

HEMP MARKET VALUE CHAIN PROFILE

1. DESCRIPTION OF THE INDUSTRY

Hemp is one of the most important fiber crops both for South Africa and the rest of the world. It has been cultivated longer than any other fiber crop. There seems to be never-ending list of benefits of the hemp plant with products ranging from clothing and textile to cosmetics and insulating boards. However it is the perceived relationship with Marijuana that gave the plant a bad name. Both come from the plant family *Cannabis sativa* L., but from different varieties. Hemp has been grown in South Africa for medical purposes for centuries. It has been illegal in South Africa since 1903 when dagga prohibition was passed.

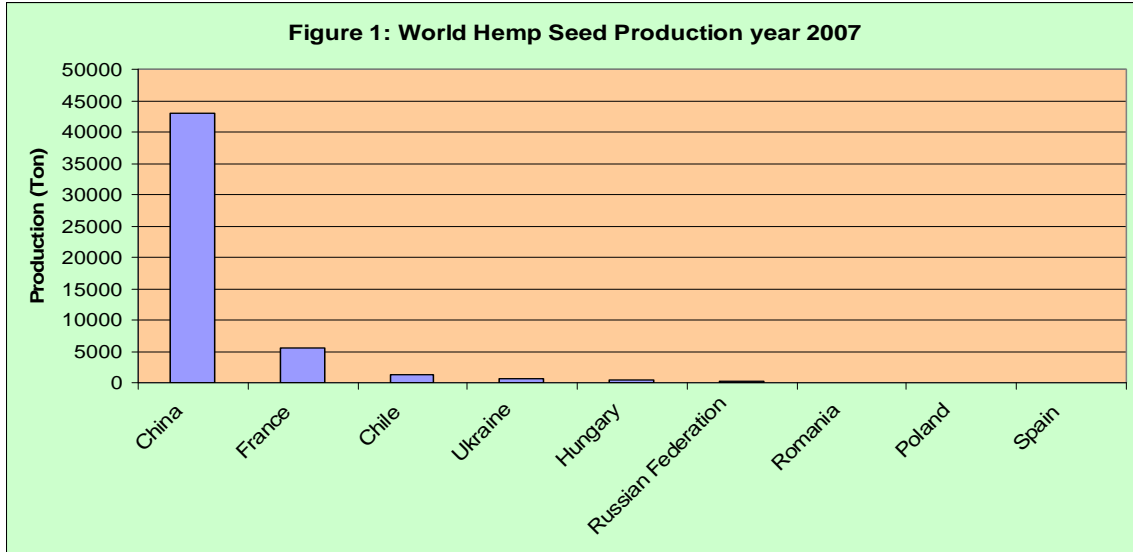
The South African government and the private sector are presently engaged in a process of trying to sort out the hemp legislation to create an environment in which this product can be commercialized. The product is currently grown in South Africa mainly for the experimental or research purposes.

1.1 Production Areas

Hemp is widely distributed in Southern Africa. The first trials were planted in the North West Province in ARC experimental farm near Rustenburg. The other trials were planted by ARC-Institute for Industrial Crops in the Eastern Cape and Western Cape, Limpopo, Gauteng, Mpumalanga, KwaZulu-Natal and Northern Cape. The largest producers of hemp in the world are countries in Eastern Europe (Romania and Poland) and China. At least 26 countries permit commercial cultivation of hemp, UK and Germany being the biggest producers of hemp in Western Europe.

1.2 Global Hemp Production

China is the largest producer of hemp globally having produced 43 000 tons of hempseed in 2007. It is estimated that an average 300 000 ha of land in China is used for hemp production per annum. France is the second largest producer hemp followed by countries such as Chile, Hungary, Ukraine, Russian Federation Romania, Poland and Spain. None of African countries is a major producer of hemp seed due to legislative issues surrounding the production of hemp.



Source: Food and Agriculture Organization

2. MARKET STRUCTURE

2.1. Domestic Market and Prices

In South Africa not enough hemp is produced for the local market due to legislative barriers. There is an existing market in South Africa for imported hemp products, mainly hemp textiles. Several hemp products, such as clothing, soaps, and shampoo, are manufactured in South Africa from imported raw materials. There is also potential demand in some other segments of the local market, such as, for example, hemp based composite materials.

2.2. Import-Export Analysis

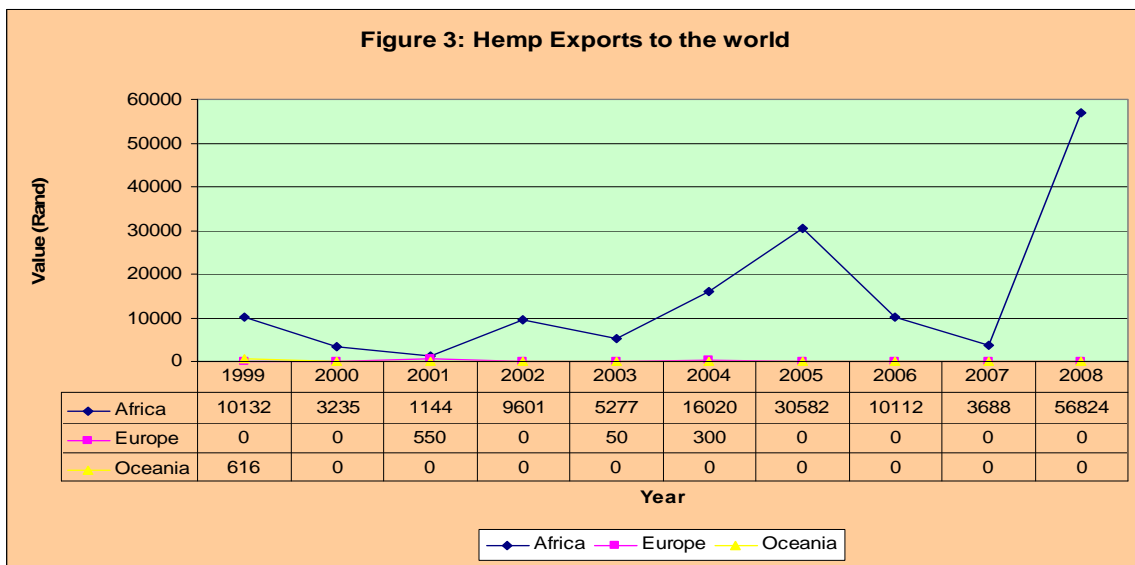
Imports and Exports of hemp from 1999 to 2008 are compared in Figure 2.



