



SOUTH AFRICAN AGRICULTURAL OUTLOOK FOR THE GRAIN, LIVESTOCK AND DAIRY INDUSTRY

by

THE BUREAU FOR FOOD AND AGRICULTURAL POLICY (BFAP)

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ABSA Economic division

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Foreword

Through collaborative efforts with the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri since 2000, the Department of Agricultural Economics, Extension and Rural Development (LEVLO) at the University of Pretoria has improved its analytical capacity. In 2004 the Bureau for Food and Agricultural Policy (BFAP) was founded and is now housed as an independent program within LEVLO and the Department of Agricultural Economics at the University of Stellenbosch. From the time of inception, BFAP has facilitated informed decision making by SA agribusinesses, policy makers, trade negotiators and farmers through the development and operation of comprehensive analytical systems.

The analysis of world and domestic markets consists of baseline projections and scenario analyses of market and policy changes and the likely impacts of these changes on the domestic markets and farm survivability. The baselines and scenarios are constructed in such a way that the decision-maker can form a picture of possible future changes and what their likely effects will be. Pro-active actions can thus flow from the usage of these baselines and scenarios. BFAP is the first of its kind in South Africa and has become a valuable resource to government, agribusiness and farmers by providing analysis of future policy and market scenarios and measuring their impact on farm and firm profitability. Core funding for this initiative is provided by: ABSA Bank, The Maize Trust; Wine Tech, and the THRIP programme of the Department of Trade and Industry (DTI).

BFAP acknowledges and appreciates the tremendous help and insight of numerous industry specialists over the past years. Although their comments and suggestions are taken into consideration in the baseline projections, BFAP takes full responsibility for any errors. Finally, BFAP expresses its sincere appreciation to FAPRI at the University of Missouri and its staff (especially Prof. Patrick Westoff) who have trained BFAP staff members and supported the modelling initiative at the University of Pretoria over the past five years. Without their support and invaluable inputs, this program would not have been a reality.

Ferdinand Meyer
Program Leader: Bureau for Food and Agricultural Policy
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Introductory Information

This publication contains the first baseline projections (2005 - 2010) for the SA agricultural sector. The baseline is a simulation of the South African grain, livestock and dairy sector model under agreed policy and macroeconomic assumptions. The sector model is an econometric, recursive, partial equilibrium model. For each commodity, the important components of supply and demand were identified and equilibrium was established in each market by means of balance sheet principles where demand equals supply. For example, in the case of a typical crop, these components include the area devoted to production, the yield per hectare, total production, direct human consumption, industrial use, exports, imports, and ending stocks. All grain and livestock commodities are modelled in a closed system of equations. This implies that any shocks in the grain sector are transmitted to the livestock sector and *vice versa*. This sector model is the first to give a quantitative analysis and projections of how different policy options, as well as a range of macro economic variables, are likely to affect the supply and demand of agricultural products in South Africa.

The baseline does not constitute a forecast, but is rather a benchmark of what could happen under a particular set of assumptions. Inherent uncertainties including policy changes, weather, and other market disruptions ensure that the future is highly unlikely to match baseline projections. Recognizing this fact, BFAP recently initiated stochastic analyses that consider at least some of the underlying variability and unpredictability of agricultural markets. For example, the variability of the exchange rate over the past four years had a major impact on prices of inputs and outputs, affecting the competitiveness of the agricultural industry severely. Although most exchange rate forecasts over history have been proven wrong, baseline projections cannot be simulated without making an assumption on the exchange rate. The deterministic exchange rate forecast for this baseline is presented on page 4 and the stochastic forecast is presented on page 11. The reader of this document should understand that future exchange rate movements are likely to move outside of the band that has been presented, which will influence the baseline projections for all the commodities. A similar argument can be followed for rainfall and many more external factors that influence the agricultural industry.

This publication contains the deterministic baseline projections with single point estimates as well as some first results from stochastic projections for the maize and wheat industry. In future, stochastic modelling techniques will be applied to a much greater extent. Macroeconomic assumptions are based on forecasts prepared by Global Insight, the Actuarial Society of South Africa and the African Institute for Econometric Modelling. In addition to the assumption that current policies remain in place, BFAP assumes that average weather conditions prevail in South Africa and around the world, the world economies grow in line with projections developed by Global Insight, and productivity generally increases in line with past trends. Baseline projections for world commodity markets are taken from the FAPRI 2005 Outlook.

Finally, these baseline projections should be regarded as one of the tools in the whole decision-making process. The results of the model should be evaluated critically. The projections tell us what the likely outcome could be given a certain set of assumptions. The external factors that influence the agricultural industry change constantly. Therefore, the process of decision-making is based on knowledge, experience, the results of models and many other strategic planning techniques.

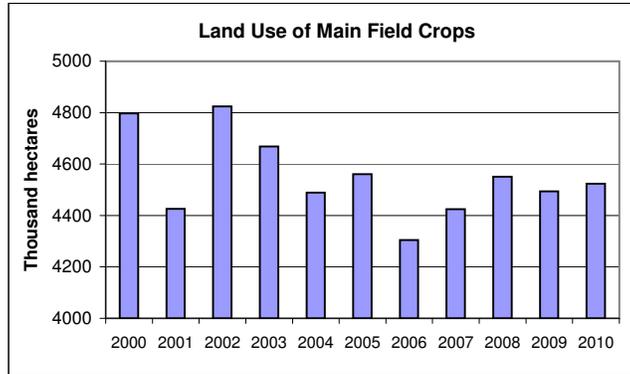
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Executive Summary

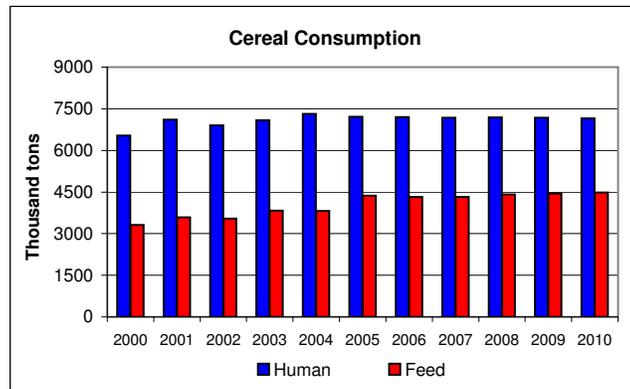
Land Use

The area planted to the main field crops (white and yellow maize, wheat, sunflowers, sorghum, soybeans) is projected to decrease rapidly until 2007, after which it will stabilize at approximately 4.5 million hectares. Since the total maize area represents almost 65% of the total area harvested under the main field crops, the rapid decrease in the area planted is mainly caused by the sharp decrease in maize plantings in 2006 due to low maize prices.



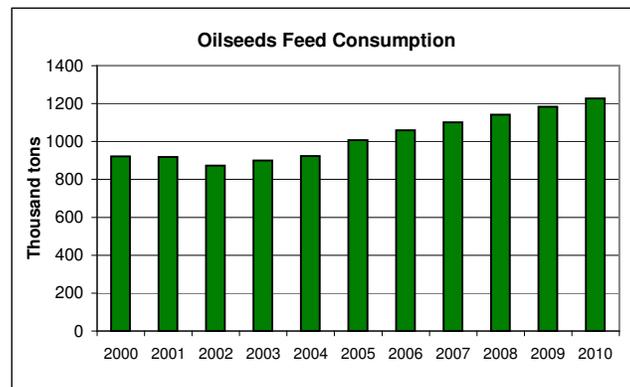
Human and Feed Cereal Consumption

Human consumption is expected to decrease mainly due to the projected decrease in the per capita consumption of white maize, which outweighs the increase in the per capita consumption of wheat products. With record low feed prices, feed consumption is projected to grow by 14% in 2005. A constant growth in feed consumption is expected over the baseline.



Oilseeds Feed Consumption

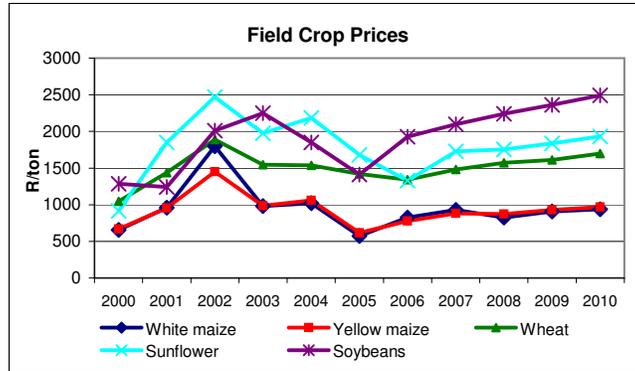
Over the past decade, the consumption of sunflower cake, full fat soybeans and soybean cake has increased sharply, from only 300 000 in 1994 to 900 000 tons in 2004. It is expected that consumption will maintain this rapid increase to reach 1.2 million tons in 2010.



