Evaluating the Sustainability of the South African Groundnut Industry

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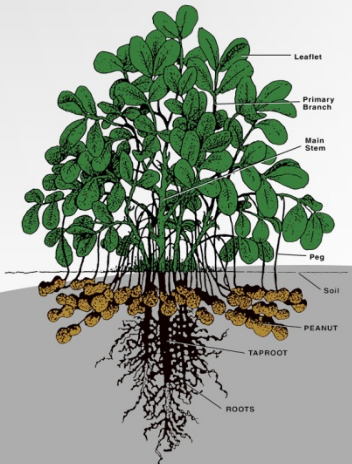

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Oil & Protein Seed Development Trust & Oilseeds Advisory Comittee

Bureau for Food and Agricultural Policy
BFAP

EVALUATING THE SUSTAINABILITY OF THE SOUTH AFRICAN GROUNDNUT INDUSTRY

A report by BFAP

February 2012

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Abbreviations and Acronyms

ARC	Agricultural Research Council
ARC-GCI	ARC-Grain Crops Institute
AT	Aflatoxin
EU	European Union
GAP	Good Agricultural Practices
HACCP	Hazard Analysis and Critical Control Point
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
PPECB	Perishable Products Exports Control Board
RASFF	Rapid Alert System for Food and Feed (EU)
SSA	Sub-Saharan Africa

List of Standard Units

Mt	metric tons
t	tons
Kg	kilogram
ha	hectare

Compiled by:

Dr Ferdinand Meyer
Gerhard van der Burgh

Acknowledgments

BFAP would like to express its sincere appreciation to all industry role-players at various levels in the groundnut value chain as well as representatives of regulatory agencies and research organisations who provided invaluable inputs to this study. A sincere word of appreciation is also extended to the international traders who were prepared to share their information on market developments and finally to the Oilseeds Advisory Committee (OAC) who funded the project, for their contributions towards the groundnut industry. **Correspondents were:**

Andries Cronje	Tiger Brands
Andreas Snyman	GWK
Alfons Visser	P-Farm
Alana Pretorius	ARC
Anthony Evans	RE- Evans
Craig Lowenthal	Snack factory
Floris Leewans	Global Trader
Gerrit Fourie	SA Groundnut Marketing
Jos Cohn	OLAM
Lynette Steyn	SAGIS
Menno van der Pijll	Global Trader
Marlene Edwards	Foodcorp
Neels Wegner	PPECB
Qrg de Witt	Trader
Patt Westhoff	University of Missouri
Ramonde Odendaal	Senwes
Stanley Fletcher	USA, Georgia University
Wessel Higgs	Trio Trade
Chris	Trio Trade

*A few farmers were also interviewed and asked for an opinion.

Executive Summary

There are many methods to calculate the relative competitiveness of an industry. This study followed a pragmatic approach by unpacking the basic interactions in the value chain not only from an empirical perspective, but also from an institutional perspective where the general sentiments and interaction of role-players in the industry can be taken into consideration. Through this approach, the real issues on the ground were captured and used to identify the critical drivers that have to be taken into consideration for the development of a turnaround strategy of the industry. The key indicators for the development of a turnaround strategy can be summarized as follows:

- **The industry as a functioning body**

First and foremost, coordination, transparency and collaboration are essential to secure the sustainability of the industry. A significant amount of distrust amongst individuals throughout the entire value chain dampens the initiative for the industry to expand and regain economies of scale to ensure consistent supplies of high quality groundnuts in local and export markets. Without the co-operation of the large role-players, it is unlikely that the industry will have sufficient momentum to embark on a turnaround strategy by itself that will be to the benefit of the industry at large. Although the Groundnut Forum can act as a central co-ordinating body, it is the industry that has to embrace and drive the turnaround strategy. The Forum will not be able to drive a turnaround strategy by itself.

According to the Oilseeds Board business plan, the task of a Forum is to be the **voice** for the industry as a whole in view of the following:

- To facilitate a say in statutory intervention in so far as information and technical services which may be required in the future are concerned;
- Co-ordination of joint business projects and programmes aimed at promoting production, quality consumption and marketing of oilseeds and oilseed products;
- Monitoring of actions and activities of the national and provincial legislator regarding matters which affect the industry;
- Development and implementation of information and education programmes to enhance the industry;
- Co-ordination and communication in the field of international trade of oilseeds.

We are of the opinion that the Groundnut Forum is currently meeting most of these criteria, but it is essential that the function or role of the Forum has to be clearly communicated to the industry. From an industry perspective it is not clear what the function of the Forum is and how the role-players should act within the framework of the Forum.

- **A transparent price discovery mechanism**

Much uncertainty surrounds the determination of prices, especially with pre-seasonal contracts that are very important for the decision of the farmer to plant. Two strategies are recommended to establish a transparent price determination mechanism. First, the calculation of export parity prices has to be refined to provide an accurate estimate of prices for South African groundnuts on world markets. Second, the possibility of providing producers with a potential price hedging tool needs to be explored. Companies like SABMiller have successfully offered barley farmers the ability of hedging barley prices on SAFEX wheat contracts. Soybean and groundnut prices are co-integrated, which implies there exists a long-run relationship and the possibility of using the soybean futures market as a price risk hedging tool can be explored.

- **Producer scepticism and production practices:**

There is a certain negative “vibe” amongst farmers. The perception is that potential profits do not weigh up against the price and quality risks faced by farmers. Alternative crops, like soybeans offer similar rotational cropping benefits as groundnuts, and a rapid improvement in cultivars boosts the profitability of soybean production. The general notion of producers who were surveyed suggests that significant improvements in cultivar development and a transparent price discovery mechanism are essential to improve the perception of producers.

- **Cultivar & Yields**

It seems as though South Africa is gradually being left behind by a number of major exporting countries in terms of cultivar development, with specific emphasis on increased yields. Economies of scale have a significant effect on local breeding programmes such as the breeding taking place at the ARC-GCI in Potchefstroom. With the ARCs current capacity and breeding under dispute by the groundnut industry, it was noted that some industry leaders have undertaken own initiatives to improve yields by importing and breeding new lines. It is debatable whether the large groundnut producing firms will have the capacity to embark on successful breeding programmes and compete on international export markets and most likely in future against imported groundnuts.

We are of the opinion that the industry should focus on well-developed high yielding imported cultivars that are cultivated at the same altitude and latitude as the South African production areas. Institutes such as IMBRAPA and INTA can be used as a reliable source, due to the PRF's existing relations with these firms.

The future of the industry will to a large extent be determined by the success of adapted new or improved cultivars, irrespective of the Spanish or Runner type.

- **HACCP compliances**

If international traders confirm our competitive advantage in terms of product type (Spanish), and South Africa is regarded as a net exporter of groundnuts, why are there still disputes over the HACCP compliances? It is a known fact that it remains a large capital investment to ensure compliance, but the authors are convinced that the incentive for complying is greater than to reject the process.

- **Aflatoxin**

A key concern restricting the growth of this industry is the high levels of Aflatoxin in the groundnut products. Aflatoxin levels remain a variable that can never be neglected in terms of standardization and consistency, since it will give the consumers, abroad or locally, the guarantee that all products underwent the same testing and procedures.

Finally, one can ask the question what the future for the industry entails in the absence of a turnaround strategy. A plausible answer is that one could see in the near future that groundnuts will only be produced by the large existing firms and hardly any production of groundnuts will be viable outside of this model. Economies of scale are important to ensure long-term competitiveness, not only by reducing costs and securing consistent supplies, but also by continuous improvement of cultivars or having access to improved cultivars irrespective of origin or type.

The model of a few large firms producing all the groundnuts will continue until it is not able to compete anymore on export markets, which are supplied by industries that do have the economies of scale with comprehensive research and development programmes. Not only on the export front, but also the local markets will be marginalised as the industry continuously shrinks. Judging by the opinions of wholesalers, it seems as if they prefer not to import, but due to uncertain supply, distrust and defaulting contracts, the large wholesalers are already now considering alternative sources of supply. The retail level is even more complicated, with the uncertain impacts of the giant chain store, Wal-Mart, on their doorstep. One has to realise that they too will consider the "cheaper" alternatives of the competing global import prices.

The South African groundnut industry will then likely enter a new phase where some of the large firms will cease their operations and South Africa will become a net importer of groundnuts, which implies that local prices will break away from export parity and trade significantly higher at import parity levels. Under this scenario, only the firms (or firm) that can produce sustainably at import parity levels will survive.

Evaluating the sustainability of the South African groundnut industry

1. Introduction

Numerous debates on the current situation of the groundnut industry as well as its sustainability have led to a decision by the Oilseed Advisory Committee to do further research on the groundnut supply chain. The Bureau for Food and Agricultural Policy (BFAP) was commissioned to compile a report containing all the aspects of the groundnut industry, with extensive focus on the supply chain. After conducting a thorough literature review regarding available public information, data was gathered by means of identifying and surveying the key role players in the groundnut industry.

This report includes the following:

a) An overview of the international production and market conditions;

b) An analysis of local production and market conditions;

c) A complete value chain analysis and development of a value chain model that provides an indication of the possible margins prevalent in primary production -, processing - and retail levels;

d) Possible turn-around strategies for the industry.

2. International market conditions, production and yields

2.1 Global Production

Over the past thirty years, the area under groundnut production has remained relatively constant, posting only marginal gains from just below 20 million hectares in the early 1970s to the peak of 22million hectares in 2000. Over the past five years, the area under production has remained just above 20 million hectares. The production of groundnuts, however, has increased significantly, especially since the early 1990s when the introduction of new cultivars boosted average yields from approximately 1t/ha to 1.7t/ha by 2010.

More recent trends revealed that groundnut production was estimated to increase from 33.36 million tons in 2009 to 35.27 million tons in 2010 (due to increased plantings in India) but then again a decrease to 34.96 million tons in 2011 (USDA, 2011). This decrease could be assigned to the drought situation in the USA. It should further be noted that the current global ending stocks are at a low or, in fact, there are no significant closing stocks. The USDA database give us an indication that there will be 300 000 tons less ending stocks of groundnuts in 2011, while according to the American Peanut Council, in reality there seem to be insufficient stocks worldwide. The Argentineans pre-sold almost half their production for 2011, and the 2012 production of oil seeds in South America may also be affected by droughts caused by an emerging La Niña phenomenon. This could lead to lower groundnut plantings in Argentina. With the American drought (and a large decrease in hectares due to an increase in soya & cotton), and a slight decrease in hectares planted from China (at present China does not have adequate groundnut supplies for pressing purposes and some pressing plants had to cease operations for the moment), India and Argentina - we can expect the global stocks to be lower than anticipated.

Lower stocks lead to higher prices and the groundnut prices reached a 30-year high in August 2011, with the Rotterdam price (CIF) trading at US$2250/t. (Oilworld 2011). The July price of groundnut oil has risen by nearly 46% from US$1820/t to US$2650/t (Rotterdam). Based on data from *Oilworld*, we can see that the price of groundnut oil rose from US$1334/t in August 2010 to US$2120/ton in July 2011 (+59%) in Rotterdam. This can mostly be attributed by the low stock levels and high demand.

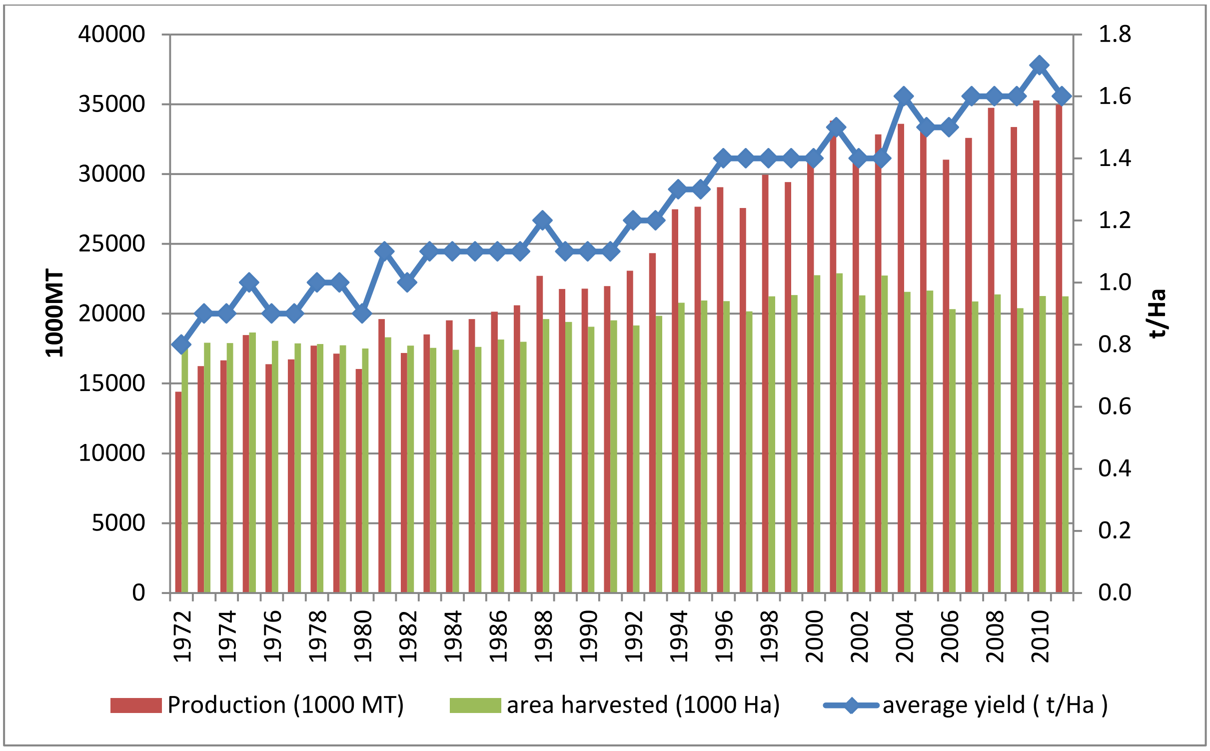


Figure 1: **Global groundnut production and yields**

Source: USDA-PS&D

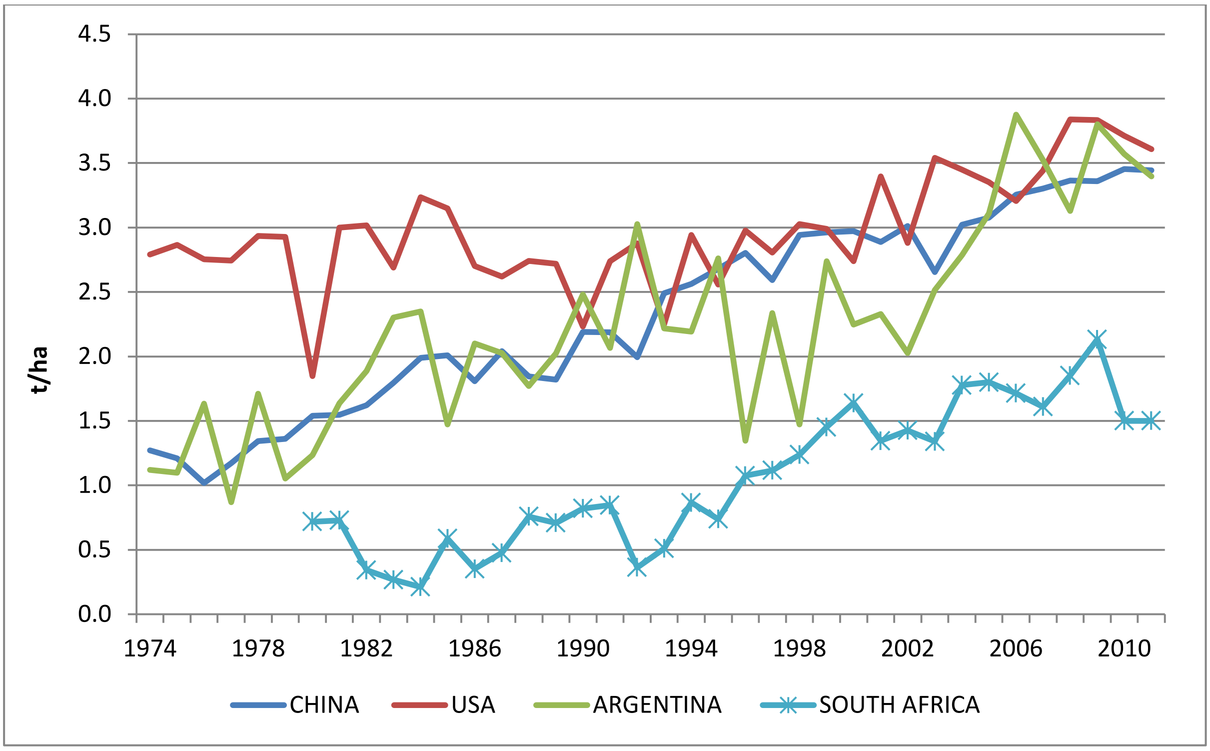


Figure 2: Leading yields – top 3 countries & RSA

Source: USDA-PS&D

When comparing the global yield factor, one has to be careful not to view it out of context, and therefore have to review each "top yielding country" in order to attain a more realistic approach. The global ranking of top groundnut yields, are positioned as follow:

1) USA
With a 10 year average yield of 3.8t/ha (USDA, 2011), America is the leader in top yielding cultivars and production methods. The fact that they predominantly plant the Runner cultivar does give them an advantage over South Africa, with our Spanish type, but this is not the only factor to take into consideration. Besides their extremely fertile soils and mostly perfect altitudes (low altitudes 50-200m above sea level), they also have the "mechanization revolution" which leads to increasing yields. In terms of production practices, they can definitely be seen as the leaders. One of the success factors of the US groundnut market was the development of the high yield variety *Florunner* - It has been the dominant cultivar since the 1979's. The first step was to develop the cultivar, and then the commercial companies followed to dry, store and treat the seed to fit into the commercial market for planting. (Haas, 2005)

2) CHINA
Close to the US we have China at 3.5t/ha (USDA, 2011). The growth in peanut consumption lead to a 40% increase from the period 1991-2011, but the increase in hectares was not enough to have sustainable productions, this lead to advanced high yielding cultivars. It should also be noted that China's production methods differ from the other two leading countries.

According to Dr. Andre Cilliers, a senior researcher at the ARC in Potchefstroom, China has very intensive production methods, where each farmer cultivates small intensive plots, and most of them cover the fields with a very thin layer of plastic to reduce pests and weed infestation, which in turn leads to moisture retention and ultimately increased yields. (Landbouweekblad, 2003)

3) ARGENTINA
With an average yield of 3.4t/ha, Argentina remains one of the leading crop producers worldwide. Their success can be attributed to strategic partnerships with research institutions, universities and the private sector. Together they managed to develop new cultivars, improvement in practices at production & harvesting as well as technological developments in the control of diseases and Aflatoxin contamination (ARD, 2008).

2.2 Global consumption

Uses of Groundnuts

A) Edible groundnuts

Food products such as roasted groundnut (salted with raisins or plain), peanut butter, peanut sauce, peanut flower, peanut milk

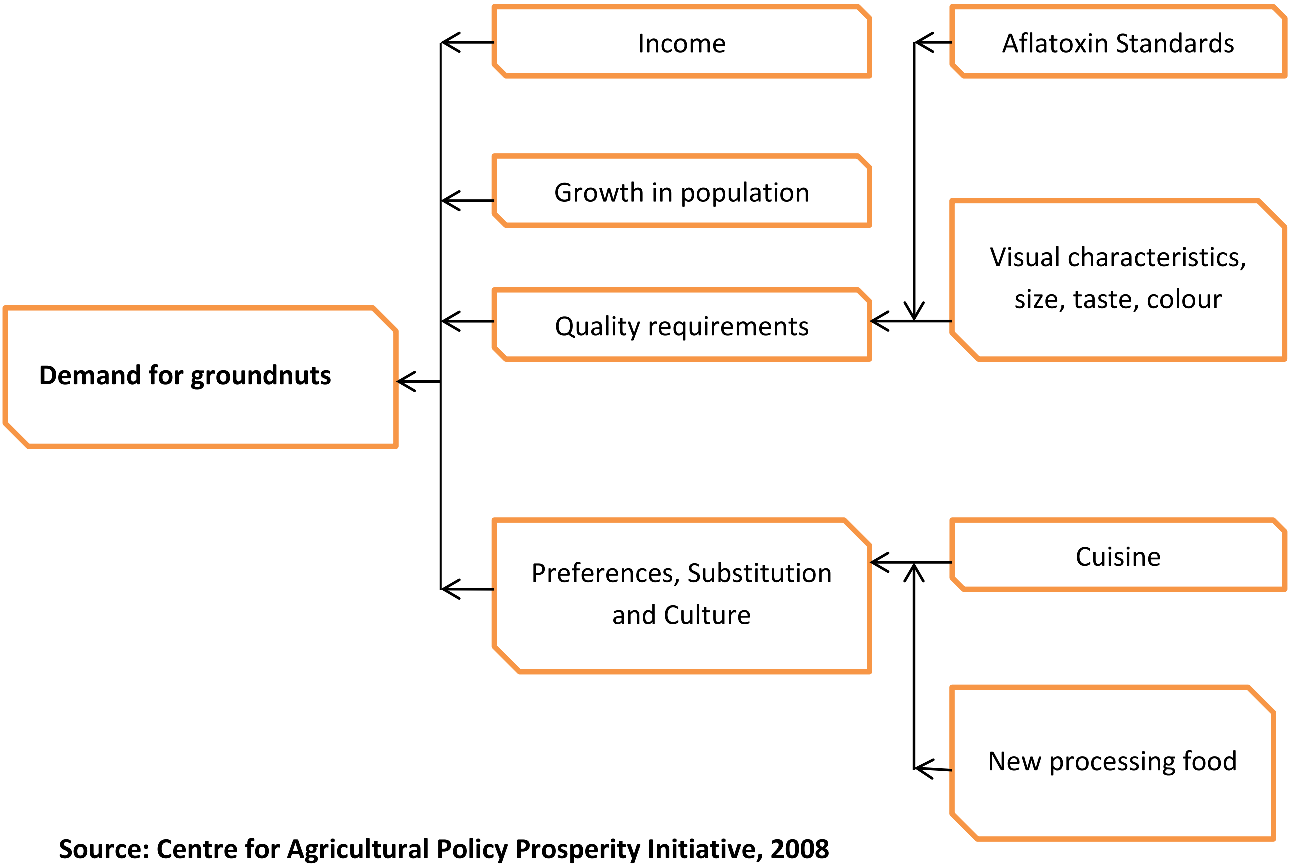
B) Crushed groundnuts

Groundnut oil (often used in Asian cuisine such as stir-fries)