Source: *Quantec Easy Data*

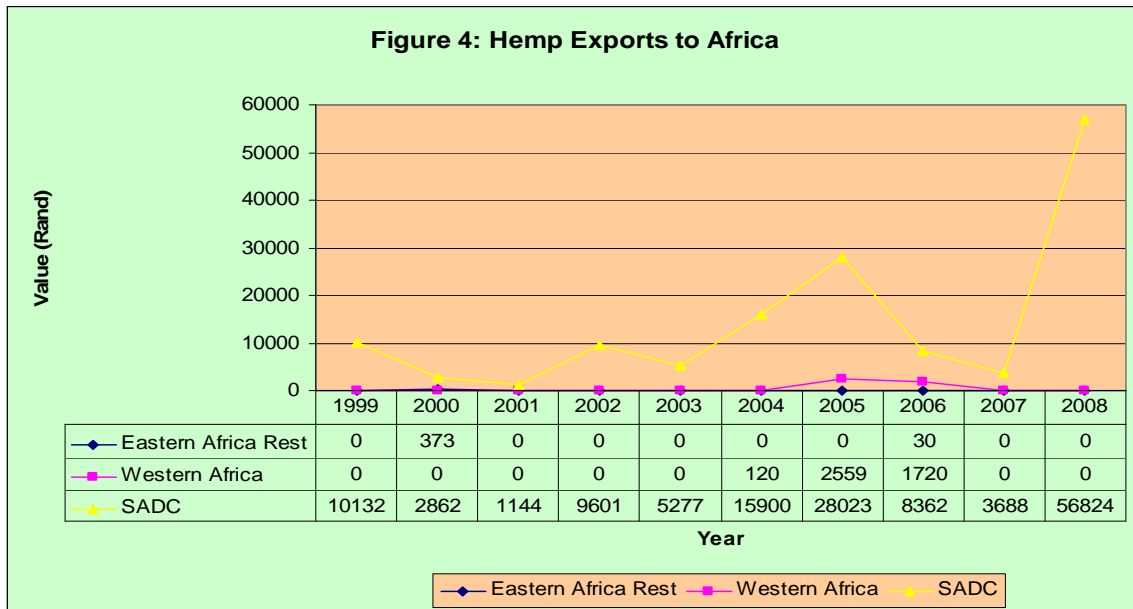
Figure 2 makes it clear that South Africa is a net importer of hemp (mainly hemp fiber and seed) and this is due to low level of production in the country resulting from the fact that hemp production is not legal in the country. Although hemp is not legitimately produced in the country, its products are in larger demand leading our manufacturers to buy it as raw material from countries where it is produced in larger amounts. It appears from Figure 2 that from the year 1999 South Africa has been importing raw hemp fiber and seed for processing purposes and then exports the processed products. Throughout the period under review the value of hemp exports has been below R5 000 except in 2008 when a peak in hemp exports was experienced in the country. For the whole ten year period under review, hemp import values proved to be far beyond export values.

2.3. Exports



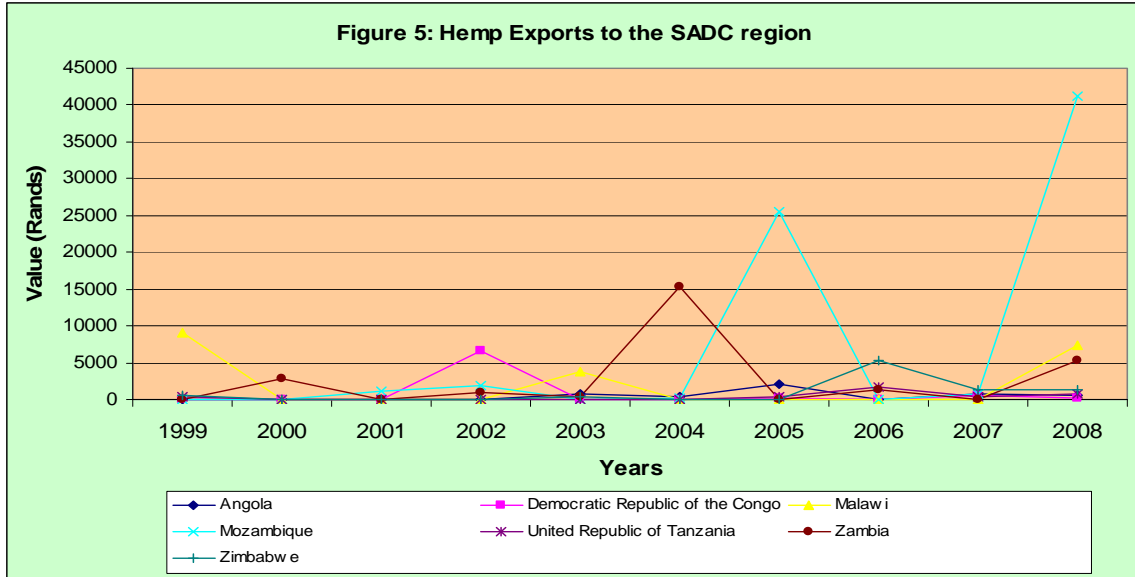
Source: *Quantec Easy Data*

Figure 3 indicates that, for the past 10 years South Africa has been exporting its hemp products mainly to the African continent with fractional amounts being exported to Europe and Oceania. A peak in the exports of processed hemp products occurred in 2008, when the value of hemp exports destined for African countries jumped beyond R50 000. The exports to Oceania were only experienced during the year 2009 after which nothing was exported to the same region until 2008.



