

# CASHEW NUTS SUB-SECTOR STUDY

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## LIST OF ACRONYMS

ASMP	Agricultural Sector Management Programme
CBT	Cashew nut Board of Tanzania
CDC	Cashew nut Development Centre
CIDEF	Cashew nut Industry Development Fund
CIP	Cashew nut Improvement Programme
DAI	Development Alternatives, Inc
DALDO	District Agriculture Development Officer
ECI	Ebony Consulting International
FOB	Free on Board
GOT	Government of Tanzania
ITF	Input Trust Fund
KG	Kilogram
MCM	Ministry of Cooperatives and Marketing
MAFS	Ministry of Agriculture and Food Security
METL	Mohammed Enterprises Tanzania, Ltd
MSE	Micro and small enterprise
MT	Metric ton
NAFCO	National Agricultural and Food Corporation
NBC	National Bank of Commerce
NMB	National Microfinance Bank
NMC	National Milling Corporation
ODA	Overseas Development Agency
PESA	Private Enterprise Support Activities
PMD	Powdery mildew disease
SACCO	Savings and Credit Cooperatives
TATC	Tanzania Automotive Training Centre
TCCIA	Tanzania Chamber of Commerce Industry and Agriculture
TFC	Tanzania Fertiliser Company
TSH or /=	Tanzanian shillings
USAID	United States Agency for International Development
USD	United States Dollar

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The Tanzania cashew nut sub sector analysis report was prepared after a series of field visits and interviews in cashew producing regions. Interviews were conducted with key stakeholders in the sector, including: private sector (processors, traders, input suppliers, transporters, bankers), government departments, farmers and farmer's associations as well as NGOs working in the sector at both national and district levels. International research on the cashew sector in Tanzania and worldwide was also consulted, and proved invaluable in the literature review as a precursor to the study. Preliminary findings of the study were also shared with a forum of private, civic and public sector representatives and their comments were integrated into the report.

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*All interpretations of facts, opinions, and errors are the responsibility of the authors.*

## EXECUTIVE SUMMARY

### OVERVIEW OF THE SUB-SECTOR

Cashew nuts are very important to Tanzania's economy. They generate an average of USD 74m per year in foreign exchange earnings, serving as Tanzania's leading agricultural export. It is grown by 280,000 smallholder farmers who derive most of their livelihood from it, particularly in the southern regions of the country. There are about 42,000 cashew farmers in the PESA regions of Tanga and Ruvuma (District Agricultural Extension Staff).

Producing as much as 90,000 to 100,000 tons of cashews in a year, only seventeen percent of the country's production is processed to add value in Tanzania. The rest is sold in raw form, to be processed and re-exported by India, the world's dominant cashew processor and exporter. Tanzania has lagged behind making in-roads into world processed cashews markets due to bottlenecks in its processing capacity. This signifies a lost economic opportunity to the Tanzanian economy and, by extension, to the farmers who inevitably get low net profits. Some progress has been made by small and medium scale processors in the past four years, but they still process very little.

Production levels of Tanzanian farmers are relatively low. Cashew nut groves have aged and diseases and pests are not effectively controlled due to inherent inefficiencies in the marketing system of the required inputs and general poor performance of rural financial markets to finance the production system.

Tanzanian cashew nuts are purchased primarily using a network of agents who go to the field to buy nuts for the large exporters. This keeps the farmers several steps removed from the exporter, let alone the end market that is processing or consuming the nuts.

Tanzania has had poor experience processing cashew nuts into kernels<sup>1</sup>. Though the government invested millions of dollars building 12 cashew processing factories, these factories have never been productive. In their best years, they operated at ten percent of capacity; most of them have been closed for years. A few small and medium processors have developed since 1999, but their processed production is still small compared the country's cashew nut production.

India dominates the world's production, processing, and export markets. India produces about 350,000 tons of raw cashews per year and imports a further 320,000 tons. It then exports about 95,000 tons of kernels. Brazil and Vietnam are the second largest producers

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<sup>1</sup> It is important to differentiate between the cashew nut and the kernel, sometimes referred to as the almond. The nut includes the shell, whereas the kernel is that portion which is eaten. Given the very hard nature of the shell, cashews nuts must be processed for consumption by first heating the whole nut, cracking the nut, and removing the membrane around the cashew kernel, which is then ready for further consumption. Therefore, differentiation in this report will always be made between the cashew nut and the processed cashew kernel.

and exporters of cashews, producing about 150,000 tons of nuts. Tanzania falls into the third category of countries producing between 75,000 and 100,000 tons per annum, along with the Cote d'Ivoire and Guinea Bissau. After India, Brazil and Vietnam are the only major exporters of cashew kernels, with 28,000 and 77,000 tons of kernels, respectively.

World demand for processed nuts (kernels) is about 176,000 tons per year and is growing at about 4.9 percent per annum. Major first world markets such as Japan, UK, USA, Germany and Netherlands are showing good uptake. However, the export market for raw cashew nuts is fraught with challenges and Tanzania faces stiff competition with upcoming production improvements in new producer countries such as Vietnam, which may destabilise the Indian export market and affect the gains made since liberalisation.

There are four main channels through which cashews move from the farm to the end consumer in Tanzania: (1) the small integrated farmer channel, (2) the small scale domestic processor channel, (3) the medium scale export processor channel, and (4) the export trader channel. The export trader channel still accounts for the vast majority of marketed production and can be further segmented between very large exporters and sporadic smaller exporters. The two processed nuts channels are growing, being led by the export channel.

**Channel One** - The small integrated farmer channel: small farmers, located fairly close to rural markets, represent a vertically integrated channel in which the producer fulfils the role as harvester, transporter, wholesaler and retailer who markets directly to the consumer.

**Channel Two** - The small processor channel: There are an estimated 50 small processors who produce anything between 2mt to 30 mt of cashew kernels a year, purchasing nuts directly from farmers.

**Channel Three** - The medium to large processing channel: There are four private processing companies in Tanzania who have a combined processing capacity of 6600mt of kernels per season, exporting about 2,910 tons of kernels in 2002 to markets in Europe, India, USA, Canada, Australia, Germany and Netherlands.

**Channel Four** - The raw cashew nut export trader channel: This is the most active channel in Tanzania, with between 13 and 23 traders accounting for the purchase of about 83 percent of the raw nuts in the country.

The sub-sector dynamics show that channel three is growing the most rapidly fuelled by investment from large export traders in channel four. Channel four remains strong, and many of the leading exporters have sound financing ties to the Indian processors, facilitating their ability to purchase the raw nuts.



## **DRIVING FORCES**

The major driving force in this sub-sector is the world market, which is expected to grow by 4.6 percent per annum over the period 1998 – 2010, driven by demand from the six largest importing countries, which grew by 7.1 percent per year, taking up 75 percent of the world imports.

As noted above, India is the leading importer of raw nuts and leading exporter of processed kernels, which gives it an important role in making the markets. While India absorbs the supply of raw nuts from Africa (Cote d'Ivoire, Tanzania, Guinea Bissau, etc), there is a limit to its overall capacity to process and export kernels. If India has an excellent harvest, then it will use Indian nuts first, reducing the demand for nuts for processing from Africa. Being able to enter the world market without going through India will be an important goal for Tanzania.

Within Tanzania, a second driving force has been the domestic marketing policies. The government controlled marketing process nearly killed the sub-sector before liberalisation. Recent political events have distorted the market in election years, leading to weak market price incentives. Government taxes, amounting to 22 percent of the FOB export value make up an important part of the marketing policy. This is an important factor considering the cost of capital in Tanzania.

The third force driving the sector in Tanzania is the interest of the private sector. Private businesses realise that they need to reduce their risk of being too closely tied to the export of raw nuts to India and that they can earn more money from processed nuts if they are able to get their production to scale. This is driving the growth of channel three.

## **CONSTRAINTS**

Constraints to growth of the cashew nut industry occur at a variety of levels: production, government policy, and marketing. When contemplating increasing benefits to the producers, the most important is to increase prices to them, providing them with an incentive to produce more.

The policy environment creates negative incentives for the development of the sector. Cashews are perceived as a cash crop to be taxed, creating a source of revenue for government at all levels, from the municipalities to the national government. Analysis demonstrates that the accumulated taxes equal about 22 percent of the FOB export value of the nuts.

There is no overall strategy within the government of Tanzania (GOT) to grow the sub-sector and increase the value added to Tanzanians through out the sub-sector. Though it has the Tanzanian Cashew Board, the Board does not promote processing, but has instead been spending money on the upkeep of non-operating factories.

On the marketing side, main constraints include weak distribution of price and market information at the farm level, poor business skills and lack of management capacity of market association leaders. The weak processing industry also hurts the domestic demand for nuts, leaving Tanzania entirely dependent on the Indian demand for its nuts.

However, even if the market conditions are right, the farmers still must overcome a number of production constraints:

- Limited extension services at producer level.
- Poor crop husbandry practices.
- Limited supply of good quality trees.
- Poor quality grades of cashew nuts that do not fetch competitive prices.
- Lack of quality sensitivity in domestic markets.

### **IMPLICATIONS FOR PROJECT ASSISTANCE**

Though there is good will and desire to invest on the part of the private sector, the constraining policy environment is negative enough to prevent long term growth to the sub-sector. Without a conducive environment and a long term strategy, investments in enhancing Tanzania's cashew production might be wasted. There are many things that the PESA project could do for the more than 42,000 cashew farmers in the PESA Regions, but this would have little lasting effect in the face of the threats on the world market. However, there seems to be a strong desire on the part of some members of government, the farmers and the processors and exporters to develop a strategic approach to improving the policy and market environment in order to stimulate growth of the sub-sector. Therefore the main recommendation is for the PESA project to assist with developing an overall strategic plan for growing the cashew industry that has buy in from the farmers, the exporters, the processors and government. Such a plan will might include:

- Improving the policy and tax environment surrounding the cashew industry and making most effective use of the tax revenues to stimulate the industry;
- Introducing incentives to process nuts domestically, increasing local value added and breaking the dependence on the Indian market.
- Getting the exporters thinking as a collective unit who are seeking to maximise Tanzanian exports, rather than to maximise their own exports, at the expense of other Tanzanian exporters. This would actually lead to greater overall exports for Tanzanian exporters.

Without such a plan, the long term growth of the industry will be in doubt and further investments in the upstream production will not be certain to bear concrete results. With respect to the PESA project, the main cashew producing farmers are in Ruvuma far from the points of export or in Tanga. Assisting them to improve their production and direct

marketing will be secondary to the benefits they will see if the overall market for nuts, led by a coherent strategy, grows significantly.

Therefore, the policy environment is a strong impediment to the growth of the cashew sector in Tanzania. It is recommended that a devoted study on the policies of all other cashew growing countries be conducted, their policy environments and recommendations for developing a sound strategic plan for the Tanzanian cashew industry. The results of this study can then be used to lobby the government for the development of a viable policy environment for the development of the Tanzanian cashew sub-sector.

Once a better strategic plan is in place, then the project can assist the farmers to produce more cashews. We propose interventions targeted at the following areas but working with small scale farmers in the Ruvuma region. Focus is recommended on a pilot working on the following areas:

- Facilitate the **provision of appropriate extension services** through direct training of farmers by trainers or by training extension officers;
- Facilitate the **establishment of home nurseries and marketing of good quality trees** to home nurseries on fee basis;
- Facilitate **capacity building within market associations**;
- Facilitate **access to market information by linking the ITFS/ farmers associations with internet service providers on fee basis**;
- Create **linkages between input suppliers and ITFs through guarantee funds** as well as **promotion of private input suppliers at local levels** through establishment of input supply guarantee funds;
- Pilot the establishment of **small scale processing at district level such as Tunduru by establishment of a technology centre to operate on commercial basis on a rent to buy or rent to use basis**; and
- Pilot the **linkages between Savings and Credit Cooperative Organisations and commercial banks for access to finance** (seasonal and warehouse receipts to hedge against distress marketing);

## 1 INTRODUCTION

The four year USAID funded Private Enterprise Support Activities (PESA) project in Tanzania commenced in October 2002. The project aims to improve income and employment opportunities for micro and small enterprises (MSEs), including farms, through market links and information, policy changes, strengthened associations and business skills training, focusing on the Tanga, Morogoro, Iringa, Mbeya, Ruvuma and Rukwa regions. PESA Tanzania is funded by the United States Agency for International Development (USAID) and implemented by Development Alternatives Inc. (DAI).

This study is an analysis of the cashew sub-sector. Sub-sector analysis offers a tool that can facilitate the development of MSEs by identifying the growth opportunities within a sub-sector and understanding their links to the overall system within which the sub-sector functions. A sub-sector is delineated by a particular final product and includes all firms engaged in raw material supply, production and the distribution of the product. Sub-sector analysis also reviews the policy and institutional environment supporting a sub-sector and offers a framework for rapidly evaluating MSE dynamics, and the prospects for cost effective interventions which can have the most widespread impact on small firms in the sub-sector. As such it forms an integral part of the DAI PESA Project in Tanzania.

Cashew is one of a number of sub-sectors that have been identified as areas offering important growth opportunities with respect to small farmers and MSEs that are to be analyzed in greater depth as part of this program. This study will focus on the cashew sub-sector in Tanzania, and will identify sub-sector dynamics, constraints, highlight the implications thereof, and provide the project with a preliminary strategic focus on how PESA can best support the growth of MSEs and farmers within the sub-sector.

## 2 OVERVIEW OF CASHEW PRODUCTION IN TANZANIA

*Anacardium occidentale L.* (cashew nut) is native to Brazil and was introduced in the 16<sup>th</sup> century by Portuguese colonists and missionaries to East Africa as well as India. The crop is widely believed to have remained in the coastal areas mainly meant for local consumption until it gained economic importance after the Second World War (Schachinger, 2001). The cashew has since spread to several dozen countries, primarily between latitudes 15 degrees north and south.

Unlike many nuts, cashews are only sold to consumers in the kernel form. The shell of the cashew nut is very hard and it must be processed before it is sold. Throughout this document, referral to cashew nuts refers to the raw form with the shell, and kernel refers to that part that is actually eaten. In the process of transforming the nut to the kernel, about 80 percent of the weight is lost. This ratio varies by region, but becomes an important factor in calculating the processing efficiencies and the ultimate price paid for the nuts.

In the period between World War II and the early 1970s, Tanzania developed one of the largest cashew nut industries in the world, with an initial export of 7,000mt to India (Schachinger, 2001). Today the Tanzanian industry accounts for at least 8 percent of the total 1.8m mt world production and it ranks among the largest exporters of raw nuts. Cashew nut trade was started by private traders, but they became marginalised by the government when it introduced a single marketing system in the 1960s. The key players in the primary marketing system were local primary societies, regional cooperative unions and a national marketing board. This central system created marketing inefficiencies which led to low producer prices for farmers which to a large extent contributed to the decline in the sector which was registered in the 1980s. During the 1973/74 season, an all time high output of 145,000mt was attained but it dropped significantly to an all time low of only 17,000mt in the late 1980s.

Tanzanian cashew production and exports shrank steadily under centralized marketing policies, but have recovered under the liberalised policies. During the 1970s, farmers were forced to abandon cashew groves as they were being resettled under the Ujamaa villagisation scheme. They were located too far from their *shambas* to effectively attend to them and intercrop the young plantations. Combined with the emergence of the powdery mildew disease (PMD), production continued to decline. Since 1990, the GOT has since made serious efforts to reinvigorate the cashew sector with external support from the World Bank, the then ODA, FAO and other bilateral sources. These efforts contributed to the recovery of the cashew sector, permitting it to realise real growth driven by the liberalisation of the sector in 1992. From a meagre output of 17,000 mt in 1987/88, output doubled every 3-4 years through the 1990's, eventually reaching over 130,000mt in the 2000/01 season. Prior to liberalisation, farmers obtained only 40 percent of the export value of the crop; since liberalisation the farmers now obtain about 60 percent of the export value of the crop. The increase in producer prices and on time payment of farmers has led to increases in cashew production.

## 2.1 PRODUCTION ZONES

The major production areas in Tanzania are the coastal areas, from Tanga in the north to Mtwara in the South. In the South, cashew is produced inland up to around 1,000 meters above sea level. The growing period for cashew nuts is about 5-6 months. Cashew is by far the most important crop in these regions and it covers a wide area of arable land both in pure stand and intercropped fields where it is intercropped with cassava (Lamboll, 1991). Cashew trees occupy up to 35-50 percent of the land.

FIGURE 1: CASHEW PRODUCING REGIONS OF TANZANIA



**TABLE 1: CASHEW NUT PRODUCING REGIONS**

REGION	1992/93 PRODUCTION (MT)	PER CENT OF TOTAL	2002/03 PRODUCTION (MT)	PER CENT OF TOTAL	12 YEAR AVERAGE PRODUCTION	DEVIATION FROM AVERAGE
MTWARA	22125	54%	52345	61%	44031	POSITIVE
LINDI	5913	14%	18146	21%	12496	POSITIVE
RUVUMA	2854	7%	4444	5%	7934	NEGATIVE
PWANI	4163	10%	9307	11%	7243	POSITIVE
DAR ES SALAAM	3840	9%	2094	2%	4193	NEGATIVE
TANGA	2246	5%	75	0%	1142	NEGATIVE
MBEYA	0	0	0	0%	0	CONSTANT
IRINGA	0	0	0	0%	1	NEGATIVE
MOROGORO	0	0	0	0	1.4	NEGATIVE
WENGENEYO	97	1%	0	0%	1126	NEGATIVE
<b>TOTALS</b>	<b>41,328</b>	<b>100%</b>	<b>86,411</b>	<b>100%</b>	<b>78,246</b>	<b>POSITIVE</b>
<b>Southern Districts Contribution</b>	<b>30,544</b>	<b>78%</b>	<b>74,937</b>	<b>87%</b>	<b>64,462 or 82%</b>	<b>POSITIVE</b>
Northern & other Districts Contribution	10,784	22%	11,474	13%	12,581 or 13%	NEGATIVE

*Source: Cashew nut Association of Tanzania*

A cashew nut improvement programme was initiated with donor funding to resuscitate the sector. The \$25 million Cashew nut Improvement Programme (CIP) was jointly funded by the World Bank, the British Overseas Development Agency (ODA) and the Government of Tanzania with the aim of increasing the production of cashew nuts in the country. Areas targeted under the project include: Naliendele (Mtwara), Nanyanga (Newala), Mangaka (Masasi), Nyangao (Lindi), Nakayaga (Tunduru), Nkulanga (Pwani) and Mwele (Tanga). Services provided to farmers included:

- Training of both the extension workers and farmers in agronomic practices especially nursery management and grafting; and
- Supply of inputs for seedlings including improved seed and polythene tubes for seedlings

In the 1991/92 season, a total of 50,000 trees had been supplied to farmers and an additional 300,000 trees were supplied in the 1992/93 season. The subsequent years saw the programme providing polythene tubes only with farmers producing their own trees.

## 2.2 INPUT SUPPLY

Cashew nut production requires sulphur dust and sulphur blowers along with other pesticides. Input supply used to be a preserve of the Cooperative Unions with provision of subsidised inputs to farmers on credit. With the introduction of the liberalisation programme in 1991/92, most cooperatives collapsed or had their functions curtailed as they were exposed to the vagaries of market forces. This destroyed input credit schemes in the face of an eruption of the cashew nut fungus disease. The demand for sulphur and the accompanying spray equipment (blowers) was not met.

