GRAIN SA GRAAN SA

The Grain and Oilseed Industry of South Africa A JOURNEY THROUGH TIME CHAPTER 1

# Production of grain and oilseeds IN SOUTH AFRICA

Each of the different grains and oilseeds in South Africa has a unique production course in history, but they were nevertheless often affected in a comparable manner by the same conditions and developments, whether these were mechanical and technological development, climatic conditions, global events or political and social events and developments in South Africa.

# **INTRODUCTION**

The most important influence on the industries probably came from the introduction of control over the marketing of agricultural products in terms of the first Marketing Act of 1937, and again about 50 years later by the Marketing of Agricultural Products Act of 1996, which abolished control.





Examples of the ploughs and harrows in the time of the Voortrekkers and just after that period.

Video: In order to get ahead one has to be familiar with the history – Mr Crawford von Abo.



Soil cultivation in the early 1900s.

Both the introduction and the abolishment of control were preceded by clear changing trends and had a material effect on the broader agricultural industry, but also on the grain and oilseeds industries in particular. Control over the production and marketing of agricultural products was not unique to South Africa and it is even probable that its introduction was in fact influenced by international trends.

In the run-up to the eventual deregulation of agriculture in South Africa the system of controlled marketing was often criticised, and the allegation was made that it had not achieved its aim. Regardless of these opinions there can be no doubt that the controlled environment created opportunities for the South African grain and oilseeds industries to develop into a commodity sector and to grow, thereby enabling it to make a material contribution to development in South Africa. Not only did it make a significant contribution to the country's gross domestic product, but it was also an important and material area of job creation, particularly for unskilled labourers.

This chapter places the history of the production of maize, winter cereals (wheat, oats and barley), oilseeds (groundnuts, sunflower seed, soybeans and canola) and sorghum in South Africa in perspective, with reference to a few outstanding events that influenced it over time. The mere scope of the information on this topic makes it impossible to expose even the tip of the iceberg. Consequently this publication refers only to a few major events, highs and lows, key role-players and light moments in the industry that were recorded in sources or are remembered by the role-players at the time.



Maize being threshed.



Graph 1: Agriculture's contribution to the GDP



Shipping of maize around 1908.



Maize was stacked into little piles before it was threshed.



The relative contribution that each of the products made in terms of volume produced is clear from Graphs 2 and 3.

The area on which maize is cultivated has traditionally varied considerably because maize is mainly cultivated on dryland. This area has decreased significantly since the drought of the middle 1990s. Statistics show that the area cultivated under maize decreased by roughly 40% over just more than three decades (from 1980 to 2013) – from about five million hectares to about three million hectares.



Graph 2: Grain production - volumes (maize, wheat, sorghum)



Graph 3: Grain production - volumes (groundnuts, sunflower, soybeans, barley)



Graph 4: Gross value of agricultural production - historical



The area under wheat similarly shrank considerably over the same period – from about two million hectares to even less than one million hectares. The enormous decrease in the middle nineties can probably be regarded as a structural change because it never rose to previous levels again after that.

In contrast, soybean plantings increased from 22 000 ha in 1975/1976 to more than 500 000 ha in 2013. However, this was still not enough to compensate for the decrease in the total area of maize and wheat plantings.

In 1970 a total of 181 000 ha of sunflower were planted. Although this varied from one season to the next, sunflower plantings showed a rising trend over time, and in 2013/2014 sunflower plantings covered 598 950 ha, with the biggest planting of 828 000 ha in 1998.

Groundnut plantings constantly increased after the Second World War, and peaked at almost 400 000 ha around 1970, after which it started to decline gradually. However, from 1995 it started to decline markedly, and by 2013 the average annual plantings was less than 50 000 ha.

The planting of sorghum peaked in the 1960s, with a record of 640 000 ha in 1966. However, it decreased drastically over time and in the ten seasons preceding the 2014/2015 season the average was only 71 000 ha/year.

The grain industry is one of the biggest agricultural industries in South Africa and by 2010 it contributed about 30% to the total gross agricultural production.

#### **Production areas**

Maize, which us the biggest locally produced grain crop and is planted on the biggest area, is the main source of carbohydrates in the southern African region. South Africa is also the biggest producer of maize in the Southern African Development Community (SADC). Maize is produced mainly in North West, the Free State, the Mpumalanga Highveld and the KwaZulu-Natal Midlands.

Wheat is planted on the second biggest area, mainly in the winter rainfall areas of the Western and Southern Cape and in the eastern areas of the Free State.

South Africa is not a significant role player in the international sunflower market, as it contributes only a small percentage to the world's production of and trade in sunflower seed. Sunflower is cultivated mainly in the same areas as maize in South Africa.

Soybeans are cultivated mainly in the Free State, Mpumalanga and KwaZulu-Natal, with small plantings in Limpopo, Gauteng and North West.

Groundnuts were initially planted in the current Limpopo. Later it was expanded to the western parts of the country, and by 2015 it was concentrated primarily in the western and north-western parts of the Free State, North West and the Northern Cape.



Graph 5: Gross value of agricultural production since 1970



Sorghum is produced mainly in the drier summer rainfall areas of Mpumalanga, Limpopo, the Free State, North West and Gauteng.

# **GOVERNMENT INVOLVEMENT**

In the years before deregulation the South African government was not only involved in the marketing of agriculture through the control boards and schemes that were instituted in terms of the Marketing Act, but also intervened in other areas in order to assist producers in the country in times of crisis and address bottlenecks in the agricultural industry.

Each such event that concerned agriculture in general is mentioned below. Those that were more industry specific are included later in the perspective on the industry concerned.

# 1973 Drought aid

Because of the severe drought from October 1972 to February 1973, many producers could not plant summer crops, feed or cash crops that season. The crops of many of the producers who did manage to plant were seriously damaged by the drought.

SAMPI realised the effect of the drought on the producers and held a mass meeting at Wolmaransstad on 9 January 1973, at which the Minister of Agriculture, Mr Hendrik Schoeman, was also present. The critical position of the producers was clear from the fact that about 1 300 producers attended the meeting.

At the meeting SAMPI submitted five proposals to the minister to help to alleviate the financial position of the producers. This included that the funds in the Stabilisation Fund (see Chapter 2) be paid out to the producers as a final payment, that specific actions with respect to the selling price of maize and the export of maize be made, and that producers receive a reprieve for the repayment of their production debt from co-operatives.

Not long afterwards Minister Schoeman announced an aid programme for producers in the drought-ravaged areas. This contained various components, but probably the most important one for the grain producers was that co-operatives were allowed to postpone certain producers' payment of production debt by spreading it over a period of four years. Qualifying producers could also apply for production credit to establish crops in the subsequent season.

# **Jacobs Committee**

In October 1978 the government appointed the so-called Jacobs Committee to investigate the economic position of grain producers and agricultural financing in general, and make recommendations in this regard. The committee was tasked with specifically referring to the ever-increasing production costs, the growing debt position of grain producers, return on capital, the extent to which existing sources of financing provided in producers' short, medium and long-term financing needs, and the role of agricultural co-operatives in the provision of financing to producers.

In its report the committee supported the principle that production patterns had to be determined by actual production costs and ruling producer prices, but was not in favour of subsidies to producers to counteract rising production costs. They were of the opinion that the agricultural sector not only had to produce enough to provide South Africa's growing population with food, but should also produce for the export market.

The committee maintained that there were sufficient reasons to rethink measures that could improve producers' financial position in order to reinstate agriculture on a sound and viable footing. They also recommended that the strategic importance of agriculture to attain the objective of self-sufficiency in particular had to receive greater priority and that the government's objectives in this regard had to be spelled out clearly.

Among other things the committee concluded that the agricultural price policy had to be reformulated, and that adjustments to the Land Bank's policy on the



financing of producers and agricultural co-operatives were the right action. They also pointed out that there was a great need for co-ordination between agricultural co-operatives and government institutions with respect to technical and economic counselling to producers.

Most of the Jacobs Committee's recommendations were accepted in principle by the Ministers of Agriculture and Finance, particularly those that applied to the pricing policy, in order to adjust producers' profit margins. The committee's report eventually led to a decision by parliament to subsidise producers' interest rates.

# Financial support by the government and the Burger Commission

The declining profitability in many parts of the agricultural sector would have led to material decreases in farming income if it had not been for the government aid to producers. Despite the government's considerable financial assistance to producers, arrears on loans increased constantly as the financial crisis on farms deepened.

In 1979 the government introduced a drought aid scheme to the summer sowing areas, similar to a scheme that was introduced in the Swartland shortly before. The aim of the scheme was to grant special aid to stock and grain producers who experienced financial problems because of drought. It was limited to producers who were still creditworthy and who could prove that their losses were caused by the drought.

In terms of the scheme, the repayment of production credit that producers could not settle because of the drought was postponed. This applied only to production credit granted for the 1979/1980 production season and offered producers an opportunity to repay that production debt over a maximum period of four years. The interest on the relevant debt was subsidised by 3,5% by the government. The scheme also made provision for special credit to creditworthy producers to purchase animal feed in areas declared to be emergency grazing areas.

However, the government's financial aid over several years did not succeed in halting the structural deterioration in the profitability of farming and the debt load constantly increased.

A material component of the producers' short-term debt, which was mainly owed to co-operatives, consisted of transfer schemes for production credit guaranteed by the government. The state guarantee with respect to the producers' carry-over debt was originally introduced after the severe drought of 1982/1983. Producers of the time recount that it was a complicated system in terms of which the maize-producing areas were divided into regions according to the type of soil. On the basis of the classification of his soil a producer could apply for a certain part of his debt to be carried over to the next year, which was then guaranteed by the government. The production debt was eventually repaid by the producers at the subsidised interest rate.

In 1992 it was estimated that the total benefit from the government's interest-rate subsidy to producers from 1983 to 1992 amounted to about R1,31 billion.

The government guarantee on carry-over debt in effect became a permanent measure after 1983 and the value of this guarantee increased over time from R800 in 1983 to R2,4 billion in 1992. The drought of 1991/1992 had a major effect on this debt.

In 1992 the state announced 13 aid schemes to agriculture on the basis of the report of the Burger Commission. This included a drought aid package of R2,8 billion that was allocated to assist agriculture in the drought-ravaged summer sowing areas. Some sources refer to an amount of R3,4 billion, but this was not the final amount that was ultimately agreed on with the government.

The drought aid package consisted of a subsidy calculated at R375/ha, which was paid to co-operatives and comprised the following:

 A carry-over debt subsidy of R175/ha to every qualifying producer, based on the average proven area under cash crop production for the 1989/1990, 1990/1991 and 1990/1991 production seasons. This amount was paid to each qualifying producer, regardless of the extent of their debt to co-operatives or ability to recover. It was therefore also paid to producers who did not have carry-over debt.

- A sliding scale crop-damage subsidy of R100/ha to producers who had had crop damage during the 1991/1992 production season. This was based on the proven area of cash crops that had been planted during this production season and/or was being planned, taking the proven crop produced during the season into account.
- A carry-over debt subsidy of R640 million in total that was paid to qualifying co-operatives. The division of the amount between the co-operatives was done pro rata according to the ratio in which each co-operative's outstanding production debt stood at the end of the 1991/1992 production season, i.e. on 31 August 1992, to the total unpaid production debt of that season at all qualifying co-operatives on that date. The calculation was done after the employment of the carry-over debt subsidy of R175/ha and the crop damage subsidy of R100/ha had been taken into account.

The implementation of this aid package also meant the end of the government guarantee.

The 1994/1995 production season was once again one ravaged by drought. The impact of this was that the main agricultural crops demonstrated a decrease in production of about 52% compared to the previous season, and in certain parts of the country producers experienced total crop failures. Because of this many grain producers experienced major problems in obtaining product financing for the next season, while perennial crop producers did not have the financing to re-establish orchards that had died off because of the shortage of irrigation water.

Because of the effect of the drought, the cabinet allocated an amount of R199,5 million to agriculture in October/November 1995 for financing aid to small-scale irrigation farmers, an animal feeding scheme and assistance with the re-establishment of perennial crops, or input financing of dryland crops.

Since then assistance from the government to agriculture has been limited to a few cases where actual disaster conditions were experienced, and agricultural producers essentially bore the risk of unfavourable economic and climatic conditions themselves.

#### Storage and silo building programme

In the early 1900s grain was harvested in sacks and transported by ox wagon to railway stations or co-operatives, where it was graded and stored on behalf of the

# IN 1925 CJ BOSMAN REPORTED AS FOLLOWS IN SUID-AFRIKAANSE GESAAIDES:

'The government constructed grain elevators in Durban and Cape Town and about thirty places in the main maize regions in the Union. Now there are great savings in the handling of the crop; sacks are largely being eliminated; wastage has been reduced to a minimum; the industry has been given a great boost; the farmer is expected to receive a greater part of the profits; buying and selling are easier; the export trade can be regulated better and the industry has been placed on a better footing.' IT SEEMS THAT THE FIRST GRAIN SILO IN SOUTH AFRICA IN WHICH 7 040 TONS OF MAIZE COULD BE STORED WAS ERECTED FOR A MILL IN VEREENIGING.



producers until it was delivered or dispatched to buyers. Because storage in the open (often on the platform of the railway station) caused material problems with contamination and quality, large corrugated iron stores were constructed in which the bags of grain were stored.

The increase in production during the early 1920s and the requirements regarding the weighing, cleaning, grading and storage brought about by increased exports emphasised the storage problem. At that stage Canada and the USA were already using silo storage and a delegation was sent there to investigate this method. On the basis of this investigation, as well as the report by the Clark Committee, South African Railways and Harbours (SAR&H), which was part of the government administration, built two silos – one at the Durban harbour with a capacity of 42 000 tons, and one of 30 000 tons at the Cape Town harbour.

The SAR&H also started constructing silos along railway routes and by 1924 the following silos (later commonly known as the Railways silos and then as the B silos), with a total storage capacity of 101 850 tons, had already been constructed in the interior:

Station	Capacity (tons)	Station	Capacity (tons)
Frankfort	5 800	Ficksburg	2 600
Heilbron	5 800	Middelburg	2 600
Klerksdorp	5 800	Makokskraal	2 600
Reitz	5 800	Moorreesburg	2 600
Bethal	4 800	Potchefstroom	2 600
Bethlehem	4 800	Leslie	2 600
Kroonstad	4 800	Pienaarsrivier	2 200
Bothaville	4 800	Ventersburg	1 800
Kinross	4 800	Kaallaagte	1 800
Senekal	4 800	Koster	1 800
Rendezvous	4 800	Leeudoringstad	1 800
Lindley	4 800	Makwassie	1 800
Balfour	3 000	Val	1 800
Clocolan	3 000	Westminster	1 800
Ventersdorp	3 000	Davel	1 800
Vermaas	3 000	Standerton	1 800
Vrede	3 000	Settlers	1 750
Coligny	2 600		



These silos received, graded, weighed, cleaned and stored only grain, and did not trade in grain themselves.

Initially, grain was delivered at the silos mainly in sacks, but also to an extent in bulk. The way in which the grain in silos was managed had several benefits, including certainty with respect to grade and mass, the possibility of guarantees by way of grain vouchers and a reduced risk of losses during the loading process.

Storage at silos initially encountered considerable problems and the safe and effective storage of maize was a source of concern for the Maize Board and the government from the earliest days. The problems experienced led to the government ordering an investigation into the storage of maize in 1945. As a result of this the Maize Board sent a delegation overseas in 1949 to investigate methods of bulk handling in Australia.

In 1951 the Maize Board allocated an amount of R300 000 for the construction of a grain silo at Lichtenburg. The bulk store that was constructed was commissioned in 1953 and was the forerunner of the movement to construct bulk handling facilities for maize in South Africa.

In February 1952 the Minister of Agriculture announced a long-term loan scheme to the value of R10 million for constructing grain silos, to be financed by the Land Bank. This only really gained momentum in the early 1960s, when the agricultural co-operatives at the time, being agents of the control boards, started to construct grain silos under the supervision of a Grain Silo Committee.

The Grain Silo Committee was constituted from representatives of the Department of Agricultural Economics, the Maize Board, Wheat Board, Oilseeds Board and Sorghum Board and had the final say with respect to the location, capacity and design of the silos. The Land Bank considered applications for financing for the building of silos only if they were backed by a certificate from the Grain Silo Committee.

The construction of bulk facilities for storing grain started getting momentum from 1961. Various methods were used in the construction of grain silos in the course of time, for example the so-called concrete chute construction method. Later vertical concrete structures were constructed that could take in and offload grain at a quicker rate, with the additional advantage of more effective fumigation.

The agricultural co-operatives at the time constructed a total silo capacity equal to 15 465 432 tons of maize, of which 14 492 576 tons was constructed at 220 depots in the north of the country, and 972 856 tons at 46 depots in the south (Western Cape).

The regulated silo building programme was suspended in 1984. At the beginning of 1990 the Minister of Agriculture, Dr Kraai van Niekerk, disbanded the Grain Silo Committee, and state loans for the construction of grain silos were abolished. This brought an end to the control and restrictions on the construction of grain silos.

Silo owners earned a good income for storage compensation, particularly in the period from 1986 up to the deregulation of the markets in 1996. As agents of the control boards they received a guaranteed set capacity compensation, regardless of the quantity of grain stored in the silos, as well as a handling fee that was based on the quantity of grain received at and dispatched from the silos.

After deregulation and the abolishing of the control boards, this guaranteed compensation ceased. In addition any person or institution could receive, store, buy



Mass storage facility in Lichtenburg.

THE AGRICULTURAL WAREHOUSE ACT PROMULGATED IN 1930 CREATED A LEGAL FRAMEWORK FOR TRADING GRAIN BY WAY OF GRAIN RECEIPTS OR SILO CERTIFICATES. IT WAS REVOKED IN 1975.





NOORDWES KOÖPERASIE (NWK) TOOK CHARGE OF ITS FIRST GRAIN ELEVATOR, CONSTRUCTED AT LICHTENBURG, IN 1959.

THE FIRST SILO FOR SENTRAALWES KOÖPERASIE (SENWES) WAS BUILT AT BULTFONTEIN AND COMMISSIONED IN 1964.

and sell grain after deregulation. This paved the way for alternative and cheaper storage methods, like bulk silo sacks (which were introduced from Argentina as a new storage solution to producers), grain dams and private storage facilities on farms.

Because producers could market their grain directly, private storage and the sale of grain directly from the field (the process known as land load) gradually increased, which placed great pressure on the profitability of traditional silo structures.

Farm storage had the benefit for producers that harvesting was shortened because the trailers of trucks had a shorter turnaround time and the vehicles did not have to drive on public roads. The shortened harvest also meant that producers could start preparing their fields for the next season more quickly. Producers could store grain for own use much more cheaply, without the expense of transporting it back from the traditional silos when required. This naturally also entailed certain demands, like capital investment and constant managing of the grain in storage, which was handled by the co-operative silo owners with established expertise.