C) Feed

Groundnut oilcake or just lightly crushed (used for animal feed, except Poultry)

Considering global demand drivers



Source: Centre for Agricultural Policy Prosperity Initiative, 2008

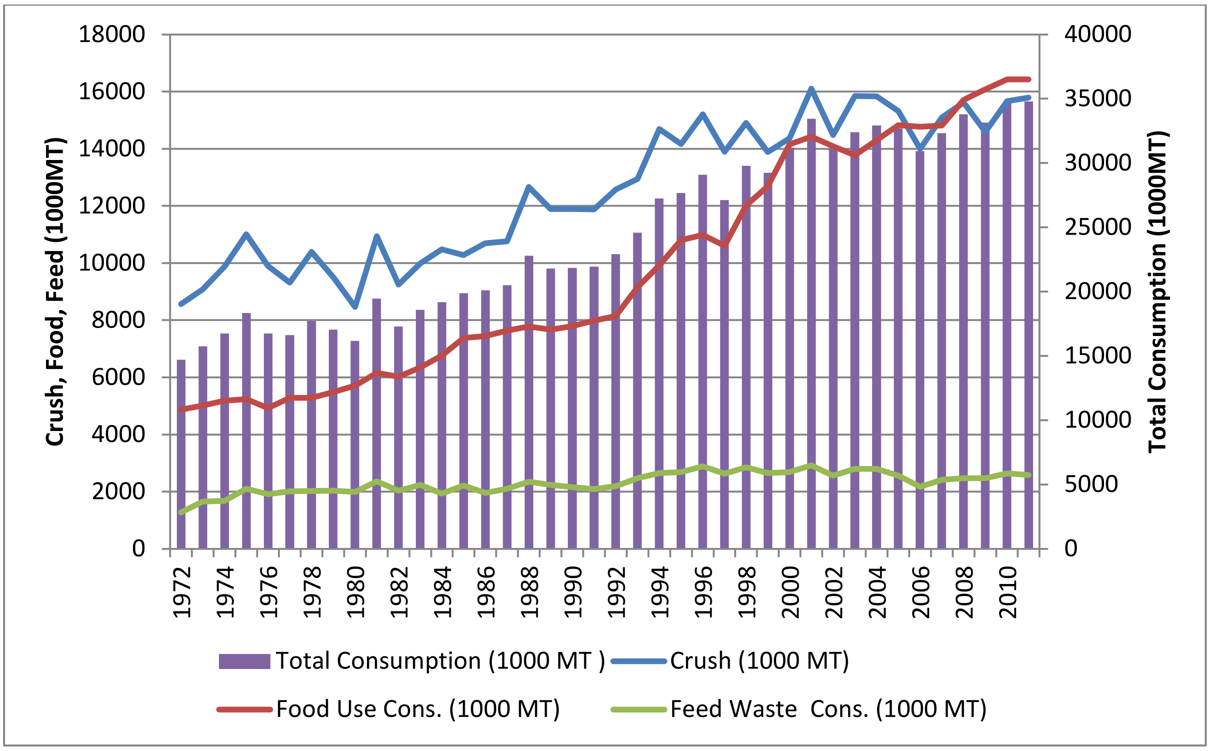


Figure 3: Total global consumption

Source: USDA-PS&D

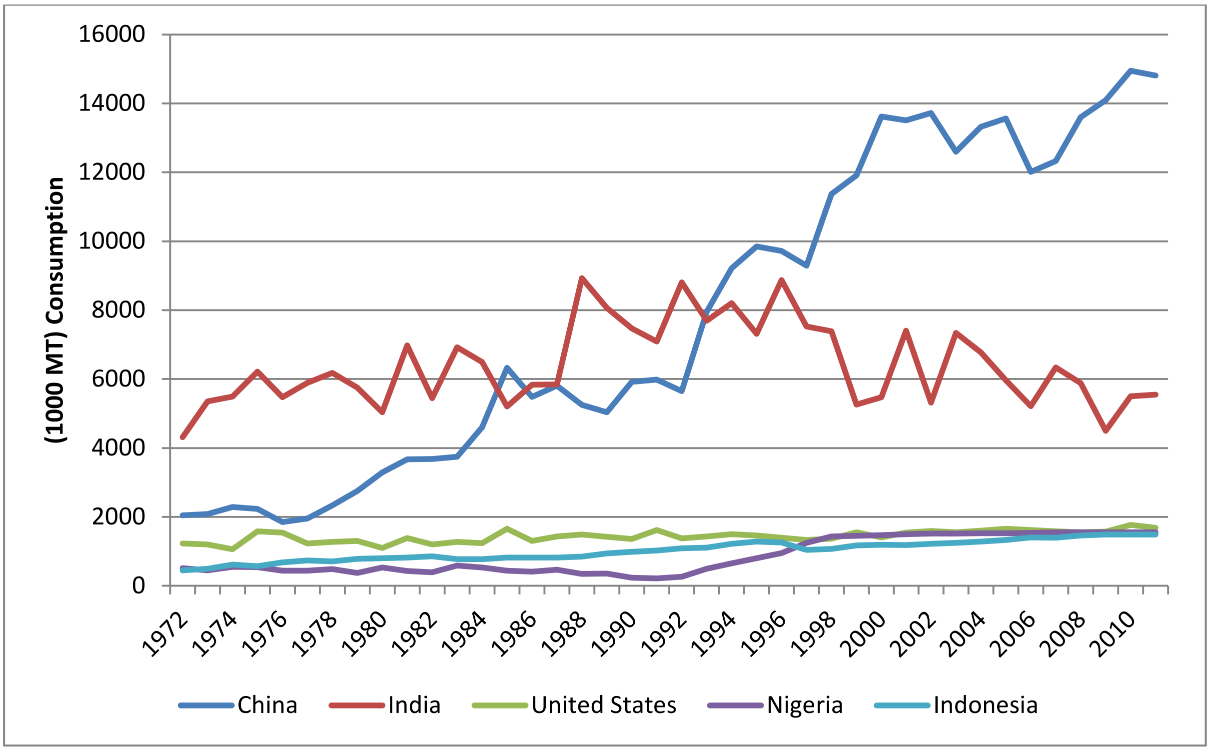


Figure 4: Top 5 consuming countries

Source: USDA-PS&D

China produces almost 45% of total global production, but their area harvested is only 21% of the total global area planted to groundnuts. Considering consumption, we can see that they consume almost 60% of total global groundnut production and their total consumption is 43% of global consumption. Their 5-year growth in percentage of global consumption is 3.75%, from 38.81% to 42.56%. See Figure 5. (USDA, 2011)

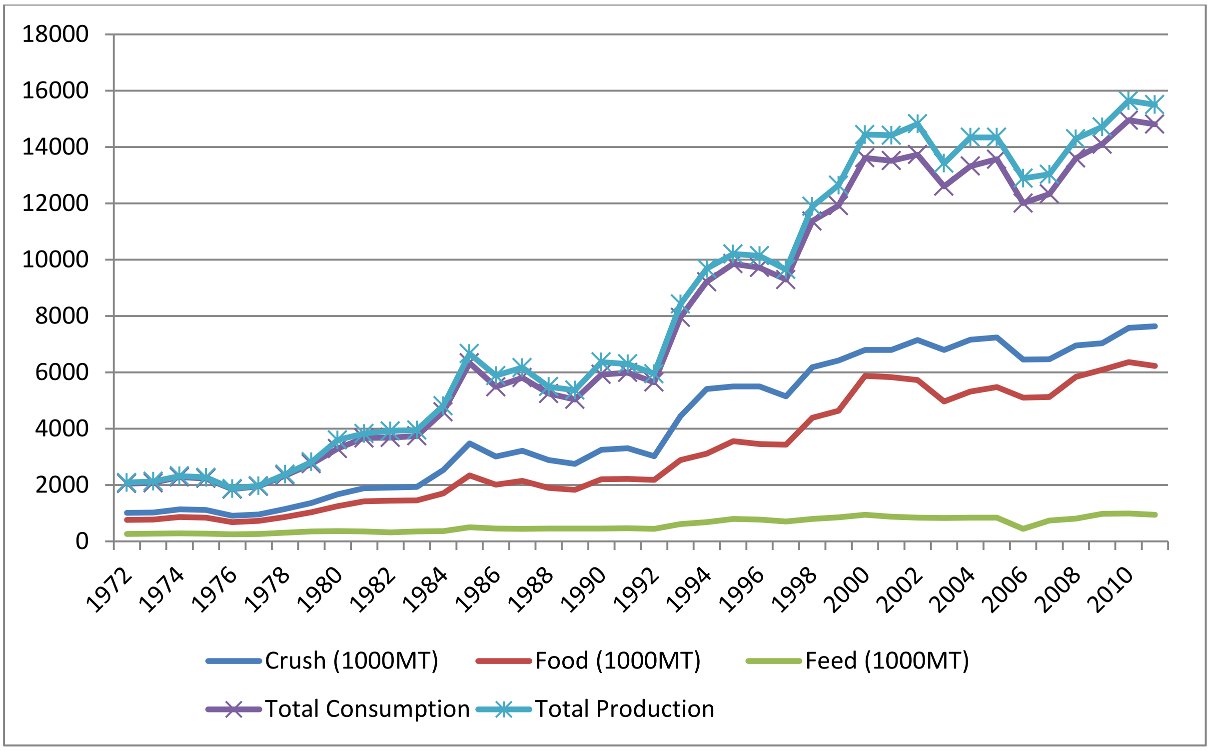


Figure 5: **Total Chinese production & consumption**

Source: USDA-PS&D

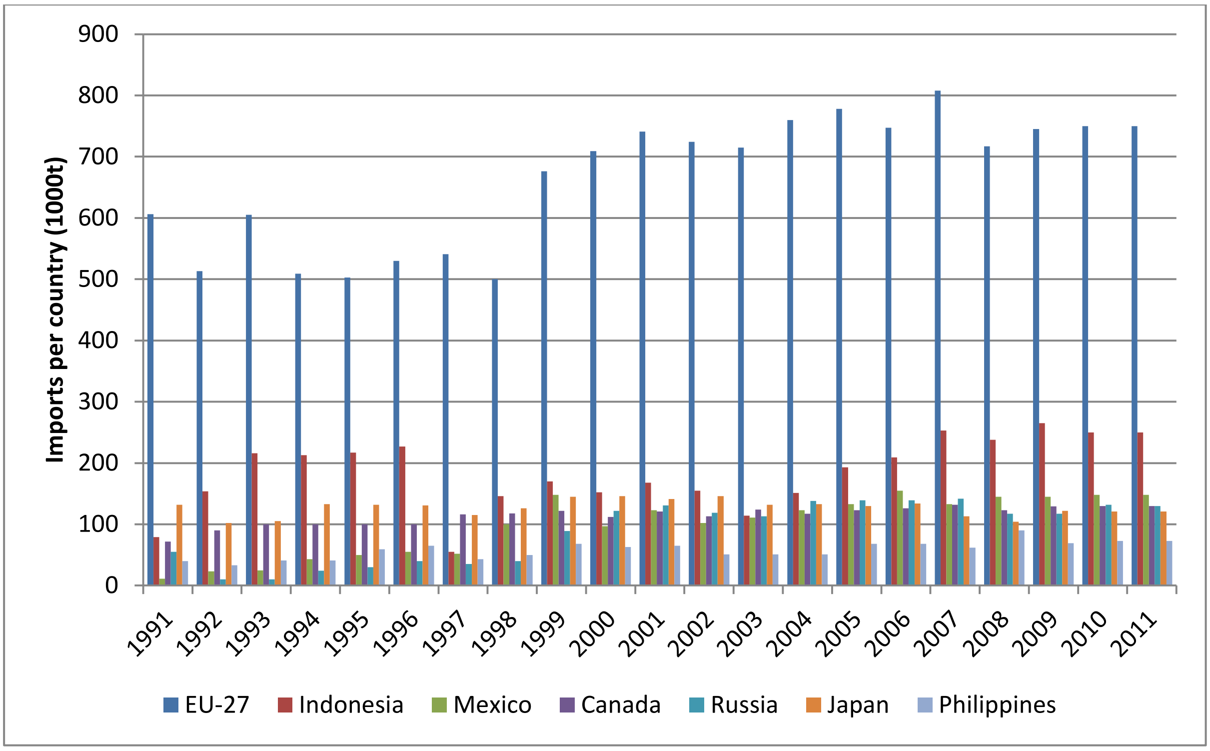


Figure 6: Comparing the largest importing countries

Source: USDA-PS&D

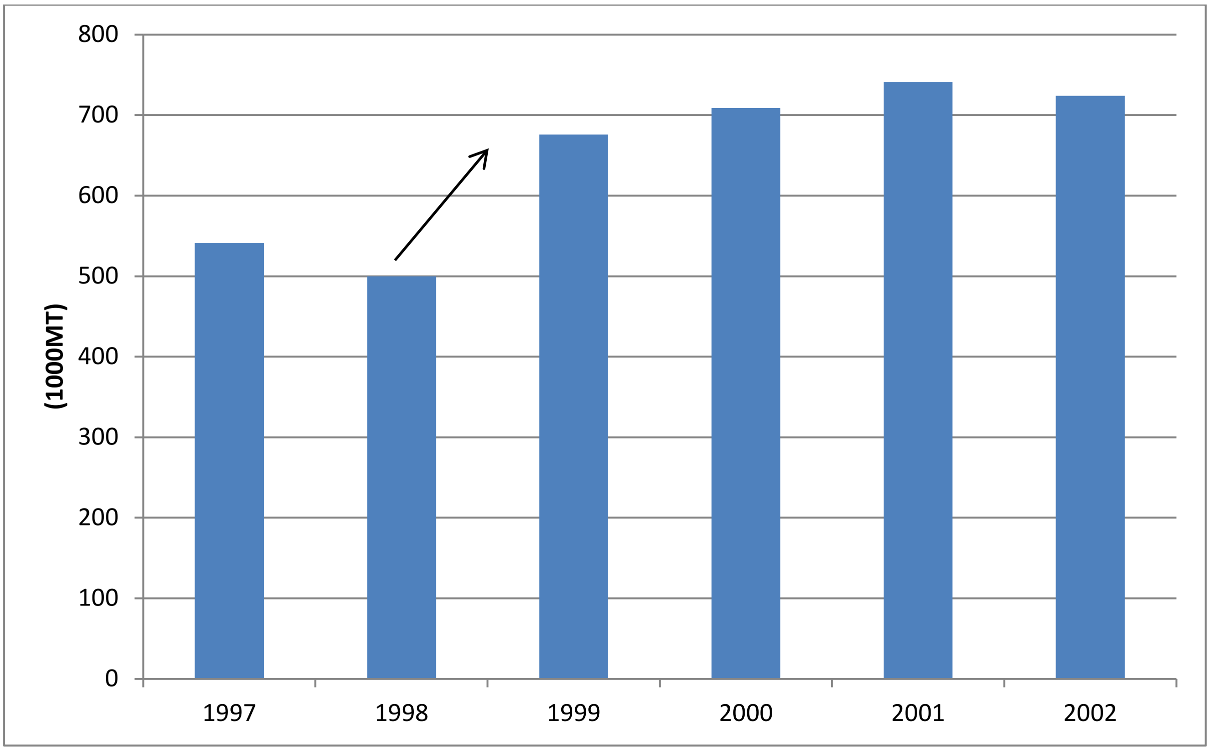


Figure 7: EU growth path with new import restrictions

Source: USDA, PS&D

Due to the strict inspection measures imposed by the EU during the 1990's, more requirements had to be met in terms of quality. This lead to 30% increased imports from 1998 to 1999. It is argued that the main reason for this was the establishment of regulations regarding Aflatoxins (ARD, 2008).

3. South African Market Conditions

3.1 Trends of local production, consumption and trade

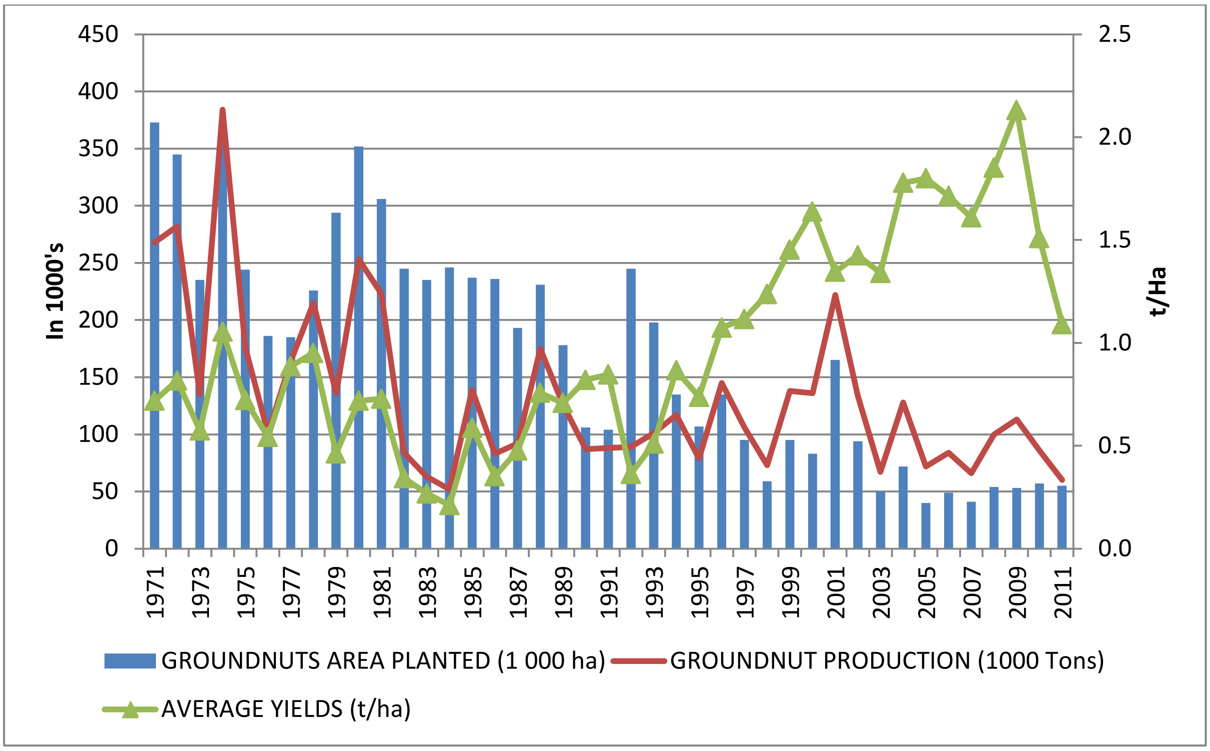


Figure 8: Production, consumption and yields

Source: SAGIS 2011

In view of figure 8, we can see an increase in yield for the period 1997 – 2009. However, this is not the full story, the increases are mainly due to a decrease in dry-land plantings, and a relatively stable planting pattern in the irrigation areas. It can thus be said that the increase in yield is mainly an irrigation story. Industry specialists argue that yields remained stagnant or rather flat in the past 10-15 years.

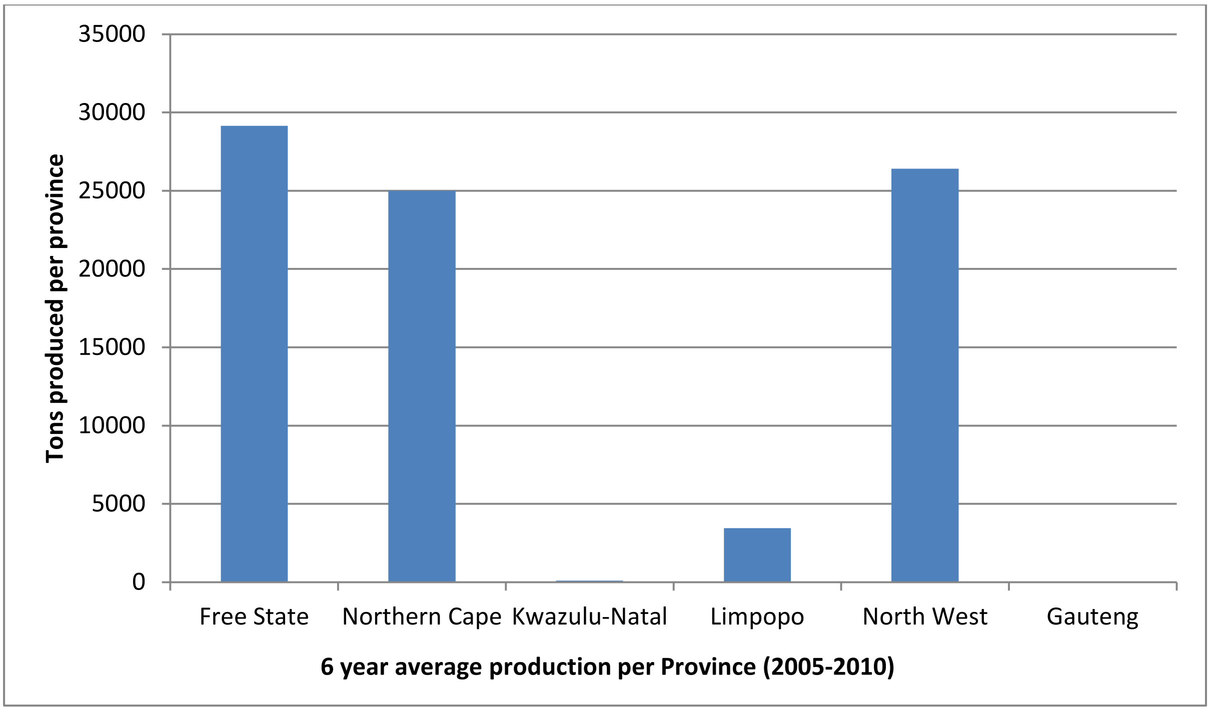


Figure 9: Average provincial production

Source: SAGIS 2011, adapted by BFAP 2011

According to some of the industry specialists a further 10 000-13 000 hectares are planted in the Limpopo, Mpumalanga and KwaZulu- Natal provinces, but the production is consumed locally. It seems as though these plantings are not recorded in the SAGIS data. More research will be done with regard to this matter – the crop estimates committee should be asked for assistance.