A 79/= million scheme was started by the CRDB for sulphur and blowers in the period 1990/91 to 1993/94 with a total of 145 to 277 stockists being provided with loans. The number of stockists supplying the items shrank due to repayment problems. On the other hand, three private firms have been established since liberalisation and only one of them has withstood the pressures of a low margin sulphur business (3.8 percent only per 25kg bag - see margin analysis in annex 8). The company imports an average of 4,800mt of sulphur in a year.

Focus group discussions with farmers in Namtumbo district bore the sorry state of input supply particularly for remote locations. Rural traders in those areas do not have access to credit lines for input supply and they do not command the necessary capital required of them to order inputs in bulk. Farmers end up getting inputs such as sulphur dust very late and through inefficient means which then creates serious market inefficiencies. Some farmers in Lusewa, Namtumbo district reported that they travel at least 150 km to their nearest sources of inputs. There are emerging input supply models such as the Tunduru Farmers Input Trust Fund (see box below).

An input trust fund is a voluntary membership contribution made by cashew farmers into a common fund in order to purchase agri-inputs. Farmers set aside a percentage of their income from cashew nut sales and this is pooled into a fund which is then used to procure and distribute cashew nut inputs. Each contributing member is given a passbook which indicates the savings they have made towards the purchase of inputs as well as draw downs against the fund. The fund is typically managed by a secretariat employed by the ITF members and these staff manage the procurement and distribution logistics of the agri-inputs.



**Tunduru Farmers Input Trust Fund Model:** the fund was set up in 1993 and it has a membership of 33,000 members from Tunduru district. On marketing of their produce, each farmer has 30/= /kg deducted for all the nuts they sell. This money is then used to procure and transport inputs to the villages for the next agricultural season. This money (30/= contribution) is deducted from the buying price from the buyer by the district council on behalf of the TITF. Each member has a passbook where an entry is made for the amount of money they have contributed relative to the sales of cashews they have made that particular season. Collections of funds takes place from December to February and inputs then get delivered to the different villages from May onwards. The TITF has its own 7tonne truck and employs 6 staff. They have structures from village level which culminate in a board of 8 members at district level representing all divisions as well as government employees comprising the District Commissioner, District Agricultural Development Officer and the District Administrative Secretary. The board meets quarterly and there is a general meeting once every year.

Source: Tunduru Input Trust Fund Secretariat.

## 2.3 PRODUCTION SEASON

The production season for cashew spans over a 5 to 6 months period with major activities being spraying, pruning, weeding and harvesting.

FIGURE 2: CASHEW PRODUCTION CALENDAR IN TANZANIA

Cashew Production Calendar in Tanzania				
	January - March	April - June	July - August	September - December
Pruning				
Weeding				
Spraying				
Harvesting				

Source: Derived from extension staff and farmer interviews

## 2.4 CASHEW NUT HUSBANDRY PRACTICES

Cashew nut production is not very difficult to manage. Their soil conditions are not very critical but they tend to grow best in deep friable sandy loam or loam soils with average ph levels of between 6.5 and 7.5. The soil needs to be well drained as cashew trees do not tolerate stagnant water and flooding. Precipitation ranging from 800mm to 1600mm is ideal and they will require a distinct dry period of two to four months. The cashew nuts need to be managed against three major problems of PMD, fungal disease and fungal infection. Research conducted at the Naliendele Research Station came up with recommendations that spacing under a mono cropping regime should be 69 trees per hectare. The main challenges to production of cashew nuts are: powdery mildew disease, Anthracnose fungal disease (*colletotrichum* spp) and *Helopeltis* and *Trips* (see annex 3):

## **2.5 CASHEW NUT VARIETIES GROWN**

The country has eight cashew nut Development Centres (CDCs) which work in conjunction with the Naliendele Cashew Nut Research Centre which is based in Mtwara region. These are in Masasi, Tanga, Tunduru, Tandahimba, Naliendele, Mukaranga, Nanyanga and Nyangawa. While the country has a total of 33 varieties of cashew nuts, a total of 23 varieties are being promoted. These 23 varieties are planted and propagated for wider adoption by farmers. From the extensive work of the CDCs, five varieties have been recommended for adoption. These are AC4, AC10, AC28, AC43 and AZ17 based on their disease resistance and good yield potential. These can produce up to 8-10m of canopy diameter with each square metre producing a kilogram of cashew nuts. According to this, a tree with an 8 meter diameter should be producing at least 36kg of nuts. Tanzanian trees are only producing 2, 5 to 5kg because they are old and do not receive good care.

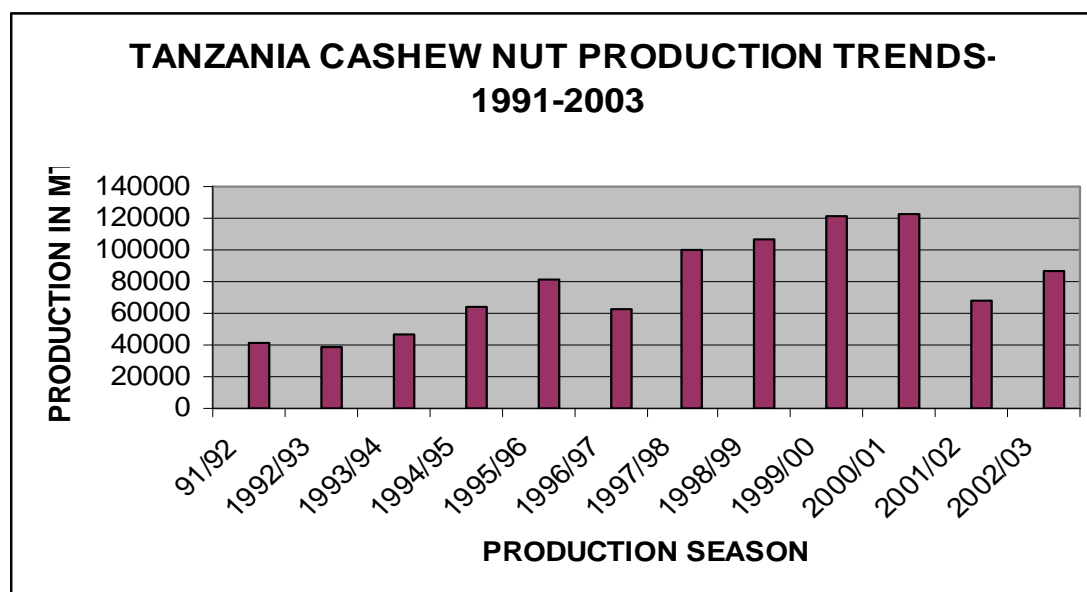
## **2.6 AGE OF CASHEW NUT GROVES**

Most of the cashew trees in the country are very old and past the optimal yield stage. Optimal yield ranges between 15 and 20kg per tree. The National Cashew nut Program estimates that on average ,yield in the country is about 3.5kg per tree which translates to a mere 20 percent of the optimal yield. The CIP aimed at a modest yield of 8.5kg per tree but farmers are still reporting yields of between 2.5 and 5kg per tree. Focus group discussions with farmers in Lusewa in Namtumbo district indicate that over 50 percent of the trees are over 30 years while 20 percent are below 5 years. While there are some young trees still to produce, a disturbing trend reported in the study is the fact that most of the trees that have been planted are from the same old varieties and no improvements have been made at all. The farmers are therefore faced with the double dilemma of low production and disease susceptibility of these varieties.

## **2.7 CASHEW PRODUCTION AND MARKETING TRENDS**

Agricultural production statistics are available on a regional as well as national basis for the cashew nut crop produced in Tanzania. Cashew nuts are the major agricultural export in Tanzania accounting for average earnings of USD 74m per year. Complete data is available only from the 1990/91 period so the analysis period in this report will be mainly from that year. Data shows that over the period ranging from 1991/92 season to 2002/03 season, a total of 938,959.87mt were produced in the country. In the 1991/92 season, a total of 41,000mt were produced and it rose to 63,000mt in the 1994/95 season .The production further rose to 106,000mt in the 1998/99 season and 122,000mt in the 2000/01season. The production fell to 67,000mt in the 2001/02 and it has picked up to 86,000mt in the 2002/03 season. The liberalisation drive fuelled the growth of the sector.

FIGURE 3: TANZANIA CASHEW NUT PRODUCTION TRENDS

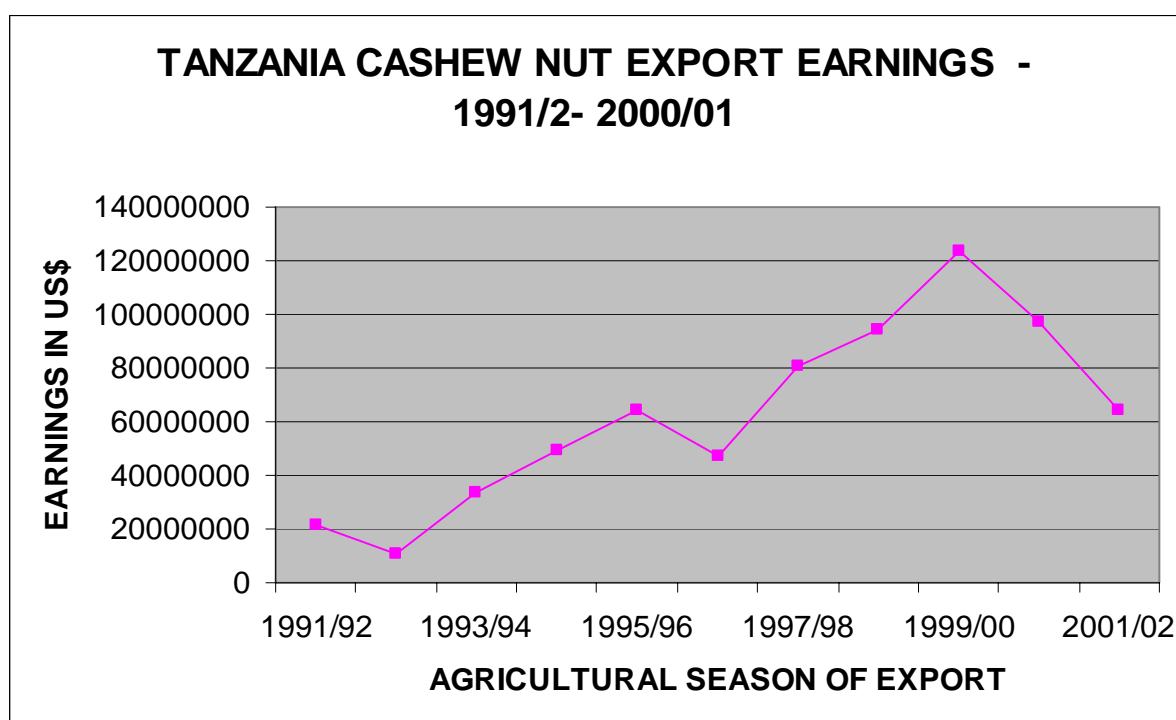


Source: Cashew Nut Association of Tanzania

In terms of earnings from the crop over the 1991/92 to 2001/02 season, the country obtained a total of USD698 million. This averages out to USD58 million earnings per year from the crop with an average export price of USD766 per mt. The earnings trend improved with the period between 1996/97 to 2002/03 realising an average of USD74m a year. However, the lowest cashew price ever recorded in the country is USD523/mt in the 2002/03 season, which does indicate a downward trend as the world supply has responded to the higher prices.

When we compare the producer prices over the period, it is noted that the average producer price over the 17 year period (1975/76-1991/92) averaged USD399/mt while the post liberalisation period price averaged USD567. This can point towards the benefits of liberalisation for the farmers as competition was introduced and farmers gained a better share of the export price unlike in the past closed marketing era. The f.o.b percentage obtained by the farmer however, took a nosedive in the year 2000/01 to as low as 35 percent of the f.o.b price. This drop is not entirely dependent on the world market price fluctuations but the political events in Tanzania which interfered with the marketing of the cashew nuts. (See case study overleaf)

FIGURE 4: TANZANIA CASHEW NUT EXPORT EARNINGS



Source: Cashew Nut Association of Tanzania

***The 2000/01 Marketing Crisis and the low farmer producer price***

*The events folded out as such: the producer price had risen in the year 1999/00 from 200/= a kg in the year 1998/99 to a good 800/=kg. When the marketing season started, farmers withheld their crop in anticipation of an even better price from the previous year yet the producer price had dropped to 350/= per kg. Being an election year as it was, political candidates moved in and promised price stability and told farmers not to buy at the aforementioned price. Meanwhile the CBT revised its initial price of 540/=kg downwards to 460/=per kg but there were still no buyers, to an extent that they set an 18.5/=bn fund to purchase nuts from farmers and tried to export them to no avail. The nuts were eventually sold to a local exporter at a price of between 280/= and 320/= per kg which was effectively below the price the CBT had paid for the nuts.*

Source: Chachage & Nyoni (2001)

This may explain the decline noted in production from that period as farmers were not well incentivised by the producer prices. This also reflects the increasing levies imposed at different transaction levels which are reducing the returns to the farmers in spite of the increase in the overall f.o.b price. Analysis of the levies indicates that they rose from 6 percent of the producer price in 1996 to 18 percent of the producer price in 2002 in spite of the falling world prices(see annex 12). The taxes account for an average of 18 percent of the f.o.b earnings for cashew exports every year in USD terms with the private sector players obtaining an average of 30 percent earnings of the f.o.b earnings. The taxes also reflect the discord between the setting of producer prices and the behaviour of the market prices to the disadvantage of the farmer. The prices obtained in the different regions also

vary with the high producer regions obtaining higher prices than the low level producer regions. This may reflect the economies of scale as well as the quality of the nuts obtained from these regions (see Table 2 for the prices by regions).

**TABLE 2: PRODUCER PRICES BY REGION**

REGION	YEAR 1995/96		YEAR 2001/02	
	Production (MT)	Producer price (=/KG)	Production (MT)	Producer Price (=/KG)
MTWARA	49000	325	31000	323
LINDI	11585	325	11000	310
<b>RUVUMA</b>	<b>7996</b>	<b>325</b>	<b>6800</b>	<b>300</b>
COAST	6858	215	12000	291
TANGA	977	215	2800	285
DAR ES SALAAM	1590	215	1856	290
OTHERS	3613	215	274	285
<b>TOTAL</b>	<b>81619</b>		<b>65730</b>	
AVERAGE PRICE/KG		262		298
PERCENTAGE OF F.O.B PRICE		59%		65%

Source: Cashew Nut Association of Tanzania

## 2.8 CASHEW PROCESSING IN TANZANIA

### 2.8.1 Cashew Nut Processing Technology

The cashew nut is a more complicated nut to process than all the other nuts as its shell is more difficult to break. It requires conditioning through humidification as well as roasting before the kernel can be removed or extracted from the shell through a process called decortication with due care being exercised not to contaminate the kernel. Every 5kg of raw cashew nuts is made up of: 65 percent outer shell, 5 percent inner shell, 5 percent moisture, 5 percent blemishes on the nut. Processing leaves one with kernels which make up only 20 percent or 1kg of the kg of raw nuts.

The cashew nut processing is mainly done using two technologies, the traditional and mechanised systems:

- **Household processing:** the nuts are dried in the sun, pan fried and cracked by simple tools such as a wooden hammer. The kernels are then rid of the outer covering (testa) at which stage they are ready for roasting and consumption.
- **Small processing technology:** these operators dry their nuts in the sun and then roast them on metal sheets. After this roasting, the nuts are spread on sand beds to dry and rid them of the cashew nutshell liquid (CSNL). The nuts are then cracked by wooden hammers to remove the kernel. From this stage, the nuts are left to cool off and the testa (outer layer on the nut) is removed through scrapping using a kitchen knife.
- **Medium scale processing:** this is an industrial process where nuts are dried in sheds. They are then either steam roasted or steamed to condition the outer shell of the nuts.

The nuts are then steamed cooked from which stage the nuts are taken for cutting to remove the outer shells and extract the kernels. The removed kernels are then dried and peeling is done to remove the testa after which stage the kernels are graded.

### **2.8.2 Challenges facing the Tanzanian Cashew Processing Sector**

The twelve government owned processing plants, with their 113,000mt annual processing capacity, have become white elephants. They never operated efficiently. All of them were closed in the 1985/86 season; three of the twelve factories were re-started in the 1987/88 season, only to be closed again in the 1991/92 season. Efforts have been made to lease the factories but the response was weak due to the firms' limited competitiveness.

At present, there are four private sector firms operating with a combined processing capacity of 6,600mt of kernels per year. They are producing about 3,000mt of kernels per year. However, they must also pay the same marketing taxes as the exporters, much of this going for the upkeep of the closed factories. This is reducing their export competitiveness. Of the 3,000mt of kernels produced, 2,910mt are exported while the other 90mt are marketed locally. In addition there is about 400 tons of local production from the smaller informal factories that are marketed locally. For the Tanzanian cashew processing industry to take off, they will need to develop efficient marketing channels, reduce the taxes that they pay and find effective markets for their products.

Obviously, reaching profitability is one of the key concerns for processors. There are approximately 40 different grades of nuts that are produced, covering a) wholes, b) Butts and Splits, c) Pieces, and d) Granules (see table 5 for the cashew grades and their prices). Alternatively these are referred to as a) whole white, b) notched white, c) notched small white, d) notched broken small white, e) white morsel, and f) white broken morsel. The prices drop substantially between each category. The overall price for the nuts sold is by grade, which is usually a mixture of the different sizes of nuts.

In addition, to the kernels, there are other by-products for cashew nuts. Very importantly, there is the possibility of extracting Cashew Nut Shell Liquid (CNSL), which sells for US 30 cents a kg. In addition, the shells and fine particles of raw nuts and processed kernels can be used for animal feed or as fuel for factories to burn (in particular the shell). Therefore, a profitable industry should really make use of all of the different parts of the cashew nut to maximize profitability, which is necessary in this highly volatile world. Increasing the yield of higher quality nuts will increase the return to the processors.

Ultimately, the cashew processors will need to find high value niches for their exports both in the African market. They are currently supplying South Africa, but as the raw material going into higher value marketed product. As an example, Tanzanian cashews are purchased by Woolworths in S.A., which then further processes them and adds the significant mark up.

## 3 MARKETS

### 3.1 INTERNATIONAL

The international market takes two forms, one for raw nuts and the other for processed cashew kernels.

#### 3.1.1 World supply for raw nuts and kernels.

Cashew nuts are produced in three areas of Africa, Asia and Latin America. The total annual world production of raw nuts is 1,178,000,000mt. The major cashew nut producing countries can be split into four levels of producers. The first category is that of India, producing about 350,000mt a year. Brazil and Vietnam are in the second level, with an average annual production of 150,000mt per year each. The third level includes Tanzania, the Ivory Coast and Guinea Bissau, each of which produces about 75,000 to 100,000mt per year. The final category comprises the rest of the countries producing about 25-50,000 mt a year of cashew nuts.

Asia produces 56 percent of total world supply, while Africa produces 28 percent and Latin America produces the remaining 16 percent. The leading African countries are Tanzania, Guinea Bissau and Cote D'Ivoire and they all export raw nuts to India. Mozambique has been an important producer of cashew nuts, but the government of Mozambique policy to ban the export of raw nuts, led to a collapse of the industry for a few years. It is now picking up again, with a limited amount of kernel production and the rest raw nut exports to India. Tanzania's primary export market for raw cashew nuts is India which takes up to 83 percent or 83,000mt of annual production (see annex 5 on world producers).