The flexibility of the deregulated market environment made it possible for producers who had their own storage facilities to market their grain more effectively by better utilising opportunities offered by the market. Analysts and academics also think that the deregulated environment promoted the profitability of maize production for the producers in the first decade after deregulation. This could place producers in a better financial position to implement structural changes in the running of their farms, like constructing their own storage facilities.

All these factors, together with the tax benefits of building silos on farms, considerably stimulated the creation of alternative storage facilities away from the traditional structures of the agribusinesses and co-operatives.

Commodity traders who did not, like the co-operatives, have their own storage facilities, also started to establish alternative storage facilities like grain bunkers in areas close to the mills they supplied with a view to reduce storage and handling costs.

However, at the same time, grain started trading on Safex with the requirement that contracts could be traded only by Safex-approved silos. This limited the use of the new alternative facilities for trading on Safex, except in the case of localities that had been approved for this purpose by Safex.

#### Transport

The way in which grain was transported to markets changed constantly since the beginning of the twentieth century as transport methods and storage facilities changed. For the greatest part of the period up to the middle of the 1990s the majority of grain was transported by rail.

During the regulated era the control boards were essentially the only entities that transported grain on a large scale in South Africa. They mainly used rail transport, which was provided only by the government's Railways and Harbour Administration (later Spoornet). It was therefore easier to co-ordinate transport needs to the interior as well as to and from the harbours, and effective methods and practices were developed in time to make this possible.

The control boards were informed about expected crop sizes and their distribution across the country and could therefore ensure timeously that effective transport



Ready to sail.

arrangements were made. However, the deregulation of the grain industry changed the playing field completely. Suddenly there were many more role-players in the grain industry who each focused on his own needs without taking the total position with respect to the supply and demand of transport into consideration and without any co-ordination. Likewise, the import and export of grain was no longer co-ordinated, and the entry of material foreign role-players like Cargill and Louis Dreyfus led to even greater complexity.

These factors, together with other logistical challenges with respect to storage capacity and the handling of many more unique consignments, promoted a major diversified, unpredictable and unstable need for transport. This, together with needs like shorter turnaround time, quick reaction and adaptability that are unique to the free market, created the opportunity for alternative transport. The transport of grain by road increased rapidly, to the extent that in 2015 about 85% of all grain in South Africa was estimated to be transported in this way, compared to 15% in 1990.

# Agricultural research and technology

On 1 April 1992 the Agricultural Research Council (ARC) was established as a relatively autonomous institution as a result of the restructuring of the Department of Agricultural Development, which involved the deregulation and privatisation of certain divisions of the department.

Initially, the ARC comprised twelve research institutes that were transferred from the Department of Agricultural Development to the ARC. Up to that stage the Department of Agricultural Development was responsible for the major portion of agricultural research in South Africa. The department was assisted with this by the agricultural faculties of universities, the marketing councils that made important inputs, agricultural co-operatives, private undertakings and the Department of Development Aid from the government. The Department of Agricultural Development had the biggest manpower component for agricultural research, with about 5 600 staff members, which included 950 researchers, 58 agricultural economists and 46 agricultural engineers.

The Department of Agricultural Development also had well-equipped laboratories with a total floor area of about 14 000 square metres, in addition to 74 experimental farms, spread across most of the climatic regions and cultivation areas in South Africa. The experimental farms carried out field trials under controlled conditions and





Maize imports.



played an important role in research, expansion and training, in addition to practical demonstrations of farming practices, systems and the development of new cultivars.

The ARC's main aim is to provide effective technology to all the participants in agriculture and related industries in order to ensure dynamic and environmentally friendly industries that are competent to produce adequate agricultural products of acceptable quality for consumers to produce. This includes providing information and research results as well as developing human capital.

With the transfer of the twelve research institutes to the ARC, the Department of Agricultural Development retained certain regional organisations and directorates, including the Directorates of Agricultural Engineering and Agricultural Economics. The changes went hand in hand with the closure of certain departments and a gradual shift in the focus to include the developing agricultural sector too.

In time, undertakings in the agricultural industry like the fertiliser companies and former co-operatives built their own research facilities and laboratories to fill gaps in certain research needs that developed after deregulation.

Grain SA also fills an important function to co-ordinate agricultural research with respect to grains and oilseeds, eliminate duplication, guide research priorities and establish synergies between various local and even international research disciplines. Since 2012 Grain SA carried out pioneering work in this regard and the industry is still benefiting from it. Chapter 7 refers in more detail to the role of Grain SA with respect to research initiatives in support of food security.

#### **MAIZE PERSPECTIVE**

#### Introduction

Maize is undoubtedly the biggest field crop in South Africa, and the staple food of the majority of not only the local population, but also of the biggest part of the



Southern African population. Graph 7 provides an overview of the history of maize cultivation in South Africa since the 1936/1937 season in terms of the number of hectares cultivated and the total yield/year.

As shown in Graphs 8 and 9, from 1970/1971 the production of maize was distributed between the provinces of South Africa.

Approximately 50% of South Africa's domestic consumption of maize is for human needs, as is demonstrated by the above statistics (see Graph 10).



Graph 6: Maize production in South Africa







Graph 8: Maize production per province



Graph 9: Maize production per province



Graph 10: Maize: Annual domestic consumption

#### Production

It seems that maize originated in Mexico and Central America, and from there spread across the globe, to the extent that it was regarded as the third biggest staple food in the world by 2010.

Although maize was already cultivated by the indigenous population when the Dutch settlement was established at the Cape, the first maize seed for commercial planting was received at the Cape on 25 November 1655. However, according to the diary of Jan van Riebeeck, the first seed was planted on his recommendation only in July 1658. Naturally, it could not be cultivated successfully in the winter rainfall region of the Western Cape, and maize cultivation was only really established with the settlement of the 1820 Settlers in the Eastern Cape, and gained momentum as the Great Trek progressed further northwards from 1838.

Maize production in South Africa only really became relevant after the discovery of diamonds in Kimberley in the 1870s and gold on the Witwatersrand in 1886. Until that stage the cultivation of maize was mainly done on the basis of subsistence farming. The discovery of diamonds and gold, which was accompanied by accelerated growth in transport and communication systems as well as other technological development, led to a concentration of people in certain areas and promoted a considerable increase in the demand for maize and other agricultural products. Maize production was given a further boost when cylinder-type threshers became available in 1902. Before that it was a major problem getting the maize kernels from the stalk.

At the turn of the century, around 1900, the production of maize was stimulated further by the start of maize exports. The first recorded maize exports were by a

IN 1907 ABOUT 490 378 HA OF FIELDS WERE PLANTED IN THE TRANSVAAL, 274 574 HA OF WHICH WERE UNDER MAIZE. INITIALLY, GRAIN PRODUCTION FOCUSED MAINLY ON LAND THAT COULD BE IRRIGATED IN SOME WAY. PRODUCERS PLOUGHED WITH OXEN AND PLANTED AND HARVESTED BY HAND. DISC PLOUGHS WERE REGARDED MORE AS MODERN IMPLEMENTS. NEVERTHELESS, PRODUCTION GRADUALLY INCREASED AND AS AGRICULTURE GREW, PETROL AND PARAFFIN-POWERED TRACTORS AND MECHANISED PLANTERS WERE IMPORTED. IN ADDITION THE FACT THAT THE PLANTERS COULD PLANT CONSIDERABLY LARGER AREAS IN THE SAME TIME, THEY HELD THE BENEFIT OF MORE EVEN DISTRIBUTION OF SEED AND THEREFORE MORE OPTIMUM USE.

firm called King and Sons, who exported a small quantity of maize to the United Kingdom (Britain) in 1893. In the decade after that it increased, and the trend indicated that South Africa could possibly become a regular maize export country.

The Natal producers, who focused more on agronomy than the producers in the republics in the interior, also experimented with exports. In 1907 a newspaper at the time reported that the Transvaal government was impressed with the success of the Natal exports to the extent that they decided to establish a large maize-producing industry in the Transvaal and allocated a specific amount for this.

Maize exports by the Transvaal from about 1908 helped to stabilise prices, as the local supply had already started to exceed the domestic demand. However, it was already clear that the exporting of maize had to be approached in a more scientific manner. The governments of the different colonial regions in South Africa consequently appealed to traders to provide support with the selling of grain – not just locally, but also on overseas markets. The quantity of maize consumed in England and the different employment opportunities for this in Europe created good market opportunities for South African maize.

The government played an active role in the exports by facilitating the logistical arrangements and even offered special rail and shipping freight tariffs for exports. Copies of weekly maize market reports from England were provided at railway stations and producers were strongly encouraged to plant more maize.

By 1910 maize was already being exported to 16 countries from South Africa, including to Canada, Australia, Britain and India.

In 1914, Joseph Burt Davy wrote in his book, *Maize – Its history, Cultivation, Handling and Uses* that the considerable growth of the South African maize industry up to that stage would not have been possible if it had not been for the export market, because the domestic use would not have been able to absorb the production.

From 1918 to 1939 South Africa was primarily a net exporter of maize. During this period maize was imported only once, namely 272 tons during the 1933/1934 season. In the 1920s maize exports were reasonably profitable on a constant basis, but in the 1930s it varied sharply.

As nitrogen was not available in the earliest years, producers mainly used phosphate and kraal manure as fertilisers. In 1903 phosphate was manufactured by the fertiliser factory SAFCO, which was based in Durban. Later, by about 1919/1920, companies like Kynoch and Cape Explosives manufactured large quantities of phosphate as a by-product of explosives.



BETWEEN 1924 AND 1940 AN AVERAGE OF 312 094 TONS OF GRAIN PER YEAR WERE EXPORTED THROUGH THE SOUTH AFRICAN HARBOURS AND AN AVERAGE OF 900 000 TONS PER YEAR OVERLAND TO NEIGHBOURING COUNTRIES.



In 1907 research into dryland cultivation of maize started, and in 1911 the first Congress was held on the topic. At that stage about 863 000 tons of maize had already been produced in the Transvaal. The research was mainly on moisture preservation and breeding better seed. The Hickory King cultivar, an early-ripening maize seed that was suitable for dryland cultivation on the Highveld, was released in 1912. In the Free State and Western Transvaal good results were also obtained with the Sahara Yellow cultivar.

#### Increase in production and consumption

In the period from 1918 to approximately 1930 there was no significant growth in the areas planted under maize. Maize products did systematically start increasing after the end of the First World War in 1919, but prices were unstable, marketing was disorganised and because of the Depression a major shortage of funding was experienced.

From about 1930, however, maize production started showing a rising trend. Prevailing climatic conditions had the biggest influence on the size of the area planted under maize, but more modern farming methods and increasing mechanisation raised yields/unit. In spite of a considerable increase in the use of fertiliser, tractors and mechanised implements, the average dryland yield for maize before 1939/1940 was less than 1 ton/ha, with the highest, namely 0,94 ton/ha, occurring in the 1939/1940 season.

The domestic consumption of maize increased from 683 000 tons in 1911/1912 to 1 430 000 tons in 1939/1940. The ongoing drought in the early 1940s, together with the growing demand for maize because of the outbreak of the Second World War, ultimately led to major maize shortages in South Africa that could not be resolved only by control measures in terms of the Marketing Act. Consequently the government appealed to the London Food Council and the Combined Food Board for larger grain allocations to South Africa. This was not very successful, as all the producing countries first wanted to meet their own needs. The government was therefore forced to investigate other sources and succeeded in 1945 in entering into an exchange arrangement with Argentina in terms of which South Africa delivered coal to Argentina in exchange for maize. The agreement was later renewed for 1946 and 1947.

The Maize Board's first official maize export contract was concluded in 1973 with Taiwan for exporting 1,2 million tons of maize over a period of three years. This not only paved the way for other trade between South Africa and Taiwan, but was followed by export contracts in 1975 (for 1,35 million tons), 1979 (for 1,8 million tons) and 1982 (for 1,8 million tons).

#### 1981 record crop

The maize crop of 1981 was the biggest produced in South Africa until 2015. In that year, almost 14,87 million tons of maize were produced, of which 13,6 million tons were delivered to the market by producers – approximately seven million tons more than the domestic demand at that stage. Consequently the industry was confronted



The signing of the first long-term maize export contract between the Maize Board and the Republic of China in Pretoria on 24 January 1973.



Graph 11: Ten biggest maize crops versus hectares planted since 1980

by an enormous surplus of maize in 1982. In addition, the export prices in that year were very low, and because of political sanctions against the country South Africa could not readily export maize, despite the location advantage with respect to quite a number of the large world markets. Exports were further hampered by inadequate and uneconomic shipping facilities in South Africa. In many cases it was also not possible to compete with countries like the USA on the basis of lower prices, as the latter country sold its maize to potential South African markets on a subsidised basis.

#### Exchange transaction with Romania

Luckily the Maize Board could succeed in securing an exchange transaction for urea with Romania, on the grounds that 204 880 tons of yellow maize were exchanged for 208 000 tons of urea. The Romanians enquired from the Chairperson of the Maize Board, Mr Crawford von Abo, about the possibility that the Maize Board could supply them with maize. Up to that stage Romania's maize had been supplied by the USA, but that ceased and the Romanians had to find alternative sources to feed their approximately one million pigs.

The Romanians could not pay the Maize Board for the maize, but they were willing to engage in an exchange transaction – be it for weapons, oil or fertiliser. The proposals were discussed with the government and it was decided that it would be urea, especially because nitrogen prices were sky rocketing at that stage. Even though the government – more specifically the Minister of Trade and Industry, Mr Dawie de Villiers – was strongly opposed to the idea, he later agreed that the transaction could proceed on the condition that it be channelled by the Fertilizer Society.

The final negotiations regarding the transaction, where the Maize Board was represented by Von Abo as well as Messrs Boetie Viljoen (Vice-chairperson of the Maize Board) and Hendrik Nel and two lawyers, took place in Murten, Switzerland. It continued for a week before agreement was reached. One aspect that received a lot of

Mr Crawford von Abo, who, as Chairperson, handled the negotiations on behalf of the Maize Board, recounted that he was not prepared to concede that the transaction be carried out by the Fertilizer Society because he wanted to retain the benefit of this for the maize producers. When the government did not want to give in, he threatened to 'take them on in politics'. A report then appeared in a Sunday paper implying that the producers were doing business with the communists.

These events occurred at the time the South African defence force was involved in a war in Angola and the Romanians fought for the enemy against South Africa. The newspaper article therefore also caused considerable embarrassment, but eventually the Maize Board was given the green light and finalised the transaction. BY 1923 THERE WERE ALREADY 20 DIFFERENT MAIZE CULTIVARS AVAILABLE IN SOUTH AFRICA.

# MR CRAWFORD VON ABO

People from Romania came to see me and asked whether the Maize Board was interested in doing business with them. Mr Hendrik Nel, manager of the Maize Board, felt that the government would never permit us, as the RSA was involved in a war in Angola. I told him that I was not involved in any war. If it was in the interest of the producers for us to do business with Romania, then we would do it. Hendrik and I then went to Bucharest at their expense.

The Romanians had done business with America in the past, but they did not want to supply them with maize for their pig farming operations of about a million pigs any longer. They were unable to pay us, but they could provide anything in exchange: From oil or fertiliser to weapons...we could choose. I asked him to give me time, because I first had to discuss it with the government.

As nitrogen prices had shot up in this period, it made sense to exchange urea for maize. Minister Dawie de Villiers — whom I went to see in the Cape — then wanted the transaction to be done by the Fertilizer Society, but I refused. I wanted the benefit to be for the maize industry. They did not want to do this at all, until I threatened to take them on in public about it.

It was then leaked to a Sunday paper that the maize producers wanted to do business with the communists. I was never in my life reprimanded like that Monday! In addition, the Romanians phoned me



papers. By the end of the week she called me and told me the Security Police were on her trail. Then 1 told her to rather leave it.

Approval was obtained at last, and we did the exchange transaction with the Romanians, withdrew the quantity of maize from the market and brought down fertiliser prices. The mistake we made was to concede to De Villiers' request that we would phase in the urea over three years and that it would be stored at the Fertilizer Society's facilities in Umbogintwini.

Someone let me know that 1 had to go and check what they had done with our urea. When 1 got there, 1 found the urea packed flat over a 100 m-wide strip and leached to such an extent that the grass for about 300 m had died. During an appointment with Minister De Villiers in Pretoria 1 told him that the urea was theirs and not ours, and that the Maize Board would not pay for the damage. Mr Andries Beyers (Chairperson of Uniegraan at the time), immediately agreed that the urea could be stored securely in Uniegraan's sack stores.





# NEGOTIATIONS ABOUT TRACTORS AND OIL DURING SANCTION YEARS

# MR JAPIE GROBLER

**1** In the days of political sanctions against South Africa I was privileged to be involved in the importing of tractors from the former Eastern Bloc countries. In England and Poland (therefore behind the so-called 'Iron Curtain') research was conducted on the rebuilding and upgrading of old, worn-out tractors. In Poland no-one could speak English and it was a nightmare just getting through the airport and immigration. No taxi could help you and people on the street were oppressed and pathetic and even afraid to be seen with a stranger.

On another occasion in the eighties I was part of negotiations with Iran — this was on a Sunday — to exchange the major part of South Africa's exportable surplus maize for oil through two intermediaries, and then ultimately in the final phase on behalf of the South African government, which could not get any oil in those years. Naturally this was highly confidential and could never be talked about. The agreements were sealed with a handshake and nothing could be reduced to writing. The sheiks who exchanged the oil never showed their faces, and every time somebody new came in to negotiate, you were unsure whether it was the same person as the one who had left the room. Today I can admit that I was petrified and not sure about my own and my partners' safety.

With acknowledgement to the centenary publication of Senwes: *"Tyd kweek wenners – Senwes, 'n Eeu van landbou"*.

IT IS IRONIC THAT THE ROMANIANS FED THE MAIZE OBTAINED FROM SOUTH AFRICA TO THEIR PIGS, AND THEN EXPORTED THE PIGS TO THE USA, WHICH HAD INTRODUCED STRONG SANCTIONS AGAINST SOUTH AFRICA. attention was the quality of the urea. The party in Switzerland was in constant contact with Dr Piet Gous, General Manager of NAMPO, to ensure that the product met all the required standards. Only after they had been assured of this fact, the transaction could be finalised. Both parties performed according to the agreement, and the urea was received in the Durban harbour later in 1982.

At the insistence of Minister De Villiers and the Fertilizer Society, the urea was stored by the latter at their plant at Umbogintwini in KwaZulu-Natal. However, the Maize Board was not satisfied with the way in which this was done and later moved it to other covered storage facilities of their choice.

The fertiliser was sold by the then co-operatives. Noordwes Koöperasie (NWK) of Lichtenburg in North West, under management of Mr Andries Beyers, played a very important role in this.

The Maize Board was satisfied with the overall transaction, as it was of great benefit to the maize producers, because it simultaneously brought higher producer prices for maize and lower fertiliser costs. The financial benefit for the maize industry amounted to several millions of rands.

