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Market and Technical Survey: Shea Nuts

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Introduction

Shea nuts are primarily grown in West and Central Africa in the semi-arid Sahel, referred to by traders as the "Shea Belt". Vitellaria paradoxa and Vitellaria nilotica are the two main varieties. Vitellaria paradoxa is exported in the largest volume and grows throughout the West African region. Vitellaria nilotica is produced primarily in northern Uganda and southern Sudan. Shea nut products, the solid fat (butter or stearin) and the liquid oil (olein), are ideal for use as raw materials in cooking oil, margarine, cosmetics, soap, detergents and candles, but it has found its primary market niche as a substitute for cocoa butter in the chocolate and confectionery industry.

Production Method

Shea nut trees grow widely and naturally in West Africa. They only begin to bear fruit after about 20 years and do not reach maturity for 45 years. They may continue to produce nuts for up to 200 years after reaching maturity. The long period taken to reach maturity has discouraged plantation planting, although they are used as shade trees for other crops in certain dry areas. Also the fact that supply far outstrips demand has fouled attempts to domesticate the trees.

The nuts, which are embedded in a soft fruit, fall to the ground during the harvesting period (typically June through August). They are then buried in pits which causes the pulp to ferment and disintegrate and produces enough heat to prevent germination. The nuts are dried for a few days and are later shelled and winnowed, usually by hand. The kernels are dried further to reduce moisture content from about 40 percent to about 7 percent.



The Shea Nut Tree (Photo Credit: KARITEA, France)

A process called fractionation separates the oil (olein) and butter (stearin). This can be done locally and allows for the extraction of the liquid oil - which is much more valuable to West Africans because of its nutritional content - by a process involving the heating and kneading of the crushed kernels and straining the resultant oily mass.



Shea Nuts (Photo Credit: CREDO, Finland)

Manufacturers in the chocolate and other food industries prefer to buy the shea nuts as opposed to the butter so that they can have as much control as possible over the processing and quality of the final product. Nuts are 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. Exports of shea butter from African countries tend to be unrefined.

Shea butter is produced on a commercial scale in Europe using hydraulic presses on the nuts and then placing them in hot air ovens. The product is then bleached with a hexane solvent. The butter must then be stored and transported in cool conditions and in airtight containers to avoid becoming rancid.

For a more detailed description of the production method, please refer to excerpts of a Fintracproduced technical report in Annex A.

Supply

Shea nut supply far outstrips demand. Over 600,000 MTs of the dominant variety, *Vitellaria paradoxa*, is produced in West Africa (see Table 1 below). Most is used as a cooking oil or as a butter for the skin and hair locally. The other variety, *Vitellaria nilotica*, has a superior quality which is preferred by the cosmetics firms (see excerpts from a shea nut technical report produced by Fintrac in Annex A). Unfortunately this variety is primarily grown and processed in northern Uganda and southern Sudan, both currently states of civil unrest, and so it is generally unavailable on the market. Several other countries, including Israel and Germany, are attempting to replicate this variety. A contact for the project that is marketing this variety can be found at the end of this survey.

Table 1: Shea Nut Production, 1993-98 (MTs)							
	1994	1995	1996	1997	1998		
Benin	15,500	15,000	15,000	15,000	15,000		
Burkina Faso	70,100	75,700	70,000	70,000	70,000		
Côte d'Ivoire	19,785	20,000	20,000	20,000	20,000		
Ghana	57,000	56,000	55,000	55,000	55,000		
Mali	85,000	85,000	85,000	85,000	85,000		
Nigeria	353,000	384,000	345,000	355,000	355,000		
Тодо	7,000	8,520	2,504	6,500	6,500		
TOTAL	607,385	644,220	592,504	606,500	606,500		
Source: FAOSTAT							

FAO export statistics of major supplying countries are provided in Tables 2 and 3 below, although they are not considered to be completely accurate and are primarily estimates. Exports during the last two years of available statistics hovered around 50,000 MTs with an export value of around \$10 million. Exports in 1996 and 1997 are more than double the five year low recorded in 1993, but lower than the high recorded in 1994.

