CBI
Ministry of Foreign Affairs

CBI Product Factsheet:

Shea Butter in Europe

Introduction

Shea butter is extensively used in cosmetics, health products and in the confectionery and chocolate industry (as an ingredient in cocoa butter alternatives). Shea butter and its fractions can also replace other edible vegetable oils or fats in other food applications. While demand for shea butter is growing, sustainable production of shea butter is at the centre of attention in European markets and opportunities are increasing for certified producers and exporters in sub-Saharan Africa.

Product definition

Shea butter is an edible vegetable oil or fat, extracted from sun-dried kernels of the shea tree (*Vitellaria paradoxa* syn. *Butyrospermum paradoxum* or *parkii*) recorded as indigenous to 21 countries[1] of sub-Saharan West, East and Central Africa. The main fatty acids of shea butter are oleic and stearic acid, with a higher proportion of the latter in the Western variety, that is, the sub-species *paradoxa* has a higher melting point butter as compared to softer butters from ssp. *nilotica* sourced east of the Adamawa highlands.

Shea is most highly valued for the symmetrical Tri-Acyl-Glycerol (TAG), Stearic-Oleic-Stearic (StOSt) rich fraction, prized for its melting properties when used as an ingredient in cocoa butter alternatives, baking products and margarines. The butter is also an emollient and humectant widely appreciated in skin moisturisers and formulation of other personal care products. Shea butter has a uniquely large fraction of unsaponifiables (typically 5-7%) consisting of bioactives that include triterpenes (with anti-inflammatory, anti-arthritic and sun protection properties), tocopherols (anti-oxidants), phytosterols (purported to have cholesterol and tumour reducing properties) and catechins or flavanols (poly-phenols with anti-oxidant properties).

Shea is listed in the Harmonised Trade System (HTS) codes[2], although there is need for clarification. Shea nut trade may be officially listed under 120792 or 1207991000 but could also just be placed under 1207, making it difficult to differentiate from other oil-crops exported from Africa, for example palm or sesame. In addition, imports into European countries are often not listed, for example into Denmark, and the annual (January-December) HTS figures do not line up with the reality of the shea nut harvest (May-August) and trading seasons (September-April). Shea butter was listed under the 151590 group, yet the specific category for shea butter is apparently now redundant. Various shea- containing cosmetic products can be found under 33, and in soap products under 34 listed categories.

Product specifications

Quality

General:

- Unrefined shea butter has a 'clean' creamy, pale-yellowish or ivory colour and due to the stearic-rich composition it may even have a green hue. Fully refined whole butter and fractionated stearin is pure white.
- The Global Shea Alliance recommends that only mature fresh fruit are collected (without knocking or shaking trees) and within a week, these must be immersed in boiling water for 15-40 minutes. Boiled shea nuts must then be quickly sun-dried (de-husking within 3-4 days), cleaned of impurities and stored in clean jute sacks (to minimise pesticide contamination avoid those pre-used for cocoa) in well-ventilated warehouses once kernels are hard with a moisture content below 7%. Refer to Scientific Animation Without Borders (SAWBO) for an animation on good production practices for shea butter.
- Currently there are no *industry-agreed* grading systems for shea nuts or butter (despite many inappropriate attempts). The Global Shea Alliance now has a working group actively developing appropriate shea nut standards for, and by, the industry[3].
- Although whole shea butter is widely consumed in Africa and fractions are commonly used in chocolates and other European edible products, it is not listed in the CODEX standard for named vegetable oils for human consumption (CODEX STAN 210-1999).
- There are many methods to extract, refine and fractionate shea butter. Ensure the preferred process is confirmed according to the buyer's specifications and market being sought.
- Prevent adulteration and contamination by other foreign materials (for example, dust, stones, insects, metal objects, etc.) by keeping facilities and equipment clean.

