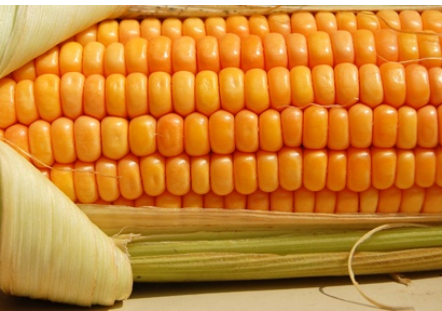




**National Agricultural
Marketing Council**
Promoting market access for South African agriculture

Hemp feasibility study

**Presentation in Parliament
January 2017**



Outline

- Introduction and background information
- Hemp products, different value chains, competition and global perspective
- Global perspective and hemp product trade
- Financial feasibility of hemp primary production
- Conclusions and recommendations

SECTION 1

Introduction and background information

Introduction

- **Hemp** (also called **Industrial Hemp**) is closely related to marijuana or dagga - they both belong to the same species called *Cannabis Sativa*.
- They differ from each other in terms of drug content tetrahydrocannabinol (THC) as well as the height.
- Dagga has a higher level of THC compared to hemp.
- Hemp grows taller than dagga. Hemp is a tall, herbaceous annual plant that grows to a height of up to five metres.
- Hemp usually has a single and slender stem of 4 to 20 mm in diameter for mature plants.
- Hemp is regarded as an agricultural commodity by most countries. It is produced in over forty countries world-wide.
- The NAMC looked at the economic feasibility of hemp production in South Africa - commissioned by the National Hemp Foundation (as part of research activities to finalise phase 2 research).

SECTION 2

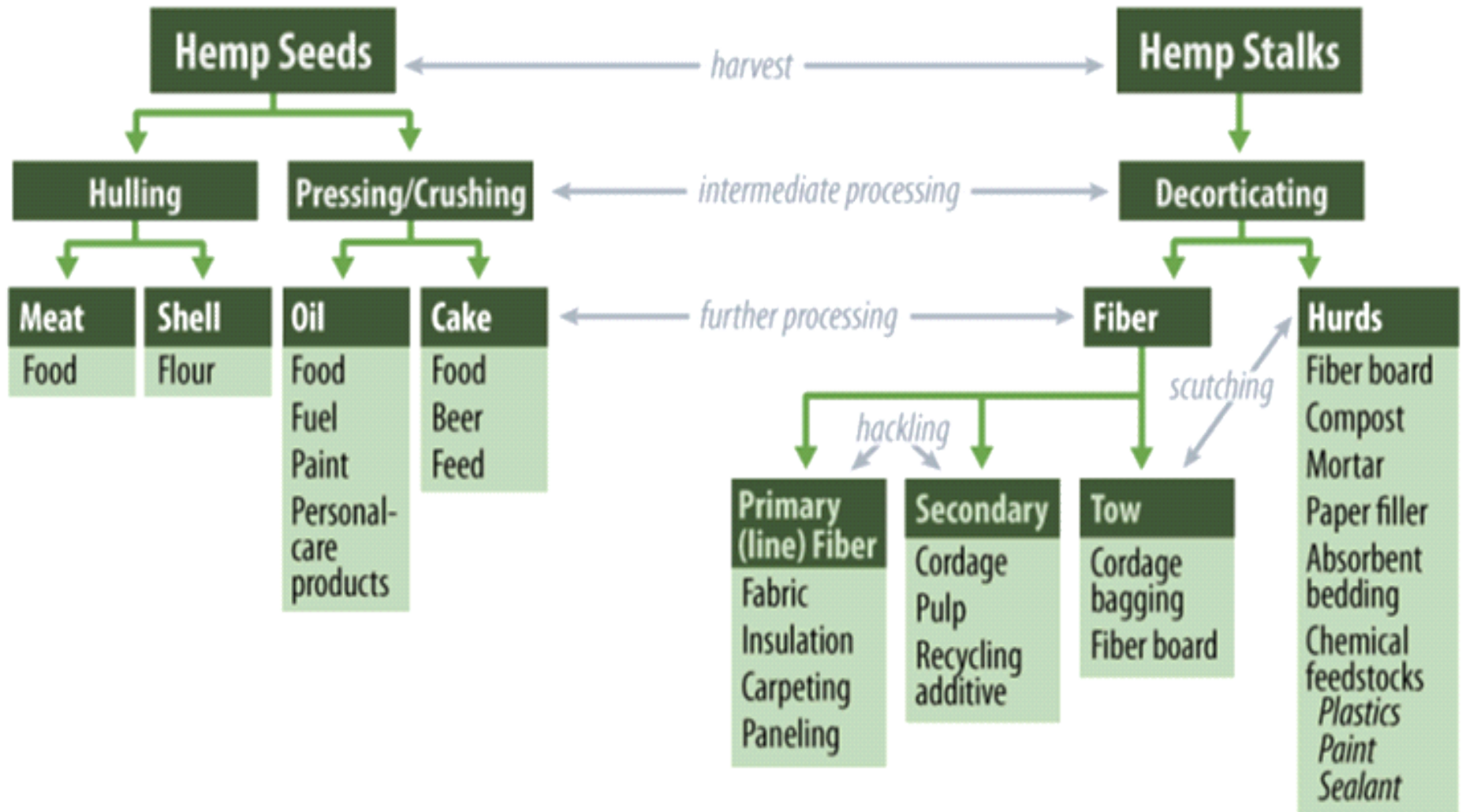
Hemp products, different value chains, competition and global perspective

