

Overview of the Nigerian Sesame Industry



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FOREWORD

Under the Rural and Agriculture Incomes in a Sustainable Environment (RAISE) IQC, Chemonics International is working with USAID/Nigeria and the Government of the Federal Republic of Nigeria (GON) to stimulate Nigeria's economic growth through increased competitiveness in the world market. A key component of this effort centers on determination of specific agricultural products with the greatest potential for increasing foreign exchange and employment. While the project specifically targets increased agricultural commodity production and exports, it also seeks to boost domestic sales as well through opportunistic 'fast track' activities, which are loosely based on development of networks and linkages to expedite trade.

At a stakeholders' conference in Abuja, Nigeria in January 2002, participants identified five Nigerian products that held the greatest potential for export growth. Chemonics was charged with conducting sub sector assessments of these products, and then developing industry action plans (IAPs) for those that indicated sufficient market opportunities.

In preparation for the sub-sector assessments, Chemonics' compared the relative opportunities in each of the selected sectors, and decided to focus on commodities where the global market was US\$1 billion or more, that is, where the market was of sufficient interest for the Nigerian economy. The current global market for sesame is roughly US\$500 million. As such, the opportunities for investment in this market are small for Nigeria. Therefore the following is just an overview of the sesame market, rather than an in-depth sub-sector assessment accompanied by an industry action plan.

This overview document examines market trends, opportunities and constraints, both international and domestic; production and processing requirements; operating environment issues; and recommendations to address the needs of the Nigerian industries.

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Rate of Exchange (ROE): \$US 1 = ₦ 117

EXECUTIVE SUMMARY

Sesame is an important export crop in Nigeria, and Nigeria has a substantial role in the global sesame trade. Annual exports of sesame from Nigeria are valued at about US\$20 million and Nigeria is the primary supplier of sesame seed to the world's largest importer, Japan. These features are poorly recognized and it is timely to develop support and action to facilitate the continued expansion of this sector.

The position of sesame is not well understood either in Nigeria or in the global trade, and a significantly clearer interpretation of Nigeria's competitive position and opportunities is essential. The compilation of this report has revealed areas of uncertainty in both, and the formulation of strategy and associated activities is therefore premature. In the first instance, a greater understanding of the position of Nigeria and its options is needed and the following notes elaborate recommendations towards this goal.

Recommendations

1. Appraise and evaluate the research, trials and extension services available to the sesame sector.
2. Investigate opportunities in other markets, with particular focus initially on the oil markets of the Far East, Korea and Taiwan.
3. Explore the possibility of changes in the Korean tendering process.
4. Evaluate the competitive position of Nigerian sesame in the Japanese market and assess the opportunity for increasing market share.
5. In conjunction with recommendation #4, evaluate the opportunity for differentiating Nigerian sesame for oil users and explore the economics and market potential for pressing sesame in Nigeria on an industrial scale.
6. Appraise the requirements of other sesame sectors.

I. THE INTERNATIONAL SESAME INDUSTRY

A. Introduction

Sesame seeds (or sesamum or benniseed) are the seeds of the tropical annual *Sesamum indicum*. The species has a long history of cultivation, mostly for its yield of oil. The original area of domestication of sesame is obscure but it seems likely to have first been brought into cultivation in Asia or India.

The plant is usually 60 to 120cm tall and the fruit is a dehiscent capsule held close to the stem. When ripe, the capsule shatters to release a number of small seeds. The seeds are protected by a fibrous 'hull' or skin, which may be whitish to brown or black depending on the variety. 1000 seeds weigh some 4-8g. The seeds have a high oil content of 44-60%.

The plant is deep rooting and well adapted to withstand dry conditions. It will grow on relatively poor soils in climates generally unsuitable for other crops, and so it is widely valued for its nutritional and financial yield from otherwise inclement areas. It is well suited to smallholder farming with a relatively short harvest cycle of 90 –140 days allowing other crops to be grown in the field. It is often intercropped with other grains.

Sesame is now cultivated around the dry tropics between the latitudes of 40° N and S. It is scarcely cultivated in the USA or Europe, not only because of climate but also because of the low returns per unit area. Non-shattering varieties have been bred in order to mechanize the crop, but the great majority of the world's output is still harvested by hand.

B. Sesame Products

Sesame is grown for its seeds, and the primary use of the sesame seed is as a source of oil for cooking. The young leaves may also be eaten in stews, and the dried stems may be burnt as fuel with the ash used for local soap making, but such uses are entirely subordinate to seed production (see Table 1).

Sesame is commercialized in a number of forms. Most sesame is processed directly into oil by the grower or within the producing region, but can also be sold in various stages of processing, for various uses, such as meal, paste, confections, and bakery products. Once harvested, the seed is cleaned and dried to about 8% moisture and may then be stored before crushing. The seed is typically crushed intact for the oil. This, however, yields a meal that is made bitter and somewhat indigestible by the presence of the fibrous husk. As such the meal is only useful as cattle feed.

The quality of the meal can be improved by removing the seed coat, dehulling, before crushing. In India, where sesame meal is an important food, this process is a standard feature of an oil extraction plant. The meal is notable for its high protein concentration which is rich in methionine and tryptophan. Since these amino acids are missing from a number of other sources of vegetable protein, such as soya, sesame meal or flour can be added to recipes to give a better nutritional balance to health food products.

Dehulling is also important for the production of the ground seed pastes such as *tahini* and for confectionery uses. The dehulled seeds are extensively used in the ground form where they comprise the base material of *tahini*, a paste used as an ingredient in Eastern Mediterranean and Middle Eastern foods.

The seeds, hulled or dehulled, roasted or raw are now widely used in the European and North American bakery industry as a garnish on bread products. For bakery products it is more a question of consumer preference: the McDonald's burger buns, for example, use only the whitest grades of de-hulled seed which have been treated to maintain their whiteness on baking, whereas other bread products exploit the darker color of the whole seeds to give aesthetic appeal.

Dehulling has always been a major problem for the sesame industry and a variety of solutions have been sought. The most basic approach is largely manual: the skins are rubbed off the wetted seed by hand. Mechanical techniques now use a similar combination of wetting and rubbing. Alkali treatments are also used to strip the hull, and this tends to result in a whiter seed. The most sophisticated plants now incorporate color sorters to differentiate between the different grades of seed.

Table 1: Sesame Products

Input	Products	Description and Uses
Seeds	Confectionery	Fried seeds may be bound together with sugar syrup to give sweetmeats.
Seeds	Biscuits	The whole seeds can be baked into biscuits.
(Hulled) seeds	Bakery	Popular in northern Europe either incorporated into breads or as decorative toppings. May be used hulled or whole.
Seeds, sometimes roasted	Oil	Particularly used in oriental cuisine. The flavor is quite strong and rarely compatible with traditional Western style cooking but also used as a salad oil.
Oil	Medicinal treatment	Ulcers and burns
Oil	Margarine	Once an important use, now other cheaper vegetable oils are available
Oil	Aerosol	Reported use as a synergist for pyrethrum sprays
Low grade oil	Various	Soaps paints, lubricants, and illuminants. Local uses, of no importance in international trade
Hulled seeds	Tahini	A paste of sesame seeds which is used as an ingredient in eastern Mediterranean and Middle Eastern foods
Tahini	Dips & spreads	Various ingredients, such as chickpeas or eggplants, are added to tahini to make dips and spreads such as hummus
Tahini	Halva	A sweet made from tahini and sugar with other added flavorings
Cake	Animal feed	Protein rich useful supplement
Cake from hulled seeds	Ingredient	Used in some Indian cooking. Also as a snack in, for example, the Nigerian Kulikuli.

The dehulling process, no matter what the method, always involves wetting the seed, which leads to considerable drying costs. As a result, the price of de-hulled seed is at least 30% above the natural type. Dehulling is said to reduce the storage ability of the seed, particularly in hot climates.

Only a small proportion of the global sesame harvest enters international trade. For the most part, the oil is expressed locally and used locally for cooking or the seeds themselves are eaten, particularly after being fried. The oil has a distinctive nutty sweet flavor that has become established in the Far Eastern cuisine. It is also used in Europe and North America for cooking or as a salad oil, but the Eastern hemisphere oil market is much greater.

