A Diagnostic Study of the Potato Subsector: Unlocking the potential for contribution towards ASGI-SA

The National Agricultural Marketing Council

and

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1 Executive summary

Agriculture has been identified as a key contributor to South Africa's 6% economic growth target. The sector's importance lies in its potential to make a significant contribution to economic development through creating jobs, assisting with poverty alleviation and earning foreign exchange. The South African potato subsector plays an important role in the South African agricultural sector and could contribute towards the Accelerated and Shared Growth Initiative of South Africa (ASGISA) programme of the South African government.

The value of potato production is in the vicinity of R2.8 billion per annum. It provides livelihoods for producers and labourers and has notable multiplier effects up and downstream in the supply chain in the input, transport, processing, retail, packaging and formal and informal trade sectors.

In terms of trends, production levels and yield efficiency for potatoes in South Africa have shown increases while real producer prices for potatoes have been stagnant for at least a decade. The most significant market outlets for South African potatoes are formal and informal fresh consumption and processing. The trade of potatoes through formal markets like fresh produce markets is declining while the informal sector for potatoes is growing significantly. There is also a sharp increase in the processing of potatoes in South Africa, with the sector doubling in the past decade. The export market for potatoes, while still relatively small in comparison to other market segments, is also exhibiting growth. Urbanisation, population growth and a demand for a safe and reliable supply of food from sub-Saharan Africa are expected to increase the demand for agricultural products and, therefore, for potatoes.

The potato chain in South Africa is relatively marginal as far as international competitiveness is concerned, in that it shows a negative trend in competitiveness when moving from the primary to the processed product.

There are a number of policies that currently impact on the potato industry, such as general monetary and fiscal policy of RSA, AgriBEE framework, land restitution and redistribution and agricultural credit. Currently the South African government does not provide any direct support to the South African potato industry. It merely creates an environment within which the South African potato industry can organise, manage and maintain itself.

The empowerment process of the potato industry is in the planning phase with no real impact observable yet. A structure and a strategy to initiate and implement the necessary programmes to bring about empowerment and transformation have, however, been adopted.

Constraints and challenges that the potato subsector faces include land claims, labour legislation, planning the implementation of the anticipated AgriBEE framework, HIV/AIDS, infrastructure, agricultural research, the deterioration of extension services and increasing pressure on the availability of water for irrigating potatoes. In view of the large proportion of potatoes grown under irrigation and the fact that South Africa's water resources are, in global terms, scarce and extremely limited, the availability of water for irrigating potatoes is foreseen to become a challenge for the sustainability of the sector.

The only marketing incentive schemes that are in place at the moment are the development of institutional markets for small-scale producers and a greater focus on the export market for potatoes in Southern Africa.

TABLE OF CONTENTS

1 Introduction

Potatoes (*Solanum tuberosum*) originated in the Andean mountains of South America and were taken to Europe by the Spanish explorers to fight scurvy. From the latter years of the 17th century, potatoes became a staple food for a great part of the world's population. There is no certainty about how and when this foodstuff reached South Africa but it is generally accepted that the Dutch East India Company brought potatoes to South Africa from the Netherlands. Today, domestic potato farmers harvest on average about R2.8 billion worth of potatoes per year (NDA, 2006). The industry comprises approximately 1 700 potato farmers, which includes approximately 400 seed growers and emerging farmers, and around 66 000 farm workers (NDA, 2003).

Potatoes are mainly grown in rotation with maize and wheat. Planting of the crop is done almost throughout the year in 16 regions of South Africa. Potatoes are produced all over South Africa in different climatic regions and there is therefore a continuous supply of potatoes throughout the year. The major potato producing provinces include Free State (30%), Limpopo (18%), Western Cape (19%) and Mpumalanga (10%) (PSA, 2005). These four accounted for 77% of South Africa's output in 2005. Gauteng made the smallest contribution, producing less than 1% of total production.

In general, the potato industry contributes the following to the South African economy:

- Creation of job opportunities
- Large downstream and upstream effect through industry linkages
- Export earnings for the country
- Empowerment of traders in the informal sector
- Food to neighbouring countries
- Improved welfare of the general population through productivity increases
- Opportunities for emerging small-scale farmers
- Income generation in small towns and rural areas

2 Structure of the subsector

This section details the structure of the South Africa potato subsector – the different types of firms and the organisation of the subsector. It also examines the employment skills and labour absorption and gives an overview of the inputs into the subsector.

2.1 Types of firms within the subsector

There are several players in the potato subsector, each of whom has different and specific roles in the potato value chain. This section briefly reviews the types of firms in the industry. Figure 1 gives a schematic representation of the potato supply chain.

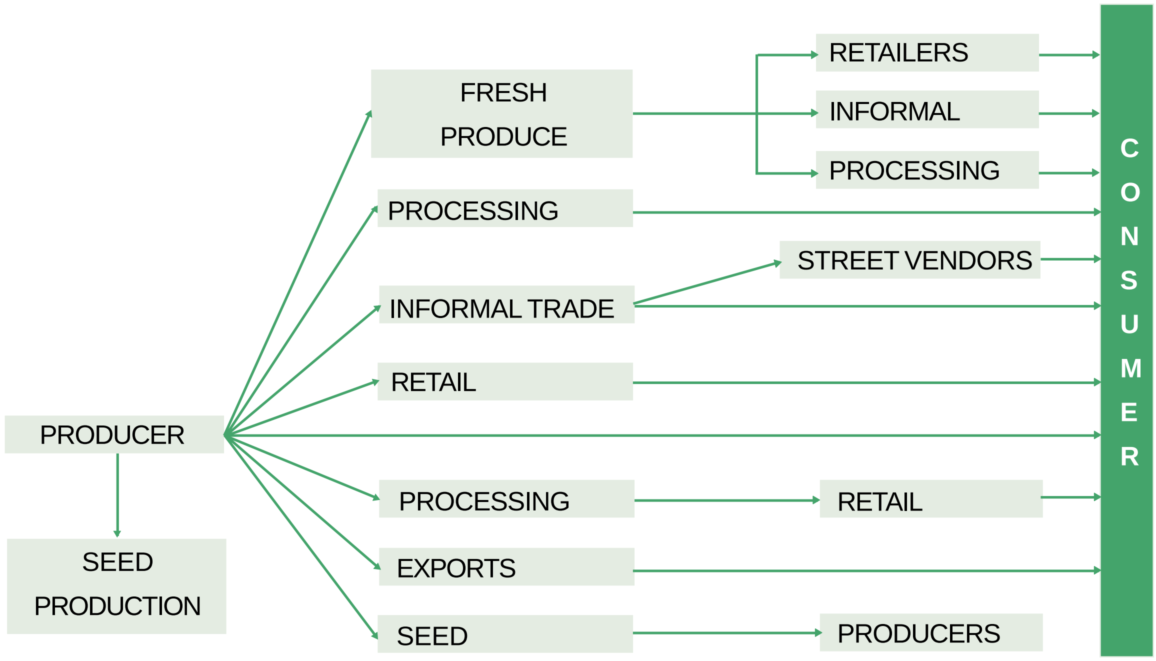

Figure 1 – Schematic representation of the South African potato supply chain

Source: PSA (2005)

2.1.1 Producers

Potato production is almost continuous throughout the year in the different regions of South Africa. Potato production comprises table potatoes and seed potatoes with the former produced for consumption and the latter for regeneration. Currently 88% of potatoes are produced for consumption and the remaining 12% for regeneration. It is estimated that there are 1 700 independent potato producers (including approximately 400 seed growers) who produce the total South African crop of seed and table potatoes. In addition it is estimated that around half the number of potato producers are emerging small-scale farmers (PSA, 2005).

Potato production takes place across South Africa with all nine provinces making a contribution to production. Table 1 below summarises South Africa's total potato production according to province and the type of harvest.

Table 1 – Production of potatoes in South Africa per province

Province	Total harvest	Table harvest	Seed harvest
	Percentage of total production		
Limpopo	17.74	19.80	2.47
Mpumalanga	10.04	10.22	8.68
Gauteng	1.41	1.60	0.00
North West	3.40	3.57	2.12
Free State	29.67	29.67	29.73
KwaZulu-Natal	7.65	6.12	18.99
Western Cape	19.55	18.77	25.29
Eastern Cape	6.61	7.24	1.99
Northern Cape	3.93	3.02	10.74
TOTAL	100.00	100.00	100.00

Source: PSA (2005)

The major potato producing provinces in South Africa are the Free State, Limpopo, Western Cape and Mpumalanga, as may be deduced from Table 1 (PSA 2005).

2.1.2 Fresh produce markets

The next link in the supply chain is the local municipal authorities around South Africa who own a total of 17 fresh produce markets, which are the primary distribution channel for potatoes. During 2005 a total of 59% of all potatoes were distributed through fresh produce markets to a number of end markets. The remaining 41% represents direct sales from producers to wholesalers, retailers, processors, some informal traders and consumers. Currently most municipal markets function on a "commission on sales" basis and are owned by the local authorities. There is, however, a move towards privatising some of these municipal markets.

Potato prices are determined by supply and demand on the fresh produce markets, which are the preferred marketing channel for potatoes. Product grading is a critical component of price determination on the market. Potatoes are still officially graded on the market The fresh produce quality standards that were originally developed by the marketing authority serve as a reference point. The price received by primary producers on the fresh produce markets is a basis for the determination of the price for direct purchases from producers.