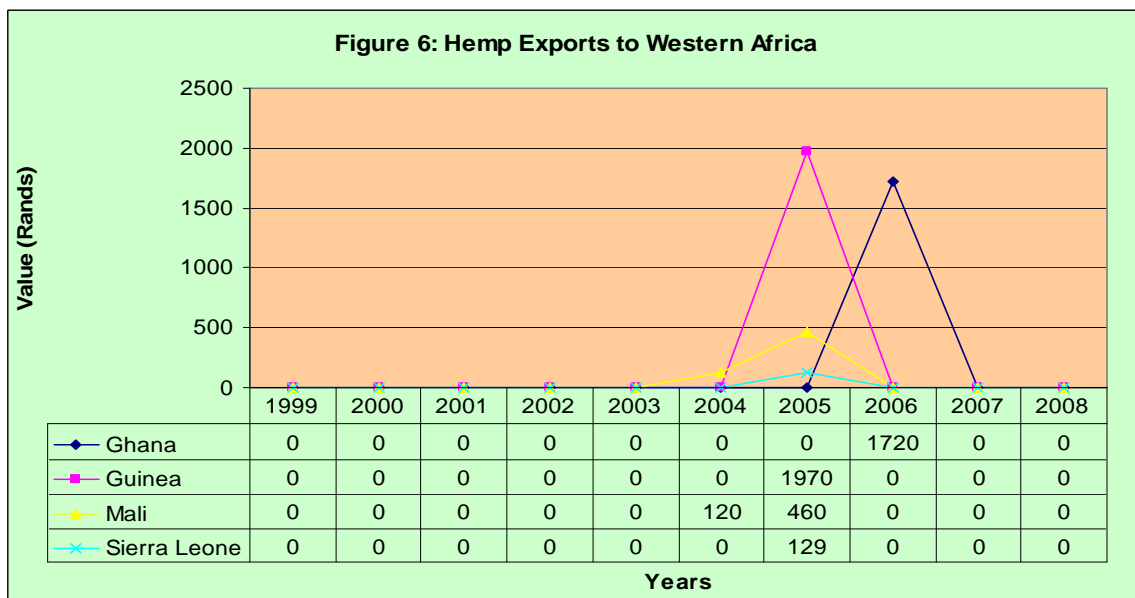
Source: Quantec Easy Data

South African produced hemp products are exported mainly to the SADC region. This can be ascribed to the fact that these are the neighboring countries to South Africa making it cheaper to export to them than to other countries while on the other hand it could be as a result of SADC Free Trade Agreement which allows South Africa to export hemp products to any SADC country free of duty. Exports to Western and Eastern Africa were in lower magnitudes over the period under analysis. The exports value of processed hemp products to the SADC region was hovering below R15 000 between the years 1999 and 2003 after which a substantial increase was experienced between 2004 and 2005. The value of exports of processed hemp products to the SADC region declined again between 2006 and 2007, to levels experienced before 2004 and then followed by a peak in export values in the year 2008. Hemp exports to Western Africa were very minimal with a slight increase being recorded during the years 2005 and 2006.



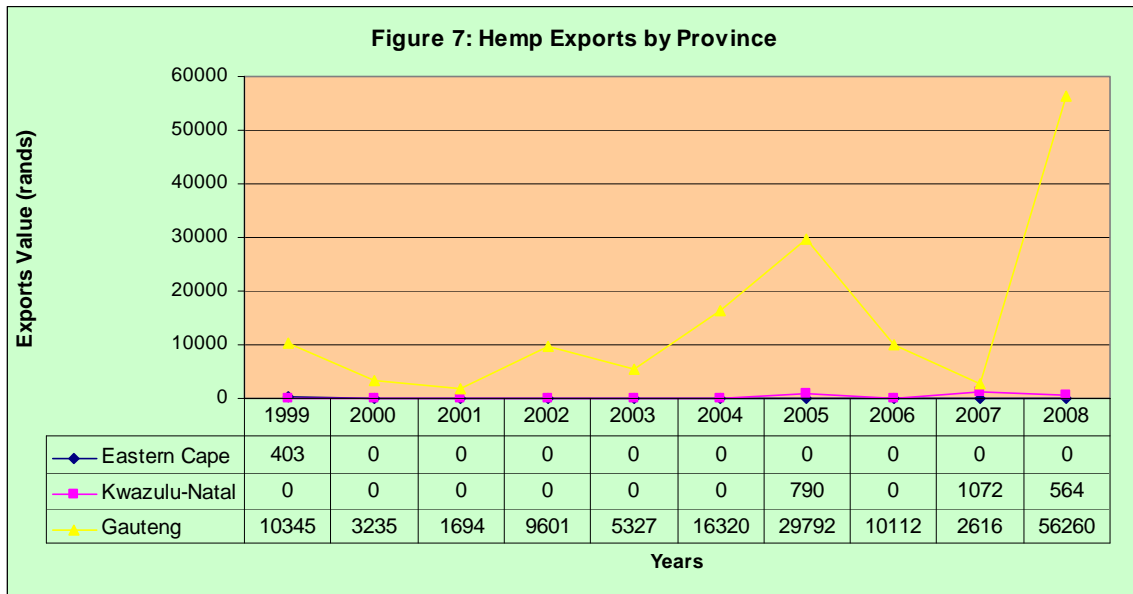
Source: Quantec Easy Data

Figure 5 show that there have been some noticeable fluctuations in the value of hemp exports to various countries within the SADC region over the past ten years. The figure further indicates that within the SADC region we export mainly to Mozambique, Malawi, Zambia, Angola, Zimbabwe, Zambia, Tanzania and the DRC. The highest export values were recorded in 2004 and 2005 from the hemp exported to Zambia and Mozambique respectively. Exports of processed hemp products to Malawi peaked during 1999 but declined substantially thereafter until 2007. Hemp export values to Mozambique have increased significantly to a peak of above R40 000.00, followed by an increase in exports to Malawi and United Republic of Tanzania.