Executive Summary

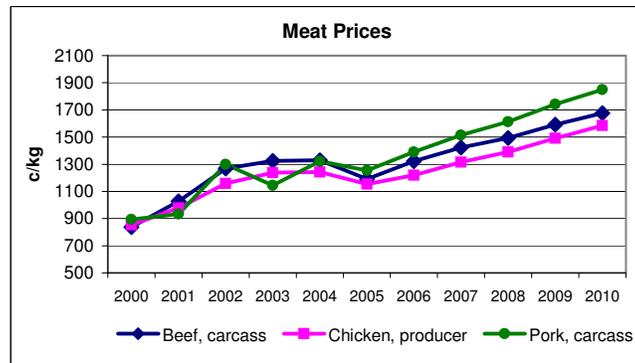
Field Crop Prices

Only modest increases are predicted for maize prices over the following two seasons. This is mainly caused by possibly the largest maize surpluses in the history of maize production in SA at the end of the current production season. Lower sunflower prices in 2006 are caused by higher projected plantings in 2006 due to relatively high 2005 sunflower prices compared to maize prices. Wheat prices are projected to remain fairly stable at these levels for the following two seasons with a modest increase from 2007 to 2010 due to a higher world price and a depreciation in the exchange rate. Soybean prices are projected to increase sharply as producers respond to the current low price level.



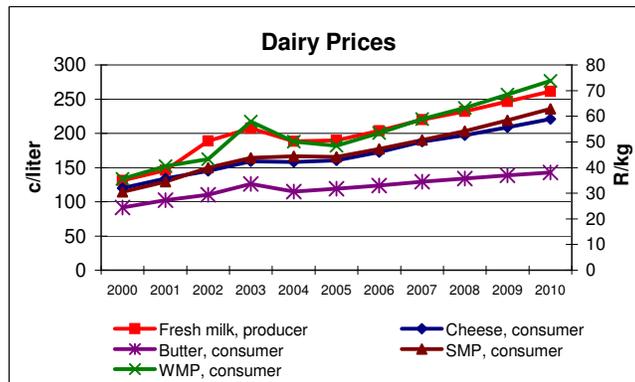
Meat Prices

All meat prices at producer or auction level are expected to decline in 2005 due to increased production of meat. Chicken prices only decrease marginally because chicken production cannot adapt from one year to the next due to the extend of fixed capital investment. However, all meat prices are projected to increase from 2006 onwards, mainly due to an increase in consumption caused by projected higher levels of disposable income.



Dairy Prices

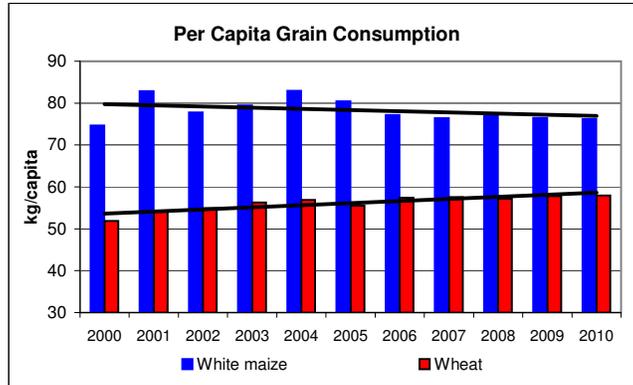
After a decrease in 2005, mainly due to the appreciation in the exchange rate, the milk and dairy product prices are projected to increase moderately over the baseline. Increases in prices are mainly driven by higher levels of domestic consumption of all dairy products except butter. Volatility in milk prices will remain in the coming years as dairy markets remain some of the most inelastic markets in agriculture. Steady growth in import demand of the world market puts somewhat upward pressure on dairy prices in the long run.



Executive Summary

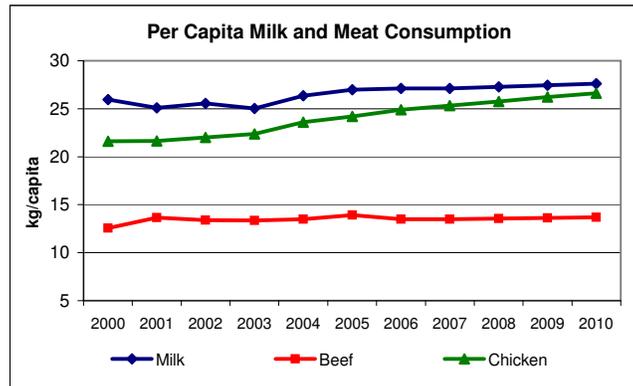
Per Capita Grain Consumption

The per capita consumption of maize (maize meal) is projected to decrease until 2010. Preliminary data for the first quarter of 2005 already show a decline in the human consumption of maize. However, the per capita consumption of wheat (bread) is projected to increase gradually over the baseline period. This increase can mainly be attributed to urbanization and the projected increase in disposable income for a larger share of the population.



Per Capita Milk and Meat Consumption

Whereas the per capita consumption of red meat is projected to decrease slightly, the per capita consumption of fresh milk and chicken is projected to increase up to 2010. The trends in the per capita consumption of these main food items are mainly caused by the projected increase in disposable income for a larger share of the population. Existing consumers are expected to continue to eat an additional 500g of chicken per person per year.

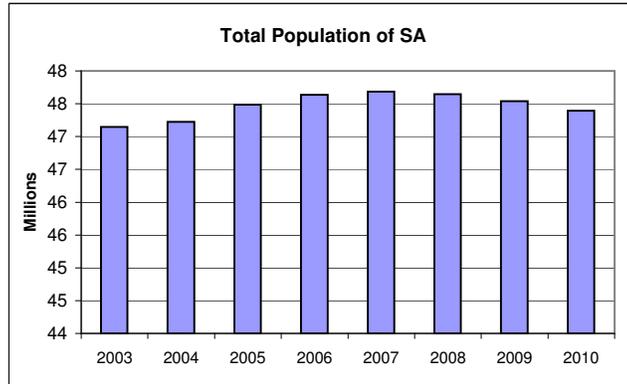


Macroeconomic assumptions

Macroeconomic assumptions are based on forecasts prepared by Global Insight, the Actuarial Society of South Africa and the African Institute for Econometric Modelling.

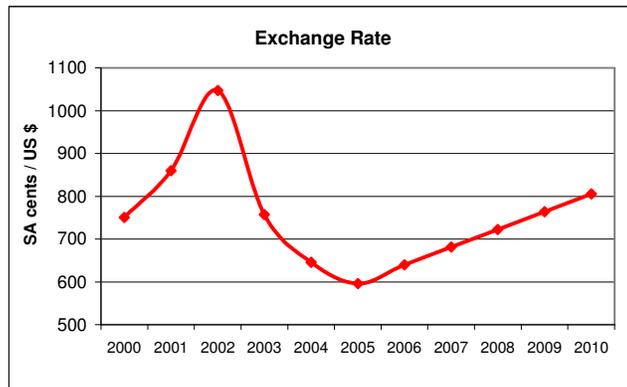
Population

The SA population is projected to reach 47.7 million in 2007 after which it will start decreasing to a level of 47.4 million in 2010.



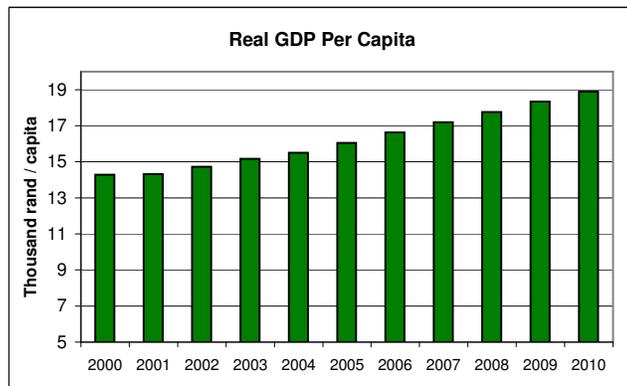
Exchange Rates

The evolution of the rand/dollar exchange rate is central to the projections as it determines the relative competitiveness of SA exports and the level of import and export parity prices. The importance of the Rand exchange rates and their volatility has increased drastically over the past four years. The rand is projected to depreciate gradually to reach a level of R8.05/US \$ in 2010.



GDP Per Capita

The South African economy performed relatively well with a registered expansion in real domestic production reaching 3.7 % in 2004. Real gross domestic expenditure expanded at almost double the rate of expansion in real GDP, coming in at 6.5% for 2004. GDP growth is expected to increase from 3.7% in 2004 to 4% in 2005. However, economic growth is forecast to slow to an average rate of 3% in 2010. GDP per capita (expressed at constant 1995 values) is expected to increase to a level of R19 000 per capita in 2010.