Many potato processors (e.g. McCain's, Simba, Willards) engage with contract farmers but also procure first grade potatoes from the market to top up their raw material levels in cases of shortages or natural disasters. Other major business buyers on the market include Pick 'n Pay, Fruit and Veg City, Tiger Brands, Spar and Freshmark. The quality of produce procured by these buyers on the market depends on consumer needs, availability and market prices.

2.1.3 Processing

Apart from being consumed fresh, potatoes are processed into a number of products. An estimated 20% of South Africa's total table potato production, equating to 30 628 091 pockets each weighing 10 kg, was processed during 2005 (PSA 2005). Table 2 summarises the different processed potato products and the percentage they comprise of total potato processing. It is clear that the most important of these processed products are crisps, frozen fries and fresh fries, which jointly account for 97% of all processed potato products (PSA 2005).

Table 2 – Processed potato products

Processed product	Percentage
Crisps	39.23
Frozen fries	39.59
Fresh fries	18.61
Canned potatoes	1.26
Mixed vegetables	0.82
Dehydrated potatoes	0.21
Other	0.17
Baby food	0.10
TOTAL	100.00

Source: PSA (2005)

Figure 2 graphically illustrates the market share of the different processed potato products.

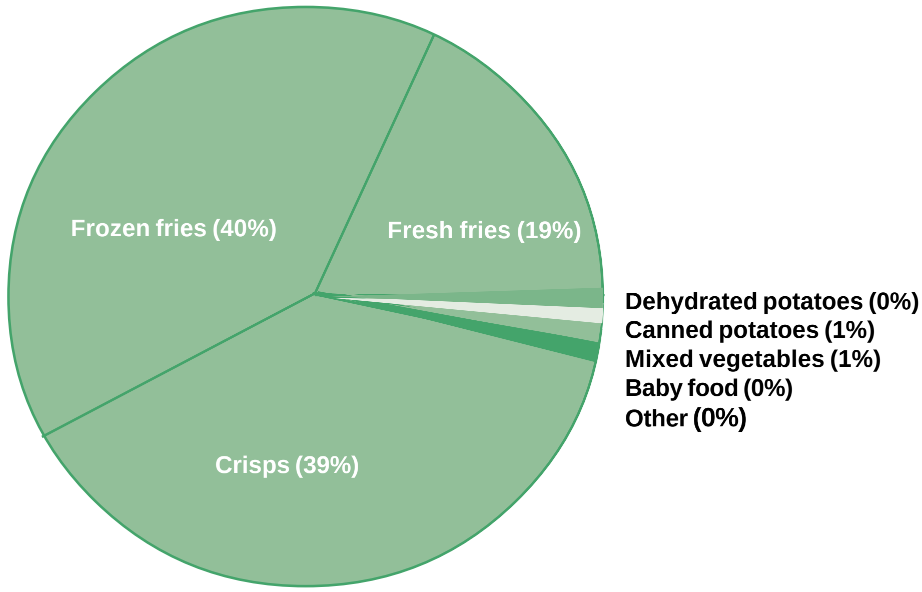

Figure 2 – Processed potato products: 2005

Source: PSA (2005)

There are several manufacturing companies in the potato sector industry that process the different potato derivatives described above. The number and names of prominent companies that manufacture each of these processed products are listed in Table 3.

Table 3 – Processed potato products

Processed potato product	Crisps	Frozen fries	Fresh fries	Canned potatoes	Mixed vegetables
Number of prominent companies	7	3	5	2	3
Companies	• Dowmont Foods • Frimax • Kavalier Foods • L & C Messaris • Willards • Poco Foods • Simba Quix	• Lamberts Bay Canning Co • McCains • Mine Corp	• Dimpho Fresh Food • Errol Veg • Mannic Chips • Rooipoort • Fresh Products • Super Chip	• Langeberg Koöp • Giants Foods	• Dimpho Fresh Food • Golden Harvest • McCains

Source: PSA (2005)

2.1.4 Informal trade

Informal traders are responsible for the distribution of 33% of all fresh potatoes sold on fresh produce markets and for 50% of all potatoes sold, including informal trade from fresh produce markets, urban and rural sales. Currently an unknown number of informal traders purchase 10 kg pockets from fresh produce markets, or directly from producers, repackage the potatoes into 1 kg or 2 kg plastic bags and sell these (or just sell the potatoes loose) in a number of settings in both urban and rural areas. This form of trading in urban areas has reportedly emerged as a direct result of changes in urban eating habits and urbanisation.

2.1.5 Formal trade

The formal sector consists primarily of the large retailers in South Africa, such as Fruit & Veg City, Pick 'n Pay, Shoprite-Checkers, Spar and Woolworths, and smaller retailers such as greengrocers and independent stores. It consumes an estimated 21% of all fresh potatoes produced, excluding any processed potato products that also go through normal trading channels. The formal trade in potatoes generally concentrates on the sale of high quality fresh potatoes, either loose or in smaller packaging. Some of the formal traders undertake their own packaging, branding, advertising and sometimes even semi-processing of fresh potatoes to create specific branded potatoes. The retail chains typically procure their fresh potatoes through direct purchases from producers, through dedicated wholesalers and from fresh produce markets.

2.1.6 Exports

South Africa is not considered to be a major exporter of potatoes in world terms, primarily because it contributes less than 1% to the potato export market of countries outside the South African Customs Union (SACU). South Africa is, however, the only exporting country in Southern Africa and one of only two exporting countries in Africa. The majority of South African potatoes are exported to neighbouring SACU countries and to Angola, Mozambique and Mauritius. The bulkiness of potatoes and the associated transport costs make the export of potatoes prohibitively expensive and for this reason South Africa's primary export markets are located in Southern Africa.

South Africa exports both seed and table potatoes to neighbouring and nearby countries. An estimated 11 072 630 10 kg pockets of table potatoes, representing 7% of total production, were exported during 2005 (PSA 2005). On a value basis, Angola, Mozambique and Zambia are South Africa's most prominent export destinations, accounting for 83% of all potato exports from South Africa (DTI 2006).

2.2 Organisation of the potato subsector

The South African potato industry has a number of organisational structures that support the potato industry in various ways. These are set out diagrammatically in Figure 3.

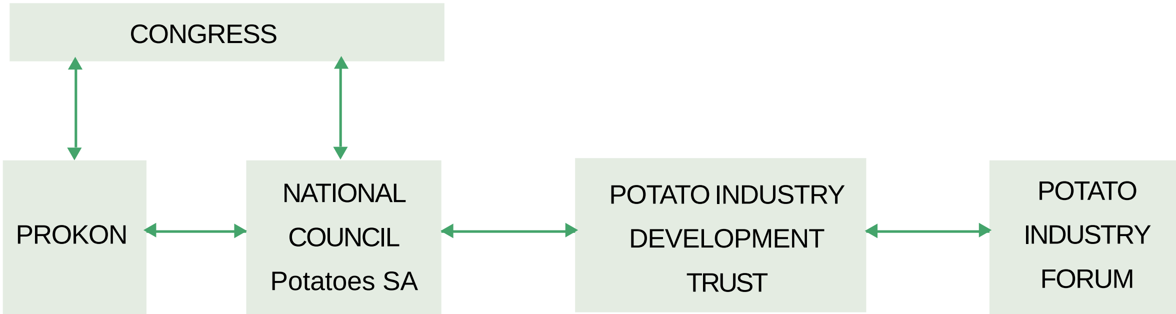

Figure 3 – Potato industry structures: 2005

Source: PSA (2005)

2.2.1 Congress

Congress is the annual meeting of all stakeholders in the potato industry, at which all stakeholders convene to discuss subjects related to the South African potato industry. Contributions to the presentation and discussion of the subject matter come from the stakeholders with a view to generally improving the South African potato industry. Congress exercises power over Prokon and the National Council of Potatoes South Africa.

2.2.2 Prokon

Product Control for Agriculture (PROKON) is an independent quality assurance body that ensures that consumers have access to quality fresh fruit and vegetables by providing guidelines on how to comply with consumer needs in terms of quality, size, packaging and cultivars. Prokon is an Article 21 company under South African law and functions under the Agricultural Product Standards Act, No 119 of 1990. Prokon is contracted to conduct food safety, quality assurance and traceability inspections for potatoes and onions at fresh produce markets in South Africa.

2.2.3 Potatoes South Africa

Potatoes South Africa is an industry-related organisation that, through its affiliates and linkages with other organisations, supports the potato industry to perform optimally by rendering services such as organisational functions, product and market development, product promotion, communication, advertising, research and information. The services are financed by means of statutory and voluntary levies, as well as from income derived from management services to several organisations and interest earned on investments. The structure of Potatoes South Africa is shown in Figure 4.