#### 1982 – disaster drought and imports

During the 1982/1983 production season, the maize producing areas again experienced a disaster drought. By the end of January 1983 the situation had worsened to the point where Viljoen (the Vice-chairperson of the Maize Board at that stage) in the absence of the Chairperson, Von Abo, announced that no more maize was to be exported. This step, together with action from the Maize Board in buying back maize already sold for export, succeeded in the end and the Maize Board could carry over approximately 1,2 million tons of maize to the next season. In spite of this, due to the lengthy drought and consecutive bad crops it was still necessary to import large quantities of maize during the following year.

The reality was, however, that there was no white maize available in the world and that mostly yellow maize was imported from the Gulf of Mexico. It was third grade yellow maize and especially at the beginning of the import programme a lot of the maize was contaminated with aflatoxin, which forced the Maize Board to destroy it.

The first imported maize arrived in Cape Town harbour on board the ship Sea Grand Ace on 19 June 1983. A total of 157 shiploads of maize with a total mass of 4,4 million tons and a value of approximately R800 million were ultimately imported during this period. The last of the imported maize arrived in Cape Town on board the ship Nosira Sharon on 18 March 1985. At the beginning of the import programme it was estimated that only about 225 000 tons of maize/month could be imported due to capacity restrictions. However, during some months as much as 335 000 tons were offloaded, thanks to excellent co-operation between the different role-players: The South African Transport Services, inspectors and clearing agents for the Maize Board and the dock workers.

# MAIZE EXCHANGED FOR CRUDE OIL

In the period around 1985 South Africa was severely affected by international sanctions and the country could not get crude oil for fuel. Negotiations were started with Iran to exchange the biggest part of South Africa's exportable surplus maize for crude oil. The transaction was negotiated by representatives of the Maize Board and the South African government during a secret meeting in London. The international political environment and attitude towards South Africa at that stage, together with the sanctions against the country, demanded extreme secrecy. No contracts were signed and the transaction was sealed only with a handshake. Again, both parties performed duly in terms of the agreement.

The following persons were among those who attended the negotiations: Messrs Japie Grobler, Vic Mouton, Jeff Wayland, Pieter Meyer and Leon du Plessis of the Maize Board and Dr Kit le Clus of NAMPO. The Department of Trade and Industry elicited a lot of criticism by protecting agriculture-related industries at the expense of producers.



Even then producers suffered as a result of rising input costs.



IN THE 1983/1984 SEASON THE POSITION WAS SO CRITICAL THAT A SCHEME WAS INTRODUCED IN TERMS OF WHICH YELLOW MAIZE WAS MIXED WITH WHITE MAIZE TO OFFSET THE SHORTAGE OF WHITE MAIZE IN THE COUNTRY. THE SCHEME WAS CONTINUED IN THE NEXT SEASON. FROM 1 APRIL 1984 THE MIX RATIO COMPRISED 75% YELLOW MAIZE AND 25% WHITE MAIZE. BECAUSE OF A DECREASE IN THE EXPECTED CONSUMPTION OF WHITE-MAIZE PRODUCTS AND THE FACT THAT MORE WHITE MAIZE WAS DELIVERED BY PRODUCERS THAN THE ORIGINAL ESTIMATE, THE WHITE MAIZE SUPPLY IMPROVED SO MUCH DURING THE SEASON THAT THE MIXING REGULATIONS COULD BE RELAXED. FROM 1 JANUARY 1985 THE PERCENTAGE OF WHITE MAIZE IN THE MIXTURE WAS INCREASED FROM 25% TO 40%, AND FROM 11 MARCH 1985 THE PROHIBITION ON THE SALE OF PURE WHITE MAIZE AND WHITE-MAIZE PRODUCTS WAS REVOKED COMPLETELY. In order to alleviate the shortage of maize supplies after the droughts of the preceding years, it was decided – with approval from the Minister of Agriculture, Mr Greyling Wentzel – that a premium would be paid for early maize delivery in the 1984/1985 season. However, the premium was limited to the first 300 000 tons delivered.

#### Land conversion scheme

At a special Congress of NAMPO held on 27 August 1987 in Potchefstroom, Minister Wentzel announced measures to make gradual structural adjustments to the utilisation of land in the summer sowing areas possible. This applied not only to land on which maize was planted, but also to other summer cereal crops. The most important component here was a special land conversion scheme that was introduced to convert marginal land into planted pasture.

The land conversion scheme was an exclusive NAMPO initiative, led by Mr Cerneels Claassen, who is discussed in more detail in Chapter 4. This was a project that would be phased in over about five years and was aimed at limiting maize production in particular to approximately the levels of domestic demand by converting about one million hectares of arable land into pasture. It went hand in hand with assistance from the government to limit losses with maize exports during the conversion period.

#### Expansion of controlled areas

In 1988 the controlled areas in terms of the single-channel system for maize were expanded to place all magisterial districts, where more than 5 000 tons of maize/ year were produced, under control. The problem was partly caused by the fact that the South African producer price for maize was higher than the international price, which was very low at that stage because of an oversupply of maize on international markets. The Maize Board was of the opinion that an 'artificial' international market situation had been created by the fact that foreign governments subsidised their maize producers heavily, and that this market situation would lead to producers in the non-controlled areas benefiting at the expense of those in the controlled areas.

#### Brand Committee (1988)

At that stage the maize industry was in a transition phase and the Maize Board had pointed out that the adjustments that were being considered could only succeed if all the maize producers were involved.

In addition to various other marketing alternatives that were considered, the Committee of Enquiry into Alternative Marketing Arrangements (the so-called Brand Committee) was, for example, investigating the possibility of establishing a grain exchange. The gap between the producer price and the consumer price of maize was problematic and one of the components contributing to this price gap was in fact the high marketing expenses of the Maize Board. This included the cost of storage, handling and fumigation, as well as the Maize Board's administrative expenses and interest expense. Any alternative would have to try and address this problem too, and accomplish a structural reduction in these costs.

The Brand Committee, whose report was handed to Minister Wentzel (Agriculture) on 14 November 1988, ultimately recommended that a single-channel marketing system for maize be retained, because, in the opinion of the committee, it would best meet the criteria that had been set for a maize marketing system in South Africa. The committee also recommended that the management and running of such a marketing system in time had to adapt to changing circumstances. In this regard it was recommended that a more market-oriented single-channel system for maize be implemented over time (by allowing producers to sell maize directly to buyers under certain conditions), in order to develop a pricing mechanism in due course.

The committee pointed out that a free-market system did have certain advantages and expressed the opinion that the best solution probably lay in a combination of regulated pricing and a free-market system, with a proper distribution of functions.



The committee's recommendations further included that the Minister of Agriculture's decision to make the single-channel system applicable to maize marketing countrywide should suffice, but accepted that different marketing arrangements could apply in different areas because of different conditions. A reclassification of the maize areas with differentiated marketing arrangements was proposed.

Other important recommendations by the Brand Committee were that the government should provide producers with support under disaster conditions, and that the government should commit itself to funding a strategic grain inventory or to funding export losses associated with predetermined strategic production volumes. Likewise, the committee maintained that support to certain consumer groups would be justified, subject to it occurring in such a way that it did not create the wrong market signals.

#### 1988/1989 surplus

The 1988/1989 season produced a large surplus of maize. Because of this, South Africa had to export about 4,2 million tons of maize, which made enormous demands on the handling and transport infrastructure. It is almost ironic that South Africa had to import maize again only a year later because of another drought, and because of the major shortage of white maize, had to mix yellow and white maize in producing maize meal.





# THE STRIKE IN 1985

# MR VIC MOUTON

AMPI's Executive decided that the fixed maize price was too low. However, the Minister of Agriculture, Mr Hendrik Schoeman, would not listen to any argument. You could fill the Lichtenburg town hall within a day, with easily 300 chairs having to be set outside, with the farmers coming to listen – all in a fighting mood. But Minister Schoeman just said that's the price, and that's it.

So, we decided not to deliver any maize. A SAMPI Executive member called Jan de Bruyn — he farmed next to Sarel Haasbroek along the Carletonville road — and Wilhelm Els from the Leeudoringstad area, were two instigators in that strike. De Bruyn parked his truck in the gate of the silo grounds in Carletonville so that the guys could not get in. And if a lorry came to unload maize, he just chased them away...jerked people from the lorries and so on.

The strike ultimately could not be sustained. The government made certain arrangements with us to end it, but the maize price remained exactly the same.

#### 1992 disaster drought and later

In 1992 a disaster drought in the maize producing areas led to a major shortage of maize in South Africa. About 4,3 million tons of maize had to be imported – the biggest maize imports until then. The government imported the maize from America, but it was administered and distributed by the Maize Board in collaboration with the Railways. The maize was of a very poor quality, mouldy, seriously contaminated with aflatoxin and full of chaff. Large quantities were not suitable for human or animal use and were dumped in the sea.

In the 1993/1994 season a large surplus of maize was once again produced. In its edition of November 1993 the magazine *Mielies/Maize* quoted the Chairperson of the Maize Board at the time, Mr Jan Schabort, as follows: 'Producers should not produce for export. This year we are losing a lot of money because of the particularly large harvest. If we produce only for the domestic market, the future of the industry should be positive. But then every farmer must do his bit and scale down plantings.'

#### Dagsê Neef.

En toe kom die reën! Soos manna uit die hemel het die wolke oopgemaak. Wat 'n wonnerlike gesig was dit nie om te sien hoe die mielietjies en die weidings op hierdie genade van Bo reageer nie. Neef, net 'n man wat alles voor hom sien verskroei het, kan werklik verduidelik hoe dit gevoel het toe dit beginne reënt het. 7 Jannewarie, na kerk, seg jou oom nog virrie tante lat die weidings nou gedaan is en dat die koeie nie meer kos had nie — ons sal maar moet verkoop teen watter prys ons kan kry. Man, en toe beginne dit reënt. Strome van segen soos die teks dit het.

Lanklaaste het oom gesien lat die trekkers so laat in Jannewarie nog planters trek. Nou bid ons maar lat die res van die seisoen ook geseënd sal wees. Ongelukkig het party vannie boere ook weer verspoelings beleef en moes hulle toekyk hoe lat 'n land wat eens deur droogte en wind vernieitig is nou deur 'n wolkbreuk weggespoel word. Ja neef, dit gebeur ook alles in een seisoen — maar kla kla onse boere nie. Maar julle stadsmense kan dit mos nie aldag verstaat nie.

Vannie stadsjapies gepraat — jou oom ennie tante het toe maar besigheid in Petoorsdorp gemaak daai Dinsdagoggend toe die manne die trekkers ennie lorries gaan staan maak het innie strate. Lanklaas het jou oom so'n spul gesten — lorries, trekkers en bakkies net waar jy kyk! Nie geweet daar is soveel boere meer oor nie. Net jammer die manne vannie koerante en die TV kannie tel nie! En was hulle nie giftig nie — amper net so erg as destyds toe NAMPO se manne mielielewerings gestaak het. Dis maar soos



# Jou oom betoog toe sélf in Petoorsdorp

die manne met die strepiespakke hul beheer van die Afrikaanse pers en meda gebruik neef.

Jou oom het selvers tussen die Petoorsdorpers innie strate rondgeloop en hulle was voorrie voet die boere goedgesind. So hier en daar was daar wel die enkelte brompot maar hulle was min. Hoe't dit nie 'n knop in die keel gebring as die ouer mense die boere bedank het virrie geskenke van groente en diesmeer nie — veral die ou tante wat die stukkie vleis gekry het — seg sy lat sy net een keer per week vieis kan bekostig. Met die twee tjoppe wat sy gekry het, het sy nou genôg vir 14 dae. As jy hoor die pryse wat hierrie mense vir 'n bietjie kos en vleis moet betaal rys jou hare. Laat ek jou sêg neef — tussen die boere en die verbruiker, maak iemand 'n helse lot geld! Miskien moet onse boere en onse eindrerbruikers meer dikwels saam gesels oor wie wat kry en wie hoeveel betaal. Ai neef, as ons net selwers onse produkte direk aan die publiek kon bemark!

Maa' ou neef, een ding is seker, na dese weet almal lat onse boere swaar kry en keelvoi daarvoor is! Nou moet die manne van georganiseerde landbou net die bol vat en hardloop.

Seg my spaais vir my lat neef Jakob Viljee, geen familie nie où neef, die NAMPO kongres gaan bywoon om self te hopr wât die boere sêg oor sake sos grondbesit, vrye mark, eenkanaalbemarking, grondslag vir prysbepaling, en nog meer. Jou oom gaan selwers daar inloer — sommer so as waarnemer. Hoor ek ook by my spaais lat neef Crawford weer mielies plant en lat hy ook as afgevaardigde by kongres gaan wees. Lyken vir my dit kan 'n baie interessante kongres wôrre.

Sêg my spaais verder lat hierrie neef Jakob glo virrie NAMPO-manne gesêg het lat voedselselfversorgendheid dis nou in pleinAfrikaans lat onse boere die stapelvoedsel vannie land self moet produseer — nie meer 'n prioriteit is nie. As ons te duur wôrre dan voer hulle sommer mielies en koring in. Wönner jou oom net waarmee hy gan betaal. Solle trant praat neef Bêrend Plessis oor onse produksiesektore wat meer produktief moet wôrre en kompeteer teen wêreldpryse van goedere. Intussen gaat hy en die goewermint voort om in die woorde van ene professor Niewenhuizen, die landbou te verwaarloos en 'n makro-klimaat net soos die natuur te skep — hard en onsimpatiek.

Maar wag neef, laat ek gaan. Ek hoor die tante aankom. Vandat ons in Petoorsdorp gewees het, het sy net een ding innie kog. Praat aanmekaar van onse boere se plig om die publiek selwers in te lig oor die ware toedrag van sake innie landbou. Wil glo 'n fonds stig om adverensies en pamflette en sulke goeters ie versprei oor die boere en onse probleme. Sêg dat sy nou glad nie meer 'n Afrikaanse koerant of die TV kan glonie. Praat van geindoktrineerde propagandamasjiene en sulke snaakse goeters. Wil selfs jou oom se voorraad witteljes verkoop om geld vir die fonds in te samel. Ek sal moet gaan keer neef.

Groetnis. Laat hy val waar hy wil.

Oom Lang Hans Viljee from *Mielies/Maize* talks about the strike in Pretoria.

IN 1991, WHEN 'POLITICS HAD ALREADY STARTED TO CHANGE', AS MR VIC MOUTON, ONE OF THE CHAIRPERSONS OF THE MAIZE BOARD, CALLED IT, PRODUCERS IN PRETORIA ARRANGED A STRIKE. IT WAS NOT CLEAR EXACTLY WHAT THE MOTIVE BEHIND IT WAS OR WHO ORGANISED IT, BUT THE RELATIVELY COMMON VIEW WAS THAT IT WAS MORE OF A POLITICAL NATURE. A DAILY NEWSPAPER AT THE TIME REPORTED THAT ABOUT 1 000 VEHICLES (MOST OF

WHICH WERE TRACTORS AND TRUCKS) WERE PARKED IN THE STREETS IN THE CITY CENTRE OF PRETORIA, WHICH TOTALLY PARALYSED THE TRAFFIC IN THE CITY. THE CITY CENTRE WAS DECLARED AN UNREST AREA AND ACCORDING TO THE ARTICLE ABOUT 120 OF THE 5 000 PRODUCERS PARTICIPATING WERE ARRESTED. THE STRIKE WAS ENDED AFTER A SUPREME COURT ORDER WAS OBTAINED, ORDERING THE PRODUCERS TO REMOVE THEIR VEHICLES.

In 1995 the Maize Board entered into an agreement with the Institute for Land, Climate and Water of the ARC to conduct research on the use of satellite technology to demarcate and number cultivated maize fields in the maize producing areas. The total area that had to be measured covered about 69 million hectares. The technology would also be used to make a more accurate crop estimate and collect other important agricultural information. At the time it was described as one of the biggest agricultural events of the time.

During October 1996 producers were advised not to plant maize on their poorer fields, as the Maize Advisory Committee (MAC) pointed out in October 1996 that there was a surplus of white maize in South Africa and no marketing scheme for the next season existed yet. In addition, international maize prices showed a declining trend and there was a risk that the surplus production would have to be sold at a loss or exported.

Shortly afterwards, in November 1996, the Minister of Agriculture, Mr Derek Hanekom, announced that no floor-price system would apply in the coming season, which also implied that there would be no stabilisation levy. The result was that the producers had no protection against falling prices.



Sound bite: The import of maize from America in 1992 – Mr Vic Mouton.



THE MAC WAS APPOINTED IN 1995 IN TERMS OF THE **PROVISIONS OF SECTION 15 OF THE MAIZE MARKETING** SCHEME TO PROVIDE THE MAIZE BOARD WITH ADVICE ABOUT SPECIFIC MATTERS. THE MAC ACTED ONLY IN **AN ADVISORY CAPACITY** AND THE FINAL DECISION **ON HANDLING MATTERS** THAT HAD BEEN REFERRED TO THE MAC RESTED WITH THE MAIZE BOARD. THE MAC CONSISTED OF 24 MEMBERS, AND THE **CHAIRPERSON WAS MR ATTIE SWART OF** THE DEPARTMENT OF AGRICULTURE.

#### 1998/1999 surplus – first year after deregulation

With the start of the 1998/1999 marketing season South Africa had about 2,61 million tons of carry-over stock from the previous year, which consisted of 1,37 million tons of white maize and 1,26 million tons of yellow maize. At that stage the crop estimates pointed to a crop of about 7,19 million tons of maize that could be expected in that season, which meant that a total of about 9,8 million tons of maize would be available in the interior. South Africa's domestic consumption was estimated at 7 million tons at the most in that season.

There was therefore an expected oversupply of about 2,8 million tons of maize in the country, which would undoubtedly harm the producer price. As the Maize Board did not exist anymore, the producers had to depend on themselves to rectify the situation. NAMPO, together with the agriculture companies and co-operatives, made a huge effort to export the maize. For this purpose, the producers were requested to render 15% of their white and yellow maize crop to an export pool, to be exported and as such help to restore the domestic supply and demand balance and support the producer price.

Producers' involvement in this export effort varied from area to area, but eventually less than 60% of the goal was reached. The surplus problem was therefore not solved by the export effort. However, it was clear that the reality of the effects of the overproduction and unregulated market environment, encouraged the maize producers to plant less maize the following season. This contributed to the limiting of the total maize yield.

#### 2004/2005 surplus

The 2004/2005 production season again delivered a very good maize crop: approximately 11,7 million tons. It was already clear from the earliest crop estimates that, given the carry-over stock from the previous years and the expected size of that season's crop, it would result in a large surplus on top of the domestic demand. Consequently, the maize prices plummeted, which in turn forced the maize industry into an enormous crisis and led to the recommendation of Grain SA in September 2004 to drastically limit the planting of maize in the coming season.

