the program 'Supporting the inclusive commercial development of the shea value chain' in Benin, Burkina Faso, Mali and Togo. In addition, EIF commissioned a research project to identify the three main Asian markets for shea butter. These reports are expected to be available later this year.

Global Environment Facility (GEF)

Through the Small Grants Programme, GEF provides financial and technical support to projects that conserve and restore the environment while enhancing people's well-being and livelihoods. The programme provides grants of up to $50,000 directly to local communities including indigenous people, community-based organizations and other non-governmental groups for projects in Biodiversity, Climate Change Mitigation and Adaptation, Land Degradation and Sustainable Forest Management, International Waters and Chemicals.

GEF has invested in several shea butter projects in Uganda, including the 'Conservation and Sustainable Use of the Threatened Savanna Woodland in the Kidepo Critical Landscape in North Eastern Uganda', which ran from 2013-2017. The National Environment Management Authority (NEMA) served as the main implementing partner of the programme.

Common Fund for Commodities (CFC)

CFC is an autonomous intergovernmental financial institution established within the framework of the United Nations. Its mandate is to enhance the socioeconomic development of commodity producers and contribute to the development of society as a whole. In line with its market-oriented approach, the Fund concentrates on commodity development projects co-financed from its resources.

CFC co-financed, together with the Dutch government, the ProKarité project, which was implemented from 2004 to 2007. The project aimed to improve product quality and market access for shea butter from West Africa.

Swedish International Development Agency (Sida)

Sida is the government agency working on behalf of the Swedish parliament and government, with the mission to reduce poverty in the world. It funded the Northern Uganda Shea Nut Project; an organic shea export project, implemented by the Export Promotion of Organic Products from Africa (EPOPA) in 2006.

The current project "Shea Nut Access and Value-addition Enhancement (SAVE)" (2018-2021) is about economic empowerment and conservation of the environment. The overall objective

of the action is to contribute to the development of green jobs for women and youth along the Shea nut Value Chain (SNVC) and in Apiary in northern Uganda.

9.2. International associations

Global Shea Alliance (GSA)

GSA is a non-profit industry association with 500 members from 35 countries, including women's groups, brands, retailers, suppliers and NGOs. Through public-private partnership, GSA promotes industry sustainability, quality practices and standards, and demand for shea in food and cosmetics.

GSA designs, develops and delivers strategies that drive a competitive and sustainable shea industry worldwide, with the goal to improve the livelihoods of rural African women and their communities.

GSA is the implementing partner for the two programmes of USAID and EIF mentioned above:

- Sustainable Shea Initiative (SSI): five-year agreement between GSA and USAID to promote sustainable shea market expansion in seven West African countries.
- Supporting the inclusive commercial development of the shea value chain': EIF programme in Benin, Burkina Faso, Mali and Togo.

In February 2020, GSA submitted a proposal for the USAID East Africa Private Sector Engagement in Support of the Prosper Africa project to increase shea trade in Uganda and South Sudan. The objective is to increase production and exports from these two countries. Proposed activities include: production assessment, logistics, organizing stakeholders, improving quality, cooperative development, R&D.

9.3. International development agencies

International Trade Centre (ITC)

ITC supports small and medium-sized enterprises in becoming more competitive and helps them to connect to international markets for trade and investment. ITC's focus is on raising incomes and creating job opportunities, especially for women, young people, and poor communities.

One of the programmes of ITC is 'Women and Trade'. This programme seeks to increase the participation of women entrepreneurs and producers in global value chains and to ensure that they enjoy greater economic benefits from participating in international trade. The SheTrades Initiative works to create an enabling ecosystem for women to thrive by promoting equitable policies. Moreover, ITC, partly through SheTrades provides online training and mentoring for women entrepreneurs. Lastly, SheTrades.com gives women entrepreneurs a platform, a one-stop shop in which to share, learn, and do business on a global scale. Given the prominent role of women in the shea industry, the Women and Trade programme may be an interesting one to partner up with.

Another programme of ITC that could be of interest is ACCESS! for African Businesswomen. This programme aims to improve business support services for women to increase their

capacity to export and success on international and regional markets with the ultimate goal of promoting their economic empowerment.

SNV

SNV is a Dutch not-for-profit international development organization that aims to make a lasting difference in the lives of people living in poverty by helping them raise incomes and access basic services. SNV has a long track record in developing sustainable agricultural production and inclusive value chains. They have presence all over the world, including Uganda, where they have been present since 1989.

Since 2014, SNV works on the Shea Butter Community Commerce project in northern Ghana, in partnership with Savannah Fruits Company and with funding from Sundial Brands.

ICCO

The work of the Dutch development cooperation ICCO is focused on three goals: food and nutrition, economic empowerment and resilient and disaster-prepared communities. ICCO is active around the globe, including Uganda.

ICCO has been working in the shea industry in West Africa since 2004, and started the specific project Birds, Bees & Business in Burkina Faso in 2018. This project, in partnership with Bird Life Netherland, combines the restoration of biodiversity and business activities in the shea value chain.

Proudly Made In Africa

Proudly Made In Africa is an Irish not-for-profit organization which works as a trade facilitator between African producers and European retailers. It has worked with shea-butter producers in Uganda, such as the Ugandan for-profit social enterprise The Shea House.