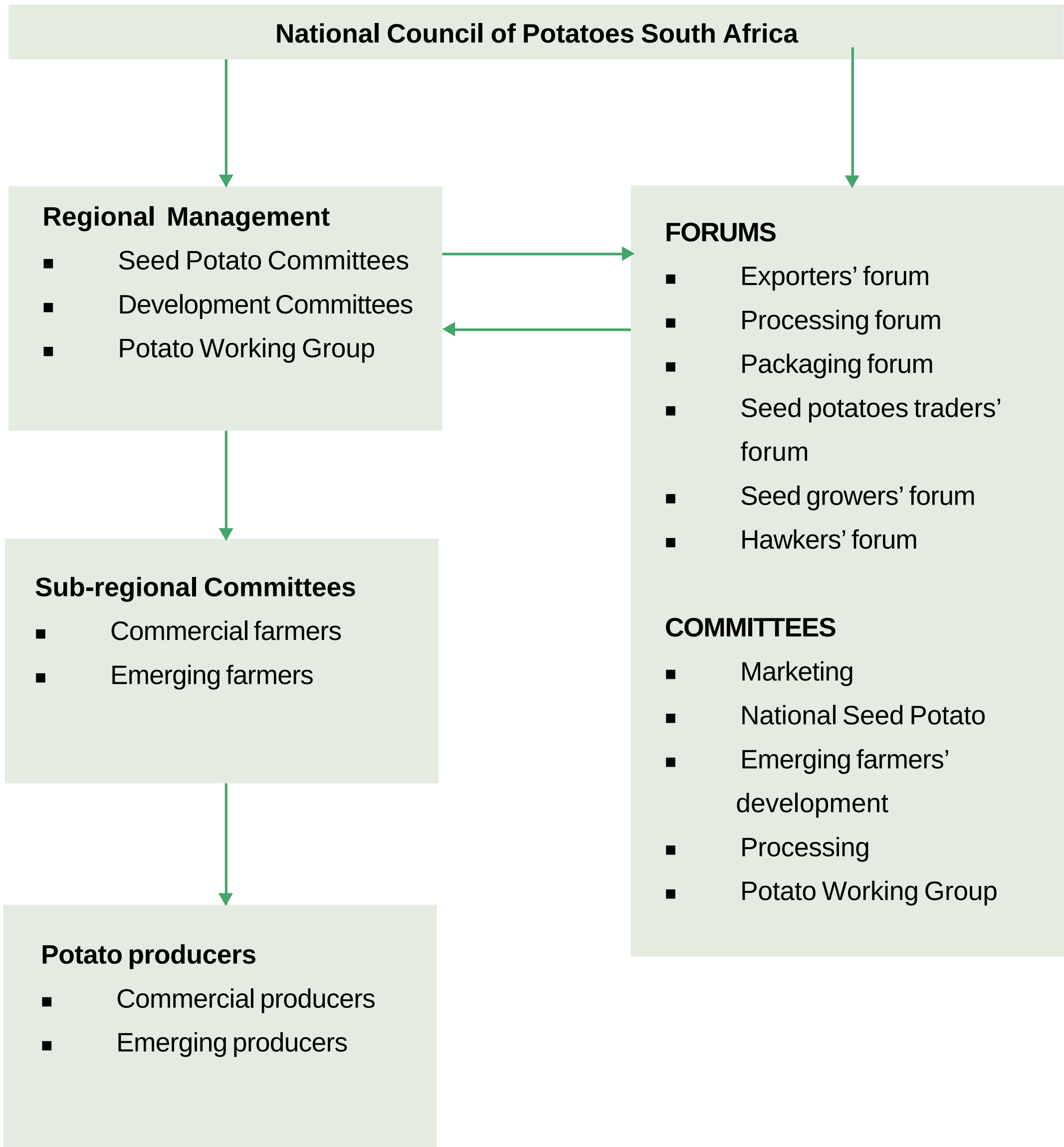

Figure 4 – Structure of Potatoes South Africa: 2005

Source: PSA (2005)

2.2.4 Potato Industry Development Trust

Government Notice R 1046, relating to the Marketing of Agricultural Products Act, No 47 of 1996, provides for the establishment of a potato levy in South Africa. The levies collected under this measure are paid into the Potato Industry Development Trust (enacted specifically for the purpose of these levies), to be utilised in accordance with the purposes set out in the government notice.

The Potato Development Trust is required to fund basic as well as applied research, including cultivar development and evaluation, and the dissemination of all relevant technical information; and the gathering, processing, analysing and compiling of industry-related information, including market statistics, and the dissemination thereof; as well as creating market access for emerging farmers (small and medium scale), including development projects related to the potato production marketing chain and the development of foreign markets for South African potatoes. The Trust makes use of Potatoes South Africa to perform the administrative functions around the collection and administration of the levies.

2.2.5 Other industry bodies

The Potato Certification Service ensures that high quality planting material is locally available by supervising and administering registrations to ensure that seed potato growers meet requirements with regard to certain bacterial diseases and viruses.

The Potato Exporters Forum oversees the export of potatoes and implements a code of conduct for the export of potatoes from South Africa. The South African Potato Exporters' Forum was established by Potatoes South Africa in conjunction with exporters to facilitate, *inter alia*, discussions between exporters, service providers and producers. The main objectives of the Forum are as follows:

- To promote good relations and cooperation among exporters and producers in a deregulated environment to ensure the successful exportation of South African potatoes
- To promote good relations between exporters as a group and the various service providers
- To monitor compliance with quality standards and international legal requirements
- To serve as a mouthpiece for the members of the Forum

2.3 Overview of employment, skills and labour absorption

Potatoes are a highly labour intensive crop to grow and 66 000 labourers are needed annually to produce potatoes on between 50 000 ha and 55 000 ha of land. A very large proportion of this labour force is minimally skilled and is employed specifically during harvest time when the workload is at its greatest.

With increased mechanisation and constant increases in efficiency, both in terms of manual labour and machinery, and as a result of labour market problems, it is anticipated that there will be a decline in the number of labourers absorbed in the potato industry. The absolute numbers of labourers for the number of hectares planted to potatoes and the number of dependants on potato farms should, however, be kept in mind when viewing the declining labour absorption of the potato industry.

Jordaan and Van Schalkwyk (2002) show that 50 person-years of employment are created for every extra R1 million of final demand for potatoes. For example, in 2005 the gross income generated from potatoes was in the vicinity of R1.6 billion. This translates into 1600*50=80 000 job opportunities created for that year. Employment multiplier figures created from R1 million additional final demand for potatoes will increase value added by R1.15, which requires R0.45 of additional international imports and contributes 0.26 to government revenue (Jordaan & Van Schalkwyk 2002). The potato industry has an employment multiplier effect in the following sectors:

- Transport
- Processing
- Independent trading
- Retail
- Packaging
- Informal trading
- Fast food outlets

The authors continue by noting that changes in the value of agricultural production have significantly larger effects on employment and value added than in non-agricultural sectors. This is even more significant for agribusiness, which has substantially higher employment multipliers than non-agricultural sectors. This is against the background that agriculture has the biggest employment/production multiplier of a series of selected sectors. What this indicates is that a production increase in agriculture creates the most employment opportunities throughout the economy when production increases, but that such an increase results in a relatively small increase in income. Nevertheless, viewed against the cost of capital and the high priority that employment is receiving in economic development policy, the agricultural sector will still be required to make important contributions to employment. The implication is, therefore, that by increasing the output of the potato sector a greater number of employment opportunities can be created. This would also imply the best outcome in terms of poverty reduction.

2.4 Overview of inputs to the subsector

The potato industry has a number of inputs. These include seed, fuel, fertilisers, pesticides, land and labour. Overall the industry reportedly suffers from relatively high and ever-increasing input costs which make the production of potatoes relatively risky.

The primary cost factors, according to Potatoes South Africa, are fuel prices, taxes and levies (Water Act, skills development levies, etc.) and labour. Figure 5 gives a comparison of the real producer price of potatoes against the real producer prices for intermediate goods, which include the cost of fertiliser, fuel, farm feed, dips and sprays, packing material and maintenance costs. As is pointed out later, the price/cost squeeze is very evident, with stagnant producer prices and escalating input prices. The gap between producer prices and input costs seems to be on the increase.

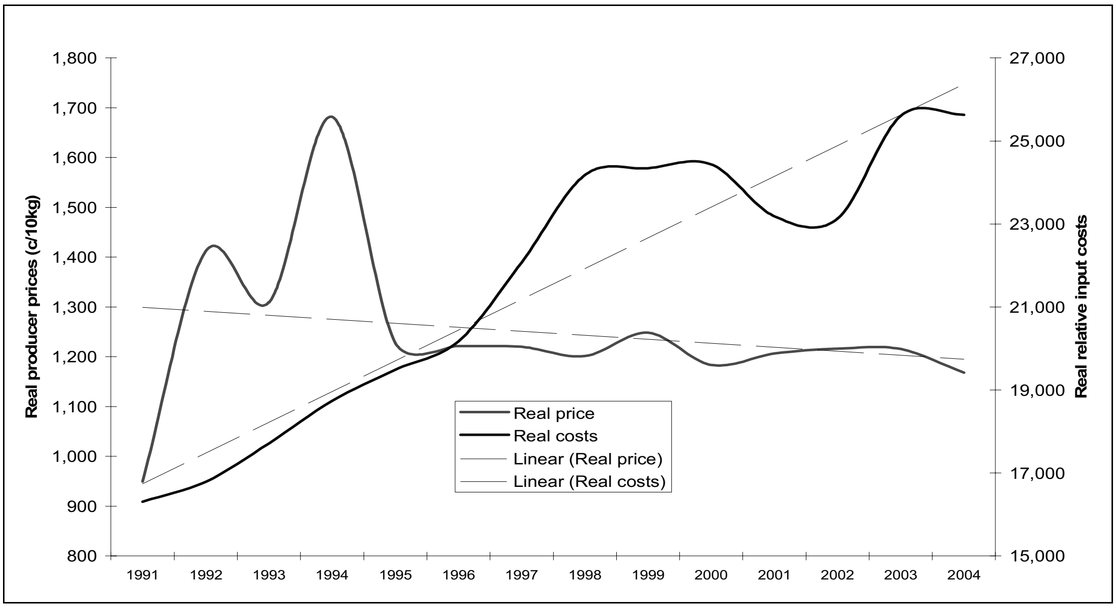

Figure 5 – Comparison of real price of intermediate goods (production costs) and real producer prices: 1991 – 2005

Source: PSA (2005), NDA (2006)

3 Trends

This section reviews trends in the South African potato sector from production through to prices and markets.