Some of the demand for raw nuts from Africa in India stems from a seasonal variation. When the Indian processing plants finish processing their harvest, the African cashew nuts are just coming on. Purchasing the African nuts allows the Indian processing plants to function all year long, allowing them further efficiencies in production.

In terms of processed kernels, there are three main categories of producers. The first and largest one is India which produces about 140,000 mt of kernels and exports about 95,000mt; it consumes about one third of its production. Vietnam and Brazil follow closely with kernel production of about exports of 37,000mt and 28,000 mt per year. Brazil exports all of its kernels to the USA. Tanzania falls into a third category, with exports of about 2,910 mt a year to twelve export markets. Table 3, below, provides background data on the production and global trade of cashew nuts and kernels<sup>2</sup>.

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<sup>2</sup> Statistics vary by country and by data source, so these figures represent global averages from 2000-2002

**TABLE 3: WORLD PRODUCTION AND CONSUMPTION OF CASHEWS**

PRODUCTION		RAW NUTS TRADE		KERNELS PRODUCTION		WORLD KERNELS CONSUMPTION		COUNTRIES
	RAW NUTS IN MT	EXPORT	IMPORT	PRODUCTION	OWN CONSUMPTION	IMPORTERS		
<b>ASIA</b>	India	375,000	-	300,000	135,000	India	47,250	87,750
	Vietnam	140,000	-	-	28,000	Vietnam	2,800	25,200
	Indonesia	30,000	-	-	3,900	Indonesia	390	3,510
	China	15,000	-	-	1,950	China	195	1,755
	Others	94,000	31,000	-	12,600	Others	1,260	11,340
	<b>Total</b>	<b>654,000</b>	<b>31,000</b>	<b>300,000</b>	<b>181,450</b>		<b>51,895</b>	<b>129,555</b>
<b>AFRICA</b>	Tanzania	93,000	83,000	-	3,400	Tanzania	490	2,910
	Mozambique	30,000	28,000	-	3,900	Mozamb	3,900	-
	Nigeria	75,000	74,000	-	200	Nigeria	200	-
	Guinea Bissau	38,000	38,000	-	-	Guinea B	-	-
	Ivory Coast	28,000	27,000	-	200	Ivory Coast	200	-
	Benin	28,000	28,000	-	-	Benin	-	-
	Kenya	15,000	14,000	-	200	Kenya	200	-
	Senegal	10,000	10,000	-	-	-	-	-
	Others	17,000	17,000	-	-	-	-	-
	<b>Total</b>	<b>334,000</b>	<b>319,000</b>	<b>-</b>	<b>7,900</b>		<b>4,990</b>	<b>2,910</b>
<b>AMERICA</b>	Brazil	180,000	-	-	23,400	Brazil	2,340	21,060
	Others	10,000	10,000	10,000	2,600	Others	260	2,340
	<b>Total</b>	<b>190,000</b>	<b>10,000</b>	<b>10,000</b>	<b>26,000</b>		<b>2,600</b>	<b>23,400</b>
	<b>Grand Total</b>	<b>1,178,000</b>	<b>360,000</b>	<b>310,000</b>	<b>193,440</b>		<b>59,485</b>	<b>155,865</b>

Source: Constructed by study team from world statistics on cashew trade, 2002

### 3.1.2 Global Demand

Cashews are considered a poor farmer's crop and a rich person's diet and as such they are a "premium nut in high income countries due to the fact that they contain 10-20 percent less fat than other nuts and have primarily unsaturated fats preferred by health conscious consumers" (Behrens, 1996:5).

The major consumers of kernels are the US, EU, India, China among others. There is a total consumption of 176-200,000mt of kernels the world over. The US consumes 40 percent of the kernels produced in the world. India is the largest supplier of kernels in the world market supplying over 60 countries of the world. The top consumers import the following quantities a year: USA (55,000mt), EU (40,000mt), China (18,000mt), and Australia (5,000mt). In Tanzania, the medium processors of cashew kernels use 15,000mt of raw nuts or 15 percent of total raw nuts produced in Tanzania. They market the processed kernels in diversified markets with the US, Japan, UK, Netherlands, South Africa and Canada taking up the cashew nuts from Tanzania.



**TABLE 4: PROJECTED CASHEW KERNEL IMPORT DEMAND TO 2010**

Country or Region	Demand in 1998 (tons)	Real PC GDP Growth Rate 1998-2010 (percent)	Population Growth 1998-2010 (percent)	Elasticities Price Income (percent)	Demand in 2010 (tons)	Growth Rate 1998-2010 (percent)
France	6,250	2.58	0.24	-0.59 6.51	21,404	10.80
Germany	12,454	3.01	-0.22	-1.32 3.23	23,690	5.51
Japan	5,532	2.29	-0.03	- .19 1.95	8,868	4.01
Netherlands	10,667	2.94	0.25	-1.44 2.94	24,429	7.15
UK	6,604	2.58	0.02	-0.39 1.97	11,283	4.56
U.S.	70,368	2.41	0.69	-0.36 1.06	103,216	3.24
Sub Total	111,875				192,890	4.64
Rest of World	28,000				48,223	4.64
World	139,844				241,113	4.64

*Source: Real per capita GDP and population growth rates are from the World Bank's Global Economic Prospects 2001. Real prices of cashews are assumed constant over the forecast period.*

Developed countries' imports of cashew kernels have grown by 7.1 percent per year during the last decade with the largest consumer being the United States with a 45 percent share of world imports during the 1990s (annex 6). There are six major importers who have a combined consumption of 75 percent of world imports. The imports of cashew kernels by three of these countries, namely the U.S., E.U., and Japan, have grown by 5.6, 12.0, and 2.6 percent, respectively, during the 1990s. The large differential in per capita consumption between Japan and most European countries, compared to the U.S., suggests considerable opportunity for increasing demand in Japan and Europe. At present Tanzania exports most of its nuts unprocessed and other countries such as India take advantage of the demand in these high income countries by processing and exporting cashews and gaining from the price premium obtainable from the trade.

According to the World Bank (2002), "in the U.S., cashews had a 23 percent share of nut consumption during 1995-99 (compared to 16 percent in the 1980s) and the highest average price among major nuts. This reflects a rise in demand for cashews. Cashews compete most directly in the U.S. with almonds, which have a slightly larger market share and lower prices. Other major nuts and their share of the U.S. market during the 1995-99 include pecans (20 percent) and walnuts (19 percent)". (See annex 6).

Assuming constant prices, the World Bank projects overall growth of world demand for imports of 4.6 percent over the 1998-2010 period compared to 7.1 percent during the 1990s. This is accounted for by the projected slower income growth and slightly slower population growth rates. Europe was noted to have relatively high price elasticity of demand for cashews a factor which should point towards considerable opportunity for increasing demand through price competition. (World Bank, 2002-see annex 7)

### 3.1.3 Cashew Kernel Pricing

Cashew prices can be fairly volatile, depending on the world supply of raw nuts and the type of nuts that are produced. An example of the differences in prices for the various types of cashews follows below.

**TABLE 5: RELATIVE CASHEW PRICES FOR DIFFERENT TYPES OF NUTS**

Type of Nut	FOB Price per kg
Whole white	\$4.54
Notched White	\$4.32
Notched small white	\$4.13
Notched broken small white	\$3.38
White morsel	\$3.19
White broken morsel	\$2.18

*Source: Cashew World Market Prices, 2003*

The evolution of world prices for cashews follows the overall supply of cashew nuts on the world market. Even though there is anticipated to be increased consumption by the importing countries, there has been an important supply response from the leading producing countries, including Vietnam and Brazil.

#### *Prices of kernels*

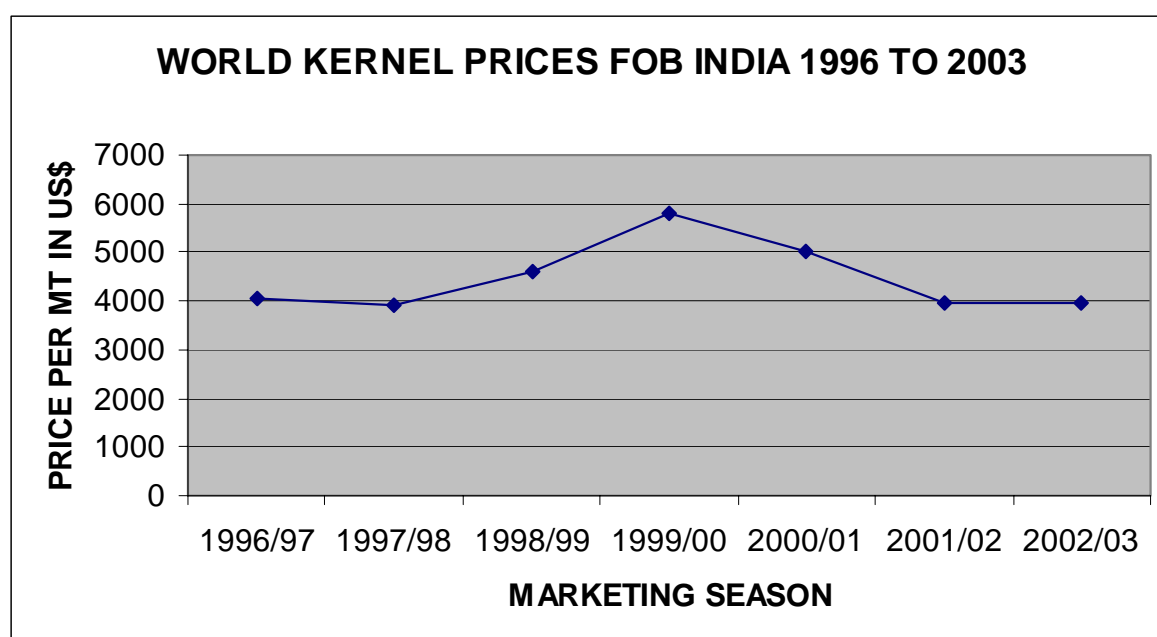
The price of processed kernels is not available for the world market but only for one firm in Tanzania. They have been exporting to nine different markets and the prices differ by market. The following prices were obtained in 2002, in US\$/kg:

South Africa	\$3.61,
US and Canada	\$3.82,
EU	\$3.82,
UK	\$3.04,
Pakistan	\$4.26,
South Korea	\$4.34,
Yemen	\$3.82,
Kenya	\$5.86,
Dubai	\$3.90.

For the nuts that Tanzania exports, it realises an average of US\$3630 per mt and therefore realises about US\$10,6m in a year from the export of its 2,910 tons.

The following chart provides the average f.o.b. prices in India for the past 8 years.

FIGURE 5: INDIAN CASHEW KERNEL PRICES, FOB



Source: Hindu Business Line, 2003

The world kernel prices were on an upward trend from the 1997/98 marketing season until the 1999/00 season. The prices started taking a downward trend after the 1999/00 season. The downward price movements are dictated by two major factors in the world market. The first issue is that of demand from key markets such as the USA and EU countries. When there are falls in currency strengths in the major buying countries, the propensity to consume kernels also goes down in sympathy. This results in sluggish demand in these countries and the prices of kernels similarly go down. The second factor is that of carryover stocks. The world production of cashew nuts is cyclical and as such that of kernels is also cyclical. When there is too much production in one year, more kernels are processed. The markets get flooded and carryover kernels into the next year. This imposes a downward pressure on the price of the kernels in the subsequent year.

The world demand for kernels ranges between 10.5 to 10.75 million cartons and prices tend to go down when the supply of cartons exceeds this demand figure. Such was the case in the 2002/03 marketing season where there were between 11.25 and 11.50million cartons of kernels in the market.

### 3.2 DOMESTIC CASHEW KERNELS MARKET

The domestic cashew nut market can be divided into (1) processed rural household consumption obtained through own produce and home based processing and (2) the urban household and institutional market for processed nuts obtained from informal traders, supermarkets and institutions such as airlines and hotels.

The local market consumes about 490mt of kernels in a year. The medium processors supply 90mt, while the household processors and small scale processors supply 400mt into the local market. This accounts for 2.36 percent or 2,360mt of raw nuts produced in Tanzania in a year. The local market sales take place in supermarkets, in local markets, and on the streets.

## 4 THE SUB-SECTOR MAPS

Sub-sector analysis centres on a schematic map that describes the economic system of the sub-sector. A map summarizes the economic relationships between MSEs and other actors in the system, It traces system flows and within them, the options available to MSEs. The sub-sector map serves as the focus of discussion and is a basis of displaying key information.

The sub-sector team came up with two maps: the first map depicts the whole sector and the second map depicts the raw and processed nut export markets. In the following sections we will discuss the different participants and their functions within the cashew nuts sub-sector. This will be followed by a graphic depiction of the map and a discussion of the different marketing channels.

### 4.1 THE FUNCTIONS AND THE PARTICIPANTS

Various functions take place from the producer to consumer level. In most instances these functions are fulfilled by different participants as most of the producers are not vertically integrated.

#### 4.1.1 Research and extension

The country has Naliendele Cashew Research Centre, a national centre located in Mtwara region. The centre works closely with eight other CDCs. Cashew nut production extension is generally provided by the government agricultural staff. Young trees of improved varieties are propagated and marketed to farmers. These are either produced by the farmers themselves or purchased from other farmers that have small home nurseries or from the eight national CDCs. Most of the farmers have limited access to the improved varieties and expressed interest in raising their own nurseries in their areas so that the improved cultivars are readily available.

#### 4.1.2 Production

Cashew nuts are predominantly produced by smallholder farmers, with very few large scale farmers numbering less than ten. *Smallholder farmers* have 1-20 acres of cashew nut groves. Cashew nut farmers regard its production as their main source of income in the areas which grow cashew nuts. They also produce other food and cash crops such as paddy, maize and cassava. Where possible they will make use of family labour, but will employ contract labour for sulphur dusting, weeding, and tree pruning and harvesting particularly those farmers with many trees. The management of the cashew nut farming is a combined effort between males and females in the household.

*Large scale farmers* are less diversified fruit producers with more than 80 acres allocated to cashew nut production. Some of the large farmers are at the industrial level, planting

cashew nut groves as a diversification strategy where they phase out crops such as sisal in favour of cashew nuts. A fairly large percentage of their groves are young or trees in their prime years. Farmers in this category are limited in number. They mostly make use of contract labour although some of the larger farmers in this group might employ permanent labour. It is estimated there are no more than five large farms producing cashew nuts in Tanzania. This group of farmers accounts for 1 percent of all the production of cashew nuts in Tanzania.

#### **4.1.3 Inputs distribution/Marketing**

Farmers source their inputs (sulphur dust or other spray chemicals) through different delivery mechanisms. The most common source is the Input Trust Fund mechanism where farmers are organised in cooperative societies. Farmers also source inputs from private traders who buy them from different places and deliver them to the district retail shops. Some cases of transporters selling sulphur dust in the villages have been noted especially in the remotest parts of some districts such as Namtumbo.

The prices of inputs sourced through the ITFs are comparably cheaper than those from private traders. An example is in Tunduru where the sulphur from the ITF cost 8500/= per 25kg while the private traders' 25kg pack of sulphur cost 11000/=. Some farmers order their inputs through the ITFs directly from Abbasi Exporters, the sole importers of sulphur. This arrangement has slight price savings as one can buy a 25kg bag of sulphur for 8300/=. The supplier of these inputs has at least two distribution agents in each district who sell at prescribed prices from the importer.

Sulphur dusting is necessary to enhance production. Sulphur dusting services are provided at the village level by owners of blowers. Blower owners charge about 1500/= per day for the blower. Demand for blowing services rises tremendously during the production period as farmers strive to protect their trees against the PMD. In a day, a blower can cover an acre of trees. There can be between 16 and 30 blowers per district although a number of the blowers are reported to be out of order.

#### **4.1.4 Local Transporters**

In areas where the ITFs are operational, sulphur dust has to be transported from the district go downs to the decentralised village collection points. ITFs hire 7 to 10 ton trucks to deliver inputs to the farmers farm gate at a rate of 650/= per 25kg bag of sulphur. In terms of produce marketing, local transport takes the form of bicycles delivering bags of cashew nuts to the marketing points from where buyers will purchase the cashew nuts. Local transport mostly takes place by jute bags carried on the head or transported on a bicycle. Often the harvesters will also transport the cashew nuts.

#### **4.1.5 Collecting and bulking**

Buyers engage intermediaries who move from village to village to purchase cashew nuts from the farmers at designated market centres. The market intermediaries bulk cashew nuts

and consolidate the produce at community owned go downs. The market intermediaries move into villages from October to December. They make use of 8 ton trucks and carry cash on them to enable spot cash payment to the farmers. Within the villages, the intermediaries rent the community go downs at a rate of 3/= per kg stored in the warehouse for the whole duration of the collection season. Given that they carry so much cash, they also mobilise armed security (soldiers) on their excursions into the villages.

The purchase of nuts is actively undertaken by agents of exporters as well as agents of processors. The trade intermediaries do not grade the produce at point of purchase, as business will be brisk and there will much competition between buyers, especially during the month of December. There are two categories of intermediaries. One group purchases every year while another group only purchases intermittently. There are 23 large and regular trade agents who on average purchase between 92 percent and 96 percent of the marketed farmers' cashew nut produce. Of the 23 regular traders, there are 13 large ones who buy anything from 1.5 mt to 20 mt and 10 small but regular agents who buy 1.5 mt and below.

There are also about 26 sporadic/intermittent trade agents who come and go, depending on the year. This group accounts for an average of 4-8 percent of the marketed cashew nuts from farmers. Of the 26 irregular traders, there are seven who buy quantities above 1.5mt when they move into the market and the rest buy quantities less than that.

#### **4.1.6 Regional transport**

Regional transport occurs when cashew nuts are transported from the production areas to the port or processing centres. Regional transport occurs almost exclusively in 8-10 ton trucks. Larger trucks are not used much due to the poor conditions of the roads. Trucks belong to the buyers of the cashew nuts who often own between four and eight trucks. Every truck will have a driver and a helper and they collect the cashew nuts from the community go-downs to take to the processing factories in Dar es Salaam or Masasi as well as to warehouses in the port packaging for export of raw cashew nuts. Other small processors load their cashew nut bags onto buses or other transporters. They are charged about 1500/= per 100kg bag for transport from Ruvuma to Mtwara.

##### *Wholesale Export*

Market intermediaries deliver the cashew nuts from the districts to the port where the cashews are graded and then exported to India. Other buyers also deliver to their processing factories for their own processing plants.

##### *Processing*

As discussed earlier, processing takes place in three different forms. The first form is rudimentary at the household level. The households process some of their produce for own consumption at a very subsistence level with a few of the processed kernels making their way onto community markets through vendors. The second form is that of the informal/small scale processors who employ an average of 15 people and process an average of 30mt of raw nuts into kernels in a year. The other form of processing is that

undertaken by medium scale processors employing from 1,000 to 1,700 employees each, most of whom are females.