9.4. International knowledge institutes

World Agroforestry Centre (ICRAF)

ICRAF is a centre of science and development that harnesses the benefits of trees for people and the environment. It develops knowledge practices, from farmers' fields to the global sphere, to ensure food security and environmental sustainability.

9.5. Ugandan governmental agencies

Uganda Export Promotion Board

Uganda Export Promotions Board (UEPB) is the national focal point for export promotion and development. The added value of UEPB as potential partner is that they offer support services to exporters in Uganda and foreign buyers including market information, assistance with entering and establishing in new export markets, business linkages, export product development and capacity building.

UEPB has set a target of supporting and enabling shea product producers to have at least 200,000 to 500,000 tonnes of shea nut produced by 2022. The trade targets should be achieved by conserving and stopping the depletion of the shea butter trees. UEPB was part of GEF's 'Conservation and Sustainable Use of the Threatened Savanna Woodland in the Kidepo Critical Landscape in North Eastern Uganda' project from 2013-2017.

9.6. International stakeholders in the shea value chain

Alban Muller Group

The Alban Muller Group is a French cosmetics company, expert in the manufacturing of natural cosmetics. Their services include custom cosmetic ingredient or product development support. The president of Alban Muller (with the same name) indicated to be interested to help formulate products with shea nilotica for the Ugandan market.

Deep Planet

Deep Planet is a company founded in 2018 that supports decision making by public and private organisations with high resolution satellite images. According to Klaus Fehling, they are planning together with the Forestry Department to use satellite images for protection of shea trees in a UNESCO (United Nations Educational, Scientific and Cultural Organization) national biosphere in Uganda. The images can support assessment of the shea tree population in the area and can also support the mapping of refugees in the West Nile area. According to Mr. Lusik of the Czech company SheaTree, certification bodies also use satellite images for their certification services. The satellite images of the shea parkland serve to calculate the amount of shea nuts from organic farming. Knowledge of certification bodies on the use and interpretation of satellite data may be useful to support mapping of shea trees in Uganda and selecting suitable areas for organic farming.

Aldivia

Aldivia is a French distributor of specialty cosmetic ingredients. The company uses green chemistry to develop ingredients for natural cosmetics. Aldivia sources various natural ingredients including marula, mongongo and baobab from Africa and currently sources shea butter from Burkina Faso and Mali. A few years ago, Aldivia was in contact with an exporter from Uganda to explore Ugandan shea supply chains, but the partnership never materialised into trade. Aldivia is still interested to explore possibilities for sourcing shea in Uganda and has a particular interest in transparent sustainable supply chains that can deliver a consistent quality shea butter for further refining in Europe.

SheaTree

SheaTree is a distributor of natural cosmetics in Czech Republic. The company already sources shea butter from Guru Nanak Oil Mills in Uganda, but is interested to buy from more suppliers. SheaTree is Fair for Life certified and is only interested in organic certified shea butter.

10. Conclusions of international market analysis

Properties and benefits of Ugandan shea

The primary factor that determines market opportunities for any natural ingredient is its properties. Shea butter, like other vegetable butters, mainly consists of fatty acids. Typically, East African shea nilotica comprises 58% oleic acid and 32% stearic acid. Compared to West African shea, East African shea nilotica contains a relatively high amount of oleic acid and a relatively low amount of stearic acid.

The high oleic acid content of East African shea nilotica provides a soft creamy texture to the butter at room temperature.

Based solely on its properties, shea nilotica is suitable for application in cosmetics and foods. Traditional medicinal uses have not been sufficiently substantiated with clinical research to be able to make any medicinal claim in international markets.

In cosmetics, shea nilotica mainly serves as an emollient (i.e. moisturiser) for skin conditioning. Many cosmetics manufacturers appreciate the soft creamy texture, which makes East African shea nilotica butter easier to spread than West African shea butter. Other cosmetic applications for shea butter include hair care products, lip balms and soaps.

In food, shea butter mainly serves as an ingredient for the food processing industry. Food manufacturers can use shea butter as a cocoa butter and palm oil substitute in a wide variety of applications including margarines, bakery and confectionery products, such as chocolate.

Current role of Uganda in international market

Uganda's current role in the international shea market is limited. Although exact data on international shea trade are not available, estimates suggest that more than 90% of shea on the international market originates in West Africa and that Uganda accounts for less than 1% of international trade.

The West African shea industry developed strongly in the past two decades. West African shea contains a large amount of stearic acid and is particularly valuable for the international chocolate industry, which has been the main driver behind the strong development of the West African shea industry. At a low price of around € 2 /kg Free-On-Board, West African shea butter is a cheap alternative to the more expensive cocoa butter for the manufacturing of chocolate.

Compared to West African shea, East African shea nilotica is much more expensive at an estimated price level of around € 6 /kg Free-On-Board. This implies that direct competition with West African suppliers on price is impossible. Moreover, international food manufacturers are most interested in the stearin fraction of shea butter. As the stearin fraction in East African shea nilotica is smaller than in the West African shea, international food manufacturers are not interested in sourcing shea in Uganda.

Local market research in Uganda may provide an explanation for high prices of shea in Uganda. This information is necessary to determine if there is potential to improve price competitiveness and increase the role of Uganda on the international market for shea for food. Otherwise, the role of Uganda on the international market will remain limited to supplying the smaller cosmetics market.