The crisis with the surplus led to Grain SA having two mass meetings early in 2005 – one in Centurion and one in Bellville. The meetings were attended by an estimated 6 500 people. The purpose of this was, among other things, to find solutions for the crisis on the grain industry and to cultivate a better feeling of fellowship among the producers. During these meetings, the producers' inputs were obtained and were afterwards considered during the further process conducted by Grain SA.



Hundreds of producers and role-players in the grain industry flocked to SuperSport Park in Centurion.



The Wolmaransstad study group looked forward to attending the meeting.



Producers at the meeting in Bellville. Almost 1 500 stakeholders gathered at the Velodrome in Bellville.



Mr Johan Kriel (ACDP, Western Cape) speaking in Bellville.



Dr Kraai van Niekerk.



Mr Bully Botma (Chairperson of Grain SA) delivering his speech.



Mr Johan Hoffman (producer from Bothaville).



The attendance at the mass meeting in Centurion was estimated to have been at least 5 000.

By July 2005, it was estimated that the carry-over stock on 30 April 2006 could amount to approximately 5,9 tons, which represented 72% of the normal annual domestic consumption.

A study conducted by Grain SA showed that with the ruling producer prices at the time it would not be economically viable to produce maize. Producers were again urged during the 2005/2006 production season to plant less maize and to rather investigate alternative possibilities like buying forward contracts (so-called paper maize) or to not sell their maize during the 2005/2006 marketing season, but to transfer it to the next year. This obviously influenced costs in terms of interest and storage.

It was clear that, no matter which alternative the producers chose to address the prevailing crisis, it could only be effective if production was substantially limited during the next season. According to Grain SA's final calculations of production for the 2005/2006 season, producers were urged to restrict white maize plantings to approximately 363 000 ha (nearly 80% less than the previous season) and yellow maize to approximately 450 000 (a downscaling of approximately 58%).

Even though maize plantings were not limited to the exact extent Grain SA recommended, only 2 032 million hectares were planted in the 2005/2006 production season, resulting in 1 191 million tons, or 37%, less than the previous year. Combined with other efforts made by producers, this meant that the goals could be reached and it led to a reasonable recovery in the price of maize.

#### 2013/2014 season

During the 2013/2014 season, approximately 14,3 million tons of maize were produced. Up to 2016 this represented the second largest maize harvest ever in South Africa. Until then the most maize cultivated in the country was during the 1981/1982 production season, namely 14,87 million tons. The 2013/2014 harvest is even more incredible because of the fact that it was produced on 2,6 million hectares, with an average yield of 5,5 tons/ha, as opposed to 4,3 million hectares with an average yield of 3,4 tons/ha during 1981/1982.

Both record-breaking years were blessed with good rains at the right time and analysts are of the opinion that comparisons could be made between the two years. The improvement in average yield/hectare undoubtedly shows a significant improvement in efficiency in the maize industry during the twenty years after 1982. This improvement can be attributed to various factors such as the improvement in the quality of inputs, the conversion of the marginal fields into planted pasture in terms of the land conversion scheme, increased effectiveness in general and huge technological developments. The latter occurred not only in the area of machinery, equipment and information systems, but also with respect to the genetic development of seed, new active ingredients for pesticides and herbicides, as well as new fertiliser products.

#### **Price formation**

#### Single-channel system

After the introduction of the single-channel marketing system in 1944/1945, the maize producers were in a position where the price as well as the market was guaranteed for their products. According to this system, the producer price for maize was based on the average production costs as determined by the Department of Agriculture. The Maize Board submitted a proposed price to the National Marketing Council, who in turn made a recommendation to the Minister of Agriculture. The minister then decided what the price should be and presented it to the Cabinet for approval, after which he announced it.

The way the producer price was calculated and the fact that the price was guaranteed, including more availability of financing and subsidies on the costs of financing and other forms of government support such as subsidies and rebates, encouraged producers to expand maize production. In time this gave way to surplus production, which added to the pressure on the producer price.

The basis on which the producer price was calculated in the mid-1970s actually led to prices that were unacceptably high according to the authorities, especially due to the effect of the rapidly accelerating inflation rate. Therefore the government decided in 1981 to move away from the above-mentioned price formula and no increase in the producer price for maize was permitted that year. This decision led to great unhappiness among the producers, as it placed them in a very bad financial position in a year in which it was hoped that the record maize harvest would contribute to the financial recovery of many maize producers. Furthermore, various measures were introduced at the same time by the Department of Trade and Industry to protect and/or promote other agriculture-related industries at the expense of the maize producers.

#### 1982 NAMPO Congress

At an extraordinary NAMPO Congress on 23 June 1982 the maize producers decided unanimously to accept a market-related economic system for the maize industry – within the ambit of the prevailing single-channel marketing system. In terms thereof, the Maize Board would still be the only buyer and seller of locally produced maize, but any person could freely import maize. Furthermore, all restraints and levies on the importing of farming input resources and raw materials needed for it would be lifted.

Since then the initial pricing formula was never fully implemented again and until 1987 the maize prices were established annually on an ad hoc basis. This caused





maize producers to have to absorb the cost-increasing effect of inflation themselves to a greater extent. The government also started phasing out the subsidy on storage costs that was in place from the mid-1950s, which placed a further financial burden on the maize producers.

During the early to mid-1980s it became clear that the government's policy gradually started moving in the direction of an economy controlled by market forces with less interference from the state, in other words a free-market system. The Prime Minister at the time, Mr PW Botha, did in fact say that the government would continue to move away from direct economic control, such as price and wage control, exchange control and bank credit ceilings. For agriculture this meant less dependence on government support and that the general thought patterns in agriculture would have to adapt to a more balanced position with less interference.

Even in the ranks of NAMPO and organised agriculture the movement to greater participation in the free market emerged. The change in the broader philosophy of the government in the mid-eighties concerning greater exposure to market forces coincided with recommendations by NAMPO that producers should be aware of the negative effect of surplus maize production and the necessity for investigating alternatives.

#### Jacobs Committee and the dual market system

After a meeting between a NAMPO delegation and Mr Greyling Wentzel, the Minister of Agriculture, in May 1983 the minister instructed the Jacobs Committee to investigate the problems in the maize industry and formulate solutions for it. The committee ultimately recommended a dual market system in terms of which producers' access to the local market would be controlled by a quota system for deliveries, while any producer would be entitled to deliver indefinite quantities of maize to an export pool. The prices of the maize for the local market and for the export pool would be determined separately from each other by the net result of the respective pools.

The proposed dual market system was accepted in principle by both Minister Wentzel and NAMPO in September 1983. For the next two years a major attempt was made to convert the concept into an acceptable system. It was constantly discussed in appropriate forums and at NAMPO's annual Congress in 1985 is was decided to give active attention to the introduction of the system. However, on 13 September 1985 Minister Wentzel rejected the proposed scheme on the recommendation of the Marketing Council before it could be implemented, and thus the concept disappeared.

At the same time Minister Wentzel announced that he was not satisfied with the existing single-channel fixed-price scheme and requested the Marketing Council to submit proposals for an alternative marketing system to him. Shortly afterwards rumours started circulating that a single-channel pooled system could be introduced, which eventually realised in 1987.

#### 1984/1985 producer price

In the meantime, the Maize Board followed the approach of using the cost of imported maize as basis for determining the producer price for the 1984/1985 season. The reasoning was that if the South African producer price was set at a lower price, it would amount to the local producers subsidising the consumer. Given the straitened financial position of the maize producers due to the prolonged drought from 1983 this was not acceptable to the producers. In the end it was decided to base the producer price on the landed costs of imported maize. In the Maize Board's 1985 annual report it was reported that the consumer organisations with whom the Maize Board had held talks since February 1984 had agreed with this approach.

During these historical meetings with the consumer organisations it was also agreed that the selling prices of imported and locally produced maize should be the same. As the import price at that stage was higher than the local producer price, this approach would necessarily lead to higher consumer prices for maize products. DURING 1985 THE MINISTER OF AGRICULTURE, MR GREYLING WENTZEL, ON VARIOUS OCCASIONS MADE IT CLEAR THAT THE CONSUMER SUBSIDY THAT THE GOVERNMENT PAID TO THE MAIZE BOARD WOULD BE PHASED OUT. THIS MEANT THAT CONSUMERS WOULD HAVE TO ABSORB A PART OF THE MAIZE BOARD'S COSTS, LIKE STORAGE, HANDLING AND FINANCE COSTS. Consequently the Maize Board and the consumer organisations agreed to negotiate jointly for the biggest possible government subsidy with a view to try and limit the increase in the consumer price for maize products to the inflation rate. The government was requested to subsidise the industry with R275 million, which was equal to the bread subsidy, but this was not acceptable to the government. The government eventually agreed to a subsidy of between R160 million and R170 million, which was sufficient to finance the Maize Board's margin, administrative costs and about 50% of the costs of its publicity campaign.

Minister Wentzel's announcement on 25 April 1985 that the maize price would not be increased from the previous year's levels (because of which the NAMPO members resigned from the Maize Board) caused great dissatisfaction among producers too, and led to a number of actions by them, discussed more fully in Chapter 2.

#### 1987: NAMPO members on the Maize Board again

In 1987, two years after the NAMPO members had resigned from the Maize Board in protest against the Maize Board, Minister Wentzel (Agriculture) announced that the two parties were negotiating again to try and resolve the situation. It was subsequently agreed that the producer members of the Maize Board would be appointed from NAMPO nominees again. It was also agreed with the Minister of Agriculture that the Maize Board would subsequently set the producer price of maize annually on the basis and assumption that it had to be to the long-term benefit of the producers, that price signals had to be released before the planting season, and that maize would not be exported at a loss again. This also included that the Maize Board was not entitled to borrow money in order to pay producers higher prices that could be earned from the market. The agreement involved the establishment of a single-channel pooled system for the marketing of maize, in terms of which the producer price was merely the result of a pooling of the Maize Board's net income from sales – locally as well as from imports.

The changed system meant that the Maize Board would make a projection of the market over the next twelve months and calculate what result the total maize crop in that season could be. The calculations included a margin for unforeseen events. On the basis of this, an advance price was calculated and paid to the producers.

This changed the maize industry drastically. Producers came under more pressure to increase productivity, which they did by reducing, among other things, inputs like fertiliser and labour and converting marginal fields to pasture. The result was a considerable increase in average yield, with fewer inputs. It also led to the produc-



The maize producers held a mass meeting at the Markotter Stadium in Klerksdorp to discuss the situation. It was held the day after the appointment with Mr PW Botha at Tuynhuys and the delegates reported about the meeting.

tion of maize dropping in the western areas with lower rainfall, and being concentrated in the higher rainfall areas to a greater extent.

#### 1993 maize price

In 1993 the fixing of the producer price for maize once more led to heavy debates because the producers as well as the consumers were actually fighting for survival under very difficult circumstances. Producers were in a position where input inflation had increased considerably under conditions where the previous season's drought had caused a drop of between 30% and 40% in maize producers' income, while at the same time consumer prices in general had risen enormously. The positive result of these debates was that agreement was reached on the need for maize prices to be market related and not politically motivated in future.

### Summer Grain Scheme terminated

In the 1994/1995 marketing year the Summer Grain Scheme was terminated, and from 1 May 1995 the single-channel fixed-price marketing scheme was abolished and quantitative restrictions on maize imports terminated. Maize prices were subsequently set without statutory intervention in the market place, and Safex became the platform for setting prices. In future, producers' decisions on price and risk management would be guided by market instruments and factors.

# Grading

Initially the grading regulations for maize were based on overseas standards.

On the recommendation of a standing committee of the Maize Board a set of grading regulations specifically for South African conditions was developed. They came into effect on 1 May 1949 when the Agricultural Product Standards Act came into force, and although they were amended from time to time, they still constituted the basis of the grading regulations for maize in South Africa in 2016.

# **Fighting insects**

Although insect infestation led to enormous grain losses in earlier years, South Africa's maize industry never experienced major problems in this regard. However, with the increase in production after the Second World War, it became necessary to store maize for longer periods. This became an ideal nutritional source for insects and insect infestation became a real threat.

In 1957 the Maize Board therefore approved fumigation experiments with a view to implementing insect control in maize and grain sorghum. An insect control scheme

FROM 1937 TO 1996 ALL ASPECTS OF MAIZE MARKETING IN SOUTH AFRICA WERE CONTROLLED BY THE MAIZE BOARD. THE WAY IN WHICH PRICES WERE DETERMINED WAS REGULATED BY THE MARKETING SCHEMES THAT EXISTED FROM TIME TO TIME. THE ABOLITION OF THE MAIZE BOARD LED TO SIGNIFICANT CHANGES. PRODUCERS COULD NO LONGER DEPEND ON A PRE-SEASON OR ADVANCE PRICE FOR SETTING PRICES OR FOR PRICE RISK MANAGEMENT. IN FACT, THE ADVENT OF THE FREE-MARKET SYSTEM CHANGED THE MAIZE INDUSTRY AS WELL AS THE OTHER GRAIN INDUSTRIES DRASTICALLY. PRODUCERS CAME UNDER PRESSURE TO INCREASE PRODUCTIVITY BY, AMONG OTHER THINGS, INCREASED USE OF MACHINERY, FERTILISER, LABOUR, THE OPTIMISATION OF GENERAL PRODUCTION PRACTICES AND WITHDRAWAL OF MARGINAL LAND FROM GRAIN PRODUCTION.





Maize grading is done by an inspector of the Board.



Insect control intensifies.



Research plays a major role in the quality of our grain products.

was subsequently introduced from 1 May 1958 and it was decided at the same time to pay Maize Board agents a separate compensation for fumigation.

Compulsory insect control by all the interest groups like agents, millers and malt manufacturers was introduced by the Maize Board in 1964. The constant focus on insect control because of this contributed to the maize industry in South Africa incurring very few losses as a result of insect infestation in the long term.

#### Research

In 1948 the Maize Board, in collaboration with the Department of Agriculture, started developing hybrid maize seed. The Maize Board invested large amounts to encourage the propagation of the seed and was directly involved in this from 1947 until 1971.

In 1951 the Maize Board also launched an experimental-farm scheme with a view to improving the productivity of farming operations. In collaboration with the Department of Agriculture, trials were conducted on the following four experimental farms: Ashley (Standerton district), Braklaagte (Bothaville district), Goosens (Senekal district) and Holfontein (Lichtenburg district). In 1971 it was decided to retain only Holfontein and sell the other farms, probably because the project did not enjoy the degree of success that was initially envisaged. Holfontein was then used until 1978 for a joint project between the Maize Board, the Meat Board and Vleissentraal to encourage the use of maize as animal feed. However, this was stopped at the insistence of the Department of Agriculture.

The Maize Board was thoroughly aware of the importance of research for agricultural production and donated an amount of R3,9 million from the Stabilisation Fund to the Department of Agriculture in 1979 to construct research facilities at the Summer Grain Research Centre in Potchefstroom.

# Biofuel

The manufacture of biofuel from maize started in the USA, driven by the USA objective of reducing dependence on crude oil and stimulating their rural economy. In addition, the process produces a reasonable volume of a by-product with a very high protein content that is excellent for animal feed. These objectives and benefits also apply in the South African context, and in 1990 the Maize Board appointed experts at a cost of R6 million to investigate the possibility of manufacturing ethanol in South Africa.

The investigation found that South Africa had the right quality and sufficient maize as well as the necessary infrastructure to successfully manufacture ethanol from maize. The possibility of crop failures and the effect this could have on the profitability of such an industry were identified as the biggest obstacles.

At a mass meeting of grain producers held in the Centurion cricket stadium in 2005 the possibility of constructing a biofuel plant at Bothaville in the Free State was in fact discussed. However, this did not get off the ground because of the government's policy that maize may not be used for the manufacture of ethanol because it is an important staple food in South Africa.

By 2014 there was still no commercial biofuel plant in South Africa. In the meantime, the government did decide to develop a biofuel plant at Cradock in the Eastern Cape in order to manufacture ethanol for compulsory blending into fossil fuel. However, ethanol will be manufactured from grain sorghum and not from maize, as sorghum is not regarded as a source of staple food.

# WINTER CEREAL PERSPECTIVE

Wheat

#### Production

Wheat cultivation with a view to baking bread is one of the oldest branches of agriculture in South Africa, and wheat milling is one of the oldest industries. Wheat production commenced in the winter rainfall region of the Western Cape in the 17th century, shortly after Jan van Riebeeck settled in the Cape in 1652.

Initially the wheat industry experienced very difficult times, particularly because the local market was restricted and it was difficult to export wheat. In the 19th century the expansion of wheat production and the wheat industry accelerated as the population increased. This was further facilitated by the advent of more advanced equipment, as well as the introduction of import levies on wheat and meal in 1826 to ensure sustained local provision.

As in the case of other crops, particularly maize, the discovery of diamonds and gold in South Africa in the latter part of the 19th century suddenly led to a sudden increase in the number of consumers of wheat as towns and rural centres developed. This was promoted by the development of the railways and other transport systems, which made the transport of wheat and wheat products to the new markets cheaper and more effective, and stimulated the expansion of wheat production to the former Orange Free State.

After the Union of South Africa came into being in 1910, wheat production received more focus, and several reports saw the light, emphasising the necessity for cheap, reliable food supply and the concurrent promotion of local economic development. The reports included recommendations that the import tariff on wheat be doubled and local production be expanded to ensure a reliable bread supply.

With the start of the First World War in 1914 South Africa produced only about 50% of the local wheat consumption. The rest had to be imported. After the war broke out, a shortage of tonnage limited imports and increased the shortage of wheat in South Africa. Because of this, domestic prices increased, which made local wheat cultivation more profitable and promoted increased production.

After an investigation into wheat supply in 1917 it was recommended that wheat cultivation be encouraged by providing seed at cost and introducing measures to make greater quantities of fertiliser and manure available. It was also found that wheat cultivation in the Western Cape was unproductive and recommended that adjustments be made. The argument was that the poor yields that were initially obtained on large sections of poorer fields were balanced by low land prices and adequate availability of cheap labour, but that the situation changed as the availability of labour dropped and the productivity of the poorer soils in particular decreased because of a lack of crop rotation.

The main changes that were proposed were the establishment of a larger animal husbandry component and more counselling and guidance to producers. According to the reports it was impossible for South African wheat producers to compete against the leaders among the world's wheat-producing countries like Canada, Australia and Argentina without the protection of import levies and preferential tariffs for rail transport.

However, despite expansions and developments, local wheat production was still unable to meet the local demand, and until 1920 about 50% of the country's wheat consumption was imported. Import tariffs on wheat were relatively low, as was the price of the imported wheat, which had a negative effect on local production. Voices started to be raised for the introduction of greater protection for South African wheat producers and millers.

The import levy on wheat was temporarily suspended from February 1920 until June 1921 because of crop failure in South Africa and high prevailing international prices. Together with this, the preferential rail transport tariff for South African wheat was abolished, which exposed the South African wheat producers even more to international competition and led to agitation for higher protective levies.