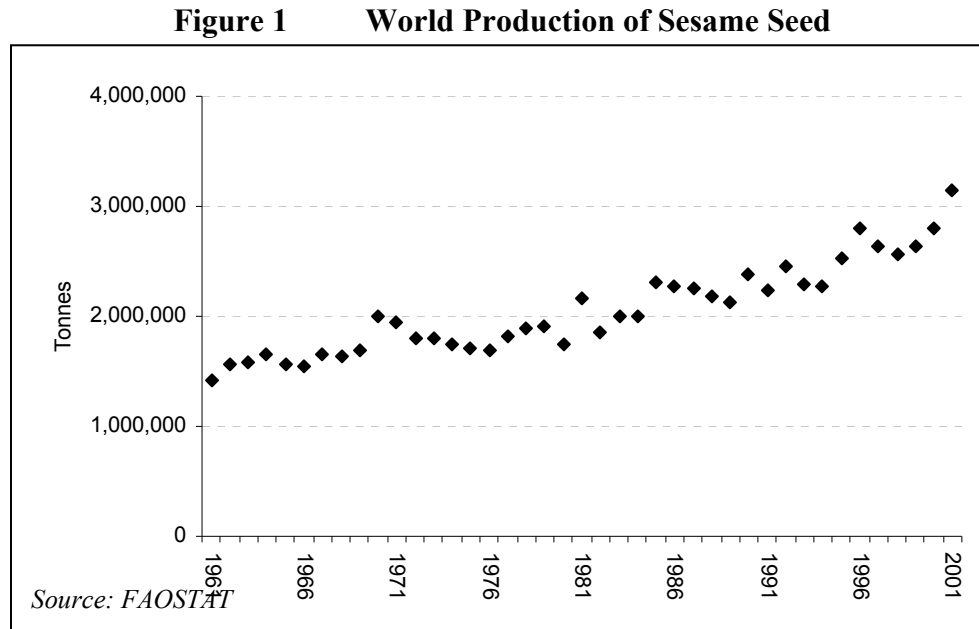
The oil is also useful in the industrial preparation of perfumery, cosmetics (skin conditioning agents and moisturizers, hair preparations, bath oils, hand products and make-up), pharmaceuticals (vehicle for drug delivery), insecticides and paints and varnishes. However, all of these uses are comparatively insignificant in terms of the quantities used.

C. Markets

C.1. Sesame Seed

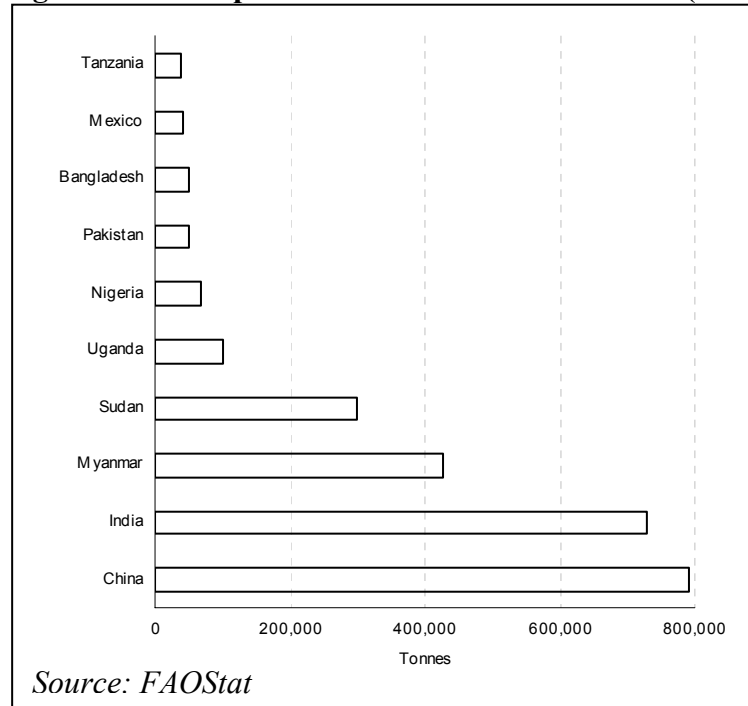
C.1.a. Production

Global production of sesame seed is estimated by FAO at 3.15 mn tonnes per year (2001) having risen from 1.4 mn tonnes in the early 1960's.



The largest producers are China and India, each with an annual harvest around 750,000 tonnes followed by Myanmar (425,000 tonnes) and Sudan (300,000 tonnes). These figures are only rough estimates of the situation as sesame is a smallholder crop and much of the harvest is consumed locally, without record of the internal trade and domestic processing.

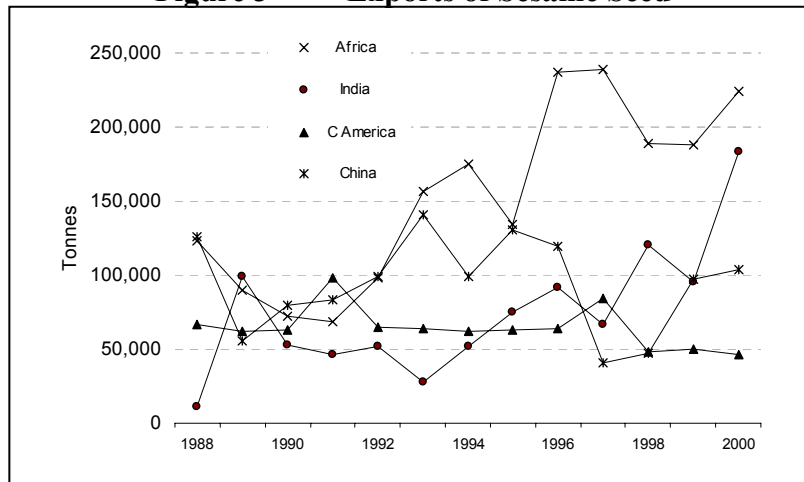
Figure 2 Top Ten Producers of Sesame Seed (2001)



C.1.b. Trade

Global exports of sesame seed are estimated to have reached 657,000 tonnes in 2000, having risen from 427,000 tonnes in 1988. The 2000 exports were valued at \$478mn. Figure 3 shows the rise of Africa over the last ten years as a supplier of sesame seed and also the growth of Indian output.

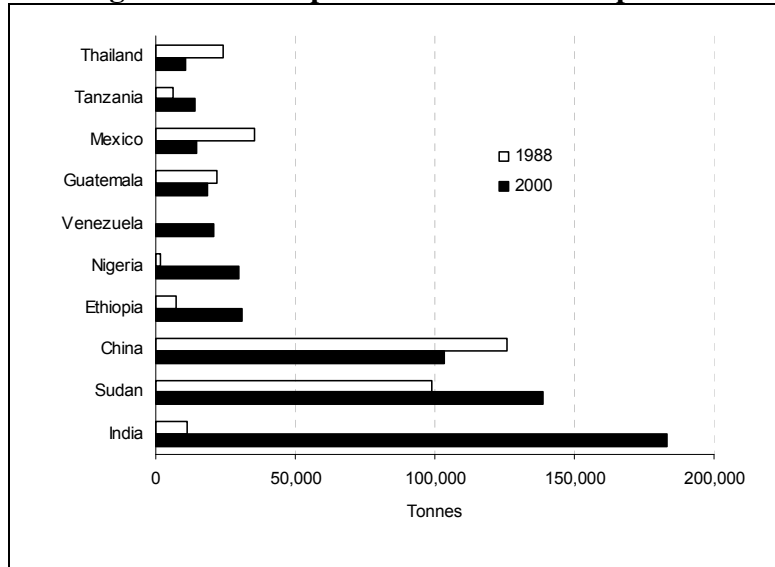
Figure 3 Exports of Sesame Seed



Source: FAOSTAT

India is now the single largest exporter of sesame seed, with exports of some 180,000 tonnes, with Sudan in second exporting over 138,000 tonnes per year. In 1988 China was the principal exporter in the world. (Note that FAO data for China includes Taiwan).