3.1 Potato production

Potatoes are one of South Africa's staple foods and the single most important vegetable product in South Africa, with a total production of 1 716 453 tonnes during 2005 (PSA 2005). Production levels for potatoes in South Africa have shown steady increases over the years, with production rising by 23% between 1991 and 2005 (PSA 2005). This is attributable to population growth and a movement away from staple food products like maize, which has seen a decline per capita consumption. An estimated 84% of the total production increases may be attributed to the combined effect of irrigation and research (Jordaan & Van Schalkwyk 2002; PSA 2005).

Currently the gross value of South African potato production accounts for about 44% of major vegetables, 14% of horticultural products and 7% of total agricultural production (PSA 2005). Figure 6 graphically illustrates the total annual South African production of potatoes from 1991 to 2005. A linear trend line confirms that production is increasing.

Figure 6 – Total annual South African production of potatoes: 1991 – 2005

Source: PSA (2005)

Figure 7 gives a breakdown of the total annual production of potatoes in South Africa from 1991 to 2005. Seed production is several times smaller than table production but also shows a general growth trend over time.

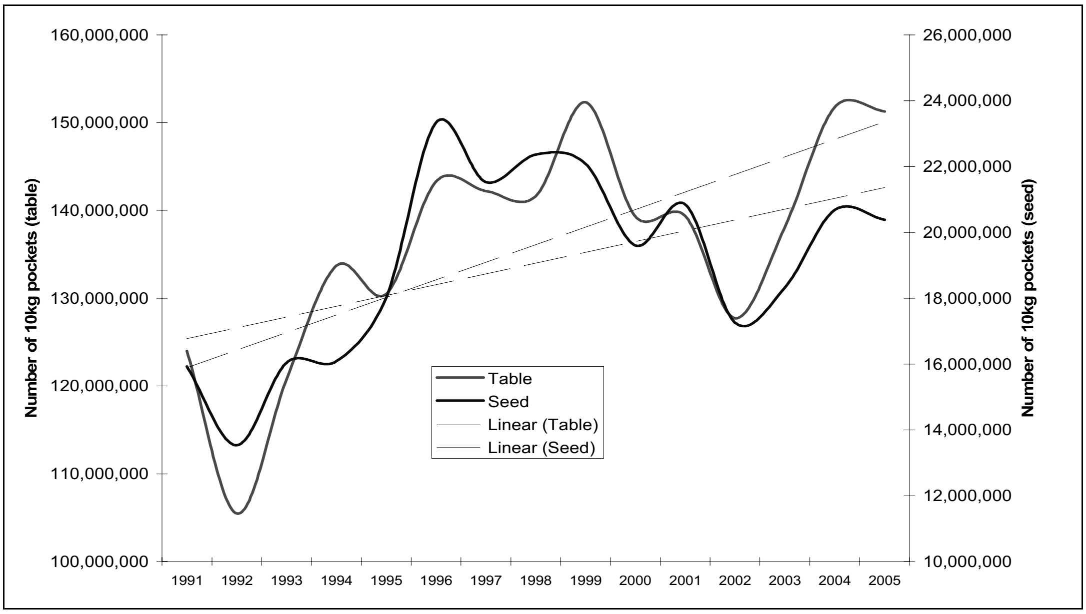

Figure 7 – Total annual South African production of table and seed potatoes: 1991 – 2005

Source: PSA (2005)

In terms of production, the number of hectares planted to potatoes has steadily been declining from 1991 while the per hectare yield of potatoes has been increasing. The area planted to potatoes has decreased by 25% since 1991 while the yield per hectare has increased by 45%. The decrease in the area planted to potatoes is attributable to an increase in the relative yield of potatoes, which, in its turn, is attributable to research and a shift away from dryland potato production to irrigated potato production. Figure 8 illustrates the trends in the area planted to potatoes and the relative yield of potatoes from 1991 to 2005.

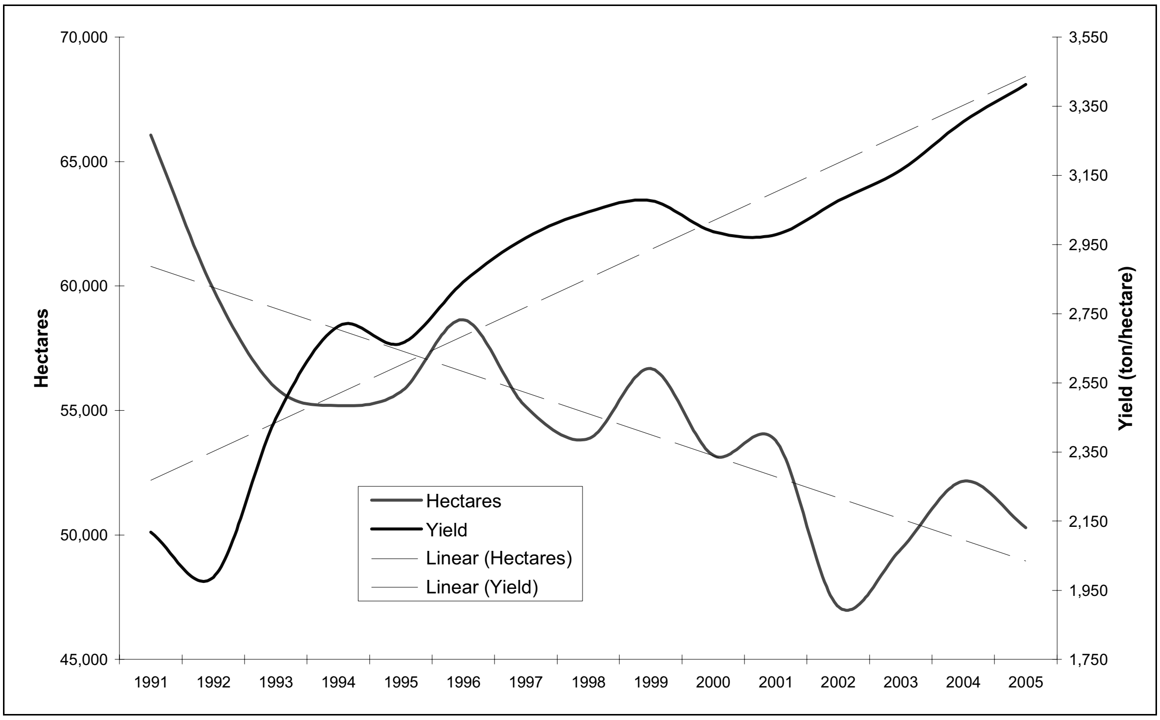

Figure 8 – Average yield and total number of hectares planted to potatoes: 1995 – 2005

Source: PSA (2005)

Figure 9 illustrates the movement away from dryland potato production towards irrigated potato production. Potato production from dryland has decreased by 62% while irrigated potato production has increased by 35% since 1991. This trend is in all probability attributable to the increased productivity that irrigated production offers potato producers and the reduction of risk associated with rainfall, particularly low rainfall (PSA, 2005).

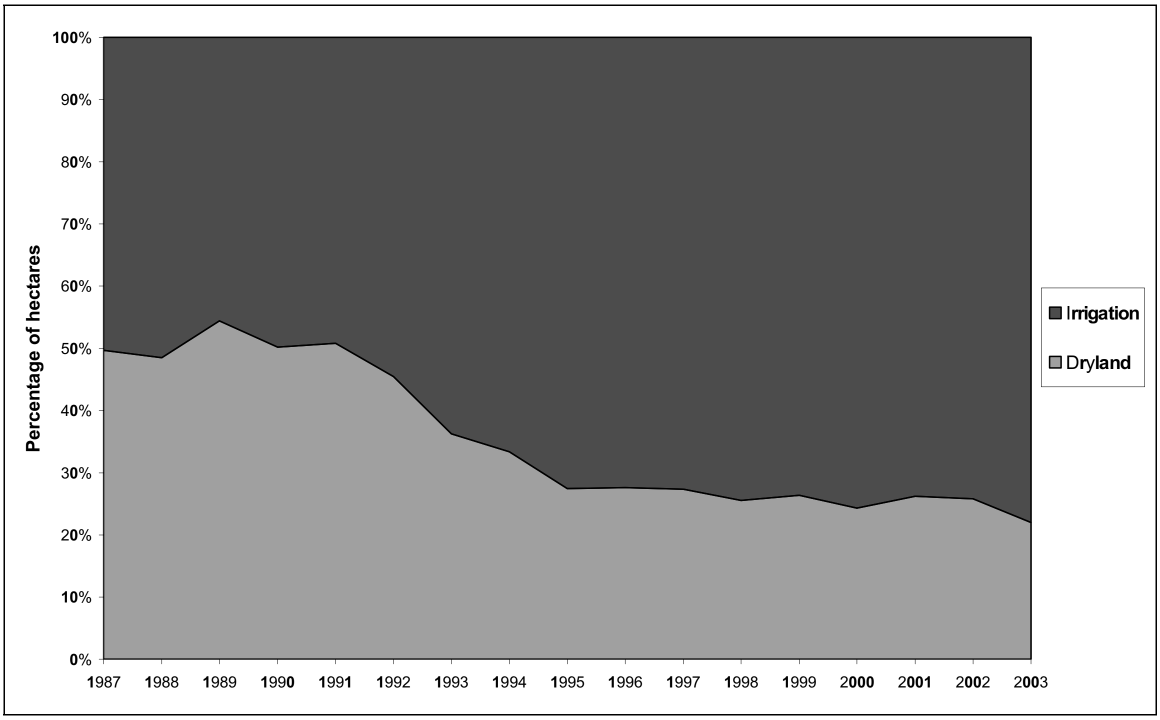

Figure 9 – Area of potatoes planted under dryland and irrigation: 1987 – 2003
Source: PSA (2003)

3.2 Potato prices

Real producer prices for potatoes saw healthy increases in the period from 1985 to 1995. The period from 1995 to 2004 has, however, seen real prices stagnate and/or hover around 1 200 c/kg per 10 kg pocket. Figure 10 graphically illustrates this trend. Closer investigation reveals that real producer prices for potatoes have declined by 4% in total over the 1995 to 2004 period. This decline is, however, negligible given that prices readily fluctuate more than 4% within and between seasons.