Between 1921 and 1926 a dumping levy was introduced on Australian wheat, which was replaced by a tariff increase in 1926. South African wheat prices were consequently maintained at levels that made local wheat cultivation profitable.

In 1930 and 1931 global prices of wheat dropped further, while South African prices dropped to below import parity at the beginning of the season. This led to an increase in the import levy and the introduction of a permit system for importing



A wheat cutter at work.



Wheat was threshed this way in the olden days.




wheat and wheat meal. A special import duty was introduced on a sliding scale to increase the minimum import price of wheat, maize meal and wheat meal.

In the 1935/1936 season considerably more wheat was produced than was required for domestic consumption. This caused logistical problems for the Wheat Board and placed enormous pressure on the production prices for wheat. However, the Wheat Board still succeeded in paying producers a fair price, mainly by making provision for the cost of storage for the wheat. Part of the surplus for that season was transferred to the next season, which produced a smaller wheat crop.

As a surplus of wheat was still available, similar measures were applied in the 1936/1937 season, with similar relative success. The harvest in the 1937/1938 season was even smaller than in the previous year – to such an extent that the wheat surplus was wiped out, and since that season South Africa has been a net importer of wheat almost all the time.

During the Second World War the local supply of wheat was inadequate for meeting domestic demand, partially because of a lack of fertiliser, while logistical and other problems due to the war hampered the import of wheat. This led to significant shortages in South Africa during the war and serious savings measures had to be introduced, as are described further on.

In the first year after the end of the Second World War, namely the 1945/1946 season, the position was even worse than during the war because of a worldwide shortage of grain (including wheat), and the local wheat crop that was the poorest in years due to climatic conditions. The result was that further drastic savings measures had to be introduced.

As can be deduced from the statistics below, the production and use of wheat until 1950 did not increase structurally. However, it then started to increase to the extent that South Africa was self-sufficient in various years during the period 1964 to 1989. The first domestic wheat crop of a million tons was produced in 1964.

At the beginning of the 1970s the Wheat Board paid particular attention to the needs of certain smaller industries that used meal and flour, including the pasta industry, which could not manufacture a satisfactory product from bread wheat. This industry required flour that was made from durum wheat. Durum wheat was not easily available in South Africa and had to be imported. However, this was during a period in which South Africa produced a large surplus of wheat that had to be exported at a loss, and that made it difficult to justify the import of durum wheat.

Consequently attempts were made in the 1971/1972 season to breed a suitable durum cultivar for South Africa. In the same year the Wheat Board also paid particular attention to the development of a so-called soft wheat cultivar to meet the needs of biscuit manufacturers.

Increasing mechanisation, higher yields and larger, more effective farms all contributed to increased production from the 1960s. In addition, the industry was supported by the Wheat Board's guaranteed stable prices that were often set at higher levels than global prices, as well as by assistance from the government, such as relatively cheap loans granted to producers by the Land Bank.

At the same time economies of scale, concentration of power and monopolies in the wheat value chain increased. As agents of the Wheat Board, co-operatives, which were owned and controlled by producers, were virtually the only storage facilities for wheat and owned the major portion of the storage capacity in the country. Wheat was dumped in the co-operatives' silos, where it was graded and stored, and from where it was eventually dispatched to buyers from the Wheat Board.

As in the maize industry, the wheat industry started changing in 1987 and wheat producers were also forced to increase their productivity by reducing inputs and converting marginal land to pastures. In the case of wheat the production in the Western Cape also shifted away from the drier parts and closer to Cape Town. However, the biggest change in the wheat industry occurred later than in the maize industry because domestic wheat prices dropped to global price levels only by 1997.



Wheat is currently cut and threshed with one machine.

# VAN RIEBEECK HEARS FIRST COMPLAINTS FROM FARMERS

Wheat was of 'political' significance right from the start, and Jan van Riebeeck was the first civil servant who had to face a delegation of wheat producers who demanded increased wheat prices.

According to Van Riebeeck's diary, producers demanded that the price of wheat be increased from five guilder/bushel to ten guilder/bushel. In the end they were given an increase to seven guilder per bushel. Since 1989/1990 South Africa has not produced sufficient wheat to meet the needs of the domestic market. The diagram below shows the ratio between domestic wheat consumption and domestic production from that season until 2013/2014.

During 1995/1996 South Africa imported one million tons of wheat. This was mainly due to dry climatic conditions in the western parts of the Free State and excessive rain and hail during the harvest season in the Eastern Free State.

In the period from 2000 to 2004 imports tended to rise constantly. In 2004 1,2 million tons of wheat were imported – roughly 60% more than the previous year – because of unfavourable production conditions that prevailed in South Africa during that period. Wheat imports then continued to rise – as can be seen from the diagram above.

Overall, the area under wheat cultivation in South Africa has decreased in the past 40 years before 2013/2014 – from a record 2 025 000 ha to about 500 000 ha. This has led to South Africa being a net importer of wheat for about the latter half of that period.

Because of the above changes in the industry, South Africa has constantly produced less than 60% of the wheat required for domestic consumption since 2010.

#### **Co-operation**

During the first part of the 20th century the South African government was in general prepared to protect local agriculture and encourage self-sufficiency. The government regarded the protection of agriculture as a 'necessary evil' to give producers and millers the opportunity to act in a protected environment. This was accompanied by the movement to encourage co-operative collaboration among producers to promote development.

Wheat producers in particular had good reasons for closer collaboration, such as regular poor harvests because of droughts, which led to enormous price fluctuations from one year to the next. For this reason wheat producers in the Swartland, who cultivated about 80% of South Africa's wheat at that stage, established a co-operative (the Westelike Graan Boeren Koöperatiewe Vereniging, known as Wesgraan) as far



Graph 12: Wheat production in South Africa



Graph 13: Wheat production per province



Graph 14: Wheat production per province since 1994



Graph 15: Average wheat yield per hectare since 1917



Graph 16: Human wheat consumption versus total output

back as 1912 in an attempt to pool resources, obtain equipment and use it collectively and promote sales.

In 1920 the Swartland producers also established a milling company, Bokomo, to mill the members' wheat and give them a degree of control over the products and the price of the wheat after it had left the farm.

At the end of 1930 the producers who were involved with Wesgraan and Bokomo started a central marketing co-operative, Sasko, which would attempt to sell wheat throughout South Africa, stabilise its price and consolidate production. Unfortunately, because of fluctuating import prices and unpredictable local production volumes, Sasko was unable to really stabilise the price of wheat.

Wheat producers continued to exert pressure for more government support, particularly in the light of the severe drought and declining prices of the early 1930s. This eventually led to the establishment of the Wheat Board and the control mechanisms for the wheat industry, described in Chapter 2.

#### Regulation

The legislation promulgated in 1930 and 1931 to restrict the import of wheat and wheat meal contributed to encouraging local wheat cultivation. From 1920 until the first part of the 1930s wheat production more than doubled from 200 000 tons to 373 996 tons in 1931/1932 and 446 580 tons in 1934/1935.

At the beginning of the 1930s the relatively general view was that the wheat-tobread chain was ineffective and wasteful because of poor co-ordination and damaging competition, and that the unstable prices were the result of speculation by traders in the unregulated market environment. The view was that the Wheat Board would be able to solve the problem by rationalising the chain and applying effective price control. The desperate and virtually critical financial position of a major part of the country's population at that stage and the accompanying overall concern about national wealth played a significant role in the sentiment in favour of government control.

Although control over the import of wheat and high protective import tariffs played a role in maintaining the domestic wheat price at a reasonable level, the prices at the beginning of each delivery season were under severe downwards pressure because of the oversupply on the market. Co-operatives tried to regulate the supply to the market and transfer surplus stock to subsequent marketing years. However, the cost and risk associated with this policy was borne only by producers who were members of the co-operatives and not by all the wheat producers. It was therefore not a sustainable plan.

The Wheat Industry Control Board (the Wheat Board) that was established in 1935 was authorised to pay storage compensation to co-operatives and producers who stored wheat. This made it possible for the Wheat Board to control the flow of wheat to the market.

During the first two years of its existence the Wheat Board was faced by surplus production and the consequent domestic surpluses, which forced the price of wheat even further downwards. However, by employing income from the levy on wheat milled in the interior and with the assistance of the government, the Wheat Board managed to prevent a total collapse in the wheat price.

Under the control of the Wheat Board the wheat industry was subject to strict control measures. Wheat was marketed in a single-channel system and producers received a set price for their wheat, while millers also paid a set levy and were subject to strict oversight by the Wheat Board with respect to the quality and price of the bread. The Wheat Board regarded the protection of the producers as well as the millers, bakers and consumers as its main task.

In 1939 the Wheat Board fixed the prices of wheat, meal and bread for the first time in terms of the Wheat Arrangement Scheme, after which those products could be sold only at the announced prices. In order to maintain the price of bread at prewar levels, producers were paid a subsidy on A grade wheat to compensate them for increased production costs after the outbreak of the Second World War. During the 1940/1941 season the government also paid a subsidy to the wheat producers, 50% of which was contributed by the Wheat Board. The official rationale for this subsidy was to support local agriculture, ensure a low-cost staple food and alleviate inflationary pressure.

In addition to the production of bread, other subtle changes started to creep in retroactively in the wheat-to-bread chain as the implementation of the Marketing Act gained momentum in the 1940s. At the beginning of each season the Wheat Board announced a guaranteed price for wheat on a cost-plus basis. This eliminated the price risk for producers and left them only with the production risk. In addition, they did not have to be concerned about the marketing of the crop, as they simply delivered it to the Wheat Board's agents (mainly co-operatives) and were paid for it at the prevailing producer price.

Critics of the Wheat Board maintained that the practices and decisions of this board ultimately led to a number of large firms establishing a monopoly in the industry. Among other things the Wheat Board decided to implement certain restrictive practices such as closing down smaller mills and concentrating the milling industry around the bigger urban centres. These practices were also expanded to the baking industry, where the Wheat Board preferred to establish only a few larger bakeries instead of a larger number of smaller ones.

#### Deregulation

In 1995 quantitative control was abolished and replaced by tariff control. Buyers were then entitled to import wheat freely on payment of the levy, and the Wheat Board was no longer the only seller of wheat in South Africa.

Although the producer price of wheat was still set by the Wheat Board until 1996, anyone could mill wheat, bake bread and set the price of their bread from 1995. The only form of government involvement in the bread price was the VAT levied on white bread, while brown bread was VAT exempt.

On 1 January 1997 the Marketing of Agricultural Products Act of 1996 came into effect, which meant the end of controlled marketing for wheat and other grain products. Wheat producers suddenly had to compete in the international market with less government support than in almost every other industrial agricultural country in the world. This caused great uncertainty in the wheat industry and some leaders even felt that this could signal the end of the local wheat industry.

As in the case of maize, domestic wheat prices have been determined on Safex since price control was abolished.

#### Rationing

After the outbreak of the Second World War the government started to ration the consumption of bread to prevent potential shortages, and on 5 May 1941 the production of white bread stopped completely. White bread was replaced by what was known as 'war bread'. The flour used to bake it was made at a very high

THE PAYMENT OF SUBSIDIES TO WHEAT PRODUCERS CONTINUED UNTIL THE END OF THE 1956/1957 SEASON. FROM THE NEXT SEASON SUBSIDIES WERE PAID **ONLY FOR BREAD FLOUR,** AND FROM MAY 1977 THE GOVERNMENT PAID **SUBSIDIES TO BAKERS ONLY ON FLOUR USED** FOR BAKING STANDARD BREAD TO KEEP THE PRICE **CONSUMERS PAID FOR** THIS BREAD AS LOW AS POSSIBLE.

extraction rate (at least 90%), which meant that more loaves could be baked from a given amount of wheat. It was coarser and darker than the traditional brown and whole-wheat bread, and for the next seven years it was the only bread available in South Africa.

Many South Africans were extremely dissatisfied with this state of affairs, particularly those who opposed South Africa's involvement in the Second World War. To make matters worse, after the end of the war the South African government, on the recommendation of the British Ministry of Food, introduced further restrictions on the consumption of bread and other wheat products because of enormous shortages of wheat, like other types of grain, worldwide.

The production of flour used for baking biscuits and cake was totally prohibited, even in private households. Hotels were forbidden to serve toast and the daily individual purchase of bread and wheat meal was restricted to eight ounces (0,226 kg) of bread and six ounces (0,170 kg) of wheat meal/individual per day.

Consumers were encouraged in the press, on the radio and in films to reduce the consumption of bread, and by the end of 1946 the sale of bread was prohibited on Wednesdays and between 15:00 and 16:00 on other days. Wheat consumption consequently stayed low in this period and only started increasing again after the National Party came into power in 1948. History teaches us that the National Party's pre-election promise that they would ensure that bread, particularly white bread, would be supplied at affordable prices played quite an important role in the party's victory in the 1948 elections.

Since the 1920s various investigations into malnutrition had been launched in South Africa, and by 1948 reasonable concern existed about this, particularly among poor whites and increasing numbers of urban blacks. Apart from the humanitarian aspect, it was believed to contribute to diseases like tuberculosis.

The Minister of Health at the time, Dr Karl Bremer, was serious about trying to find solutions to combat malnutrition. As part of his attempts to address the problem he introduced a national bread enrichment scheme, which involved certain nutrients (groundnut meal, powdered buttermilk, powdered skim milk and calcium carbonate) being mixed into brown-bread flour at the government's expense to increase its nutritional value.

The bread was known as the Bremer loaf and was subsidised by the government so that it could be sold at a lower price than ordinary brown bread.

All restrictions on the sale of bread and other wheat products were lifted on 1 November 1948. This led to an enormous increase in the demand for those products, and in 1948/1949 about 600 000 tons of wheat were consumed, compared to the average use of 400 000 tons/annum over the previous twelve years.

#### Baking and milling industries

The baking industry was also subject to control measures that were introduced to ensure stability, promote efficiency through economies of scale and optimum capacity utilisation, and keep the price of bread affordable. This followed a recommendation by the Trade and Industries Board in 1939 that the Wheat Board implement restrictive registration for millers and bakers.

This policy on registration was continually adjusted in accordance with changing circumstances in subsequent years. One of the consequences was that a concentration of power developed in the baking industry. The number of registered bakers decreased from 200 in 1941 to only 104 in 1971. By 1985 six bakery groups jointly baked about 90% of South Africa's bread.

This concentration of power probably contributed to a commission of enquiry into the Marketing Act (the Wentzel Commission) that was appointed in 1976. Although the commission's report supported the continuation of the Marketing Act, it did mention the concerning side effects of the Marketing Act on the wheat industry, and on the Wheat Board's power to limit the number of bakers and millers. THE WAR LOAVES WERE SOLD FOR SIX PENNIES, AND ACCORDING TO WHEAT BOARD STATISTICS, AN AVERAGE OF 300 MILLION LOAVES/YEAR WAS SOLD DURING THE SEVEN YEARS FROM 1941 TO 1948.



During the 1980s the pressure on the authorities to make the baking industry more accessible to new entrants increased and led to the allocation of more licences for the baking of the subsidised standard bread. The number of bakeries that were licensed by the Wheat Board to bake this bread increased from 338 in October 1985 to 370 in February 1991.

In 1985 the Davin Commission was appointed to investigate the justification of the payment of government subsidies on bread and whether to continue them. The commission recommended that the Wheat Board continue determining producer prices for wheat, but that price control, the payment of subsidies and restrictive registration of millers and bakers of standard bread be stopped. Only the recommendation regarding the registration of millers was implemented at that stage.

In 1985 the Competition Board made the following recommendations on the basis of an investigation into economic competition in the milling and baking industry in South Africa, carried out at the direction of the Minister of Trade and Industry:

- The restrictive system of registration for millers and bakers had to be abolished and replaced by a system of formal registration.
- Price control on milling and baking products had to be abolished.
- In order to prevent the concentration of economic power in the wheat industry from increasing, the Competition Board had to be informed of all future business acquisitions in the industry.

The Competition Board also maintained that the bread subsidy should not be continued in its existing format and supported the recommendations of the Davin Commission in this regard.

In 1986 the National Marketing Council (NMC) investigated the application of the Winter Cereals Scheme at the request of Minister Wentzel (Agriculture), together with other schemes that were introduced in terms of the Marketing Act. Among other things the NMC recommended that certain adjustments to the system of restrictive registrations with respect to millers and bakers in terms of the Winter Cereals Scheme be made by replacing the system with one of formal registration.

From 1990 the Wheat Board's role began to change drastically and the regulatory measures with respect to the wheat industry were in fact adjusted to allow the market to function according to free-market principles to a greater extent.

In 1991 the compulsory registration of millers and bakers was abolished by the Wheat Board and price control on all wheat products was terminated, after which the price of bread increased rapidly. The price of white bread rose by 26,1% in one year, and that of brown bread by 27%. Consumers also started to complain about the low quality of the bread after control was abolished.

The bread subsidy, which had existed since the 1940s, was scaled down over time and from 1947 differentiated subsidies were paid on white and brown bread, with a higher subsidy on brown bread. The subsidy on white bread was abolished from February 1984, and in 1988 the cabinet decided in principle to phase out the bread subsidy over a period of three years. The Blignaut Committee was appointed to work out the final strategy in this regard, and on 1 March 1991 the payment of government subsidies on all standard bread was abolished.

A large-scale concentration of power occurred in the milling industry too. The number of wheat mills in the country was reduced from 120 in 1951 to only 66 in 1974. However, the Commission of Enquiry into the Marketing Act that was appointed in 1979 recommended that the Wheat Board retain the power to register millers. By 1985 there were only 50 registered wheat mills in South Africa, of which 31 were owned by six milling groups with a joint market share of 98%.

In addition to their milling activities, the larger mills also expanded their control to the baking industry during the 1970s and 1980s. By the time the registration restrictions were lifted, the few groups that sold the biggest quantity of bread



# 'TANNIES' WHO CAN KNEAD

# MR ANDRIES BEYERS

t is a fact that you cannot bake bread with any flour. At that stage the grading requirements for wheat meal were 9 protein and 70 bushels – otherwise it was feed grade.

One day a few ladies from the Western Cape arrived at my office. They placed these nicely baked loaves in front of me and said: 'These loaves were baked with flour with a bushel of between 60 and 70.' So I asked: 'For how long did you knead them?' (Because if you knead and work dough for long enough you will eventually be able to bake bread.) 'No, for a long time,' they said, 'but we just want to show you that it can be done. Go and show this to the millers.'

However, the millers' and bakers' process leaves about three minutes for proving a loaf of bread – you cannot take it out, knead it and take it out and knead it again. With this explanation they left quite satisfied after a cup of tea or two.



flour in South Africa also baked most of the bread. In spite of the fact that literally thousands of small bakeries were opened, by 1990 more than 80% of the bread production was still in the hands of only six groups.