Most promising segments for Ugandan suppliers

The cosmetics market offers most opportunities for East African shea nilotica butter. Based on the unique properties and benefits, East African shea nilotica is most suitable for skincare products (lotions, creams), haircare products (shampoos and conditioners), lip balms and soaps.

Europe is the largest producer of cosmetics in the world with a production value of € 79 billion and is estimated to be one of the largest markets for shea butter for cosmetics. China is another large producer of cosmetics (€ 48 billion) and its cosmetic market is growing rapidly. Although

detailed data on the Chinese market for shea are missing, various sources suggest that the Chinese cosmetics market offers many opportunities for shea butter.

A particularly promising segment within the European and Chinese cosmetics markets is the market for natural cosmetics. In Europe, natural cosmetics account for around 5% of the total cosmetics market and the growth rate for this segment is significantly higher than the growth rate for the total cosmetics market. Quantitative data for the Chinese natural cosmetics market are not available, but various industry sources suggest that China has an underdeveloped, but significant and fast-growing natural cosmetics market.

West African shea suppliers and many other suppliers of vegetable butters of different origin provide strong competition in cosmetics markets. West African shea has similar cosmetic benefits and is used in the same type of cosmetic products. However, the soft creamy texture of East African shea nilotica is often regarded as a comparative advantage. As East African shea nilotica is more expensive than West African shea and most other vegetable oils, shea nilotica suppliers can best target manufacturers of luxury cosmetics.

Fractionation of shea nilotica from Uganda does not offer much potential. Fractionation is not economically attractive, because Ugandan shea nilotica has a relatively low stearin content and high costs compared to West African shea paradoxa. Similarly, other sources of olein fractions are more price competitive than olein from shea nilotica.

Requirements in most promising segments

The main requirement for shea butter for cosmetics markets is purity. This means that the shea butter is not adulterated and that impurities are removed through filtration.

Two other major requirements for shea butter that will be refined before use in cosmetics are a low peroxide value (below 10 mEq/kg) and a low Free Fatty Acid content (<8%). Buyers will need a Certificate of Analysis to verify that the shea product meets their quality requirements.

In the European market for natural cosmetics, many buyers require an organic certificate to support their marketing story that explains how the ingredients in their cosmetic products were made.

Requirements for final cosmetic products based on shea butter are much more demanding than requirements for shea butter as an ingredient for cosmetics. Both in Europe and in China, authorisation for introducing final cosmetics products to the market requires elaborate documentation on product safety and efficacy, of every ingredient in the product as well as the final product. The bureaucratic authorisation procedures require sound knowledge of legal requirements, which is usually provided by a partner in the respective market that will also function as the legally required Responsible Person that is fully liable for the product's safety. This can vary from handling complaints to product call back operations.

Many cosmetics manufacturers appreciate transparent and sustainable supply chains. Suppliers have various possibilities to provide the needed transparency and sustainability. They can provide information on request, put their data into SEDEX or obtain a certificate from a third party. The most common certificate is Fair for Life.

Distribution channels to most promising segments

Only small amounts of unrefined shea butter go to cosmetics manufacturers directly. Most manufacturers of conventional and natural cosmetics prefer to use refined shea butter as an ingredient for their cosmetics, as opposed to unrefined shea butter. In Europe, most of these

cosmetic manufacturers source their raw materials including shea butter from European distributors. Those distributors include refiners, wholesalers of cosmetic ingredients and formulators. With their knowledge and equipment, refiners play a key role in European shea butter trade. They account for a large part of the trade in shea butter and in many cases provide toll-refining services to other wholesalers of cosmetic ingredients and formulators.

Promotion in most promising segments

Many European and Chinese cosmetic manufacturers do not know the differences between West African shea and East African shea nilotica. Both subspecies share the same INCI name and most cosmetic manufacturers are not even aware of the existence of different subspecies. This is one of the major challenges for Ugandan shea exporters, as a lack of distinction in quality will result in a competition on price with the much cheaper West African shea.

A good marketing story for shea nilotica should include information on cosmetic benefits and how these differ from shea butter from West Africa. Marketing stories can build on origin, properties or functionality, certification, suitability to marketing trends, sustainability, traditional use or production method. The traditional manufacturing techniques used in Uganda, as opposed to the mostly industrial processing techniques used in West African is an important element of the marketing story for East African shea nilotica, as it gives a more natural and personal character to the product. Moreover, the marketing story can build on the traditional medicinal uses of shea nilotica in Uganda.

Trade fairs provide the best platform for telling the marketing story to potential buyers. In-Cosmetics and Vivaness are the most relevant trade fairs in Europe.

11. Recommendations for Ugandan shea stakeholders and GIZ programme

A programme to develop shea supply chains in Northern Uganda must comprise marketing activities and supply chain activities. Both types of activities can take place simultaneously. However, the supply chain must be able to meet minimum requirements of buyers before suppliers start offering products to buyers.

11.1. Marketing activities

11.1.1. Select target markets

A clear focus on the most promising market segment is key to successful entry to international markets. Focus is needed to use resources wisely by investing in promotion and compliance with expectations of buyers in the selected target market to improve sales volumes and prices.

Cosmetics are the most promising market segment with particularly good opportunities in the growing natural cosmetics market segment. In this segment, there are buyers with an interest in the exclusivity of East African shea nilotica butter and willing to pay the price premium compared to other vegetable oils and most notably West African shea butter.