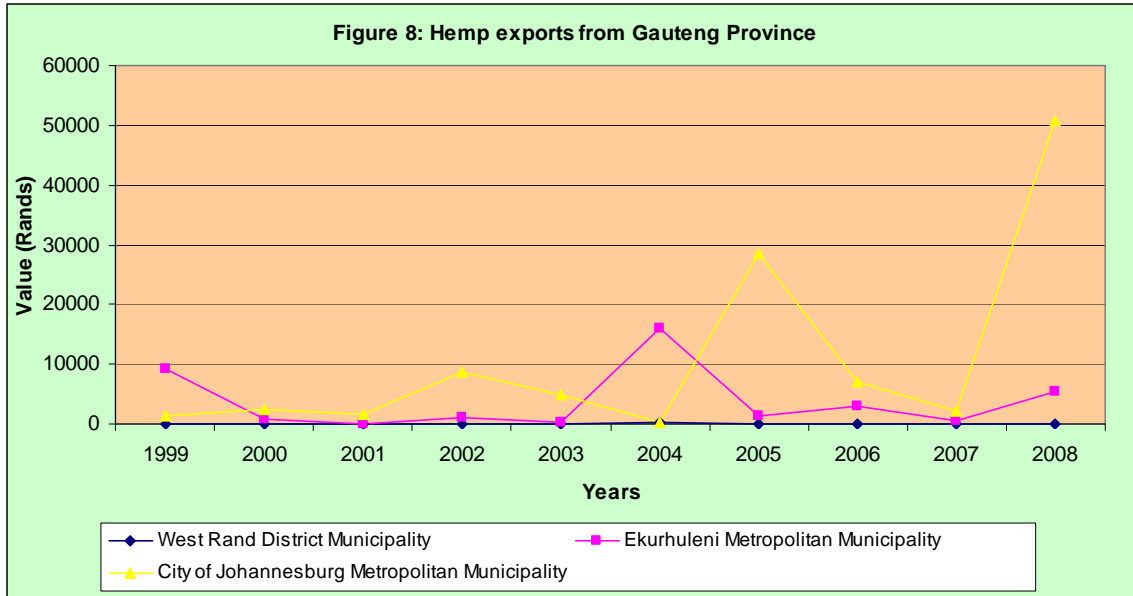
Source: Quantec Easy Data

Figure 6 indicates that the value of processed hemp exports to Western Africa began in 2004 to Mali followed by a substantial increase to Sierra Leone and Guinea in 2005 and another increase to Ghana in 2006. The value of hemp exports originating from South Africa to various countries in Western Africa diminished completely from the year 2007 to 2008. In the Western Africa, South Africa generally exports hemp to Guinea, Mali, Ghana and Sierra Leone.



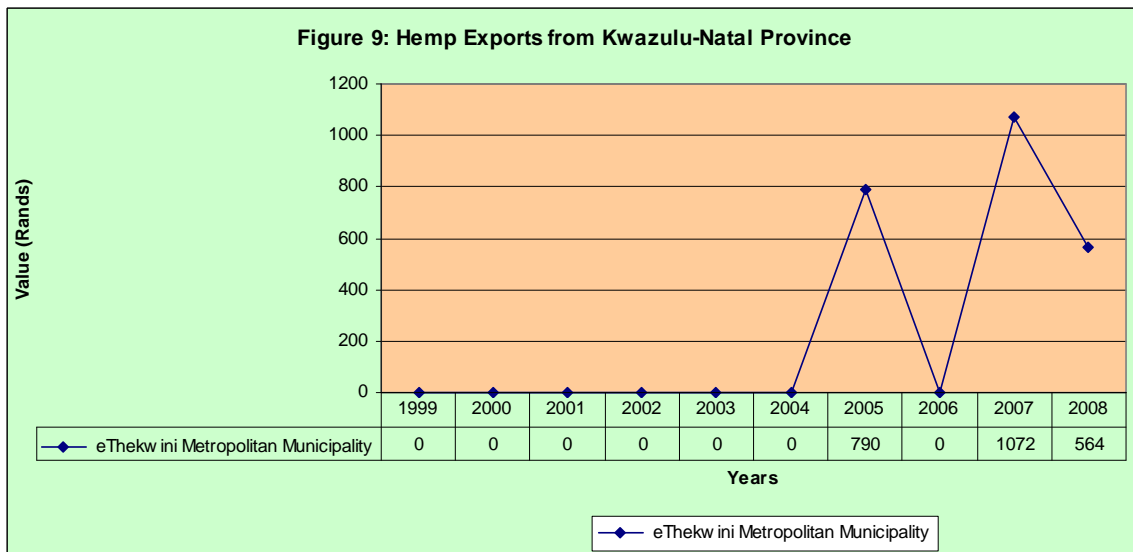
Source: Quantec Easy Data

Processed hemp products originating from South Africa are exported mainly through Gauteng Province as depicted in Figure 7. There are however, fractional minimal exports of processed hemp recorded from the Eastern Cape in 1999 and Kwazulu-Natal in 2005, 2007 and 2008. The value of processed hemp products from the Gauteng province fluctuated from 1999 until 2003. A reasonable increase in the value of exports from Gauteng was experienced between 2004 and 2005, followed by a decline in 2006 and 2007. The exports of hemp products from Gauteng Province have increased significantly in 2008 to R56 260 which was the highest value over the period under analysis. Generally, hemp products produced in South Africa are exported mainly via Gauteng followed by KwaZulu-Natal Province. This is as a result of availability of suitable infrastructure for exportation of agricultural products in these provinces.



Source: Quantec Easy Data

In the Gauteng province, hemp exports originate mainly from the City of Johannesburg and Ekurhuleni Metropolitan Municipalities, while intermittent fractional values were recorded from the West Rand District Municipality. Severe fluctuations in the value of exports of processed hemp products were experienced during the period under review with peak values for the City of Johannesburg recorded in 2005 and 2008 while Ekurhuleni attained peak values in 1999 and 2004.



Source: Quantec Easy Data

In the Kwazulu-Natal province exports of processed hemp products occurred through the eThekweni Metropolitan Municipality between the years 2004 and 2008.

2.4. Share Analysis

Table 1: Share of provincial exports to the total RSA hemp exports (%)

Years Province	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Eastern Cape	3.75	0	0	0	0	0	0	0	0	0
Kwazulu-Natal	0	0	0	0	0	0	2.58	0	29.06	0.99
Gauteng	96.25	100	100	100	100	100	97.41	100	70.93	99.01

Source: Calculated from Quantec Data

As shown in Table 1, Gauteng and KwaZulu-Natal are the main hemp-exporting provinces in South Africa. The table further indicates that Gauteng Province commanded the greatest share of hemp exports than KwaZulu-Natal Province over the past ten years. The Eastern Cape Province commanded a 3.75% share in processed hemp exports during 1999 and thereafter diminished from the market.