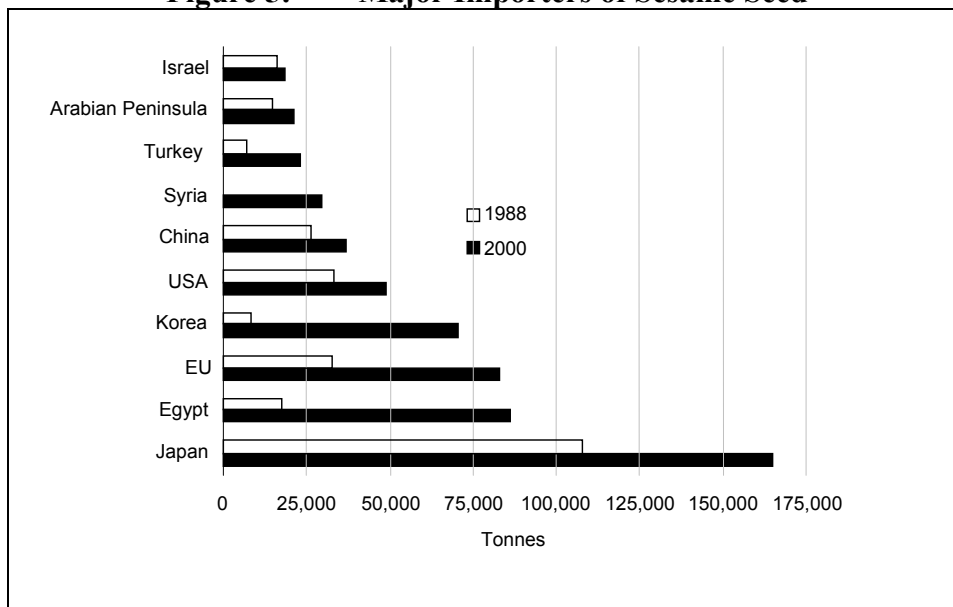
Figure 4 Top Ten Sesame Seed Exporters



Source FAOSTAT

Figure 5 shows the major importers of sesame seed. As before, FAO data for China includes Taiwan. The rise in international trade in sesame seed noted above is also shown in the increased imports in Figure 5. All the major importers show strong increase in consumption over the past 10 years.

Figure 5: Major Importers of Sesame Seed

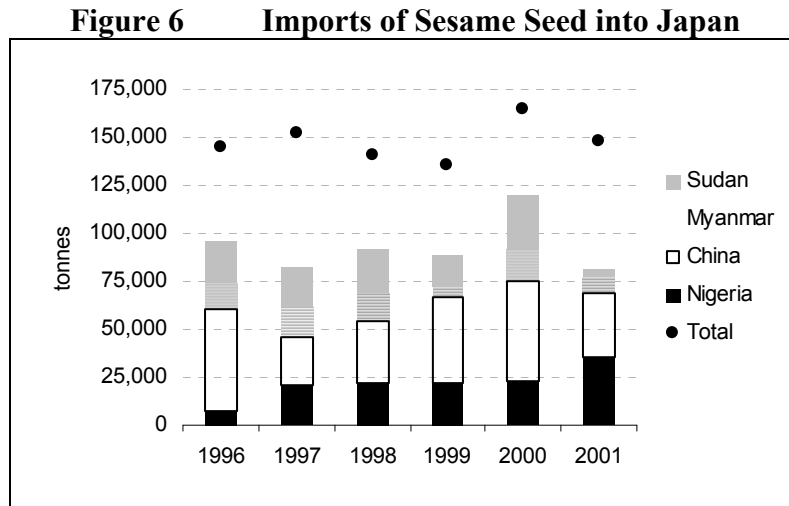


Source: FAOSTAT

Japan dominates the purchasing side of the trade for sesame seed, with an annual requirement up to 165,000 tonnes. Sesame oil, particularly from roasted seed, is an important component of Japanese cooking and traditionally this is the principal use of the seed. However, much of the recent increase

seems to have come from expanding demand for sesame in other forms, either whole or processed. The trade estimates that 30% of imports are used in forms other than oil, either as a powder, a paste, a roasted condiment or whole. The increased consumer concern for healthy eating, and the beneficial image of sesame in this sector, is held to be responsible for this development in the market.

Figure 6 shows the progress of recent imports into Japan. Note that in 2001 Nigeria was the largest supplier to the Japanese market, the world's largest import market for sesame.

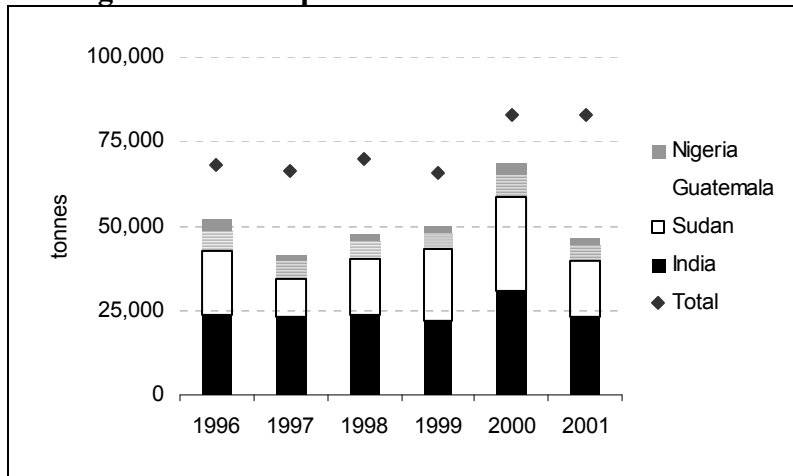


Source: Japan Customs

Imports of sesame into Egypt have also grown strongly. Egypt was the second largest importer in 2000. Detailed statistics for Egypt's foreign trade have not been located for this report so there is no information on the origin of the sesame imports. However, it is likely that Sudan and Uganda are the major suppliers, given their proximity and the presumed lower cost of transport.

Imports of sesame seed into the EU have grown over the 1990s and the market now imports in excess of 80,000 tonnes. The major consuming markets in the EU are Greece, Germany, the Netherlands and the UK. In Greece, sesame is used mostly for preparing *tahini*, the paste of ground sesame seeds, which is used as an ingredient. In northern Europe, sesame is more commonly used as a bakery product and is particularly popular in Germany and the Netherlands either within breads or on the surface of bread and breadsticks as a garnish.

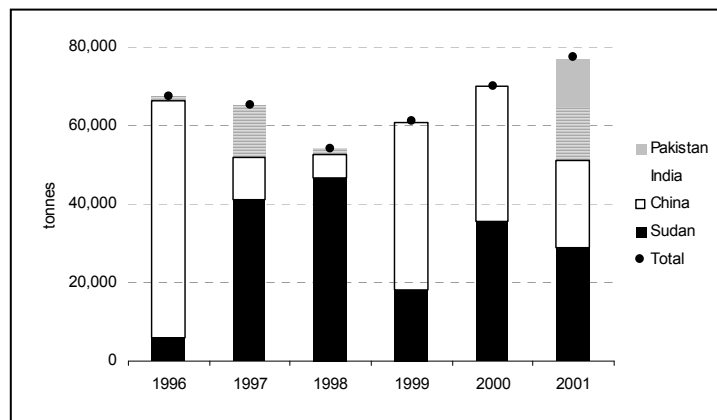
Figure 7 Imports of Sesame Seeds to the EU



Source: EUROSTAT

A rapid rise in sesame imports has been seen in South Korea, where the inability of local production to keep pace with demand, and the liberalization of imports, has allowed trade to increase dramatically. Korea is principally an oil market. Local production amounts to some 28,000 tonnes and despite the 40% import duty the market is still heavily dependent on foreign suppliers.

Figure 8 Imports of Sesame Seed to South Korea



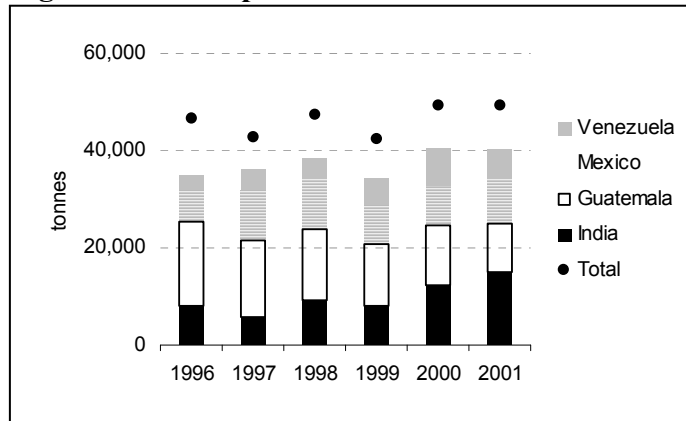
Source: Korean Customs Service

The Korean sesame market, like the Japanese market, mainly imports sesame for oil extraction. Unlike the Japanese market, however, sesame imports are controlled by a government organization that largely buys through a tendering process. In the past, the bulk of sesame was imported from China. Increasingly, other sources such as India, Sudan and, most recently, Pakistan, are taking the market share.