Macroeconomic assumptions

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total population of SA	46.9	47.1	47.2	47.5	47.6	47.7	47.6	47.5	47.4
					millions				
Exchange rate	1047.0	757.0	646.0	596.0	640.1	681.7	722.6	763.8	805.8
					SA cent/US \$				
Real GDP per capita	14.7	15.2	15.5	16.0	16.6	17.2	17.8	18.3	18.9
					thousand rand (constant 1995)				
GDP deflator	118.7	124.1	131.4	134.3	140.1	145.9	151.0	157.5	164.0
					index (2000 = 100)				
CPI: food	121.8	131.8	135.0	137.9	143.9	149.9	155.2	161.8	168.5
Weighted interest rate index	102.3	100.0	95.0	87.0	90.7	94.6	97.9	102.1	106.3
PPI: agricultural goods	145.4	142.0	128.0	105.0	110.3	115.8	121.6	127.6	134.0

Baseline policy assumptions

The baseline contains all current policies on an international as well as domestic level. In this case it means that all FAPRI baseline projections of international commodity prices were simulated under the assumption that all countries will adhere to their bilateral and multilateral trade agreements and their WTO commitments. In the case of South Africa, current policy is maintained. With the deregulation of agricultural markets in the mid-nineties all the non-tariff trade barriers and most direct subsidies were replaced by tariff barriers. In the case of maize and wheat, import tariffs were introduced in the form of variable import levies. For maize, if the world price trades below a US No. 2 FOB gulf price of \$110/ton, an import levy is triggered that is equal to the difference between the reference price and the world price. In the case of wheat, a US Hard red wheat (no. 2) price of \$157/ton was identified as the reference price. Simple ad valorem tariffs are applied in the case of oilseeds. In the case of meat and dairy products, a combination of fixed rate tariffs and/or ad valorem tariffs was implemented. The projected tariff levels, as derived from the FAPRI baseline projections of world commodity prices, are presented in the table below.

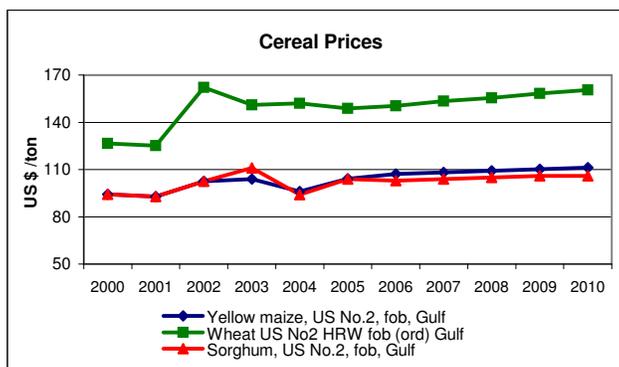
	2003	2004	2005	2006	2007	2008	2009	2010
				R/ton				
Maize import tariff: ref.price = US\$ 110	7.1	9.3	34.6	18.1	12.5	6.1	0.0	0.0
Wheat import tariff: ref.price = US\$ 157	44.1	9.6	49.2	42.3	24.3	10.9	0.0	0.0
Sunflower seed import tariff: 9.4% of FOB	231.3	194.9	176.9	198.8	217.3	230.3	244.3	257.7
Sunflower cake import tariff: 6.6% of FOB	74.4	50.7	46.2	50.5	55.4	59.8	63.7	66.6
Sorghum import tariff: 3% of FOB	25.2	18.2	18.6	19.8	21.3	22.8	24.3	25.6
Soybean import tariff: 8% of FOB	187.1	127.6	132.5	148.9	166.3	180.0	190.2	201.5
Soybean cake import tariff: 6.6% of FOB	128.9	87.4	92.4	100.9	108.0	116.9	124.2	131.1
				tons				
Cheese, TRQ quantity	1198.9	1198.9	1198.9	1198.9	1198.9	1198.9	1198.9	1198.9
Butter, TRQ quantity	1167	1167	1167	1167	1167	1167	1167	1167
SMP, TRQ quantity	4470	4470	4470	4470	4470	4470	4470	4470
WMP, TRQ quantity	213	213	213	213	213	213	213	213
				percentage				
Cheese, in-TRQ	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%
Butter, in-TRQ	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%
SMP, in-TRQ	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%
WMP, in-TRQ	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%
				c/kg				
Cheese, above TRQ rate: 500c/kg	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Butter, above TRQ rate: 500c/kg	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
SMP, above TRQ rate: 450c/kg	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
WMP, above TRQ rate: 450c/kg	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
Beef import tariff: max(40%*CIF, 235c/kg)	565.4	482.7	436.5	453.9	475.0	489.6	502.6	519.6
Chicken import tariff: 220c/kg	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0
Pork import tariff: max(15%*FOB,130c/kg)	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0

World prices

The January 2005 FAPRI global baseline projections were used for this baseline. In some cases the 2005 projections have been updated with the latest market developments.

Cereals

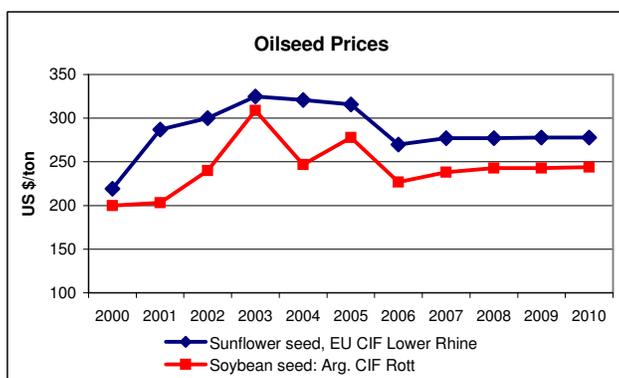
In 2004/05, increased planted area and yield growth increased world maize production, causing the maize price to drop to \$94/ton. In 2005/06, production decreases with the return to average yield levels, which increases the maize price to \$104/ton. Over the baseline, the maize price grows 1.7% annually on average. The world wheat price was \$152.04/ton in 2004/05, and is projected to decrease in 2005/06 to \$148.75/ton. Although production is slightly lower in 2005/06, higher stock levels increase the supply in the world market. The average annual growth rate of the wheat price is 0.8% in the next ten years.



Oilseeds

The soybean price weakened in 2004/05 under the pressure of record supplies. The expectation of falling prices, combined with rising soybean production costs and Asian rust caused Argentina and Brazil to slow their soybean area expansion. A modest price recovery is projected for the baseline period.

The sunflower seed price fell in 2004/05 along with all other oilseed prices. Because of reduced production, this drop was much smaller compared with other seed prices. From 2006/07 onwards, sunflower seed and cake prices grow slightly and then weaken somewhat.

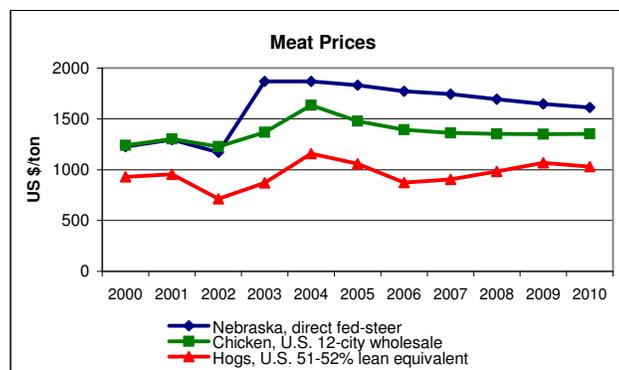


Meat

US prices are used as representative of world prices in the model. Despite the discovery of the first BSE case in the US, 2004 beef prices were at record levels. In the longer run, beef prices fall due to the cattle cycle.

Cyclical behaviour also dominates the pork market.

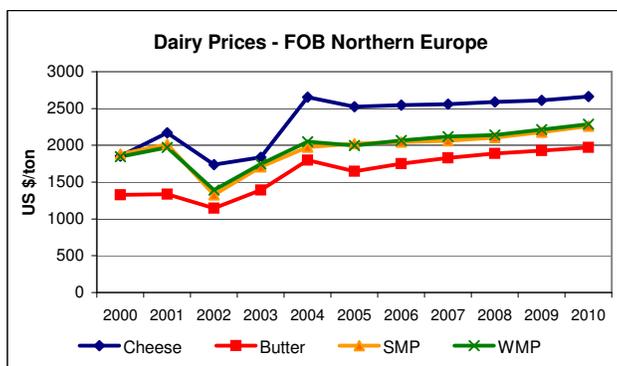
For poultry meat it is expected that trade will recover from the AI outbreak. Total broiler production increases by 2.9% annually, which drives prices down by 3.7% over the next five years.



World prices

Dairy

Steady demand and lower Australian exports boosted butter and cheese prices by 28% and 41%, respectively in 2004. Butter and cheese prices decrease 5% and 8%, respectively, in 2005 as Argentina, New Zealand, and Ukraine expand exports. In the case of milk powders, steady growth in import demand puts some upward pressure on dairy prices in the long run.