Hemp products & market channels

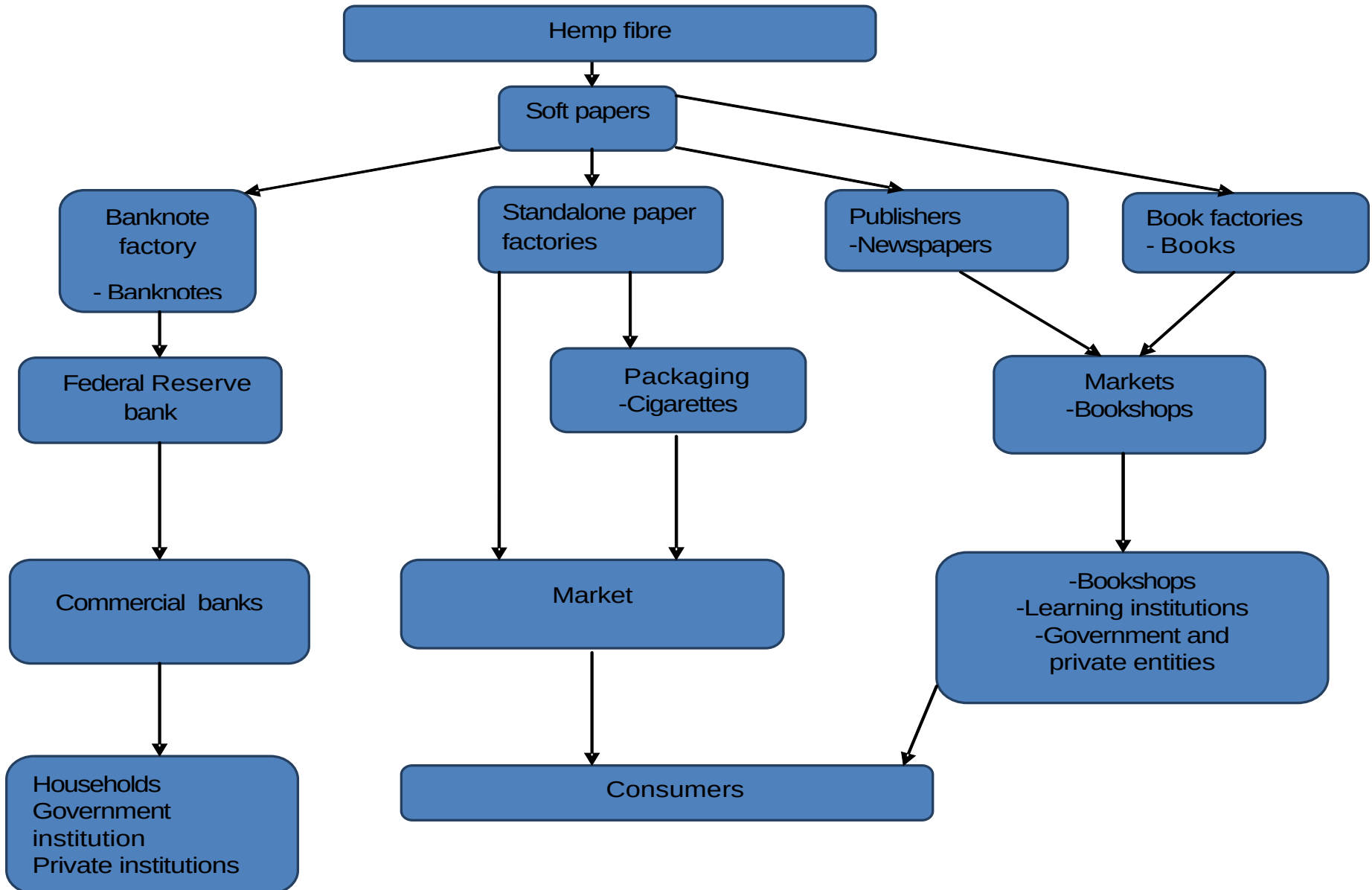
- Industrial Hemp is grown for its:
 - Stalk,
 - Seed, and
 - Leaves.
- The three jointly make:
 - More than 25 000 different products within nine niche sub-markets as follows:
 - Agriculture & textile,
 - Recycling & automotive,
 - Furniture & food/nutrition/beverage,
 - Paper, construction and cosmetics.