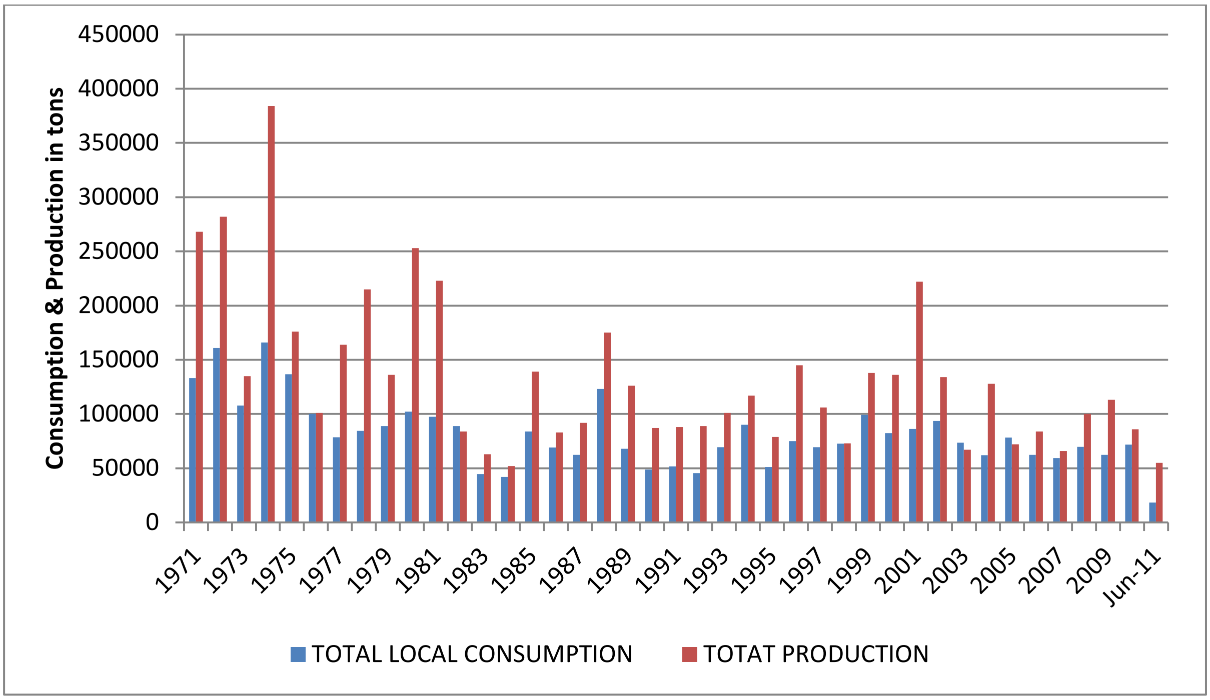


Figure 10: South Africa's local consumption versus production

Source: SAGIS 2011 & Surveyed by BFAP for the 2011 season

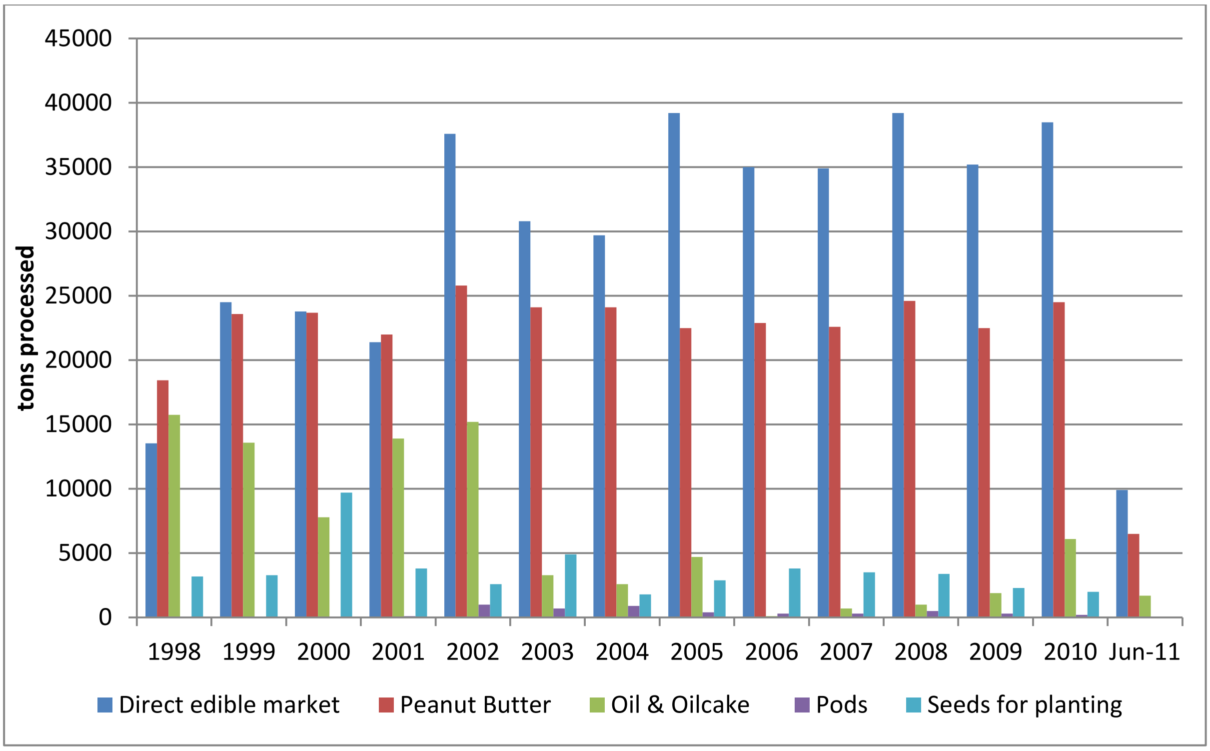


Figure 11: Local consumption distribution

Source: SAGIS June 2011

For the past 9 years the consumption levels in the edible groundnut market have remained constant. The edible market includes the raw peanuts which are typically bought in 400g packets, either salted or with raisins. The market share for this product is at about 36 000 tons on average, which includes the "hawker market" (SAGIS 2011). In terms of absolute share of the total domestic consumption, the edible peanut market is followed by the processing of peanut butter. This market is even more stable than the edible market and just under 25 000 tons are processed each year. The peanut butter brands that one typically finds on the shelf are Black Cat, Yum-Yum, Skippy, Thokoman and certain no-name brands. Most of the processing plants supplying raw shelled peanuts to the peanut butter producers will also produce their own "un-branded" peanut butters, which is either sold as their own brand in smaller retail outlets or sold in bulk to the informal market. The formal peanut butter market is at about 25 000 tons per annum (SAGIS 2011 & also confirmed by the Peanut Butter Producers).

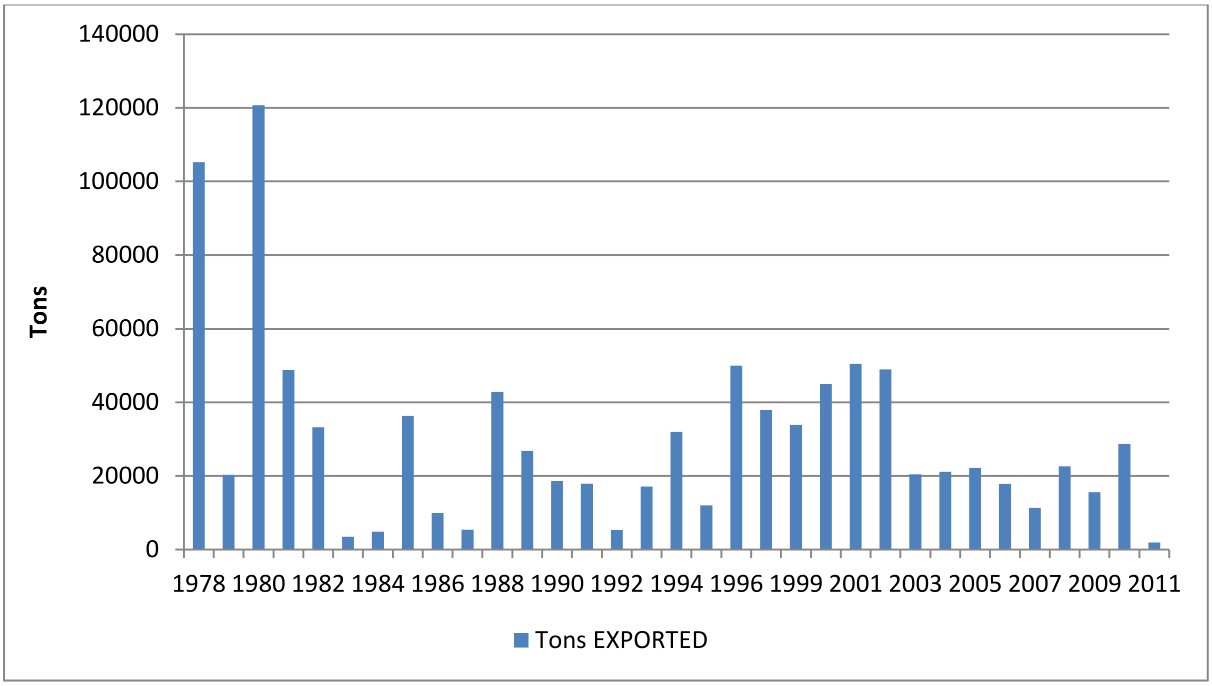


Figure 12: Groundnut exports

Source: SAGIS June 2011

Despite the sharp decline in the area under production, South Africa remains a net-exporter of groundnuts, as production exceeds consumption in most of the years (Figure 10 & 11). Yet, the competition for hectares between various field crops is mounting, as the relative profitability is shifting. The soybean industry has gained significant momentum over the past five years and the area under production is expanding rapidly. As a legume, soybeans also offer similar rotational cropping benefits when produced in a typical production cycle with other summer crops like maize. Figure 13 compares the relative shifts in the area under production of soybean and groundnut.

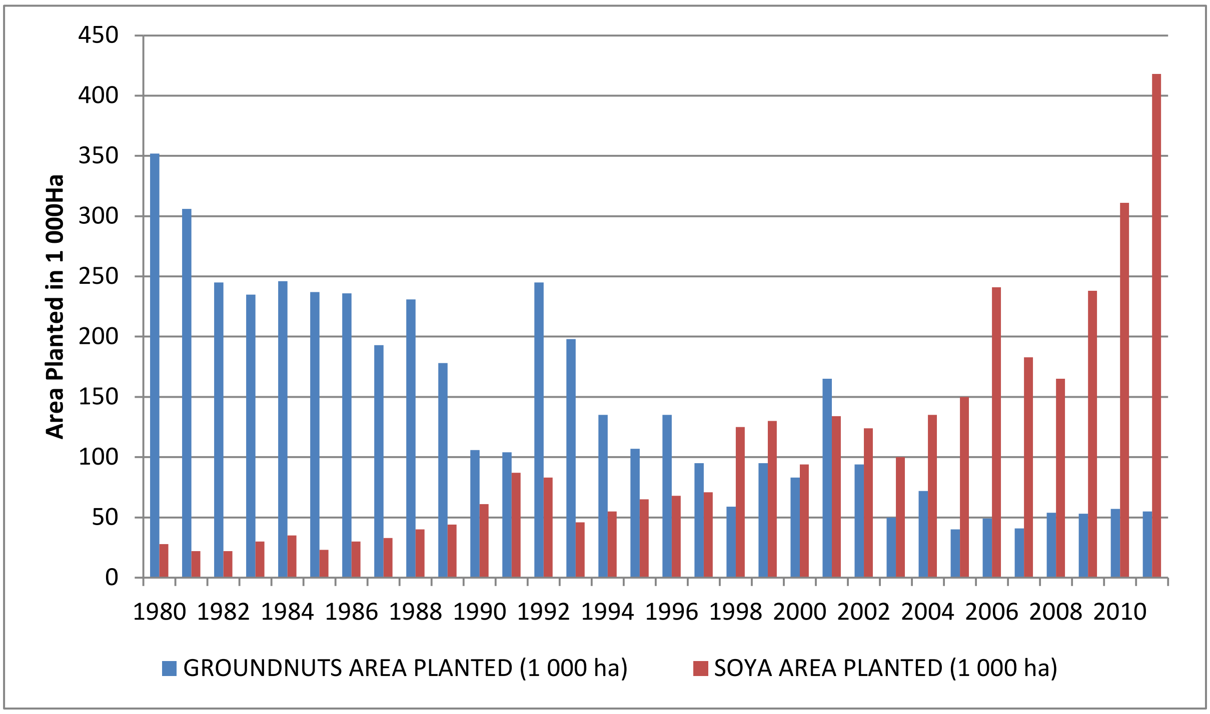


Figure 13: The competition for hectares between soybeans and groundnuts

Source: SAGIS, 2011

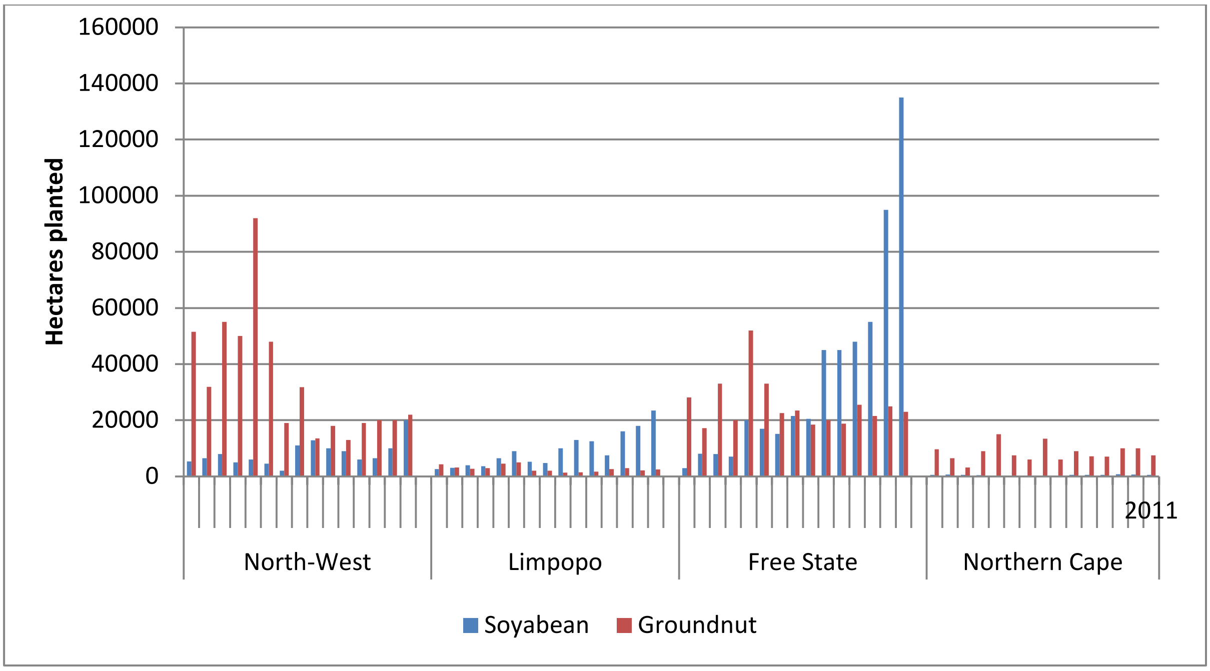


Figure 14: Historic production comparison groundnut vs soybeans (1997 -2011)

Source: SAGIS 2011, sourced from crop estimates committee and compiled by BFAP 2011

Evident is the change in hectares planted from 1997 – 2011, where one sees the turn from groundnuts to soybeans in the dry land production areas. This shows that the odd 80 000 ha that is lost from groundnuts could, most likely, be replaced by another legume such as the soybean.

Also seen from the yield charts, is a sharp increase in yield from 1997 – 2009, mainly due to the reduction in dry-land planting (i.e. replaced by soybeans). From figure 14, it is apparent that the major shifts have taken place in the North-West and Free State provinces. These are two provinces where soybeans and groundnuts are produced under dry land conditions and conservation tillage practices can be applied with success under the correct crop selection – With specific reference to soybeans & maize rotational conservation tillage practices.

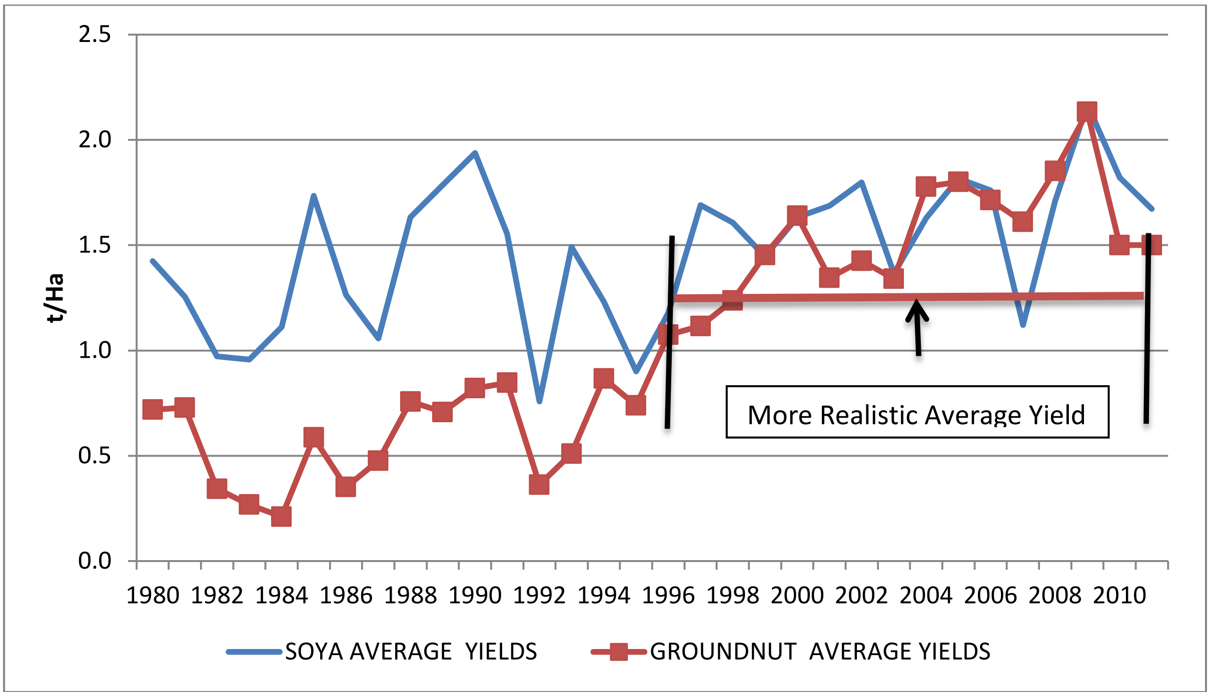


Figure 15: Soybean versus groundnut yields

Source: SAGIS, 2011

Table 1 provides an overview of the relative competitiveness of the two commodities in terms of profit margins per hectare.

Table 1: Profit per hectare comparison (2011 Production season)

	CONVENTIONAL	CONVENTIONAL
Dry Land:	**Soybeans**	**Groundnuts**
Product Price (R/ton)	3 440	6 750 (average price)
Estimated Yield (ton/ha)	1.75	1.25
Gross Product Income (GPI) (R/ha)	6 020	8 438
Total Allocated Costs (R/ha) - Seeds, Fertilizer, Lime, Diesel etc.	3353	4 130
Total Specified costs (R/ha) - Labour, Insurance etc.	1 070	1078
Total Costs (A + B) (R/ha)	4 422	5209
Margins (Surplus / Shortage)		
Rand per hectare	**1598**	**3229**

Source: Senwes Costs & Yields 2011, BFAP calculations

3.2 A specific focus on cultivar development

The successful adoption of new cultivars that can boost yields without compromising on quality is essential for the long-run sustainability of the industry. The main breeding programme for the groundnut industry is managed by the ARC-GCI. At the time the ARC was interviewed, the question of competitiveness of local cultivars was raised. The ARC's (Pretorius, 2011) response to this question was as follows:

1. SA producers have always been producing a high quality groundnut.

2. The industry has to realize that groundnuts exported from countries such as Argentina and Brazil are >80% high-oleic, so the farmers in SA will have to be paid a premium price for high-oleic groundnut.

3. The industry has to promote the planting of high-oleic groundnut cultivars.

4. The molecular-market assisted breeding programme, used since 2010, made it possible to quickly identify a large number of the high- and intermediate-oleic genotypes in the Back cross stage 4. These genotypes will be evaluated under field trials for their potential as high-yielding, high-quality future cultivars in a much shorter time-span than what was needed in a conventional programme alone. One can thus assume that there are upcoming improved CV's in the pipe-line.

It is also worth noting that Miss Alana Pretorius from the ARC was sent to the USA to meet scientists in Georgia and Texas and explore the possibility of importing cultivars to SA and to **a)** test them in cultivar trials to see how they adapt to our climate conditions and **b)** to use them in our breeding program.

According to (Pretorius, 2011), it is challenging to import new cultivars if they contain genes with Intellectual Property (IP). Despite this, the ARC is in the process of importing cultivars; even if only to test them for adaptability. SA's big commercial groundnut producing areas have a narrow window of approximately 150 days from plant to harvest as early frost could damage the crop. In SA the necessary heat-units for groundnuts to mature are also much lower than the heat-units available in the USA – especially in Georgia. It seems as if the Texan climate is changing and with diminishing water tables, they also focus more on Spanish types than Runners. Runners need 180 days and Spanish CV's require 150 days from planting to maturing. Hence, although there might be genetic material that the ARC does not have in its "germplasm bank", it is not straight forward".

Following a visit in 2010 by Dr Mienie, he and Dr Pretorius from the ARC are in communication with EMBRAPA (Brazilian Agricultural Research Corporation). According to Pretorius, EMBRAPA has wonderful crosses that Dr Soraya Bertiolli is willing to share with South Africa but EMBRAPA'S policy changed and they have IP on every resistance gene (resistance to *Aspergillus flavus*, rootknot nematode, *Cercospora arachidicola* (early leaf spot), *Cercosporidium personatum* (late leaf spot) and *Puccinia arachidis* (brown rust)".