[1] *Benin, Burkina Faso, Cameroon, Central African Republic, Cote d'Ivoire, DRC, Ethiopia, Gambia, Ghana, Guinea-Bissau, Guinea-Conakry, Mali, Niger, Nigeria, Sierra Leone, Senegal, South Sudan, Sudan, Tchad, Togo and Uganda*

[2] *http://www.trademap.org*

[3] *http://www.globalshea.com/work/projects/13/Shea-Kernel-Quality-Standards*

- Pure unrefined shea butter should be packaged under hygienic conditions, have a low Free Fatty Acid content (FFA preferably <3%), low peroxide value, preferably <10meq kg^{-1}), low impurities (<0.1%) and moisture content (<0.1%).
- Depending on the variety or fraction of shea butter, buyers may also specify the iodine value (30-80 mg I_2/g) and a melting point of between 20°C and 40°C to signify appropriate minimum purity.
- Ensure proper storage and transportation (see 'Packaging').

Organic (if relevant)

- Comply with organic standards for the production of the raw material: no use of synthetic pesticides, use of natural fertilisers, natural control of weeds, etc.
- Do not use solvents or other chemical substances, disallowed under organic standards, during butter extraction.
- Preferably dedicate the processing plant to the production of organic butter only, in order to avoid contamination from non-organic particles. If this is not possible, ensure thorough cleansing of machinery and equipment between conventional and organic production.
- Refer to the section on legal requirements for additional information on organic certification in Europe.

Labelling

- Ensure traceability of individual batches.
- Use the English language for labelling unless your buyer has indicated otherwise.
- Labels must include the following:
    - Product name
    - Batch code
    - Name and address of exporter
    - Best before date
    - Net weight
    - Recommended storage conditions

Organic (if relevant): Name/code of the inspection body and certification number.

Packaging

- Bulk shea butter can be prepared 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, flexitank or isotanks
- Unless sourced sterile from manufacturer, all materials and containers are recommended to be washed with detergent and rinsed thoroughly with clean warm water and dried before use.
- Store in tightly sealed containers in cool dry dark place; do not expose-to temperatures above 35° C.
- Shea nuts can be stored for a maximum of five years with correct conditions, whereas shea butter, even refined, should not be stored for more than 18 months.

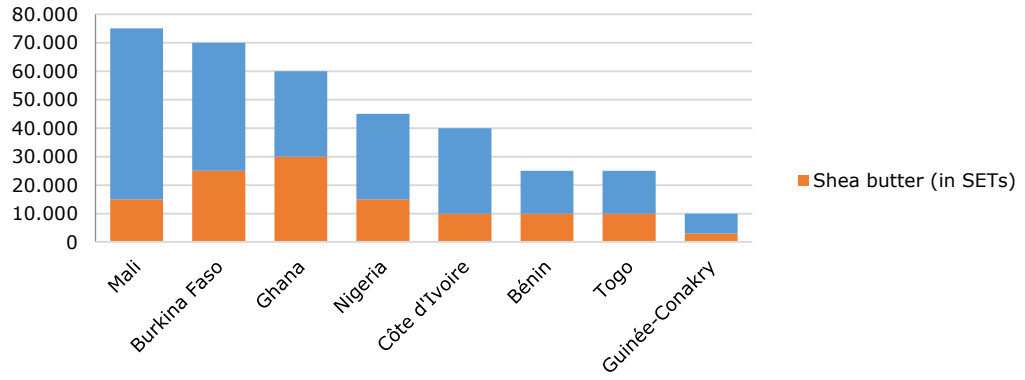
Trade and Macro-economic statistics

As explained in the section 'Product definition', shea butter cannot be categorised under one specific HS code, making it difficult to analyse trade and other macro-economic statistics for this product.

The Global Shea Alliance's presentation The Shea Industry's Economic Impact in Africa quantifies the market for shea in terms of exports from shea-producing countries in Africa. The calculation combines shea nuts and shea butter (estimated shea butter converted pre-export), where the total is given in shea nut equivalent tonnes (SETs).

Total shea exports in 2011 amounted to 350,000 Shea Nut Equivalent Tonnes (SETs). Mali was the leading producer, accounting for around 21% of total exports, closely followed by Burkina Faso (20%). Ghana (17%), Nigeria (13%) and Côte d'Ivoire (11%) also played a major role.

Figure 2. Estimated total shea production by main exporting countries in Africa, in SETs, estimated share of shea butter converted pre-export*, in 2011



**Figures given as dry kernel equivalent, i.e. 1 ton butter exported requires 3 tons of shea nuts and so butter export is given as kernel (shea nut) equivalent.*

Source: Dr. Peter Lovett in The Shea Industry's Economic Impact in Africa, Global Shea Alliance, 2011

Tip:

- With growing international demand for shea products, coupled with increased in-country processing capacity, it is worthwhile to carefully consider where to source your butter from. For example, it may be essential that you can demonstrate traceability and sustainability at source; or it may be important to locate a geographic area where there is less competition from other exporters.