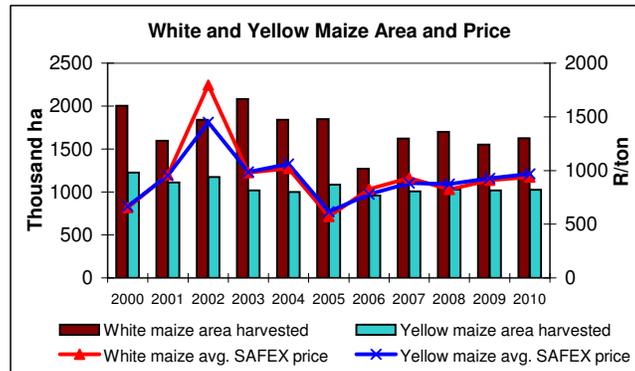


	2004	2005	2006	2007	2008	2009	2010
World prices in dollars							
							US\$/ton
Yellow maize, US No.2, fob, Gulf	96.00	104.19	107.17	108.16	109.16	110.15	111.14
Wheat US No2 HRW fob (ord) Gulf	152.04	148.75	150.39	153.44	155.50	158.21	160.52
Sorghum, US No.2, fob, Gulf	94.00	104.00	103.00	104.00	105.00	106.00	106.00
Barley, U.S. Portland	120.80	122.56	124.34	124.39	124.89	124.77	125.46
Canola / Rapeseed Pri - EU 00 cif Hamburg	245.00	225.00	239.00	244.00	248.00	249.00	247.00
Sunflower seed, EU CIF Lower Rhine	321.00	315.80	270.00	277.00	277.00	278.00	278.00
Sunflower cake(pell 37/38%) , Arg CIF Rott	119.00	117.40	119.66	123.04	125.30	126.43	125.30
Sunflower oil, EU FOB NW Europe	675.00	705.00	727.63	743.48	745.74	748.00	750.26
Soybean seed: Arg. CIF Rott	247.00	278.00	227.00	238.00	243.00	243.00	244.00
Soybean cake(pell 44/45%): Arg CIF Rott	205.00	235.00	238.81	240.08	245.16	246.43	246.43
Soybean oil: Arg. FOB	475.00	490.00	502.25	514.50	521.65	521.65	525.73
Fishmeal: 64/65%, c&f Hamburg	641.00	659.00	669.69	673.25	687.50	691.06	691.06
Cheese	2,653.00	2,524.00	2,544.00	2,560.00	2,588.00	2,613.00	2,661.00
Butter	1,797.00	1,649.00	1,751.00	1,828.00	1,887.00	1,927.00	1,973.00
SMP	1,976.00	2,023.00	2,045.00	2,064.00	2,104.00	2,178.00	2,259.00
WMP	2,047.00	1,999.00	2,065.00	2,118.00	2,139.00	2,214.00	2,285.00
Nebraska, direct fed-steer	1,868.00	1,831.00	1,773.00	1,742.00	1,694.00	1,645.00	1,612.00
Chicken, U.S. 12-city wholesale	1,634.29	1,478.00	1,392.00	1,360.00	1,352.00	1,348.00	1,351.00
Hogs, U.S. 51-52% lean equivalent	1,157.65	1,058.00	874.00	906.00	983.00	1,067.00	1,031.00

White and Yellow maize

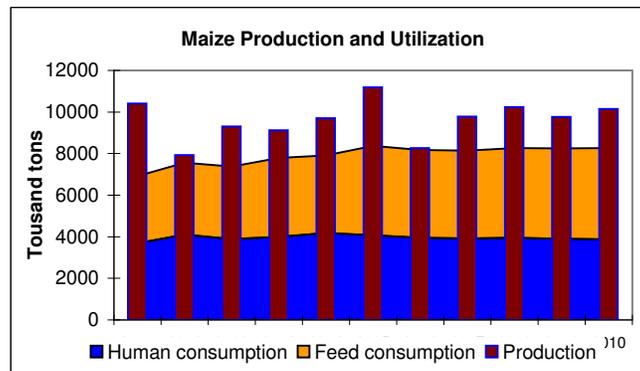
Area and Price

The white and yellow maize areas harvested decrease in 2005/06 by 29.4% and 11.3 %, respectively, mainly because of low producer prices. Despite the decrease in plantings, current projections suggest that prices will not rise sharply in 2005/06 due to the record high carry over stocks. Over the next five years white and yellow maize prices will recover to a level of approximately R1000/ton in 2010. Maize prices are highly volatile and stochastic projections are used in the following section to illustrate a possible band where prices could fluctuate in the next five years. Whereas the white maize area is expected to fluctuate between 1.5 and 1.6 million hectares over the baseline and yellow maize area evens out at approximately 1 million hectares.



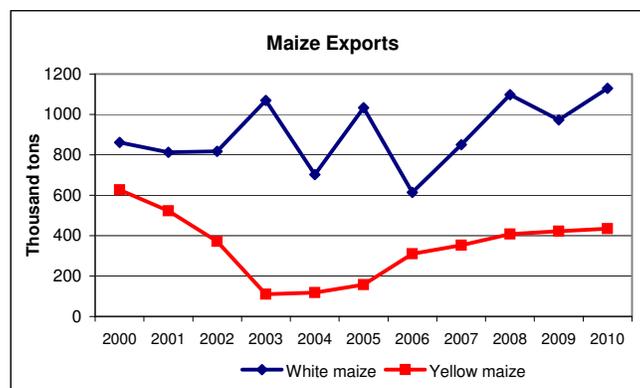
Production and Utilization

A record yield of 3.82 t/ha is projected for the 2004/05 production season. In 2005/06, production decreases due to the reduction in the area harvested and the return to average yield levels. The total maize harvest for 2005/06 is estimated at 8.3 million tons. Production is expected to vary between 9.5 million and 10 million tons over the remaining baseline period. In 2004/05 white maize consumption is projected to fall to a nine-year low. Whereas human consumption decreases over the baseline, feed consumption is projected to grow 3% annually on average. Despite the decrease in the area planted to white maize, SA will remain a net exporter of maize.



Trade

In 2005/06 white maize exports increase by 47% to just over 1 million tons, mainly to neighbouring countries. With lower production in 2005/06, white maize exports decrease sharply. Volatility in white maize exports will remain in the coming years, being highly dependent on the scarcity of maize in neighbouring countries. Yellow maize exports are expected to moderate at approximately 400 000 tons over the next five years. In recent years, uncertainty has grown surrounding the availability of sufficient infrastructure to export large volumes of maize.



White and yellow maize

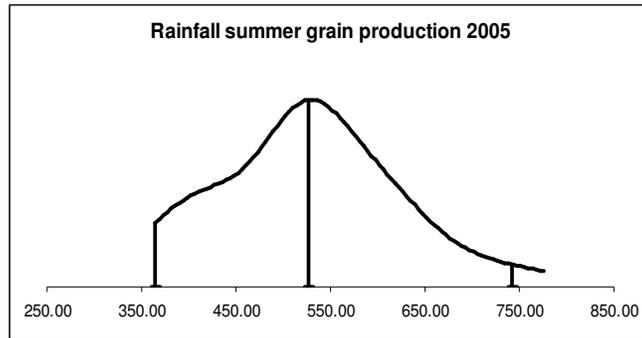
	2002	2003	2004	2005	2006	2007	2008	2009	2010
Area harvested	thousand hectares								
White maize	1,843	2,083	1,842	1,847	1,271	1,622	1,700	1,551	1,628
Yellow maize	1,174	1,017	1,001	1,084	959	1,009	1,029	1,019	1,024
Yield	t/ha								
White maize	2.99	3.01	3.24	3.61	3.48	3.51	3.54	3.57	3.60
Yellow maize	3.07	3.10	3.73	4.17	4.01	4.05	4.10	4.14	4.18
Production	thousand tons								
White maize	5,576.0	5,862.0	5,976.0	6,674.9	4,417.6	5,694.0	6,020.6	5,544.2	5,867.0
Yellow maize	3,734.0	3,256.0	3,734.0	4,519.2	3,843.1	4,090.5	4,218.0	4,222.0	4,287.0
Feed consumption	thousand tons								
White maize	105.0	457.0	669.0	765.0	698.7	700.1	765.1	751.1	759.9
Yellow maize	3,373.0	3,338.0	3,070.0	3,536.0	3,522.6	3,518.7	3,555.0	3,594.6	3,626.3
Human consumption	thousand tons								
White maize	3,643.0	3,745.0	3,915.5	3,818.3	3,675.2	3,642.9	3,688.1	3,634.9	3,610.8
Yellow maize	249.0	250.0	260.0	255.4	278.3	277.6	259.3	264.8	262.4
Total domestic use	thousand tons								
White maize	3,874.0	4,527.0	4,806.0	4,908.3	4,698.9	4,668.0	4,778.3	4,710.9	4,695.7
Yellow maize	3,665.0	3,770.0	3,721.0	3,973.5	3,982.9	3,978.3	3,996.3	4,041.4	4,070.7
Ending stock	thousand tons								
White maize	1,718.0	2,017.0	2,485.0	3,219.1	2,336.4	2,537.8	2,682.6	2,543.4	2,585.5
Yellow maize	992.0	501.0	635.0	1,194.6	1,040.4	1,066.0	1,118.4	1,122.5	1,141.1
Exports	thousand tons								
White maize	817.0	1,069.0	702.0	1,032.5	613.7	851.2	1,097.6	972.5	1,129.2
Yellow maize	371.0	110.0	118.0	157.0	310.6	352.2	407.4	421.5	434.6
Imports	thousand tons								
White maize	274.0	33.0	0.0	0.0	12.2	26.6	0.0	0.0	0.0
Yellow maize	651.0	408.0	239.0	170.8	296.2	265.5	238.0	244.9	236.9
Average SAFEX prices	R/ton								
White maize	1795.6	982.0	1019.0	571.0	826.2	930.8	824.8	908.4	939.2
Yellow maize	1449.5	986.0	1060.0	615.1	777.9	882.5	873.4	928.0	968.5

Stochastic Analysis: The Approach

The deterministic results as presented in the preceding page, do not take variations in rainfall and exchange rates into account. Hence, stochastic simulations are done in order to take variation, and thus risk, into account.