The USA is the fifth largest import market with a steady demand for 45,000 to 50,000 tonnes per year. All uses of sesame are found within the USA and there is a significant local production to augment the imported supplies to the market. Imports are mostly derived from Central America

where the higher value bold sesame seeds are available for garnishing bakery products such as hamburger buns.

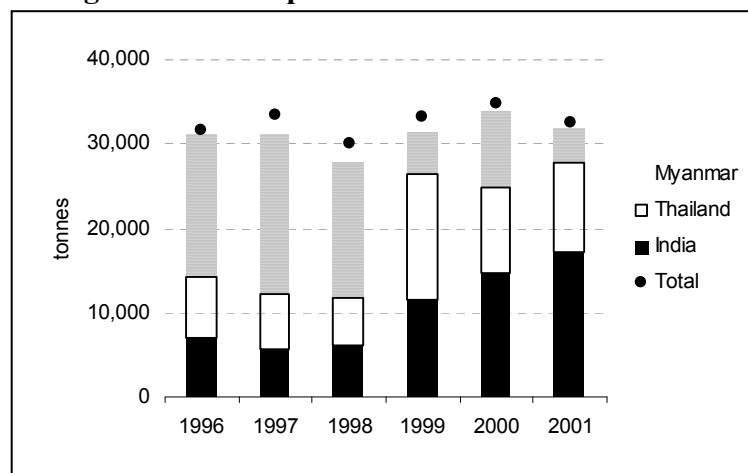
Figure 9 Imports of Sesame Seeds to the USA



Source: US Dept. of Commerce, Bureau of the Census

Finally the import demand for sesame in Taiwan remains strong. Again this is mainly an oil market. There has been little change in demand over the recent years, and importers remain dependent on three origins – India, Thailand and Myanmar.

Figure 10 Imports of Sesame Seed to Taiwan



Source: Taiwan Directorate General of Customs

C.1.c. Pricing

The sesame market is not centralized or regulated internationally and there are no objective mechanisms for price reporting. *The Public Ledger* and the Market News Service of the International Trade Center both publish prices based on interviews but these are not always consistent. Indicative prices are shown in Table 2 below based on a variety of sources:

Table 2: Sesame Seed Prices

Origin	Price US \$ /tonnes	Basis	High	Low
Guatemala	1400	Fob	1670	880
Venezuela	1280	Fob		
Uganda	550	Fot	500	650
India hulled	940	CIF		
India natural	700	CIF		
Sudan natural	600	Fob		
China	1100	C&f		

Source: Public Ledger, MNS & Trade Discussions

Prices in 2002 are significantly lower as a result of continued pressure of supplies.

C.2. Sesame Seed Oil

C.2.a. Processing

Sesame oil is extracted from the seeds by mechanical pressing. The seed may be cold-pressed to give an aromatic salad oil or hot pressed to give a lower grade product. In the Far East, sesame seeds may also be toasted (i.e. roasted) before pressing to yield much darker oil that is more pungent.

The hot pressed oils are usually refined before consumption to remove free fatty acids, residues and all aromatic compounds. This then leaves bland colorless oil. Refined oils are suited to the cooking of the Western hemisphere where highly aromatic oils are not appreciated.

C.2.b. Trade

The Food and Agriculture Organization estimate that global production of sesame oil now exceeds 200,000 tonnes per year. However, global exports are just over 30,000 tonnes per year. Clearly processing is either local, with the oil used within the region, or the seeds are exported and pressed nearer to the market.

The major exporters of oils are China and Japan. Among African sesame growers, only Sudan has developed a significant export trade in oil with shipment in 2000 estimated by the FAO at 2,800 tonnes.

The importers of oil are the countries of the Far East and also Europe. These markets have rather different requirements for the types of oil, with a strong preference for refined oils in Europe.

C.2.c. Pricing

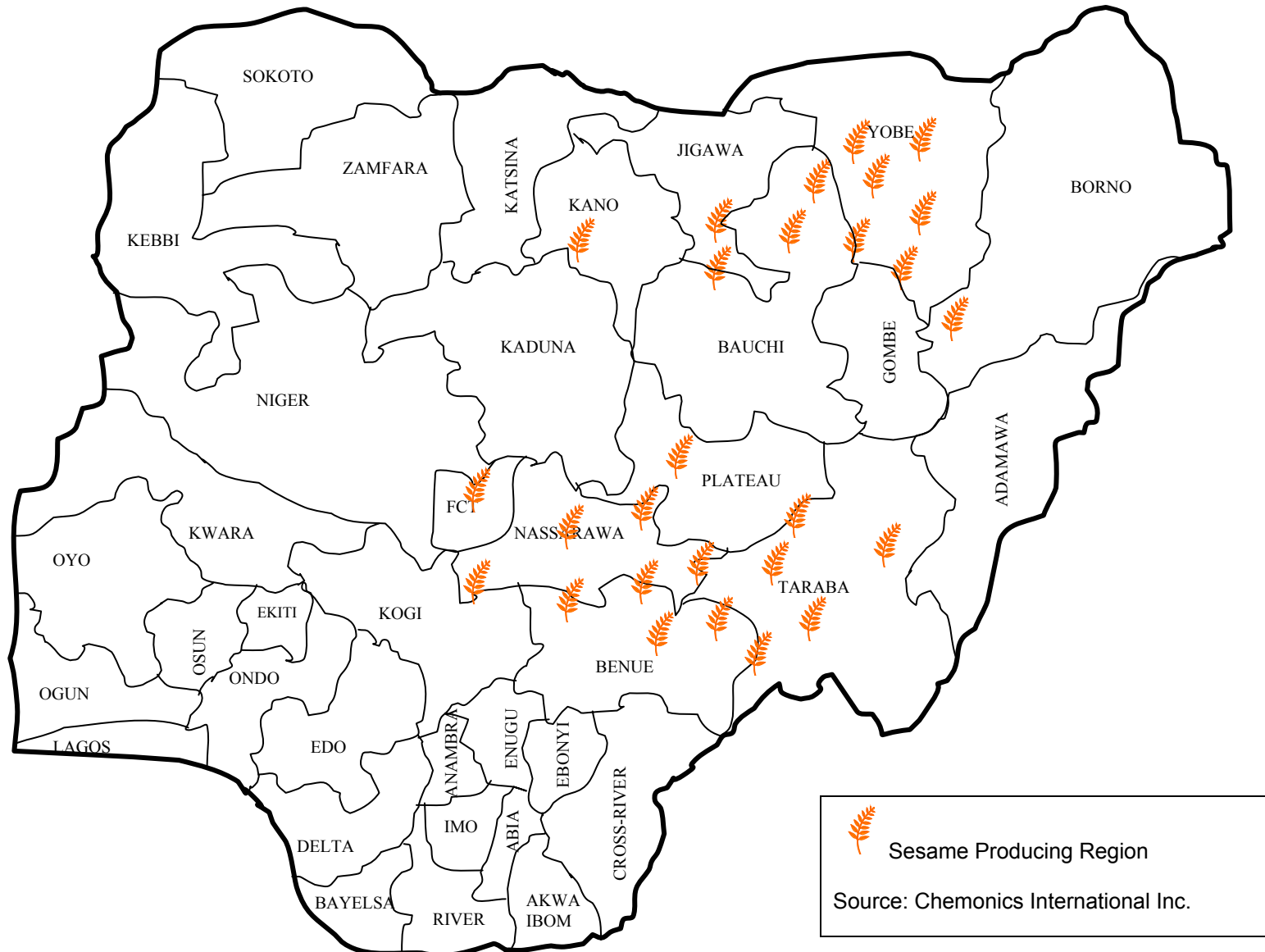
Relative to other vegetable oils, the trade in sesame oil is quite minor in quantity but high in value. Table 3 compares some volumes and values in global exports of vegetable oils.