Food is currently not a promising market for East African shea nilotica due to low price levels in this market. While some interest may come from food manufacturers aiming to use shea butter as a substitute for palm oil or as an exclusive ingredient for fine foods, a focus on the more promising natural cosmetics market will lead to better results in terms of exports.

Europe and China are both relevant markets and other markets offer additional opportunities. The mature European cosmetics industry has a leading role in the global market and its legislation and product standards are an example to many other countries. In fact, European cosmetics manufacturers play a major role on the Chinese market. This implies that success in the European market will open opportunities in other markets which are more easily accessible. On the other hand, the fast growth of the Chinese market with many small players creates room for East African shea nilotica which seems to face less competition from West African shea in China. The planned research on the Chinese shea market by GSA for the EIF programme, which is due around July 2020 will provide more insights into the opportunities there.

Finally, the East African cosmetics market appears to provide many opportunities. Research on this market by local researcher Carol Asiimwe provides more information. In addition to local formulators, international organisations such as GSA and Alban Muller could support development of a market for cosmetic products based on shea nilotica through development of formulations.

11.1.2. Identify specifications

Distinction from other vegetable butters and notably shea from West Africa is crucial for success on the international market. Without a clear distinction, Ugandan shea nilotica will compete directly with the much lower-priced West African shea.

Laboratory analysis of a cold-pressed shea nilotica from Uganda already showed that the particular shea tested had a good colour (light), low unsaponifiable content (2.7%), low latex (Karitene) content and low diglycerides content compared to average quality shea from Ghana. If the production practices for this shea butter are representative for the entire value chain, these test results provide a good basis to develop specifications. If any production practice will be changed then another laboratory test is needed to identify effects of the changes on product quality. For example, changing the processing methods from cold-pressing to expelling may affect the product quality.

The specifications must clarify to potential buyers that shea nilotica from Uganda is different from other vegetable butters. Colour, odour, purity, shelf-life and fatty acid composition are particularly important to buyers and optimising specifications related to these quality aspects through adaptation of production practices requires most attention.

As buyers need supplies of a consistent quality, the specifications and samples offered to them must represent what the supplier can offer in the volumes and at the time needed by the buyer. For this reason, specifications mention ranges such as 55-57.5% oleic acid content. Smaller ranges imply more control over quality by the supplier and more quality consistency. When laboratory analyses show large variations, the supplier will have to increase ranges to be able to deliver according to specifications.

In any case, the specifications must meet the African standard for unrefined shea butter of the African Organisation for Standardisation (ARSO).

11.1.3. Prepare product documentation

International buyers need detailed product information including, but not limited to, specifications. Buyers in cosmetic markets need to include this in a ‘Cosmetic Product Safety Report’ and a ‘Product Information File’ for their own cosmetic products. Buyers appreciate it

when a supplier can provide information on the physio-chemical (physical and chemical), microbiological and toxicological characteristics of their shea product.

By building a technical dossier for the shea product, a supplier can improve the offering for buyers in the international cosmetics industry. The Center for the Promotion of Imports from developing countries provides a workbook for preparing a technical dossier for cosmetic ingredients. Shea is comprised of fatty acids. Other oils have different compositions regarding their fatty acid profiles. Different profiles perform differently in cosmetics. Hence the fatty acid profile is one of the most important parameters to include in your dossier.

Besides the characteristics of the shea butter, cosmetics manufacturers will appreciate information that can help them to formulate with shea butter. When suppliers can show how shea butter performs in different cosmetic formulations, this will remove a major barrier for manufacturers that are not yet familiar with East African shea nilotica. For example, Cooperative Office for Voluntary Organisations (COVOL) in Uganda developed cosmetic prototypes based on formulations suited to the unique properties of the nilotica shea butter. COVOL was a partner in the Shea Project. Besides COVOL, other partners for developing such formulations to show its application, use and efficacy include local universities, specialised companies such as Eurofins or GSA. GSA showed interest to help GIZ implement its programme by organising trainings for Ugandan SMEs on formulation of cosmetics with shea.

11.1.4. Prepare a marketing story

In order to market shea nilotica on international markets, a marketing story needs to be developed that shows how the butter is different from West African shea butter. It may be beneficial to market the butter under a different name, such as Nilotica butter. In addition, one buyer suggested to register the butter under an INCI name that is different from West African shea. The buyer expected that costs of registering a new INCI name may be as low as € 1,000.

Apart from the properties, cosmetic benefits and formulation options as mentioned above, shea nilotica's origin, production methods, traditional use and data on how the butter supports local communities are additional elements of a marketing story. For each element, the question should be, what makes this shea butter special?

Buyers appreciate good quality pictures that show how the shea nuts are collected and processed into shea butter, or information on how the product helps local communities. Buyers often communicate ingredient stories with pictures and short stories on the end-product, or in their corporate image or cosmetic brand. Suppliers also need to support any statements they make with documentation.

11.1.5. Visit and exhibit at international trade fairs

A good understanding of international markets requires participation in a trade fair. The most suitable trade fair for shea butter suppliers targeting the European natural cosmetics segment is In-Cosmetics. A visit to In-Cosmetics by cooperatives and companies that aim to export to Europe will help them to understand the expectations of European buyers and build a network of potential business partners. Guidance by a consultant has several benefits. The consultant can help the participants to prepare their visit, introduce them to companies at the trade fair, provide specific market information and arrange logistics. The combination of visits to trade fairs with visits to companies in Europe is useful to learn about technological standards in Europe, business culture and buyer requirements.