Hemp value chain

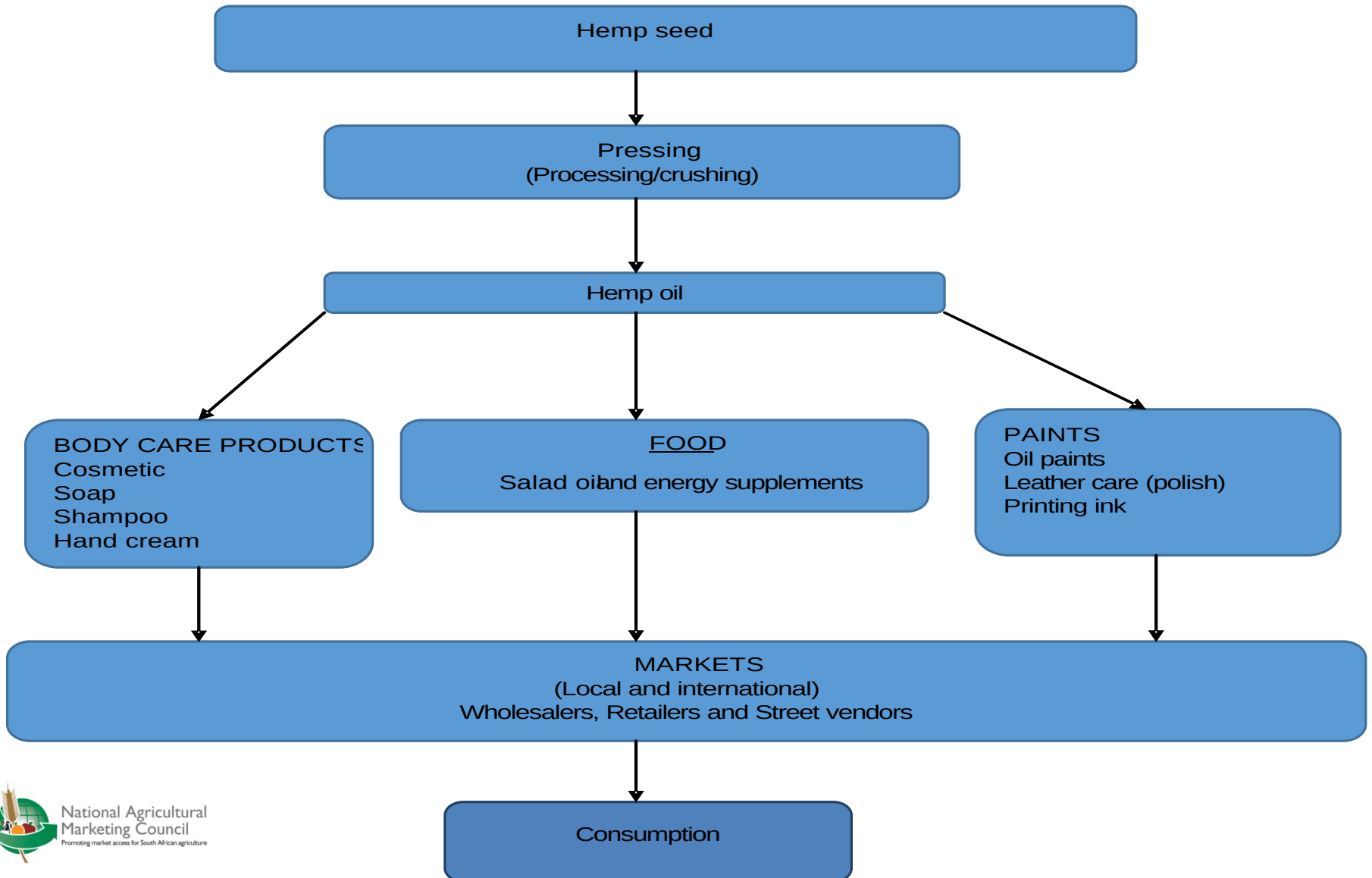
Industrial Hemp



Paper value chain



Hemp oil value chain



Hemp as a competitive crop

Hemp as a substitute to:

- * *Flax,*
- * *Wood,*
- * *Cotton, and*
- * *synthetic products.*

Hemp as a complement: *hemp hurds + lime to produce = hempcrete/building.*

1 Teaspoon	Chia	Flax	Hemp
Omega3	2300mg	2400	1000mg
Omega 6	600mg	800mg	2500mg
Fat	4.5	4	4.6
Fibre	3g	5g	0.3g
Calories	55	60	57
Price	0.05	0.22	0.26

Hemp global perspective

Country	Hemp evolution	hectare	Legal status
China	9 000 years ago	20 000	Legal
Japan	Ancient religion	-	Legal (except leaves)
Australia	Legalise in 1995	<630	Legal
Canada	Banned 1938-1998	16 000	Legal
Eu	Ban lifted in 1993-1996	-	Legal
SA	Banned	-	illegal

- *In the last 20 years, various countries, mainly in developed nations, have legalised the production and processing of hemp products after recognising the distinction between the hemp and marijuana products.*

“South Africans are faced with the choice of becoming competitors in the race to seek economic advantage from hemp or to allow other nations to carve out their niches in the hemp market at South Africa’s expense” - Legislative Research Unit of the Eastern Cape Provincial Legislature (1998).