Market trends

Sustainability in supply chains

- Sustainability has become the centre of many policies followed by companies, institutions and individuals across Western Europe. The need for more sustainable products and practices has made European importers more involved in agricultural practices in shea-producing countries.
- In 2013, the Global Shea Alliance (GSA) established the Sustainability Working Group, which integrates the sustainability efforts within the shea industry. The Sustainability Working Group created a proposal for a Sustainability Program, which included sustainability guidelines, three initial project concept notes, and qualifications for program participation, which was unanimously approved by GSA members in 2014. Read more about the GSA Sustainability Program on its website.

Tips:

- Promote sustainable and ethical aspects of your production process and investigate whether you can support these claims with certification. Make sure to check out the 'Niche requirements' section of this document for further information on the standards available.
- Before engaging in a certification programme, be sure to determine (in consultation with your potential buyer) whether this label has sufficient demand in your target market and whether it would be cost-beneficial for your product.
- Keep track of sustainability initiatives within the shea industry by linking up with the Global Shea Alliance.

Aflatoxin in shea nuts

- The European food industry is highly concerned with the expansion of aflatoxin contaminations in many nuts and their derivatives. In order to combat the situation, it has enforced strict regulations and requirements to avoid the entrance of contaminated raw materials into Europe.
- Shea nuts are a poor substrate for aflatoxin bacteria[4], although care during post-harvest processing is advised, e.g. following GSA's recommended practices.

[4] *http://aem.asm.org/content/43/5/1210.full.pdf*

- The ECHO community has published a vast report on aflatoxin contamination. It is noted that there are cases where the aflatoxin was still traced in, for instance, refined oils of contaminated seeds and nuts. With the increasing awareness on the harming effects of aflatoxin, producers should be extra cautious when harvesting, storing and transferring the shea nuts in order to avoid the subsequent contamination of the shea butter.

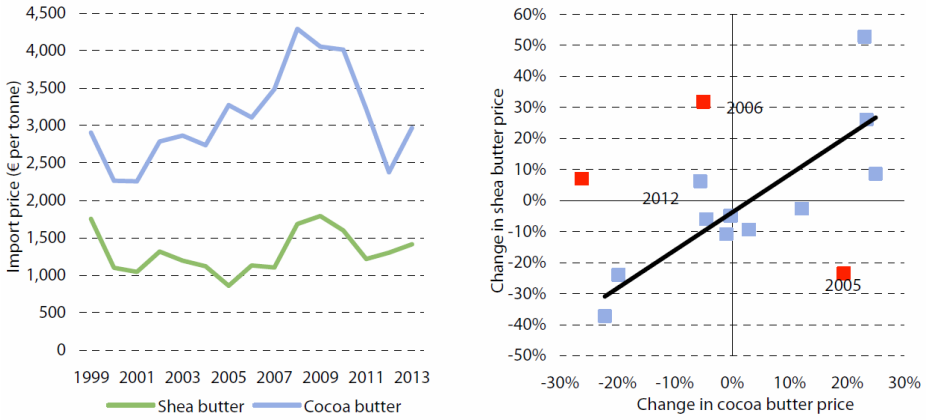
Tips:

- Pay special attention to legislation concerning aflatoxin contamination of food ingredients and make sure to reach at least the minimum requirements.
- Develop a quality assurance system for your shea products. Note that HACCP (see legislation section) is a minimum requirement for the European food industry. Consult your buyer for any requirements.

Rising demand for chocolate will affect shea butter

- During the Global Shea conference of 2014, LMC International presented the summary results of an extensive World Cocoa and Cocoa Butter Equivalent (CBE) markets research[5]. Among their findings was that demand for CBEs is closely linked to demand for chocolate confectionery. It was also confirmed that cocoa butter prices directly affect shea butter prices.