Table 2: Worldwide Shea Nut Exports by Volume, 1993-97 (MTs)							
HS Code 120792	1993	1994	1995	1996	1997		
Ghana	1,793	13,988	6,000	19,654	19,654		
Benin	7,870	15,266	9,504	9,504	9,504		
Côte d'Ivoire	4,792	12,163	11,195	5,422	5,422		
Burkina Faso	5,000	5,000	7,633	7,633	7,633		
Тодо	1,112	6,562	4,606	8,330	5,284		
Nigeria	-	5,000	-	-	-		
Mali	500	500	500	500	500		
UK	-	215	182	28	-		
Other	28	10	34	21	31		
TOTAL	21,095	58,704	39,654	51,092	48,028		

Table 3: Worldwide 97 (US\$000s)					
HS Code 120792	1993	1994	1995	1996	1997
Ghana	340	2,590	1,500	5,846	5,846
Benin	1,071	2,223	1,400	1,400	1,400
Côte d'Ivoire	1,319	1,601	1,973	793	793
Тодо	137	764	788	1,274	972
Burkina Faso	500	500	847	847	847
Nigeria	-	1,500	-	-	-
Mali	150	150	150	150	150
UK	-	45	37	9	-
Other	6	9	38	10	33
TOTAL	3,523	9,382	6,733	10,329	10,041
Source: FAOSTAT					

Source: FAOSTAT

Import Markets

A few companies based in Europe control the import market for shea nuts. Their main clients are chocolate manufacturers as the shea nut by-products are among the principal ingredients in cocoa butter equivalents (CBEs). Many countries, including the US, forbid the manufacture of CBEs, so the main importers tend to be in Europe with minor amounts also shipped to Japan. However, even in Europe not all countries allow CBE manufacture, but they all allow the sale of CBE products. The countries that allow its manufacture include the UK, Denmark, Sweden, Portugal, Ireland, Russia and Japan.

Accurate trade statistics are difficult to obtain. Statistics from the UN Food and Agriculture Organization (FAO) and the European Union report that European imports were in the range of 2,500-5,000 metric tons (MTs) in 1997. Based on interviews with traders, previous years' import statistics and export statistics of producing nations, the European import market is probably much larger (possibly reaching 50,000 MTs with an import value of over \$13 million per year).

Major European importing companies are primarily based in Denmark, Sweden and the UK. Denmark and the UK each imported approximately 20,000 MTs last year, while Swedish imports were estimated at around 10,000 MTs. Fewer imports were recorded by France, as importers there are more interested in shea butter as opposed to nuts. The list of importers interviewed for this market study can be found at the end of this survey.

The market is not open to much speculation and trades are done in a closed circuit dominated by the Europeans. Japanese importers complain of being unable to break into the Europeans established network of clients and suppliers.

Shea butter is becoming increasingly popular as an ingredient in cosmetics and soaps, especially in France and the US. According to one importer interviewed, they have seen a threefold increase in demand for shea butter in the past year. Chocolate and confectionery products account for 95 percent of shea butter demand, with only 5 percent currently used for cosmetics and pharmaceuticals.

Prices

Over the course of the past export season (September through April/May), the price for shea nuts ranged from \$240-350 per MT (CIF Europe) with \$300 per MT being the average price. Ghanaian and Nigerian nuts are preferred because of their higher oil content and thus fetch a slightly better price (\$275-\$350) per MT. Incentives are offered for better quality nuts (see quality standards below) through premiums that are paid to exporters.

Historically the price has reached a high of \$1,000 per MT, but there has been a gradual downward trend as the price of cocoa beans and butter has decreased (see Annex B). The price of shea nuts and butter follows the movement in the price of cocoa beans and butter but at a substantially lower price because it is only a substitute for cocoa butter in chocolate. The price of cocoa beans has decreased 40 percent in the past year due to increased supply at origin and lower consumption in the market.

Manufacturers add the shea butter to their CBEs in the hope that they can provide a discount on their product in order to increase sales, although they often try and convince consumers that there is a quality issue involved in their marketing decision. With lower cocoa bean prices there has been less of an incentive to purchase shea nuts. Chocolate manufacturers remain committed to CBEs, nevertheless, because their thinking is long-term and the confectionery industry has a labeling cost to contend with in Europe as they must state whether a product has CBEs in it or not.

There is a large mark-up for the various shea nut by-products: fractionated oil can fetch a price of \$3,300 per MT and the refined butter from Europe trades at \$1,000 per MT (all prices CIF US). The retail price for the refined butter is \$6 per ounce in the US. The unrefined *Vitellaria nilotica* shea butter from Uganda is priced at \$60/kg, while unrefined shea butter from West Africa is priced at \$200/MT (CIF Europe).

Quality Standards

Individual companies specify their own quality standards for purchases of shea nuts. The following is a benchmark for the composition of the shea nut required for import:

- Free Fatty Acids (FFA) = less than or equal to 6%
- Moisture Content = less than or equal to 7%
- Oil Content = greater than or equal to 45%
- Latex = 4-10%

The oil content is the most crucial element of the shea nut as that component is an important ingredient in the composition of the butter that goes into CBEs and other by-products. If the oil content is higher and the FFA and moisture content is lower, then the exporter will receive a price premium.