- Production of hemp is widespread, covering **30** countries with successful industries in countries such as:
 - China,
 - Canada,
 - Russia,
 - USA and
 - several European countries

Country	Year started	Area planted (ha)	Top variety	Market
China	About 9000 years ago	20 000	Yunma 1 and 2	USA
Australia	1995	630 (in one out of five states)	-	Local
Canada	1999	16 000	-	Australia +USA
EU	Many years	10000 - 15 000	-	Local + USA
USA	No information			
Japan				

- The choice of hemp variety need to be based on its performance,
- Europe followed by Asia and the Americas accounts for a reasonable number of countries producing hemp,
- Top five producers of hemp were,
 - ★ China,
 - ★ Japan,
 - ★ Australia,
 - ★ Canada a
 - ★ EU
- Some countries such as France and Finland never abolished hemp production,

SECTION 3

Global perspective and hemp products trade

International organizations coordinating investments in hemp production

Country	Organization name	Organization type	Main functions
Canada	Canadian Hemp Trade Alliance	Non-profit organization representing producers, processors, traders and researchers	Promotes Canadian hemp production and trade to global markets and disseminates information and coordinate research on hemp.
The United State of America	Hemp Industries Association	Non-profit organization representing producers, processors, traders and researchers	Driver for fair and equal treatment of industrial hemp to compete with other industrial crops and drives policy changes in government to encourage global production of industrial hemp as raw material for the industry.
The European Union	The European Industrial Hemp Association	Non-profit organization representing producers, processors, traders and researchers	Represents individual countries of Europe that have interest in hemp production and promotes production, legislation and trade of hemp products.
Ireland	International Hemp Building Association	Non-profit organization	Promotes hemp products in building industry across 25 countries, mainly in Europe.
India	Indian Industrial Hemp Association	Non-profit organization representing producers, processors, traders and researchers	Improves producer's hemp quality and compliance to production standards, promotes processing of hemp production, and deals with legal issues affecting hemp production.
British, South Africa, Canada and others	Global Hemp Group	Investment company	Focuses on acquiring and/or joint venturing with companies across all sectors of the hemp and cannabis industries in order to promote investments in the hemp industry.

TRADE - World leading exporters of tow and waste of true hemp (HS: 5302)

	Value (R'000)				Share of world trade (%)			
	2010	2011	2012	2013	2010	2011	2012	2013
Netherlands	9001	971	24961	23114	12.1	15.8	11.7	13.3
China	6873	4818	5627	6261	2.7	7.8	5.1	6.9
Germany	1523	2373	2437	3246	1.2	7.5	3.9	4.9
Mauritius	678	2287	1865	2305	19.4	7.6	6.6	4.5
Italy	11027	2330	3173	2113	0.5	1.0	2.3	3.4
Spain	299	295	1112	1594	13.4	34.6	6.6	3.2
United Kingdom	7616	10556	3165	1517	2.0	2.5	2.0	2.4
USA	1159	762	957	1133	0.0	0.0	0.0	1.8
Egypt	0	0	0	845	0.7	2.0	0.7	1.3

World leading importers of tow and waste of true hemp (HS: 5302)

	Value (R'000)				Share of world trade (%)			
	2010	2011	2012	2013	2010	2011	2012	2013
Germany	8330	20392	28437	36837	12.6	14.6	20.7	24.3
Czech Republic	10036	13281	23473	31930	22.8	30.7	28.1	18.3
Spain	18111	27856	31872	24055	2.4	3.9	3.7	4.7
Belgium	1931	3574	4147	6194	2.1	4.2	3.3	3.3
Japan	1669	3775	3795	4292	1.6	2.1	2.1	2.3
Switzerland	1290	1920	2364	2958	0.3	0.5	0.9	2.2
Australia	204	460	998	2871	2.0	1.0	0.8	1.6
France	1625	899	916	2161	2.7	3.5	2.9	1.4
Italy	2172	3207	3288	1777	1.3	1.3	1.0	1.3

World leading exporters of raw or retted hemp fibre (HS: 530210)

	Value (R'000)				Share of world trade (%)			
	2010	2011	2012	2013	2010	2011	2012	2013
Netherlands	8855	252	24381	21078	38.7	3.9	86.6	79.9
China	1895	1611	352	1690	8.3	24.8	1.3	6.4
United Kingdom	539	1301	204	759	2.4	19.9	0.7	2.9
Italy	8476	1417	1480	595	36.9	21.8	5.3	2.3
USA	343	511	360	259	1.5	7.9	1.3	0.9
United Arab Emirates				259	0.0	0.0	0.0	0.9
Germany	182	180	196	259	0.8	2.8	0.7	0.9
Spain	7	36	16	211	0.03	0.6	0.1	0.8
Czech Republic	0	93	409	173	0.0	1.4	1.5	0.7
Canada	51	158	41	173	0.22	2.4	0.2	0.7
South Africa (12)	95	101	139	144	0.41	1.6	0.5	0.6

Hemp in South Africa

- South Africa decided to explore hemp production following a need for the development of alternative fibre resources.
- South Africa has been on the trialling phase of hemp production
 - Only one entity has with a license to produce.
- The Department of Health issues license and regulates production
- Trials were initiated in 1994 in the Rustenburg area - funded by the South African Bast Crop Consortium (SABCC).
- The founders of the SABCC include
 - * ARC's Tobacco and Cotton Research Institute (ARC/TCRI)
 - * PG Bison
 - * Masonite Africa Ltd.,
 - * and the Southern African Hemp Company (SAHC)