Figure 3. Comparison between cocoa butter and shea butter prices



Source: LMC International

- According to the research, world consumption of chocolate has been increasing for the past years and it is forecasted to keep increasing in the years to come. The rising demand for chocolate has pushed cocoa butter prices higher, thus shifting the chocolate confectionery producers into substituting cocoa butter with cheaper options such as vegetable oils and shea butter. CBEs are estimated to cost 30-40% less than cocoa butter.
- The Global Shea Alliance confirms the rising demand for CBEs derived from a mix of shea stearin and palm mid fraction by confectioners. CBEs report a yearly growth of 10%, compared to 3-4% growth in the chocolate market (based on 2010 figures; the market has slowed down following the impact of the economic crisis).

Tips:

- Accompany the trends in the European chocolate market. Make sure to check the website of LMC International.
- Follow cocoa prices on the website of the International Cocoa Organization. If prices of cocoa (butter) are high, food manufacturers are more willing to use alternatives like shea in confectionery products.

High standards in the chocolate industry

- Certain markets and industries in Europe are expected to remain resilient to using CBEs.
- In particular, the high quality chocolate industries in countries such as France, Italy and Belgium, substituting cocoa butter with its equivalents is considered a downgrade and is rarely applied. Many artisanal chocolate producers in these countries have denied the cocoa butter substitution and continue to only use cocoa butter.
- As a reaction to the directive 2000/36/EC concerning cocoa butter substitution, these industries adopted new logos informing consumers on the manufacturing of products which use exclusively cocoa butter.

[5] *https://www.lmc.co.uk/Cocoa-Alternatives_to_Cocoa_Butter_The_outlook_for_CBEs_CBSs_and_exotic_fats*

Tips:

- Make sure to target your markets correctly. Avoid traditional high quality chocolate industries in countries such as Belgium, Italy and France.
- Check the website of Cabisco to familiarise yourself with the European chocolate and confectionery market.

With which legal requirements must my product comply?

Maximum level for erucic acid in oils and fats: European legislation fixes a maximum level of erucic acid in oils and fats intended for human consumption. The level of erucic acid contained in the products concerned must not exceed 5% of the total level of fatty acids in the fat component. Unadulterated shea butter does not contain erucic acid.

Tip:

- Consult the maximum levels for erucic acid in the EU Export Helpdesk.

Extraction solvents for food: There are European Union rules for the marketing and application of extraction solvents used in the production of foodstuffs and food ingredients.

Tip:

- Identify the extraction solvents for food that you can use, along with the conditions for their use.

Contaminants in food: The European Union has laid down maximum levels of contaminants in food, including ingredients such as vegetable fats. With regard to maximum levels for polycyclic aromatic hydrocarbons (PAHs) in foodstuffs, there have also been recent regulatory updates that have implications for shea butter produced from smoked kernels being used in edible products.

Tip:

- Read more about contaminants in the EU Export Helpdesk, and consult the European Commission's factsheet on food contaminants: Managing food contaminants: How the EU ensures that our food is safe and EU regulations on PAHs.

Maximum Residue Levels (MRLs) of pesticides in food: European legislation has been laid down to regulate the presence of pesticide residues (MRLs) in food products.

Tip:

- If the agricultural raw material has been treated with pesticides, verify that residues remain within limits. For additional information, read about MRLs in the EU Export Helpdesk.

Additives, enzymes and flavourings in food: The European Union has set a list of permitted flavourings and requirements for their use in foodstuffs intended for human consumption, which includes vegetable fats. This is particularly relevant to food manufacturers. However, insight into this legislation can help you to understand their requirements.

Tip:

- Familiarise yourself with the concerns of the end-users of your products by checking European Union legislation on Additives, enzymes and flavourings in food.

Food business operators shall put in place, implement and maintain a permanent procedure, or procedures, based on the HACCP (Hazard Analysis and Critical Control Points) principles. This also applies to the food import to and the food export from the European Union.

Tip:

- Ensure compliance with European Union legislation on Hygiene of foodstuffs (HACCP).

Non-Cocoa Butter Fats: The European Union has restricted use of Cocoa Butter Alternatives (Equivalents, CBEs and Improvers, CBIs) to a maximum of 5% of the chocolate product. Shea is one of the six species currently allowed as an ingredient in these non-cocoa butter fats.

Tip:

- Learn about Directive 2000/36/EC, which sets the parameters for cocoa butter substitution in the European Union.