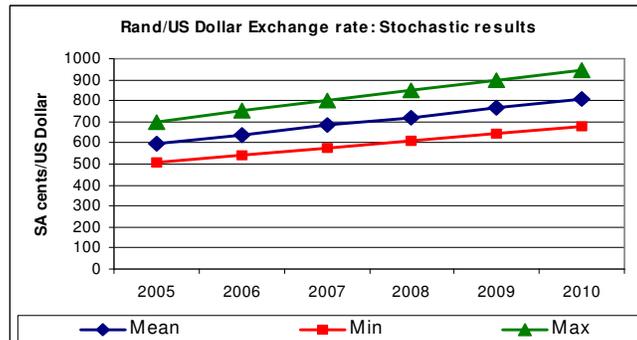
Rainfall: Summer Grain Production Area

Rainfall statistics of the past 30 years indicate a high probability of 540 mm of annual rainfall over the summer grain production area. The likely minimum rainfall is 360 mm and the maximum 745 mm.



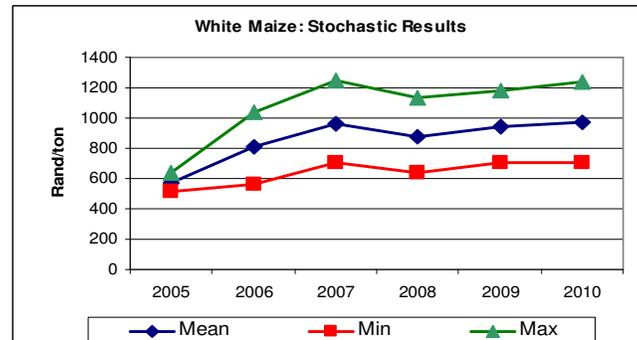
Rand/US Dollar Exchange Rate

Given the world economic situation, the Rand is likely to depreciate against the US Dollar during the period 2005 to 2010. The likely Rand/US Dollar exchange rate starts at a level of R6/US Dollar and ends during 2010 at R8/US Dollar. However, given the changes that can take place in the world economy, the Rand can trade between R6,81/US Dollar and R9,46/US Dollar during 2010.



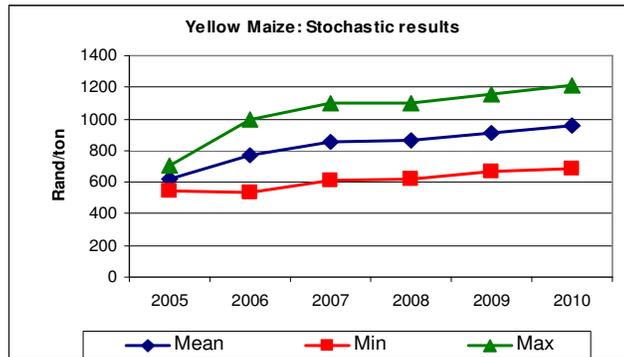
White Maize

Given the possible variation in rainfall as well as the exchange rate, the white maize price can vary significantly during the period 2005 to 2010. The likely range within which the average annual white maize can trade during the period 2007 to 2010 is between R600/ton and R1 200/ton. During the period 2005 to 2007 an increase in prices is likely.



Yellow Maize

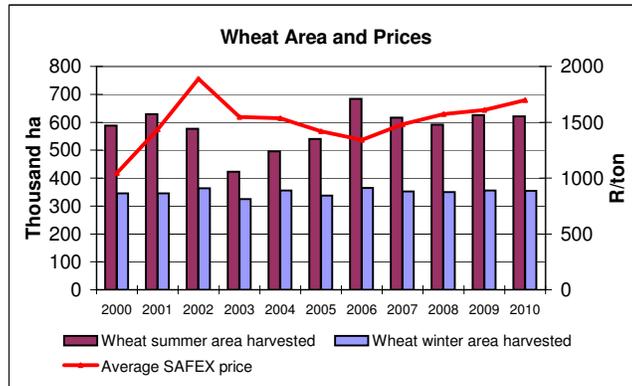
The yellow maize price is likely to increase during the period 2005 to 2007. However, due to possible changes in rainfall and the exchange rate, the annual average minimum price at which yellow maize is likely to trade remains near R600/ton for the period 2005 to 2010. The likely average annual maximum price increases significantly during 2005 to 2007, after which it will trade between R1180/ton and R620/ton on average.



Wheat

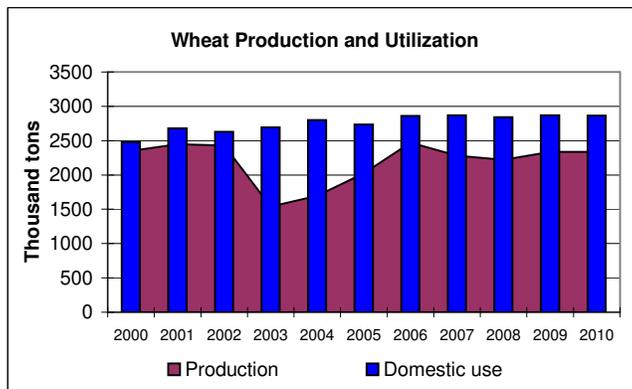
Area and Price

Wheat area harvested in the summer rainfall region increases sharply over the next two years due to its return being relatively higher than maize. With maize prices not recovering in 2005/06, the wheat area harvested in the summer region is expected to expand even further in 2006. This will apply downward pressure on the wheat price. From 2006 onwards the wheat price is expected to grow 6.8% annually on average to R1699/ton in 2010. The relatively low producer prices, combined with the lack of competitiveness with cheaper imports will keep the area harvested in the winter rainfall region constant at approximately 350 000 ha.



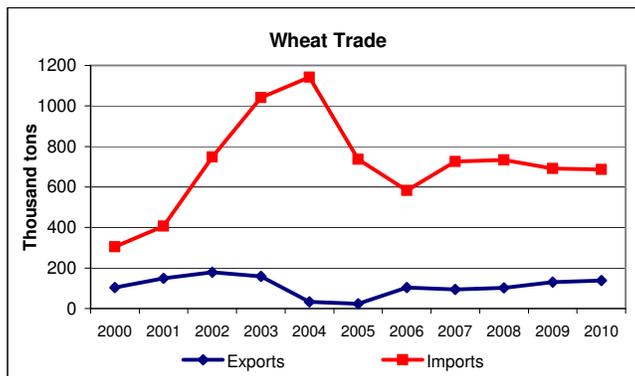
Production and Utilization

With the return to average yields, wheat production is expected to stabilize from 2007 onwards at approximately 2.3 million tons per annum. Wheat consumption grows by 5% over the baseline.



Trade

Wheat imports have risen sharply over the past few years reaching a maximum of 1.1 million tons in 2004. Imports are projected to decrease by 35% in 2005 and by a further 21% in 2006. From 2007 onwards wheat imports tend to stabilize at approximately 750 000 tons per annum. Wheat exports increase gradually over time to 138 300 tons in 2010.



Wheat

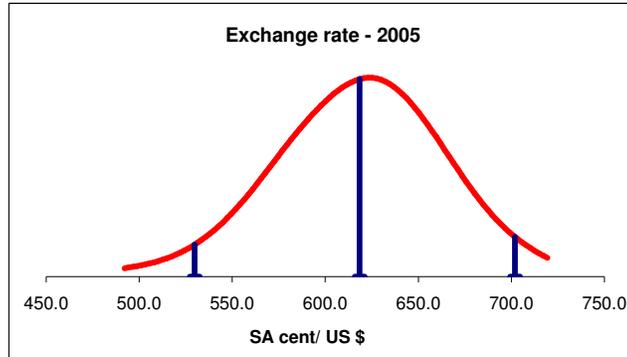
	2002	2003	2004	2005	2006	2007	2008	2009	2010
Area harvested	thousand hectares								
Summer area	577.1	423.0	495.2	540.1	683.6	616.2	591.7	625.3	620.9
Winter area	364.0	325.0	356.0	336.9	364.1	351.7	349.7	355.2	354.7
Average yield	t/ha								
Summer area	2.7	2.4	2.4	2.7	2.7	2.7	2.7	2.8	2.8
Winter area	2.5	1.6	1.5	1.7	1.7	1.7	1.7	1.7	1.7
Total wheat	thousand tons								
Production	2,427.2	1,540.0	1,699.0	2,025.3	2,472.1	2,281.2	2,222.8	2,336.6	2,335.2
Feed consumption	30.0	16.0	75.3	47.9	75.2	76.6	69.0	73.9	73.2
Human consumption	2,575.0	2,654.0	2,685.0	2,637.2	2,735.6	2,745.6	2,724.1	2,746.3	2,745.2
Domestic use	2,629.0	2,695.0	2,800.3	2,733.1	2,858.8	2,870.2	2,841.1	2,868.2	2,866.3
Ending stocks	946.2	598.0	606.3	611.9	703.5	746.5	759.9	789.8	806.8
Exports	179.0	158.0	32.5	22.9	104.1	94.5	101.9	130.1	138.3
Imports	747.0	1,042.0	1,142.1	736.3	582.4	726.4	733.6	691.6	686.5
Average SAFEX price	R/ton								
	1,889.8	1,546.0	1,535.0	1,419.0	1,342.2	1,482.0	1,572.3	1,610.8	1,699.2

Stochastic Analysis: Wheat Industry 2005

For the wheat industry, a stochastic overview is provided specifically for the 2005/06 season and not over the baseline. Three variables were identified that bear most of the risk, namely the exchange rate, rainfall and the world price. All the variables are presented in the form of probability distribution functions, with a lower, most likely and upper band. This does, however, not imply that the variables cannot move outside of these bands.