Table 2: Share of district hemp exports to the total Gauteng provincial hemp exports (%)

Years District	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
West Rand	0.23	0	0	2.72	2.91	0.83	0	0	0	0
Ekurhuleni	83.63	27.00	0	3.41	8.48	97.32	4.75	27.61	15.55	9.80
City of Johannesburg	16.13	72.99	100	93.86	88.59	1.84	95.24	72.38	84.44	90.20

Source: Calculated from Quantec Easy Data

During the period under review the City of Johannesburg Metropolitan Municipality commanded the greatest share of exports of processed hemp products from the Gauteng Province with the exception of the 1999 and 2004 years when the Ekurhuleni Metropolitan Municipality commanded the greatest share. The west rand district municipality's share of processed hemp products declined from 2.91% in 2003 until there were no exports in 2008.

Table 3: Share of district hemp exports to the total KwaZulu-Natal provincial hemp exports (%)

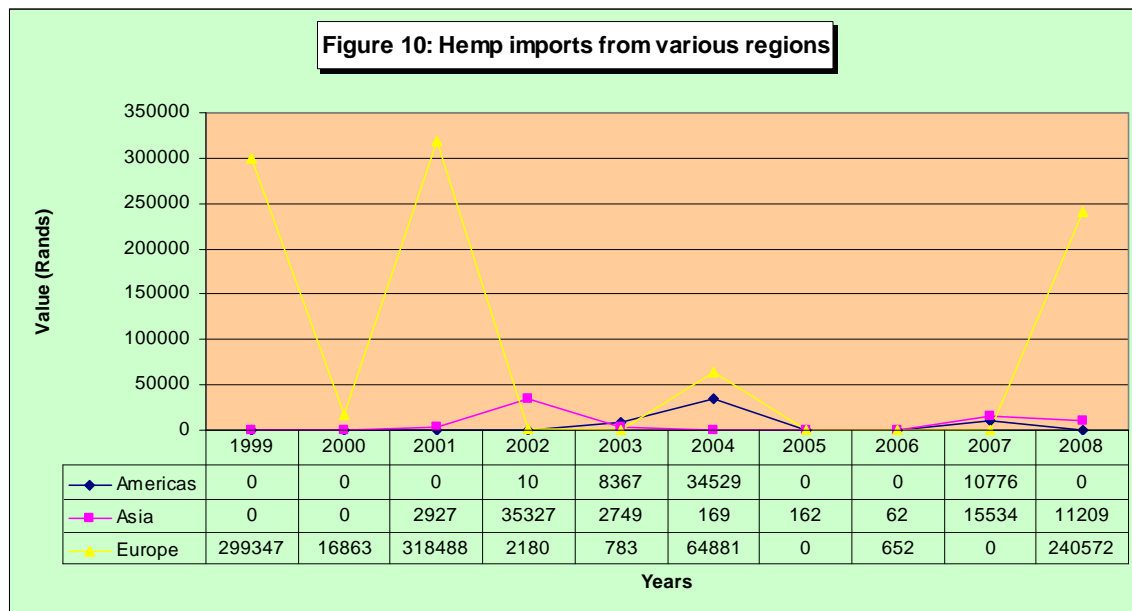
Years District	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
eThekweni Municipality	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easy Data

In the KwaZulu-Natal Province, the eThekweni district is the only exporter of hemp and hemp products, commanding 100% share in the value of exports between the period 1999 and 2008.

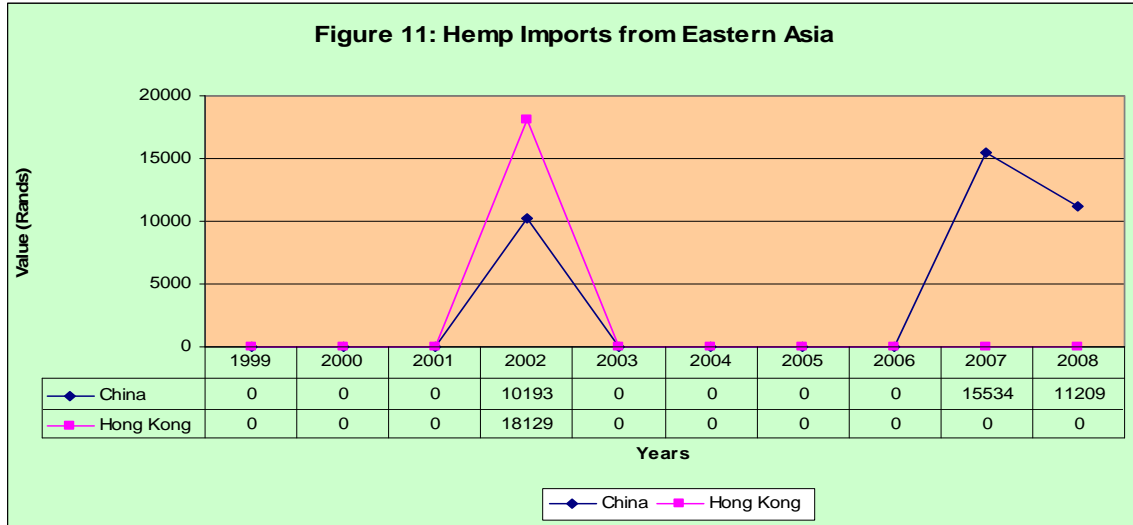
2.5. Imports

This section entails the analysis of the value of hemp imports from various regions around the globe to South Africa from 1999 to 2008.