Labelling of Vegetable Oils and Fats: On 25 October 2011, The European Parliament and The Council of the European Union approved a new regulation which includes re-labelling of vegetable oils and fats on food products – a compromise text aimed at ensuring that food labels carry essential information in a clear and legible way. Therefore by 13 December 2014, all edible products containing shea will have to be labelled accordingly, instead of just stating vegetable fat, oil or non-cocoa butter fats.

Tip:

- Learn about Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers.

Figure 1. Extract from Reg. No 1169/2011: Annex VII, Indication and designation of ingredients, Part A— specific provisions concerning the indication of ingredients by descending order of weight

Category of ingredient	Provision concerning indication by weight
9. Refined fats of vegetable origin	May be grouped together in the list of ingredients under the designation 'vegetable fats' followed immediately by a list of indications of specific vegetable origin, and may be followed by the phrase 'in varying proportions'. If grouped together, vegetable fats shall be included in the list of ingredients in accordance with Article 18(1), on the basis of the total weight of the vegetable fats present. The expression 'fully hydrogenated' or 'partly hydrogenated', as appropriate, must accompany the indication of a hydrogenated fat

*E.g. "Cadbury Trick or Treat size tub" now lists the following ingredients: Sugar, Glucose Syrup, Vegetable Fats (Palm, **Shea**), Dried Skimmed MILK, Cocoa Mass, Cocoa Butter, Dried Whey (from MILK), MILK Fat, Emulsifiers (E471, E442), Sodium Bicarbonate, Salt, Flavourings, May contain NUTS, EGG, SOYA[6] and "Nestlé aero bubble selection" now lists the following ingredients: Sugar, Dried Whole Milk, Cocoa Mass, Cocoa Butter, Vegetable Fat (Palm/**Shea**/Illipe/Mango/Kokum Gurgi/Sal), Lactose and Proteins from Whey (from Milk), Whey Powder (from Milk), Emulsifier (Sunflower Lecithin), Butterfat (from Milk), Flavouring, Milk Chocolate contains Cocoa Solids 25% minimum, Milk Solids 14% minimum and Vegetable Fat in addition to Cocoa Butter[7]*

What additional requirements do buyers often have?

Food safety management: Buyers commonly require their suppliers that they have a quality/food safety management system in place. These systems require companies to demonstrate their ability to control food safety hazards in order to ensure that food is safe at the time of human consumption.

Tip:

- Suppliers can apply a basic HACCP system. However, if they aim to supply food manufacturers more directly, it is necessary to have a certified food safety management system recognised by the Global Food Safety Initiative, such as ISO 22000, British Retail Consortium or International Featured Standards - Food: Food Safety Management Systems. Visit the website of the Global Food Safety Initiative for more information.

[6] *http://www.waitrose.com/shop/DisplayProductFlyout?productId=146237*
[7] *http://www.waitrose.com/shop/DisplayProductFlyout?productId=161870*

What are the requirements for niche markets?

Regulation (EC) 834/2007 on organic agriculture: The European Union has established requirements on the production and labelling requirements with which an organic product of agricultural origin must comply in order to be marketed in the European Union as "organic".

Tips:

- If you do choose to obtain a certificate for organic production, refer to the European Union Regulation for organic production, and be sure that your organic certification is harmonised with the European legislation.
- For information on organic certification in Europe, visit the website of Organic Farming in the European Union.

Fair Trade: There are a number of socially responsible standards appropriate for shea butter including IMO's Fair for Life, which ensure traceability, above local-market prices and health and safety in the working environment; Ecocert's closely linked equitable trade scheme, which offers a fair trade version of organic butter; and FLO-cert where a minimum price is paid to shea butter producers (currently set at about four times local market prices).

Tips:

- Before jumping into Fairtrade certification, make sure to assess (in consultation with your potential buyer) if this label has sufficient demand in your target market and whether it will be cost beneficial for your product.
- Although FLO certification is the leading fair trade certification scheme in Europe, you should also check out other schemes for shea butter certification including IMO's 'Fair for Life' and Ecocert Fair Trade.

Ethical and Environmental Responsibility: Since shea trees are sustainably managed in agroforestry farmed-parklands (which are rich in biodiversity) and traditionally hand-collected, and naturally processed, only by women; there are growing opportunities to promote the unique production of shea in Europe.