Exhibition at In-Cosmetics becomes relevant when suppliers are ready to export and able to invite several promising contacts to their stand. Suppliers are ready to export when they have a solid understanding of European market requirements, can provide representative samples in compliance with European industry standards and have developed their product documentation and marketing story.

There are several benefits of exhibiting over visiting a trade fair. Firstly, the people responsible for buying shea products for European companies are mostly visiting stands of potential suppliers. Suppliers who are visiting the trade fair will usually not find these buyers at the stands of the European companies, which are occupied mostly by sales people. Secondly, exhibition by a supplier is perceived by buyers as a sign that the supplier is reliable. In fact, many buyers will only seriously consider a supplier when the supplier has exhibited several times. Thirdly, exhibitors are usually able to meet much more potential buyers than visitors.

Besides visiting and exhibiting at international trade fairs, organizing an international shea conference in East Africa offers an opportunity to draw international buyers to Uganda. GSA has shown interest to support organization of such a conference.

11.2. Supply chain activities

11.2.1. Protect shea trees

Apart from the importance of tree conservation for local ecosystems and communities, international buyers will appreciate measures to protect natural resources. The protection of trees has value for the marketing of shea butter as a sustainable product and simultaneously addresses concerns of buyers about future availability of shea.

In 2015, a national strategy for the conservation and sustainable use of the shea butter trees in Uganda was developed. The plan of Deep Planet for mapping shea trees using satellite images, as mentioned in the section on international stakeholders in the shea value chain, may support their conservation.

11.2.2. Organise collectors

There are two approaches to organising shea collectors. The first approach is to use existing cooperative structures. The second approach is to organise collectors in small groups of 20-150 collectors and hire extension workers to manage supplies. The first approach is suitable when cooperatives are strong and have the management capacity to secure supplies of good quality at competitive prices. The second approach is a good alternative when strong cooperatives are not present and when reliable private companies with a responsible sourcing approach can take the role of aggregator.

Industry sources have indicated that it's crucial for the success of a shea value chain that the cooperative or company involved in the aggregation of shea has a high capacity to manage the supply chain in terms of logistics, quality management, financing and responsible sourcing. International buyers will verify this management capacity through questionnaires that suppliers need to complete.

In supply chains with many female collectors, experience of the Swedish company AAK has shown that female extension workers can improve communication with the female collectors.

11.2.3. Optimise collection and storage

Compliance with market requirements starts with good collection practices. The African code of practice for shea kernel and shea butter provides good collection, storage and processing

practices. Industry sources have indicated that inappropriate collection and storage are major causes of moulding and subsequent high FFA values in the final shea butter. Collecting at least once a week to prevent moulding or germination of the shea nuts, sorting out kernels that have been affected by mould and storage in well-ventilated hygienic areas can improve compliance with requirements regarding FFA content. See the section below on Suitability of different processing methods for promising segments for more information.

Efficient collection and aggregation of shea nuts minimises cost and can help to make prices more attractive to buyers. Shea expert Peter Lovett mentioned the Nut Wizard as a potentially useful tool to improve efficiency of collection of shea nuts. The local market analysis by Carol Asiimwe provides more information on this topic of shea nut collection.

11.2.4. Obtain organic certification for collection and processing

Most buyers in the natural cosmetics market appreciate or even demand organic certified shea butter. Certification of shea butter will increase market opportunities and strengthens the image of the supplier as a responsible company with a sustainable production system. As shea tree conservation is an important subject in the shea sector in Uganda, organic certification can play an important role in further substantiating the story of environmentally sustainable shea nut collection.

A study for USAID in South Sudan shows that the shea production system in that country is organic by default and does not require costly adaptations to comply with the EU organic standard. Assuming that the situation is similar in Uganda, organic certification should be feasible there as well. However, one interviewed processor has indicated that organic shea nut collection may not be feasible in Uganda due to widespread use of agrochemicals by farmers in the shea parklands. Spraying chemicals in houses to combat malaria is another threat, as shea collectors often store their shea nuts in their houses.

According to a survey by FiBL, the certified area for organic shea nut collection in Uganda amounted to 406 hectares in 2020. As the total certified area for organic wild collection in Uganda was 157,922 ha, the actual certified area for shea collection might be significantly larger than 406 ha.

When aiming for organic certification, consult different reputable EU accredited certification bodies such as Ecocert, Soil Association or Control Union about certification procedures and costs to select the best offer.

11.2.5. Consider fair trade certification

Many cosmetics manufacturers in Europe appreciate fair trade in their supply chain. They will use information about fair practices in their own marketing stories. Fair trade certification, though not a common requirement, supports their marketing story.

Fair for Life is the most widely used fair trade scheme in shea trade. The wide recognition of this certificate is an advantage compared to other schemes. FairWild is less known but could be interesting as the scheme was specifically designed for wild collected ingredients and includes useful tools for natural resource assessment and sustainable collection practices that could support shea tree conservation. The best choice for a fair-trade scheme depends on the exact priorities of the supplier.

11.2.6. Select the most suitable primary processing method

Processing of shea involves primary processing of shea nuts into unrefined shea butter and can additionally involve secondary processing such as fractionation or refinement. Selecting the most appropriate primary and secondary processing method is a crucial step in developing a successful value chain.