These real prices and the relative production costs, as depicted in Figure 11, demonstrate that the price–cost squeeze phenomenon is clearly apparent in the South African potato industry. The stagnant and/or marginally declining producer prices are in contrast to the escalating costs of production as represented by the linear trend lines. This phenomenon of stagnant or declining real prices is expected with most commodities.

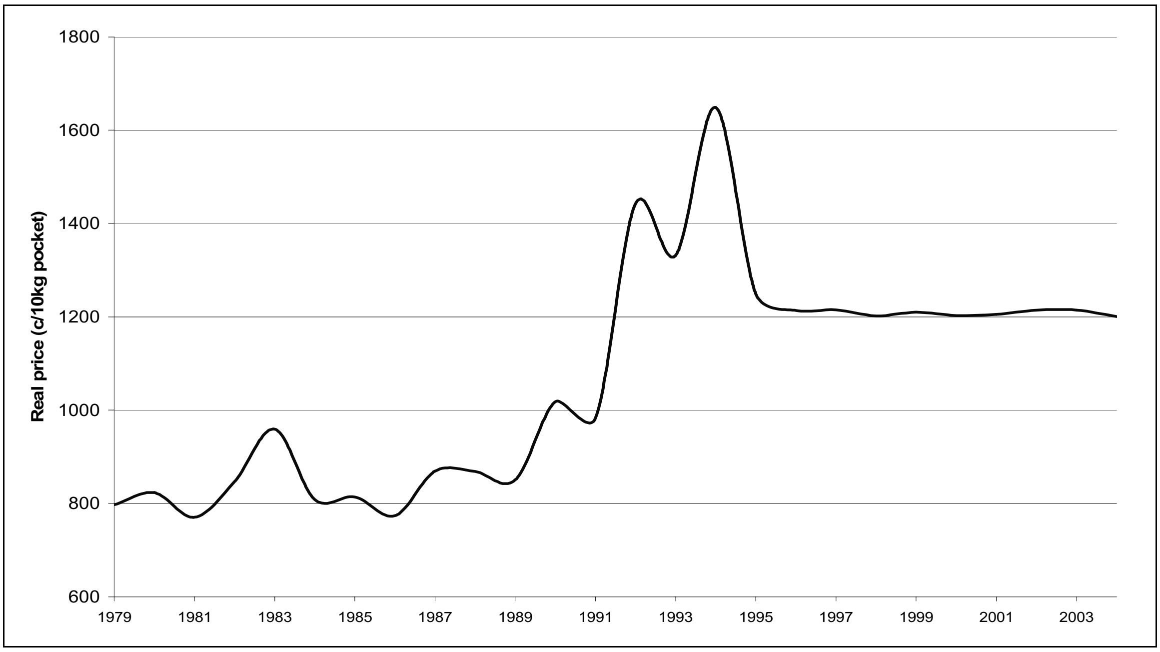

Figure 10 – Real market prices for South African potatoes: 1979 – 2003

Source: PSA (2003)

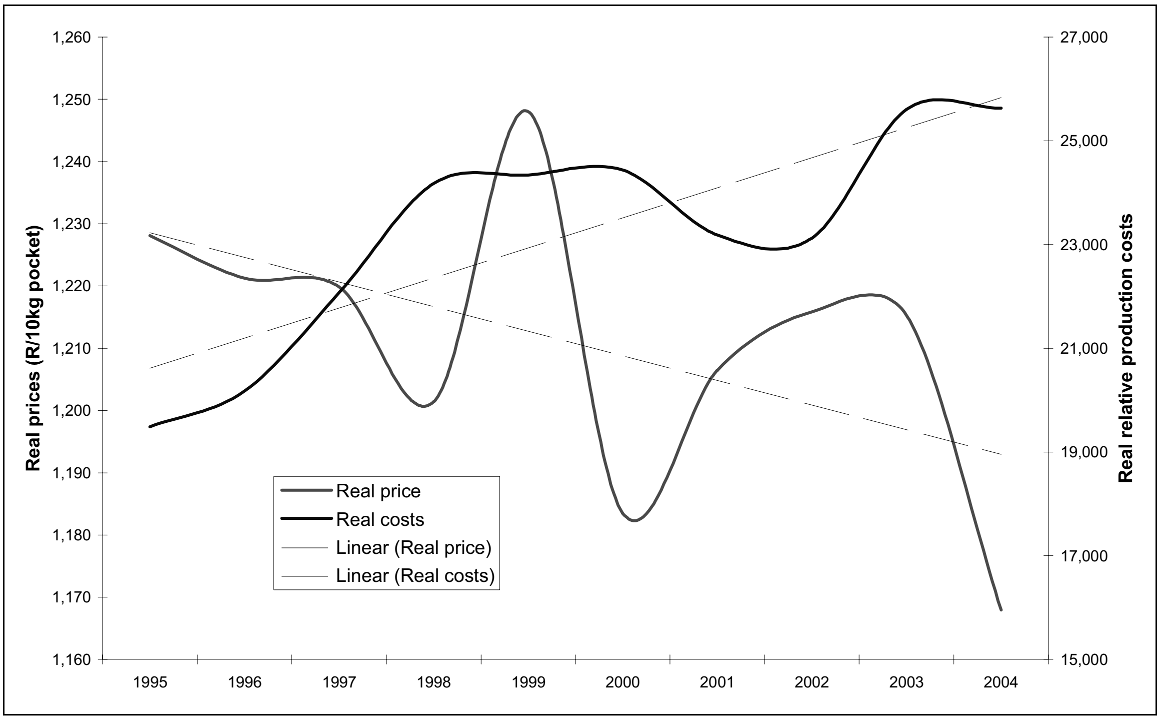

Figure 11 –Real prices for potatoes and real relative production costs: 1995 – 2004

Source: PSA (2005)

3.3 Potato markets

Potatoes in South Africa have several market outlets. This section reviews some trends in the potato market from a supply chain perspective ranging from potato production to the different outlets.

3.3.1 Potato production

The per capita consumption of potatoes in South Africa hovers around 32 kg per person per annum. Figure 12 illustrates the trends in South African per capita potato consumption between 1995 and 2005. In contrast to South African per capita consumption, research reveals that the per capita consumption of potatoes in developing countries is estimated at 14 kg per capita per annum, while that of Europe is 86 kg and North America 63 kg per capita per annum respectively. It is therefore suggested that developing countries and countries like South Africa have ample room to expand per capita consumption of potatoes (http://www.cipotato.org).

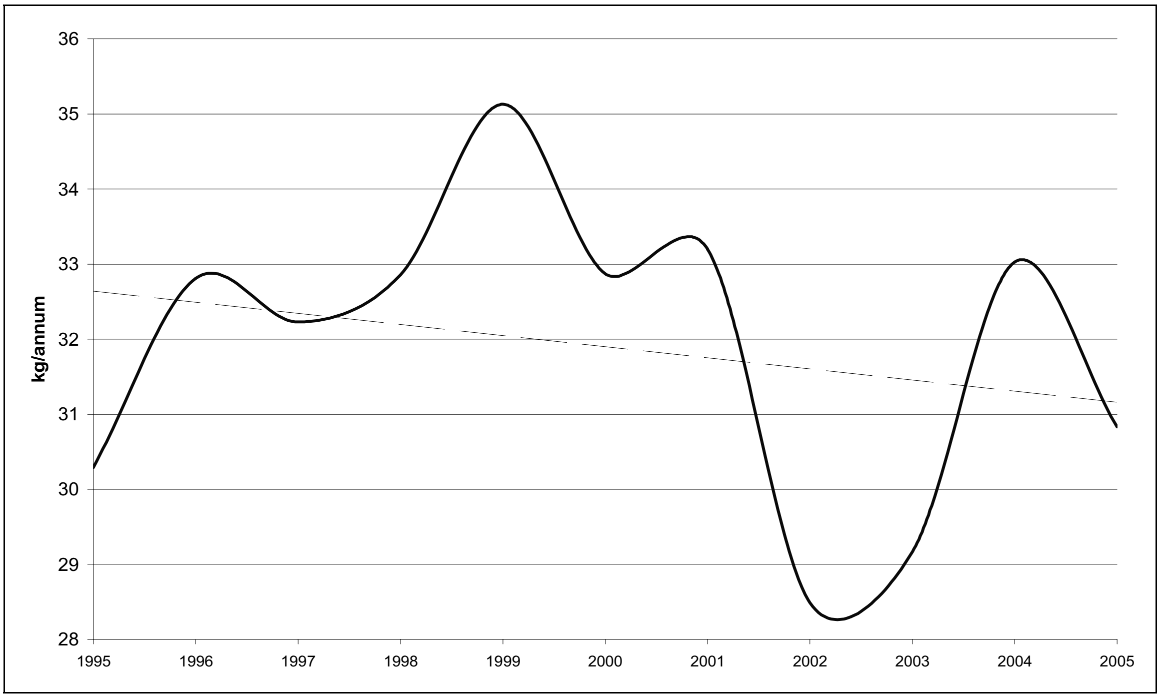

Figure 12 – Per capita consumption of potatoes in South Africa: 1995 – 2005

Source: PSA (2005)

3.3.2 Market outlets

The market outlets for potatoes in South Africa are defined by whether or not a fresh produce market is used as the primary channel. From Table 4, it is evident that the formal and informal sectors, via fresh produce markets and the processing sector, which procures directly, are the primary outlets for South African potatoes, accounting for 71.4% of the total market in 2005.