For example, by being granted membership of the Union for Ethical BioTrade (UEBT)**,** you can demonstrate being part of a growing international community of influential actors committed to ensuring their sourcing practices promote the conservation of biodiversity, respect traditional knowledge and assure the equitable sharing of benefits all along the supply chain.

In May 2013, the Geneva-based Organization for an International Geographical Indications Network (oriGIn) and the Association of European Regions for Products of Origin (AREPO) organised a conference entitled, 'Geographical Indications in the 21st century'. Shea butter was highlighted as an African crop which provides economic sustainability for rural families that could benefit from having **Geographical Indications** (GIs). GIs refer to collective intellectual property protection referring to products having a specific geographical origin from which they derive particular qualities, reputation or characteristics.[8]

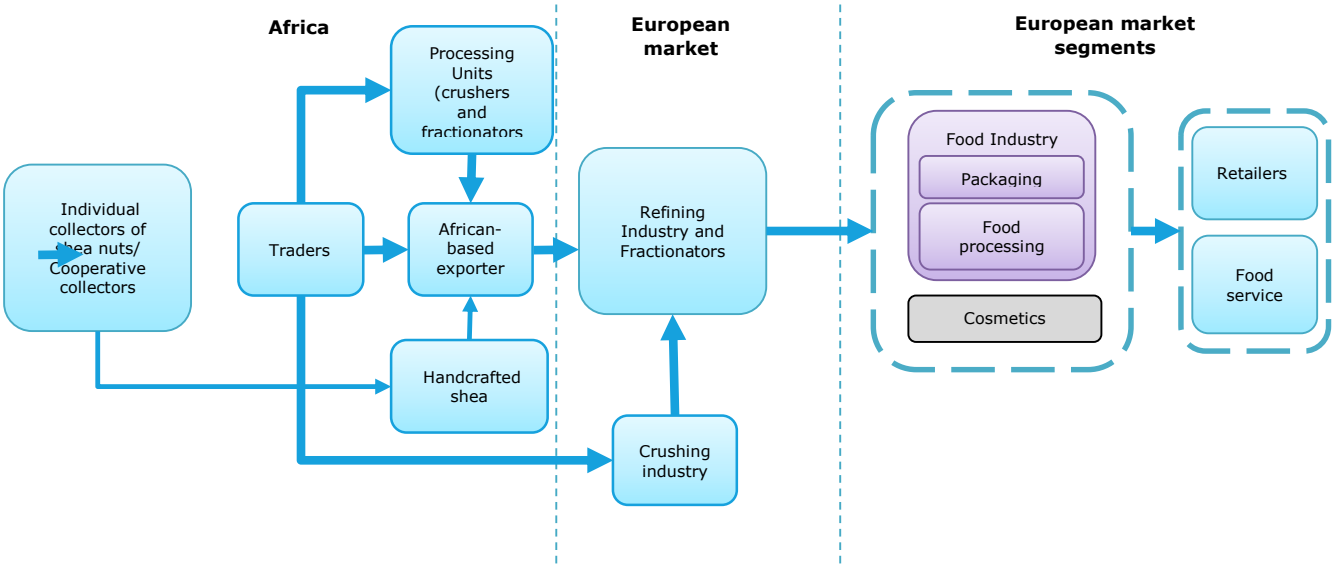
Other certifications which may also enable promotion in niche edible and cosmetic markets include verification of the **Halal**, **Kosher** and cruelty-free nature of shea production and products. The latter is particularly relevant in the European Union which, since 11th March 2013, bans the sale of all animal-tested cosmetics[9].

[8] *http://www.ip-watch.org/2013/06/04/protection-of-local-gi-products-can-benefit-women-speakers-say/*
[9] *http://ec.europa.eu/consumers/archive/sectors/cosmetics/files/pdf/animal_testing/com_at_2013_en.pdf*

Market channels and segments

Market channels

Figure 4. Trade channels for shea butter in Europe



The trade structure of the shea industry begins from the shea nut pickers in Africa, and ends mainly as a cocoa butter equivalent (CBE) in the food industry:

- The dry kernel is collected by either individual collectors or (women's) collectives and is then sold to local traders/agents or traditional local processors.
- The traders provide the bulk of shea nuts to either the local processing industry, where it is turned into butter, or they supply them directly to African exporters. These exporters take over the transfer of the nuts to the European crushing industry.
- The majority of extraction and refining of shea butter has traditionally been undertaken at the plants of large-scale European companies.
- European manufacturers in the chocolate and other food industries traditionally preferred to buy the shea nuts, as opposed to the butter, so that they could have as much control as possible over the processing and quality of the final product. Nuts were also preferred because they can be stored for up to five years in the right conditions, while the butter is more expensive to store and deteriorates more rapidly.
- Nonetheless, there has been a significant shift of shea butter extraction toward shea-producing countries in Africa in the past years. This shift has given producers more control over the shea chain, thus enhancing value addition and compliance with European quality requirements. Currently, West Africa has the capacity to process at least half of its exported crop into butter, including both mechanical and handcrafted facilities. Of approximately 20 shea-processing plants in West Africa (whether active, being renovated or under construction - various sizes), half are African-only owned, 33% are joint ventures between an African and a foreign firm(s), and 20% are under foreign ownership. In terms of processing capacity, however, about 47% consist of mixed ownership (joint ventures), 35% are foreign-only ownership, and only 19% are African-only ownership.
- Out of the total shea butter exports from Africa, 85-90% goes into food products and the rest is used in the cosmetic sector. The food industry mainly uses shea stearin as an ingredient as a cocoa butter equivalent (CBE) and cocoa butter improver (CBI) in the chocolate and confectionary industry. There are additional opportunities in the food market for food-grade refined olein and whole shea butter as a palm oil replacer, for instance.

Tips:

- Develop an appropriate post-harvest system for the shea nut in order to avoid subsequent contamination of the butter. A well-developed and documented system will also remove the need for further refining before entering the European markets, and will thus enhance your value addition.
- Link up with sector associations and be part of cooperatives if you cannot reach the required volumes by yourself.
- Comply with sustainability standards required by your specific segment and stay up-to-date on developments in this respect. Link up with the Global Shea Alliance to stay up to date on developments in sustainability, value addition and processing activities in your region.
- Comply with sustainability standards required by your specific segment and stay up-to-date on developments in this respect. For information on the various sustainability standards visit the ITC website on the voluntary standards that are available for exporters.
- Learn more about trade channels and segments in the Europe by consulting the CBI document on Channels and Segments for Vegetable Oils.

Market segments

Shea butter is mostly used in the food and cosmetics industry in Europe. Within the food industry, it is only used as an ingredient in food manufacturing; currently shea butter is not sold in the consumer market for direct human consumption (whereas in the cosmetics market it is).

The primary application of shea in the food industry is in the form of shea stearin, used as an ingredient in cocoa butter equivalents (CBEs) and cocoa butter improvers (CBIs). However, shea has many potential applications as a palm oil substitute in various food products.

The market for shea butter can be further segmented into non-certified and certified, where the main difference lies in the price level. However, certified shea is currently only available in the cosmetic market.

For organic-certified shea, a premium margin of 25-30% can be expected, whereas the Fairtrade minimum price (FLO) is currently about four times local market prices. This price differential leads to a situation where, for instance, a large part of shea butter processed organically ends up being sold on the conventional market as a non-certified product.

Useful sources

- The Global Shea Alliance is an organisation dedicated into creating a sustainable shea industry worldwide. For trade information, market trends and industry news you can access the following website - www.globalshea.com
- The EU Vegetable Oil and Protein meal Industry - www.fediol.eu
- The Food and Agriculture Organisation of the United Nations has a variety of agricultural databases - faostat3.fao.org/home/index.html
- For information on the latest market developments in the Oils and Seeds sector, visit Public Ledger - publicledger.agra-net.com/oils

More information

EU Expanding Exports Helpdesk - http://exporthelp.europa.eu - go to 'trade statistics'.
Eurostat - http://epp.eurostat.ec.europa.eu/newxtweb - statistical database of the EU. Several queries are possible. For trade, choose 'EU27 Trade Since 1995 By CN8'International Trade Statistics - http://www.trademap.org – you have to register

CBI Market Intelligence

P.O. Box 93144
2509 AC The Hague
The Netherlands

www.cbi.eu/market-information

marketintel@cbi.eu

This survey was compiled for CBI by ProFound –Advisers In Development
in collaboration with CBI sector expert Dr. Peter Lovett

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