#### **4.1.7 Retail**

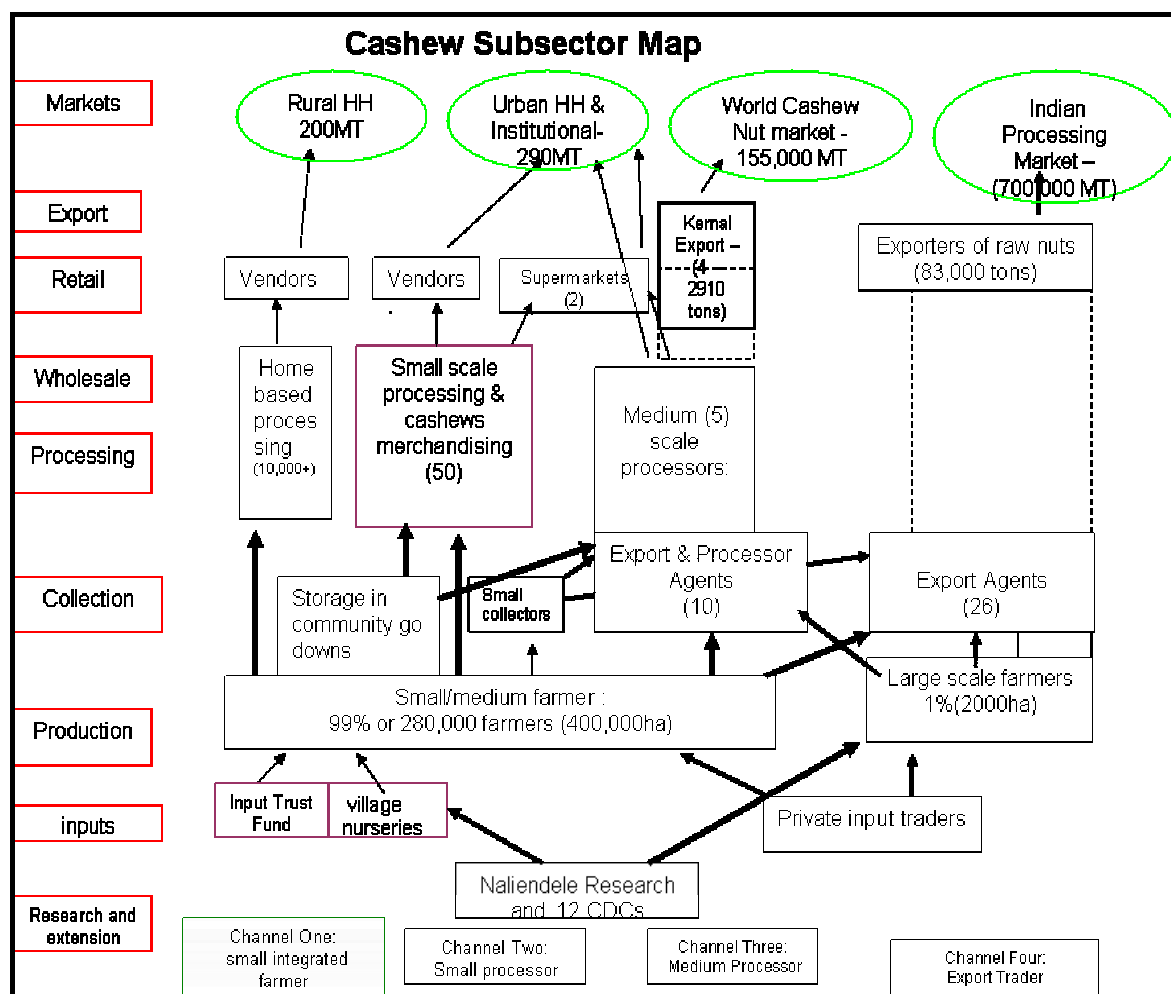
Cashew nuts are retailed at two levels. The first level is that of supermarkets which order from medium processors and retail in urban supermarket outlets. The second form is that of vendors who order their supplies from small scale processors. They in turn retail to consumers directly on designated urban markets or resell to mobile vendors and hawkers who conduct their business on the streets. Supermarkets mainly purchase their supplies from large scale processors such as Premier Cashew Nuts and Mohamed Enterprises while the fixed and mobile vendors tend to purchase from small scale processors in Kibaha or from other fixed vendors who may order in bulk.



## 4.2 THE MAPS

We have compiled two sub-sector maps. The maps depict the marketing channels in operation in the sub-sector.

FIGURE 6: OVERALL CASHEW SUB-SECTOR MAP



Source: Constructed by Study Team, 2003

## 4.3 THE CHANNELS

There are four main channels through which product moves from the farm to the consumer.

### 4.3.1 Channel 1: The small integrated farmer channel

The small integrated farmer channel comprises a very small portion of the informal processed market channel. Some small farmers, located fairly close to rural markets, represent a vertically integrated channel in which the producer fulfils the role of harvester, transporter, wholesaler and retailer who markets directly to the consumer. This is the case

with farmers who undertake small scale processing of cashew nuts and market the same themselves. Farmers in the rural areas also process their own cashew nuts for home consumption. Their processed nuts are mainly for local consumption with very little being made available for resale. Own consumption is regarded as being less than 1 percent or 200mt of the 3,400mt processed cashew kernels produced in a year in Tanzania. An average smallholder farmer has 5 acres of cashew trees with each acre holding 35 trees. The average yield per tree is 5kg and a farmer realizes a margin of 102/= per tree per year.

#### **4.3.2 Channel 2: The small processor channel**

During the marketing season, small processors procure raw nuts from small and medium farmers. There are an estimated 50 small processors of this size who process anything between 5kg to 6mt of cashew kernels a year. These processors wholesale to vendors who in turn resale in urban markets especially on the streets. The processors also sell to institutional markets such as hotels on order basis. Apart from wholesaling, the processors also sell directly to customers in a retail function. On average the small processors realise margins of 398/= per mt processed cashews and an individual processor can produce anything between 5kg to 6,000kg.

Small scale retailers/vendors also operate in this channel and they have differentiated products. Over and above the two roasted flavours sold in the supermarkets they also sell unprocessed but peeled cashew nuts which buyers go and process on their own at home. The vendors mainly source their supplies from Masasi and Kibaha small processors. They market their processed nuts to street vendors who resale on the roads and they also sell to tourists who order for them as gifts for friends overseas. There are 30 such vendors in Dar Es Salaam in an established market who were observed and they on average market individually market about 55kg of processed nuts per month. The vendors order at 5000/=kg and resale at 6000/=kg. Orders are taken in from processors in 25kg packs after which they do their own repacking. The average prices of processed and semi-processed nuts in the vendors' market was 6/=g and 5.40/=g respectively a situation which gives the vendors a price attractiveness and competitiveness of 32 percent in monetary terms over supermarkets.

#### **4.3.3 Channel 3: The medium to large processing channel**

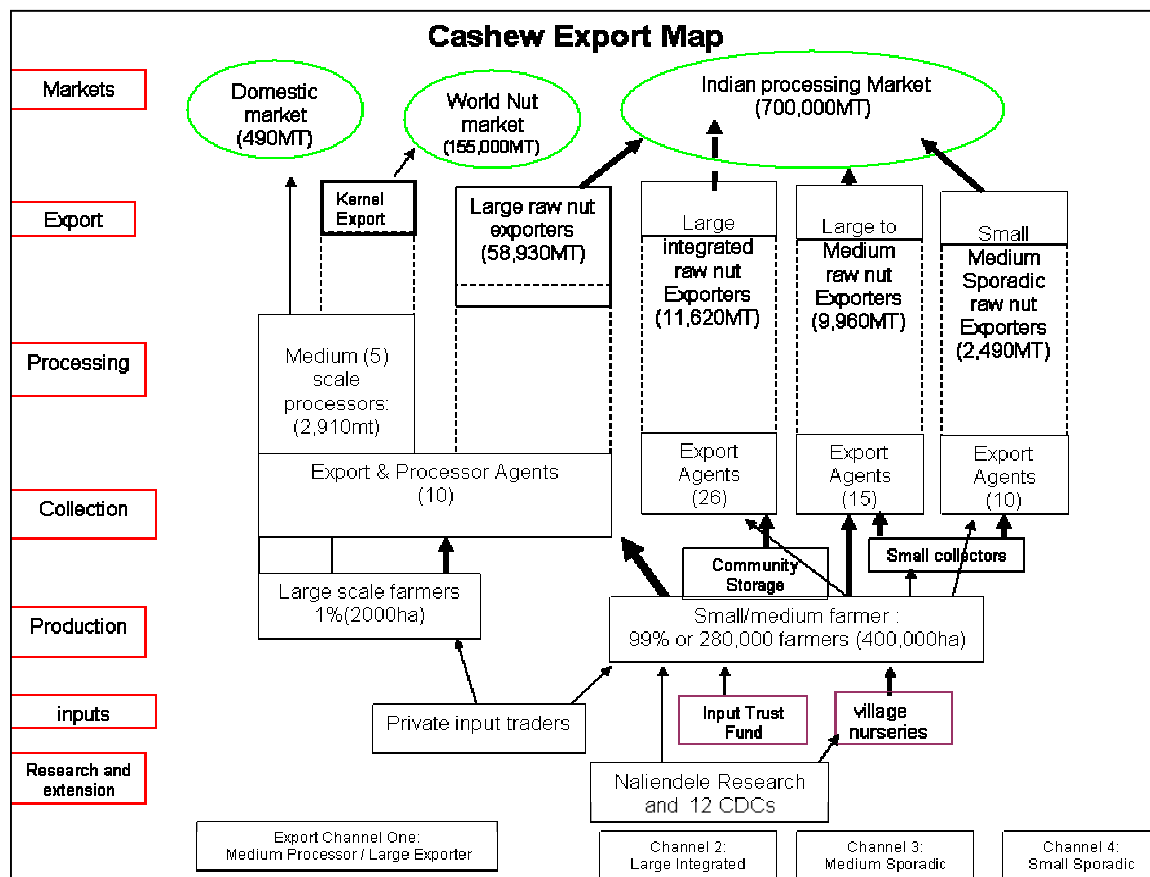
The processed cashew nuts export channel is the second most prominent channel in the cashew sub-sector. There are four private processing companies in Tanzania who have a combined processing capacity of 6600mt per season. An average of 3,000mt of cashew kernels are produced in this channel with 2,910mt being exported each year from Tanzania to markets in Europe, India, USA, Canada, Australia, Germany and Netherlands. This is a channel that has operated intermittently and has not grown sufficiently in spite of the potential and opportunities presented in the export market. The major exporters are medium scale private firms such as Premier Cashew and Mohamed Enterprises, OLAM and EOTF. This channel processes about 15,000mt of raw cashew nuts into about 3,000mt per year and the quantity of processed nuts is going up every year. The largest processor, Premier Cashew Nuts has been exporting an average of 1,500mt and has noted annual

increases in production since inception in the year 1999/2000. The company has just commissioned a 250mt capacity factory for the processing of organic cashew nuts and this will see an increase in output by 250mt kernels this year all destined for the European export market.

#### **4.3.4 Channel 4: The raw cashew nut export trader channel**

This is the most active channel in Tanzania with traders ranging from 23 to 49 operating in this channel on an on and off basis. On average, 26 of them operate in this channel every year. The buyers can be divided into four groups of players: medium processors/large exporter, large integrated, medium sporadic and small sporadic buyers. Figure 4, below, shows the structure of the exporting industry in greater detail.

FIGURE 7: MAP OF THE CASHEW EXPORTERS



- **medium processors/large exporter:** these buyers buy from farmers on behalf of processors who process the nuts as well as export the nuts to India.
- **large integrated:** these buyers get pre-finance from Indian processing firms and buy cashew nuts specifically for export to India.
- **medium sporadic:** these buyers come in one year and disappear in another. They buy between 5,000mt to 20,000mt per year.
- **small sporadic:** these also behave the same way as the medium sporadic buyers only that they buy small volumes which are generally less than 5,000mt per year.

The major activities in this channel start from buying the raw cashews from farmers in villages through trade intermediaries. The produce is stored in rented community go downs and then transported to ports for shipment to India in the majority of cases. An average of 83,000mt of raw cashew nuts is exported to India every year through this channel.

## **5 INSTITUTIONAL, POLICY, AND REGULATORY, FRAMEWORK**

### **5.1 INSTITUTIONAL FRAMEWORK**

The sub-sector is officially governed by the CBT and supported by the Cashew Industry Development Fund (CIDEF). The former is charged with regulation and promotion of quality in the marketing and export of raw and processed cashew nuts. It has the additional responsibility to advise the government on matters relating to the cashew nut industry and carry out other functions as deemed necessary by the Minister of Agriculture. In addition the Cashew Association of Tanzania (CAT) is an industry forum to discuss and provide guidance to government on the best way to manage the sector.

#### **5.1.1 The Cashew Board of Tanzania – CBT**

The Cashew Board of Tanzania was created to regulate and promote quality in the marketing and export of raw and processed cashew nuts. The board also has additional responsibility to advise the government on matters relating to the cashew nut industry and carry out other functions as deemed necessary by the Minister of Agriculture. It is funded by a 1 percent levy on exports and by fees from licensing traders. An additional 2 percent levy is collected by the Cashew Board and 1% is supposed to be passed on to the Cashew Industry Development Fund (CIDEF). The CBT is also supposed to pass on the other 1% to research in the cashew nuts related issues. The CBT licenses all cashew nut buyers and exporters as well as up keeping the 12 closed government factories. The CBT is also charged with the responsibility of championing the strategic direction the sector should be working towards by engaging all stakeholders in the sector. It has not been very proactive in this final objective.

#### **5.1.2 Cashew Industry Development Fund – CIDEF**

The CIDEF was created at the initiative of the Cashew Association of Tanzania. It has the status of an NGO and is managed by a Board of Trustees. It aims to promote and sustain the cashew industry. The Fund, which was started in 1996, is meant to collect a development levy of 2 percent on the f.o.b. value of cashew nut exports. Half of the amount raised was supposed to go for research and development, and the remainder being used to fund cashew processing, an Integrated Cashew Management package which would offer grafted seedlings, poly-clonal seeds, top-worked trees and fungicides, including sulphur dust, to participating farmers (Tanzania Agriculture, Feb 2000, p163). CIDEF was formed when the government pronounced that the cashew industry had to finance itself. The collections from levies only took place for 3 years and the CBT felt threatened and stopped passing the export levy contributions to CIDEF. CIDEF provides a stakeholder forum for all cashew nut players and it has a board of trustees who comprise representatives from government (2 representatives, one from the research and another one from the ministry of Agriculture), CAT, CBT, processors, traders/exporters and farmers. The payment of the levy is under dispute and the matter is in the courts at the moment.

### **5.1.3 Cashew nut Association of Tanzania – CAT**

The Cashew nut Association of Tanzania is made up of processors, buyers and exporters. They self finance and lobby the government and the CBT for the promotion of processing and developing a conducive environment for their operations covering such issues as levies and taxes. CAT is supposed to have more influence in the running of CIDEF as the latter seems to articulate the interests of the private sector and indeed the cashew nut sector in Tanzania much better than the CBT.

### **5.1.4 Conclusions on Institutional framework for cashews in Tanzania**

There appears to be some concerns from the private sector that the Cashew Board may be returning to its previous role of competing with the private sector in cashew marketing. Recent actions of the CBT raise questions about the role of the Board and its contribution to the sector. For example, in September 2000, the CBT announced indicative prices and a regulation requiring exports to be shipped in sisal bags. The indicative prices did not reflect market conditions and led to marketing delays and confusion by farmers. The regulation regarding sisal bags led to delays in exports and eventually to deterioration in the crop quality since traders delayed purchasing. Neither action was in the best interest of the cashew industry.

The CBT also has a conflict of interest in the computation of export levies which fund its operations. It calculates export prices rather than using exporter records. This encourages overstating export prices in order to inflate export levies (World Bank 2002). Meanwhile, the CIDEF and CAT appear to be marginalized by CBT. This has resulted in a lack of strategic guidance to the sector over the past few years.

## **5.2 POLICY AND REGULATORY**

The main regulatory issues in the cashew sector revolve around its marketing and taxation. Before liberalisation, there was a centralised cooperative system that controlled all procurement and marketing of the nuts. Farmers obtained the equivalent of 30 percent of the f.o.b price per ton for their cashew nuts. With the liberalisation process in 1992, there was an ushering in of the private sector and farmers started getting prices within the 60-70 percent range of the f.o.b price. The buying and marketing of the cashew nuts are regulated by the CBT and regional and district authorities. Regulatory issues revolve around the following issues:

- Licensing and domestic taxation;
- Amount collected for export taxes;
- The use of the export taxes (whether to subsidise the closed factories or CIDEF); and
- Strategic plan from the government perspective;

The following table highlights the range of taxes that are collected on the marketing channels for cashews. The high volume of production and the export earning nature of the

product makes it a particularly juicy target for taxes, even if it hinders the long run profitability and development of the industry.

**TABLE 6: LEVIES AND TAXES FOR CASHEW SUB-SECTOR**

National level levies	Comments	Total in 2002/03 (in USD)
CBT Export levy	3% of FOB value	1,262,379
CIDEF Contributions	11.3/= per mt	477,149
Phytosanitary certificate	1.05/= per kg	86,564
Port Charges	21/= /kg	1,731,280
CBT District License	60,000/=per district/buyer/year*	
<b>Regional, District and Village level</b>		
City levy	1.98/=kg	163,233
District Council levy	10,000- 20,000/=per district	
Primary Co-operative society levy	6/= per kg	494,644
District Business License	180,000 – 200,000 /= per district*	
Produce cess	5% of the farm gate value (200- 300,000 per district)	1,497,557
District Development Levy	25/=per kg	6,122,128
Educational Fund Levy	4-10/= per kg*	
Sports Fund –District and Regional**		
Sherehe Regional Occasions Fund**		
Sherehe District Occasions Fund**		
District Inputs Fund**		

Source: Derived from discussions and documented cases

Notes: \* Depends on the number of districts one buys from

\*\* Vary from district to district

NB: Exchange rate of 1USD: 1050/= applied on all conversions.

**Trading license:** an exporter registers with the CBT and pays for the requisite license to purchase cashew nuts in that particular agricultural season. The present cost of the license is 60,000/= per district per year.

**Export permit:** for those that intend to export the nuts, they have to be issued with a permit and they pay 3 percent of the f.o.b price to the CBT based on actual value of the cashew nuts bound for export. The export permit is issued per consignment.

**District cess:** on paper this is 5 percent of the value of the cashew nuts (farm gate price) intended to be purchased per season in a given district. The fee is paid in advance. In practice, however, the fee is higher than that as each district determines the rate and collects it as well. In Ruvuma region, the authorities indicated that they require anything between 200,000/= and 300,000/= per season. In Tunduru, they limit the number of buyers to a maximum of 15. This seems to be arbitrary as it is not based on the produce available in the district and it may actually work against the interests of the farmers as competition is effectively reduced by limiting the number of buyers.

**Cooperative levy:** a cooperative levy of 6/= per kg is also required from every buyer and this is paid after purchase of the cashew nuts. Other levies include: the development levy, education fund, primary cooperative society contribution, village cess and health fund among others.

Traders pay a District Produce cess when purchasing the cashew nuts. These are not the only levies charged to buyers and it is worth noting that these levies a significant negative impact on profitability, especially for the farmers as these costs are eventually passed on to them.

### 5.2.1 Cashew Board of Tanzania Licenses

The Cashew Board of Tanzania (CBT) requires every buyer to obtain a district license before any purchase of cashew nuts can commence. One has to obtain a license at 60,000/= per district. However for one to get this license, they need to produce their trading license for the district in question which ranges from 100,000/= to 200,000/= per district. This may be a limiting factor and effectively an entry barrier to small buyers who may not be able to raise this amount or may not already be in possession of a trading license. If one intends to export, they will also require an export license which is 3 percent of the value of the f.o.b price of the exports and this is issued per consignment. On average, all these taxes account for 22 percent of the total sub-sector's export earnings. This is not supportive of the local industry for it to compete favourably with the other cashew nut producing countries, but the revenue is used to keep other elements functioning in the region.