The primary processing method has a large effect on both quality and price of shea. Before analysing effects of different processing methods on quality, price and suitability for supplying to the most promising market segments, a brief description of each processing method is provided below.

The traditional and semi-mechanised methods of butter extraction which is fully manual accounts for about 60% of all crude butter produced in the West African sub-region (Addaquay, 2004). According to research by Carol Asiimwe, manual processing accounts for only 40% of shea butter in Uganda.

Hand-crafted unrefined shea butter

Differences in traditional processing of shea from West Africa (paradoxa) and East Africa (nilotica):

Table 7 Comparison between traditional processing in West and East Africa

Traditional West African processing	**Traditional East African processing**
Boiling nuts	Boiling not required
Sun-drying nuts	
Crushing nuts	
Roasting kernels	Sun-drying kernels
Grounding/milling into fine paste	
Separation of oil through boiling with water and decanting	

Yields of traditional processing are usually around 20-30% by weight (Sources: Lovett, 2013; Addaquay, 2004). The processing of shea using the traditional method is mostly done by women.

Mechanically processed unrefined shea butter

Modern processing of shea nuts with an expeller:

- Heating in steam-jacked container (lower temperature required for shea nilotica than for shea paradoxa)
- Expression of the oil from the kernels with an expeller
- Filtration with plate and frame filters to remove impurities such as dirt

Shea butter from expellers contains many contaminants and has a brownish colour. Yields of expelling are around 30-40% (Sources: Lovett, 2013; Addaquay, 2004). The operation of machinery including mechanical expellers is mostly regarded as a man’s job.

Cold-pressed unrefined shea butter

Modern processing of shea nuts with a bridge press:

- Pressing of nuts
- Filtration with plate and frame filters to remove impurities such as dirt

Yields of cold-pressing are around 25-30%. For large volumes of shea nuts, the laborious batch process that requires several steps for each batch of nuts to be pressed is a disadvantage of the bridge press, compared to expellers that enable a continuous process (Source: Lovett, 2013).

Fully mechanised unrefined and refined shea butter

In some high-tech factories in West Africa, Europe and other international markets, processing of shea nuts into shea butter is fully mechanised and yields are optimised by adding another processing step. After expelling, the residue is washed with a solvent such as hexane for extraction of remaining shea. These factories can achieve yields of 42-50% (Source: Maanikuu and Peeker, 2017).

Establishing such a factory in Uganda is not feasible in the short-term as industry sources indicate that the large investments in such a factory require a processing capacity of about 40,000 tonnes of shea butter to make the factory profitable. This is more than the estimated trade in shea in Uganda at this moment. Moreover, particularly natural cosmetics markets offer many opportunities for shea nilotica and many natural cosmetics manufacturers prefer minimal processing and do not want shea butter to be extracted using processing aids other than water.

Suitability of different processing methods for promising segments

A small group of ethical cosmetics manufacturers explicitly promotes hand-crafting of their shea butter to position themselves as ethical suppliers. They only source hand-crafted shea. Another small group of natural raw cosmetics manufacturers promotes cold-pressing of their shea butter and only sources shea which has been cold-pressed.

The largest group of cosmetics manufacturers only considers the specifications of the shea butter regardless of the primary processing method. The two main challenges with the primary processing in Africa are the control of Free Fatty Acids and peroxide values. Refer to the chapter on requirements for an explanation of buyer specifications regarding Free Fatty Acids and peroxide values.

A high content of Free Fatty Acids is the result of hydrolysis. When nuts are not properly stored and dried, they contain a high amount of fungi (i.e. moulds). The enzymes (lipase) in the fungi hydrolyse the fats converting them to Free Fatty Acids. The heating of nuts for preparing the nuts for expelling destroys the enzymes, but excessive heating (boiling for more than 30 minutes) results in high peroxide values. As shea nilotica is more liquid than West African shea due to the higher olein content, less heat is required to prepare the nuts for expelling and the risk of high peroxide values is less.

Heating such as roasting of kernels also has a negative effect on colour. A light colour is particularly important when targeting buyers of unrefined shea butter. Buyers of refined shea butter still have the option to bleach the shea butter during refinement. Eliminating heat treatment and sorting out dark shea kernels improves compliance with this light colour requirement. As roasting of kernels is not necessary for Ugandan shea kernels, the risk of darkening is low for the different processing methods.

This implies that expelling and cold-pressing are both suitable processing methods for Ugandan shea nilotica to comply with buyer requirements regarding FFAs and peroxide values. In terms of yields, expelling (30-40%) is more attractive than cold-pressing (25-30%).

11.2.7. Optimise sorting and grading of shea butter

Buyers that use unrefined shea butter in their products have higher quality requirements than buyers that will first refine shea butter before using it in their products. Only the latter have the opportunity to improve quality through refinement.

Shea butter suppliers that target both markets for unrefined and refined shea butter can grade their shea butter accordingly. This allows them to supply their unrefined shea butter of high quality to users of unrefined shea butter and supply their unrefined shea butter of lower quality to refiners and eventually buyers of refined shea butter.

Quality consistency is a major requirement of buyers using unrefined shea in their cosmetics. Shea nuts are harvested from different areas under different environmental conditions (e.g. climate) and at different times during the year. Subsequently, processing is often done by small-scale processors in small batches with different technologies. All these variables have an influence on physical properties and the chemical profile of shea butter. Standardisation by blending of different quality shea butters is necessary to achieve a higher quality consistency as required by international buyers.