Although the abolition of price control on bread flour and the restrictions on registration in 1991 paved the way for new entrants to the wheat milling industry, it did not have a significant impact during the 1990s. Despite the fact that 90 new wheat mills were constructed in South Africa between 1991 and 1999, about 97% of South Africa's wheat meal was produced by only 33 of the large mills at that stage.

#### Levies

#### Import tariff

The South African wheat industry is subject to the payment of tariffs on wheat that is imported. This was introduced mainly to protect local producers against low subsidised global prices, which could lead to the domestic prices dropping to levels that could place the sustainability of the wheat industry in South Africa at risk. The tariff is based on the fixed global price in USA dollars. If the global prices of wheat drop below the set level that is calculated according to a fixed formula, the tariff comes into effect.

During 2005 the International Trade Administration Commission (ITAC) of South Africa undertook a study to determine whether the prevailing tariff dispensation on imports was effective. The wheat industry believed the system to be ineffective because the basis for calculating the tariffs took only the USA dollar price of wheat into account, without factoring in the exchange rate fluctuations between the USA dollar and the SA rand. It also did not take the differences between the various countries of origin of the wheat into account.

Consequently, the grain industry proposed an alternative dispensation for determining the tariff that would take those aspects, among other things, into account. However, the ITAC found that there was no justification for a tariff hike, as the milling industry in particular did not experience significant competition from imports.

#### Statutory levy

The objectives and aims of the statutory levy that is applied to wheat, barley and oats in terms of the Marketing of Agricultural Products Act, 1996, are to provide financial support to winter cereal research, information and development functions that are regarded as essential to the winter cereal industry and have been identified as in the interest of the industry. The winter cereal industry and directly affected parties regard the maintenance of macro industry information as essential for strategic planning purposes.

The provision of generic market information to all role-players on an ongoing basis is critical to allow the market to operate effectively. The winter cereal industry supports the principle that generic market information must be obtained through statutory

BY THE YEAR 2000 FOUR GROUPS, NAMELY PIONEER FOODS, TIGER BRANDS, PREMIER FOOD AND FOODCORP, MILLED 80% OF THE COUNTRY'S WHEAT AND BAKED MORE THAN 65% OF THE BREAD IN THE COUNTRY. measures and that SAGIS is the official vehicle for achieving this. A statutory levy is required to ensure that the winter cereal industry also shares in the gathering and dissemination of information.

The premise is that proper and accurate information on the winter cereal market that is available constantly and timeously not only improves market access for all market participants, but also promotes the effectiveness of the marketing of winter cereals and winter cereal products and therefore also the viability of the winter cereal industry and the agricultural sector in general. Market information furthermore promotes food security because the market can function better, as information on national stock levels of winter cereal is available.

Financing is also required for research on new technology to understand and manage the complex interaction between the changed behaviour patterns of crops and the external factors affecting them, like pests and diseases. It is also essential for the industry to maintain the specific infrastructure established over time to conduct research on consumer preferences.

Furthermore, in order to optimise proceeds from exports, it is essential for South African products to comply with international quality standards, which creates a need for researchers and breeders to ensure that locally produced winter cereals are and remain competitive on international markets. The levy is needed for the funding of research projects in order to address these needs.

The levies are administered by the Winter Cereal Trust in a separate account. A part of the levies is also used for small-scale producers and the emergent winter cereal industry.

The levies apply in the geographic area of the Republic of South Africa and apply to all winter cereals:

- (a) that are sold by or on behalf of the producer thereof;
- (b) that are imported into the Republic of South Africa;
- (c) that are processed or converted to a winter cereal product, if the winter cereal product is destined to be sold;
- (d) that are exported from the Republic of South Africa if the levy has not been paid in terms of any of the above; and
- (e) with respect to which a silo receipt is issued if the levy has not been paid in terms of any of the above.

The amount of the levy is adjusted from time to time. The following levies applied from 1 October 2014 to 30 September 2016 (VAT excluded):

- Wheat R17,00/metric ton
- Barley R16,00/metric ton
- Oats R13,00/metric ton.

The levy is payable by the buyer, importer or processor on the basis as determined in the regulations, but under certain conditions it can be deducted from the purchase price paid to the producer or the importer. In the case of a silo receipt the levy is payable by the issuer of the receipt, but it can also be recovered from the person to whom the silo receipt is issued.

The levy must be paid to the Winter Cereal Trust by the last day of the month following the month in which the winter cereal is purchased, converted, processed or exported or a silo receipt is issued.

The statutory levies must be implemented as follows: 70% for research and information, 20% for transformation (development of black producers) and no more than 10% for administration.

#### Research

The necessity for research into the wheat industry led to the Wheat Board donating an amount of £620 to the Stellenbosch-Elsenburg College of Agriculture as far back as 1936 to purchase a Farinograph-Fermentograph, which is used to test the baking quality of wheat. About two years later, in April 1938, the Wheat Board donated a





further amount of  $\pm 934$  to the same college to purchase further equipment to be used for research into wheat.

The Wheat Board subsequently on several occasions made further donations to the college of agriculture to appoint staff and purchase equipment required for advanced research. Among other things, this equipment included ovens and apparatus required to determine the ash content of bread and to provide an incubator used in research on wheat diseases.

In time certain members of the Wheat Board became dissatisfied with the repeated donations to the Elsenburg College of Agriculture while the universities, colleges and research centres in the northern parts of the country also experienced the same need. The matter was discussed by organised agriculture at provincial and national level and the Wheat Board was requested to introduce a levy on wheat, oats, barley and rye to generate funds for research. The Wheat Board supported this and established the Winter Cereals Research Fund in 1952. From the 1953/1954 season a special levy was introduced on winter cereals, which was deducted from the producer price. The levies that were collected with respect to the different grains were employed specifically for research into each type of grain.

As wheat farming increased in the former Orange Free State and Transvaal, the need for research and research facilities in those parts increased, and in 1953 the Wheat Board made donations for this purpose to the Potchefstroom University and the Small Grain Centre at Bethlehem. Later amounts were also donated to the Roodeplaat research centre to construct a laboratory and other facilities. However, this did not last long, as it was decided to concentrate all wheat research activities in the northern regions at the Small Grain Centre at Bethlehem.

In addition to the above actions, the Wheat Board sponsored research at various universities. The University of Pretoria, for example, conducted research on root diseases and the causes of crater disease on the Springbokvlakte, while the University of Cape Town conducted research on viruses in wheat and their transferability, among other things by the Russian wheat aphid.

The University of the Free State was involved in research on the drought resistance of wheat, combating wild oats and the biology and ecology of the Russian wheat aphid. Research at the Stellenbosch University concentrated on wheat quality, barley, lupine development and fertiliser. At the University of the Witwatersrand the effective absorption of inorganic nitrogen in the wheat plant during the growth and development stages was researched.



The Small Grain Institute does extensive research on winter grains.



The laboratory of the Small Grain Institute.

The main objectives with the research were to develop wheat and other winter cereal cultivars that would provide the maximum yield in the different climatic regions of South Africa, as well as to develop cultivars that would produce highquality grain, particularly with a view to the baking industry.

Since the establishment of the Agricultural Research Council (ARC) in 1990 this body has conducted considerable research with respect to wheat, including the development of varieties producing a high yield and with good milling and baking properties, as well as varieties with resistance to diseases like Russian wheat aphid and wheat stem rust.

The need for suitable wheat seed led to the Wheat Board starting as far back as 1947 to establish a certified seed scheme in which classified cultivars of winter cereals were included. Suitable seed breeders were identified who reproduced and cleaned small quantities of seed under the supervision of the Wheat Board before distributing the seed. This certified seed was supplied to the agents of the Wheat Board and to producers to enable them to reproduce their own seed.

The agents of the Wheat Board, which were mainly agricultural co-operatives, started reproducing seed on a larger scale and building their own seed schemes. Later Sensako started to reproduce seed on a large scale from mother seed obtained from the Department of Agriculture's Technical Services.

#### **Barley and oats**

Before deregulation in 1997 the marketing of barley and oats was, like that of wheat, controlled by the Wheat Board in a single-channel system in terms of the Winter Cereals Scheme. Under this scheme the Wheat Board was the only buyer and seller of barley and oats at set prices. As in the case of wheat, barley and oats could only be imported on the basis of a permit issued by the Wheat Board.

Next to wheat, barley is probably the most important small grain in South Africa. Production of malting barley under dryland conditions requires high rainfall that is distributed very well across the production period. In South Africa this is limited to a specific region in the Southern Cape that stretches from Botrivier in the west to Heidelberg in the east. However, barley is produced under irrigation in various areas in the country, like in the cooler irrigation areas of the Northern Cape and on a smaller scale in places in North West and Limpopo.

The processing of barley into malt is concentrated mainly in Caledon in the Western Cape, although it is done on a smaller scale in Alrode near Johannesburg as well.

The market for malting barley in South Africa in effect consists of only one major buyer, namely South African Breweries Maltings (SABM), which supplies its majority shareholder, South African Breweries Limited (SAB), with malting barley.

Barley producers are assured of a market for their product, as the former SAB Group has given a written undertaking to purchase barley only locally by way of fixed-price forward contracts.

Research with respect to barley is conducted by the Small Grains Institute at Bethlehem in the Free State and the South African Barley Breeders' Institute (Sabbi) near Caledon, and is funded by way of statutory levies on barley sales.

#### SORGHUM PERSPECTIVE

#### Introduction

Sorghum is a tropical grain grass that is indigenous to Africa, and according to some sources it has been produced in southern Africa for more than 3 000 years. Currently it is produced worldwide in warmer regions and in terms of volume it is regarded as one of the most important grain types in the world. It is increasingly used as the basis for successful food and beverages industries and is an important source of food security, particularly in Africa, because it offers excellent nutritional value.

In South Africa sorghum is, in terms of volume, the third biggest grain after maize and wheat. Sorghum production in South Africa can be divided between commercial and smallholder or subsistence farms. The small farmers usually use their own production, which makes it difficult to determine exactly how much sorghum is actually produced in South Africa. It is estimated that on average about 13% of the total annual sorghum production in South Africa from 2009 to 2013 was employed for own consumption by producers, particularly by non-commercial producers.

One of the outstanding properties of sorghum is that it is highly effective in converting solar energy into food. It is well adapted to drought conditions and is produced mainly in the drier summer rainfall areas of Mpumalanga, Limpopo, the Free State, North West and Gauteng.

It is interesting that several of the sorghum varieties cultivated in the USA probably came from 16 different varieties that were exported there from the former Natal in 1857.

In spite of South African sorghum production representing only a small percentage compared to maize, the sorghum industry is well established and leads the way in many areas in a global context. Agronomic research, as well as research into milling and malting quality, has been conducted by internationally recognised scientific institutions for decades.

#### Production

Although South Africa produces the third biggest grain crop in South Africa, it contributes only a small percentage of the total domestic grain crop. From 2004/2005 until 2014/2015 about 189 522 tons of sorghum on average were produced annually in South Africa, which represents only about 1,64% and 10,17% of the average annual maize and wheat crops respectively over that period.

The Free State is the biggest producer of sorghum in South Africa and from 2004/2005 until 2013/2014 it annually produced on average 54% of the sorghum



A close-up view of sorghum kernels.





The fumigation of grain against insects.

crop, with Mpumalanga the second biggest producer (26%), followed by Limpopo (10%), North West (7%) and Gauteng (2%).

In the period from 2000/2001 until 2014/2015 the total South African sorghum crop varied between 96 000 tons (in 2005/2006) and 373 000 tons (in 2003/2004), with an average of 203 360 tons/year.

Graph 18 depicts the yield/hectare of sorghum planted from 1990/1991 until 2015/2016.

Although South Africa is a net exporter of sorghum, trade in this commodity with other African countries remained relatively low compared to other grains, probably because some of the other African countries produce even more sorghum than South Africa. However, exports in 2004 and 2005 were mainly to African countries, particularly Botswana. Because of quality requirements in Botswana it is vital for the product to comply with certain minimum standards.

#### **Marketing and prices**

From the 1944/1945 to the 1948/1949 season sorghum marketing was handled by the Maize Board, but from 1949 to 1957 there was no formal control over this marketing. From the 1957/1958 season onwards sorghum was again marketed by the Maize Board as part of the Summer Grain Scheme until the Sorghum Board was established on 31 January 1986. This board then took control of sorghum marketing until the Marketing of Agricultural Products Act of 1996 came into effect on 1 January 1997. After that sorghum, like the other grains in South Africa, was traded without restriction on the free market.

Sorghum prices fluctuate considerably. When local sorghum production exceeds the domestic consumption needs for food and beverages, the sorghum price is determined by the lowest price of competing grain (yellow maize). In years in which the domestic demand for sorghum is greater than the local production, the price depends on the import parity and the premium paid for malt quality.

During 2005 and at the beginning of 2006 sorghum producers experienced enormous cost-price pressure. Producer prices of sorghum dropped drastically, mainly because of overproduction and a stronger currency rate, while input costs of imported inputs like fuel, chemicals and fertiliser increased rapidly. This raised doubts about the prospects of cultivating sorghum sustainably and profitably in South Africa and led to producers being forced to scale down plantings.

#### Levies

Statutory levies on sorghum that are collected in terms of the Marketing of Agricultural Products Act of 1996 are revised from time to time and the income from these is employed for research purposes by the Sorghum Trust.

250,0 Free State **Fons** (thousand) 200,0 KwaZulu-Natal 150,0 Limpopo 100,0 Mpumalanga Gauteng 50,0 North West 0,0 994/1995 2002/2003 2007/2008 008/2009 995/1996 997/1998 998/1999 2001/2002 2003/2004 004/2005 2005/2006 2009/2010 2011/2012 2012/2013 2013/2014 2014/2015 993/1994 996/1997 999/2000 2000/2001 2006/2007 2010/2011

The current levies on sorghum apply until 28 February 2018.

Graph 17: Sorghum production per province



#### **Processing and consumption**

About 90% of sorghum planted in South Africa is used for manufacturing food and beverages for people. In the food market it is used to manufacture malt, meal, couscous and other types of food like rice and crushed maize, while malt is mostly used to manufacture sorghum beer (a traditional African beer). Sorghum meal, also known as 'mabele', competes directly with the other grains as a breakfast porridge.

Manufacturers of sorghum products operate in a very competitive environment in which consumers can very easily switch to substitutes like maize meal, rice and lager beer.

The economic climate and the influence of Western culture definitely have an effect on the demand for sorghum products. The impact of these factors can be seen in the declining trend in the consumption of sorghum from 2003/2004 until 2013/2014, as is demonstrated in this diagram below.

From 2004/2005 until 2013/2014 an average of about 178 660 tons of sorghum was processed for the consumer market, with an average of about 8 300 tons used for animal feed.

The biggest use of sorghum in South Africa is for the production of sorghum beer. In the 1930s the government prohibited the production of sorghum beer by private institutions and individuals, and sorghum beer breweries that did not belong to the government were declared illegal. The right to brew sorghum beer was awarded to local authorities, provided that the income earned from it is used for the development of black residential areas. Later the local authorities transferred this responsibility to the Industrial Development Corporation.



Graph 18: Average sorghum yields per hectare



Graph 19: Average sorghum yields per hectare and producer price per ton

The use of sorghum as animal feed was in time researched well and documented. In that market it was used mainly for processed food for pets, poultry and livestock. However, it is not a stable market and apparently price is the determining factor in the decision of whether to use maize or sorghum in animal feed.

For ruminants a combination of sorghum and other grains provides a product with a nutritional value comparable to that of maize. However, food manufacturers sometimes hesitate to use sorghum instead of maize because of the negative effect that locality and the course of the season can have on the nutritional value of sorghum, and because it may contain tannins. This, together with problems with respect to availability of the right quality, storage space and other practical problems, places sorghum in a considerably weaker position than maize.

About 55% of the sorghum meal and malt manufacturers are concentrated in Gauteng and North West, followed by Limpopo, the north-eastern Free State and the northern parts of KwaZulu-Natal. Because the bigger industries manufacture sorghum malt as well as sorghum meal and other sorghum products, all these products are normally distributed through the same distribution channels. The distribution network stretches much wider than only the areas where sorghum is cultivated and processed. There are also a number of areas in South Africa where the distribution networks are not yet properly established, which creates a potential for market expansion for sorghum products.

## **Quality and grading**

Sorghum is graded according to strict quality standards as GM (GM1, GM2 and GM3), GH (GH1 and GH2) and Other, and the marketing of sorghum is strictly controlled by regulations announced in terms of the Agricultural Product Standards Act of 1990. The regulations also make provision for the way in which sorghum has to be packaged and labelled and prohibits the sale of sorghum that contains any ingredient that would make it unfit for human or animal consumption.

The Agricultural Product Standards Act of 1990 and the Foodstuffs, Cosmetics and Disinfectants Act of 1972 also contain specific prescriptions about food hygiene and safety standards of sorghum products destined for export.

#### Storage

Sorghum is primarily stored at a market-related cost in commercial grain silos, where it is cleaned and graded. Usually any practical quantity of grain sorghum is received and handled, provided the requirements of the Department of Health are met. Like with other grain, the quality and quantity of the stored sorghum are usually guaranteed by the storage facility and the owner can obtain a silo certificate that can be used in the trading of sorghum.

Only a limited quantity of sorghum flows directly to the various market sectors, as only a few processors have sufficient bulk facilities to store it.





Graph 20: Utilisation/consumption of sorghum



#### Research

Sorghum is one of the crops researched by the ARC's Grain Crops Institute in Potchefstroom. Research projects on sorghum were initially funded jointly by the government and external sources like the Sorghum Trust. However, over time the funding of research projects became increasingly problematic as the government started to scale down its contributions for this purpose and it became more difficult to generate funds for research from the sorghum industry itself.

The Sorghum Trust makes contributions for research to institutions like the ARC, Grain SA, universities and non-governmental organisations. The Sorghum Forum annually invites all relevant research institutions to submit research proposals to the forum. The forum's research project committee assesses and prioritises the proposed projects according to norms and criteria established by the forum. Researchers are offered an opportunity to explain the proposed projects, after which the committee submits its recommendations to the forum.

Projects approved by the forum are then submitted to the Sorghum Trust for the allocation of funding. The trust considers the applications in terms of the trust deed and the applicable regulations, as well as the availability of funds. If insufficient funds are available for financing all the approved projects, the projects are funded in order of priority up to the amount of funds available.

#### Biofuel

The possible manufacture of renewable fuel like bio-ethanol has been on the table for quite some time, and can hold major benefits for the sorghum industry. Sorghum is the only grain crop in South Africa that is available for the manufacturing of bio-ethanol, as maize is regarded as a staple food in South Africa and may not be used for this purpose. Sweet sorghum is particularly suitable for manufacturing bio-ethanol because of its high sugar content.

Initially it was thought that the use of grain for manufacturing biofuel would be able to stabilise the grain industry, promote the admission of new participants to the industry and stimulate rural development. It could perhaps in the long term also provide a solution to problems with surplus production and create a market for increased production of grains like maize, sorghum and oilseeds.