***The district cess, municipal levies and CBT levy as well as sulphur import inspection charges:*** The main policies affecting the cashew nuts sub-sector revolve around the municipal cess that is charged to the traders in terms of their range and the collection modalities. The district cess has a negative impact on the producer price setting and negatively affects the farmers in the end. Taxes tend to be collected on gross sales rather than profits. This unfairly penalizes producers during low price years when returns are already low. Taxes also vary by district which creates uneven incentives and encourages producers to transport their products to neighbouring districts to avoid high local taxes. The most important local tax is the district produce cess which varies from district to district. For example, according to the Ministry of Agriculture and Cooperatives' report on the *Impact of taxes and levies on the agricultural sector*, (September 1998, section 7.4) the



district cess on cashews ranged from a low of 6.5 Tsh/kg in Newala to a high of 15 Tsh/kg in Lindi.

### **5.3 IMPLICATIONS FROM THE INSTITUTIONAL AND POLICY ENVIRONMENT**

If Tanzania can get its institutional and regulatory environment sorted out, it can lead to significant improvements in both exports and in the composition of those exports. This section presents some different scenarios that may be obtained under a different and more conducive institutional and policy regime.

#### **Scenario one: - Present Policy regime:**

**Benefits:** under the present policy regime, the country will continue to market about 80 percent of its raw cashew nuts to India and earn about USD44m every year. The country will employ about 4,000 people in the commercial processing of the 16 percent cashew presently processed by small and medium scale processors in Tanzania.

**Costs:** the export market to India may weaken or collapse and there will be no alternative markets for raw cashew nuts. The main impact will be the loss of income to at least 280,000 smallholder farmers whose main livelihood comes from cashew nuts. It will also signify a reduced source of taxes from the sector which averages about US\$13m a year. This will impose a huge relief burden on the government in terms of support to be rendered to the farmers.

#### **Scenario two: Processing 50 percent of the country's production (50,000mt of raw nuts into 10,000 tons of kernels) and exporting 50 percent of the production as raw nuts.**

Under this scenario, Tanzania will get about US\$25m a year from raw nuts exports and almost US\$50 million in processed nuts for a total of \$75 million. This will see the employment of at least 12,000 people and this creates a larger tax base for the government and farmers get good prices and do not need handouts, which is a relief to the national fiscus.

**Scenario three (unlikely): 100 percent processing (100,000mt raw nuts – 20,000 tons of kernels).** If Tanzania could process all of its nuts, this would create income of about US\$100 million a year to the country and will see the employment of at least 25,000 people. This would create a larger tax base for the government.

There can also be downstream benefits. For example, a South African company is interested in investing in the expanded processing of cement in Tanga which will employ more locals and wants to make use of cashew nuts shells for fuel. The cement will therefore be cheaper to produce and will therefore compete well in the international market and generate more forex for the country. Cheaper cement will also mean more affordability in the local market and will have positive ripple effects in the construction of houses and offices in the country as well.

Of the three scenarios, the second and the third would be better for Tanzania than the current one, but it will require some significant strategic inputs to achieve.

## 6 SUB-SECTOR DYNAMICS AND DRIVING FORCES

### 6.1 SUB-SECTOR DYNAMICS

Overall, it is clear that the cashew industry in Tanzania has rebounded from its moribund state in 1991. The liberalization of the sector has led to growth from 40,000 tons of exports to more than 100,000 tons.

From the analysis of the sub-sector, some of the channels are growing, while others are losing importance. The processed nuts (kernels) channels (2 and 3) are growing but especially so with channel three that is exporting. However, the industry's processing capacity is not well geared up to compete in the world markets. Eleven of the 12 government factories are not operational and the twelfth is operating at a fraction of capacity, leased by a private processor. Small and medium processors are developing but their processed production is still negligible compared the country's cashew nuts production. Only 15-17 percent of the nuts are processed and the other 83 percent is exported in raw/unprocessed form.

We note that the export of cashew nuts is quite volatile, but there has been a concentration in the hands of the larger integrated exporters (channel 2 within the exporter map). The more sporadic and speculative traders are being squeezed out of the market.

### 6.2 DRIVING FORCES

The major driving forces that affect the growth of the cashew industry in Tanzania have been: strong export markets, the deregulation of the marketing channels in Tanzania, the profitability of the processed kernels, government levies, access to cashew production inputs and processing as outlined below.

Market demandWorld demand for processed nuts is encouraging with major first world markets such as Japan, UK, USA, Germany and Netherlands showing good uptake. The export market for raw nuts is fraught with challenges and Tanzania faces challenges should the India export market for raw nuts collapse as it is the only market in place at the moment and there are limited prospects for diversifying the market for raw nuts. However, the price for kernels has been coming down as there has been an increase in the overall supply.

**Tanzania has a heavy reliance on export of raw nuts to one market (India):** Tanzania exports between 95 - 97 percent of its raw nuts to India. This poses a real threat should that market collapse. India needs 600-700,000mt of raw nuts each year to maintain its production lines running on a year round basis. It is the largest cashew processing country and exports an average of 95,000mt a year out of its production of 130,000 mt. The Indian market has been able to accept all the cashews that Tanzania could produce and has developed integrated contracting relationships with several of the largest Tanzanian exporters.

However, there is increasing competition in the world market to supply India, both from other cashew producing countries in Africa as well as from India itself. On the other hand, should the Indian market for raw nuts collapse, the farmers will have very little in terms of crop diversification options and a lot of Tanzanians already employed in the sector will lose their jobs.

**Links to Indian processing plants:** There are about 26 buyers of cashew nuts in Tanzania every year. Some of the buyers in this lot have very important links with the Indian processing sector and actually receive pre-finance for their purchases of raw nuts. This is an important link as external finance is introduced into the sector and competition for the raw nuts is created among the different buyers and farmers obtain improved producer prices. It also keeps those suppliers linked to the Indian market.

### 6.2.1 Deregulation

**Increased private sector activity since liberalisation in 1992.** Before liberalisation, all the raw nuts were bought and marketed by government through a parastatal and farmers got prices which were at best only 30-40 percent of the f.o.b. price. With liberalisation, the country has seen an influx of private sector buyers which introduced healthy competition and farmers started obtaining better prices. They now get up to 60 percent of f.o.b. price, representing an effective doubling of their share. There have been a total of 51 buyers operating in the cashew buying business with an annual of 26 actively buying every year.

However, with deregulation comes uncertainty. The production of raw nuts swings in highs and lows between the years and depending on the world market prices. In one year, farmers get good prices and this encourages them to take care of their cashew nuts groves and they get resultant good yields. In subsequent seasons, farmers get low prices and get discouraged from investing more in production. These cyclical movements are driven more by the world producer prices, which essentially is driven by India.

### 6.2.2 Profitability of Processing

**Small and medium scale processing:** the Tanzanian cashew industry is growing in terms of processing and there are good growth prospects should the right policy environment be fostered. The world market for cashew kernels is sufficient to clear all of Tanzania's raw nut production when converted into kernels. On the other hand, the large twelve government processing factories have all closed except for one which is being leased, but is operating below optimal levels. The plant has a capacity of processing 10,000mt of raw nuts a year but in its two years after renovations, the plant has only managed to do 78mt of cashew kernels or about 390mt of raw nuts which is way below its capacity. The sad state of affairs is that the buyers and processors who are actively promoting growth in the cashew industry in Tanzania are being taxed for the upkeep of the closed factories and salaries of staff overseeing the upkeep of these closed factories.

**Processing more profitable than trade.** The world price of raw nuts when compared to that of the processed nuts indicates that it is potentially profitable to process the nuts than to sell them in raw form. Under the present conditions however, where processed cashew nuts are still taxed as raw nuts, there are limited incentives for private capital investment in processing especially given the high cost of capital in Tanzania. For the small processors however, they sell within the country and their processed kernels are all bought at competitive prices. Their scale is too small in sympathy with their range of technology as well as their sizes.

### 6.2.3 Regulatory Framework

**Government levies and district and municipal taxes at 22 percent of FOB reduce margins of farmers, traders, and processors.** The government policies of levies along the different levels within the sub-sector are an important consideration amongst the several constraints facing the sub-sector. It is disturbing to note that an average of 22 percent of the revenue in the sector is going to the government. The levies are noble, but they need to be rationalised in terms of the points at which they are collected and their application in the development of the sector. The levies have tended to increase, albeit not in synch with the producer prices.

An important consideration on the taxes is that many of them are being charged up front, so add cost to the exporters well before they get paid by the ultimate buyers. In a market where the cost of capital is in excess of 20 percent, this adds a substantial cost to doing business.

### 6.2.4 Production and processing technologies

**Supply/access to inputs affects productivity:** The smallholder farmers, accounting for 98 percent of the country's total cashew output, have serious limitations in accessing production inputs (specifically sulphur dust and improved cashew seedlings). In spite of the existence of twelve CDCs in addition to the Naliendele Research Centre, farmers in remote areas still have improved seedlings supply problems and end up planting home grown seedlings which give very low yields.

On the other hand the importers of sulphur operate on very low margins and the TPRI collects USD 25 per every ton of imported sulphur for inspecting the product and this further increases the costs of the product. Farmers have set up ITFs, to which they contribute money into and jointly source sulphur. These have had mixed success and accountability of the office bearers to the contributing farmers are highly questionable within the ITFs. Most farmers interviewed were not clear on the way their funds are managed.

**Improving processing technology:** Tanzania is producing good cashews but is heavily threatened by upcoming countries such as Guinea Bissau and Ivory Coast who are also targeting the same raw cashew nut markets of India. While India is able to take-up all the cashews Tanzania can market at present, the situation may not be tenable. Even if all nuts

should still be marketed, there is an opportunity cost of not processing cashews locally. Since reviving the large government factories will not happen, the burden for processing will be on the private sector which must make the right investments. Developing a domestic processing industry will take time, as the investments, skills, systems and marketing capacity will need to be put in place. But developing a strategic plan to incentivise the development of the local processing industry should be a priority. **The lack of a competitive domestic processing industry puts the entire cashew sector in Tanzania at risk of being displaced by other raw cashew nut producers or a change in policy in India.**

However, **the value added from processing appears to be high and there are large employment opportunities from manual processing.** According to the World Bank: 2002 “the **price of processed cashew kernels exported from India during 1996-98 averaged \$5106/ton compared to \$1063/ton paid for raw nuts imported**”. According to Behrens (1996:25), an average worker can shell 21 kg of raw nuts per day and obtain 5kg of kernels.<sup>3</sup> Using the Indian raw and processed nut prices as an example of the potential for processing, the value added from manual processing would be \$3.21 per day (excluding other costs such as transport, packaging and handling). An experienced worker in India can shell twice as much with 90 percent whole kernels according to Behrens. If an average worker in Tanzania shelled 21 kg of raw nuts per day and worked 250 days per year, 20,381 workers would be needed to shell the 107,000 tons Tanzania produced in the 2000/01 season. Thus the employment opportunities from manual processing are significant. The value added per day from manual processing is about 3 times the average wage in Tanzania.

Given this scenario, there is need to promote community based processing of cashews in conjunction with the private sector. India’s competitiveness in processing is not in sophisticated technology but high labour intensive home based technologies. The local industry can also adapt in that direction. There are already examples of home based processing with good results. A mechanism to expand that kind of low cost technology can be promoted by linking these home based industries with exporters so that all processed products meet the required quality and are exported in a manner that ensures maximum return.

In addition, the low cost technology developed by the TATC can be promoted by linking it with a financier. This can be financed by the present private sector processors or the CBT. In the former case, the processors can be contracted or become franchises to the processor who meet the required production standards and market exclusively to the processor for eventual final finishing and export of the product. In the latter, the CBT could finance the establishment of low cost -technology centres in all cashew growing areas (such as the ones developed by the TATC). Private sector could then be invited to lease these or rent to buy these centres and manage them by processing cashews and paying back. Alternatively,

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<sup>3</sup> The cost of raw nuts is 21 x \$1.063 and the value of processed kernels is 5 x \$5.106, to yield a value added of \$3,21 per day.

one can just manage the centre and have farmers come in and rent to use the machine for the duration of the processing of the quantity of nuts they have on hand.

***Farm and pre-marketing finance production financing:*** The rural financial systems are underperforming and yet the farmers require a lot of support to finance their operations. The resultant effect is that they under perform in their operations and end up realising correspondingly low returns. These returns put them in a double dilemma of poor reinvestment in agricultural production on which their livelihoods depend and triggers off the poverty cycle. The SACCOS model can be expanded based on the ITFs model and linkages can be brokered with commercial banks such as CRDB and others. CRDB already runs a microfinance project with 17 SACCOS in Iringa region and repayment rates of 96 percent are being reported.

### **6.3 POINTS OF LEVERAGE**

Points of leverage are those points where working with a few individuals or organizations will provide outreach to a much larger number of smaller actors. Traditionally points of leverage are nodes in the channel (where one operator will deal with a large number of other operators), a geographic cluster or concentration of enterprises, or government policies. In this case, we are looking for points of leverage that will enable the majority of small and medium in the cashews growing areas of Tanzania to improve the quality and quantity of their production, to build capacity at farmer and market association level and to provide easy access to market and price information to all the participants in the different identified marketing channels. These can either be nodes in technical advice and research services, geographic concentration, input suppliers, farmer and market associations and private sector partners

#### **6.3.1 Nodes in the channel**

***Market associations:***

Farmers are too disaggregated in their marketing operations, a situation which is increasing marketing costs for buyers and resultantly the producer price obtained by the farmer. There is great scope to organise farmers into clusters that can mobilise their individual members to bring their produce to centralised places. With this arrangement, farmers can enforce grading standards and establish common prices which they can negotiate with the private sector buyers. The buyer who offers the best price can then buy the produce. This can either be an auction arrangement of the cashews or just a spot market conducted at the go downs. At the moment there is little grading taking place which creates problems for processors and exporters as well as farmers alike as low prices are offered.

***Input supply (sulphur import, retail traders and ITFs):***

The production process is threatened by poor supply of inputs and this poses a credible threat to the future of cashews harvests in the country. There is need to enhance the functions of the ITFs and retail traders and their access to viable sources of sulphur dust and other complimentary inputs. The present ITF set up while good has limitations in terms of input supply and accountability and transparency with their constituencies. Strong

and viable ITFs or retail traders can engage in bulk purchase of inputs or even import of the required inputs and negotiation with government for specific terms under which inputs can be imported. This can be through creating a credit guarantee facility by the CBT for ITFs or retail traders. They can then link up with importers of the required inputs which will enable them to access inputs on credit and resale to farmers on cash and immediately repay to the suppliers. The guarantee fund can then be withdrawn once the supplier and traders have reached comfort levels with each other. The importer of sulphur is interested to set up more retail outlets for sulphur. There is also need to reduce the costs associated with the import of sulphur which relate to inspection and licensing so that the landed cost of sulphur is competitive and affordable to the farmers.

### **6.3.2 CDCs and Home nurseries:**

The access of improved cashew nut varieties is still problematic. CDCs should create more links with home nurseries which are effectively private enterprises. Existing home nurseries which are producing local cashews varieties can be supported to promote the improved varieties. These can then be used as demonstration plots where the recommended husbandry practices are practiced. This can facilitate the education of a large number of farmers on the positive aspects of planting good quality trees of the most suitable varieties. Given the extension worker to farmer ratios of about 1:2000 farmers, this mechanism can have tremendous leverage in terms of outreach especially if the hosts of the home nurseries can be given training of trainers' course by the CDCs. Their incentive will be in the added sales of seedlings that will obtain from them promoting the improved technology.

### **6.3.3 Large trader agents**

The buying of nuts is concentrated in the traders who buy on behalf of the processors and exporters. This is a useful link which creates the right competition in the marketing of the farmers' produce as well as the link between the Tanzanian producers and the external export market as some of them access finance offshore and purchase raw nuts in Tanzania.

### **6.3.4 Geographic concentration**

Cashew production is concentrated in specific geographic areas, as noted in section 2. Within the PESA regions, the majority of the production is in Ruvuma and Tanga Districts. However the price of cashews from Tanga is very low, despite the ease of access and proximity to the ports. The price of cashew nuts from Tunduru is among the highest in the country, despite the long distance from the ports, so they offer a good opportunity for PESA to target its assistance. (The quality of nuts from Tunduru is higher than that from Tanga).



### **6.3.5 Other points of leverage**

The CBT and the CAT also provide important points of leverage into the overall sub-sector. The CBT focuses on the overall governance of the sub-sector, setting indicative prices and dictating the use of the levies that are raised to support the sector.

The CAT is the best overall body regrouping the various actors to develop a strategic plan for the industry to grow.

### **6.3.6 Policies**

The main policies affecting the sub-sector relate to the taxes that are being collected at all levels on the backs of the producers and the exporters, the continued payment of good resources to keep up the old factories, and the lack of an overall strategic plan for the sub-sector.

## **7 CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS**

As has been seen, the major overall constraint revolves around the future strategic vision for the development of the industry. Given the relatively small role that PESA regions play in the overall sector, they must be considered secondary actors to the overall industry. However, should the strategic vision be addressed, there are a number of other areas where PESA could intervene to assist small farmers directly.

### **7.1 CONSTRAINTS**

The following are regarded as constraints in improving income and employment opportunities for MSEs in the cashew nuts sub-sector:

- Limited extension services at producer level.
- Poor crop husbandry practices.
- Supply of good quality trees.
- Poor quality grades of cashew nuts that do not fetch competitive prices.
- Lack of quality sensitivity in domestic markets.
- Poor distribution of price and market information.
- Poor business skills and lack of management capacity of market association leaders.
- Weak development of the processing industry.

### **7.2 OPPORTUNITIES**

The following are regarded as opportunities in improving income and employment opportunities for MSEs in the cashew nut sub-sector:

- Export of cashew kernels is an opportunity, if the exporters can find access to good markets;
- Linkages between small and medium processors to scale up production of cashew kernels;
- Improvement of input distribution mechanisms from import level to community retail outlets in cashew producing regions;
- Redirecting the 1 percent of the 3 percent levy collected by the CBT for the growth of the sub-sector;
- Existing ITFs can be organised into effective market associations for better market communication and interaction between each other;

- National, Regional and district council management as well as private sector players who have identified the cashew nut sub-sector as an important sub-sector for the development of MSEs within their region or district;
- Sufficient levels of production to occupy present processing capacity and potential to increase it by establishment of decentralised input supply points;
- Developing information portals through internet cafes for accessing market information at regional level;
- Stimulating the availability of small scale processing equipment.
- Research centres for best practice and development of good varieties are available to leverage.

### **7.3 IMPLICATIONS AND OPTIONS FOR ASSISTANCE**

#### **7.3.1 Overall recommendation**

Any steady growth in the sub-sector must be underpinned by a strategic vision for the sub-sector and aligning government policies to achieve that vision. The market and policy constraints identified in the sub-sector through this report suggest that there is need to have them resolved for any other interventions to have any meaningful impact on the production in the PESA regions. This study has been a rapid overview of a very complicated sub-sector, which can use greater and more in-depth analysis, particularly on the policy and market side. As such, the primary recommendation is that a focused and in depth study of the different taxes and their implications on the Tanzanian cashew nut sub-sector be undertaken along with the development of a strategic action plan for the entire sector, not just the PESA regions.