At this stage it seems like the only source from where the ARC will be able to import cultivars over the short run is Dr. Jean-Francois Rami from Senegal. It is envisaged that the seeds will be imported in January 2012 and then planted in the greenhouse for multiplication. The ARC is thus still negotiating with the USA, Brazil and Argentina. It is important to note that 90% of the CV's from the USA, Brazil & Argentina are runners (180 days) and red. Pretorius argues that the Texas Spanish types have a much higher possibility of working in SA under our climate conditions. The ARC also mentioned that the Groundnut Forum has agreed to finance the importation costs.

Current cultivars on the variety list that are not bred by the ARC-GCI include:

Inkanyezi (959)
JL 24 (959)
Mwenje (1137)
Nyanda (1137)

Table 2: Cultivar variety list 2011, including registration date

Variety list for 2011					
		Registration PBR	**Sole right**	**Expiry PBR**	**Growth period & use**
Akwa (254-30)	ARC	1994/02/08	1999/02/08	2009/02/08	150 days, tan testa, much planted in SA, exported
Anel (254-3)	ARC	1993/11/10	1998/11/10	2011/11/10	150 days, tan testa,much planted in SA
Harts (254-3)	ARC	1988/12/28	1993/12/28	2008/12/28	120 days, red testa
Inkanyezi (959)	Other companies				150 days, tan testa, small-scale farmers
JL 24 (959)	Other companies				120 days, tan testa
*** Kangwane Red (254-3)/ARC**		1997/07/05	2002/07/05	2017/07/05	120 days, red testa
Kwarts (254-3)	ARC	1991/05/15	1996/05/15	2006/05/15	150 days, tan testa, much planted in SA, exported
Mwenje (1137)	Other companies				150 days, tan testa
Nyanda (1137)	Other companies				150 days, tan testa
Rambo (254-3)	ARC				big kernel, 180days growth season, not in demand
*** SA Juweel (254-3)**	ARC	2005/01/08	2010/01/08	2025/01/08	150 days, high oleic, tan testa
Sellie	ARC	1977	1982	PBR exp.	150 days, tan testa
***Tufa (254-3)**	ARC	2008/03/07	2013/03/07	2028/03/07	150 days, tan testa, much planted in SA, exported
*** royalties paid to ARC**					

Source: Personal correspondence with the ARC

Apart from the breeding programmes managed by the ARC, several private initiatives have emerged, where role-players in the industry are attempting to breed improved cultivars. The following information was received from Alfonds Visser, co-owner of a breeding scheme for new cultivars in South Africa.

Trial results for the 2011 season:

A) Plantings in Vaalharts district

Two plantings were done (52 seeds/planting); repeating the same planting 3 times. Then a further seven lines from their seeds were tested. From the graph below is seems like the alternative cultivars that are bred under this private initiative are outperforming one of the existing cultivars (Akwa).

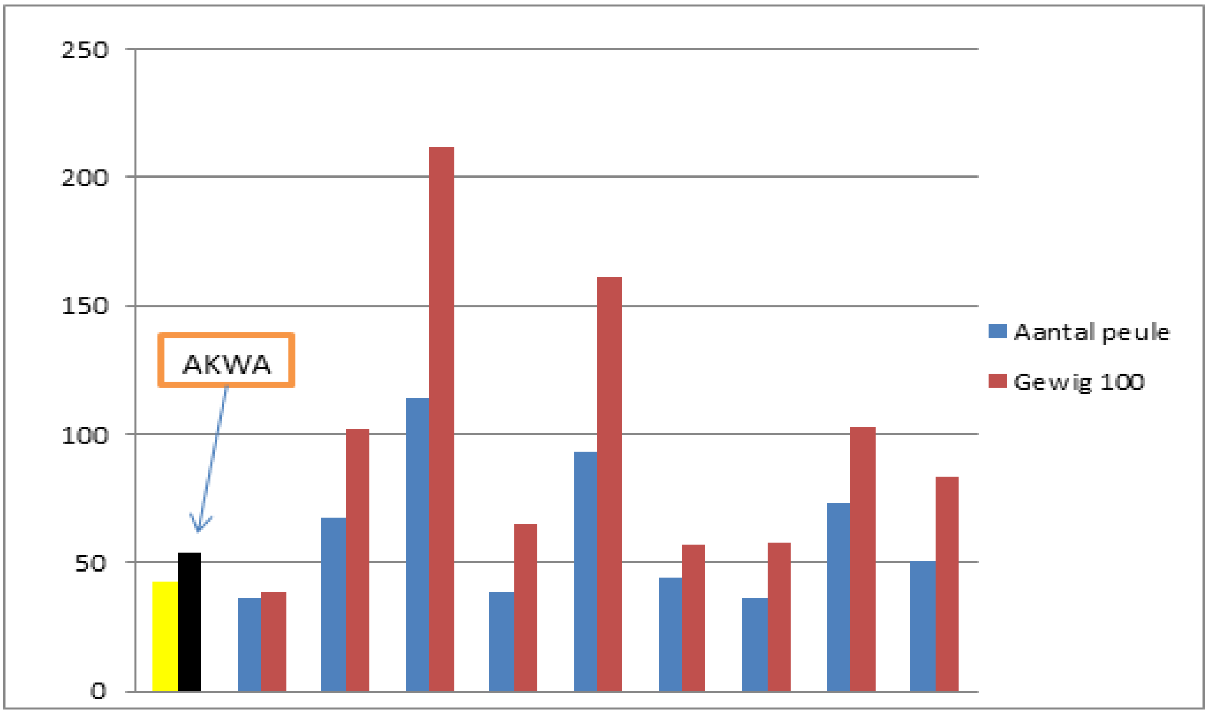


Figure 16: Trial results for planting in the Vaalharts area

Source: P-Farms & SAGM, August 2011

B) Hoopstad trial plantings

Two plantings were done (52 seeds/planting). Similarly, the alternative cultivars outperformed the existing cultivar in this specific trail.

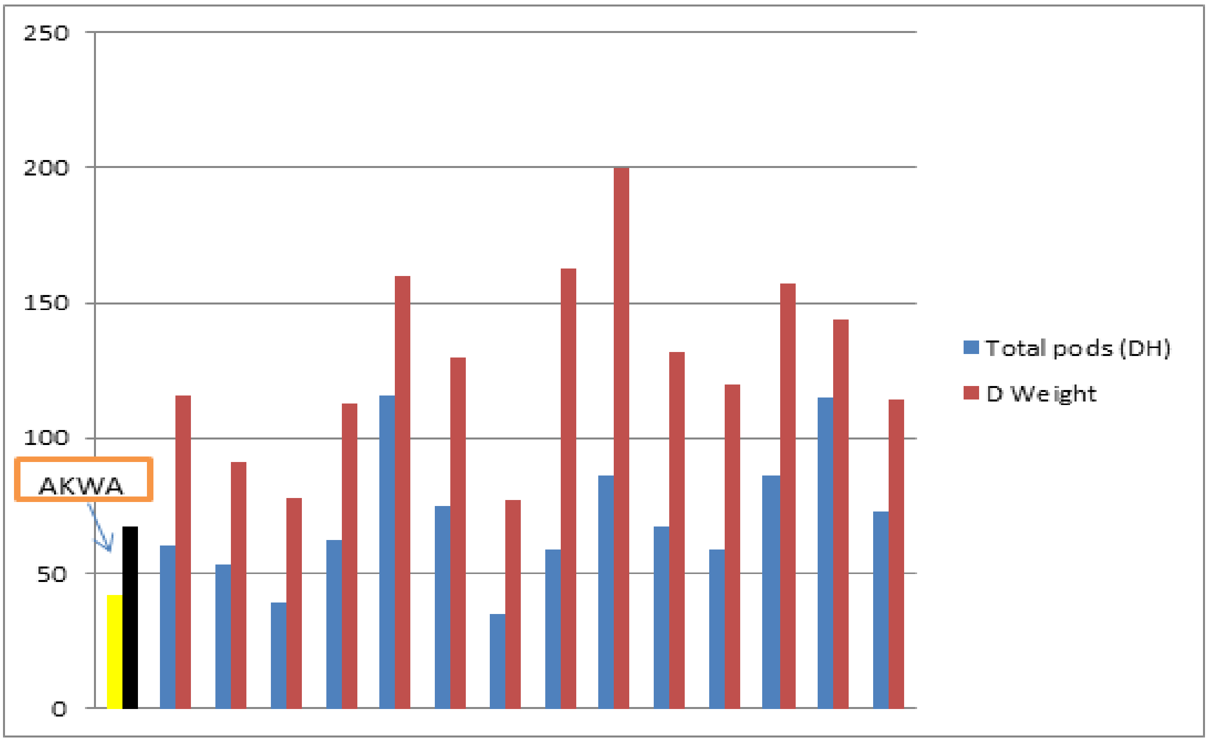


Figure 17: Trial results for plantings in Hoopstad district

Source: P-Farm & SAGM, August 2011

It has to be considered that the lines used are single selections and at least 3-4 years of trial and increases need to be done before it can be made commercially available.

The P-Farm/SAGM seed-breeding project achieved above average results in comparison with our local cultivars trials. The combination of local breeding from Dr Schalk van Wyk and imported lines from seed companies abroad (Argentina, Australia, USA, and Brazil) provides hope in terms of higher yielding cultivars. The cultivars will mostly be cross bred to provide the yields of the Runner type, but still maintain the size and physical appearance of the local Spanish type; they will also have the high levels of HO (High & intermediate-oleic kernels will ensure that products made from them will have a longer shelf-life) that our South African cultivars boast with.

However, the costs of these projects are immense and further research is needed to make this a sustainable project for the future of the breeding project. Costs provided by the P-Farm/SAGM breeding company gives us an indication of these expenses.

Table 3: Average costs to fund breeding of new cultivars

YEAR	AVERAGE COSTS:
2011	R 2 000 000
2012	R 2 500 000
2013	R 3 250 000

Source: P-Farm & SAGM, August 2011

Concluding remarks regarding cultivar development:
It is apparent that the breeding of new cultivars is not an easy task. The ARC has been running a breeding programme for the past 5 years with limited success. Since breeding stations/laboratories require intense capital investment and management, one can argue that the South African groundnut industry is probably too small to do this on its own. Therefore, it is essential to leverage any local activities through close collaboration with world-class breeding programmes of institutions like EMBRAPA or INTA.

3.3 The pricing of groundnuts on international and local markets

The transparent determination of groundnut prices in the South African market is one of the key factors that can support the sustainability of the industry in future. In order to unpack and address the major shortcoming of the existing pricing system, three questions have to be answered:

Three questions:

1) Can the local price be derived from the international price for groundnuts?

2) How can we calculate the price for choice (40/50) in different countries?

3) What is the price difference between Choice & Sundries grades?

Numerous industry players were consulted to provide inputs regarding the optimal price discovery mechanism. The section below provides a summary of the answers to the three questions asked, which is followed by a detailed interpretation of the inputs received from the industry in conjunction with an analysis of pricing trends. Due to confidentiality, the individual names of the various industry role players' answers that were summarized below, are not disclosed.

Three answers:

1) "There is no single global price level for groundnuts, as there is no stock market for it like for crude oil, grains, cocoa beans etce. It is therefore very tricky to link the South African market price to one specific reference point."

2) “Groundnuts from different origins like Argentina, USA, India, China and South Africa all have their own price level. One would probably have to calculate a weighted price”

3) “In general, when having the price level for 40/50 (raw peanuts), deduct US$ 80-100 to get the price level for splits/ Sundries”.

Consulting with the industry on the issue regarding the pricing of groundnuts, it becomes apparent that much uncertainty exists regarding the pricing. This can be regarded as a disincentive for farmers to grow groundnuts as the price risk is very high. Taking this into consideration, it was decided to unpack some of the key elements driving the price determination of groundnuts.

Effects from surety of delivery and competitiveness in global price

According to Fletcher & Giha (2002) in their publications entitled “Determinants of Price Premium in the Rotterdam Groundnut Market”, the reputation of a firm is based not only on the quality of the goods it offers but also on its reliability as a supplier. The reputation mentioned by Fletcher and Giha is not merely an idealistic dream for the South African industry: in fact it was a reality a few years ago. According to the industry pioneers “we had products of such exceptional quality and prompt delivery of contracts that we had the printed words ‘Imported from South Africa’ on packets of peanuts in Japan”. The importing countries knew our product, but more importantly, they could trust the country to meet their demands and honour future contracts.

Fletcher and Giha state that “even in some cases such as groundnuts traded in Rotterdam; one may observe price premiums paid for the commodity of some specific origin”. An alternative way to differentiate products when the quality is somewhat homogeneous is by **the reliability of the supplier**”. The authors supported their arguments by providing a summary of market prices (Table 3, Figure 18) for groundnuts from various origins in the Rotterdam groundnut market.

Table 4: A Comparison between import unit values & Aldebaran prices (40/50-Choice)

	Argentina	China	USA	Brazil	South Africa
Unit Values					
2001	795.8	707.3	913.2	701.5	787.4
2002	743.7	655.6	812.2	641.5	652.8
Aldebaran Commodities					
2001	786.3	735	826.7	785	823.3
2002	712.5	673.8	787.5	696.3	780

Source: Eurostat & Aldebaran Commodities

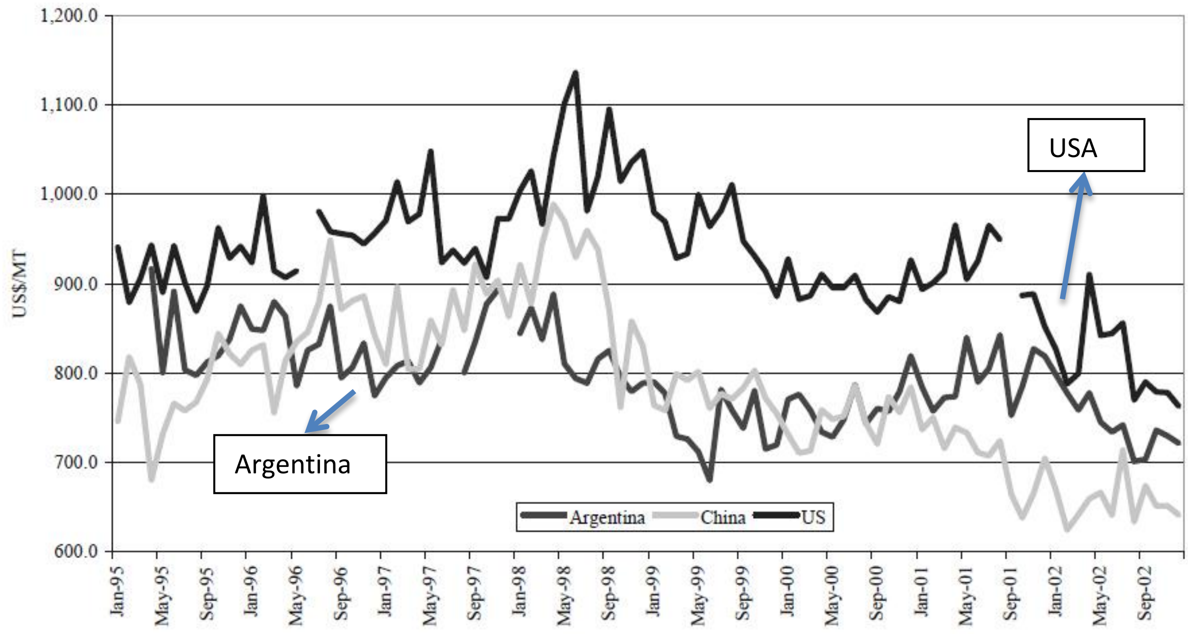


Figure 18: Price difference in product sold in the Netherlands 1995-2002

Source: Eurostat 2003 & Adapted by BFAP 2011

2010 – 2011 current Rotterdam comparisons

Since South Africa is a net exporter of groundnuts, our export realisation price ought to be derived from world markets. The Figure 19 below shows the price differential of groundnuts trading in Rotterdam from various countries of origin. The information was sourced from a trading company in Rotterdam and did not include data of South African groundnuts. However, the trader's comment with respect to South African groundnuts was as follows: "South African 60/70 last traded around US$ 2200/ton, but there are currently no sellers since quality issues cause problems to source groundnuts against existing contracts". It seems that over the last two years South Africa was not regarded as a reliable supplier, which implies that the price is meaningless. South African groundnuts were last traded by this specific company at levels comparable to groundnuts sourced from China. This trading company further confirmed that there is a big demand for the Spanish cultivar, and South African groundnuts should receive a premium in the market if a sound steady supply of groundnuts can be secured. The company argues that on average the difference between Argentine 60/70 and South Africa 60/70 is between US$ 200 / US$ 300 per ton.

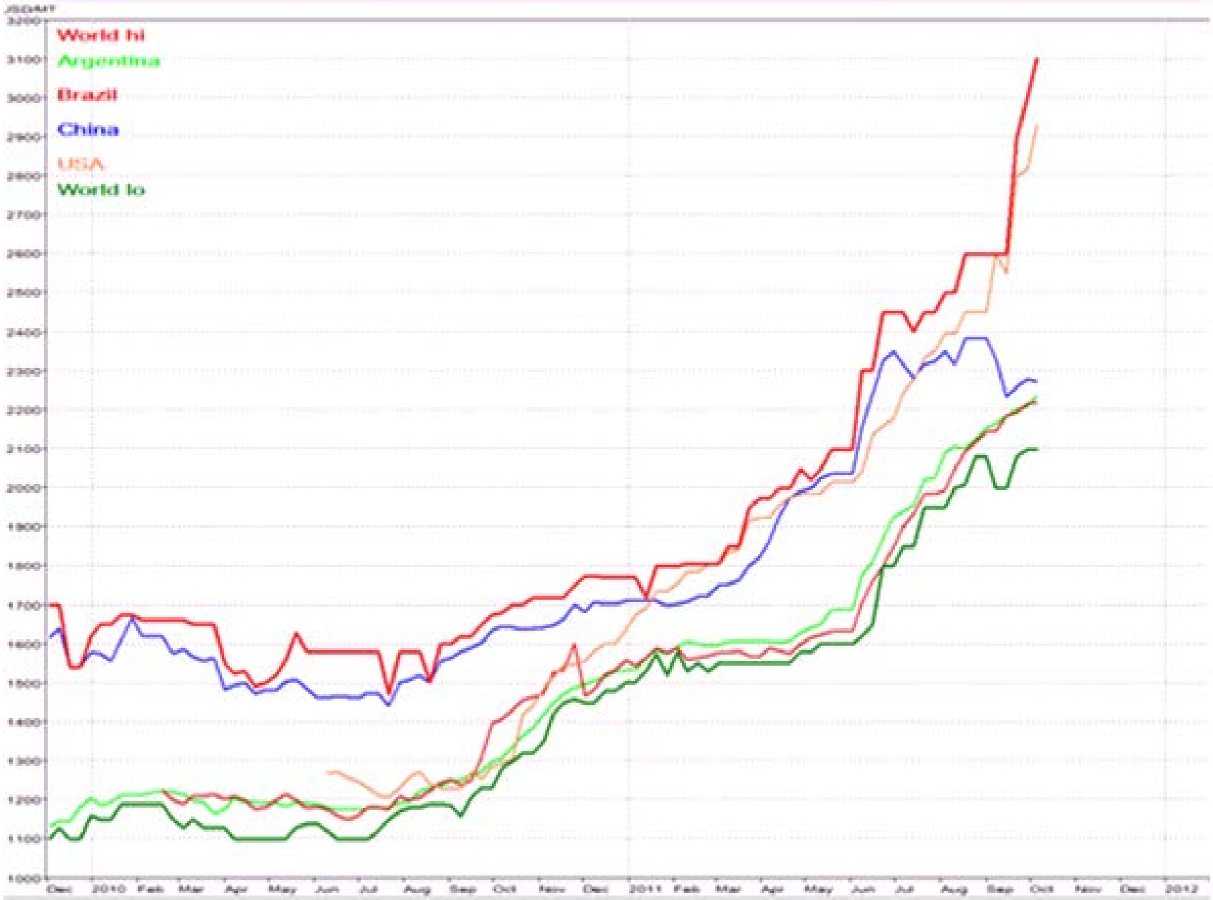


Figure 19: Price of 40/50 Runners, cif Rotterdam from different countries of origin

Source: Netherlands trading company compiled for BFAP 2011

With respect to the information presented in Figure 19, the company argues that China is currently not at the top, but in the last 2 years China was indeed one of the most expensive origins. China and USA are typical origins with a very strong domestic usage. Export prices are not influenced too much by other origins, but mainly by their own demand. Argentina, however, does not really have a big domestic consumption, and has to follow the world market”.

The average exports between the five countries mentioned below shows that South Africa is ranked fourth with regard to average quantity exported over a period of 39 years. This comparison was drawn to illustrate that the total notifications mentioned in Table 5 - column two, should be compared relative to the average quantity exported per country. Considering that South Africa is such a small exporter, with so many quality notifications and non-compliant reports, shows that serious attentions should be given to our quality standards.

Table 5: Notifications on groundnuts and groundnut products presenting average levels of Aflatoxins above the Codex Levels (2000–2006)

Notified Country	Total Notification	% of notifications reporting results for more than 1 sample	% of notifications above Codex level (average of samples)
Total Notifications	924	35	42.5
China	306	44	34.1
Argentina	141	16	56.5
India	38	37	64.3
Egypt	82	45	32.4
Brazil	75	35	34.6
South Africa	41	10	25.0
Ghana	51	10	80.0
Sudan	28	61	82.0
Malawi	7	43	66.0
Uganda	2	50	100.0

Source: ARD 2008, sourced from RASFF

Table 6: Average tons exported per year, per country (1972 – 2011)

	Argentina	Brazil	China	South Africa	United States
Average (1000t) exported per year - over 39 year period	241	30	442	37	329

Source: USDA – PSD 2011, compiled by BFAP 2011

Table 7: Measures Taken on Consignments Found to Be Noncompliant (proportion of volume rejected, period 2004–2005)

	Physical treatment	Re-dispatched/returned to dispatcher	Destination changed	Destroyed	Product recall or withdrawal	Blocked	Not Determined
Argentina	60	18	13				9
China	7.7	73.5	3.7	1.5		6.5	6.7
Brazil	79.6	17	1.6				1.2
Egypt		83.5		5.9			10.3
USA	34	37	4.3	17	7		
Sudan	100						
South Africa	85.3	7.6	7				
Malawi	15.5	20.3	42.5			21.3	

Source: ARD 2008, sourced from RASFF

The concluding results from their research show that the groundnuts country of origin is a key variable in explaining groundnut prices. The result allows us to conclude that apparent dependability may be a key component of the groundnut price as a reference point. We can also be sure that the lack of reliability may imply a discount on the price paid for groundnuts. More focus should be given as to what is the real world price to determine the export parity price, as the price is solely dependent on the country of origin, not only the Rotterdam, Argentinean or US prices.