Progress (developments and records)

- First findings by the SABCC suggested that there was a need to develop:
 - * Higher-yielding variety,
 - * Higher-fibre, and
 - * and lower-THC hemp cultivars.
- Issues of adaptability of cultivars to be addressed (SA conditions) - in 1997, a research programme was initiated to address these findings.
- Then CSIR conducted a feasibility study during this period and concluded:
 - Hemp can be economically viable only when its use is extended from the production of fibre into other potentially lucrative uses (i.e. textile),
 - Indicated a need for extensive research and development, and
 - CSIR estimated that production costs of hemp are more or less the same as maize and cotton

Progress (developments and records)

- In 2007 The Premier of the Eastern Cape called for the NHF phase 2 research.
- To be able to achieve the NHF phase 2 objectives; the 4 technical working groups of Phase 1 were reconstituted into two working groups and given distinct mandates:
 - - ★ The Public Sector Working Group led by DAFF and consisting of NAMC and IDC was tasked with determining the feasibility of commercializing hemp in South Africa and the related legislative implications;
 - ★ The Private Sector Working Group led by House of Hemp (HoH) and consisting of ARC and CSIR was tasked with conducting commercial research trials to determine factors that will influence commercialization of hemp cultivation and processing in rural areas and establish THC stability on farm for 3 consecutive years.

Findings of NHF phase 2 research study

THC analysis

- THC is stable and hemp is not dangerous and statistical significant evidence shows that only 3% had THC level variations over the limit which was rare and insignificant.
- Hemp also contains significant medical compound CBD.

Cultivar Adaptation

- 3 Exotic hemp cultivars are well adapted to South African conditions.

Seed breeding

- ARC bred SA hemp 1 and SA hemp 2 are at par or outperform international cultivars.

Emerging farmer business case

- There are opportunities to use hemp for socio-economic development of rural and resource poor farmers and SMEs.
- It is possible to control community based hemp commercial trials with permits
- Without resources and proper training emerging farmers will struggle

Hemp processing opportunities with existing technologies

- Extraction of hemp fibres (SFS and CSIR M&M Tech),
- Extraction of hemp medicines (Dube Port and CSIR BioChemTech) and

Challenges facing hemp industry in South Africa

- Legislative and regulatory constraints that hinder its viability, growth and development potential:
 - * It takes months before a permit is cleared (this affected the trials)
 - * Trials were conducted is not commercially viable way on following ground:
 - * bureaucratic processes,
 - * Limited land size (influencing the effectiveness of economies of scale), and
 - * Few varieties were explored.
- Hemp information is not easily accessible and inadequate (it appears to be restricted to those who actively research)
- **Current hemp market structure**
 - **Monopoly** (single buyer - no competitive pricing),
 - **Infant industry challenges** (logistics costs and lack of economies of size)
 - Few actors who are sceptical of each other),
 - Lack of consolidation (industry unity)
 - Lack of appropriate infrastructure

SECTION 4

Financial feasibility of hemp primary production

Financial feasibility of industrial hemp production in South Africa

- Farm trial information was used - argument that local hemp companies could be better-off when hemp is produced locally
- Hemp production stands to provide employment creation and farm income
- The aim of the financial analysis was/is to determine the financial implication (benefit-cost) of hemp production in South Africa (using the trial data as a typical farm).
 - ★ The analysis included total estimated cost per hectare planted, and projected cash flow and profitability.

Global picture - enterprise budget

- Enterprise budgets from USA and Canada are presented:
 - ★ Mainly to highlight typical input and output relationships,
- Potential yields, production costs and returns are important considerations when evaluating industrial hemp as a potential crop
- The enterprise budget for hemp seed and fibre production for both Colorado and Canada are projected.

Estimated production costs and returns for an industrial hemp seed

Colombia, USA

GROSS RECEIPTS	Unit	Price	Yield/Acre	Per Acre
Hemp seed	LB.	\$3.70	825	\$3,052.50
Total Receipts				\$3,052.50
DIRECT COSTS	Unit	Cost/ Unit	Quantity	Cost Per Acre
OPERATING PRE-HARVEST				
Seed	\$	1,789.77	1.00	1,789.77
Fertilizer	\$	80.00	1.00	80.00
Fertilizer application	\$	7.00	1.00	7.00
Irrigation	\$	30.00	1.00	30.00
Field prep	\$	85.00	1.00	85.00
Labour	\$	6.25	1.00	6.25
Registration fees	\$	505.00	1.00	505.00
Sampling fees	\$	50.00	1.00	50.00
Interest expense (6 mths @ 7.5%)	\$	74.93	1.00	74.93
Total Pre-Harvest Expenses				2,627.95
HARVEST COSTS				
Custom harvest (Combine)	\$	45.00	1.00	45.00
Hauling	\$	30.00	1.00	30.00
Total Harvest Costs				75.00
Total Operating Costs				2,702.95
PROPERTY & OWNERSHIP COSTS				
General farm overhead	\$	48.00	1.00	48.00
Ownership costs	\$	50.00	1.00	50.00
Real estate taxes	\$	16.00	1.00	16.00
Total Property & Ownership Costs				114.00
Total Direct Costs				2,816.95
RETURN TO MANAGEMENT & RISK				235.55