Table 3 Global Exports of Selected Vegetable Oils

	Quantity (tonnes)					Value '000 US \$	Implied unit value /tonne
	1961	1970	1980	1990	1998	1998	
Oil of Cotton Seed	229,859	240,202	431,135	309,055	260,467	168,564	\$647
Oil of Groundnuts	290,094	429,753	476,593	347,615	310,827	295,111	\$949
Oil of Jojoba				622	1,797	18,514	\$10,303
Oil of Olive	202,622	243,403	265,264	564,828	926,137	2,177,754	\$2,351
Oil of Palm	629,181	906,260	3,616,636	8,071,864	10,401,595	6,370,579	\$612
Oil of Palm Kernels	81,792	164,799	379,155	917,878	987,113	658,663	\$667
Oil of Sesame Seed	1,311	2,048	7,857	23,780	23,480	57,498	\$2,449
Oil of Soya Beans	390,592	1,120,510	3,196,066	3,738,885	8,023,140	5,132,832	\$640
Oil of Sunflower Seed	218,284	731,937	1,113,136	2,648,585	3,527,017	2,473,767	\$701

Source: FAOSTAT

Figure 11: Map of Nigeria Showing Sesame Producing Regions



II. CURRENT STATUS OF THE NIGERIAN SESAME INDUSTRY

A. Introduction

Sesame is an important crop to Nigerian agriculture: it is quite extensively cultivated, it yields in relatively poor climatic conditions, and it is widely used within Nigeria and is an important component of Nigeria's agricultural exports. It is however, given little attention and there are relatively few companies involved in the trade. As a smallholder crop, often intercropped with others, the extent of cultivation is poorly known and there is little information on yields or productivity. For the most part the surplus crop is commercialized, bulked up and exported with minimal processing limited to drying and cleaning.

B. Production

Sesame production in Nigeria probably began in the middle belt region of the country and later spread out between latitudes 6° and 10° N. Sesame is commonly grown by smallholder farmers. The major producing areas in order of priority are Nasarawa, Jigawa and Benue States. Other important areas of production are found in Yobe, Kano, Katsina, Kogi, Gombe and Plateau States. Harvesting begins in late December and continues through July. Each producing area has only one season.

There are 2 types of sesame produced in Nigeria

1. White/raw = Food-grade used in bakery industry. 98-100% whitest grade seeds.
2. Brown/mixed = Primarily oil-grade.

The White (Food Grade) seed is grown around the towns of Keffi, Lafia/Makurdi, Doma, and in Nassarawa, Taraba, and Benue States. It is easier to sort and the Fumani/Denin people consume sesame locally. The Brown/mixed grows in the North, in Kano State and in Jigawa State near Hadejia, and somewhat in the southern part of Katsina State. There is some local consumption of the brown grade, but not much. The brown can be upgraded to Food Grade through bleaching, as discussed earlier.

Several varieties of sesame are cultivated in Nigeria. The basic agronomic characteristics of the varieties are shown in Table 4.

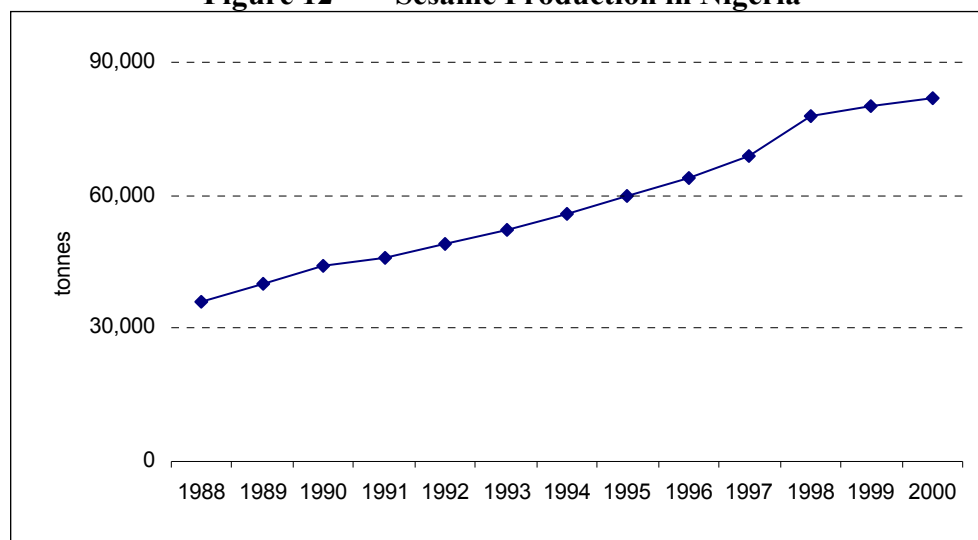
Table 4 Characteristics of Sesame Grown in Nigeria

Variety	Days to Maturity	Seed Color	Seed Size mm	Oil Content	Potential Yield kg/ha
NCRI BEN-01M	102-115	White	3	45%	1000
NCRI BEN-02M	102-115	Light	3	45%	750
NCRI BEN-032	125-140	Brown	2	40%	600
E-8	90	White	3.6	50%	1000
Yandev-55	125	Light	2.5	45%	600

Source: National Cereals Research Institute, Badeggi

As noted above, annual output of a smallholder crop such as sesame is difficult to estimate when much of the production is consumed locally without entering into formal trade. Large-scale commercial production of sesame is limited in Nigeria, and there are no accurate records of national production. Figure 12 below charts the growth in sesame production as estimated by the Central Bank of Nigeria. Figures from FAO are more conservative with an estimated output of 60,000 tonnes in 1999.

Figure 12 Sesame Production in Nigeria



Source: CBN Annual Report

C. Processing

As presented earlier, sesame can be processed to several different stages, such as simply cleaning, or cleaning and dehulling, cleaning/dehulling/drying, cleaning/dehulling/drying/crushing for oil, etc. In Nigeria, the primary processing facilities focus almost exclusively on cleaning. There are a few commercial cleaning facilities, and they are all privately held. Two are in Kano with a cleaning capacity of about 100 tonnes a day, and one is in Lagos with a cleaning capacity also of about 100

tonnes a day. A commercial cleaning facility is about to be installed in Nassarawa State, with a capacity to handle about 200 tonnes a day.

There are also dehulling/cleaning/color-sorting facilities in Lagos, but most of the sorting is done manually by women, some located at storage facilities in Lafia and Makurdi. There are no commercial crushing plants for sesame seed oil. There are a few groundnut oil mills in Lagos that have the capacity to crush sesame seed as well as peanuts, and there is also an idle sesame seed crushing plant in Lagos. The Raw Material and Research Development Council in Abuja has a pilot plant that is supposed to crush about 20 tonnes per day. It should be operational soon.

D. Marketing

As a predominantly smallholder production, the crop is commercialized by buyers or middlemen who tour the rural areas buying from the farmers. The sesame is transported to the larger towns, bulked in store and sold to the agents of the major exporters. The major buying centers are the urban markets in the states where sesame is predominantly cultivated. These centers include:

Town	State
Doma	Nasarawa
Malam-Madori	Jigawa
Potiskum	Yobe
Oturkpo	Benue
Dawanau	Kano

Anecdotally, prices increase through the season. Table 5 below shows the annual average price of sesame seed (source unknown; pricing point unknown).

Table 5: Annual Average Price of Sesame

Year	Price Naira/tonne
1996	22,500
1997	28,500
1998	38,500
1999	38,800
2000	41,500

E. Local Consumption

Industrial processing and utilization of sesame have not been fully developed in Nigeria. However, the product is locally processed and utilized in various forms in the states where the crop is cultivated. Principal among the products are: “KANTUN RIDI” and “KUNUN RIDI”. At the local level oil is also extracted from the seed and the cake is made into “KULIKULI” which together with the leaves are used to prepare local soup known as “MIYAR TAUSHE”. The oil is used locally for cooking as well as for medicinal purposes such as the treatment of ulcers and burns. The stem and the oil extract are equally used in making local soap. In all the states where sesame is cultivated,

women are more involved in the local processing of sesame seed into commercial products. A more convenient dehulling technique has been developed through addition of 3% Sodium Chloride (salt) and soaking over night. Roasting of seed at 100°C also gives optimum oil yield. The National Cereals Research Institute, Badeggi have developed a 10kg hydraulic hand press for household and small-scale sesame oil extraction.