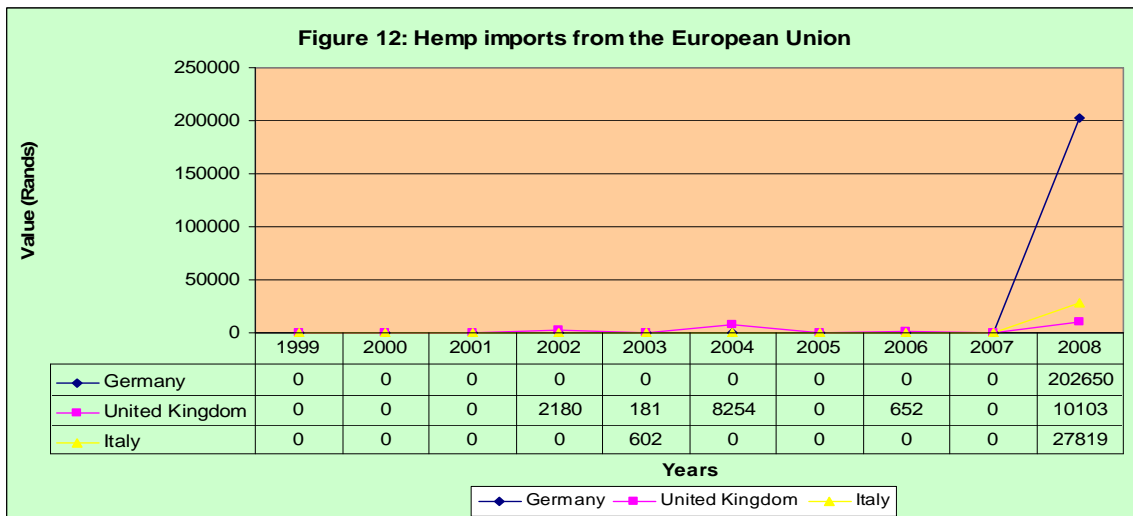
Source: Quantec Easy Data

The hemp that is used by manufacturers in South Africa originates mainly from Europe and Asia. This is mainly because hemp production in these regions has been legalized and they produce it on a larger scale than in other countries. South Africa normally imports hemp raw materials from these countries for the manufacturing of the products such as clothing, soaps and shampoo (and other health care products). Between 1999 and 2008 the value of raw hemp imports from both Asia and Europe has been below 50 thousand rand and characterized by the absence of imports during some of the years. The highest import values were recorded in 1999, 2001 and 2008 from Europe.



Source: Quantec Easy Data

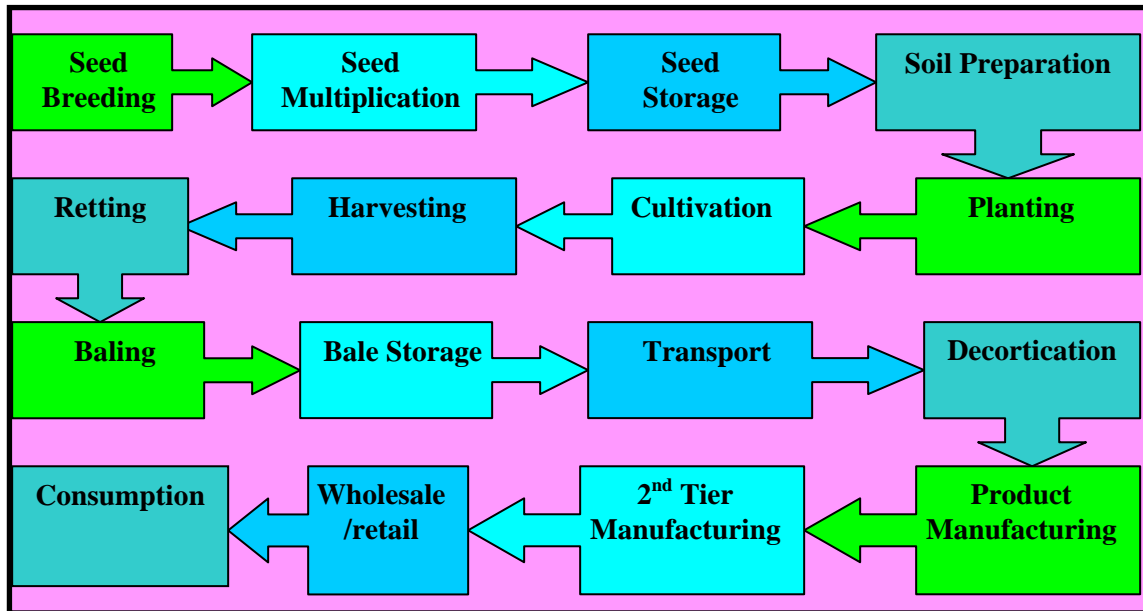
In Eastern Asia we import hemp mainly from China and Hong Kong. Hemp is thought to have been growing in China for more than 4500 years and records indicate that the growing of this plant has never stopped in this country since then, giving China a comparative advantage in the market. South Africa imported hemp raw materials from Eastern Asia with a value less than R20 thousand during the year 2002 while during other years there were no hemp imports from this region except in 2007 and 2008. In the European Union we get our hemp imports mainly from Germany, Italy and the United Kingdom. However, the value of hemp imports from these EU countries has diminished between the periods 2005 and 2007, followed by an increase in 2008 for imports originating from European Union.