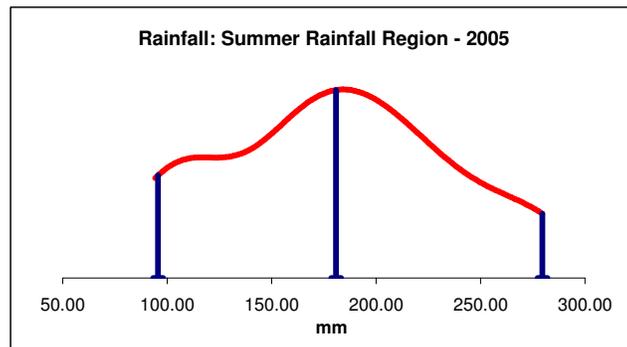
Exchange Rate

Current results suggest that there exist a high probability that the average exchange rate will be just below 620c / US \$ in 2005. The upper level of the exchange rate lies at 715c/US \$ and the lower level at 495c/US \$. However, this does not imply that the exchange rate could not move outside of this distribution.



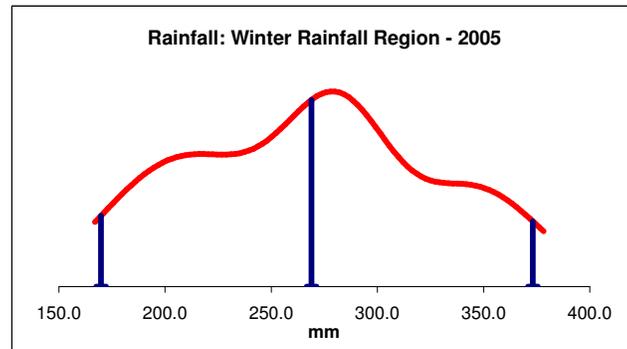
Rainfall: Summer Rainfall Region

Rainfall statistics of the past 30 years indicate a high probability of 181 mm of rainfall over the critical months influencing wheat production in the summer rainfall region. The likely minimum rainfall is 94mm and the maximum 279mm.



Rainfall: Winter Rainfall Region

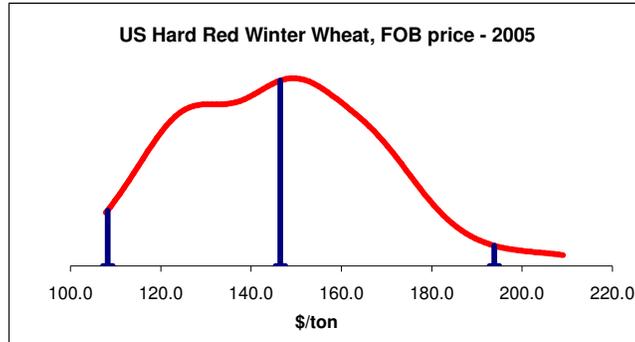
Rainfall statistics of the past 30 years indicate a high probability of 268 mm of rainfall over the critical months influencing wheat production in the winter rainfall region. The likely minimum rainfall is 166mm and the maximum 378mm.



Stochastic Analysis: Wheat Industry 2005

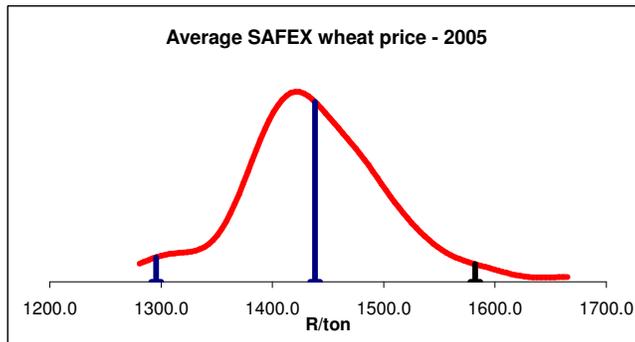
US Hard Red Winter Wheat Price

US hard red winter wheat price statistics over the past 10 years suggest a high probability of a wheat price of \$146/ton for the 2005/06 season. The FAPRI 2005 baseline projects a price of \$148/ton. Important to note is that the projected price level is below the reference price of \$157/ton at which a wheat tariff is triggered.



Wheat Price

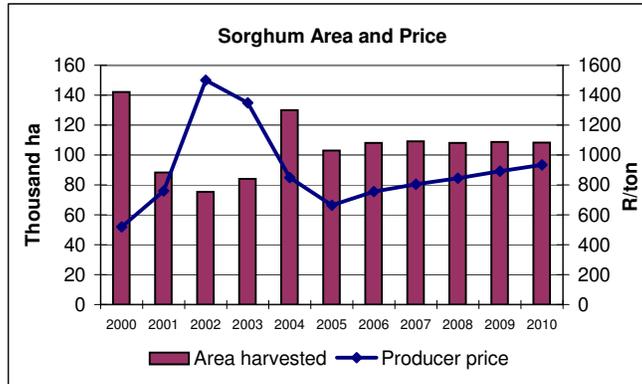
Due to variations in the exchange rate, rainfall and the world wheat price, it is likely that the SAFEX wheat price will vary between R1300/ton and R1660/ton. Current projections suggest that there is a high probability that the wheat price will trade at approximately R1420/ton in the 2005/06 season.



Sorghum

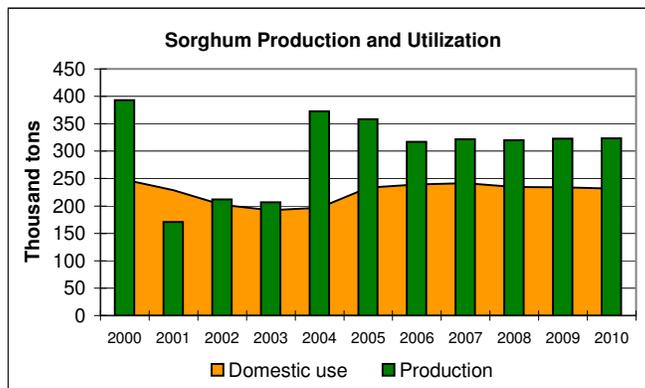
Area and Price

When maize prices shot up in 2001 and 2002, a lot of sorghum area was substituted with maize. This created a shortage in the sorghum market, which led to sorghum prices being higher than maize prices. In 2003/04 producers responded to high prices and the area planted increased by 55%. In 2004/05 just over 100 000 ha are harvested. It is projected that the sorghum area harvested will stabilize at 108 000 ha. The sorghum price is projected to increase by 7% annually on average.



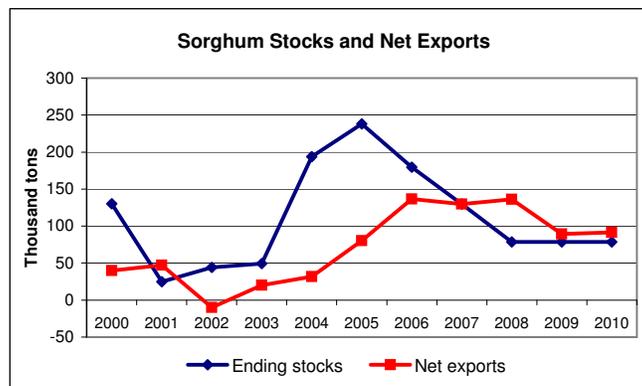
Production and Utilization

In 2004 production nearly doubled. For 2004/05 another large crop of 358 000 tons is expected. Therefore, in the past two seasons large surpluses were produced. Over the past decade human consumption of sorghum has dwindled. In 1994 just over 500 000 tons of sorghum were consumed in the domestic market, compared to approximately 200 000 tons over the past few years. There has been a general tendency amongst consumers to move away from traditional beers. However, domestic consumption is projected to recover somewhat to a level of approximately 230 000 tons over the baseline.



Stocks and Trade

Due to large surplus production over the past two years, combined with shrinking domestic use, it is expected that in 2004/05 sorghum stocks will reach the highest level over the past ten years. High stock levels will lead to increased exports. Exports are projected to peak in 2006 when 136 400 tons will be exported. Exports will decrease as stocks are drawn down.