F. Export

About 60-70% of sesame produced in Nigeria is exported to the major consuming countries. Without commercial scale oil extraction, only the seed is exported from Nigeria. There are contract-cleaning facilities available in Lagos (for example AKKAY) but no hulling operations.

Three companies dominate the buying and export of sesame:

- ⇒ Olam Nigeria
- ⇒ Akkay Limited
- ⇒ Dangote
- ⇒ Dantata

Market share of these and other exporters is not known.

Detailed export statistics for Nigeria are not available but Table 6 below has been compiled from shipment records and, for comparison, from the import statistics of the major destinations.

Table 6: Nigeria Sesame Export Figures (Units: tonnes)

Year	Shipments Reported by Export Inspectorate	Total Imports from Nigeria Reported by EU, USA, Japan
1996	12,770	11,976
1997	46,388	22,537
1998	37,767	23,319
1999	20,640	23,730
2000	24,949	26,822
2001		37,381

Sources: Export Inspectorate Division, Federal Ministry of Commerce

The discrepancies between the two series are not explained. The higher shipment in 1997 might imply that a destination other than the EU, Japan or USA was involved in buying Nigerian sesame.

III. ENVIRONMENT

A. Government Policy/Infrastructure

When Nigeria achieved independence in 1960, agricultural exports accounted for over 60% of total export earnings and a similar proportion of the gross domestic product (GDP). In the 1970s and 1980s, a combination of increasing petroleum production and rising prices brought easy and windfall earnings, which diverted Nigeria's attention from developing other sectors of the economy and encouraged the neglect of agricultural exports. Over the years, there have been different agricultural policies targeted at improving the performance of the agricultural sector. The objectives of agricultural policy can be broadly stated as follows:

- Provision of self-sufficiency in food and raw materials for industries;
- Improvement of the socio-economic welfare of rural people engaged in agriculture; and
- Diversification of the sources of foreign exchange earnings through increased agricultural exports arising from adoption of appropriate technologies in food production and distribution

While the policies are sound, until the recent return to democratic governance, the will and strategies to implement them had largely been absent during years of military rule. The emergence of democracy required the institutionalization of civil governance structures and the revival of the productive value-adding sector of the economy, which is so strategic in addressing the multifaceted socio-economic problems confronting the nation.

Nigeria does currently have access to several export stimulation incentives:

A.1. Federal Ministry of Finance, Budget Office

In the area of exports, exporters enjoy a couple of government initiatives. The Federal Ministry of Finance, working with several parastatals, including the Nigerian Export Promotion Council (NEPC), Nigeria Export-Import Bank (NEXIM) and local commercial banks, has several export-oriented incentives:

a. Manufacture – In- Bond Scheme

The Manufacture-in-Bond Scheme is designed to encourage manufacturers to import duty free raw material inputs and other intermediate products whether prohibited or not for the production of exportable goods, backed by a bond issued by any recognized commercial bank, merchant bank, insurance company or NEXIM. The Bond will be discharged after evidence of exportation and repatriation of foreign exchange has been produced.

b. Duty Drawback Scheme

The Duty Drawback Scheme provides for refund of duties/surcharges on raw materials including packing and packaging material used in the manufacture of products upon effective exportation of the final product.

c. Export Expansion Grant Scheme

The Export Expansion Grant Scheme provides for cash inducement for exporters who have exported a minimum of N500,000 (five hundred thousand Naira) worth of processed products. Exporters of processed products initially received a 4% rebate on repatriated proceeds, which, as of 2002, has been increased to 20%.

This scheme was discussed most often by the exporters interviewed for this report. Due to the 6-8 month delay in payment, there is a secondary market for the Duty Credit Certificates. The Certificates are essentially cash, to be collected eventually from the Government. Usually the exporter sells this certificate to importers through the banks at 10%.

d. Export Development Fund Scheme

The Export Development Fund (EDF) is a scheme developed by the Federal Government of Nigeria to provide financial assistance to private sector exporting companies to cover part of their initial expenses in respect of the following export promotion activities:

- Participation in training courses, symposia, and seminars in all aspects of export promotion
- Advertising and publicity campaigns abroad
- Export market research
- Product design and consultancy
- Participation in trade fairs, missions
- Cost of collecting trade information and
- Supporting the development of export oriented industries

Also the Nigerian Export Promotion Council meets regularly with exporters to discuss, develop and improve new incentives.

A.2. The Nigerian Export-Import Bank (NEXIM)

NEXIM was established by the Federal Government of Nigeria by Decree 38 of 1991 to replace the defunct Nigerian Export Credit Guarantee and Insurance Corporation with the main objective of providing a commercially oriented and export-stimulating institution that is committed to bringing about export-led recovery as well as a culture of self-inspired and sustained exporting in Nigeria. The bank was established to provide, among others: credit in local currency to support Nigerian exports; export credit guarantee and export credit insurance; domestic credit insurance when such a facility will help export; credit insurance in respect of external trade, transit trade and entrepot trade; and investment guarantees and investment insurance facilities. NEXIM maintains a foreign exchange revolving fund for lending to exporters who need to import foreign inputs; raw materials and packaging materials to help export production and a trade information system to support export business. NEXIM also buys and sells foreign exchange.

Presently, NEXIM is mainly involved in the production of financial and risk bearing services, market information export education and advisory services, to mention a few. NEXIM has emerged as the predominant source of short-term trade financing provided to the export sector. The major financial facilities offered by NEXIM in support of non-oil export include:

a. Rediscounting and Refinancing Facility (RRF):

This helps banks to provide pre and post shipment finance in local currency to support non-oil exports. While the refinancing scheme provides a bank with credit of up to one year, the rediscounting scheme provides short-term pre-shipment credit up to 120 days and post-shipment credit up to 60 days. As at the time of this report, exporters were receiving a NEXIM rediscounting rate of 21% (inclusive of bank charges, about 4%) as compared to commercial bank rate of 35%

b. Foreign Input Facility (FIF):

This provides manufacturers of export products foreign currency loans to import capital equipment, packaging and raw materials to produce finished products for export. The facility was intended to benefit small and medium sized enterprises whose assets do not exceed \$6 million.

c. Stocking Facility:

This is provided in local currency and it enables manufacturers of exportable goods to procure adequate stocks of raw materials to keep their production at optimal levels.

NEXIM Risk Bearing Services include:

- Export Credit Guarantee Facility
- Export Credit Insurance Facility
- Investment Guarantee and Investment Insurance Facilities
- Interstate Road Transit Scheme to guarantee goods transiting Nigeria to other member states of the Economic Community of West African States (ECOWAS)

In 2000, NEXIM was able to generate \$15.90 million of foreign exchange from its Export Credit Rediscounting and Refinancing Facility (RRF), which represents an increase of 99.5% over levels achieved in the previous year. The foreign exchange generated from RRF operations serves as a barometer of effectiveness of NEXIM's export support activities. Besides these export incentives, the Federal Government still has a long way to go with bureaucratic procedures, particularly at the port and data/information management, which is unreliable and in most cases, non existent.

Under the first National Development Plan, the Federal Government restricted itself to research activities for improving production of cash crops. However, following the emergence of many problems, especially food shortages, the government decided to play a more dynamic role in primary production, beginning from the mid-1970s. Consequently, the policy instruments adopted were: provision of credit; intensification of agricultural research; input subsidy; price support; manpower development and training; mechanization; land reform and international trade regulation. In order to ensure the realization of policy goals, various institutions were established for supervising or for providing some of the essential supporting services required by the sector.

A.3. The Africa Project Development Facility (APDF)

The APDF was launched in 1986 to support the development of competitive African small and medium enterprises, with services that are needed and affordable, working mainly through local institutions and consultants. The APDF has assisted over 460 enterprises in Sub Saharan Africa.

APDF helps to improve operations through capacity building and training. While APDF itself does not provide finance, it helps to source financing from the market and to find appropriate business solutions.

B. Socio-Economic Issues

Due to the nature of the ADAN project, there is a special need to highlight several socio-economic concerns as well as the business issues. Both criteria are important to the success of any project.

B.1. Environmental Effects

Sesame is an environment-friendly crop. It is suited to smallholder cultivation and, in adding to the diversity of local products, supports sustainable agricultural systems.