In view of the results above and with the objective to receive a premium price for peanuts, the South African groundnut industry will have to come up with a strategic plan to market our "Proudly South African" quality Spanish product, and guarantee the delivery of it. If not, the probability of achieving a premium in the world export markets is unlikely, with the effect seen in the pockets of the farmers who in the end remain the cornerstone of this supply chain.

South African price formation

Establishing a benchmark price (floor price) for the following season's production is an essential decision for the months of August, September and October. This is not an easy task, as no one can predict what might happen in the world, due to unforeseen circumstances. A floor price is given in September/October, to ensure planting- but this price is not a "put option", as the processors can still make it lower during Nov-Feb. Some of the processors did give a forward contract price for the 2011 season (due to the "surety" of a high price for the 2012 deliveries), however, it will only be around May month that the contracts are closed. This is to protect the processors from defaulting if the price decreases during that time.

The price formation for the different grades is mostly done by each individual processor and the strategy as to how they compensate their producers varies from one processor to the other. A few models are shown as to how this is done, but with special emphasis on the formation of the Sundries price linked back to the Farm-gate price.

- **(A) Choice: 40/50 – 70/80**, which according to GWK 2011 makes up about 66% from a ton of peanuts delivered (in the irrigation areas). Other processors reported a range of 54% (if harvested conventionally) to 59% (harvested mechanically). The full Choice price is allocated to this percentage of peanuts delivered. The Choice price is derived from an export parity price given either from SAGIS or some individuals follow their own calculations based on the cif Rotterdam price.

  Import & Export parity prices: As mentioned earlier, the export or import parity price is derived from the cif Rotterdam price, but South Africa is not solely dependent on exports to the EU. We have markets in the US and Japan, where prices are largely determined by local supply and demand dynamics and trade at different levels compared to the cif Rotterdam prices. It is essential that possible premium markets are identified by processors and traders and these benefits have to be trickled down to the rest of the industry in order to boost the capacity and sustainability of the industry.

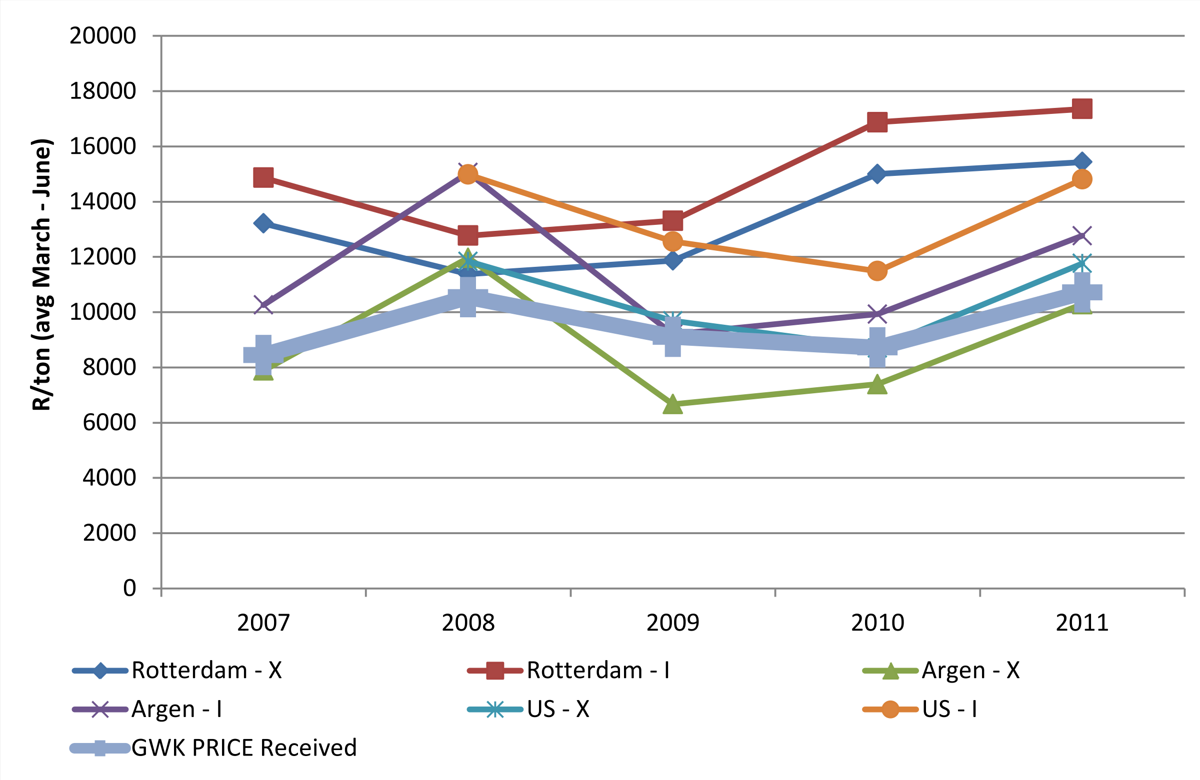


Figure 20: Import parity, export parity and local prices

Source: Grain SA 2011, Personal correspondence with GWK, BFAP calculations 2011

Figure 20 explains our local processors' competitiveness with respect to the average cif Rotterdam export parity price. Over the past five years the prices that were received by GWK closely match the export parity prices derived from the Argentinean and US prices. The question then remains, why are local prices in some seasons trading significantly below the export parity price for Rotterdam if most of our groundnuts are exported to European and Japanese markets? One of the reasons might be that the Rotterdam prices in the calculation are annual average prices and the Argentinean and US prices are average prices for the period March-June when most of our groundnuts are sold. The point remains, an accurate reflection of export parity prices for the true export markets is required.

Table 8: Import parity prices, from which export parity can be derived

				JUNE
		Units	Source	Price
Import	RSA BENCHMARK PRICE (world price) landed in e.g. Hoopstad	R/ton	own calculation	15 820.99
	PROCESSED PRICE (AFTER IMPORT COSTS & HANDELING)	R/ton	own calculation	12 572.72
RSA – **A**	Choice 40/50 - 60/70 (FULL PRICE)	R/ton	own calculation	12 572.72
RSA – **B1**	Sundries 70/80 (FULL PRICE-24%, the 24% is a RSA model)	R/ton	own calculation	8 298.00
B2	Sundries quoted price by Argentinean Company – Delivered Reef $1701 * R 7.22	R/ton	Industry correspondence	12 240.00
RSA – **C**	Crush (FULL PRICE-60%, the 60% is also an RSA model)	R/ton	own calculation	5 029.88
	SUPPLY OF GROUNDNUTS			
	Imports of Groundnuts- Choice			
	FOB value Choice	$/t	SAGIS/Oilworld	1 776.00
	FOB AVERAGE VALUE	$/t	SAGIS/Oilworld	1 776.00
	Freight rate	$/t	SAGIS	98.00
	Insurance (0. 3% of FOB)	$/t	SAGIS	5.33
	Cost, insurance and freight (TOTAL)	$/t	own calculation	1 879.33
	Cost, insurance and freight (NEW TOTAL IN RANDS) R7.22	R/t	own calculation	13 568.75
	Financing cost (Prime rate for 30 days) (9%)	R/t	SAGIS	100.37
	Cost, insurance, freight and financing (SUM TOTAL)	R/t	SAGIS	13 669.12
	Discharge cost- Durban (handling, doc, storage etc.)	R/t	SAGIS	465.00
	Import tariff (10%) on FOB	R/t	SAGIS	1 356.87
	FOR Durban	R/t	SAGIS	15 490.99
	Transport: Durban to Reef	R/t	Survey	330.00
	Durban to Reef (average price)	R/t	own calculation	15 820.99
		R/kg	own calculation	15.82
	Costs to import Choice:	R/t	own calculation	2 998.27

Source: SAGIS 2011 & BFAP calculations 2011

- **(B1) Sundries: Splits & 80/100**, they make up 18% from a ton delivered (GWK 2011). Then again from the industry average we received an average of 29% (from a ton delivered) at a price derived from the Choice price, less 24%.

  When comparing the average producer price for Sundries 2011, we received an average farm-gate price of R5 500 from the industry – but comparing this to point (B2) - Table 7, it shows that the Sundries price from Argentina <u>delivered in Randfontein is **R 12 240</u>.

  If we were to deduct freight, handling costs, transport and variable costs (costs of processor to clean a raw-product) from this Argentinean price : R12 240 - R3 500 (surveyed) it would give us a price of R 8 740 – i.e. this is what a typical wholesaler should be paying for his Sundries based on parity prices. Taking this a step further, if we were to deduct a further R 2500 (which are the costs of processing a ton of raw peanuts in SA – Table 21), we calculated a price of R 6 240 for Sundries at Farm-gate level. This is what our producers should be receiving on average. But due to the lack of global trader information, our processors are currently comparatively out priced and are receiving less than their wholesalers would be paying for a ton of imported Sundries, the effect is related back to the producer price, who receives R 740 less for Sundries. This exact example can be seen when the "real global" Choice price is not in place, as seen from Figure 20.

  The traders from the EU also mentioned that they have no formal pricing on the Sundries, but depending on the demand, they usually sell it for $80-$100 less than Choice price, i.e. about R720-R800 less than Choice.

- **(C) Crush**: These are all the rejects or the products with high AT levels or peanuts that cannot be blanched (about 13 - 16% from a ton delivered). This market is so small in South Africa, that it remains a challenge to compare the choice grades to the global averages. At present our Crush grade sells for less 35% of the Choice grade price.

An integral part of the price formation mechanisms and transparency in terms of the information is also having the ability to hedge price risks. As already mentioned, role-players in the groundnut industry do not have the ability to hedge themselves against significant price risks. Figure 21 compares the two oil seed legumes namely soybeans and groundnuts; we found a relatively close correlation between the CBOT soybeans price and the cif Rotterdam price of groundnuts. In fact when a series of statistical tests were conducted, it was determined that both price series are non-stationary and are co-integrated. This implies there is a statistical meaningful (99% confidence level) long-run relationship between soybean and groundnut prices. Moreover, the soybean price determines (causes) the groundnut price, not vice versa. This could be attributed to the demands in oilseeds and further linkages to the oilcake produced as by-product. One possibility could be to design a hedging model for local producers and processors, where the groundnut prices can be hedged on the soybean markets. A similar method is currently followed by SABMiller to provide South African barley farmers with the option of hedging barley prices on the SAFEX wheat contracts.

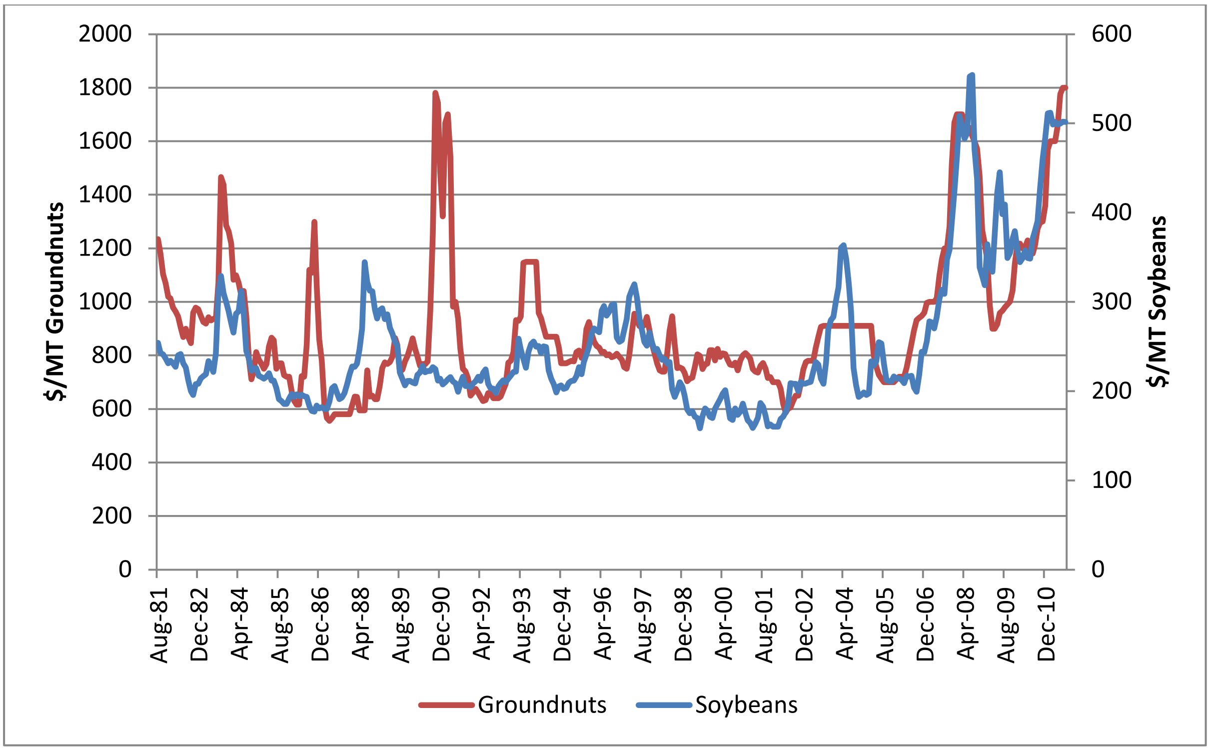


Figure 21: CBOT Soybean price compared to cif Rotterdam groundnut price

Source: Index Mundi 2011 & compiled by BFAP 2011

3.4 South African export opportunities and limitations

Major export destinations for South African groundnuts are Germany, Netherlands, Japan and Mexico. Some of these countries have no "HACCP" requirements for their imported products, but are rather concerned about a quality product that is Aflatoxin free. However, considering the attempt to remain a global competitor, it would still benefit South Africa to maintain high standards of HACCP requirements, currently neglected. Imports into the EU increased by 30% with new groundnut regulation in 1998 - requiring registration with HACCP, indicating the importance of maintaining these standards – (Figure 7)

HACCP should be seen as a mechanism to stay in the "niche" export markets, while on the other hand having consistency in our market demand, inevitably requiring a constant supply. Unfortunately, the groundnut industry in South Africa lacks reliability and cannot promise any processor from the EU that they will provide a constant supply. If the industry in South Africa can always sell with a premium, it will have a spill-off effect to the farm-gate price and farmers will remain weighing groundnuts as their crop of choice – mostly due to price.

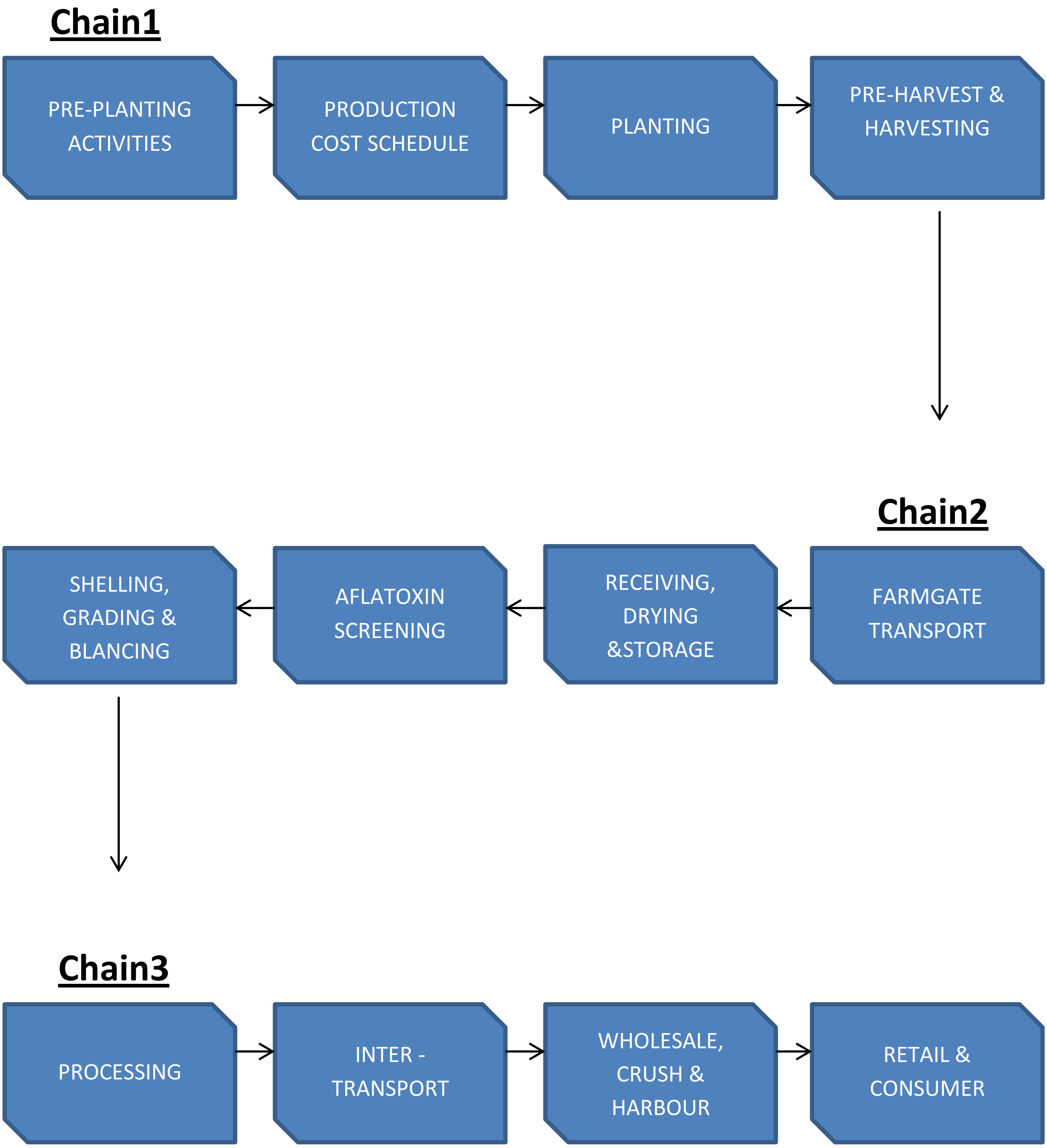
Industry experts argue that comparativeness in the groundnut industry should be measured on the factors listed below which are of utmost importance for the export market and should not be measured merely on production costs & selling prices.

While South Africa is only producing the Spanish type (from a very small crop) and mostly for niche export markets, the processing costs are not that important argue some of the processors. The local demand is limited and our high levels of Aflatoxin(AT) will always force us to sell the biggest part of the crop to informal buyers in SA that do not have any AT specifications.

South Africa's export market drivers:

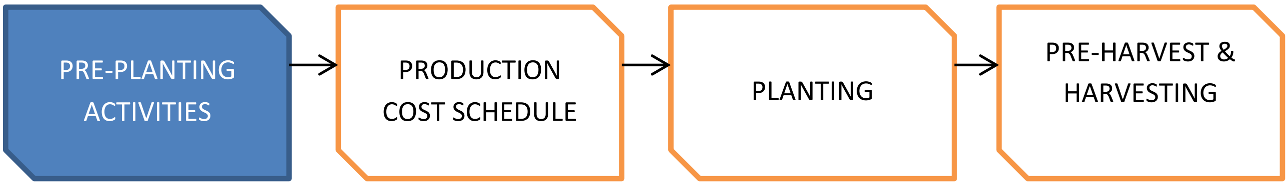
- Crop size and reliability of producing the same quantity product, on a constant basis every year.
- Ability to deliver on export contracts and to hedge against other exporters.
- We have to offer bigger quantities to specific overseas buyers without the risk of short delivery. In order to achieve this, a processor must be able to receive at least 10 000Mt from the producers.
- Maintain good quality standards and eliminate the risk of Aflatoxin rejections.
- Maintain HACCP & food safety standards acceptable to the import country.

4. The Groundnut Supply Chain



4.1 Chain 1: Pre- Farm gate

Link 1:



Deciding which crop to plant

The challenge for the groundnut industry is portrayed in producers' annual question regarding the profitability of mainly maize, sunflower, cotton or canola. These crops being the direct competitors for groundnuts.

Evident in Table 9 is the direct competition between cultivation of soybeans and groundnuts. Soybeans have become the more favourable crop and can be regarded as one of the strongest competitors for the groundnut industry. Table 9 indicates that with the current high maize prices combined with high yields, the margin of profit for groundnuts relative to maize is too low. Yet, another challenge for the groundnut industry is that only traditional practices can be used, as opposed to other crops that can be cultivated with utilization of other production practices. Thus, the realization of increased profit from other crops versus groundnuts, complex irrigation practices and the lack of utilization of other production practices (such as conservation tillage/ no-till) in groundnut cultivation; causes farmers to choose the safe option.

Most producers therefore have a certain stigma regarding the cultivation of groundnuts to be too labour-intensive and production too complex. Currently farmers know from past experiences what the risks and efforts are with groundnuts, and without considering the new production and cultivation methods, they merely stick to the crop they know, namely maize.

Careful attention should be given by the Forum to each pre-planting season (Aug-Oct), as this is the time in which most planning and decisions with regard to crop selection is done by the major commercial producers.