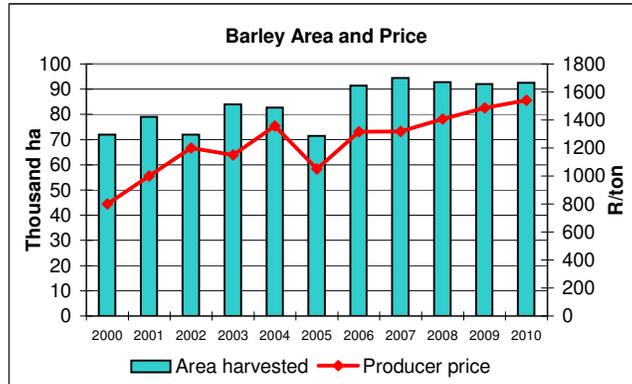
Sorghum

	2002	2003	2004	2005	2006	2007	2008	2009	2010
				thousand hectares					
Area harvested	75.3	84.0	130.0	103.0	108.1	109.2	108.1	108.7	108.4
				t/ha					
Average yield	2.8	2.8	2.9	3.5	2.9	2.9	3.0	3.0	3.0
				thousand tons					
Production	212.0	207.0	373.0	358.1	317.1	321.6	319.7	323.1	323.4
Feed consumption	33.0	19.0	9.0	18.8	25.7	29.7	24.5	25.8	25.7
Human consumption	162.0	163.0	170.4	204.7	203.5	202.1	200.3	198.2	196.0
Domestic use	202.0	192.0	196.8	233.5	239.1	241.7	234.7	234.0	231.8
Ending stocks	44.0	49.3	194.0	238.2	179.7	129.6	78.5	78.4	78.4
Net exports	-10.0	20.0	31.5	80.5	136.4	129.9	136.1	89.2	91.6
				R/ton					
Average producer price	1,500.0	1,350.0	850.0	664.5	755.8	804.9	845.7	892.1	934.0

Barley

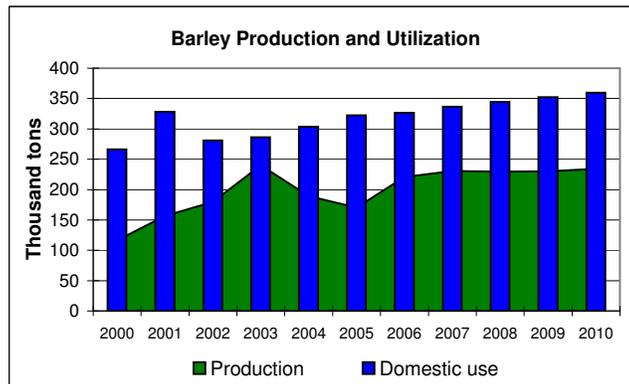
Area and Price

Interestingly, barley is the only agricultural commodity in SA where prices are fixed by one institution, namely the South African Breweries (SAB), and are not traded in a free market environment. Due the high level of substitutability between wheat and barley, SAB uses the wheat price as one of the main drivers for setting the barley price. In 2004 at planting time SAB fixed barley prices at the same level as wheat prices. With the appreciation of the rand, wheat prices plummeted, which led to higher relative returns for the barley producers. For 2005 SAB has fixed the price way below the current wheat futures price at R1050/ton. The current import parity price is R1363/ton. In 2005 barley area planted decreases to 71 400 ha. It is expected that barley prices will increase by 47% over the baseline. This will lead to an increase in the area planted.



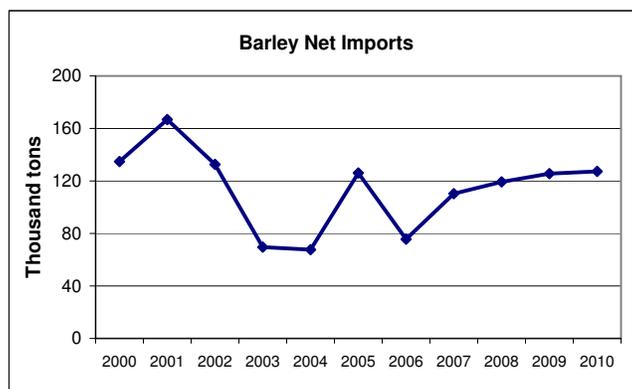
Production and Utilization

Current projections suggest that the consumption of barley will increase over the baseline by an annual average of 3%. After a decrease in 2005, production will stabilize at approximately 230 000 tons.



Trade

Volatility in barley imports will remain in the next two years after which imports will even out at 125 000 tons as production stabilizes.



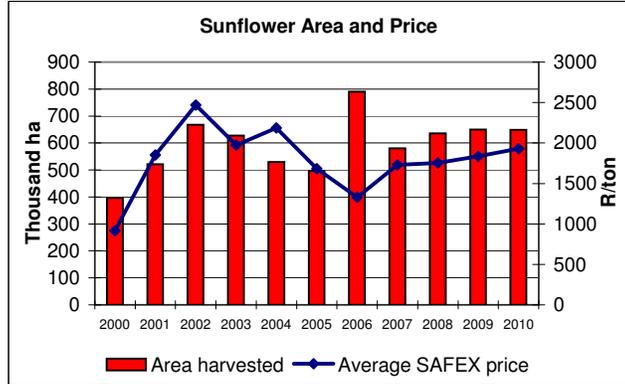
Barley

	2002	2003	2004	2005	2006	2007	2008	2009	2010
				thousand hectares					
Area harvested	72.0	84.0	82.7	71.4	91.4	94.5	92.8	92.0	92.6
				t/ha					
Average yield	2.5	2.9	2.3	2.4	2.4	2.4	2.5	2.5	2.5
				thousand tons					
Production	180.0	240.0	189.4	170.1	220.6	230.9	229.6	230.3	234.3
Domestic use	280.9	286.2	303.3	322.2	326.4	336.7	344.3	352.1	359.6
Human consumption	269.0	276.7	281.8	300.2	303.7	313.4	320.2	327.4	334.4
Ending stock	78.2	101.5	55.1	29.0	-1.2	3.3	7.9	11.7	13.7
Net imports	132.7	69.5	67.5	126.0	75.6	110.3	119.3	125.6	127.2
				R/ton					
Average producer price	1,200.0	1,150.0	1,356.0	1,050.0	1,315.8	1,318.3	1,405.7	1,487.0	1,540.6

Sunflower

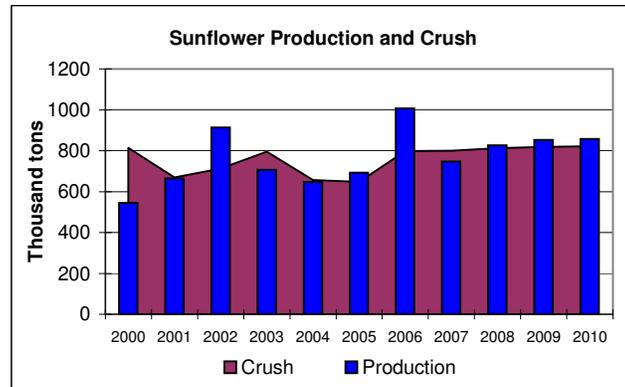
Area and Price

In 2005/06 area harvested increases by 59% to 789 000 ha due to relative high returns when compared to maize. Over the past few years sunflower seed have traded at import parity levels. The level of world prices and the exchange rate have, to a large extent, determined the level of the domestic price. However, this situation could change rapidly as sunflower plantings increase and production exceeds consumption. Current projections suggest that the increase in plantings will limit the increase in the domestic price. The average SAFEX price is expected to increase by 30% over the baseline and reach R1932/ton in 2010.



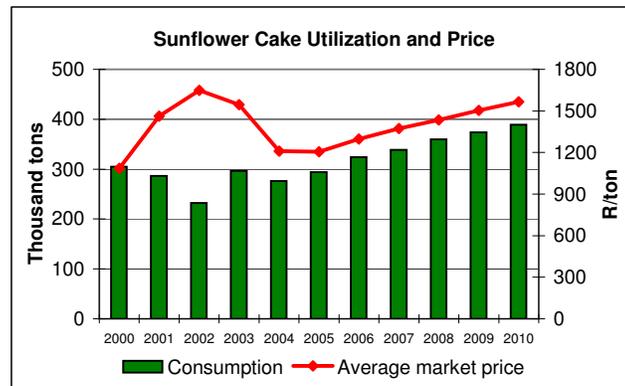
Seed Production and Utilization

Sunflower seed production is projected to exceed the utilization of seed by local crushers in 2006. Although utilization is projected to increase over the projected period, it does not grow fast enough to accommodate the increase in production. Despite the fact that SA has excess crushing capacity, local crushers have to compete against cheap imports of sunflower crude oil. This fine balance between imports and local crushing is heavily influenced by the exchange rate.



Cake Utilization and Price

Currently, sunflower cake trades at approximately R900/ton, which is even lower than the projected prices for 2005. It is expected that local cake prices will be supported by a constant increase in the consumption of cake in the feed market. Although sunflower cake can be utilized in feed rations as a less expensive source of protein, the high fibre content limits the amount used in major feed rations, for example, broilers, to less than 7%. Despite this, cake consumption is projected to increase steadily to reach 389 000 tons in 2010.