Source: Quantec Easy Data

2.5. The Hemp Market Value Chain

Figure 12: Hemp Market Value Chain

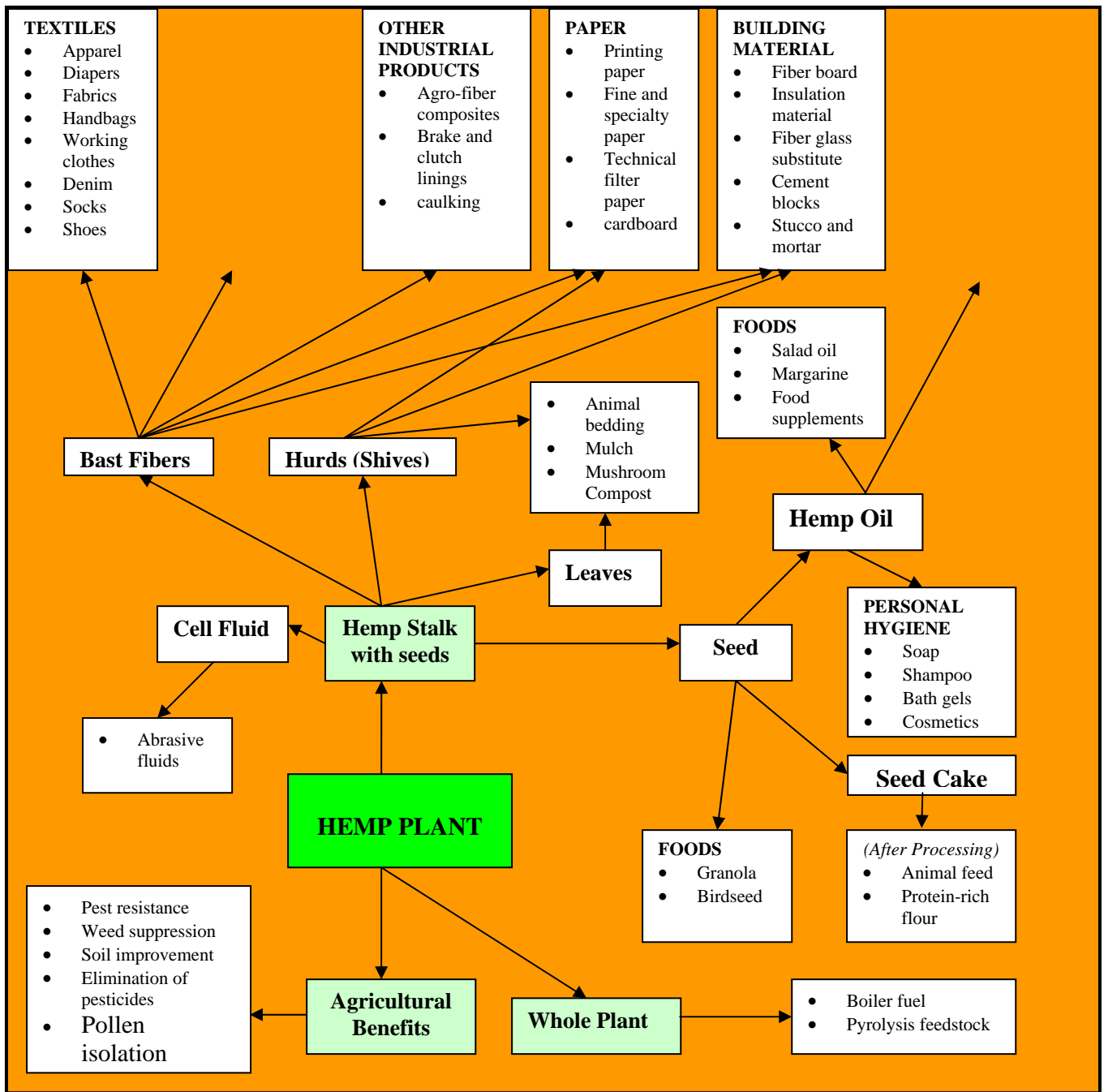


The hemp value chain begins with seed breeding and multiplication followed by seed storage, soil preparation and planting. After harvesting hemp, the bast fibers must be separated from the rest of the stalk and this is done through the process called retting. Once the stalks are retted, dried and baled, they are taken to a central location for processing. With mechanical process called breaking, stalks are pressed between fluted rollers to crush and break the woody core into short pieces (called hurds), separating some of it from the bast fibre. The remaining hurds and fibre are separated in a process called decortication with one machine called a decorticator. After this process various hemp raw materials are taken to the manufacturers who produce final hemp products such as bags, shoes, socks and cosmetics.

3. Hemp Value Chain Tree explaining its various uses

Figure 13: Hemp value chain tree





Source: Roulac (1997)

The markets for hemp products include high-end value added opportunities such as the oil and health food markets; woven and knitted textile such as carpets and apparel, moulded or pressed textiles; medium to low-end value adding opportunities such as pulp and paper, building materials, beverages, livestock feed and bedding and biomass fuels.

All parts of hemp plant can be used in the industry for manufacturing of various products. Whole stalk of the hemp plant can be used to make environmentally friendly paper,

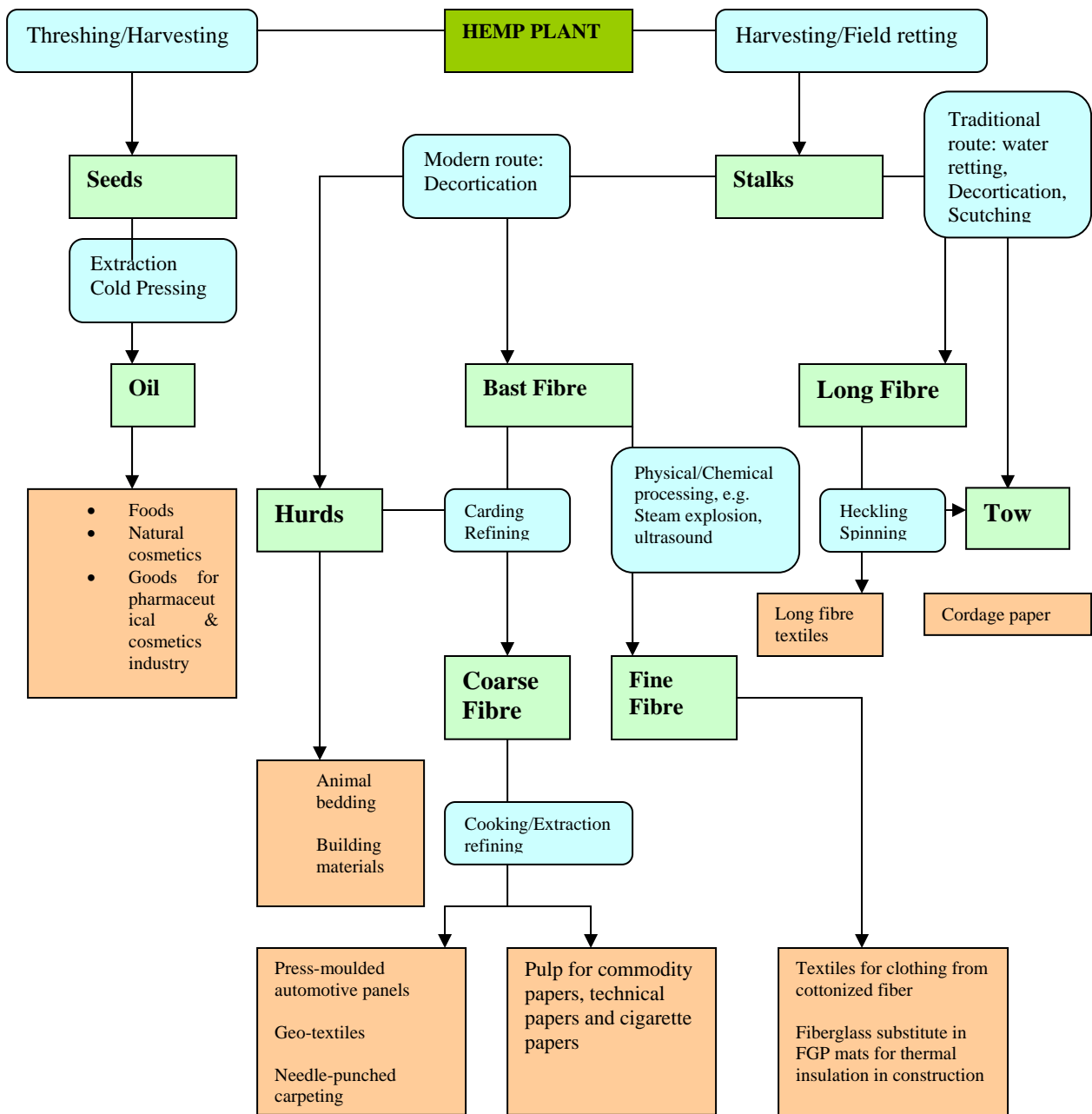
packaging material, cardboard, cigarette papers, filters and newsprint. It also produces a large amount of biomass, which can be converted into ethanol to be used as fuel as an environmentally friendly alternative to toxic petrochemicals. The by-products from this process include foods, animal feed, bio-chemicals and various materials, making it a much attractive option to oil refineries.