Table 9: Average income per hectare – Cash crop comparison (dry land)

	MAIZE-CONVENTIONAL	SOYBEANS-CONVEN	SUNFLOWE CONVEN	GROUNDNUT CONVEN
DRY LAND:				Field drying,
PRODUCT PRICE(R/ton)	1650	3440	3650	6750
ESTIMATED YIELD (ton/ha)	5	1.75	1.5	1.25
GROSS PRODUCT INCOME(GPI)	8 250	6 020	5 475	8 438
A: DIRECT ALLOCATABLE COSTS				
Seed	727	950	218	600
Fertilizer	1 773	440	1 122	480
Lime	77	61	46	92
Herbicides	611	517	235	236
Pesticides	318	189	90	517
Seed-inoculation	0	184	26	127
Fuel	822	460	916	887
Repairs	525	369	531	672
Oils & grease	41	23	46	44
A: TOTAL ALLOCATABLE COSTS	4 893	3 192	3 229	3 654
B: OTHER SPECIFIED COSTS				
Labour temps	113	68	68	169
Crop Insurance	133	590	207	300
Input Insurance	0	0	0	69
Crop marketing costs	494	250	254	124
Production costs Interest	324	187	216	222
B: TOTAL SPECIFIED COSTS	1 063		745	883
C: TOTAL COSTS(A + B) (R/ha)	5 957	4 287	3 974	4 537
D: MARGINS(Surplus / Shortage)				
Profit per hectare	2 293	1 733	1 501	3 900
Rand per ton	459	1 133	1 000	3 120
E: Break-even points				
Break-even price (R / ton)	1 191	2 307	2 650	3 630
Break-even Yield ton / ha	3.61	1.17	1.09	0.67

Source: Senwes 2011 costs, based on average 2011 prices – calculated by BFAP 2011

Land & land preparation

One of the issues that were noticed is the lack of proper track record keeping by producers, especially in terms of which land was planted to groundnuts in what year. This is a major “yielding” factor, as cropping groundnuts year in and year out reduces yields significantly and increase pests. Proper rotation cropping is advised by the industry, as well as proper field management, which also contribute to GAP (Good Agricultural Practices) requirements. In terms of land preparation we will also have to compare it to the competing commodities such as Soybeans. Most farmers can apply minimum till practices, but with groundnuts we learned that ploughing, preparing a seedbed and the correct liming is essential.

According to Dr Schalk van Wyk, the application of the correct lime is very important and ALCO LIME is recommended (Not applicable to this study). This is an area where farmers could get more assistance from the industry, and in turn provide greater yields and improved quality.

Link 2:

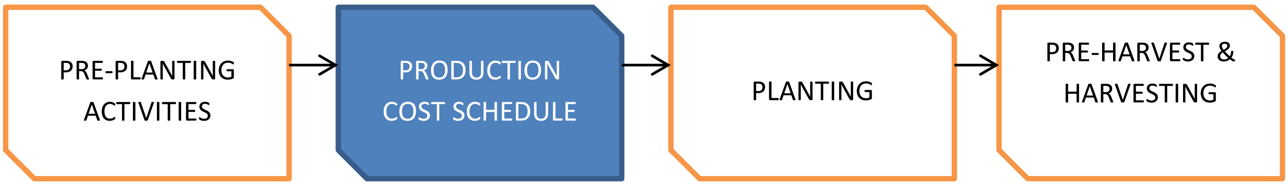


Table 10: Groundnut Production Cost Schedule for Dry Land (Per District)

2009/2010 Actual data – Econ Group					
District	**Bothaville**	**Bultfontein**	**Hoopstad**	**Kroonstad**	**Wesselsbron**
Yield (t/ha)	1.2	1.1	1.54	1.5	1.3
Avg price (R/t)	5 025.00	5 012.00	5 050.00	5 045.00	4 900.00
Brake-even (t/ha)	0.84	0.94	0.9	0.95	0.97
Brake-even (R/ha)	3 529.80	4 293.64	2 949.22	3 181.33	3 648.46
1) Gross income per ha (yield*avg price)	6 030.00	5 513.20	7 777.00	7 567.50	6 370.00
Direct Costs	2 314.00	2 669.00	2 615.00	2 770.00	2 527.00
Contractor's	-	-	-	-	-
Fertilizer	189	175	247	298	125
Temp Labour & remunerations	334	370	384	374	357
Herbicides & Pesticides	-	257	-	121	187
Packaging Materials	169	154	215	222	178
Seed	450	460	600	550	500
Diesel. Oil, Ghries	625	701	653	601	654
Repairs	500	498	457	547	471
Diverse costs	-	-	-	-	-
Lime	47	54	59	57	55
2) Gross income per ha	3 716.00	2 844.20	5 162.00	4 797.50	3 843.00
Overhead Costs	936.76	1 039.00	986.8	1 011.00	894
Electricity	54	51	57.75	54	55
Vehicle costs	164	181	172.7	157	198
Short Insurance	68.41	72	54.6	87	85
Repairs	131	114	123.2	98	167
Tax	7	15	15.75	11	9
Labour	205.67	244	249.7	251	25

Administration	121	112	63	131	117
Technological improvements	12.27	25	27.5	21	37
Depreciation	173.41	225	222.6	201	201
1) Total costs	3 250.76	3 708.00	3 601.80	3 781.00	3 421.00
1) Net Income (R/ha)	2 779.24	1 805.20	4 175.20	3 786.50	2 949.00
Unexpected Costs	985	1 015.00	940	991	1 322.00
Management	75	54	35	25	-
Rent	-	-	-	250	220
Interest to Bank	700	460	401	365	555
Interest Other	210	501	504	351	547
2) Total production Costs	4 235.76	4 723.00	4 541.80	4 772.00	4 743.00
2) Net INCOME R/ha	1 794.24	790.2	3 235.20	2 795.50	1 627.00

Source: Senwes 2011

Table 11: Production Cost Schedule Irrigation

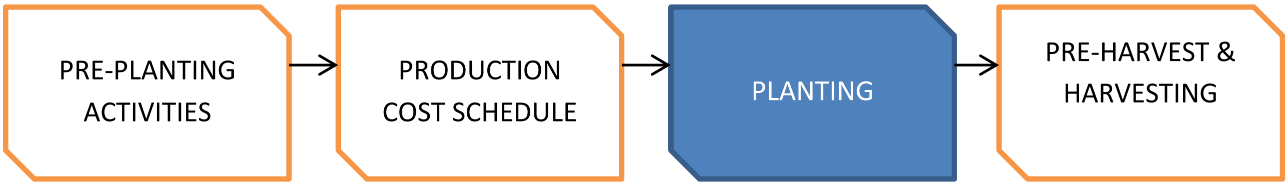
		June -	June -	*June2012
Product Price (average between all grades)		(5500/ton)	(6000/ton)	(8500/ton)
Value per Hectare: 3t/ha * Price/ton		16500	18000	25500
Income from Hay on field: 4t * R600/t		2400	2400	2400
Inputs	Product	Price/ha	Price/ha	**Price/ha
Diesel	Diesel	504	733	806
Fertilizer	N	1170	1680	1848
	P	686	802	882
	K	388	452	497
	Gips	810	410	451
Micro - Elements	Natruimmolibdaat	0	185	204
	Zinkpholate	46	42	46
	Tripholate	52	101	111
	Speedfol - B	16	18	20
	Marinure DS	0	103	113
	Comcat	0	120	132
Seed	Seeds	1560	1346	1481
	Inoculation	257	229	252
Herbicides	Hammer	83	104	114
	Metagan Gold	40	75	83
Pest Control	Karate	50	30	33

	Score	194	130	143
	Punch C	126	124	136
	Temik	991	1158	1274
Insurance	GWK	130	306	337
Harvesting Costs	Harvester	2800	2800	3080
Transport	Contractor	0	90	99
Drying Costs	GWK Drying costs	3200	2400	2640
Labour	labour temps	67	67	73
Irrigation	Eskom	877	877	965
	Water board	398	509	560
	Scheduling	65	75	83
Mechanisation	Repairs	219	621	683
Pivot Costs	Repairs	242	325	358
Total Input Costs		14971	15912	17523
Interest	for 3 Months	288	398	420
Total Production Costs		15258	16310	17943
Profit Per Hectare		3642	4090	9957

Source: GWK 2010 & 2011 “Produksie Koste Gids” & BFAP calculations

* The price for the 2012 season is estimated, based on global demand and industry specialists arguing that this could be the floor price. The input costs is adjusted with a 10% increase from June 2011 Production Catalogue GWK.

Link 3:



The following topics should be addressed by the Groundnut industry

- Planting date
- Fertilizer application
- Plant density
- Planting techniques (production methods)
- Cultivar selection for different production areas

The above mentioned topics all form part of a proper “Groundnut production manual”. The key requirement from the processors is that a quality product be delivered. If South Africa continues to produce exceptional quality groundnuts, we will always have a market for our Spanish product. But an attribute to quality is yield. If we cannot compete with yield, we will stay behind in the international export market, all of this forms part of “our economies of scale”.

South Africa’s production costs falls in the same cost structure as the rest of the world, these costs are mostly derived directly from energy costs (e.g. crude oil price). In other words to plant groundnuts in RSA, will either cost the same or it might even be more expensive to produce here than elsewhere in the world. In order to stay in competition relative to the FOB Rotterdam price; South African farmers will have to produce yields in the same league.

It was further mentioned that the Spanish variety couldn’t produce yields as the Runners do. However if we do invest in an updated groundnut production manual, which is supplied to every producing farmer, and implement it we can expect and average increase of at least 0.4-0.5 t/ha (dry land) argues the leading producers. Examples were given where some producers harvest 1.2t/ha, but his opposite neighbour harvests 1.8-2 t/ha, because of the correct cultivation practices and crop management.

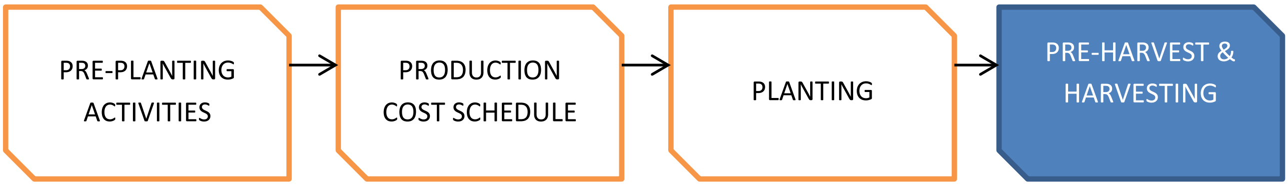
Table 12 shows the increase in profit per hectare from a 0.5t/ha increase in yield. At these yields we have no reason not to produce surpluses and export a premium product, with the producer earning an additional R2300/ha profit. In real terms this means that a farmer planting 100Ha dry land would gain an average profit of R 230 000.

Table 12: Results in income per hectare from a 0.5t/ha increase in Yield (Dry-land)

Dry land production (2010)	Bothaville		Schweizer-Reneke		Heilbron	
Product Price (R/ton) - R 5 500						
Yields (ton/ha)	1.25	1.75	1.25	1.75	1.25	1.75
Gross Product Income (GPI) (R/ha)	6 875	9 625	6 875	9 625	6 875	9 625
A: DIRECT ALLOCATABLE COSTS (R/ha)						
Seed	600	600	600	600	600	600
Fertilizer	498	664	411	529	437	562
Lime	148	173	84	118	135	169
Herbicides	236	236	138	138	138	138
Pesticides	517	517	928	928	1 196	1 196
Seed-inoculation	127	127	127	127	339	339
Fuel	885	895	1 040	1 050	1 009	1 019
Repairs	672	678	751	757	760	767
Oils & ghries	44	45	52	53	50	51
A: TOTAL ALLOCATABLE COSTS (R/ha)	3 727	3 935	4 131	4 299	4 664	4 840
B: OTHER SPECIFIED COSTS (R/ha)						
Labour temps	169	237	338	473	211	296
Contractors	300	300				
Crop marketing costs	69	96	69	96	69	96
Crop Insurance	124	173	406	568	188	264
Production costs Interest	226	241	266	286	274	284
B: TOTAL SPECIFIED COSTS (R/ha)	887	1 047	1 078	1 423	742	939
C: TOTAL COSTS (A + B) (R/ha)	4 614	4 982	5 209	5 722	5 406	5 779
Profit Per Hectare	2 261	4 643	1 666	3 903	1 469	3 846
Gain from increase of 0.5t/Ha		2382		2237		2377

Source: Senwes 2011

Link 4:



Moisture conditions

The basic principle of having damp/wet peanuts underground and extremely dry ones above the soil is a crucial component of pre-harvesting activities. The exact timing after "digging" is very important, and this is where the mechanical method makes the largest market entry. However as mentioned in *link 3*, more attention should be given to the production process. The production manual should contain all aspects of production as well as the differences in cultivating groundnuts.

The average price to dry groundnuts is estimated at R800/t, at average delivering moisture of about 11%. But due to seasonality, this is very difficult to determine. For example the 2011 season, with all the late rains, made it almost impossible to dig the peanuts, let alone deliver them in bags. This is where the moisture content comes largely into play, if the producer goes above 22%, their profits are too low. However, it would still be better to deliver, rather than having to wait for the groundnuts to dry on the field.

Table 13 below shows what losses can be minimized with the application of mechanical harvesting, while the groundnuts are still at an 11-15% moisture rating.

Table 13: Bulk versus Bag – damage percentages with regards to moisture

	Bulk delivery	Bulk delivery	Left on field to dry
Moisture delivered	15-20%	11-15%	8-11%
Average moisture delivered	17.30%	13.20%	9.50%
Moisture graded	6.50%	7.60%	7.70%
Damages (a)	6.10%	5.50%	6.30%
Splits (b)	5.40%	5.60%	5.80%
Total Damages (a) + (b)	11.50%	12.10%	13.10%

Source: Industry Survey, Compiled by BFAP 2011

Drying costs & moisture levels

The costs of drying are mostly applicable to those producers who make use of bulk handling (mechanical harvesting). They harvest while the crop is estimated at 16% moisture, and consequently have the least amount of losses and damages. The graph below shows the cost of drying (per ton) as the moisture content increase.

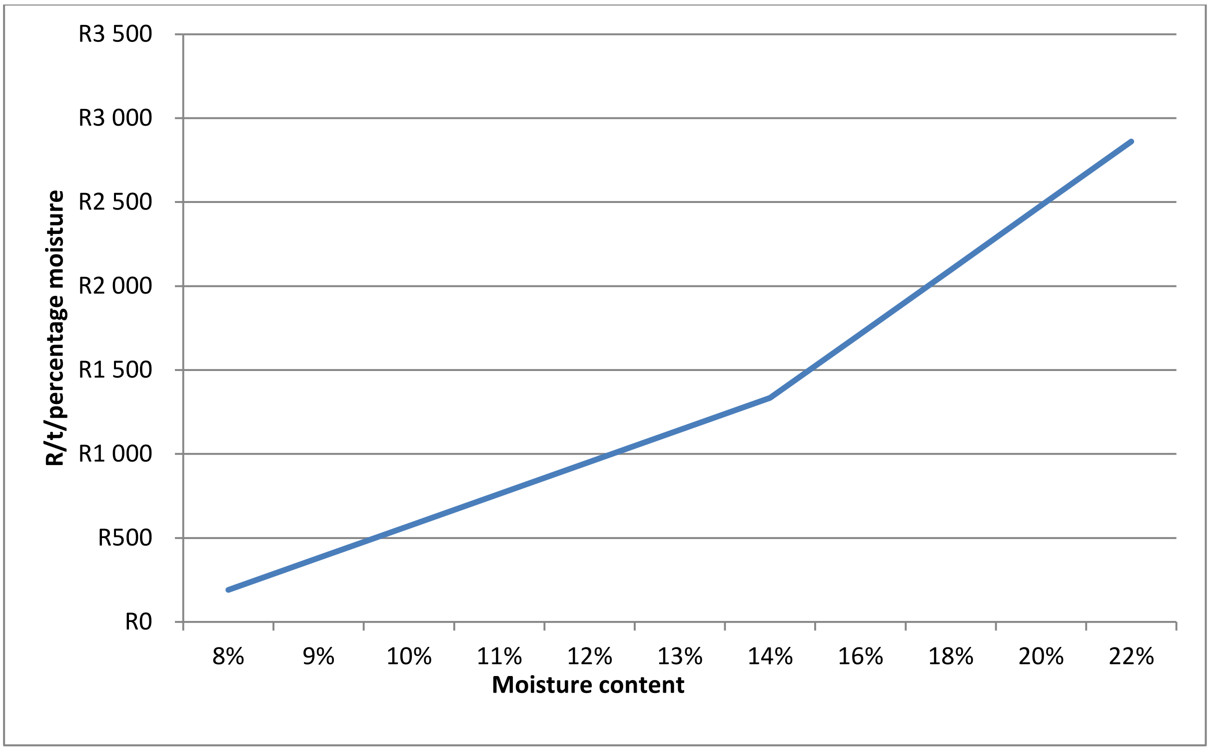


Figure 22: Drying cost versus moisture

Source: Industry Survey, BFAP 2011

Harvesting techniques

Harvesting remains one of the largest contributors to the decrease in plantings, as most farmers cannot tolerate the intensive labour force required for harvesting. This was also predominantly the reason for a large shift in crop selection to commodities such as soybeans and maize. With the upgrading of processing - or delivery infrastructure, the labour-intensity of the groundnut industry is bound to change.

The shift from handling raw peanuts in bags (hand-picking - right to bulk handling (mechanical harvesting - left), resulting in deliveries done in bulk by 30-ton trucks, has led to a revolution in the industry.

Some farmers are of the opinion that this "revolution" will not work in South Africa. However, many others have utilized these practices for the past five to ten years with great success. We will compile a short comparative paragraph on the two methods. This is also an area of concern regarding economies of scale, considering how many producers in South Africa can afford the expensive machinery used in the harvesting process.

Table 14: Mechanical vs. hand-picking costs (Irrigation)

MECHANICAL HARVESTING	R/ha	HAND-PICKING (HEAPS)	R/ha
Contract Harvesting	630	Contract Harvesting	1 450
Contract Harvesting	1 550	Package materials	368
Package materials	368	Labour	430
Labour	430	Contract tillage	1 000
Total Cost	2978		3248

Source: Senwes 2011

Table 15: Grading for Bulk versus. Bag (Price realized from a ton of raw un-shelled groundnuts)

Grading	R / ton	% Composition		Ton / ha		Realisation R/ha	
		Bag	Mech.	Bag	Mech.	Bag Drying	Mech.
Choice	6000	53.89%	58.58%	1.886	2.343	11 316.90	14 059.20
Choice	5250	10.11%	10.42%	0.354	0.417	1 857.71	2 188.20
Sundries	3500	26.00%	22.41%	0.910	0.897	3 185.00	3 138.07
Crush	2000	8.00%	6.87%	0.280	0.275	560.00	549.60
Oil Crush	1000	2.00%	2.00%	0.070	0.080	70.00	80.00
		100%	100%	3.500	4.011	16 989.61	20 015.07

Source: Industry Survey (2010 Prices)

Table 16: Price realization for the two practices

Bulk drying vs. field drying(Bags)	BAG DRYING	MECH HARVESTED
Price realised from field – Table 4	16 989.61	20 015.07
Bags	289	0
Drying costs (R800/t * 4t/ha)	0	3209
Interest (30 days @ 10%)	140	0
Labour on field	88	0
Price realisation/ha	16473	16806

Source: Industry Survey, BFAP 2011

From the tables above it is clear that bulk delivery is a cost benefit and gains a price realization of R333/ha higher than the old conventional method. Not only does it save costs, but it also spreads the risks, since the producer can dig the groundnuts in literally a day and harvest them as soon as they reach 18% moisture. Whereas the manual practice of bagging would first require the farmer to make little heaps and further load these peanuts into bags to be delivered.

The effective bulk harvesting causes higher moisture percentages to be realized at delivery, and as evident from Table 13 a higher moisture percentage at delivery results in less damage/splits for the producers, which at the end contributes to increased *Choice grade* selections.

There are some advantages to the bag method, such as increased employment requirements from the communities, but this is largely not applicable to the large commercial farmers as they are trying to be more productive and cost effective.

Considering the Senwes production catalogue of 2011/2012 summer crops, we find the comparativeness of the two methods of harvesting. With mechanically harvesting the farmer will not only save R270/ha, but also plenty of time and the risk with weather changes. The data gathered from the producers interviewed, supports the production costs catalogue as they too mentioned that the mechanical harvesting is a more cost effective alternative.

Some of the challenges regarding mechanical harvesting would be that our current "Mechanical Capacity" for the country is not sufficient for total mechanization of the industry. This is because currently only 5-7 processors are geared with the necessary drying facilities to receive mechanically harvested groundnuts.

Secondly, mechanical diggers and harvesters will also be insufficient if our local production is to increase to 120 000 ha. However, if farmers can guarantee constant production, we are of the opinion that most of the processors will invest in the necessary machinery and facilities to be completely mechanized.

A typical cost for mechanization is close to R2 Million for the most technologically advanced digger & harvester combination. This combination can easily harvest 250 ha – 300 ha irrigation groundnuts per season, and still do it in time to help out with a neighbour. The other alternative is a more cost efficient machine such as Colombo, the digger-and-harvester combination is priced at R 680 000. To carry these costs alone can become an immense burden and therefore joint ventures in mechanization are a strategy that the farmers will have to follow if they were to invest in the necessary equipment needed.

Post-harvest period risk

The final part of the harvesting link is the post-harvest risk. These risks are very common in the industry, with the key concern being Aflatoxin. Aflatoxin accumulates mainly as a result of high moisture levels during the post-harvest period. A production manual therefore should require producers to apply prescribed techniques to reduce the effect of this fungus growing.

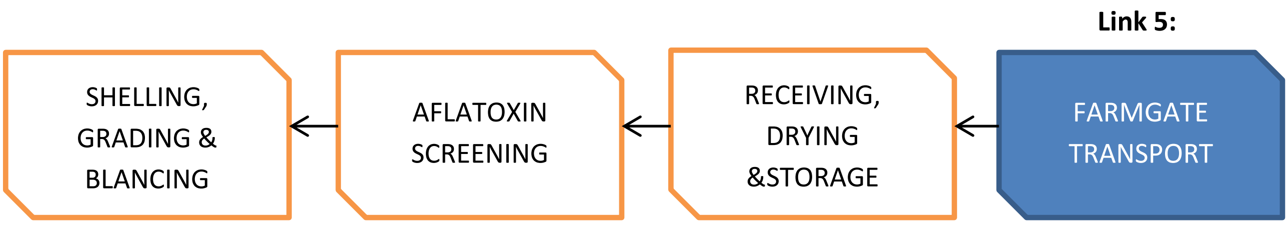
A larger profit could then possibly be gained in the entire chain, since no blanching costs are incurred, neither extra sampling costs from PPECB. This should also be implemented by GAP (Good Agricultural practices) and HACCP. If South Africa's producers are willing to be more co-operative with regards to the policy requirements, more incentives can be given to them. For the industry to have a healthy export (niche) market, it will have to start at production level.

Most of the producers in countries such as Argentina and the US receive great incentives for low levels of Aflatoxin. The grading in these countries is also primarily done with special reference to Aflatoxin levels.