11.2.8. Building capacity of selected processors

According to local researcher Carol Asiimwe, Klaus Fehling of KFP and Marie Veyrier of the GSA, the lack of sufficient capacity for shea processing by most collector groups explains why most shea trade in Uganda comprises shea nuts. As shown above, particularly quality management for exports requires many resources. In addition to the equipment, processing requires considerable know-how on quality parameters (e.g. FFA), quality requirements (e.g. maximum FFA levels), control points (e.g. sorting out moulded shea nuts), monitoring (e.g. recording of measurements), testing (e.g. sample analysis), traceability (e.g. recording of sources) and management systems (e.g. systemic improvement of processing method). Only few companies in Uganda have the financial, technological and human resources to implement the quality management required for international markets.

Partnering with companies that already have sound knowledge of quality management systems reduces the risk of non-compliance with international market requirements for quality. Such companies can include existing exporters in Uganda and international buyers with an interest to support shea value chain development with advice on quality management. Aldivia may be one of the international companies interested in providing such support.

11.2.9. Optimise transport to international markets

Shea nilotica has a low melting point and will become liquid when exposed to higher temperatures. The shea solidifies when it cools down again. However, the shea butter becomes gritty, while many buyers appreciate the smooth texture of shea nilotica butter.

Refrigerated transport in reefers is expensive and may not be necessary when it is possible to maintain temperature above melting point using shade and ventilation. Overnight transport may provide another solution.

ANNEX I Identification of key stakeholders

The research included engagement of key stakeholders to obtain answers to research questions.

The key stakeholders are divided into African exporters, traders in international markets, shea-based cosmetics manufacturers and supporting organisations.

Major African suppliers in the global shea butter market

- Ghana Nuts Company Ltd
- Wilmar Africa Ltd/ Ghana Specialty Fats
- Timiniya Tuma Company Ltd (Ghana)
- Star Shea Ltd. (Ghana)
- Klaus Fehling Partners (Uganda): Contact person interviewed: Klaus Fehling

Major international traders in the global shea butter market

- Bunge Loders Croklaan (Netherlands). Contact person interviewed: Jean-Arnaud Janvier (Supply chain manager)
- AAK AB (Sweden). Contact person interviewed: Laura Schlebes (Sustainable Multi-oil Manager)
- Olvea Group (shea within Olvea: Marjorie Riesgo Saives)
- Cargill Incorporated. Interviewed: Jan de Jong
- Clariant AG (Switzerland)
- Archer Daniels Midland Company
- BASF SE
- Croda International Plc (France): Géraldine Mouton, purchasing
- Agrobotanicals, LLC
- Sophim S.A.
- AOS Products Private Limited (UK
- The Savannah Fruits Company (Ghana): Interviewed: Peter Lovett (former director)
- Ojoba Collective
- The HallStar Company (Italy)
- All Pure Nature Ltd. (Ghana)
- Lovinah Naturals Shea Radiance
- Jedwards International, Inc. (USA)
- Maison Karite Sociedad Limitada (Spain)
- Vink Chemicals Gmbh & Co. Kg (Germany)
- Shebu Industries
- Shea Therapy Ltd
- The Pure Company
- Suru Chemicals
- Shea tree (Czech Republic). Contact person interviewed: Vladivir Lusik
- Abdulaziz Alzahrani (Saudi Arabia)
- ATF Global (Turkey)
- Berg + Schmidt GmbH & Co. KG (Germany)
- Consensus Innovations & Technology (UK)
- Desmet Ballestra (Belgium)

- Dirkzwager Moordrecht B.V. ORGANIC CERTIFIED (Netherlands): Contact person interviewed: Bas Overbeek
- Exxenze (Switzerland)
- Fair Tales Ghana (Estonia)
- Fuji Oil Holdings (Japan)
- Wilmar (Singapore)
- Hawafel Company (Saudi Arabia)
- Henry Lamotte Oils GmbH (Germany). Contact person interviewed: Yannic Sommer (purchasing)
- IMCD Benelux (Netherlands): Mark Bierenbroodspot
- Jaqston Trading Limited (Russia)
- Lemon Green Organic Sdn Bhd (Malaysia)
- Manorama Industries Limited (India)
- Mills AS (Norway)
- Gustav Heess (Germany: Lars Lührs (sales and purchasing manager)
- FairOils (Belgium)
- Inovia International (UK)
- Starlight Products (France)
- Quimdis (France)
- Aldivia (France). Contact person interviewed: Francois Schall (agro sourcing engineer)
- Kerfoot Group (UK)
- Esperis (Italy)
- De Lange (Netherlands). Contact person interviewed: Jasper Vossen (general manager)
- BSP Sourcing / Bioaktive Specialty Products (Germany)

Major shea-based cosmetics manufacturers

- Africa Ouro Karite (Spain)
- Aiysura (UK)
- Di Luca & Di Luca (Sweden)
- Laboratoires M&L (L'OCCITANE EN PROVENCE) (France)
- Liha Beauty (UK)
- Lonaen (Poland)
- Maison Karite Sociedad Ltd (Spain)
- Naturally Tribal Skincare Ltd (UK)
- Olam Food Ingredients UK Ltd (UK)
- Oyémam (Norway)
- The Body Shop (UK): Rosie Akester (Community Trade Senior Buyer - Africa & UK)
- Florame (France): Angela Bashos (purchasing)
- Farfalla (Switzerland): Markus Wegmann (purchasing)
- La Saponaria (Italy): Panaroni Wigi
- Nateva (France)
- Primavera (Germany)
- Bioturm (Germany)
- Naissance (UK). Contact person interviewed: John Brebner