Table 4 – Market breakdown for South African produced table potatoes: 2000 – 2005

Primary market channel	Outlet	2000	2001	2002	2003	2004	2005
		Percentage of total					
Market	Processed	5.6	6.6	4.1	3.1	3.2	2.7
	Export	3.2	3.4	3.0	2.9	2.2	2.2
	Formal sector	36.0	36.2	30.9	22.1	21.3	21.3
	Informal sector	18.4	18.5	21.8	29.2	32.6	32.6
Outside market	Processed	12.8	12.8	18.2	19.3	18.6	17.5
	Export	3.9	4.2	6.5	6.5	4.8	5.1
	City trade	5.7	5.4	5.9	7.7	7.8	8.0
	Farm trade	1.8	1.4	1.3	1.1	0.9	1.0
	Rural trade	12.5	11.5	8.4	8.0	8.6	9.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: PSA (2005)

From Table 4 it is also noteworthy that processors are increasingly procuring directly from producers rather than through fresh produce markets when the different primary channels for processing are considered.

Figure 13 graphically illustrates some of the trends in the market outlets for potatoes. The market outlets in this graph are summarised according to final outlet. City trade, farm trade and rural trade are, for the purposes of this graph, considered to be informal trade. It is evident from the graph that there is an increase in the processing sector which reflects changing consumer tastes. The processing of potatoes has grown by 100% between 1995 and 2005. The informal sector for potatoes is also growing significantly: between 1995 and 2005 it grew by 59%. It may be speculated that the growing informal trade for potatoes is due to some substitution of other staple foods that are showing a decline in per capita consumption. The export market for potatoes, while still relatively small in comparison to other market segments, is also exhibiting growth and grew by 28% in the period between 1995 and 2005.

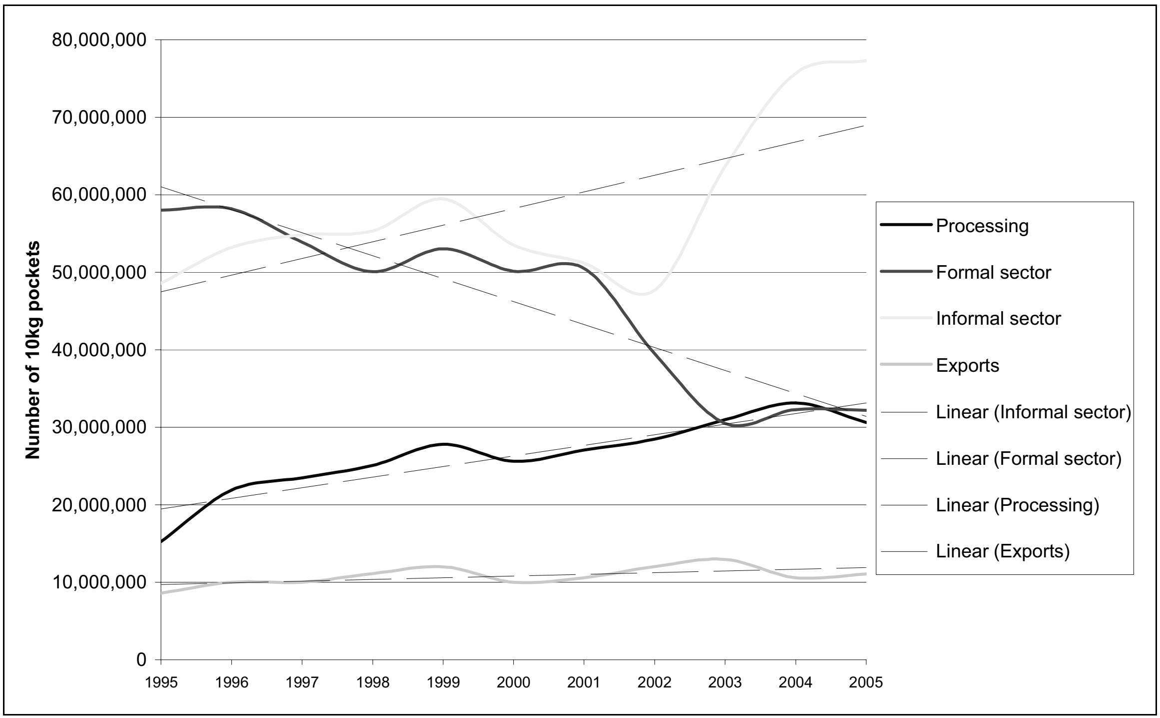

Figure 13 – Market outlets for South African potatoes: 1995 – 2005
Source: PSA (2005)

3.4 Potato subsector turnover

The value of the South African potato crop for 2005 is estimated at about R2.8 billion (NDA 2006). This does not include any value-added activities downstream of production, where the value of turnover in terms of value-added activities is reasonably difficult to acquire. As mentioned previously there are, however, a number of processing companies that have invested in the processing of potatoes and a significant number of fresh produce markets, all of which handle fresh potatoes and who, by implication, are directly or indirectly invested in the potato industry and contribute to the turnover of the subsector.

As noted previously, Jordaan and Van Schalkwyk (2002) show that 50 person-years of employment are created for every extra R1 million of final demand for potatoes. During 2005 this would translate to 80 000 employment opportunities created for that year. Employment multiplier figures created from R1 additional final demand for potatoes will, in their turn, increase value added by R1.15, which requires R0.45 of additional international imports and contributes 0.26% to government revenue (Jordaan & Van Schalkwyk 2002).

3.5 Imports and exports

As noted previously, South Africa is not considered to be a major exporter of potatoes in world terms. South Africa is only ranked 31st on the list of global potato production, supplying a mere 0.5 % of the world's total production (DTI 2006). South Africa is, however, the only exporter in Southern Africa and exports to a number of countries in its proximity. There has been a steady increase in the real value of potatoes exported. This corroborates the earlier observation that the export volumes for potatoes are on the increase. Imports and exports of fresh or chilled potatoes are graphically illustrated in Figure 14.

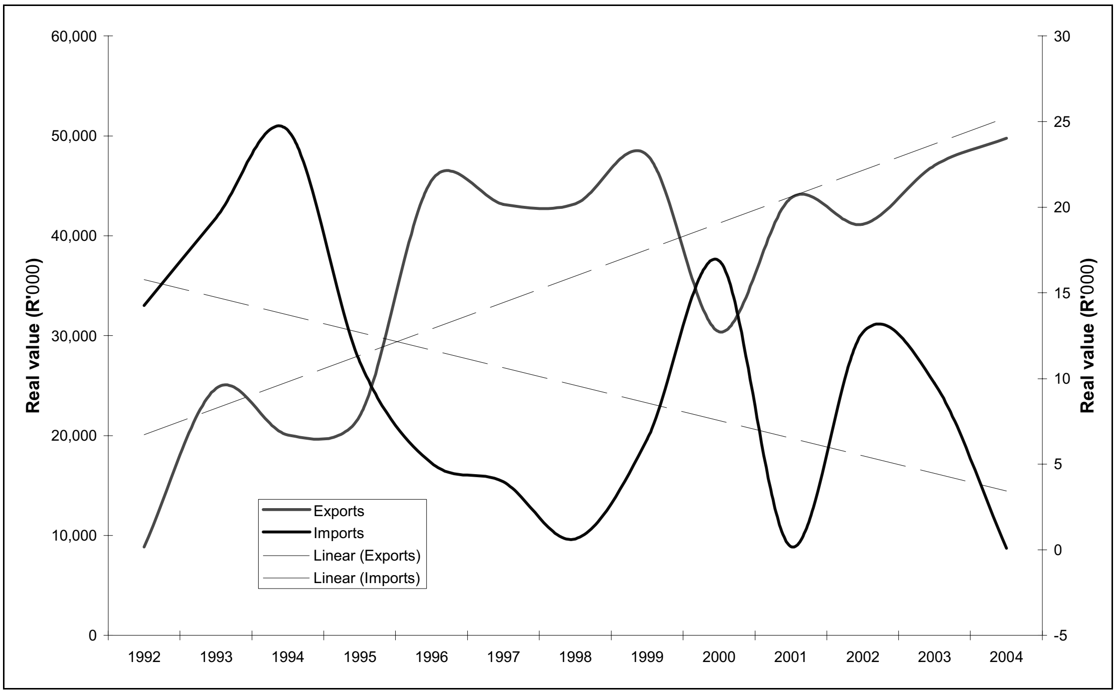

Figure 14 – Imports and exports of fresh or chilled potatoes: 1992 – 2004

Source: DTI (2006)

The total value of potatoes or potato products imported into South Africa amounted to about R51 million during 2005. The value of some of these imported products is, for all practical purposes, insignificant whereas for others it is significant. The most significant imported potato or potato-related products in terms of value are frozen fries and starch (Tariff code 1108 1390) which jointly constitute some 94% of all imports. The imports of potatoes or potato-related products are summarised in Table 5.