B.2 Impact on Incomes

Sesame is tolerant of dry conditions and can yield in areas where agriculture is difficult. It is suitable for intercropping and, with a short harvest cycle, the land is free for other use during 8-9 months of the year. Generally, sesame grows in areas of sorghum production and the crop can provide an alternative source of income as well as cooking oil for local consumption.

B.3 Impact on Women

Women are employed in the production, marketing and processing of sesame.

B.4. Geographic Distribution

Sesame grows in many states of Nigeria across the central (middle belt) and northern parts of the country.

IV. OPPORTUNITIES AND CONSTRAINTS

A. Opportunities

A.1. Growing Market

Demand for sesame has grown strongly in all the major consuming countries over the past decade. There are good reasons for continued growth in the demand as the product matches the healthy eating drivers in a number of the developed markets. Further, oriental cuisine has an enduring popularity in western markets and is likely to continue.

A.2. Multiple markets and uses

Sesame is imported by over 100 countries according to the FAO. There are at least 20 countries that import 7,000 tonnes or more per year. There is therefore the opportunity to achieve a broad market base. There is a diversity of uses for sesame and this feature should be exploited by developing the appropriate product to suit the end user.

A.3. Nigeria is an important producer and source

Nigeria already has the technology to produce a significant export crop. There is an established demand for sesame from Nigeria and this must be built upon. Despite the poor reputation of Nigerian exports, sesame is accepted in the market and Nigeria is a known source of supply.

A.4. Nigeria is the largest supplier of sesame to Japan

In 2001 Nigeria became the largest supplier of sesame to the World's largest importer of sesame, namely Japan. It is critical to maintain and grow this market share.

A.5. Unexploited markets

Nigerian sesame is valued primarily as an oilseed. Despite its important position in the Japanese market, Nigerian sesame is not gaining market share in other important sesame oil markets such as Korea and Taiwan. Further, while sesame for oil use is generally valued below sesame destined for other uses, there are opportunities to meet the specifications required for such alternatives. Nigerian sesame does not feature in the Mediterranean imports, for example, for a variety of reasons that could be investigated.

B. Constraints to Overcome

B.1. Commodity pricing

Nigerian sesame is bought based only on the price set by the seller. With its high oil content it is suited to pressing, and the low price and lack of attention to quality issues make the Nigerian product an attractive raw material for the industrial processor. Here the quality requirements are low and price expectations are also low. It is however a sector where it is difficult to compete other than on price.

B.2. Many other suppliers

Sesame grows widely across the tropics and is a popular crop with smallholders who can achieve an income in inhospitable conditions with the crop. The yields under mechanization are quite low and

the labor based producing regions can compete with the developed economies. The crop is widely cultivated, and as an opportunity to boost rural incomes the crop receives widespread donor support as well. Thus, although demand is likely to continue to grow we can also anticipate the continued expansion of supply and a consequent competitive market.

V. CONCLUSIONS AND RECOMMENDATIONS

Sesame is an important export crop in Nigeria, and Nigeria has a substantial role in the global sesame trade. Annual exports of sesame from Nigeria are valued at about US\$20mn and Nigeria is the primary supplier of sesame seed to the world's largest importer, Japan. These features are poorly recognized and it is timely to develop support and action to facilitate the continued expansion of this sector.

The position of sesame is not well understood either in Nigeria or in the global trade and a significantly clearer interpretation of Nigeria's competitive position and opportunities is essential. Other sectors examined during the course of this project, such as cashew or shrimps and prawns, have developed action plans and strategies for achieving defined objectives. Any business strategy must marry the internal capabilities of an enterprise, such as sesame in Nigeria, with the environment in which it operates, which here is the global marketplace. The compilation of this report has revealed areas of uncertainty in both, and the formulation of strategy and associated activities is therefore premature. In the first instance, a greater understanding of the position of Nigeria and its options is needed and the following notes elaborate recommendations towards this goal.

Recommendations

As a smallholder crop, capable of providing income in areas where the options are quite limited, sesame has a key role in sustaining agriculture in disadvantaged areas. Participants at a workshop for the sesame sector, held in October 2002, complained of inadequate support for producers

Recommendation 1: Appraise and evaluate the research, trials and extension services available to the sesame sector.

The annual exports of sesame seed are valued at \$20mn in a global trade in sesame seed valued at \$480mn. Despite being the leading supplier to Japan, Nigerian sesame exporters have only 4% of the world market. Exports are heavily skewed towards Japan.

Recommendation 2: Investigate opportunities in other markets, with particular focus initially on the oil markets of the Far East, Korea and Taiwan.

Korea presently buys through a tendering system with specifications that include minimum oil content of 48%. With a more flexible specifications the price advantage of Nigerian sesame as a source of oil would become clear.

Recommendation 3: Explore the possibility of changes in the Korean tendering process.

Japan has a number of different uses for sesame seed from oil production, both natural and toasted, as well as bakery and confectionery uses. It is likely that Nigerian sesame is used for oil production while other origins supply sesame for other uses. Nigeria must consolidate its current position in this market with a review of its competitive position and the opportunity to develop into other uses.

Although access may have been gained on the basis of lowest price it is important to move away from this strategy.

Recommendation 4: Evaluate the competitive position of Nigerian sesame in the Japanese market and assess the opportunity for increasing market breadth.

It seems that Nigerian sesame is generally imported as an oilseed. The seed from Nigeria has relatively high oil content and is competitively priced. Where the bakery and confectionery users of sesame have particular requirements concerning seed attributes, such as color and flavor, the sesame oil sector is less demanding. Nigeria's position is therefore precarious: low prices can be replicated by any other low cost producer and quality norms, such as there any, are easily matched.

Recommendation 5: In conjunction with recommendation #4, evaluate the opportunity for differentiating Nigerian sesame for oil users and explore the economics and market potential for pressing sesame in Nigeria on an industrial scale.

While Nigerian sesame is used for oil production, the possibility of accessing other markets for sesame should be investigated.

Recommendation 6: Appraise the requirements of other sesame sectors.

Appendix 1: SWOT Analysis of the Nigeria Sesame Industry

The purpose of this SWOT – Strength, Weakness, Opportunities and Threats analysis - is to provide basic information for strategic restructuring of the investment appraisal within the industry in Nigeria. The analysis highlights several issues regarding the sub-sector that are critical for both Nigerian and international stakeholders. The observations under each component have been grouped into the general categories: market/price; production; processing; exporting; and labor.

Strengths

Market/price

- Acceptance by the Japanese
- Strong domestic demand for sesame underpinning the production
- Product with recognized nutritional benefits

Production

- Widespread cultivation
- Cultivation technology well understood
- Contributes to sustainability of local agriculture
- Minimal inputs required
- High employment oriented
- Relatively pest and disease free in Nigeria

Export-related

- The existence of highly professional exporters
- Established trading connections with overseas markets
- Easy access to sea-freight

Labor

- Large supply of unskilled labor

Weaknesses

Market/Price

- Highly dependent on a single market, Japan
- Poor market breadth
- High cost of local capital
- Value added not provided (exporting a raw commodity rather than a food ingredient)

Production

- Produced by a large number of smallholders
- Absence of standards
- Absence of support to farmers – trials, extension etc

Processing

- Limited at present to cleaning facilities

Export-related

- The delays and low efficiencies of the ports and shipping operators in Lagos
- Poor infrastructure
- Low standards

Opportunities**Market/Price**

- Increasing demand for sesame
- Multiple markets and uses
- Unexploited markets such as Taiwan and Korea
- Further opportunities in Japan

Production

- Potential for expanding production
- Improve farm income by improving quality criteria
- New varieties

Processing

- Possibility of hulling, grinding or pressing for oil

Export-related

- Increase foreign exchange earnings

Threats**Market/Price**

- Fall in international prices
- No differentiation from other supplies to this sector
- Discounted price for Nigerian sesame
- Low credibility of Nigerian products and exporters
- The ability of other low cost producers to mirror the comparative advantages of Nigerian sesame in the global market

Production

- Competition from other crops

Export-related

- Bureaucratic policies and procedures with export.