- Alban Muller Group (France). Contact person interviewed: Alban Muller
- Neal's Yard Remedies (USA). Contact person interviewed: Susan Curtis
- Cime (Belgium). Contact person interviewed: Walter de Boeck

Supporting organisations in shea sector

- Global Shea Alliance. Contact person interviewed: Marie Veyrier: mveyrier@globalshea.com
- Uganda National Council for Science and Technology. Dr Julius Ecuru (Assistant Executive Director, Science and Technology Management) j.ecuru@uncst.go.ug / +256 772 595 233; +256 414 705 500/4
- Intertek Food Services (laboratory testing)
- Fairtrade International

ANNEX II Questionnaires for interviews with key stakeholders

Questions for R&D departments of European companies already using shea nilotica

Properties and benefits:

- Why do you use shea nilotica in your products? What makes shea nilotica an interesting product to formulate with?
- What are the main cosmetic benefits of shea? And shea nilotica? (functional/active)
- What is the difference in functional/active properties of shea nilotica when compared to other vegetable butters?
- What is the difference in unsaponifiables content between West African shea and Ugandan shea?
- What is the difference in cinnamate esters (with sunscreen function) content between West African shea and Ugandan shea?
- What is the difference in bioactivity between West African shea and Ugandan shea?
- What is the importance of peroxides values as a measurement for oxidation and shelf life?

Questions for European cosmetic manufacturers or vegetable oil/butter importers

European market:

- How open is the European market for new vegetable oils? What would make buyers interested in new oils?
- What room is there on the European market for another shea butter?
- What are the main vegetable butters on the European market that shea competes with?
- Why are cosmetic companies interested in normal shea butter?
- Do you differentiate between East and west African shea butter in your production lines? How do you select the product and producer and how do you import?
- What kind of companies are we talking about for growing natural ingredients interest? And how much share do they have on the international market? Small niche cosmetic companies. How relevant are they in the cosmetics sale?

Requirements:

- What are specific requirements for applications in different cosmetics products such as cream, shampoos, soaps and suncare products?
- What is the relevance of Access and Benefit Sharing requirements for markets in Europe?

Doing business:

- What are the experiences of European buyers with doing business with Ugandan (shea) suppliers?

- And West African shea suppliers?

Promotion:

- Besides attending trade fairs, what are other relevant opportunities for promotion?
- What do shea nilotica producers need to distinguish themselves from West African shea producers?
- What could be an interesting marketing story for shea nilotica? Which elements should it contain?

Distribution:

- How can Ugandan shea suppliers benefit from the worldwide growth in e-commerce?
- How do manufacturers import shea products? Mainly as kernels, butter, fractionated? Maybe different type of manufacturers import different products – conventional cosmetic companies I assume mainly kernels, while smaller natural cosmetic companies unrefined shea butter?

Prices:

- What are the latest price levels for West African shea and East African shea?
- And for competing vegetable butters on the European market?
- What are the different price levels for unrefined and refined shea butter?
- What are the different price levels for different grades of shea butter?
- Apparently, in the cosmetic industry the price difference between West and East African shea butter does not play such a big role?

Questions for international cosmetic companies working in both Asia and Europe and Asian brands and traders

Asian market (in particular China):

- How big is demand for shea from China and demand for Ugandan shea nilotica in particular?
- What are the main differences between the cosmetics markets in Asia and in Europe? How does legislation compare between the two markets?
- What is the interest in natural ingredients for cosmetics in Asian markets? How does that compare to Europe?
- How large is the natural cosmetic market in Asia? And for natural ingredients? What are the developments in those markets? How does that compare to Europe?
- What are the main vegetable butters on the Asian market that shea competes with?
- How open is the Asian cosmetics market to new natural ingredients? Or new vegetable butters?
- Do voluntary standards play a role for manufactures and for consumers?

Requirements:

- What are the legal requirements relevant for shea in prioritized Asian markets?

- What is the relevance of Access and Benefit Sharing requirements for markets in Asia?
- What are specific requirements for applications in different cosmetics products such as cream, shampoos, soaps and suncare products?

Doing business:

- What are the experiences of Asian buyers with doing business with Ugandan (shea) suppliers?
- And West African shea suppliers?

Promotion:

- Besides attending trade fairs, what are other relevant opportunities for promotion?
- What do shea nilotica producers need to distinguish themselves from West African shea producers?
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Distribution:

- How can Ugandan shea suppliers benefit from the worldwide growth in e-commerce?

Prices:

- What are the latest price levels for West African shea and East African shea?
- And for competing vegetable butters on the European market?
- What are the different price levels for unrefined and refined shea butter?
- What are the different price levels for different grades of shea butter?

Questions for Uganda National Council for Science and Technology

- What Access and Benefit Sharing requirements are relevant for shea from Uganda?
- Are there already cases in Uganda to come into an agreement between the collector and the buyer documented?
- Is the Material Transfer Agreement already a requirement for the export of natural resources from Uganda? --- Export Promotion Board.