Table 5 – Summary of the import of potato or potato-related products: 2005

Imported product	Mass (kg)	Value (Rand FOB)	% of value	Average price (R/kg)	RSA fresh price (R/kg)
Table (fresh or cooled)	79 820	194 421	0.38	2.44	1.73
Frozen (fresh or cooked)	525 633	1 659 178	3.24	3.16	1.73
Starch 1108 1310	934	2 696	0.01	2.89	1.73
Starch 1108 1390	3 061 912	8 719 328	17.03	2.85	1.73
Frozen fries (preserved)	13 750 844	39 868 192	77.85	2.90	1.73
Crisps	49 771	761 874	1.49	15.31	1.73
Seed	41	6 541	0.01	159.54	1.73
Total		51 212 230	100.00		

Source: PSA (2005)

3.6 Subsector competitiveness

The potato chain in South Africa is relatively marginal as far as international competitiveness is concerned. The potato chain shows a negative trend in competitiveness when moving from the primary to the processed product. Potatoes, the primary product, have shown a positive trend in competitiveness from 1961 to 2002, frozen potatoes and flour of potatoes have positive long-term trends in competitiveness but have demonstrated negative trends in competitiveness from 1998 to 2002. (Esterhuizen 2006). Table 6 summarises the competitiveness of the South African potato sector.

Table 6 – Competitiveness of the South African potato sector

Product	RTA 2002	RTA 2001	RTA 2000	Trends 1961 – 02	Trends 1980 – 02	Trends 1993 – 02	Trends 1998 – 02
Potatoes	0.82	0.75	0.69	+	+	+	+
Potatoes, frozen	0.08	0.09	0.05		+	+	-
Flour of potatoes	(0.29)	(0.03)	2.27	+	+	+	-

RTA = Relative Trade Advantage Index

Source: Esterhuizen (2006)

The Relative Trade Advantage Index (RTA) shows the net trade advantage or disadvantage and is a comprehensive measure of competitiveness. This index is given by the difference between the Relative Export Advantage and the Relative Import Penetration Index. RTA may be greater or less than zero. A positive value expresses a situation of net competitive advantage, and a negative one shows a competitive disadvantage in agricultural trade.

The exchange rate plays a very important role in the competitiveness of the South African potato sector.

3.7 Market opportunities and future growth potential

There will be an additional 12.6 million people living in urban areas in South Africa by 2010 (StatsSA, 2006), driving urbanisation rates to 69% in comparison to the current 55%. The anticipated growth in urbanisation as well as population growth are expected to increase the demand for potatoes and other agricultural products. Two major shifts in the production and processing of potatoes are also expected to have a significant impact on the South African potato industry in the future. The first is the continuation of the shift from dryland production to irrigated production. Because over and under production during good and poor seasons will be eliminated, a more constant supply and, therefore, greater price stability within the sector are anticipated. The second shift is the continuation of the present increase in the production of processed potatoes at the cost of fresh potatoes. As consumers' per capita income increases, they tend to prefer processed food, a trend currently observable in South Africa. Jordaan and Van Schalkwyk (2002) also project that the demand for potatoes is likely to increase by 10% between 2005 and 2010 due to an increase in population, greater urbanisation, greater per capita income and greater per capita consumption of potatoes.

An increasing number of countries in sub-Saharan Africa are reportedly also turning to South Africa as a reliable source of food. This may therefore considerably increase the possible market size for South African potatoes.

3.8 Impact on other sectors/subsectors

The potato subsector has a number of backward and forward linkages in the South African agricultural and general economy, and changes in the subsector will, therefore, have an impact on other sectors and/or subsectors.

Although quantifying this impact is arduous, Jordaan and Van Schalkwyk (2002) show the possible impact of the potato industry on the rest of the economy by pointing out that it could have a sizeable positive impact on the creation of employment opportunities and could contribute positively to value addition in the agricultural sector, increased imports and greater government revenue as pointed out earlier.

4 Policies impacting on the South African potato subsector

There are several government policies which affect potato production in South Africa. These are summarised below.

4.1 Current policies

There are a number of policies that currently impact on the potato industry. They include the following:

- General monetary and fiscal policy of South Africa (especially the exchange rate)
- AgriBEE framework
- Land restitution and redistribution
- Agricultural credit

These policies are not discussed at length since they are within the public domain.

4.2 Summary of current government support to the subsector

Currently the South African government does not provide any direct support to the South African potato industry. It merely creates an environment within which the South African potato industry can organise, manage and maintain itself. Such support includes sanitary and phytosanitary measures to protect the local industry from risks associated with sanitary and phytosanitary conditions, the maintenance of fresh produce markets as an outlet for potatoes, the institution of tariffs to protect against dumping, and a National Agricultural Marketing Council to oversee the marketing of agricultural products, among others. The government also facilitates the levy applicable to potatoes which makes it possible to put structures like Potatoes South Africa in place to serve the whole industry.

4.3 Other support

No other support to the South African potato sector is evident.

4.4 Status of empowerment process and impact on the subsector

The empowerment process in the potato industry appears to be at the planning phase with no real impact observable yet. This is, in all probability, attributable to a lack of clear guidelines as to what the process ought to entail, how it ought to be implemented and a lack of appropriate support structures. The AgriBEE charter will provide a framework for the empowerment process but it is still in the drafting phase and is not a final document to be acted upon.

However, thus far and as part of its drive to effect empowerment and transformation in the South African potato sector, Potatoes South Africa has adopted a structure and strategy to initiate and implement the necessary programmes to bring about empowerment and transformation. A specific position at the executive level of Potatoes South Africa has been created to facilitate the Emerging Farmer Development Programme and another position to oversee emerging sector projects.

Potatoes South Africa has also compiled and submitted a report to the Business and Institutional Development Directorate of the National Department of Agriculture (NDA) highlighting the urgent need for support in these empowerment initiatives. The recommendations include NDA support to Potatoes South Africa for small farmer programmes through the following:

- An annual small farmer project grant to allow Potatoes South Africa to maintain and expand small potato farmer projects
- An annual capital grant for small farmer and trader support
- A capital loan fund, administered by Potatoes South Africa, to support small farmers with production capital
- Introduction of a small farmers' pilot project with the NDA and Potatoes South Africa as joint partners

Potatoes South Africa notes that in terms of land reform the organisation is continuously monitoring development on a regional basis to identify opportunities and to ensure support for the emerging sector. Reportedly a number of individual Potato South Africa members are involved with BEE programmes within the individual farming operations.

The informal trade (specifically informal buyers) has also been identified as a significant role-player in the South African potato supply chain since it accounts for approximately 40% of the business on fresh produce markets. Potatoes South Africa is of the opinion that these traders should be empowered to develop as business entrepreneurs in the sale of fresh produce.

It is further noted that the pressing needs of emerging farmers include training (skills development), extension and mentorship programmes. These would all be aimed at improving their ability to operate in an economically sustainable manner and removing a pervasive subsistence culture that prevents development.

A need has also been identified to improve or provide extension services to emerging potato growers focusing on specific problem areas that are relevant to small-scale producers.

4.5 Evaluation of response to subsector issues

According to information obtained in the course of interviews with Potatoes South Africa, it appears that the main issues within the subsector are being adequately addressed. These issues pertain specifically to the constraints and challenges that the industry faces. The only three issues highlighted as not being adequately addressed are the following:

- Sanitary and phytosanitary measures are sometimes considered inadequate to ensure the protection of the industry from the possible introduction of new pests and diseases through imported seed and related products.
- The commission sales marketing system in respect of fresh produce markets remains the most important price setting mechanism and the potato industry feels that ongoing efforts should be made to improve this public price setting mechanism, which is used throughout the industry to set prices for potatoes.
- Imports of processed potato products are placing domestic processors under growing pressure to increase their competitiveness or cease operation.

5 Constraints and challenges

This section identifies the constraints and market failures hindering investment, growth and employment in the subsector.

5.1 Regulatory

- **Land claims**

Land claims bring about uncertainty for land owners, who are consequently reluctant to increase investment in existing land and infrastructure or to increase investment in additional land. This uncertainty is expected to adversely affect investment, growth and employment within the industry.

- **Labour legislation**

Restrictive labour legislation is reportedly resulting in increased mechanisation, thereby decreasing the number of employment opportunities within the sector.

- **Implementation of anticipated AgriBEE framework**

Currently there is a lack of support structures to start working towards AgriBEE compliance when the framework is implemented. This is manifested through the following:

- Producers are uncertain about the implications of AgriBEE and generally lack a clear understanding of AgriBEE.
- There is a lack of AgriBEE advisors to the industry and the various components of the industry.
- There is a lack of knowledgeable trainers to assist the industry with skills development, especially at production level.
- There is a lack of potato-specific training materials for trainers to train labourers, especially at production level.

5.2 Labour markets

- **HIV/AIDS**

The exact impact of HIV/AIDS on the potato industry is not clear, but interviews suggest that HIV/AIDS is thought to be making a significant impact on the labour market within the potato industry through decreased productivity and a depletion of the workforce. It is suggested that not only unskilled labourers but also skilled labourers are adversely affected by HIV/AIDS. This implies that regular training of unskilled labourers must be done to replace skilled labourers adversely affected by HIV/AIDS, and the costs associated with this must be incurred. It is also pointed out that labourers who are adversely affected by HIV/AIDS and depart from the workforce are increasingly replaced by mechanised processes, which systematically decreases the employment opportunities in the sector. This is apparently as a result of restrictive labour legislation, as noted previously, and the direct and indirect costs of training unskilled labourers to replace skilled labourers who depart from the workforce.