Estimated production costs and returns for an industrial hemp fibre

GROSS RECEIPTS	Unit	Price	Yield/Acre	Per Acre
Hemp Fibre (total receipts)	Ton	\$441.00	6.35	\$2,800.35
DIRECT COSTS	Unit	Cost/ Unit	Quantity	Cost Per Acre
OPERATING PRE-HARVEST				
Seed	\$	1,789.77	1.00	1,789.77
Fertilizer	\$	80.00	1.00	80.00
Application	\$	6.50	1.00	6.50
Irrigation	\$	30.00	1.00	30.00
Field prep	\$	80.00	1.00	80.00
Labour	\$	6.25	1.00	6.25
Registration fees	\$	505.00	1.00	505.00
Sampling fees	\$	50.00	1.00	50.00
Interest expense (6 mths @ 7.5%)	\$	74.72	1.00	74.72
Total Pre-Harvest Expenses				2,622.24
HARVEST COSTS				
Mowing	\$	15.00	1.00	15.00
Rake	\$	10.00	1.00	10.00
Bale (\$10/bale)	\$	90.00	1.00	90.00
Hauling	\$	90.00	1.00	90.00
Total Operating Costs				205.00
PROPERTY & OWNERSHIP COSTS				
General farm overhead	\$	48.00	1.00	48.00
Ownership costs	\$	50.00	1.00	50.00
Real estate taxes	\$	16.00	1.00	16.00
Total Property & Ownership Costs				114.00
Total Direct Costs				2,941.24
RETURN TO MANAGEMENT & RISK				(140.89)

Deductions based on Colorado hemp trials

- Operating costs of growing hemp are the same regardless of the purpose.
- However, output for hemp seed tends to be higher compared to that of fibre.
- As a result, the enterprise budget for the hemp seed trial indicates an estimated profit of \$235, while there is an estimated loss of \$141 for the hemp fibre trial.
- The assumption here was that the cost of seed is \$51.14 per block and that the land is 35 acres (equivalent to 14.2 hectares).
- *This implies that the hemp seed provides higher returns due to higher outputs.*

Canadian typical hemp enterprise budget

Assumptions:		Gross Yield (tons/acre)	Hemp Price (\$/ton)	Total income	Per ha
	Stalks	5	\$75,00	\$375,00	\$840,00
	Seed	0,5		\$1 500,00	
	Leaves	0,5		\$1 500,00	
Total income				\$3 375,00	
	Cultural				
	Tillage and Planting				\$40,00
	Hemp Seed (25 lb/ac @ \$1.36/lb)				\$34,00
	Fertilizer (600 lb/a 16-16-16 @ \$250/ton) + Application				\$85,00
	Irrigation				\$62,00
	Total Cultural				\$221,00
	Harvest				
Variable Costs	Forage chopper (\$3.00 / ton)				\$15,00
	Raking (\$1.50 / ton)				\$7,50
	Baling, Large Square Bales (\$9.80 / ton)				\$49,00
	Loading and Trucking (\$3.00 / ton)				\$15,00
	Total Harvest				\$86,50
	Miscellaneous				



Deductions based on Canadian hemp enterprise

- The results indicates that a gross yield of 5 tons per acre is not sufficient for the business to break-even rather 8.22 tons per acre would be sufficient.
- However, some of the variable costs might not necessarily be incurred in the South African context, and this could change the outlook of the enterprise budget for the same enterprise.

South Africa's Hemp trials

- There were five (n=5) hemp trials in 2014/15 financial year:
 - Eastern Cape,
 - Kwa-Zulu Natal, and
 - Western Cape.
- Three products were produced from the hemp plant:
 - Seed,
 - Stalks, and
 - Leaves.
- It appears from the results that seed is more profitable relative to stalk and leaves
- According to the results hemp trial A (HTA) commanded the top total income per hectare (R4 880) followed by hemp trial D (HTD) at R4 649 and hemp trial F (HTF) at R3 341.
- It is worth noting that two hemp trials, namely the HTB and HTE did not produce any harvest.

- Due to late arrival of hemp seed,
 - Delayed permit approval,
 - Lack of infrastructure and climate.
-
- On the other hand, the input costs such as labour, soil preparation, THC testing and seed are relatively higher compared to water, fertilizer, soil testing, and electricity.
 - The results also indicate that only HTA made a profit and other hemp trials were operating at loss, with HTD's loss
 - **Positive observation** - the trend of total hemp income all hemp products has been increasing over the five years
 - Therefore, South Africa should consider embarking on commercial hemp trials.