The policy study would have to encompass the review of the world cashew trade and the different policies in place in each country to stimulate their development. This would then compare the impact those policies are having on the cashew industry in that particular country. This will allow for a sound comparison between Tanzania and its leading competitors and will help to create a clearer picture of what is needed for the development of the cashew nut industry in Tanzania. A special focus should be on India as the largest consumer of Tanzania's raw cashew nuts as well as all the competing African countries producing cashew nuts. This study should conclude with an overall statement of a strategy for Tanzania and recommendations for growing the overall industry. A preliminary scope of work is attached for that study.

#### **7.3.2 Secondary recommendations**

The cashew nut sub-sector has significant opportunities which can be leveraged, if there is a vision for the overall sector. We propose interventions targeted at the following areas but working with small and medium scale farmers, the private sector and government in the Ruvuma and Tanga regions. Focus is recommended on the following areas:

- Facilitation of the **provision of appropriate extension services** through direct training of farmers by trainers or by training extension officers. This could possibly be done in conjunction with Naliendele Research Station and its CDCs, farmer association networks or private sector partners such as the ones already affiliated to the Tanzania Chamber of Commerce, Industry and Agriculture. Extension services must be focused on home nurseries and appropriate cashews husbandry.
- Facilitation of the **establishment of home nurseries and marketing of good quality trees** to home nurseries on fee basis.
- Facilitation of **capacity building within market associations**. This could take place through business skill training courses as well as visits to other markets to enable leaders to exchange ideas. The ITFs will also benefit from capacity building to enhance their management and governance issues with their constituencies.
- Facilitation of **access to market information can be enhanced by linking the ITFS/ farmers associations with internet service providers on fee basis**. The CBT can be engaged to assist in this regard given its price sensitisation mandate. Facilitation of the introduction of a price and production information format on a pilot basis in Ruvuma region; in collaboration with the District Councils and a private service provider offers this scope in Songea region. After a pilot phase this could be expanded to other cashew nut producing regions.
- Creation of **linkages between input suppliers and ITFs through district based retail outlets** as well as **promotion of private input suppliers at local levels** through establishment of input supply linkages with the importer of sulphur.
- Pilot the establishment of **small scale processing at district level such as Tunduru by establishment of a technology centre to operate on commercial basis on a rent to buy or rent to use basis**. This can be established in with a processor or with CBT funding from part of the levies collected. Should the private sector be engaged, then the starting point of this exercise should be an in-depth discussion and needs assessment of the private sector companies willing to subcontract small processors to produce kernels under their license to ensure that the necessary standards of production are met. This would need to have linkages with export market development so that Tanzanian processed nuts can establish a niche the world market and attain a specific competitive edge.
- Pilot the **linkages between Savings and Credit Cooperative Organisations and commercial banks for access to finance** (seasonal and warehouse receipts to hedge against distress marketing). Farmers can be organised to market at pre-negotiated prices based on market situation analysis. Any credit provision should lean heavily on demonstrated savings by the ITF and training on credit discipline with messages being passed to the farmers by politicians, extension and the private sector to avoid entitlement mentality that is prevalent among the farmers.

## **ANNEX 1: LIST OF PEOPLE INTERVIEWED**

<b><u>Name</u></b>	<b><u>Region</u></b>	<b><u>Position/specific area</u></b>
Mr Hamis Mwanga	Dar es salaam	Branch Manager: CBT, Dar es Salaam
Mr Suresh Ramaiya	Dar es salaam	Managing Director: Mohamed Enterprises Tanzania (processor & exporter)
Mr Mushtak Fazal	Dar es salaam	Fidahussein & Company Ltd (processor&exporter)
Vendors Market	Dar es salaam	Bega kwa Bega Market
Mr V S A Msofu	Njombe	Tanzania Farmers Association Branch Manager (input supplier)
Mr S S Kalembo	Songea	Regional Commissioner
Ms Sixta Msanga	Songea	Regional Agricultural Development Officer
Mr Watson Nganiwa	Songea	Regional Cooperative Advisor
Mr Haule E	Sasawala/Lusewa	Divisional Agricultural Extension Officer
Mr	Songea	Regional Administrative Secretary
Mr K Maswaga	Songea	District Agricultural Development Officer
Mr Emmanuel Samundo	Songea	Farmer
Lusewa farmers' representative	Lusewa	Cashew nut farmers
Mr Hamim Kalela	Lusewa	Owner/Manager Hamim Store (Rural Trader)
Farmers (males)	Tunduru	Cashew nut farmers
Mr Meza	Tunduru	CBT Branch Manager - Tunduru
Mr Nayopa	Tunduru	CBT Chief Engineer
Mr Kimena	Tunduru	Branch Manager- Mohamed Enterprises (processor/exporter)

ANNEX 1: PEOPLE INTERVIEWED  
DAI TANZANIA PESA CASHEW NUT SUB-SECTOR STUDY  
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Mr Machaga	Tunduru	District Agricultural Development Officer
Ms Bibie Mnyamagoln	Tunduru	Acting District Executive Director
Mr Ngonyani	Tunduru	District Agricultural Agronomist
Mr Bitama	Tunduru	Cooperatives Officer
Mr Fidelis Nykunga	Tunduru	Agricultural Officer
Mr Muhamed Hassan	Tunduru	Supervisor of Tunduru CDC
Mrs Angela Ndaka	Tunduru	NMB Branch Manager
Farmers (females)	Tunduru	Cashew nut farmers in Mtafika village
Ms Bibi Bertha H Mende	District Commissioner	Namtumbo district
Mr A S Kalinga	Songea	NBC Branch Manager
Ms Angelina Haule	Songea	Premium Agrochem Ltd Salesperson
Mr John g Oisso	Songea	TFC- Zone Manager
Mr L X Ngonyani	Songea	RAPCO chemicals Managing Director
Mr Yohana W Nchimbi	Songea	TCCIA –Executive Officer
Mr Juma	Iringa	Acting Regional Administrative Secretary
Mr Mpwehwe	Iringa	DALDO
Mr Mupangula	Iringa	TCCIA- Executive Officer
Iringa Market Traders	Iringa	Iringa Market Traders
Ms Kisa Emmanuel	Iringa	CRDB- Credit Officer
Mr Samuel Kishosha	Iringa	CRDB- Micro-finance Officer
Messrs Msumbwe & Mwachura	Iringa	Concern International
Ms Lily Balama	Iringa	Enterprise Works
Dr Amon P Maerere	Morogoro	Sokoine U of A Crop Science Dept. Chairperson

ANNEX 1: PEOPLE INTERVIEWED  
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Dr A W Rwamugira	Morogoro	Sokoine U of A- Perennial Crops Lecturer
Kibaha Factory Guard	Kibaha	Kibaha Cashew Processing Factory
Colonel M B Mashauri	Kibaha	TATC- Director General
Mr Kindamba Ali	Kibaha	Owner/Manager of processing enterprise
Mr Kilonzo	Namtumbo	District Executive Director
Father Xavier	Songea	Internet service provider
Reverend Sister Janet	Songea	Project Director –Iuli
Mr U Y Msumi	Dar es Salaam	Executive Secretary CAT
Saidi ‘Njomoke’ Mohamed	Dar es Salaam	Transporter
Saijab Rajabali	Dar es Salaam	Director (sulphur importer)
Mr Mohamed Hasan	Muheza	Kauzeni Farm Pvt Ltd
Dr G Mhando	Muheza	Large Scale Cashew Farmer
Mr Francis Mhina	Mwele	CDC Manager
Mrs Zaina Mhando	Mwele	Agric Extension Officer
Mr Yusuph Kiondo	Maramba	Village Executive Officer
Mr Msanga	Tanga	Regional Planning Officer
Mr Sarai Ramahani	Pangani	DALDO
Mr Kidika Andrew	Pangani	SMS Cashew Traders
Mr Zubeni Ramadhani	Pangani	Field Statistics Officer
Mr Salim Al Amar	Pangani	Al Amar Enterprises
Mr Yakub Hasham	Tanga	Shellcraft Ltd (input supplier)
Mr Salahudin Alwani	Tanga	Director Shellcraft Ltd (input supplier)
Mr Ramadhani Mweta		Director Makau Enterprises (cashew buyer)
Mr Ngage Abdhalah	Muheza	Ward Extension Officer
Mr. Alexander Amuko	Muheza	Extension officer
Duga Maforoni	Muheza	Extension Officer
Mr. Juma Mbago	Muheza	District Crop Officer
Mr. Flotei Mvungi	Muheza	District Coop Officer
Mr. Athumani Mwakinda	Muheza	Small holder farmer



ANNEX 1: PEOPLE INTERVIEWED  
DAI TANZANIA PESA CASHEW NUT SUB-SECTOR STUDY  
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Mr. Hamudu Hamedi	Muheza	Small holder farmer
Mr. Rashid Omari	Pangani	Small holder farmer
Mr. Masoud Kombo	Pangani	Small holder farmer
Mr. Bandika Kilewa	Pangani	Small holder farmer
Mr. Said Baakari	Pangani	Small holder farmer
Mr. Hosein Waziri	Pangani	Small holder farmer

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## **ANNEX 3: CASHEW NUT DISEASES**

## COMMON CASHEW NUT CROP DISEASES IN TANZANIA

**PMD (*Oidium Anacardii*):** this is the most important disease. It is a fungal disease first observed in 1974. PMD attacks the leaves and shoots, inflorescence, nuts and apples at the most serious period of growth in June when the trees are flowering. Control is managed through spraying sulphur powder at a rate of 1.25kg per tree per year. It is recommended that five rounds of sulphur dust be applied per year with the first three rounds being spaced at 14 days while the last two rounds should be spaced at between 21 and 28 days. Alternatively, farmers can also apply Bayfidan chemicals which will require three rounds of spraying and requires mixing of the chemical with water before spraying. It is however, more expensive and labour intensive as farmers will need lots of water to mix the chemical and spray the whole field.

Farmers in the study areas reported that they have poor access to the sulphur dust and when they are available, they tend to be prohibitive in cost such that they do not afford them. They also report that they mainly obtain the sulphur dust late when their trees have already been badly affected by the PMD. They also cite the problem of access to sulphur dust application equipment. In Lusewa, Namtumbo district for example there were only 9 functional blowers to cater for 530 cashew nut farmers which translates to 59 farmers per blower. The farmers in question have a total of 18845 productive trees. Average blowing can cover an acre or about 60 trees in a day. Given this scenario, one can note that it will take at least 35 days to blow all these trees with sulphur in one area. Given the delays in supply of sulphur dust as well as the cost elements, it becomes a daunting task to manage the application of sulphur dust under these circumstances. Some farmers in Tunduru have started innovating by creating their own homemade blowers from perforated small sachets tied to long sticks which they fill with sulphur dust and then shake on the leaves with similar results to those obtained from the use of a blower.

**Anthraxnose fungal disease (*colletotrichum spp*) and Helopelitis and Trips:** these are not as widespread as PMD. The fungal disease causing wilting of the tree while the later are pests. These pests occur in the growing area but their damage is not so extensive and they are controlled through insecticides such as Karate and Celeron. The effect of these sucking insects is their phytotoxic saliva which causes shoots and inflorescence to die and cause lesions on nuts.

**ANNEX 4: CASHEW NUT PROCESSING  
TECHNOLOGIES**

## CASHEW NUT PROCESSING TECHNOLOGIES IN TANZANIA

The first and oldest technology is the **traditional processing system** which involves manual operation by experienced workers who attain very high levels of efficiency. This is noted in their recovery rates (proportion of whole kernels taken from the nuts without breaking). This is the technology that forms the backbone of India's cashew processing industry. The second form of technology is the **mechanised processing system**. This is meant for large scale processing but it still requires a lot of labour as well as the attendant high capital injection of the machinery itself. Its recovery rates are way lower than those of the manual technology. This is the technology that is in abundance in Tanzania.

Tanzania made these investments over the 1980-90s period to attain a total capacity of 113,000mt per year of processing raw nuts. During the second half of the 1970s and early 1980s, a combined capacity of 105,000mt per year was installed in the form of 12 factories. Nine (9) of these factories have individual capacity ranging from 10,000mt to 12,500mt per year while another three (3) have combined individual capacity ranging between 5,000mt and 8,000mt each per year. These investments were made possible through the World Bank funding through an IDA loan valued at US\$21m in 1974. A second loan was made available in 1978 to the tune of US\$27.5m. However, the second loan was made available to the government when in actual fact the first five machines had not even run for their operational and economic efficiency to be tested. Additional funding was sought to gear up the country's processing capacity to 113,000mt in a year. The sad situation is that all this capacity was up at a time when the country's production of cashew nuts plummeted to require utilisation of a third of the installed capacity only.

### Cashew Nut Mechanised Processing Outlay

The mechanised processing is laid out in the following steps:

Nuts are sun **dried** to reach the required moisture content after which they are **steamed** for at least 30 minutes in tanks. They are then removed and spread on flat surfaces for them to **cool** off over a 24 hour period. They are then **cut** by hand to remove the nuts/kernels. The nuts are then taken into the oven for **roasting** after which they are taken for **peeling**. From this stage, the nuts are then **graded** and before being **vacuum packed** as final products. They are then ready for the market after this process.

The twelve government owned processing plants have become white elephants with their 113,000mt annual processing capacity. All of them were closed in the 1985/86 season and three of the twelve factories were re-started in the 1987/88 season but only to be closed again in the 1991/92 season. Efforts were made to lease the factories but the response was pathetic due to the firms' limited competitiveness. One firm in Lindi was leased by a private investor in 1994 but only to be immediately closed due to its low recovery rate which led to disappointingly low output prices. This corroborates the assertion made by the private sector that the firms in question are unviable and have always operated at a loss hence the private sector disinterest to the government call for leasing them. The factories generally have high operational costs and low processing efficiency (low recovery rate of

whole kernels) which renders them incapable of competing on the world market with India for example.

In the period 1981-83 for example, the kernel prices fetched by India was US\$2.04 per kg while that fetched by Tanzania was US\$1.83 which is a reflection of the efficiency of the two countries expressed in quality of kernels. (Ministry of Agriculture and Co-operatives, 1999) Nothing has changed now in the case of Tanzanian factories to increase this efficiency. The factories may in fact have been operating at very uneconomic levels but managing to stay afloat due to the monopoly in the purchase of raw nuts from the farmers at low prices which helped to absorb the factories inefficiencies. In their whole existence since establishment, the 12 factories have only managed to produce a total of 73,329mt of cashew kernels which is a mere 65% of the annual total processing capacity. Two factories were rehabilitated and these have a combined capacity of 20,000mt a year. However, only one is in intermittent operation and is producing about 78mt a year intermittently which is only a small fraction of the what the medium scale processing firms are achieving yet they have very limited processing capacity compared to the rehabilitated factory. This is not an encouraging situation given the costs of maintaining/upkeep of the 12 factories for which the active private sector players are being asked to finance through export levies. The long and short of it is that the operating players are being levied to subsidise the questionable sustenance of the non-functional factories. This has the effect of reducing the export competitiveness of the country's products and is highly questionable and counterproductive to the country's export competitiveness in world markets.

Private processors on the other hand have shown good initiative in setting up processing plants which are processing about 3,000mt of kernels a year which translates to 85% or 15,000mt of the raw nuts produced in the country. When this is combined with the household and informal processing, it all accounts for 17% or 17,000mt of the total Tanzanian raw nuts production. From all this processed cashews, 3400mt of kernels are produced. Tanzania exports 86% or 2,910mt of this and consumes the other 14% or 490mt locally. One of the most successful cases is Premier Cashew which employs 1700 women in its factories. The company has been realising incremental growth every year. From its inception in year 99/00, the firm started with 248mt of kernels and scaled up to 1300mt in the year 2002/03. The Company plans to gear that up to 2,000mt in the 2003 season having commissioned an additional plant. The processors however, lament the heavy tax/levy administration system within the system which is hindrance in their business. An example given was that of numerous taxes levied from the national authorities right down to the village. A recommendation was passed to the effect that, taxes should be collected once at the port of export and remitted to the respective recipients accordingly as this would reduce transaction costs immensely. This would improve accountability on the administration of the taxes as well as the improve collections as tax evasion would be eliminated for those not contributing at the moment. They cite examples of other cashew producing countries such as Mozambique and Guinea Bissau where taxes are collected at the port and efficiently so.



They also recommended that all external buyers of raw nuts should be taxed and the proceeds should be issued to CAT for its work in the promotion of the cashew processing industry as it has no source of funds for its mandate. The fact that the processors are taxed creates no incentive for processing the nuts. One recommendation from the processors is to get export tax relief so that they are incentivised to process and also stand in good stead on the export market in terms of price competitiveness.

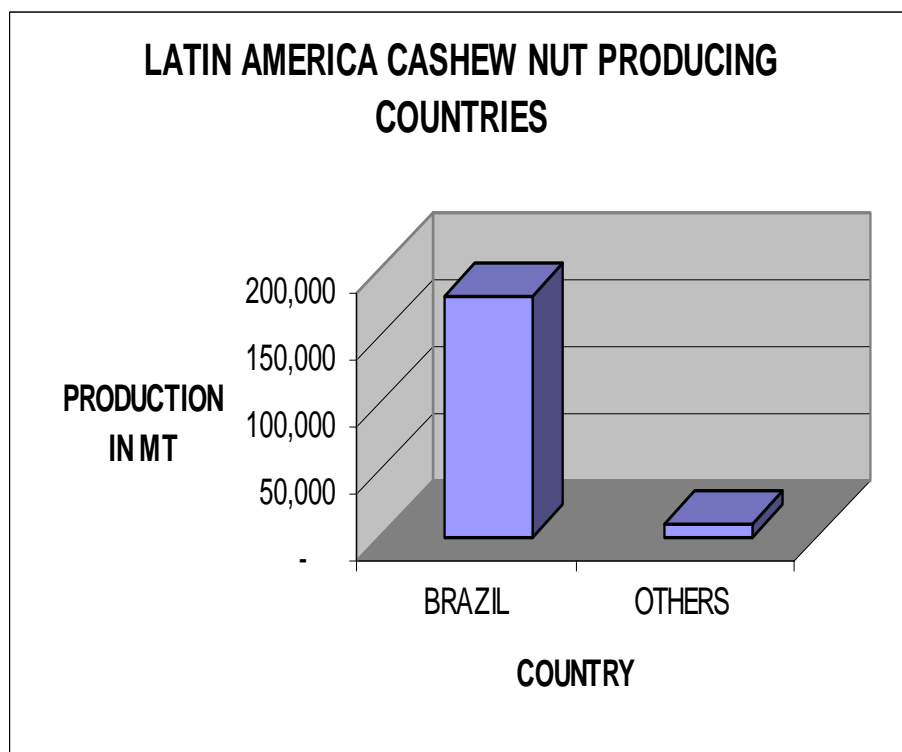
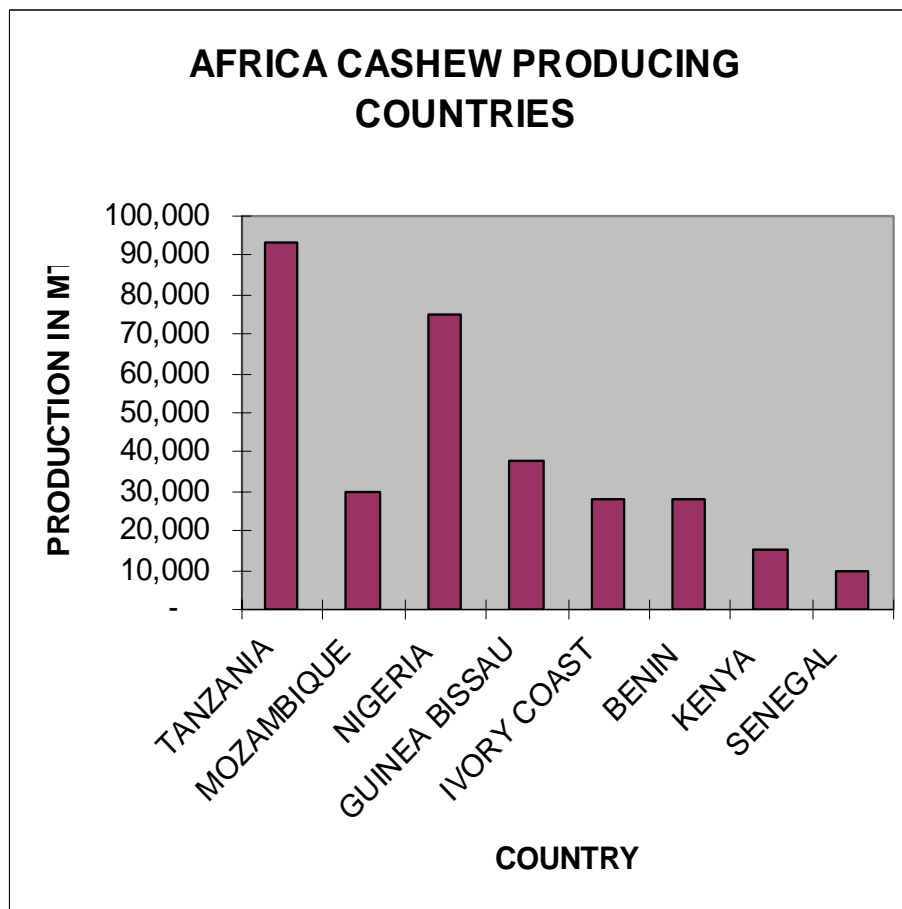
CBT on the other hand is determined to have the factories re-started and has at the time of this study started reviewing bids for the closed factories was due to take place. In a strategy paper on the Cashew Nut Industry, the CBT recommended the following the measures to be taken:

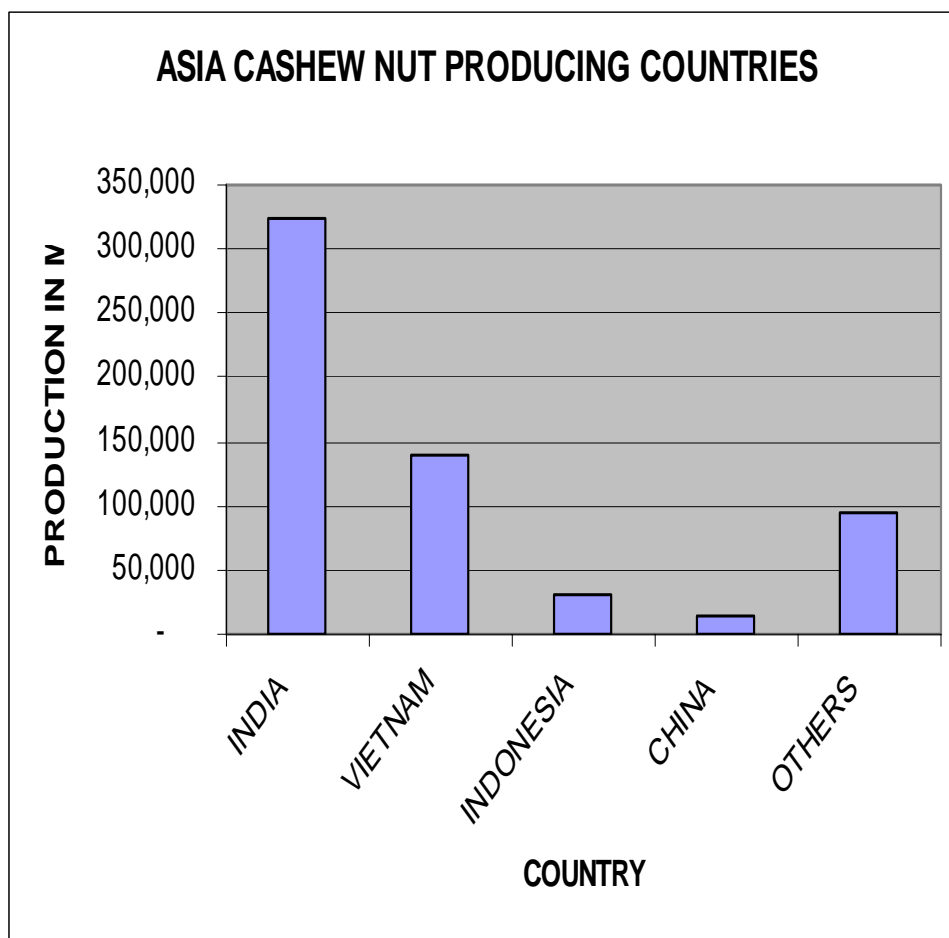
- Minimising the labour costs
- Diversification of products beyond the kernels
- Quality control to increase kernel recovery rates
- Protection of the local processors by taxing export of raw nuts as well as allowing for tax exemptions on processed products.

This however, has not found favour with the government as the protection of the local industry is ultra vires to the legislation governing the export of cashew nuts where export trade is provided for in any form. Instead, the focus of the industry is best advised in the direction of small scale processing which is thriving in Mozambique and Guinea Bissau with its high labour intensity. There are certainly merits in going in this direction in the local industry as the labour is available and useful linkages can be brokered between the medium processors and small processors to attain efficiencies in the production of kernels. This is in line with developments in the world markets.

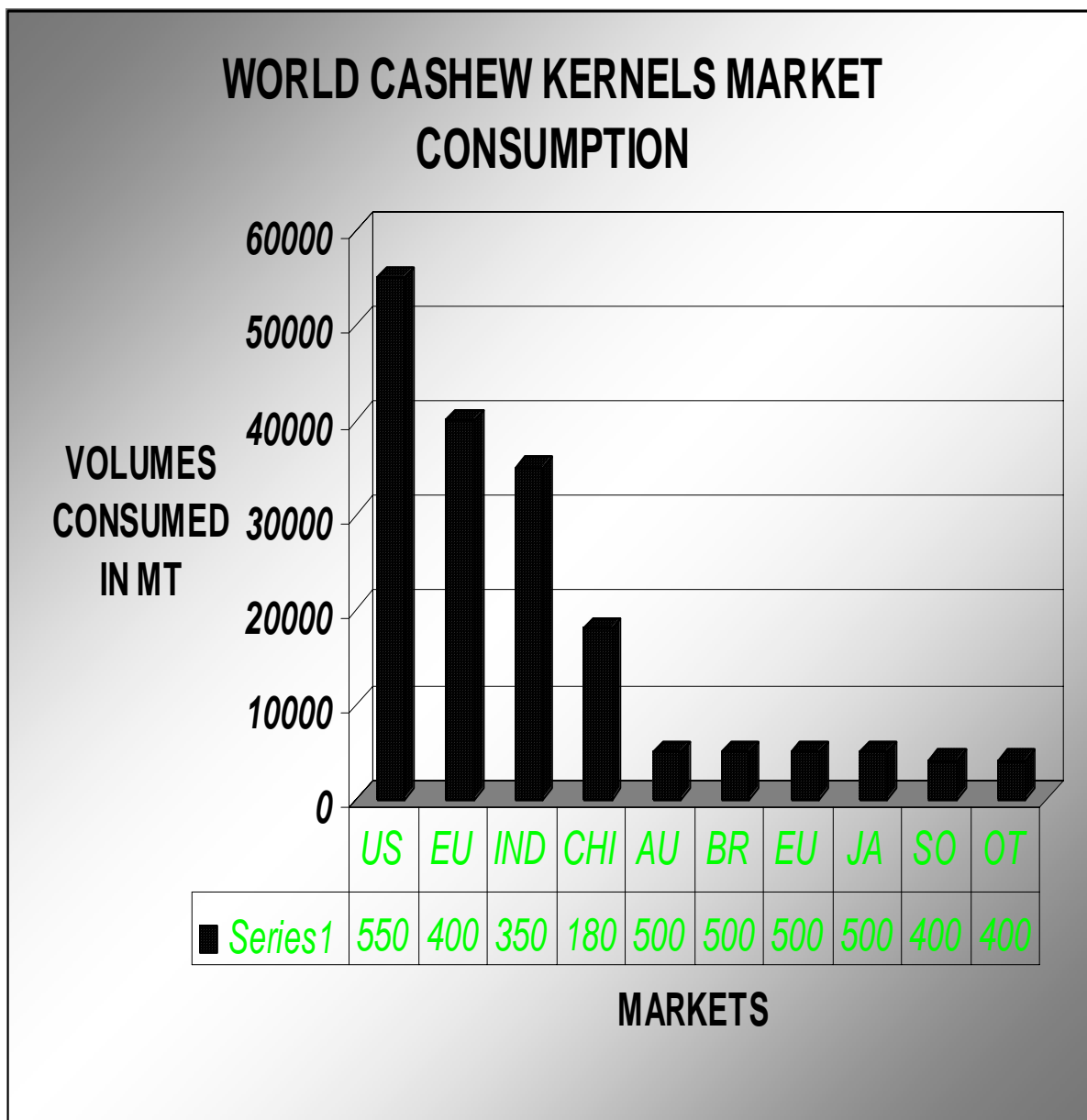
## **ANNEX 5: WORLD CASHEW NUT PRODUCERS**

(Data constructed from World Cashew Market Statistics).





**ANNEX 6:      WORLD MARKETS OF CASHEW KERNELS**



## **ANNEX 7: CASHEW KERNELS WORLD MARKET PRICE ELASTICITIES**

### Cashew Imports and Per Capita Consumption.

	----- IMPORTS -----				PER CAPITA CONSUMPTION	
	----- Tons -----		---- % of world total ---		----- grams/capita ---	
	<i>1980-99</i>	<i>1990-99</i>	<i>1980-99</i>	<i>1990-99</i>	<i>1980-99</i>	<i>1990-99</i>
U.S.	38,353	58,358	64	45	161	227
France	4,119	14,051	7	11	14	51
Netherlands	2,209	7,428	4	6	152	479
Germany	2,392	7,339	4	6	30	90
UK	3,116	5,767	5	4	55	98
Japan	2,847	5,591	5	4	23	45
<b>World</b>	<b>59,901</b>	<b>130,480</b>			<b>Source: World Bank</b>	

**Notes:** The per capita consumption in the Netherlands may be overstated because of re-export to other European countries.



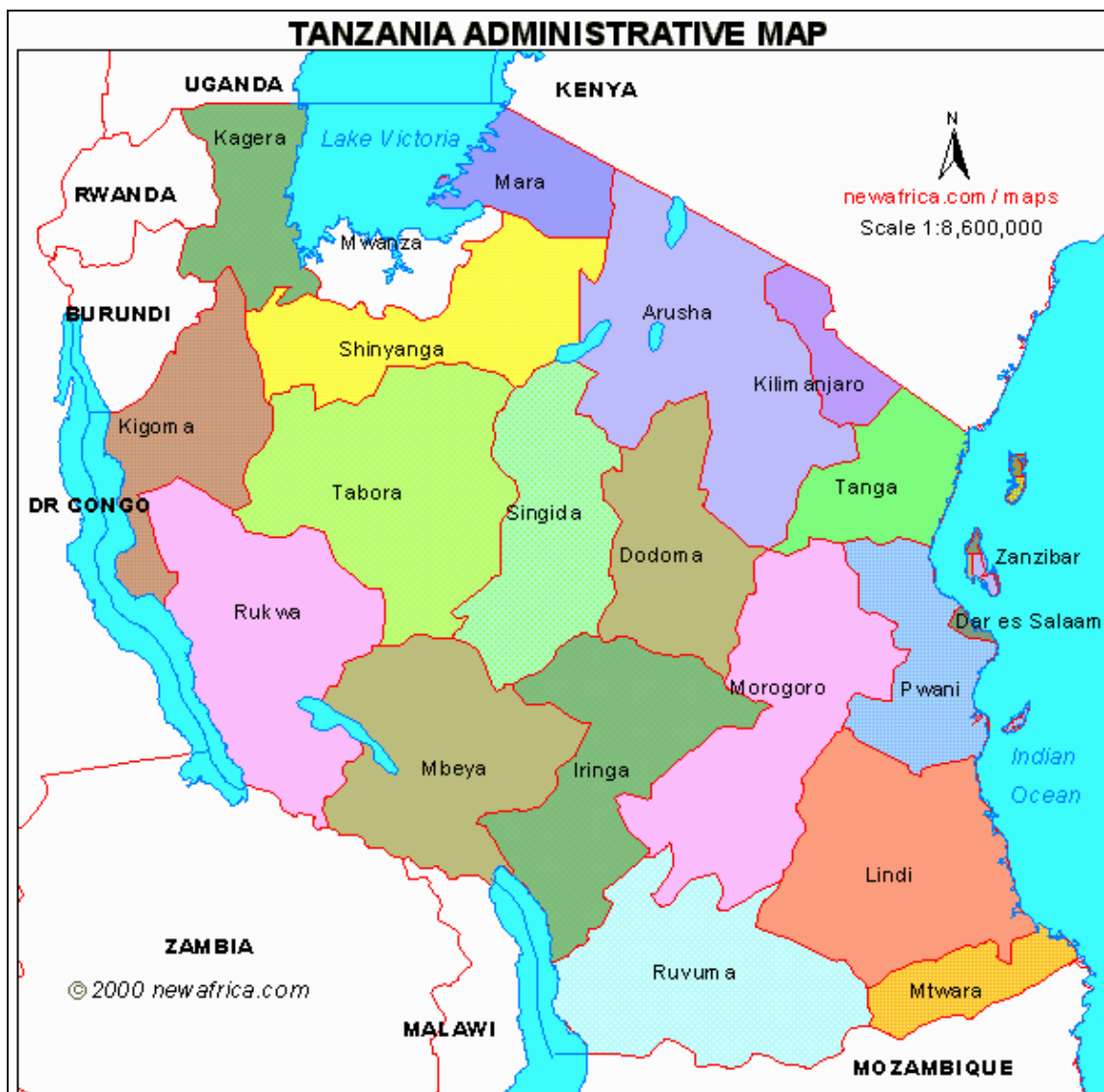
## **ANNEX 8: SMALL HOLDER FARMER CASHEW MARGIN ANALYSIS**

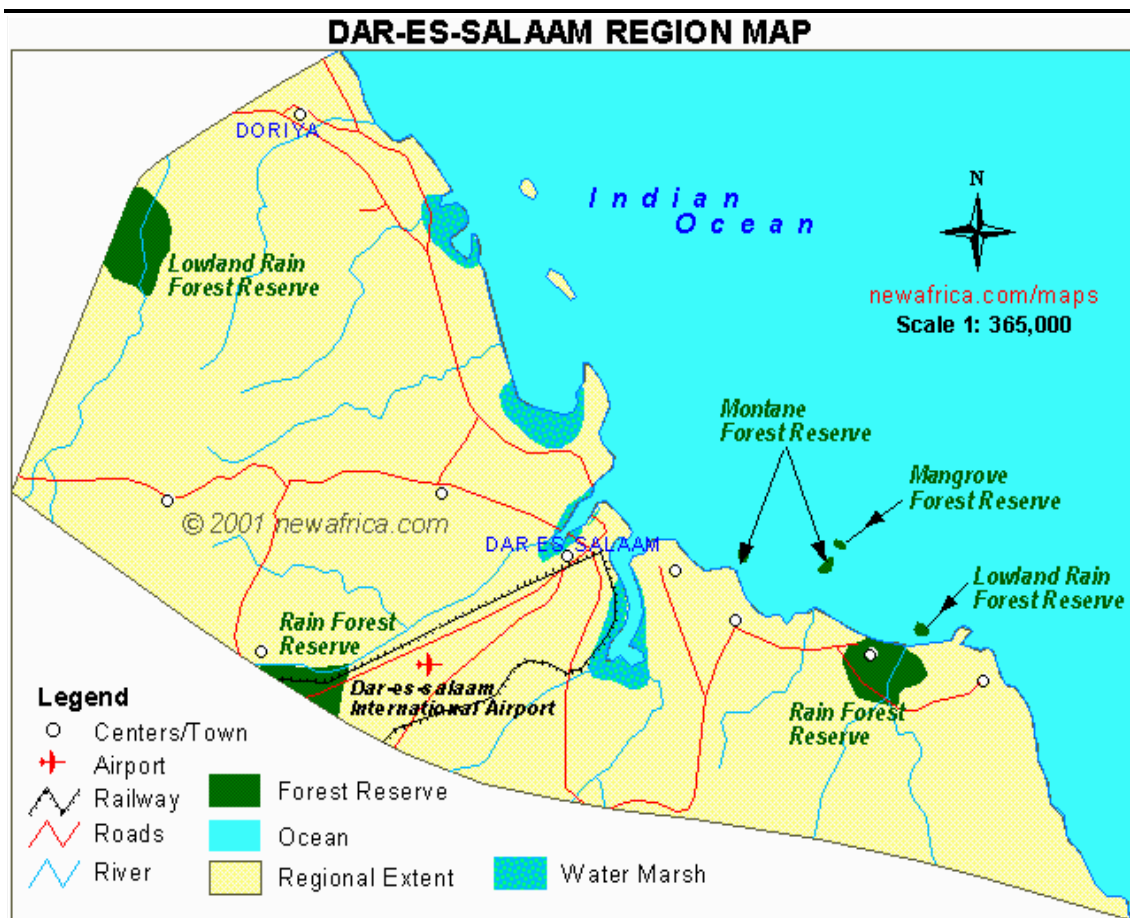
ANNEX 8: SMALL HOLDER FARMER CASHEW MARGIN ANALYSIS  
 DAI TANZANIA PESA CASHEW NUT SUB-SECTOR STUDY  
 FINAL REPORT, OCTOBER 2003

Cost centre	Unit costs	Cost /acre in /=	Cost/acre in US\$	%
sulphur	1.25 kg/ tree	14000	14	34
Blower rental	1500/day	4500	4	11
Labour costs			0	
weeding	1500/day	3000	3	7
blowing	10000/season	10000	10	24
pruning	2500/season	2500	2	6
harvesting				
(picking to drying)	42000/season	4200	4	10
Other costs				
transport	25/=/kg	3281.25	3	8
<b>Total costs/acre</b>		<b>41481.25</b>	<b>41</b>	<b>100</b>
Total costs/tree		1185.18	1.2	3
<b>Total costs/kg</b>		<b>237</b>	<b>0.24</b>	<b>100</b>
<b>Price per kg</b>		<b>339</b>	<b>0.34</b>	143
<b>Farmer's breakeven price</b>		<b>237</b>	<b>0.24</b>	<b>100</b>
<b>Farmer' G/margin/kg</b>		<b>102</b>	<b>0.10</b>	<b>43</b>