5.3 Infrastructure

A lack of infrastructure in remote rural areas is viewed as a major constraint in accessing markets, especially for small-scale producers. Special reference is made to road infrastructure. Where transportation is available in the remote rural areas it is prohibitively expensive for small-scale producers, particularly where refrigerated transportation is required. The transportation problems that emerging farmers face also result in a deterioration of quality, late delivery and, ultimately, the realisation of lower prices. Transport assistance is emphasised as a critical success factor for emerging farmers.

Other forms of infrastructure that could be considered major constraints, again especially for small farmers, include a lack of sorting and packaging facilities or a lack of access to these. Improved sorting and packaging could potentially increase producers' returns.

5.4 Other

- **Agricultural research**

  A decline in agricultural research places an enormous burden on the industries themselves to conduct critical research. Industry bodies seldom have sufficient capacity in terms of researchers and/or funds to conduct the necessary research. The declining research capacity at both parastatals and industry bodies results in a decline in critical research output, which in turn results in a decline of growth in the industry.

- **Deterioration of extension services**

  Deterioration in extension services is leaving a void in an area where there is reportedly a dire need on the part of both commercial and (especially) emerging producers. Specific extension services are reportedly required in

  - Technical production aspects
  - Selection of correct cultivars
  - Disease control management
  - Adherence to quality, grading, safety and hygiene requirements and regulations
  - Basic business management especially with regard to financial management (especially cash flow management), credit control and marketing
  - Supply chain issues such as managing logistics, packaging and maintenance of a cold chain

- **Water for agriculture**

South Africa is located in a predominantly semi-arid part of the world. The climate varies from desert and semi-desert to sub-humid, with an average rainfall for the country of about 450 mm per annum – well below the world average of about 860 mm per year – while evaporation is comparatively high. As a result, South Africa's water resources are, in global terms, extremely limited. This is of special importance to the potato sector, which is heavily dependent on water for irrigation given that 70% to 80% of all potatoes are produced under irrigation.

The most recent analysis of the available water resources in South Africa shows that the total local water resources available in South Africa in 2000 was 13 227 million m^3 while the annual water requirement was 12 871 million m^3 (DWAF, 2006). Therefore, for the time being, South Africa has a adequate supply of water. A reconciliation of the requirements for and availability of water as well as a breakdown of current consumption is shown in Tables 7 and 8 respectively.

Table 7 – Reconciliation of the requirements for and availability of water, 2000 and 2025 (million m^3 per annum)

	2000	2025
Local yield	13 227	12 166
Less consumption	12 871	14 230
Less transfer out	170	170
Balance	**186**	**(234)**

Source: *National Water Resource Strategy* (2004)

The balance of water availability after provision for consumption and transfers is currently 186 million m^3 per annum. It is, however, notable that water supply in South Africa could possibly be in deficit by 2025 (DWAF 2006) if measures are not put in place to ensure longer term water supply.

Table 8 – Breakdown of water consumption, 2000 (million m^3 per annum)

Sector	Million m^3 per annum	Percentage of total
Irrigation	7 920	62
Urban and rural	3 471	27
Mining, bulk infrastructure and power generation	1 052	8
Forestry	428	3
TOTAL	12 871	100

Source: *National Water Resource Strategy* (2004)

The total area under irrigation for commercial and developing agriculture is 1 290 132 ha and the potential for expansion is 283 350 ha. Included in this total irrigated area is an area of 47 486 ha (or 3.7% of the total) which is used for food plot and small-scale farming on a large number of irrigation schemes in all provinces (DWAF 2006).

Agriculture is characterised as a very large and very inefficient user of water. Estimates are that on average only 45% of the water that is diverted or withdrawn for irrigation actually reaches the crop. Approximately 15% is lost through canal distribution; 15% through on-farm distribution and 25% through field application.

With increasing economic growth and development, the competition for existing water resources between agricultural, domestic and industrial water users and for environmental protection is expected to intensify. This trend is complicated by the necessity to reduce poverty and improve the food security of rural households. These factors highlight the dire need to increase water use efficiency to ensure sustainability of irrigated agriculture. Current water losses of up to 45%, if saved, could result in an estimated 524 300 more hectares of cultivated land being irrigated which, it is estimated, would increase agricultural GDP by R752 million (Backeberg, 2006).

Reallocation of water currently used for commercial agricultural production will nonetheless only take place if there are incentives to increase farming profitability.

6 Opportunities

6.1 Possible policy interventions/levers

The challenge for the potato industry lies in how to increase productivity and hence profits. Options include increasing yields and production, and decreasing production costs. Another challenge is to increase market share and consumption. Options in this regard include affordable consumer prices, availability, value addition and the blanket promotion of potatoes.

Potatoes South Africa holds the view that the role of government should be limited to creating a legislative framework for fresh produce marketing and supporting programmes for the emerging sector in partnership with the industry.

Potatoes South Africa has highlighted the following priorities in terms of assistance required from government and its agencies to improve the marketing of potatoes:

- Assistance with controls to protect the local potato industry against dumping practices and protection against imports from subsidised countries
- Assistance in establishing trading opportunities, especially in SADC countries
- Intervention with a view to separating ownership and management of fresh produce markets (Management of fresh produce markets should reportedly involve key role-players in the business operations of markets, like producers, market agents and buyers/consumers.)
- Revisiting the regulation of market agents and their sales staff by the Association of Public Account Committees – a point raised by the industry on various NAMC forums
- Assistance of Potatoes South Africa in the funding of marketing innovations aimed at supporting emerging farmers

6.2 Other market development interventions

Potatoes South Africa has highlighted the following possible market development interventions to improve the marketing of potatoes and to increase the economic contribution of potatoes to employment, poverty alleviation and general economic growth:

- Increasing the per capita consumption of potatoes. This can be achieved through various marketing processes, such as blanket generic marketing.
- Establishing trading opportunities especially in SADC countries. As noted previously a number or countries in close proximity to South Africa are turning to South Africa as a reliable source of safe food.

6.3 Possible marketing incentive schemes that could be established

Interviews with Potatoes South Africa reveal that the only marketing incentive scheme that is evident at the moment is the development of institutional markets for small-scale producers. Institutional markets like hospitals, schools and prisons could be used to “groom” small-scale producers to improve their production, quality and consistency so that, over time, they could enter the broader potato marketing environment.

The development of export markets to Southern Africa could also form part of any marketing incentive schemes that might be introduced.

7 Conclusion

Potatoes play an important role in the South African agricultural sector. The value of potato production is in the vicinity of R1,6 billion per annum, produced by around 1 700 potato producers and 66 000 labourers.

The South African potato industry structure includes producers, fresh produce markets, retailers, processors, exporters, informal traders, seed producers and consumers. SWOT analyses for each of the role-players in the potato sector, especially Potatoes South Africa, would have aided in gaining insight into the current state of the South African potato sector and the structures that govern it. Industry-generated SWOT analyses were, however, not available during the compilation of this report.

Potatoes are a highly labour intensive crop and a very large proportion of minimally skilled labour is absorbed in the industry. The potato industry also has a number of employment multipliers in, for example, transport, processing, independent traders, retail, packaging and informal traders. Increased mechanisation, increases in efficiency and labour market problems are, however, resulting in a decline in the number of labourers absorbed in the potato industry.

Production levels for potatoes in South Africa have shown steady increases while the number of hectares planted to potatoes has been steadily declining as a result of increased yield efficiency. Real producer prices for potatoes have been stagnant for at least a decade. The most significant market outlets for South African potatoes are formal and informal fresh consumption and processing. The trade of potatoes through formal markets such as fresh produce markets is declining while the informal sector for potatoes is growing significantly. There has also been a sharp increase in the processing of potatoes in South Africa with the sector doubling in the past decade. The export market for potatoes, while still relatively small in comparison to other market segments, is also exhibiting growth.

The potato chain in South Africa is relatively marginal as far as international competitiveness is concerned. The potato chain shows a negative trend in competitiveness when moving from the primary to the processed product.

Urbanisation, population growth and increasing incomes are expected to increase the demand for agricultural products and, therefore, for potatoes. An increasing number of countries in sub-Saharan Africa are reportedly also turning to South Africa as a reliable source of food. This considerably increases the possible market size for South African potatoes.

There are a number of policies that currently impact on the potato industry, such as South Africa's general monetary and fiscal policy, AgriBEE framework, land restitution and redistribution and agricultural credit. Currently the South African government does not provide any direct support to the potato industry. It merely creates an environment within which the South African potato industry can organise, manage and maintain itself.

The empowerment process within the potato industry appears to be at the planning phase, with no real impact observable yet. Potatoes South Africa has, however, adopted a structure and strategy to initiate and implement the necessary programmes to bring about empowerment and transformation.

Constraints and challenges that the potato subsector faces include land claims, labour legislation, planning the implementation of the anticipated AgriBEE framework, the impact of HIV/AIDS, infrastructure, agricultural research and the deterioration of extension services. Given that potato production in South Africa is heavily dependent on water for irrigation and the fact that South Africa's water resources are, in global terms, scarce and extremely limited, the availability of water for irrigating potatoes is foreseen to become a challenge for the future of the sector.

Potatoes South Africa is of the opinion that the only marketing incentive scheme that is evident at the moment is the development of institutional markets for small-scale producers. Institutional markets like hospitals, schools and prisons could be used to "groom" small-scale producers to improve their production, quality and consistency so that they could start entering the broader potato marketing environment.

It is anticipated that through targeted interventions such as those outlined above the South African potato subsector could be a key contributor to South Africa's 6% economic growth target and to ASGISA.

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