However, a number of issues had to be addressed before large-scale production of biofuel from those grains could continue, namely:

- The impact on food security and prices;
- The acceptability of by-products for the feed industry; and
- Government involvement and legislation.

Sorghum is a key crop in helping to establish the bio-ethanol industry in South Africa, particularly in drier western areas where the cultivation of sugar cane is not possible. This will support considerable expansion in local sorghum production and significantly increase the importance of sorghum in the South African economy.

On 30 September 2013 a notice was published in the Government Gazette that biofuel had to make up at least 5% in volume of diesel and 2% to 10% of petrol from 1 October 2015.

According to Grain SA this would mean that about 620 000 tons of additional sorghum per year would have to be produced in South Africa to achieve those targets, which would require new varieties that can produce higher yields to be developed – all factors that would benefit the sorghum industry greatly.

Despite extensive inputs by Grain SA on the viability and the possible benefits of this for the sorghum industry, the industry was, at the beginning of 2016, still waiting for the government to announce the final regulatory environment for finalising the biofuel industry.

# OILSEED PERSPECTIVE: GROUNDNUTS, SUNFLOWER, SOYBEANS AND CANOLA

#### Groundnuts

#### Utilisation

Groundnuts are mainly cultivated for human consumption. They are primarily used in the production of sweets and breakfast cereal, or in unprocessed form. Statistics show that approximately 26% of the groundnuts produced in South Africa from the 1990/1991 until the 2001/2002 season were consumed in their unprocessed form (shelled and unshelled).

The crushing of groundnuts for oil renders approximately equal quantities of oil and oilcake. The oilcake is mostly used in the manufacturing of products like peanut butter and animal feed.

#### Production

The groundnut originally came from South America (Bolivia and adjacent countries), but is currently cultivated in tropical and warm climatic regions across the world. In the USA, groundnuts were cultivated in gardens up to approximately 1870, and planted as grazing for pigs up to approximately 1930.

Initially groundnuts were imported from India and other countries in the Middle East for crushing in South Africa, while the South African producers focused on the eating market. During the 1920s, the government encouraged the creation and expansion of oil crushing capacity. Initially growth was slow and it only really took off during the 1930s.

According to the first report of the Oilseeds Control Board, released in 1952, groundnuts were first cultivated for commercial purposes in South Africa during the First World War. During that period, the price of groundnuts increased significantly amidst inflationary circumstances, which made the cultivation of it very attractive.

The best prices were achieved in the eating market, which motivated producers to mostly plant the Virginia Bunch cultivar. A promising export market for these groundnuts developed in the international eating market, which contributed a lot to the strengthening of the domestic producer price. This in turn contributed positively to the increasing of production and the improvement of the general quality of South African groundnuts.

During the Second World War (1939 - 1945) and the period shortly after that, the local production of groundnuts was further stimulated by a shortage that arose from limited imports – firstly due to a lack of space on board ship for imports and then due to developments in the international markets, particularly in Asia and Europe. It became clear that the domestic production of groundnuts would have to be increased to meet the demand, specifically for the crushing industry.

In order to address this need the government started a campaign, at the insistence of the crushers, to increase the production of groundnuts in South Africa significantly. The seed of the Natal Common type of groundnut, which offered a higher yield/ hectare, is less susceptible to drought conditions and more suited for oil crushing, was made available. A guaranteed producer price for shelled groundnuts as well as other guidelines aimed at supporting the industry was announced before the start of the production season.

Subsequently the production of groundnuts increased quite quickly from 8 000 tons of shelled groundnuts in 1946 to 79 000 tons in 1952.

In the ten-year period from 1970/1971 to 1979/1980 an average of 280 000 ha/year was planted with groundnuts. The largest planting was 373 000 ha in 1970/1971, and the smallest was in 1976/1977, when only 185 000 ha were planted. During the next ten years the average annual groundnuts plantings decreased to 221 000 ha, and in the period from 1990/1991 to 1997/1998 it decreased further to an average of 161 000 ha/year.



Graph 21: Value of oilseed production since 1990

However, in the period from 1997 up to approximately 2009 the average yield/ hectare showed a rising trend. Upon closer examination it seems this can probably be attributed to the fact that the cultivation of groundnuts on dryland decreased, while there was an increase in the use of irrigation.

Groundnuts are very sensitive to unfavourable climatic conditions, which explains why there is not a big correlation between the total area on which groundnuts are planted and the total yield produced – as the graph above indicates.

#### Harvesting process

Traditionally the harvesting process of groundnuts used a lot of manual labour. The groundnut plants were pulled from the soil by hand and piled up until the correct moisture content was reached, after which the pods were harvested and put into sacks. This meant that the harvest was delivered to buyers in sacks.

Therefore, groundnut production was a very labour-intensive process. It was believed that the decrease in production since approximately 2002 could largely be attributed to labour problems on the back of labour legislation applicable in South Africa after 1994, as well as the increasing labour costs that made it more viable for producers to plant other crops that were not so sensitive to unfavourable climatic conditions.

During the late 1990s the idea developed that the production of groundnuts will only be expanded on a larger scale in South Africa if the process could be mechanised to a greater extent. Calculations done in 1999 indicated that it was cheaper



Graph 22: Production statistics of groundnuts 1936/1937 to 2014/2015 - hectares and tons produced

at that stage to harvest groundnuts in the traditional way than with the available mechanic solutions. Consequently, a lot of producers left the industry.

Since the early 2000s mechanical harvesting processes were imported, which made it possible to deliver groundnuts in bulk and save on labour costs. The mechanical harvesting process also increased the average grading of the producers, with more choice and miscellaneous grade than was delivered by the traditional process.

However, the mechanisation equipment needed was very expensive and could rarely be afforded by smaller producers. The process also requires different infrastructure than the traditional method. This includes facilities for the bulk receipt and handling of groundnuts, as well as dryers able to dry the groundnuts harvested mechanically to the required moisture content.

#### Production areas

In certain areas of South Africa, specifically the northern and eastern areas, groundnuts are quite often planted by small farmers for personal use, because it is an important source of nutrition in those areas. For commercial use, groundnuts are mostly cultivated in the western summer rainfall areas of the country, both under irrigation and dryland. During the period from 2008 to 2013, approximately 36% of South Africa's groundnuts were produced in the western and north western parts of the Free State, with approximately 30% in North West and 28% in the Northern Cape.

Graph 23 shows the distribution of groundnut production in the different provinces of South Africa for the period from 1993/1994 to 2013/2014.

#### Aflatoxin

High aflatoxin levels in groundnuts are one of the biggest risks of the groundnut industry. Aflatoxin is a fungus that spreads quickly, particularly in groundnuts with a high moisture content, if it is not managed properly. Internationally the tolerance levels for aflatoxin contamination are very strict in order to manage the risks for human consumption. This increases the risk with the exporting of groundnuts. The contamination of the groundnuts can be countered by blanching, but this is associated with high costs.

In order to restrict the spreading of aflatoxin, all processing infrastructures in South Africa have to adhere to stringent requirements from the Department of



Cultivation of groundnuts.





Graph 23: Distribution of groundnut production per province since 1993/1994

Health. Physical tests are done on samples and samples of all batches before they may be sold.

#### Cultivars

South Africa almost exclusively produces the Spanish type of groundnut, and even though research regarding the development of groundnut cultivars is a priority, only the following approved cultivars were available in South Africa in 2013:

Registered cultivars 2013			
Akwa (254)	Harts (254)	Kwarts (254)	Phb 96B01 R (411)
Anel (254)	JL 24 (959)	Rambo (254)	Phb 95Y41 R (411)
Billy (254)	Kangwane Red (254)	Sellie	Phb 95Y40 R (411)
Robbie	PAN 9212	Tufa (254)	Phb 95Y20 R (411)
Mwenje (1137)	SA Juweel (254)	Inkanyezi (959)	Phb 95B53 R (411)
Nyanda (1173)			

In the light of the growing demand for groundnut varieties that deliver higher yields, the ARC conducted research about this during 2011 and 2012 in various large groundnut producing countries. The ARC concluded that the best alternative would probably be for South Africa to import seed for reproduction from Senegal.

In 2012 it was also established that certain larger role-players in the industry had imported new breeds/varieties independent of the ARC in an attempt to increase production yields. They were dissatisfied with the ARC's breeding programme regarding varieties that could deliver better yields.

#### Marketing

Under the control of the Oilseeds Board, groundnuts were marketed according to a single-channel system with prices determined by the Oilseeds Control Scheme. After control was abolished in 1997, the price of groundnuts was established in the market place, driven by demand, supply and quality.

Graph 24 (on page 58) shows the annual change in groundnut prices compared to tons produced from 1990/1991 to 2013/2014. It shows a clear correlation between the total tons produced and the producer price, but indexed price comparisons show that the producer price has been structurally higher than the historical price since 2006/2007.

A study conducted by the Bureau for Food and Agricultural Policy (BFAP) in 2012 concluded that a lack of mutual trust in the groundnut industry's value chain hampered initiatives for growth and recovering economies of scale to ensure an ongoing supply of high quality groundnuts to the market. The opinion was that a total turnaround strategy in the industry in South Africa was necessary and it should be



initiated by the big role-players, a process in which the Groundnut Forum can play an important coordinating role.

It was also found that great uncertainty regarding pricing prevailed in the groundnut industry, specifically regarding pre-season contracts. This plays an important role in the producers' decision to plant groundnuts or not. The recommendation was that a specific price strategy was necessary to enforce a transparent pricing mechanism and that the possibility of introducing a price-hedging mechanism for groundnuts should be examined.

Groundnuts cultivated in South Africa are traditionally an export product, and despite the problems in the industry, South Africa is still a net exporter of groundnuts, because in most years the domestic production exceeds the domestic consumption. Domestic prices are therefore largely determined by export parity.

The export market makes high demands regarding the quality of the groundnuts, especially for the presence of aflatoxin. Groundnut exports experienced enormous problems in 1999 and many consignments were returned to South Africa from overseas destinations because the quality was not acceptable. In addition to unacceptably high levels of aflatoxin contamination, mixing of cultivars occurred, and this was also not acceptable to the international buyers, particularly because they were used to the high quality of South African groundnuts and they often traded at quite a premium.

By 2013, groundnuts were mainly exported to the Netherlands, Germany, Japan and Mexico.

#### Sunflower

#### Utilisation

In South Africa sunflower seeds are almost exclusively used for manufacturing oil and oilcake – approximately 95%. The rest is mainly used for human consumption and in pet food. Sunflower oil is used mainly for human consumption, be it in unprocessed or processed form. However, in South Africa oilcake is exclusively sold for manufacturing animal feed.

Unlike in the case of soybean oilcake, the production of which has grown substantially since 2005/2006, the production of sunflower oilcake has stayed almost at the same level and the predictions are that in the future it will vary between 700 000 and 800 000 tons/year.

#### Production

Sunflower performs better than most other grain crops under unfavourable, dry climatic conditions, which could possibly explain why it is a popular crop to grow in the more marginal production areas of South Africa.

Sunflower is a good crop-rotation crop with maize and there is a fair correlation between the surfaces on which maize and sunflower can respectively be planted, because producers can easily switch over to sunflower when the optimum planting date for maize has passed. It also explains in part why sunflower production varies quite a lot from year to year, as is seen in Graph 26 (on page 60).

In 2008 South Africa was the world's tenth biggest producer of sunflower seeds, produced mainly in the Free State, North West and Limpopo and on the Highveld of Mpumalanga.

#### Import and export

Traditionally sunflower seeds are exported on a very limited scale by South Africa, especially because their export was viewed as uneconomical as a result of the mass-volume ratio. Sunflower seeds may only be exported if they satisfy the prescribed phytosanitary requirements and are certified by PPECB as suitable for export.

During the first half of 1996 a sharp decline in the rand/dollar exchange rate and a strong demand for plant-based oil and oilcake in Europe and Britain created a good









Graph 25: Groundnuts – gross yield

opportunity for the profitable export of sunflower seeds, after which 100 000 tons were exported. This was the first export of sunflower seeds by South Africa in more than a decade.

South Africa is a net importer of sunflower oil, which in theory provides the opportunity for the expansion or local sunflower production. However, the fact is that oilcake obtained from sunflower seeds is not of the same high quality as that of, for example, example soybeans. Because of its limited use in animal feed formulas as a result of the high fibre content, the market for sunflower oilcake is also limited. These facts limit the motivation to expand the production of sunflower.

#### Marketing and prices

During the regulated period the Oilseeds Board controlled most of the aspects of the oilseeds industry and therefore also controlled sunflower in a single-channel system. Producer prices of sunflower seeds were determined by local supply and demand, as well as the prices of the export pools of the Oilseeds Board, and did not fluctuate during the season. However, this situation changed drastically in the last years before the commencement of the Marketing of Agricultural Products Act in 1997 and the accompanying abolition of the control boards.

At a NOPO Congress held on 10 March 1994 it was decided to recommend to the Minister of Agriculture, Dr Kraai van Niekerk, that the single-channel pooled system for sunflower seeds as well as soybeans had to be retained, but that it had to be reviewed annually. It was also recommended that producers should be allowed to deliver sunflower seeds and soybeans directly to registered processors during the 1994/1995 season. These recommendations were accepted by the minister and on 22 April 1994 the Oilseeds Scheme was amended accordingly.



At the NOPO Congress in 1995 recommendations for changes to the Oilseeds Scheme from the 1996/1997 season were accepted, paving the road for full deregulation of the oilseeds industry. These recommendations included that prices for sunflower seeds and soybeans had to be determined in the market environment in future so that the products could be traded freely between producers and buyers, that international competitiveness had to be pursued, and that a realistic rate-fixing policy for oilseeds and oilseed products be maintained. It was also recommended that the Oilseeds Board had to be retained to fulfil certain functions, among other things to administer a surplus removal system for groundnuts and sunflower seeds.

The free-market principles that were thus introduced required producers to take careful note of the supply and demand position in South Africa and adapt their production accordingly, as there was no longer only one guaranteed buyer. Failure



Graph 26: Sunflower production from 1950/1951 to 2014/2015 – the effect of the 1992 drought that also harmed sunflower production



Graph 27: Maize production versus sunflower production - hectares per annum since 1950/1951



Graph 28: Sunflower production per province from 1993/1994 to 2014/2015

to do this led to an oversupply of sunflower seeds in 1996, for example, because producers did not heed information that the Oilseeds Board published in January and February of that year. The Board namely announced that the initial contracts for the local sunflower crop was nearly fully subscribed, but still nearly 90 000 ha of sunflower were planted. This eventually led to an oversupply of 75 000 tons of sunflower seeds in the local market, which had to be sold for unfavourable and unprofitable prices.

Deregulation inevitably led to differentiated prices for oilseed products, depending on the distance from the most important markets and the time of the delivery of the products. This discouraged production in areas far away from the markets. In the deregulated environment contracting took place directly between producers and buyers, but with an increased risk for producers. In addition, the availability of quality market information posed a real risk for producers.

As a result of the Uruguay round of the GATT, quantitative import control with respect to oilseeds was replaced by tariff control. An inescapable result of this was that any person could import oilseed products by paying the tariff, subject to phytosanitary requirements, which meant that South African products were exposed to international competition to a greater extent. The international prices therefore became a more important factor in establishing the local producer price.

Since sunflower seeds started to trade on Safex in February 1999 this was the forum where the price was determined. The price levels of sunflower seeds are indeed influenced by the local supply and demand, but the supply of and demand for sunflower oil in domestic as well as international markets also play a role.

It seems that the international price of sunflower oil serves as a guideline for the South African price of sunflower seeds as well as sunflower oil. The Argentinian sunflower oil price is especially relevant as the marketing seasons of these two countries correspond. The fact that South Africa is a net importer of sunflower oil, which is imported as crude oil, means that the local sunflower price trades at close to import parity.

In the run-up to greater deregulation of the agricultural industry, and specifically with the change from the single-channel marketing system for sunflower seeds to a surplus removal scheme, Minister Hanekom (Agriculture and Land Affairs) consented in January 1996 that an amount of R34,26 million could be paid to sunflower producers who sold sunflower seeds to the Oilseeds Board from 1988/1989 to 1994/1995. The amount was paid from funds that had accumulated in the sunflower reserve and that exceeded the Oilseeds Board's need for reserves for the new surplus removal scheme.

#### Research and information

Research with regard to sunflower, soybeans and groundnuts is funded among other things from the income of the Oilseeds Trust and Protein Research Foundation (PRF).

In the period before the establishment of Grain SA, NOPO introduced and successfully operated an information service by auto fax. The information function about the sunflower industry is currently run by SAGIS, while Grain SA plays an important role in promoting the industry as a whole.

#### Soybeans

#### Origin

From the Cedara Memoirs it seems that soybeans were introduced to South Africa in 1903.

The seed was imported from China, but producers had very little or no knowledge about soybeans and experienced many problems with the cultivation, especially because there was very little information available. Soybean production therefore did not really become established in South Africa immediately.

However, the former Department of Agriculture was determined to reduce the production problems by developing progressive production methods. The department also launched various initiatives to enhance understanding of the opportunities that soybean production offered in South Africa and to promote the production of the crop.

# COMPENSATE ON OIL CONTENT, ASKS PRODUCERS

During the NOPO Congress in February 1997 the request was made that producers be compensated according to the oil content of sunflower seeds. The reaction of the processors was that they would be willing to compensate producers in this way, provided that sunflower seeds could be provided to them on the basis of the oil content. However, talks with the silo industry revealed that it would not be logistically possible to store sunflower seeds in silos according to the different oil-content levels and the request could not be accommodated on a large scale.

However, one of the large agribusinesses in South Africa, Senwes, decided to buy sunflower on the basis of oil content during the 1998 season. The producer price would be calculated on an oil content of 42%, with a sliding scale that became effective when the oil content was higher or lower than 42%.

In 1942 a Feed Committee was appointed to specifically investigate matters regarding animal feed and its improvement. That committee, together with the Department of Agriculture, the Oil Expressers Association and the Animal Feed Manufacturers Association (AFMA), probably played the most important role after that to stimulate the production of soybeans in South Africa.

#### Production

South Africa is traditionally an importer of soybeans.

During the 1940s approximately 75% of South Africa's need for oil and protein seeds, which included soybeans, was imported from Europe and the USA, as the local production could not satisfy the demand. Concern about the availability of cargo space to import oilseeds apparently motivated the Oil Expressers Association to finance the establishment of the Animal Feed Manufacturers Association (AFMA) with the aim of facilitating the import and distribution of animal feed with a high protein content in South Africa.

Research into the production of soybeans that was done in Potchefstroom led to the introduction in 1950 of the first soybean cultivar that was cultivated specifically for South African conditions. The cultivar was known as Geduld.

Despite ongoing efforts and research to increase the production of soybeans in South Africa, it was only in the late 1990s that a fair momentum was achieved, but even after 2010 soybeans still made up only a small though important and growing component of the South African grain economy.