APPENDIX 2: CONTRIBUTIONS

	<i>Company</i>	<i>Contact</i>	<i>Title</i>	<i>Location</i>
Private Sector – Nigeria				
1.	Olam Nigeria Ltd.	V. Srivathsan	Chief Executive	Lagos, Nigeria
2.	Goldchains International Ltd	Boma Anga	Managing Director	Lagos, Nigeria
3.	Shebag Holdings Ltd	Sheriff T Balogun	Managing director	Kaduna, Nigeria
Private Sector – UK				
7.	Choithrams Company	Andrew Barker		London, UK
8.	Accord Associates	Peter Jaeger		
9.	Accord Associates	Grahame Dixie		
Nigerian Government				
1.	Projects Coordinating Unit (PCU)	Dr. Salisu Ingawa	Head of Unit	Abuja
2.	Projects Coordinating Unit (PCU)	Ismaila Adamu	Personal Assistant to the Head of Unit	Sheda-Abuja
3.	Projects Coordinating Unit (PCU)	Gidado Bello		Sheda-Abuja
4.	Nigerian Export Promotion Council (NEPC)	Mathew Iranloye	Chief Trade Promotion Officer	Abuja, Nigeria
5.	Nigerian Export Import Bank (NEXIM)	R. O. Madaki	Chief Executive	Abuja
6.	Nigerian Export Import Bank (NEXIM)	Baba Yusuf Ahmed	Executive Director	Abuja, Nigeria
7.	Nigerian Export Import Bank (NEXIM)	Muhammad Muhtar	Deputy General Manager	Abuja
8.	Nigerian Export Import Bank (NEXIM)	Arua K. Ndukwe	Research Dept	Abuja
9.	Federal Office of Statistics (FOS)	Henry Eteama	Statistician	Abuja
10.	Central Bank of Nigeria (CBN)	Ngozi Egbuna	Agric Studies Unit	Abuja
11.	Central Bank of Nigeria (CBN)	Moses. F. Otu	Principal Economist	Abuja
12.	Cocoa Research Institute of Nigeria (CRIN)	Rev. Oduwole		Ibadan, Oyo
NGO				
1.	Enterprise for Development International (EfDI)	Dr. Charles Akinola	Executive Director	Ikeja, Lagos
Multilateral/Donor Agencies				
1.	USAID	Abdulkadri Gudugi	Agricultural Economist	Abuja
2.	African Project Development Facility, APDF	Akin Adeoye	Project Officer	Lagos, Nigeria

APPENDIX 3: PROJECT BACKGROUND

Before independence, Nigeria's economy was largely sustained through agricultural exports. Major industries such as Unilever PLC, Paterson Zochonis PLC, etc., depended on agricultural raw materials from Nigeria and other Commonwealth nations in the tropics and export trade in agricultural commodities accounted for over 60% of Nigeria's export earnings. Apart from this, the sector also accounted for a similar proportion of the nation's Gross Domestic Product (GDP) and it was the largest source of employment. In the 1970s and 1980s, a combination of increasing petroleum oil production and rising prices brought easy and windfall earnings, which diverted Nigeria's attention and encouraged the neglect of agricultural exports. The country invariably lost its competitive advantage in certain commodities, which it had painstakingly established.

While one cannot blame agricultural neglect alone for the nation's dwindling export trade in agricultural commodities, other factors such as increase in industrial activities in the country, government policies on local value added commodity processing, finance, pricing, etc., have all contributed to the weakening of the nation's capacity to participate effectively in the commodity export trade. Over the years, there have been different agricultural policies targeted at improving the performance of the agricultural sector and reviving export trade in semi-processed agricultural commodities. These policies focused mainly on:

- Attaining self-sufficiency in food and raw materials for industries;
- Improvement of the socio-economic welfare of rural people engaged in agriculture; and
- Diversification of the sources of foreign exchange earnings through increased agricultural exports arising from adoption of appropriate technologies in food production and distribution

While the policies are sound, until the recent return to democratic governance, the will and strategies to implement them had largely been absent during years of military rule. The emergence of democracy required the institutionalization of civil governance structures and the revival of the productive value-adding sector of the economy, which is so strategic in addressing the multifaceted socio-economic problems confronting the nation.

Nigeria plays a strategic role in the stability of sub-Saharan Africa and the challenges associated with rebuilding the economy of such a huge nation whose economy had been mismanaged and ravaged as a result of poor governance are enormous.

The United States Government through its Agency for International Development (USAID) is assisting the Nigerian Government and its people rebuild the socio-economic and political structures of the nation. Accordingly, a USAID strategic plan, which focused on five strategic goals, was developed. These strategic goals are to:

- a. Sustain Nigeria's transition to democratic governance;
- b. Strengthen Nigeria's institutional capacity for economic reform and enhance its capacity to revive agricultural growth;
- c. Develop the foundation for education reform;

- d. Increase the use of family planning, maternal and child health services and HIV/AIDs/STD preventive measures; and
- e. Improve management of local infrastructure and the energy sectors.

To help revive agricultural growth, the Government of Nigeria (GON) requested USAID/Nigeria's assistance to determine which agricultural products have the greatest potential to increase foreign exchange and create jobs. The GON is convinced that a realistic business plan to maximize Nigerian's agricultural potential must be based on sound information, an analysis of what actually exists, and a clear understanding of the constraints in the sector that inhibit the GON and the Nigerian private sector from capitalizing on these opportunities.

Chemonics International is working with USAID/Nigeria and Government of the Federal Republic of Nigeria (GON) to meet these objectives. The following three-phase approach was designed to achieve these objectives:

- I. Assessment of the Global Market for Agricultural Products;
- II. Evaluation of Nigeria's Agricultural Sector; and
- III. Agricultural Industry Action Plans

The final result will be the submission of a number of Industry Action Plans (IAPs) that will be implemented as part of a comprehensive agricultural competitiveness program that would be supported by USAID and other international donors as well as the international and Nigerian private sectors.

- I. Assessment of the Global Market for Agricultural Products.

The first phase was a broad overview of the world market for agricultural products, including products that are currently, or potentially could be, produced in Nigeria. The global markets, including the Africa region, were evaluated using a rigorous methodology and evaluation criteria developed by consultants experienced in global markets for tropical agricultural products. For example, the set of criteria included existing consumer demand, trends in market shares, capital requirements, product distribution, commodity prices and volatility, financial returns, etc. The results of this assessment produced a prioritized list of the most promising global marketing opportunities for current and prospective Nigerian agricultural export products.

- II. Evaluation of Nigeria's Agricultural Sector: "The Agriculture Commodity Summit."

In collaboration with the Project Coordinating Unit (PCU) of the Federal Ministry of Agriculture, and the Nigeria Export Promotion Council (NEPC), Chemonics International held a stakeholders' summit on Nigerian agricultural exports in Abuja in January 2002. The summit was attended by more than two hundred participants and stakeholders who helped to identify and recommend, for further study in the Agricultural Industry Action Plans, those commodities that had the greatest

potential for creating increased economic growth, external and internal trade, opportunities for employment and increased income and wealth for Nigeria.

Facilitated by local and expatriate consultants, the summit pulled together local experts; stakeholders and public officials who jointly developed a comprehensive list of opportunities matching existing and potential Nigerian agricultural products with current and forecasted world demands. The summit combined completion of questionnaires (during the summit meeting) with the discussion of the rank-ordered list of commodities for domestic production and export potentials.

The summit also created a high profile public and private sector buy-in for this approach to agricultural competitiveness and demand for the “downstream” activities’ industry action plans, and possible constituencies/partnerships for the eventual implementation of the action plans.

From the summit, the following commodities were chosen for in-depth study:

1. Ginger
2. Gum Arabic
3. Sesame
4. Cashew
5. Leather/Skins
6. Marine Products (prawn farming)

Following the summit, a team of consultants including expatriate and local industry experts conducted “validation visits.” These visits were to selected sites, and stakeholders (exporters, processors, producers, etc.) and were designed to confirm information and gather data necessary for preparing useful action plans.

III. Industry Action Plans

Industry Action Plans are being developed for the most promising commodities selected from the agricultural commodity summit. These action plans, or “road-maps”, will identify weak links in the commodity chain that limit competitiveness and suggest practical steps for overcoming them. This analysis includes private and public sector individuals most active in the selected commodity. The plan will focus on actions individuals interested in establishing and/or expanding their presence in the export of Nigerian agricultural products to take. The action plan will also identify interventions appropriate for USAID and GON support to both increase and accelerate private sector agribusiness activity within the commodity chain.