Shea butter buyers may also specify its iodine value and a melting point of between 30° C and 40° C - which signifies a minimum purity. Needless to say, the product should be free of foreign bodies. Users in the cosmetic industry want a very highly refined butter product (such as the butter of *Vitellaria nilotica*) and may require a detailed specification of the different fatty acids, the refractive index and a saponification value.

List of Importers

Loders-Croklaan Hogeweg 1 P.O. Box 41520 AA Wormerveer THE NETHERLANDS Tel. +31-75-6292911 Fax +31-75-6292421 Contact: Mr. Japp Biersteker WWW: <u>http://www.croklaan.com</u> (This office is a subsidiary of Unilever UK PLC and does all its tropical nut and edible oil buying)

Karlshamns AB 37482 Karlshamn SWEDEN Tel. +46-454-82000 Fax +46-454-82839 Contact: Ms. Monika Hjorth email: <u>mh@karlshamns.se</u>

Aarhus Oliefabrik A/S M. P. Bruuns Gade 27 P.O. Box 50 DK-8000 Aarhus C DENMARK Tel. +45 8730 6000 Contact: Mr. Soeren Laursen email: <u>sla@aarhus.com</u>

Brittania Food Ingredients Ltd. Goole DN14 6ES UK Tel. +44-1405-767776 Fax +44-1405-765111 Contact: Mr. Phil Nash email: office@britfood.demon.co.uk (Raw material supplier to Mars and Cadbury's UK)

Agritropic s.a.r.l. Rue des Moulins 43100 Vieille-Brioude FRANCE Tel. +33-4-71749790 Fax +33-4-71749282 Contact: Mr. Georges Brun (also acts as Commercial Director for Aarhus out their Abidjan office) email: <u>sla@africaonline.co.ci</u>

Eurobroker 30, rue d'Astorg 75008 Paris FRANCE Tel. +33-1-44948787 Fax +33-1-40060313 Contact: Mr. Michael Becker, Tropical Nuts Division email: michael@eurobroker.fr

Aarhus Olie Côte d'Ivoire (subsidiary of Aarhus Oliefabrik A/S, Denmark) Résidence de la Tour B.I.A.O 8-10 rue Joseph Anoma (entrée avenue Lamblin) Abidjan 01 BP 1730 COTE D'IVOIRE Tel. +225-327052/53 Fax +225-327055 Contacts: Mr. Søren Laursen, Managing Director email: ghb@africaonline.co.ci

EXA Cosmetics 112 rue de Lagny 93100 Montreil FRANCE Tel. +33-1-42879698 Fax +33-1-48708870 Contact: M. Philippe Monmarché (Use refined shea butter in their line of cosmetics)

D2E

202, rue de la Croix Nivert 75015 Paris FRANCE Tel. +33-1-53785858 Fax +33-1-53785850 Contact: Dr. Laurent Sousselier (Use refined shea butter in their line of beauty creams)

Fuji Oil Company, Ltd. 1-5, Nishi Shinsaibashi 2-chome, Chuo-ku Osaka 542 JAPAN Tel. +81-724-631364 Fax +81-724-631601 Contact: Mr. Uragami, Manager email: <u>780040@so.fujioil.co.jp</u> (Import shea nuts, butter and oil) Fuji Vegetable Oil, Inc. (US based subsidiary of Fuji Oil) 120 Brampton Road Savannah, GA 31408 USA Tel. (912) 966-5900 x 315 Fax (912) 966-6913 Contact: Mr. Don Tanegawa email: <u>fvo_finance@gapcdr.com</u> (Imports shea butter and oil only for sale to chocolate manufacturers in Canada and S. America)

AFAJATO, Inc. 6455 E. Briar Drive Lithonia, GA 30058 USA Tel. (770) 482-4451 Fax (770) 413-6389 Contact: Mr. Paul Agbemashior Email: <u>afajato@aol.com</u> (Imports shea butter only for sale to health food and arts and crafts stores, primarily from Ghana)

The Shea Butter Company, Ltd. 16781 Torrence Avenue Lansing, IL 60438 USA Tel. 1-877-489-2700 (toll free) Fax (708) 481-3144 or 1-877-489-9917 (toll free) Contact: Mr. Thom Rivers Email: trivers@naturalessence.com WWW: Terry Labs 390 N. Wickham Road, Suite F Melbourne, FL 32935 USA Tel. (407) 259-1630 Fax (407) 242-0625 Contact: Ms. Gail Falco or Mr. Dave Wellsley email: aloe@terrylabs.com WWW: http://www.terrylabs.com (Sells refined shea butter to cosmetic companies in US)