The woody core of the stalk (Hurds) can be used building materials, insulation material and fibre-board. Hemp applications in the building industry range from a strong, light and durable cement, when mixed with lime, to environmentally friendly insulation, to an input for fibre-board. The bast fibre can be used to make fabrics, apparel, bags, shoes, socks and carpets. Due to its high absorbency rate and quick decomposition, hemp has several applications as industrial product. It can be used for animal bedding, mulch, boiler fuel and chemical absorbent.

Hemp seed contains up to 25% high quality protein with all eight essential amino acids. This can be used to make bread, granola, ice cream, protein powder and oil. After pressing hemp seed for oil, the remaining solids are still very nutritious for both humans and animals and can be processed into protein-rich flour and animal feed. Hemp oil can also be used to manufacture cosmetics, soap, shampoo, hand cream, salad oil, margarine, oil paints, leather care and printing ink.

Figure 14 provides a summary of the processing routes as well as the products that are formed at each stage of the processing of the hemp plant.

Figure 14: Processing of the hemp plant



Source: Roulac (1997)

3. MARKET INTELLIGENCE

The major export markets for South African hemp are the SADC countries.
 The following tariffs are applied by the various export markets to hemp and hemp products originating from South Africa based on the data from 2009:

Table 21

IMPORTING COUNTRY	TYPE	APPLIED TARIFFS	ESTIMATED TOTAL ADVALOREM	APPLIED TARIFFS	ESTIMATED TOTAL ADVALOREM
		2008		2009	
Australia	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
USA	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
China	MFN duties (Applied)	6.00%	6.00%	6.00%	6.00%
Kenya	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Guinea	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
Ghana	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Nigeria	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
Angola	MFN duties (Applied)	2.00%	2.00%	2.00%	2.00%
	Preferential Tariff for SADC countries	0.00%	0.00%	0.00%	0.00%
Tanzania	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
	Preferential Tariff for SADC countries	0.00%	0.00%	0.00%	0.00%
DRC	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
	Preferential Tariff for SADC countries	0.00%	0.00%	0.00%	0.00%

Source: ITC Market Access Map

Hemp and Hemp products from South Africa can be exported to the SADC countries free of duty due to the SADC Free Trade Agreement. Table 21 indicates that Ghana and China have a heavily protected hemp industry with tariffs of 10% and 6% respectively. These tariffs have not changed in 2009.

Hemp textiles and hemp products from other countries can enter South Africa free of duty. This is to make it easier for South Africa based manufacturers to import hemp fibre and textiles from other countries to be able to manufacture the products that are demanded in the country. There is a legislation that prohibits commercial growing of hemp in South Africa, but hemp products are amazingly in higher demand and this could be one of those reasons that made our country not to charge any tariff for hemp imports.

5. CHALLENGES

In South Africa it is not permissible to cultivate hemp commercially on a large scale. A special permission to grow hemp is granted on conditions issued in terms of Section 22A (9) (a) (i) of the Medicines and Related Substances Act 101 of 1965 to possess and cultivate it for only research purposes. The commercial cultivation of hemp in South Africa is prohibited due to the following legislations:

- The Drugs and Drug Trafficking Act, 1992 (Act No 140 of 1992) which describes hemp as dagga. The Act prohibits the possession, processing, transportation and commercialization of hemp. This Act is enforced by the South Africa Police Services,
- Medicines and Related Substances Act, 1965 (Act No 101 of 1965) which requires that a permit should be obtained from the Department of Health in accordance with Section 22A (9) (a)(i) of this Act. The Act allows possession and cultivation of hemp for research purposes only,
- The Environmental Conservation Act, 1989 (Act No 73 of 1989) describes hemp as a declared weed or invasive alien plant species. This Act is enforced by the Department of Environmental Affairs and Tourism.

6. ACNOWLEDGEMENTS

The following organizations are acknowledged:

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ITC Market Access Map

Website: <http://www.macmap.org/South> Africa

Food and Agriculture Organization of the United Nations

Website: www.fao.org

Roulac, J.W., 1997: Hemp horizons: The comeback of the world's most promising plant, Chelsea Green, Vermont

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