Aflatoxin contamination

Source: ICRISAT, 2011

4.2 Chain 2: Post Farm-gate to Processor



Transport component

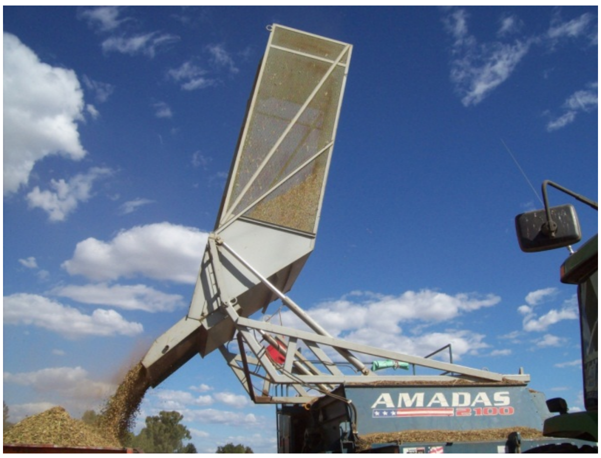
The industry's logistic issues are minimized to a large extent through commercial transport contractors. The primary part of transport is loading of either the bags or loading bulk by a groundnut harvester such as an Amadas. The average travelling distances to the processors differ, but it is mostly not further than 60km.

Transports related equipment

Underneath, a photo (left) shows how the harvester dumps the peanuts into a large truck, trailer or extra buffer storage tanks (picture on the right), which is supplied by the contactors.

The pictures are shown to illustrate the level of mechanization that can be put in groundnut production, but the question still remains whether the cost incurred is worthwhile.

The bulk handling processors were asked whether the capacity exists for the entire crop to be in "bulk handle" and the response was negative in terms of current practices. They indicated, however, that the industry would need to implement these practices in order to keep up with efficiency. We agree with this notion, especially from the producers' side where time and cost is decreased.



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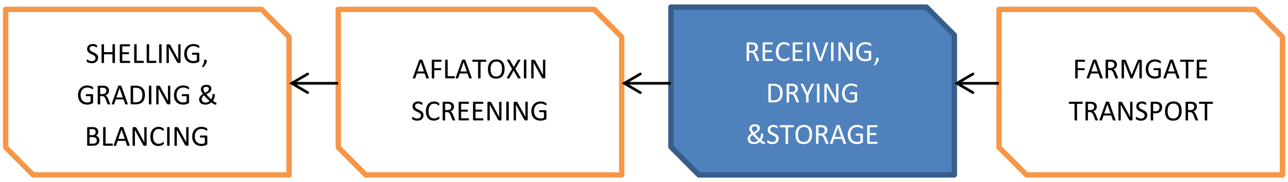


Delivering (dumping) methods & pricing

Depending on the processor, raw un-shelled peanuts will be delivered either by truck or tractor with trailer. From the truck a sample is taken, the moisture percentage determined, and a calculation is made to see how much "moisture" needs to be deducted. The sample groundnuts are shelled, so that the grading can be done (Choice, Sundries, and Crush). The producer then receives an invoice stating the moisture, grade and volume.

The grading and sorting of groundnuts is another area where more in-depth trials are necessary in order to implement standardized procedures. With bulk (mechanically harvested) delivery, out of a ton 59% are Choice grade, about 27% Sundries and the rest is Crush. While with bagged deliveries only 54% is Choice grade (Table 17).

There is also a massive dispute over the price formulation of the Sundries grade. A fixed price model will have to be built in order to protect the producers and in the end to stay on a competitive FOB export parity regarding Sundries price.

Table 17: Grading composition for mechanical delivery vs. bag drying

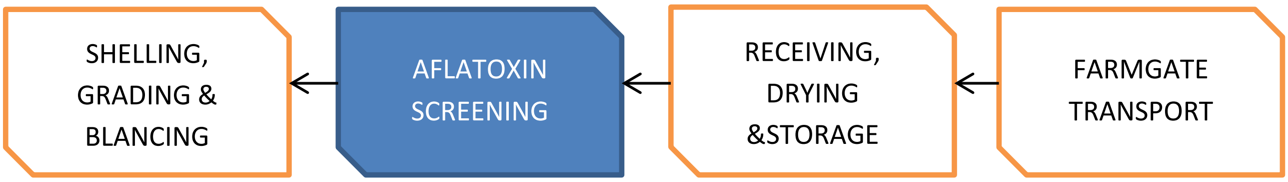
Grading	R / ton	% Composition	
		Bag Drying	Mech Harvest
Choice 60/70	6000	53.89%	58.58%
Choice 70/80	5250	10.11%	10.42%
Sundries	3500	26.00%	22.41%
Crush	2000	8.00%	6.87%
Oil crush	1000	2.00%	2.00%
		100%	100%

Source: GWK 2010 Data, compiled by BFAP 2011

Storage process

It should be noted that with processor handling, it is required by legislation and policy to keep each producer's peanuts separate. The delivered product now has to stay separated at all times in order to follow up on the EU regulations of traceability, and the control of Aflatoxin levels. However, to implement the above-mentioned legislation in practice seems to be impossible.

Link 7:



Aflatoxin situation in RSA

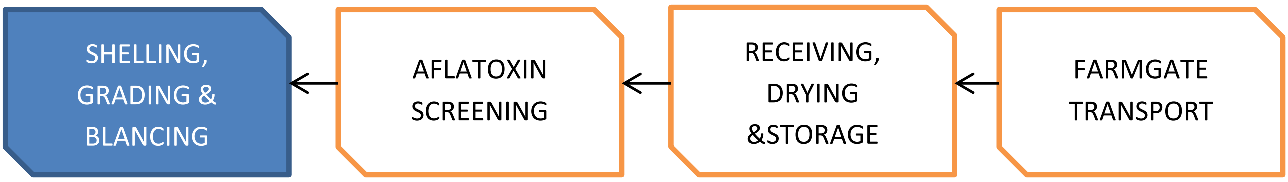
Most people are aware of the high levels of Aflatoxin that was found in peanut butter during 2001 during a school's feeding scheme in the Eastern Cape. What people are unaware of are the amounts of contaminated peanuts & peanut butter that can enter the country.

All of the processing infrastructure must comply with HACCP standards, according to legislation by The Department of Health (August 2011), which also includes very high precautionary measures to prevent Aflatoxin from spreading. Before any product can be sold, a sample has to be taken by the PPECB inspectors (and others), which are then processed in a laboratory. The fact that incidents, such as the incident in the Eastern Cape, do take place means that there are unsafe and unreliable processing practices taking place. These products are sent into the market in a way that no one can trace. A proper database needs to be drawn up to try and determine how many tons of groundnuts are distributed from our neighbouring countries into South Africa. SARS does provide us with an indication, but not which are tested for Aflatoxin or where it is delivered. According to one of the auditors that conduct the Aflatoxin testing, more and more of the world's "scraps" are brought into South Africa. The capacity to test each of these imports in depth is not available due to the great amounts of harbour imports.

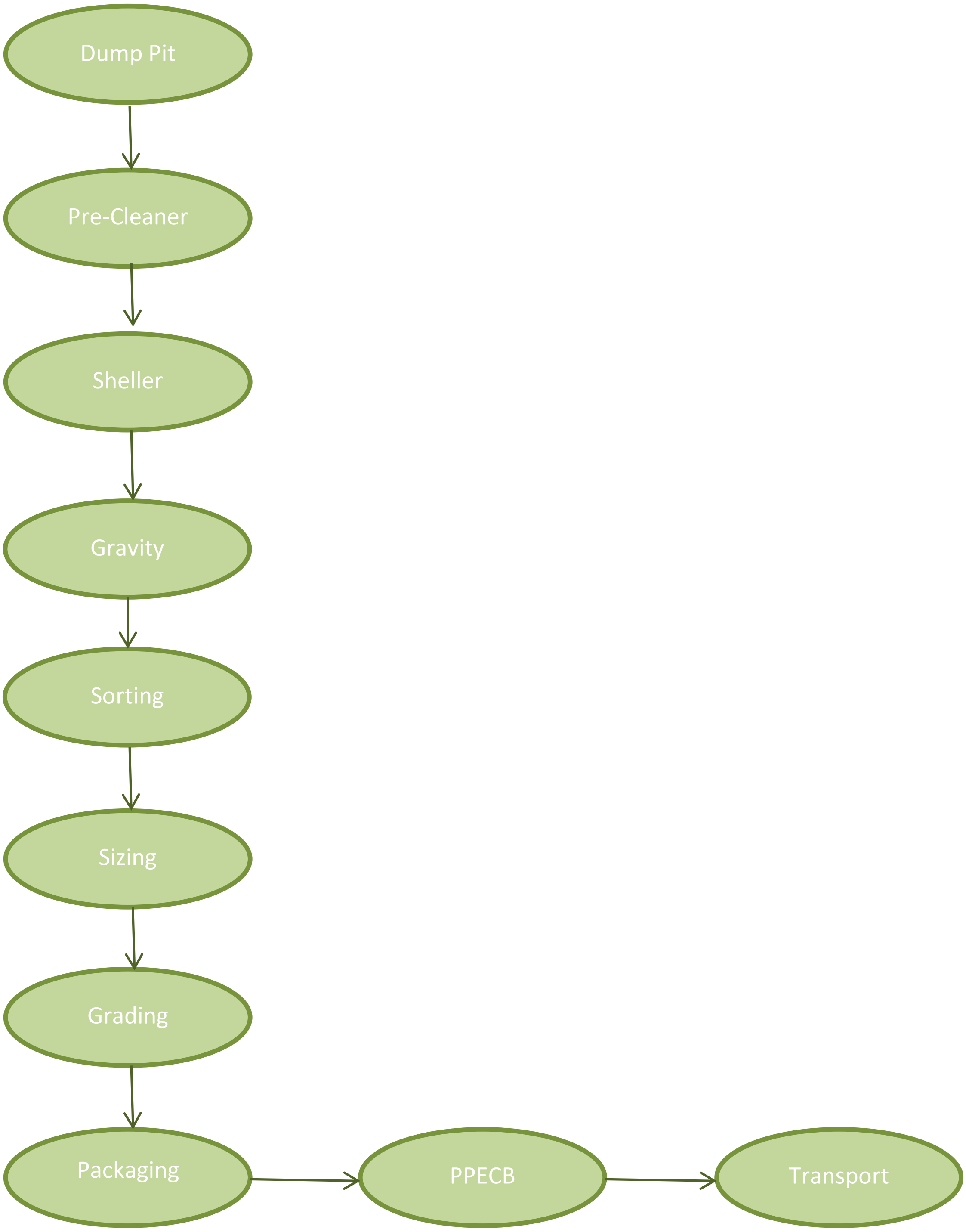
Aflatoxin management

There is an Aflatoxin prevention and management manual, but this should also be made available to all the producers. If producers should receive greater incentives for delivering an Aflatoxin free product, more will be done from their side to deliver a quality product that has a lower Aflatoxin level.

Link 8:



Infrastructure of the shelling process



Grading process and category price relations

As mentioned earlier, a more in depth study will have to be done regarding the grading process, as to how much of the ton delivered by the producer is regarded as Choice, Sundries and Crush, as well as on the price allocation of Sundries (70/80) grade in the South African market. With the current global shortage, processors are realizing massive gains in this grade, but the question remains, how much of this high price is realized back to farm-gate level.

Blanching costs and losses

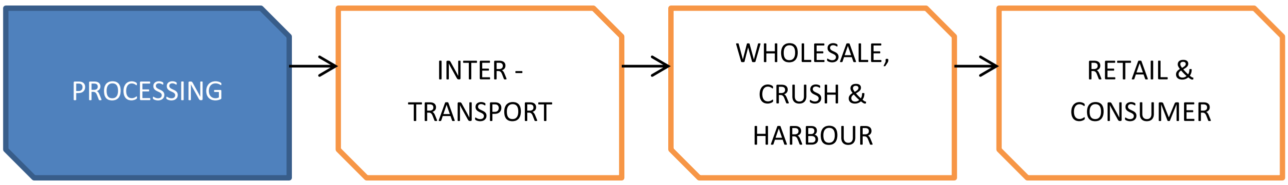
Table 18: Total costs to blanch and profits on re-sale

Description	R / TON (JUNE)
Raw material cost	5000
Transport cost	200
Total cost	5200
Losses:	
Redskins	201
Germ	5.2
Foreign material	0
Colour sorter loss	490.88
Moisture loss	196.56
Crushing material	216.84
Picking belt rejects	26
Total loses	1137
Raw material costs	**6337.24**
Cleaning cost	450
Blanching cost	1150
Packaging cost	100
PPECB cost - A/T	40
Cost	7927
Reject recovery	-45.46
Total Cost	**7881.78**
Margin	118.22
Selling price	8000

Source: Industry survey, August 2011

4.3 Chain 3: Processor to end-consumer

Link 9:



Processing plants

Table 19: Current processors and seed suppliers

Processing plant	**Province**	**Capacity in tons**
GWK	Northern Cape(Douglas)	10 000 – 12 000
OLAM	Northern Cape (Jan	10 000 – 15 000
VGM	Northern Cape (Hartswater)	3000 – 4000
Lemacor	Northern Cape (Hartswater)	1500 – 2000
Elkana	Northern Cape (Hartswater)	1000 - 1500
P-Farms	Northern Cape (Hartswater)	10 000 – 12 000
Skema Produkte	Northern Cape (Magogong)	3500 – 4500
TOTAL MAX CAPACITY:	**Northern Cape**	**51 000**
New Nut Company	North West (Setlagole)	4000 - 7000
Roba Neute	North West	3500 - 4500
Dirlyn Boerdery	North West (Bloemhof)	800 - 1300
Countrywide Nuts	North West (Schweizer-	5000 – 8000
TOTAL MAX CAPACITY:	**North West**	**20 800**
SAGM	Free State (Hoopstad)	8000 – 11 000
S&C Graan (Qualita Saad)	Free State (Hoopstad)	2500 – 3500
Zesto Grondbone	Free State (Hoopstad)	8000 – 12 000
Side Step Bdy	Free State (Bothaville)	800 - 1500
Grahams Luck	Free State (Wesselsbron)	1000 – 1500
Rhys Evans	Free State (Viljoenskroon)	8000 – 10 000
TOTAL MAX CAPACITY:	**Free State**	**39 500**
Snack Factory	Gauteng (Bronkhorstspruit)	4000 - 6000
Kaya Grain	Limpopo (Naboomspruit)	1000 - 2000
Peu Leweransiers	Limpopo (Potgietersrus)	1000 - 1500
TOTAL MAX CAPACITY:	**GP & LP**	**9 500**
**Informal Processing on Farms	ALL PROVINCES	3000 - 5000
TOTAL PROCESSING CAPACITY:		**120 800**

Table 20: Processing plants which closed down

Processing Plant	Situated in:	Capacity (Tons)
1)Groundnut International(Suid-Wes)	Makwassie	
	Bloemhof	
	Schweizer_Reneke	
TOTAL CAPACITY		**40 000**
2)NWK Bpk	Madibogo	
	Mareetsane	
	Delareyville	
	Burhmansdrift	
	Lichtenburg	
	Mafikeng	
	Kameel	
TOTAL CAPACITY		**25 000**
3) NTK	Nylstroom	7000
4) OTK	Marble Hall	3000
5) Senwes	Jan Kempdorp	
	Magogong	
	Viljoenskroon	
TOTAL CAPACITY		**15 000**
SUM TOTAL		**83 000**

Source: Industry Survey, BFAP August 2011

Most of the capacity lost was due to decreased plantings in the regions, but most of the equipment was purchased back into the industry. A final amount of the South African capacity could not be concluded. Table 8 gives us an indication, but there will also be a few farmers processing their own product and selling it to the informal market.

The processors mentioned above are the ones who will bag the "clean product". The form in which they sell it, is either pre-packet in 25-50kg hessian bags for the export market or in bulk bags for the local market. Another PPECB test is done prior to the loading.

Table 21: Processing cost breakdown for Choice grade:

Local supply of raw peanuts (June-July Prices)			R/ton
local price paid to farmers	R/ton	survey	6500
Transport cost: processing plant	R/ton	survey	250
Handling cost:	R/ton	survey	85
Pollyprop bags/hessian bags(R60/R200-avg R100)	R/ton	survey	200
Storage costs: costs of processor	R/ton	calculated	50
Interests paid on investment	R/ton	survey	115
Price traders/wholesalers pay for shelled groundnuts (Choice)	R/ton	calculated	10000
Fixed costs	R/ton	survey	827.5
Variable costs	R/ton	survey	1672.5
Total costs of Processing	R/ton	calculated	**2500**
Choice 40/50 - 60/70	R/ton	industry	10000
Cost of groundnuts	R/ton	calculated	6500
Total costs of processing	R/ton	calculated	2500
PROCESSORS REALISATION BAGED/READY TO SELL	R/ton	calculated	1000

Source: Industry Survey, August 2011

In the end, the processor sells the 3 grades (in the simplest form) of groundnuts to either the traders or the local buyers. The products sold are:

- **Choice: 40/50 – 70/80**, which according to GWK 2011 makes up about 66% from a ton delivered. These products are usually sold for the raw/cooked peanut market, but mostly exported. The processors either sell it to the traders to be exported, or they export it themselves. If the product is not exported, it will be sold either to Simba, Safari or Snack Factory (Wholesaler Packagers), they are the ones selling the pre-packed products to the retailers.

- **Sundries: Splits & 80/100**, which make up 18% from a ton delivered. They are sold mostly to the peanut butter manufacturers, or the African markets. Due to the peanut being a bit smaller, the African consumers argue that it has a better taste. These products sold in the informal market could possibly have high Aflatoxin levels, but they are not necessarily tested for it.
- **Crush**: This would be all the rejects or the products that have too high AT levels to be sold or blanched (approximately 16% from a ton delivered).

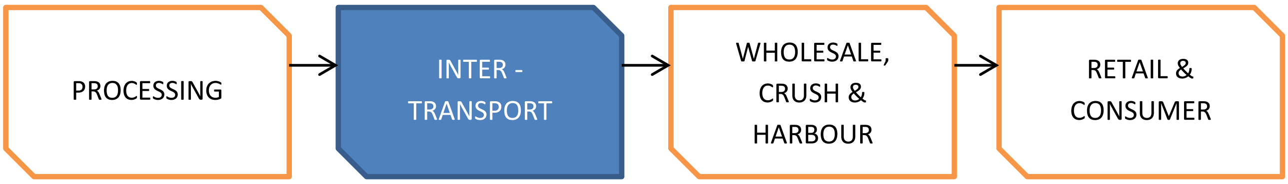
Economies of scale for the processor

Looking at Table 21, we notice a profit realization of about R1000/ton for the processors if R6500/ton is paid to the farmer, but it should be made known that these prices will either increase or decrease as the season progresses. It is important to consider, however, that an average price for the year can only be established at the end of the season.

The “manufacturer’s realization” will increase drastically, if these processors were to function at full capacity. At the moment most of them are functioning at a third of their capacity.

The fact that processors are functioning at such low capacities leads to a greater cost for the producer due to an uneven supply in the market. If the processors could know that the farmers would plant the full (average 150 000ha) and have the surety that delivery in the future will be at full capacity, then a decrease in handling costs would be allocated. But currently the first priority of the processors is to cover their overheads, which comprises why they follow the strategy to “spread risk”. This implies charging the producer an average rate, quite high at current, so that in the years in which supply is low, their processing plant can still realize a profit.

Link 10:



Processed groundnut transport
There are two methods of doing the transport:

1) Simply loading the hessian bags onto the truck, and sending it off to its destination (similar for exports, except that the cost increases).

2) Sending a freight container to the processing plant, loading, and sending it directly to the harbour to get loaded; resulting in less damage to be incurred to the product. The cost allocation will also be shown in the excel model.

Quality for exporting groundnuts (Logistics)
One of the main objectives would be to prevent groundnuts from splitting. That is why the second method mentioned above may just be the answer to the split damages abroad. The other topic is the PPECB tests that should be done prior to loading. Some of the exporting countries are so experienced in the export market, that when their cargo leaves the harbour, all their responsibilities come to an end.

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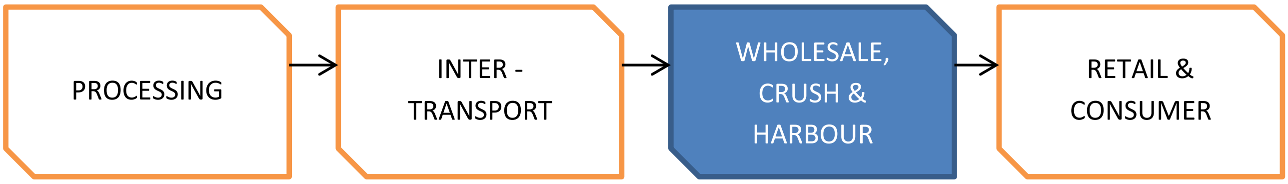
Link 11:



Peanut butter types on retail shelve

3.1 Black Cat

This is a Tiger Brands Product, and about 12 000tons is produced annually. The key characteristic is the fact that Black Cat is "pure" peanut butter with no other oils or flavour enhancers.

3.2 Yum-Yum

This is a Nola (Food-Corporation) product that is processed in Randfontein. This is a much smoother peanut butter, but does contain extra vegetable oils and sugars. They also fall in the 12 000 ton range.

3.3 Thokoman

They are a small part of the market and not as aggressive competitor as the other two. They have an approximate 3000 ton market cap.

3.4 "No name brands"

The No Name brands are mostly supplied by the same processors as Black Cat or Yum-Yum for example PnP, Spar, Woolworths and Checkers have their product made by either Nola or Tiger Brands. But it is a different product in terms of taste and texture. There is also a new entrant into the Checkers chain named "Pot-O-Gold".

3.5 Skippy

The Skippy brand used to be locally produced in Hartswater region by Unilever, but decided to close down a few years ago. The brand is currently being imported and sold for almost R15 000/ton more than any of the other brands.

3.6 Processing plants peanut butter

Most of the processing plants that supply raw shelled peanuts to the peanut butter producers make their own peanut butters, which is sold either as their own brand in smaller retail outlets or it is sold in bulk to the informal market.

Groundnut oilcake market (Crush)

One of the most effective ways to reduce Aflatoxin levels is by extracting the oil. But this does not resolve the key issue. If the product is past a certain level of Aflatoxin it will be found in the oil, but in very small amounts. The oilcake can be used in the animal feed sector, but not to chickens or dairy cows. More research should be done with regards to the oil market as China crushes most of their crop. It might be that all the produce which has the high AT readings are processed for this sector, since their traditional cooking practices involves peanut oil, which is appropriate due to its high boiling point.