SA's picture of an enterprise budget

Statement	Sites	HTF	HTB	HTD	HTA	HTE	Total
Income	Seed	R 1 750	R 0	R 2 630	R 3 030	R 0	R 7 410
	Stalks	R 421	R 0	R 900	R 314	R 0	R 1 635
	Leaves	R 1 170	R 0	R 1 350	R 1 305	R 0	R 3 825
Total Income		R 3 341	R 0	R 4 880	R 4 649	R 0	R 12 870
Expenditure							
Soil test		R 50	R 50	R 50	R 50	R 50	R 250
Soil preparation and planting		R 600	R 150	R 662	R 1 098	R 1 577	R 4 088
Seed		R 1 440	R 1 440	R 1 552	R 1 440	R 1 440	R 7 312
Fertilizer		R 470	R 654	R 611	R 300	R 0	R 2 035
Labour		R 5 200	R 330	R 5 681	R 1 742	R 0	R 12 952
Water		R 0	R 0	R 729	R 0	R 0	R 729
Electricity		R 0	R 0	R 640	R 0	R 0	R 640
Total Expenditure		R 7 760	R 2 624	R 9 925	R 4 580	R 3 067	R 27 956
Gross Profit / Loss		-R 4 419	-R 2 624	-R 5 045	R 69	-R 3 067	-R 15 086
Other expenses							
THC test		R 1 522	R 0	R 1 522	R 1 522	R 0	R 4 567
ARC workshop		R 200	R 200	R 200	R 200	R 200	R 1 000
Permit costs		R 76	R 76	R 76	R 76	R 76	R 378
Total other expenses		R 1 798	R 276	R 1 798	R 1 798	R 276	R 5 944
Total loss / profit		-R 6 217	-R 2 900	-R 6 842	-R 1 729	-R 3 343	-R 21 031



Income statement for SA's hemp trials per site

	2010	2011	2012	2013	2014	total
Income						
Seed	R 44	R 0	R 795	R 165	R 7 410	R 8 415
Stalks	R 509	R 0	R 681	R 1 312	R 1 635	R 4 137
Leaves	R 0	R 0	R 0	R 0	R 3 825	R 3 825
Total Income	R 553	R 0	R 1 476	R 1 478	R 12 870	R 16 377
Expenditure						
Soil test	R 447	R 0	R 200	R 250	R 200	R 1 097
Soil preparation & planting	R 3 672	R 0	R 1 654	R 1 587	R 4 088	R 11 001
Seed	R 3 033	R 3 033	R 3 176	R 4 139	R 7 312	R 20 693
Fertilizer	R 1 344	R 0	R 1 425	R 716	R 2 035	R 5 520
Labour	R 6 005	R 0	R 3 200	R 5 828	R 12 952	R 27 985
Water	R 1 200	R 0	R 0	R 2 728	R 729	R 4 657
Electricity	R 0	R 0	R 1 125	R 0	R 640	R 1 765
Total Expenditure	R 15 701	R 3 033	R 10 780	R 15 247	R 27 956	R 72 717
Gross Profit / Loss	-R 15 148	-R 3 033	-R 9 304	-R 13 769	-R 15 086	-R 56 340
Other expenses						R 0,00
THC test	R 1 368	R 0	R 4 050	R 6 000	R 4 567	R 15 985
ARC workshop	R 4 634	R 0	R 3 222	R 0	R 1 000	R 8 856
permit costs	R 273	R 273	R 0	R 435	R 378	R 1 359
Total other expenses	R 6 275	R 273	R 7 272	R 6 435	R 5 944	R 26 199
Total loss / profit	-R 21 423	-R 3 306	-R 16 576	-R 20 204	-R 21 030	-R 82 539

Income statement for SA's collective hemp

Totals per year						
Statement	2010	2011	2012	2013	2014 total	
Income						
Seed	R 441.00		R 7,950.00	R 1,654.65	R 74,100.00	R 84,145.65
Stalks	R 5,091.00		R 6,810.00	R 13,121.79	R 16,350.00	R 41,372.79
Leaves					R 38,250.00	R 38,250.00
Total Income	R 5,532.00	R 0.00	R 14,760.00	R 14,776.44	R 128,700.00	R 163,768.44
Expenditure						
Soil test	R 4,469.50		R 2,000.00	R 2,500.00	R 2,000.00	R 10,969.50
Soil preparation and planting	R 36,721.00		R 16,540.00	R 15,867.00	R 40,877.00	R 110,005.00
Seed	R 30,330.00	R 30,330.97	R 31,758.00	R 41,390.00	R 73,120.00	R 206,928.97
Fertilizer	R 13,444.00		R 14,250.00	R 7,157.00	R 20,350.00	R 55,201.00
Labour	R 60,045.00		R 32,000.00	R 58,282.00	R 129,523.00	R 279,850.00
Water	R 12,000.00		R 0.00	R 27,275.00	R 7,290.00	R 46,565.00
Electricity			R 11,250.00	R 0.00	R 6,400.00	R 17,650.00
Total Expenditure	R 157,009.50	R 30,330.97	R 107,798.00	R 152,471.00	R 279,560.00	R 727,169.47
Gross Profit / Loss	-R 151,477.50	-R 30,330.97	-R 93,038.00	-R 137,694.56	-R 150,860.00	-R 563,401.03
Other expenses						
THC test	R 13,680.00		R 40,500.00	R 60,000.00	R 45,666.00	R 159,846.00
ARC workshop	R 46,338.00		R 32,220.00	R 0.00	R 10,000.00	R 88,558.00
permit costs	R 2,730.00	R 2,730.00		R 4,350.00	R 3,775.00	R 13,585.00
total other expenses	R 62,748.00	R 2,730.00	R 72,720.00	R 64,350.00	R 59,441.00	R 261,989.00
Total loss / profit	-R 214,225.50	-R 33,060.97	-R 165,758.00	-R 202,044.56	-R 210,301.00	-R 825,390.03