Increasing proceeds, supported by a favourable agricultural policy environment that supported commercialisation and the use of agricultural technology, as well as its utilisation as crop-rotation crop for maize, made it possible for commercial producers to easily convert from the production of traditional grains to soybeans.

Graph 29 shows the changes in the extent of the production of oilseeds in South Africa from 1970/1971. The growth in the production of soybeans relative to the other oilseeds crops is clearly seen.

#### Imports

Local production provides only in a relatively small part of the South African demand for soybeans, as is seen in the table about production and consumption numbers. A large part of the domestic demand for soybeans is therefore still imported.

Soy meal is mainly imported from Argentina, while soybean oil is mainly imported from Argentina and Brazil.

Soybean seed is imported from various countries, including the USA, New Zealand, Japan, Australia and a number of European countries. However, South Africa also



produces soybean seed, which is regulated by the Plant Improvement Act of 1976.A part of that is exported, mainly to neighbouring countries, but a smaller part also to countries in Asia, South America and Europe.

#### Producer prices

South African soybean prices are mainly influenced by the size of the crop in South America, international supply and demand trends, shipping tariffs and the rand/ dollar exchange rate.

#### Development

The changing strategic importance of soybeans, initially as an important source of protein in the manufacturing of animal feed and later as a key component of food for humans and animals, in time led to a greater acceptance of soybeans in the South African agricultural environment and it has started to earn a place in policy matters. The policy initiatives raised the status of soybeans as cash and as food crop, which also encouraged seed companies to develop improved seed varieties.

The Department of Trade and Industry initiated extended processes since around 2010 with a view to developing new soy-processing plants and improvements to existing facilities.

In addition, the high nutritional value of soybeans and the increased industrial demand promoted the cultivation of soybeans from around 2010. The attractiveness of soybean production and the value of the industry were further enhanced by good crop yields in especially the top soybean-producing areas, linked to favourable market prices that increased the yield/hectare for producers appreciably. Market conditions also changed to such an extent that the processing of soybeans became more attractive, and in fact improved, increasing the demand for soybeans even further.

Especially since the Genetically Modified Organisms Act came into effect in 1997, after which new GMO cultivars were released in the RSA, the area on which soybeans were cultivated, as well as the total production, increased substantially. Between 1997 and 2014 the area of 87 000 ha increased to 502 900 ha, and the production of 120 000 tons to 867 700 tons, as can be seen on the diagram above. The BFAP predicts that it can increase to up to as much as 605 000 ha by 2020, and that the yield/hectare can improve appreciably in that time, which will serve as a great incentive for producers to further expand soybean production. The BFAP also predicts that the local demand for soy meal could double from 2012 to 2020.

These factors and expected developments, together with the value of soybeans as a rotation crop as a result of the improved nitrogen levels in die soil, indicate good prospects for South African soybean production.

#### 1 200 000 1 000 000 800 000 Groundnuts Tons 600 000 Sunflower seed 400 000 200 000 Soybeans 0 975/1976 2011/2012 1977/1978 983/1984 985/1986 987/1988 2009/2010 1979/1980 981/1982 989/1990 991/1992 993/1994 1995/1996 997/1998 999/2000 2001/2002 2003/2004 2005/2006 2007/2008 2013/2014

Graph 29: Changes in tonnage production of oilseeds in South Africa from 1975/1976 to 2013/2014

THE CEDARA MEMOIRS ON SOUTH AFRICAN AGRICULTURE WERE WRITTEN BY ER SAWER IN COLLABORATION WITH THE DEPARTMENT OF AGRICULTURE OF NATAL AND PUBLISHED IN 1909.

THEY DEALT WITH DIFFERENT BRANCHES OF THE SOUTH AFRICAN AGRICULTURAL INDUSTRY, INCLUDING GRAIN, LIVESTOCK AND TOBACCO.



Graph 30: Soybean production and consumption from 1976/1977 to 2014/2015



Graph 31: Soybean prices from 1990/1991 to 2014/2015

#### **Production areas**

Not all the provinces in South Africa are equally suitable for the production of soybeans. For example, during the 2013 season it was reported that soybeans were mainly cultivated in the Free State (42%), Mpumalanga (40%) and KwaZulu-Natal (6%). However, small crops were found in Limpopo, Gauteng and North West.

#### Canola

#### Production

Canola is a winter crop that needs relatively cool, moist conditions for the best results, especially in the flowering, pod-forming and seed-setting stages. In South Africa canola can be cultivated in all areas where wheat is grown, but it does not produce the same good results everywhere. Currently (2016) commercial canola cultivation takes place mainly in the Western and Southern Cape.

In South Africa only canola brassica napus is cultivated commercially.

As in the case of wheat, canola cultivars are mainly classified according to their need for cold. It is divided into winter types, intermediary types and spring types. These names have little to do with the time of year when it is planted, but more with the cultivars' need for cold. The spring type is the most suitable for South African conditions.

Canola is very suitable for a rotation system with wheat, as it contributes very well to the quality of the soil and facilitates weed control in the field. Changing from wheat to canola production does not necessarily require a big additional capital investment, as many of the implements used are the same as those for wheat pro-



duction. However, adaptation regarding transport is needed, as the seeds are very small and can easily be lost from normal bulk loads.

Canola/rape seed crops are some of the biggest among oilseeds in the world and contributed nearly 14% of the world's total oilseed production in 2009/2010. In that year the total canola/rape seed production in the world was nearly 55 million tons.

Declining profit margins from the production of traditional winter grain crops due to low producer prices and ever-rising input costs during the late 1980s created a need for alternative cash crops that could be cultivated in the Swartland and the Southern Cape. This led to the import of seeds of four crop plants for trials, namely canola, linseed, sunflower and safflower. Trials with the four crop plants in various places in the Swartland and Southern Cape over a period of three years from 1990 to 1992 indicated that canola that came from Australia showed the best potential for the area. It was therefore decided that this was the way to go.

Canola was produced in South Africa for the first time in 1992, when 13 kg seed were distributed among 30 producers to cultivate the first canola in the country on a commercial basis. The crop, cultivated on approximately 400 ha, yielded about 500 tons of canola.

From these humble beginnings the canola industry in especially the Southern Cape grew rapidly, and by 1996 15 000 ha canola had already been planted in this area. Production of canola in the Southern Cape was further promoted by the establishment of the company Southern Oil Ltd (SOILL) in 1996, wg=hich constructed an oil press in Swellendam.

Although production in the Swartland did not grow as rapidly as in the more southern parts of the Western Cape, the construction of an oil press in Moorreesburg during





Graph 32: The comparative production of soybeans per province from 1993/1994 to 2014/2015



"O" FROM OIL AND

"LA" FROM "LOW ACID".

1998/1999 also promoted the production of canola in that area. This press was later closed down and canola from the area is now sent to Swellendam.

During the years 1998/1999 until 2003/2004 the areas on which canola was cultivated increased from 21 000 ha to more than 44 000 ha, but then decreased to between 32 000 ha and 34 000 ha for the years 2006/2007 to 2008/2009. This stagnation and even decline in production can be attributed to various factors, of which low and uncertain proceeds were some of the main reasons. During that time canola producers in the Southern Cape also experienced problems with snails and aphids that damaged the crops to such an extent that it was often necessary to sow all over again.

South Africa's canola production contributes only a very small part to global production. In 2008/2009 it was about 30 000 tons of a global production of 57,97 million tons. By 2013/2014 it had increased to around 139 500 tons, compared to the global production of about 71 million tons.

Still, it is estimated that the potential for the cultivation of canola in the Swartland and Southern Cape is around 150 000 ha, with the most important area for expansion in terms of hectares being in the Swartland.

#### Yield

In the Swartland and Southern Cape the yields on dryland vary from 1,0 tons/ha to 1,8 tons/ha, but yields of up to 2,5 tons/ha have been obtained by producers. Under irrigation conditions yields of more than 4 tons/ha have been achieved in trials.

#### Crop rotation

Canola is an excellent rotation crop with other grain and pasture crops. Especially the types that are resistant to herbicides make it possible for canola to be included in large areas in a crop-rotation system with wheat. In the Swartland canola is not cultivated on the same field more than once in a four-year cycle, and in the Southern Cape not more than once or twice in a ten-year cycle.

In crop-rotation systems like this canola usually results in an increase in the yield of the subsequent grain crops. Compared to a wheat monoculture system over a five-year period on the Langgewens experimental farm, the wheat yields increased by 20% in the first year after canola had been cultivated on the same field. Further benefits of canola in a crop-rotation system is the reduction of diseases, more effective weed control, improved root systems as a result of a biological ploughing action, more effective utilisation of planters and harvesters, and the better distribution of financial risk.

Canola is mainly used for manufacturing canola oil and oilcake and in the South African market competes with other oilseeds like sunflower and soybeans.



Graph 33: Canola production



The oil content of canola varies between 36% and 50% of oil and 20% to 25% of oilcake, with a protein content of almost 37%. Unprocessed canola and canola oilcake are high-quality products and very good feed for animals.

As a large part of the South African demand for vegetable oils has to be imported, the international price of oilseeds plays a major role in the pricing of the local oilseeds and therefore also of oilcake. The domestic price for canola is in turn based on the domestic price of sunflower and soybean products.

Internationally the production of canola has increased since the middle 1970s from the sixth largest oilseed crop to the second largest in 2013. The increase in South Africa is seen in the diagram above.

The process for the cultivation of canola seed is very technical. Male and female plants are planted separately and pollination takes place exclusively through honey bees. Co-operation between canola producers and honey farmers is therefore of the utmost importance.

In countries like Canada and Australia the propagation of canola seeds is a major industry, but in South Africa no canola seed had yet been produced by 2015.

## **CONSERVATION AGRICULTURE**

#### Introduction

The concept and practice of conservation agriculture is based on the understanding of the absolute necessity for land for the production of food for a world population that is increasing at an immense rate, apart from many other very important functions that it fulfils.

The point of departure of the conservation agriculture concept is that conservation and the improvement of the quality and health of the soil is vital for sustainable agriculture, the environment and therefore also for plants, people and animals. Soil health in this context is seen as the ability of the soil, as a living ecosystem, to perform according to its potential. However, this ability is something that is declining over time as the result of incorrect usage and the influence of the natural elements on the soil.

Soil is not an inexhaustible source. According to estimates, around 12 million hectares of arable land, on which 20 million tons of grain could have been produced, annually goes to waste worldwide on account of soil degradation, and approximately 30% of the earth's food-producing soil has become unproductive since around 1960 as a result of erosion.

If these trends are not turned around quickly and soil conservation and improvement do not become a reality, it can become impossible to produce enough food for the world's growing population. Experts in this field believe that conservation agriculture could make a major contribution to soil health and conservation.

In South Africa continuous intensive soil cultivation has led to excessive soil degradation in the grain-producing areas. In a study that the ARC carried out during 2008 it was found that the average loss of soil on account of grain production in the country was about 13 tons/ha/year, which is much higher than the rate at which natural soil formation takes place. The conclusion was that agricultural production and management models will have to change to ensure economically viable agricultural production in the long term.

## Origin

The concept of conservation agriculture started in the 1930s during the so-called 'Dust Bowl' in the USA. This referred to the terrible soil degradation due to water and wind erosion that American producers experienced as a result of intensive tillage practices and accompanying soil disturbance. Driven by the realisation that they really had to do something about that, the producers started experimenting with conservation agriculture practices and principles. After the American government and technical experts became involved, the approach started to spread with producers always driving the efforts.

In the next few decades this approach spilled over to countries like Canada, South America and Australia, and in the late 1960s also to South Africa, where it became established especially in KwaZulu-Natal. The KwaZulu-Natal No Till Club was formed, making an important contribution to implement this approach in local conditions. In the 1980s and 1990s much research was conducted about conservation agriculture in collaboration with the KwaZulu-Natal No Till Club and its members.

The application of conservation agriculture practices was therefore relatively well accepted in KwaZulu-Natal. This also spread to the Western Cape in the 1990s, where entry into conservation agriculture was driven by economic realities in particular. The producers in those areas were compelled to make changes to their farming practices in order to be more sustainable and economically viable.

By the end of 2014 it was estimated that about 70% to 80% of the producers in the Western Cape accepted conservation agriculture, and about 60% in KwaZulu-Natal, but in the rest of South Africa there were very few.

It is estimated that worldwide around 100 million hectares of field crops are cultivated under conservation agriculture. In countries like Argentina, Brazil, the USA and Australia the acceptance level among producers for conservation agriculture is more than 70%.

#### Conservation agriculture farmer innovation programme

In South Africa, during the second half of the 2000s, the Maize Trust decided to place a greater focus on conservation agriculture, and the Trust in fact made funds available for conservation agriculture projects. A few years later the Maize Trust and Grain SA together decided to create a position for an expert who could focus permanently on the promotion of conservation agriculture among all grain farmers in South Africa. The position, which was filled during January 2013, is located in Grain SA's structures, but is funded by the Maize Trust, with a smaller contribution from the Winter Cereal Trust.

The programme is established in Grain SA as the Conservation Agriculture Farmer Innovation Programme, with the following strategic goals:

- To create more awareness for conservation agriculture;
- To improve access to information for all those involved;
- To achieve better training for key role-players in conservation agriculture;
- To do more research on farms with producers as participants.

It is deemed important for the success of the programme to acknowledge producers and use them as primary, unique innovators, because success depends in the first place on the acceptance and innovation by producers. Research is done on the farm in collaboration with different role-players with the producer in the









The Dust Bowl of the 1930's.

central role, ensuring that the accompanying experience and awareness, which are the key elements of the programme, are duly emphasised. When this has been achieved, technical and scientific support can make the management of the process successful.

The purpose of the programme is to empower producers in order for them to become innovative and implement and apply sustainable agricultural practices.

The process being followed is firstly to identify well-organised and dedicated producer structures, like study groups, stokvels among small farmers, and No Till Clubs that are prepared to support the programme, also known as producerinnovation platforms. In collaboration with those groups of producers projects are designed where priorities, activities and gaps are identified. In order to address the gaps, other role-players, like researchers, extension officers, input providers and manufacturers are involved in designing and implementing complete work kits. The project therefore mainly consists of producers, but also includes technical and other experts and support.

In 2013 Grain SA started with purposeful conservation agriculture projects among commercial producers, the first of which was with the Ottosdal No Till Club in North West. The objective in 2014 was to obtain additional funds from the Maize Trust and channel the money to more producer innovation platforms of this nature, especially in areas where conservation agriculture is not yet fully accepted, or has not yet become established. The Eastern Free State is one such an area where specific study groups have already been identified, which Grain SA will use to create and pilot projects about conservation agriculture.

The intention is to conduct more similar projects among emerging farmers. For that purpose the approach in the existing two study areas among emerging farmers – one in the Bergville district in KwaZulu-Natal and the other in the Matatiele district in the Eastern Cape – will be used to assist producers with the cultivation of maize and legumes.

Co-operation with Grain SA's Farmer Development Programme has already been achieved to implement conservation agriculture in their study groups. The emphasis of the programme will therefore move to conservation agriculture to a greater extent, because the practice has so many benefits for emerging farmers as well.

#### The system

Conservation agriculture is seen as the ideal system for sustainable and environment-friendly intensification in agriculture, through which producers can achieve higher productivity levels and profitability, and at the same time improve soil health and the environment. The system involves three principles that have to be preferably implemented as one whole system:

- Reduced mechanical disturbance of the soil.
- Crop diversification, including rotation and the use of cover crops. The belief is that the more crops that are used in a rotation system, the better the results are.
- Permanent organic ground cover.

When a producer applies those principles simultaneously and properly it influences the health of the soil in particular, promoting stability with regard to production (by opposing the negative effect of adverse climatic conditions), income and profitability, labour practices, etc.

An important benefit of conservation agriculture is that it stops the soil degradation process and contributes to the rehabilitation of the fertility of the soil. This enables producers to apply fertiliser more optimally, and reduce the use of chemicals like pesticides and herbicides in general, while crop yields stabilise and can even increase over the long term.

Experts explain that if the agri-ecological system improves with regard to grain cultivation, it results in more positive microorganisms being formed in the soil, counteracting the negative microorganisms that cause diseases. Biodiversity is improved aboveground as well as in the subsoil so that the balance in both instances is repaired by the repeated application of the above-mentioned three principles.

Conservation agriculture also has other benefits that can contribute to the long-term sustainability of farming units. For example, it usually goes hand in hand with good general farm management like time planning, soil and moisture management, the use of quality seed, and co-ordinated management of diseases, pests, weeds and fertiliser. Integration of an animal factor also plays an important role in the improvement of soil health.

#### **Track traffic**

The application of conservation agriculture differs according to the type of soil in question. It is appreciably easier to implement in soil with a higher clay content and in higher rainfall areas, and much more difficult in dry circumstances and sandy soil, as is found typically in especially the North West Free State and parts of North West where deep water table sandy soils are found.











If there is really a lot of sand and the area is very dry, the soil has to be built up biologically first before conservation agriculture can be applied with success. The degree of soil degradation and the compaction in the subsoil of those areas currently make it necessary to use a track traffic system. It is the practice to counteract soil compaction by using rippers and then planting in the ripped row without disturbing any other part of the soil. This is currently generally regarded as the best practice in the deep sandy soils in the drier areas of South Africa's grain cultivation area.

A project with regard to the sandy soils is also being conducted to determine whether these practices can be improved and a more biological approach followed to improve the sandy soils biologically by the strict application of conservation agriculture principles.

#### Information

Various awareness opportunities are regularly presented under the banner of the conservation agriculture innovation programme or by supporting it, for example the KwaZulu-Natal No Till conference in 2013, the conservation agriculture congresses that were presented since March 2014 in North West in collaboration with the Ottosdal No Till Club, and various farmers' days among small and emerging farmers.

Information about conservation agriculture is available on the internet, but practical examples of conservation agriculture are also published in magazines like *SA Graan/Grain, Landbouweekblad* and *Farmer's Weekly*. Grain SA identifies producers in specific areas who apply good conservation agriculture practices and then describes those systems very well before it is published. In that way the information is made available to producers in the areas involved who are interested in applying these practices.

Grain SA also tries to bring the issue of conservation agriculture to the attention of universities to a greater extent and to create opportunities where these institutions can collaborate with producers in this field. In this way they try to make the students more aware of and expose them to conservation agriculture practices.

#### Aim

The objective of Grain SA is to establish as many innovation platforms as possible in these agri-ecological regions where there is no or very little acceptance of conservation agriculture. In the process, a conservation agriculture working group was established in Grain SA, playing a major role in the co-ordination and management of the programme. The working group developed a specific method to identify and assess new projects and to identify a panel of experts who can assist them. The working group also collaborates with other important role-players like the government departments about issues concerning the creation of policies and development of accredited training curriculums.

Work is currently being done to integrate conservation agriculture into the socalled 'LandCare' programme of the Department of Agriculture, Forestry and Fisheries. This is a community-based natural resource conservation programme.