Most of South Africa's oil crushing capacity for peanut oil is depleted. The largest processor used to be Cape Oils (A Tiger Brands operating company), but it was sold off. Some of the only crushers left are in Viljoenskroon. The availability of peanuts for crushing does limit the opportunities in a very lucrative market. Processors conduct an annual "Aflatoxin crush"; a process in which they crush all the produce that had the risky AT levels. There are a few (1 or 2) smaller crushers processing about 1000tons a year. According to some of the industry specialist, we found that there will always be a demand for SA crude peanut oil in China at very good prices.

**This is a distinctive market that the industry should pay attention to in order to further our competitiveness in the industry. But it is advised that the "raw-peanut" processors should not over-saturate this market, as it is already at capacity in terms of availability of produce to crush. Peanut oil is sold at R 23/250ml(August 2011 price).

Wholesale pricing

Table 22: Processing of peanut butter & wholesale – retail margins

	Unit	Source	Rand/ton
Total wholesale processor chain 1- fixed costs:	R/ton	estimated	5750
Electricity, wages, mech etc. (11%)	R/ton	estimated	2750
Crushing and mixing (5%)	R/ton	estimated	1250
Packaging (7%)	R/ton	estimated	1750
Total wholesale processor chain 2 costs:	R/ton	estimated	14000
Sundry peanuts bought from 1st processor(blanched)	R/ton	estimated	8000
Cost of chain rebate (14%)	R/ton	estimated	3500
Old stock not sold (3% loss)	R/ton	estimated	750
Cost of transport & intermediates (7%)	R/ton	estimated	1750
Total costs	R/ton	estimated	19750
Selling from wholesale to retail excl- VAT (80% of retail price)	R/ton	confidentially surveyed	25000
Average retailer selling price(e.g. PnP, SPAR, Checkers)	R/ton	confidentially surveyed	31250
TOTAL COSTS OF PEANUT BUTTER (incl.packaging)	R/ton	estimated	19750
WHOLESALERS AND RETAILERS			
PEANUT BUTTER LIST PRICE	R/ton	confidentially surveyed	25000
Profit of wholesale processor (21% of process price)	R/ton	estimated	5250
Costs of retailer	R/ton	confidentially surveyed	4875
Mark-up/Profit of retailer (5.5% of Wholesale price, depending on retailer location and market)	R/ton	confidentially surveyed	1375
PEANUT BUTTER RETAIL PRICE	R/ton	confidentially surveyed	31250

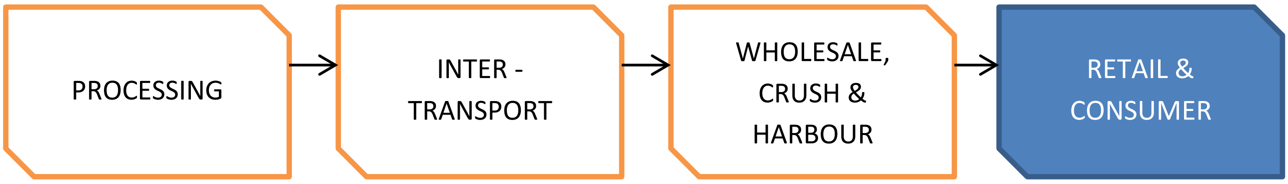
Source: BFAP calculations 2011

Table 23: Processing of raw-peanuts into packets & wholesale – retail

GROUNDNUTS FOR EDIBLE MARKET based on JUNE/JULY PRICES		Source	Rand/ton
Total Wholesale Processor chain 1- fixed costs:	R/ton	Calculated	9200
Blanching (4%)	R/ton	Survey	1200
Percentage lost 10% from Blancher (100kg)(4%)	R/ton	Survey	800
Electricity, wages, machinery etc. (15%)	R/ton	Survey	5000
Roasting (4%)	R/ton	Survey	1200
Packaging (3%)	R/ton	Survey	1000
Total Wholesale processor chain 2 costs:	R/ton	Calculated	21092.7
Raw peanuts bought from 1st processor (unblanched) (47%)	R/ton	Industry	8000
Cost of chain rebate (14%)	R/ton	Survey	4470.6
Cost for doing business with retailer adhoc (10%)	R/ton	Survey	3193.3
Delivery to shelf (7%)	R/ton	Survey	2235.3
Old stock not sold (3% loss)	R/ton	Survey	958
Cost of transport & intermediates (7%)	R/ton	Survey	2235.3
Total costs	R/ton	Survey	30292.7
Selling from wholesale to retail excluding- VAT (65% of retail price)	R/ton	Survey	31933.3
Average Retailer selling price	R/ton	Survey	48888.9
PACKAGING ACTIVITY			
Fixed costs	R/ton	Calculated	10864
Variable costs	R/ton	Calculated	13958
Total costs of packaging	R/ton	Calculated	1000
Distribution costs	R/ton	Calculated	4470.6
TOTAL COSTS OF GROUNDNUT (including packaging)	R/ton	Calculated	30292.6
MANUFACTURERS REALISATION (REFINEMENT & PACKAGING)	R/ton	Calculated	31933.3
WHOLESALERS AND RETAILERS			
GROUNDNUT LIST PRICE	R/ton	Calculated	31933.3
Profit of Wholesaler (5% of process price)	R/ton	Calculated	1640.6
Realization of retailer (37% of Wholesale price) – Do not know retailer overheads.	R/ ton	Calculated	16955.5
GROUNDNUT RETAIL PRICE	R/ton	Survey	48888.8

Source: Industry Survey, August 2011

Link12:



Retail cost structure

The entire cost structure is explained in Link 11.3, for both the wholesalers, but finally to the retailer section as well.

Imported processed products

There are very little final products being imported, but with the introduction of Wal-Mart we can expect all of this to change. As mentioned earlier, the South African retailers are also considering the "cheaper alternative". Imports on peanut butter have been on local shelves for a while now, but the tendency is increasing, as more pressure is being put on retailers to compete with Wal-Mart. There is a consumer preference with regard to the raw/cooked peanuts in South Africa, as our consumers are accustomed to our local Spanish type. The imports for raw peanuts are mostly the Runner type, which is not nearly as sweet and tasteful as the Spanish.

5. Conclusion and possible turnaround strategies

The initial objectives of this study were to provide an overview of the production and market conditions, to unpack the groundnut value chain, and to identify possible areas where the competitiveness of the industry can be improved over the long run. There are many methods to calculate the relative competitiveness of an industry. This study followed a pragmatic approach by unpacking the basic interactions in the value chain not only from an empirical perspective, but also from an institutional perspective where the general sentiments and interaction of role-players in the industry are taken into consideration. Through this approach, the real issues on the ground were captured and used to identify the critical drivers that have to be taken into consideration for the development of a turnaround strategy of the industry. The focus of the turnaround strategy is to improve the competitiveness of the groundnut industry. Interestingly, during the 1980s the Argentinean groundnut industry also found itself at a crossroads and together with the World Bank, the industry designed and implemented a turnaround strategy with meaningful success. In the Appendix, some of the main drivers addressed by the Argentinean strategic plan are summarized.

The key indicators for the development of a turnaround strategy for the South African groundnut industry can be summarized as follows:

The industry as a functioning body:
First and foremost, coordination, transparency and collaboration are essential to secure the sustainability of the industry. Transparent information is a basic economic principle that no organization or institution should function without, but due to a lack of transparency, the competitiveness of the industry is compromised. A significant amount of distrust amongst individuals throughout the entire value chain dampens the initiative for the industry to expand and regain economies of scale to ensure consistent supplies of high quality groundnuts in local and export markets. Judging by the opinions of wholesalers, it seems as if they prefer not to import, but due to uncertain supply, distrust and defaulting contracts, they are considering alternative sources of supply. The retail level is even more complicated, with the uncertain impacts of the giant chain store, Wal-Mart, on their doorstep. One has to realise that they too will consider the "cheaper" alternatives of the competing global import prices.

Without the backing and co-operation of the large role players, it is unlikely that the industry will embark on a turnaround strategy by itself that will be to the benefit of the industry at large. The Forum can act as the co-ordinating body, yet at the moment there is a lack of incentive for some of the key role-players to support this initiative. Judging from the discussions with industry role-players, the two most common reasons for members not participating in the Forum are that they are concerned that the activities of the Forum could potentially be in violation of the Competition Act and secondly, the potential conflict of interests, which is natural in a relative small industry with a few large role-players. However, if common goals and strategies can be identified to boost the competitiveness and capacity of the industry at large, the individual conflicts of interests can be marginalised. The uncertainties surrounding the possible investigation into the activities of the Forum by the Competition Commission has a major impact on the effective functioning of the Forum. A clear mandate and strategy for the Forum has to be designed under which all role-players in the industry can comfortably participate to support the common goals of the industry.

A transparent price discovery mechanism:
Much uncertainty surrounds the determination of prices, especially with pre-seasonal contracts that drive the farmers' decision to plant. Two strategies are recommended to establish a transparent price determination mechanism. First, the calculation of export parity prices has to be refined to provide an accurate estimate of prices for South African groundnuts on world markets. Currently, the parity prices that are reported by SAGIS and Grain SA, make use of the Argentinean and US groundnut prices as reference points. Although this provides some benchmark, these reference prices are not a true reflection of the actual parity prices that are obtained in South African export markets. The main export destinations for South African groundnuts are currently Germany, the Netherlands and Japan. Having said this, for the duration of this study, the specific prices that were obtained in these markets were not obtainable.

Second, the possibility of providing producers with a potential price hedging tool needs to be explored. Companies like SABMiller have successfully offered barley farmers the ability of hedging barley prices on SAFEX wheat contracts. Soybean and groundnut prices are co-integrated, which implies there is a long-run relationship and the possibility of using the soybean futures market as a price-risk hedging tool can be explored.

Producer scepticism and production practices:

There is a certain negative “vibe” amongst farmers. The perception is that potential profits do not weigh up against the price and quality risks faced by farmers. Furthermore, the production of groundnuts is labour intensive and amongst some of the producers that were surveyed, the negative impact of stringent labour legislation was mentioned. Alternative crops, like soybeans offer similar rotational cropping benefits to groundnuts, and a rapid improvement in cultivars boosts the profitability of soybean production. Furthermore, the price risk of producing soybeans can be hedged on the SAFEX futures market. The stigma still remains that groundnuts are one of the most difficult crops to cultivate. Yet, a number of the large producers argue that with new production practices, there should be no reason for producers not to plant. Publishing a new updated production manual is advisable. It should give clear step by step guidelines in cultivating top quality groundnuts. Some of the issues involve the correct harvesting date, as this could lead to gains of up to 0.2t/ha if done correctly as well as a better grading for the groundnuts delivered and less risks for Aflatoxin formation.

The general notion of producers who were surveyed suggests that significant improvements in cultivar development and a transparent price discovery mechanism are essential to improve the perception of producers. More detail with respect to cultivar development is provided in the section below.

Cultivar, yields and breeding programs:

It seems as if South Africa is gradually being left behind by a number of major exporting countries in terms of cultivar development and it is debatable whether the remaining large groundnut producing firms will have the capacity to embark on successful breeding programmes and to compete on international export markets and most likely in future against imported groundnuts. The future of the industry will to large extent be determined by the success of adapted new or improved cultivars, irrespective of the Spanish or Runner type or of the country of origin. A number of concerns have been raised regarding the breeding programmes of the ARC, but this project does not deal with the ARC program in detail. Private breeding programmes are a fair alternative, yet the costs are high and the rate of success uncertain. If the industry can manage to breed a high-yielding cultivar with the required quality specifications, South Africa could follow the same growth path as the US when the Florunner cultivar was introduced.

We are of the opinion that the industry should focus on well-developed high yielding imported cultivars that are cultivated at the same altitude and latitude as the South African production areas. Institutes such as IMBRAPA and INTA can be used as a reliable source, due to the PRF's existing relations with these firms.

HACCP compliances:

If international traders confirmed our competitive advantage in terms of product type (Spanish), and South Africa is regarded as a net exporter of groundnuts, why are there still disputes over the HACCP compliances? It is a known fact that it remains a large capital investment to ensure compliance, but the authors are convinced that the incentive for complying is greater than to reject the process. It is said that some countries do not require HACCP standards for exports, but this should not be the motive not to comply. The industry should have a joint consensus as to what level they will comply with HACCP. The result being that any country buying South African groundnuts will have the undertaking that all regulations are met, the product has a certain quality to it and traceability is honest & true. This ensures global competitiveness and creates consumer preferences as mentioned in the price section.

In conclusion, the groundnut industry as a whole is in distress and a well-coordinated swift action plan is essential where all role players (Groundnut Forum, traders, processors, farmers, research institutes etc.) in the industry participate to the benefit of the industry at large. The area under production has shrunk dramatically and the largest share of the local crop is produced by a handful of large vertically integrated firms that have the ability to capitalize on possible export premiums and sales on local markets.

One can ask the question what the future for the industry entails in the absence of a turnaround strategy. A plausible answer is that one could see in the near future that groundnuts will only be produced by the large existing firms and hardly any production of groundnuts will be viable outside of this model. One can imagine that the competition between these entities will be fierce, which implies that shared benefits like breeding programmes to improve cultivar development will be severely limited. Economies of scale are important to ensure long-term competitiveness, not only by reducing costs and securing consistent supplies, but also by continuous improvements of cultivars. The model of a few large firms producing all the groundnuts will continue until it is not able to compete anymore on export markets that are supplied by industries that do have the economies of scale with comprehensive research and development programmes. The South African groundnut industry will then likely enter a new phase where some of the large firms will cease their operations and South Africa will become a net importer of groundnuts, which implies that local prices will break away from export parity and will trade significantly higher at import parity levels. Under this scenario, only the firms (or firm) that can produce sustainably at import parity levels will survive.

6.References

ARD, 2008. Barrier, Catalyst or Distraction? Standards, Competitiveness and Africa's Groundnut Exports to Europe.Agriculture and Rural Development Discussion Paper 39, World Bank. Available: http://tradestandards.org/en/Article.58.aspx (Accessed 2011/07/21).

Cilliers, A. 2003. SA Grondboonkultivars. Available: http://www.landbouweekblad.com/sa-grondboonkultivars-steeds-die (Accessed 2011/07/14).
GWK. 2011. Produksie Koste Gids. Available: www.gwk.co.za

Giha, C.L.R. & Fletcher, S.M. 2002. Determinants of Price Premium in the Rotterdam Groundnut Market. University of Cambridge, Department of Land Economy, UK, University of Georgia, National Center for Peanut Competitiveness, College of Agricultural and Environment Sciences, Griffin Campus, USA. Available: http://ressources.ciheam.org/om/pdf/c64/00800057.pdf (Accessed 2011/09/08).

Haas - Center for Business Research and Economic Development, 2005. Report on the feasibility of a Peanut Processing Facility in Santa Rosa County, Florida. Available: http://uwf.edu/haas/pdfs/impactStudies/Peanut%20Study%20Final%20Report.pdf (Accessed 2011/08/08).

ICRISAT - International Crops Research Institute for the Semi-Arid Tropics, 2010. 'Pre and post-harvest management of Aflatoxin contamination of groundnut'. Institut d'economie rurale (IER), Mali. Available: http://www.icrisat.org/aflatoxin/Presentations/AflatoxinManagement.pps. (Accessed 2011/09/12).

Index Mundi. 2011. Available at www.indexmundi.com

ITC - International Trade Centre. 2001. Exporting Groundnuts. International Trade Forum Issue1/2001.Available:
http://www.tradeforum.org/news/fullstory.php/aid/135/Exporting_Groundnuts.html
(Accessed 2011/08/25).

Oilworld, 2011. Personal communication.

Senwes Kooperasie. 2011. "Jaarlikse Produksie Kostes". Kleksdorp. Available: www.senwes.co.za
South African Grain Information System (SAGIS). 2011. Historic Prices – online database. Available: http://www.sagis.org.za/ (Accessed 2011/07/13).

U.S. Department of Agriculture, Foreign Agricultural Service (USDA-FAS). 2011. Production, Supply, and Distribution (PS&D) online database. Available: http://www.fas.usda.gov/psd/ (Accessed 2011/07/18).

APPENDIX

The following Mini-Case was compiled by the World Bank - Agriculture and Rural Development Discussion Paper 39 in an article entitled “Barrier, Catalyst, or Distraction, Standards, Competitiveness, and Africa’s Groundnut Exports to Europe”, by Luz, Diaz, Rios, Steven and Jaffee.

The success of the Argentine groundnut export industry

Since the mid-1970s, the groundnut industry in Argentina has shifted its production paradigms, moving from the production of groundnuts for crushing purposes to the production of high-quality groundnuts to supply the confectionery industry. Several local and international factors contributed to this shift. At the local level, the competition generated by other oil crops (e.g., soybeans) and improved technologies for production, mainly in aspects related to groundnut production and harvesting, were critical. At the international level, the low international prices for groundnut oil and the opportunities created by increasing EU demands for high-quality edible groundnuts certainly contributed to the emergence of Argentina as an important supplier of groundnuts to the global markets in the late 1980s and early 1990s. The Argentine National Institute of Agricultural Technology (INTA) initiated its work on improving varieties of the “runner”-type groundnut — optimal for confectionery purposes—with assistance provided by the University of Florida in the United States, in 1975. Toward the mid-1980s, the industry started replacing traditional varieties with those specifically oriented to producing high quality groundnuts for the confectionery industry.

Innovations at production and postharvest stages

During the first half of the 1990s, Argentina considerably increased groundnut production, and consequently its exports, mainly as a result of the implementation of a project called “Maní 2000,” led by the INTA. The project focused on improvements in marketing systems and improved practices at the production and post-harvest stages.

The partnership between the private sector, universities and research centres was critical to promoting technological developments regarding varietal development, improved water management, plant disease control, prevention of Aflatoxin, and improved post-harvest practices. In August 2001, the “Fundación Maní Argentino” was created, aimed at consolidating the research efforts in this sector. The sector comprises about 1,000 highly experienced producers. Several public and private institutions provide training to farmers and promote the implementation of good agricultural practices for the prevention of Aflatoxin contamination. Given the high production costs per hectare (approximately US$700/ha), close co-ordination between suppliers and processing/exporting companies is fundamental.

The producers are generally linked with the exporting companies through contractual agreements, by which agricultural inputs and technical assistance are provided. The dynamics of the sector have been quite impressive; the country’s exports of groundnuts were estimated at 115 532 tons in 1994 and reached 408 048 tons in 2006. Argentina has risen to become the world’s third largest exporter of shelled groundnuts and the second largest exporter of prepared groundnuts (Figure 16). The ability to ensure a reliable supply of quality and safe produce has certainly been one of the pillars of the success achieved by the Argentine groundnut industry in international markets.

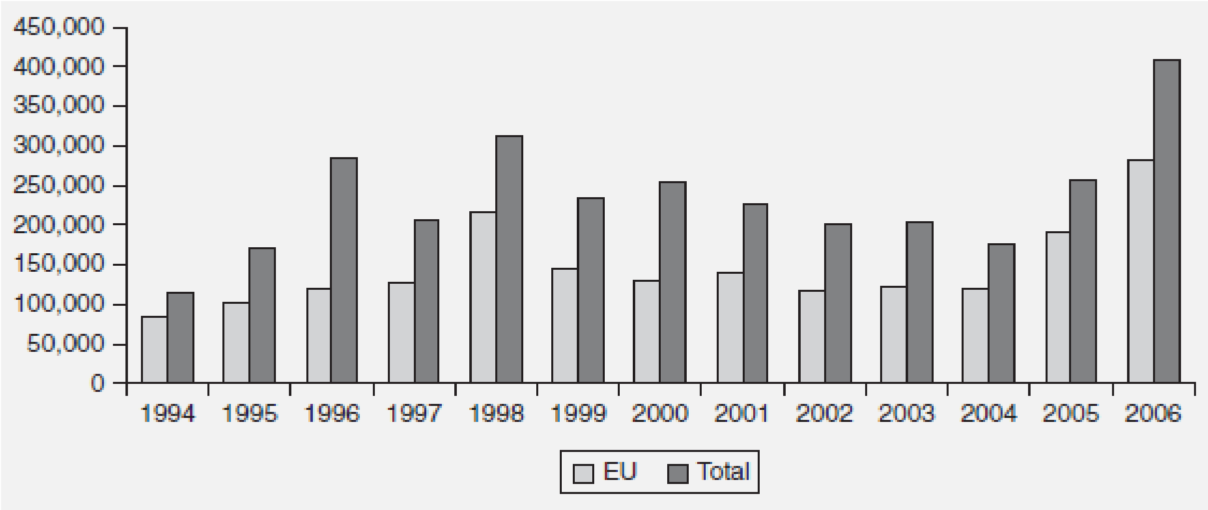


Figure 23: Groundnut Exports from Argentina (Mt)

Source: ARD 2008 sourced from Cámara del Maní, 2006

The focus for development: Satisfy export markets

Argentina's groundnut industry developed as an export-oriented industry: 90% of Argentine groundnut production is exported, and there is not a significant domestic market for groundnut products and sub products. Therefore, the capacity of the industry to anticipate and effectively respond to export market requirements has been vital for its sustainability.

The Argentinean dependence on export markets is reflected in the importance placed on enhanced competitiveness through technological improvements and innovations. In the past decade, the processing sector has invested about US$70 million in innovations and modern technologies for improved logistics, storage, and value addition. Most of the processing companies are increasingly exporting blanched groundnuts, both to respond to the growing demand for this product in international markets and as a way to reduce Aflatoxin problems and improve profits, as this product category receives a price premium (US$100–$120) compared to raw product. In fact, exports of shelled groundnuts have shown a decreased trend, while exports of blanched groundnuts have been growing significantly. Recent efforts to differentiate the product in international markets include the development of the seal of origin "Groundnut from Cordoba—Maní de Cordóba."

In conclusion, the public and private investments made to comply with EU market requirements have paid dividends, as Argentina enjoys a reputation of being a reliable supplier of high quality, safe groundnut products in international markets. Clearly, for the Argentinean groundnut industry, emerging standards have served as a catalyst for modernization of the sector—in effect; compliance with standards has been used as a tool to develop competitive advantages.

Sources: ARD 2008 and sourced from - Personal communications with representatives from the Argentine Peanut Chamber and SENASA; INTA Website.