Edible Oils Marketing Consultant Nyland Coach House Nyland, Cheddar, Somerset BS27 3UD, UK Tel. +44-1934-741137 Fax +44-1934-741862 Contact: Mr. Ian Campbell CA email: I_DCampbell@compuserve.com (Previously worked for Unilever; excellent shea marketing contacts in Europe and Canada)

Shea Nut WWW References

1. TECO Finance Export

URL: http://www.sheabutter.com/

Main activity is international trade of tropical raw materials. TECO collects these products in Guinea-Bissau, Ivory Coast, Mali, Burkina Faso, Togo, Benin and Nigeria. The main products are cashew nuts and shea nuts. Collection requires a strong organization with financing facilities, distribution of bags, quality control, warehousing and Export formalities from the loading port. Processing, packaging, and distribution take place in France.

For more information: 24 rue Violet, 75015 PARIS - FRANCE, Tel : 331 45.78.92.91, Fax : 331 45.77.00.69, email : <u>info@sheabutter.com</u>

2. The Cooperative Office for Voluntary Organizations of Uganda (COVOL Uganda) - Shea Project

URL: <u>http://www.covol.org/Shea/index.html</u>

The Shea Project for Local Conservation and Development is an integrated, long-term effort to preserve the ecological integrity of savanna woodland in northern Uganda through reinforcement of the economic importance of the shea butter tree, Butyrospermum parkii, source of the food oil known as shea butter. Funded to 75% by the USAID Action Program for the Environment (APE), the Shea Project is a collaborative effort of COVOL Uganda and the women's farming groups of Lira District in northern Uganda.

For technical information: Mr. Eliot Masters, Project Coordinator, COVOL, P.O. Box 833, Lira, UGANDA, Fax +256-41-543565, email: covol@bushnet.net

For marketing information: Ms. Alisa Puga, 4680 Portola Drive, Santa Cruz, CA 95062 USA, Tel./Fax (831) 462-2182, email: <u>alisap@earthlink.net</u>

3. UNIFEM - "Eradicating Feminized Poverty" (Report)

URL: <u>http://www.unifem.undp.org/ec_povh1.htm</u>

4. Meeting on Karité (Vitellaria paradoxa) 15-17 April 1998, FAO, Rome, Italy

URL: <u>http://www.fao.org/waicent/faoinfo/forestry/NWFP/KARITE.HTM</u>

5. Solutions Cite Case Study

URL: <u>http://www.solutions-site.org/cat9_sol66.htm</u>

The Songtaaba Women's Group has transformed karité (shea nut) processing and made it into a substantial industry run by women, from

production to marketing of a wide range of consumer products.

6. "Le vrai faux chocolat qui irrite l'Afrique"

URL: <u>http://www.francophonie.org/syfia/88bchoco.htm</u>

EU regulations on chocolate content and effects on cocoa-producing nations / vegetable oil imports, including karité (shea nut).

7. "Karité: extraction sans peine" - Centre Technique de Cooperation Agricole et Rurale ACP-EU (CTA)

URL: http://www.agricta.org/ctafr/spore73.htm#anchor1489889

New press for extraction that is less labor intensive. Women are responsible for much of the extraction process in the production of shea butter.

8. KARITEA

URL: http://www.adx.fr/karitea/karitea4.html

Beauty product producer - partner/source from Groupe Coton et Développement (Mali)

9. IDRC - Adventures in Development - Vegetable Oils (Burkina Faso)

URL: http://www.idrc.ca/adventure/ehuiles.html

10. Mission Nature - Association for New Hope and Ideas (ANHI)

URL: http://www.credo.fi/eko/oil.htm

11. University of Southampton - International Center for Under-utilized Crops

URL: <u>http://www.soton.ac.uk/~icuc</u>

- <u>Annex A: Excerpts from "Development of the Rural Shea Butter Industry in</u> Uganda"
- Annex B: Historical Trends in Cocoa and Cocoa Butter Prices
- <u>Complete PDF Version</u>.

This site was developed under the auspices of the RAISE program and through the sponsorship of the <u>U.S. Agency for International Development</u>. RAISE is being implemented under an IQC mechanism, by three consortia led by <u>ARD</u>, <u>Chemonics</u> and <u>DAI</u>. This site was designed and is maintained by <u>Fintrac, Inc</u>.