Challenges specific to emerging hemp farmers

- External factors include
 - permit access, permit fencing requirements,
 - delay in permit issue,
 - limit of 2ha,
 - insects and challenging weather.
- Internal factors include
 - bad soil preparation or off timing
 - delays in planting or harvesting times
 - wrong seed or plant spacing applications
 - harvesting timing (too early or too late)
 - failure to secure all required resources
 - failure to secure needed extension support and afford expansive technical services from research institutes
 - incapacity to deal with machine and crop maintenance issues
 - poor management
 - lack of self motivation
 - inadequate group dynamics and disputes

Projected Income statement for SA's hemp trials if they are capacitated to reach ideal international yields

Model for farming hemp		
Statement		1 ha
Income		
	Seed	R 50,000.00
	Stalks	R 30,000.00
	Leaves	R 18,000.00
Total Income		R 98,000.00
Expenditure		
	Soil test	R 500.00
	Soil preparation and planting	R 6,000.00
	Seed	R 6,000.00
	Fertilizer	R 7,000.00
	Labour	R 50,000.00
	Water	R 7,000.00
	Electricity	R 7,000.00
Total Expenditure		R 83,500.00
Gross Profit / Loss		R 14,500.00
Other expenses		
	THC test	R 5,000.00
	ARC workshop	R 3,000.00
	permit costs	R 1,000.00
total other expenses		R 9,000.00
Total loss / profit		R 5,500.00

Projected Income statement for SA's hemp trials if they include CBD

Model for farming hemp with CBD		
Income and Loss statement		1 ha
Income		
	Seed	R 25,000.00
	Stalks	R 15,000.00
	Leaves	R 18,000.00
	CBD sales shared profit	R 300,000.00
Total Income		R 358,000.00
Expenditure		
	Soil test	R 500.00
	Soil preparation and planting	R 6,000.00
	Seed	R 30,000.00
	Fertilizer	R 7,000.00
	Labour	R 80,000.00
	Water	R 7,000.00
	Electricity	R 7,000.00
Total Expenditure		R 137,500.00
Gross Profit / Loss		R 220,500.00
Other expenses		
	THC test	R 5,000.00
	ARC workshop	R 3,000.00
	permit costs	R 1,000.00
	cost of extracting CBD	R 150,000.00
total other expenses		R 159,000.00
Total loss / profit		R 61,500.00

SECTION 5

Conclusions and Recommendations

General remarks

- There are countries that have legalised hemp production for industrial use.
- Hemp products are traded globally and South Africa does trade as well.
- The tool used to calculate this information is programmed such that it is able to produce cash flow analysis, balance sheet as well as financial ratios.
- Based on lack of access to financial information required to calculate the above-mentioned ratios, the study could not calculate them and make a determination.
- In addition, a work of this nature would have determined the viability for each of the nodes of hemp value chain, but the available information was limited to the hemp trials.

- The results reveal that globally, it is feasible to produce hemp for seed production as compared to fibre production.
- There was lack of access to financial information required to calculate the financial ratios in order to determine the financial viability of this enterprise.
- The trials were conducted under challenging circumstances not enabling environment to prove the commercial viability of hemp enterprise (and the origin was not commercial),
- Failure to address the challenges mentioned, industrial hemp production in South Africa will remain unfavourable.

Recommendations

- a) *Introduction or provisions for use of different varieties need to be monitored and encouraged.*
- b) *Development of locally adapted seeds for all uses need to be prioritised (and be driven by businesses not researchers fantasies). To include hemp for fibre, seed and CBD purposes.*
- c) *Provisions of a functional and duly authorised NHF that can create an enabling environment for commercialisation of legal hemp industry. Required includes:*
 - *Increase maximum hectarage on permit to allow for Competitive environment with few controls on input and output side,*
 - *Infant industry support for the establishment of the value chains need to be established*
 - *Amendment of legislations from the three departments(DoH, SAPS, DEA)*
 - *Urgent Legal succession to allow for large scale commercial trials during process of legislative amendments*
- d) *Development of industry norms and standards need to be prioritised.*
- e) *R&D to address research gaps and reach sustainable Beneficiation of agro-processing harvest will multiply jobs.*
- f) *Human Capacity development and Empowerment of Farmers and Resource poor SMEs.*
- g) *Effective public education and information sharing towards awareness raising*

Conclusions

- The economic feasibility study indicates that hemp can be a viable industry or not
- The integrated inter-departmental team can consider using both the economic feasibility report and the technical report from the ARC, CSIR, NAMC, IDC, DAFF and HoH and to make one final report
- A submission proposed legal succession while exploring possible legislative amendments will be forwarded to all key departments (Health, Justice, SAPS and DEA).



Thank You