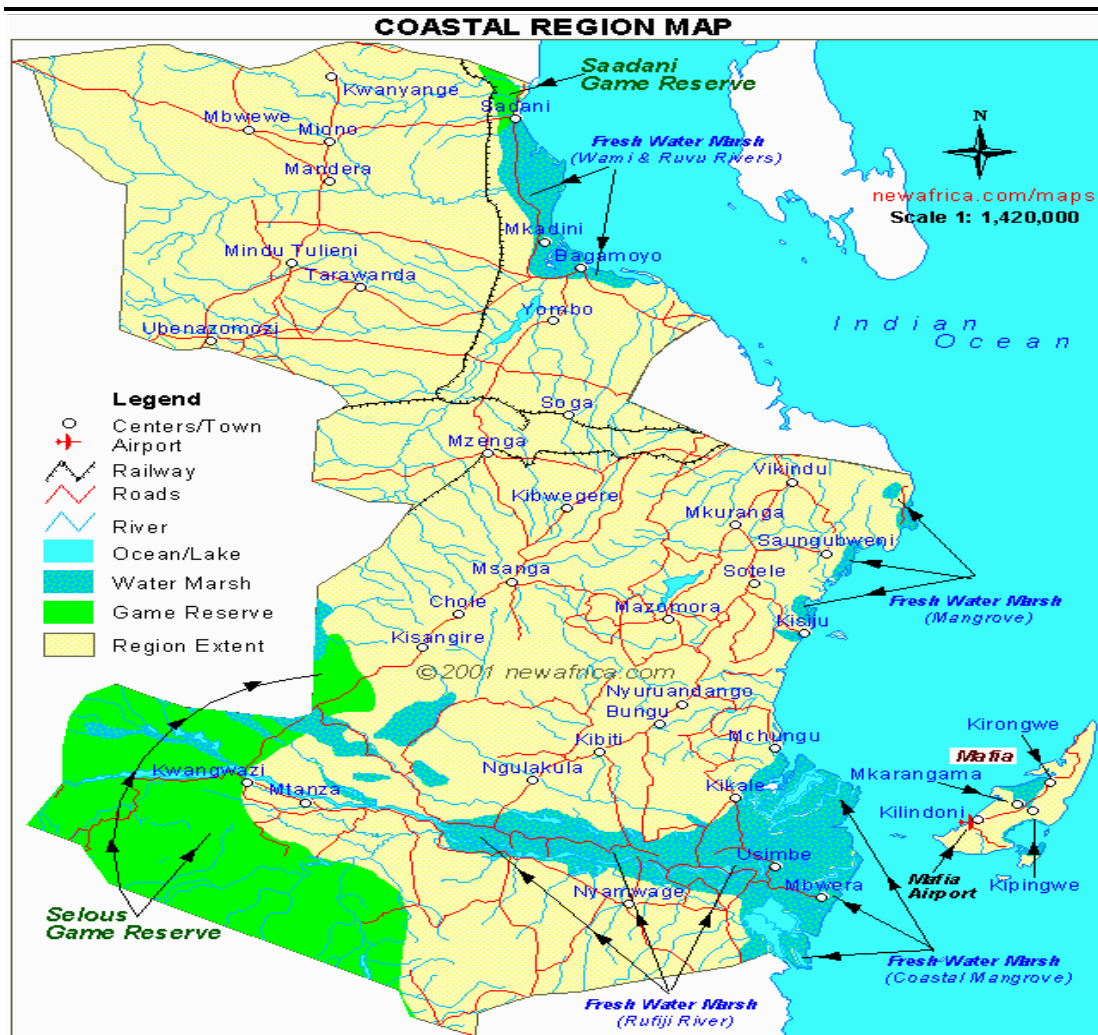
Source: Calculated from interviews with farmers and extension staff

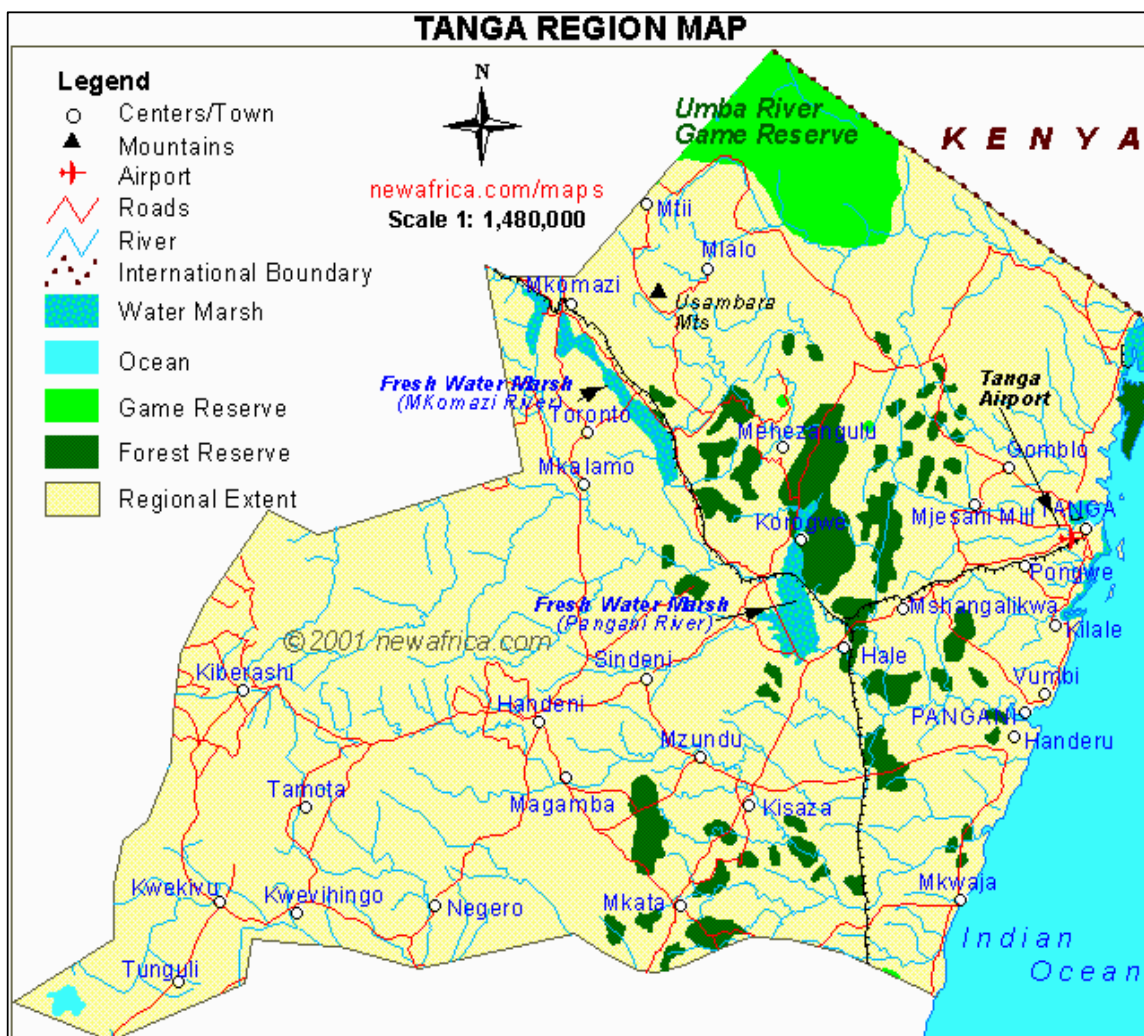
## ANNEX 9: REGIONAL MAPS



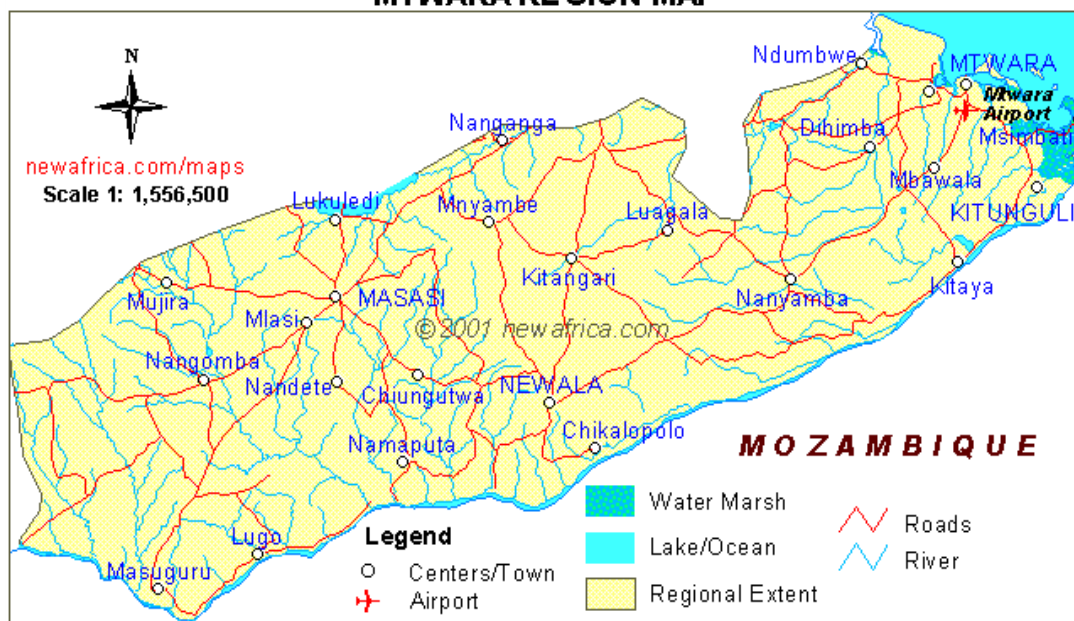


ANNEX 9: REGIONAL MAPS  
 DAI TANZANIA PESA CASHEW NUT SUB-SECTOR STUDY  
 FINAL REPORT, OCTOBER 2003





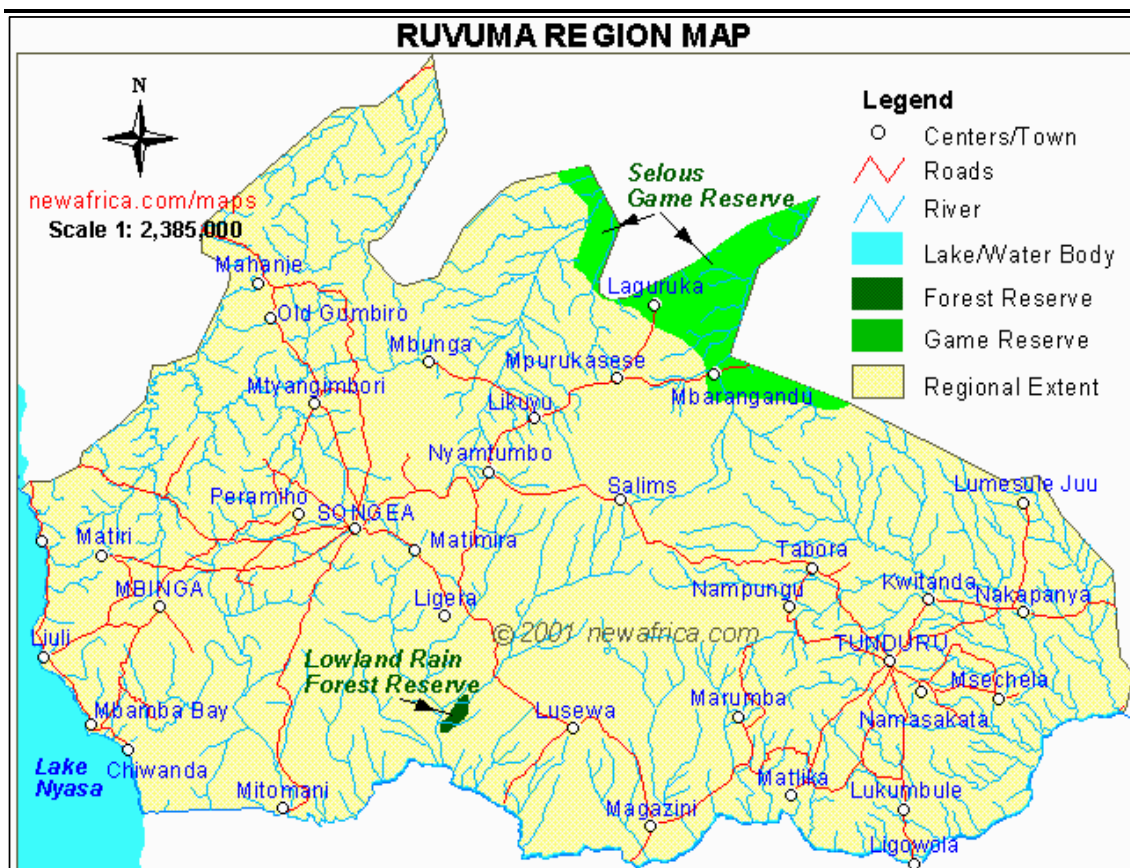
**MTWARA REGION MAP**











## ANNEX 10: TANZANIA FACTORIES INFORMATION

Number	FACTORY	LOCATION	CAPACITY (TONS)	DATES OF OPERATION	REMARKS	CUMULATIVE RAW CASHEWNUTS PROCESSED FROM 1978 TO 2002 IN EACH FACTORY IN TONNES
1	Lindi	Lindi region	10,000	October 1978 - June 1983 - 57 m October 1991 - April 1992	Requires major rehabilitation	10,769
2	Mtama	Lindi region	5,000	October 1979 - June 1982 - 33 m	Requires major rehabilitation	3,651
3	Nachingwea	Lindi region	5,000	February 1981 - June 1982 - 17 m	Requires major rehabilitation	479
4	Tundururu	Ruvuma region	10,000	Never operated	Requires major rehabilitation	-
5	Likombe	Mtwara region	10,000	June 1981 - March 1985 November 1987 - August 1992 -	Requires major rehabilitation	32,589
6	Newala I	"	10,000	Never operated	Requires major rehabilitation	-
7	Newala II	"	10,000	June 1981 - April 1982 - 11 m	Requires major rehabilitation	930
8	Masasi	"	10,000	March 1981 - June 1982 - 16 m December 2001 - April 2002	Operating	1,140 -
9	Tanita I	Dar es salaam	12,500	1965 - August 1985 March 1988 - August 1992	Requires minor rehabilitation	E
10	Tanita II	"	12,500	1987 - June 1982	Requires minor rehabilitation	E
11	Kibaha	Coast region	10,000	October 1980 - March 1985 November 1987 - August 1992 - To restart soon	Requires minor rehabilitation	23,681
12	Mtwara	Mtwara town	8,000	Obsolete	Obsolete	E
		<b>Total Capacity</b>	<b>113,000</b>		<b>Total Tonnes Pr</b>	<b>73,239</b>

80,000 The factories with available Data

**TABLE II: MEDIUM SCALE PROCESSING FACTORIES (PRIVATE OWNED)**

FACTOR	LOCATION	CAPACITY (TON)	REMARKS
Premier	Dar es salaam	5,000	Operating
Mohamed	Dar es salaam	1,000	Operating
EOTF a	Dar es salaam	300	To start soon
EOTF b	Dar es salaam	300	To start soon

Source: Constructed from analysis of the sub-sector business development services.

**ANNEX 11: SERVICES RENDERED IN THE TANZANIA CASHEW SUB-SECTOR**

<b>FUNCTION</b>	<b>SERVICES</b>	<b>BUSINESS</b>
Seed development	Research, seed multiplication	Small home nurseries
Input supply	Sale of sulphur, sulphur blowers,bags	Input suppliers
Production	Input purchase, planting, weeding, pruning, blowing	Blower rental services, blowing services
Harvest	Labour to harvest,	
Storage	Move to go down, unload, rent storage	Transport, storage rental, security
Local trader/agent	Move to market,	Transport, financial services
Processing	Transport to factory, move into factory, process, move from mill to packages,	Transport, equipment sales, spare parts, factory engineering
Wholesale and retail	Unloading transport, market storage, breaking bulk, selling	Supermarkets, vendors, security
Export	Transport, selling, market information	Exporters, transporters, storage, port services

## ANNEX 12: TAXES AND REVENUE ATTRIBUTIONS IN THE TANZANIA CASHEW SUB-SECTOR

SEASON	YR 1996/97	YR 1997/98	YR 1998/99	YR 1999/00	YR 2000/01	YR 2001/02	YR 2002/03
<b>TOTAL RAW NUTS BOUGHT</b>	63,033	99,916	106,442	121,207	122,284	67,369	86,564
TZ /=:USD AVERAGE RATE	620	679	739	800	880	915	1008
F.O.B PRICE /MT	<b>750</b>	<b>843</b>	<b>889</b>	<b>1039</b>	<b>798</b>	<b>537</b>	<b>532</b>
FARMER'S PRICE IN \$ TERMS	<b>435</b>	<b>422</b>	<b>576</b>	<b>727</b>	<b>276</b>	<b>339</b>	<b>346</b>
<b>TOTAL VALUE OF EXPORTS IN</b>	<b>47,274,623</b>	<b>80,942,228</b>	<b>94,351,578</b>	<b>123,792,393</b>	<b>96,913,812</b>	<b>34,604,885</b>	<b>42,079,309</b>
<b>FARMERS EARNINGS IN US\$</b>	<b>26,781,101</b>	<b>28,271,672</b>	<b>61,283,140</b>	<b>88,137,673</b>	<b>33,743,218</b>	<b>22,814,456</b>	<b>29,998,196</b>
FARMERS PRICE AS% OF FOB	57	35	65	71	35	66	71
VALUE OF TAXES IN US\$	<b>3,129,409</b>	<b>11,613,421</b>	<b>12,366,327</b>	<b>16,638,188</b>	<b>16,551,695</b>	<b>5,907,419</b>	<b>7,417,885</b>
VALUE OF TAXES AS % OF FOB \$ (%)	7	14	13	13	17	17	18
PRIVATE SECTOR EARNINGS IN US\$	17,364,113	41,057,135	20,702,111	19,016,532	46,618,899	5,883,010	4,663,228
PRIVATE SECTOR EARNINGS AS % OF FOB	37	51	22	15	48	17	11
<b>TOTALS EARNINGS IN SECTOR PER YEAR</b>	<b>47,274,623</b>	<b>80,942,228</b>	<b>94,351,578</b>	<b>123,792,393</b>	<b>96,913,812</b>	<b>34,604,885</b>	<b>42,079,309</b>
<b>TOTAL EXPORT VALUE IN \$</b>	<b>47,274,623</b>	<b>80,942,228</b>	<b>94,351,578</b>	<b>123,792,393</b>	<b>96,913,812</b>	<b>34,604,885</b>	<b>42,079,309</b>
<b>INCOME TO FARMERS IN \$</b>	<b>26,781,101</b>	<b>28,271,672</b>	<b>61,283,140</b>	<b>88,137,673</b>	<b>33,743,218</b>	<b>22,814,456</b>	<b>29,998,196</b>
CBT 3% LEVY IN \$	1,417,381	2,341,545	2,830,547	3,713,772	2,907,414	1,038,147	1,262,379
EXPORT TAX (2%)	944,921	1,638,659	N/A	N/A	N/A	N/A	N/A
CITY LEVY	200,155	230,688	361,617	473,296	297,096	87,193	33,378
1.2% STAMP DUTY	566,952	655,464	N/A	N/A	N/A	N/A	N/A
DISTRICT CESS	0	6,747,065	9,174,163	12,451,120	13,347,185	4,782,079	6,122,128
<b>TOTAL LEVIES</b>	<b>3,129,409</b>	<b>11,613,421</b>	<b>12,366,327</b>	<b>16,638,188</b>	<b>16,551,695</b>	<b>5,907,419</b>	<b>7,417,885</b>
LEVIES AS % OF FARMER'S INCOME	12	41	20	19	49	26	25
<i>AVERAGE CASHEW EARNINGS /YEAR</i>	<b>74,279,833</b>	%					
FARMERS' SHARE	<b>41,575,637</b>	<b>56</b>					
GOVERNMENT SHARE	<b>10,517,763</b>	<b>14</b>					
PRIVATE SECTOR SHARE	<b>22,186,433</b>	<b>30</b>					