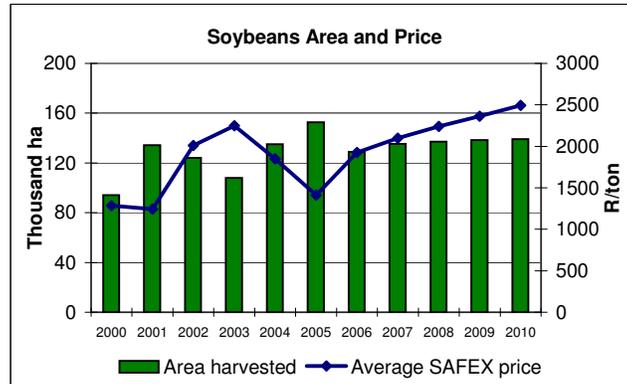
Sunflower

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sunflower seed				thousand hectares					
Area harvested	668	628	530	497	790	580	636	650	649
				t/ha					
Average yield	1.37	1.38	1.22	1.39	1.28	1.29	1.30	1.31	1.32
				thousand tons					
Production	914	707	648	693	1,008	747	826	853	857
Crush	713	795	657	648	798	800	812	819	822
Domestic use	734	807	676	660	810	812	824	831	834
Ending stock	283	125	115	153	253	171	194	201	202
Net Imports	-44	1	18	6	-97	-18	21	-14	-22
				R/ton					
Average SAFEX price	2,470	1,974	2,185	1,682	1,330	1,729	1,754	1,836	1,932
Sunflower cake				thousand tons					
Production	299	334	276	272	335	336	341	344	345
Domestic use	232	296	276	294	324	339	360	374	389
Change in Stock	72	43	12	71	81	80	81	81	81
Net imports	5	5	12	92	69	83	99	111	125
				R/ton					
Average market price	1,649	1,545	1,210	1,205	1,298	1,374	1,435	1,504	1,566

Soybeans

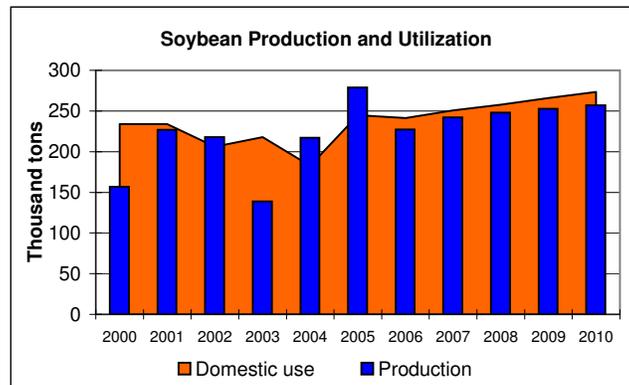
Area and Price

With relative good returns when compared to maize, the soybean area harvested increases in 2004/05 by 13% to a record level of 153 000 ha. The domestic price decreases as production exceeds domestic use of soybean seed. The area harvested is projected to moderate at 138 000 tons over the baseline. Prices are projected to increase as domestic consumption surpasses production.



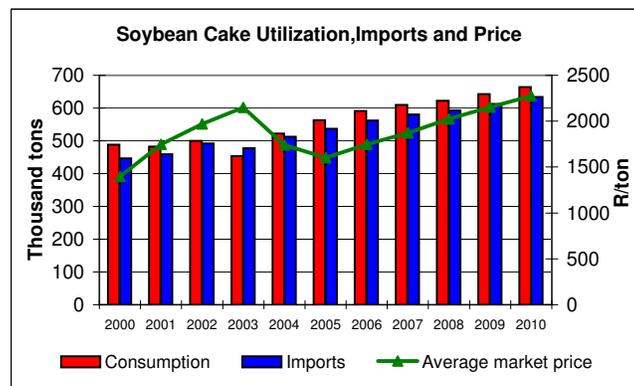
Seed Production and Utilization

Domestic utilization of seed consists of human consumption (approx. 20%), crush (5-10%) and full fat feed consumption (75-80%). Full fat feed consumption is projected to increase by 29% until 2010. Production evens out at approximately 255 000 tons.



Cake Utilization and Price

Soybean cake consumption is projected to increase to 677 000 tons in 2010. Domestic cake production only amounts to approximately 30 000 tons per annum. Therefore, the domestic cake price is a function of the world price and the exchange rate. As the exchange rate depreciates and the world price increases over the baseline period, the domestic price of cake will increase to reach a level of R2273/ton in 2010.



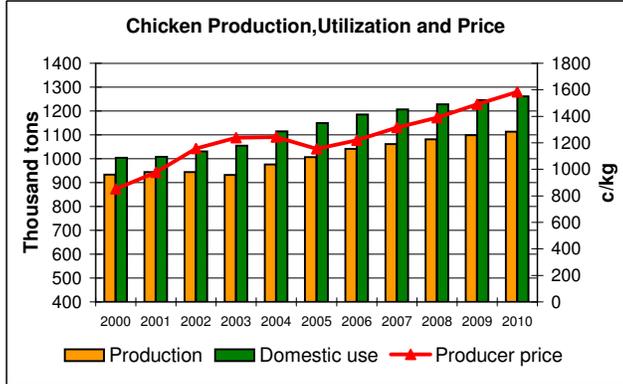
Soybeans

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Soybeans									
				thousand ha					
Area harvested	124	108	135	153	129	135	137	138	139
				t/ha					
Average yield	1.76	1.29	1.61	1.83	1.76	1.79	1.81	1.83	1.85
				thousand tons					
Production	218.0	139.0	217.0	278.8	227.2	241.9	248.0	252.8	257.0
Feed consump.full fat	141.0	149.0	126.0	150.6	144.2	153.0	159.5	167.5	174.9
Crush	9.0	8.0	12.0	33.3	36.0	36.7	37.2	37.5	37.6
Domestic use	206.0	218.0	182.5	244.9	241.2	250.7	257.7	266.0	273.5
Ending stock	105.0	48.7	99.2	97.2	82.2	71.9	64.6	60.0	56.8
Net imports	32.0	17.0	16.0	-35.9	-1.0	-1.5	2.3	8.6	13.2
				R/ton					
Average SAFEX price	2,011	2,250	1,850	1,410	1,926	2,097	2,240	2,363	2,494
Soybean cake				thousand tons					
Production	7.2	6.4	9.6	26.6	28.8	29.4	29.7	30.0	30.1
Domestic use	499.6	453.8	522.0	563.3	590.9	609.7	622.7	642.3	663.6
Net imports	492.4	477.8	513.0	536.7	562.2	580.3	593.0	612.3	633.5
				R/ton					
Average market price	1,970	2,150	1,740	1,602	1,748	1,872	2,024	2,152	2,273

Meat

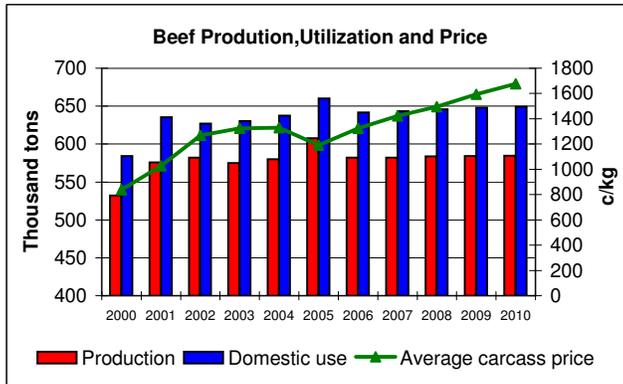
Chicken

The outbreak of AI, particularly in Asia, has affected the global poultry market. After a 7% decrease in 2005, the domestic chicken producer price is expected to increase by 39% over the projection period to reach R15.84/kg in 2010. Long term consumers are expected to continue to eat an additional 500g of chicken per person per year. This brings the total consumption of chicken to approximately 1.3 million tons in 2010. High prices and low feed costs in 2004 and 2005 are expected to result in a 3.5% increase in production in 2006. Chicken imports are projected to increase by 9% over the baseline as world trade recovers and grows at a rate of 3.6% over the rest of the decade.



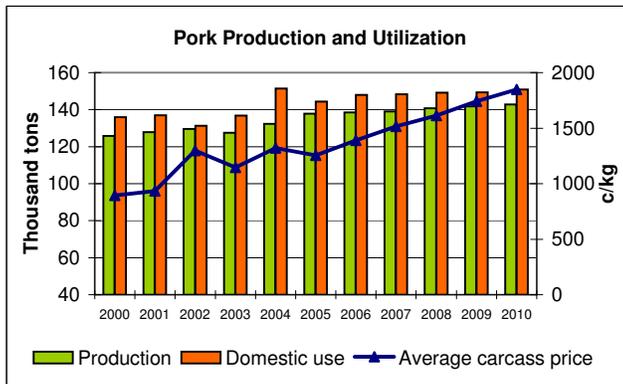
Beef

Record beef prices in 2004, combined with extremely low feed prices, will boost production in 2005 by 5%. Although cattle prices have exhibited amazing strength in the first quarter of 2005, it is expected that increased production will put downward pressure on beef prices during the last two quarters of 2005. Over the baseline beef prices are expected to increase by 4% annually on average to reach R16.75/kg in 2010. Beef consumption increases in 2005, due to the lower auction prices but then decreases over the next few years to approximately 650 000 tons in 2010. Beef imports are expected to increase as world trade recovers from the BSE crises in Northern America and the world price decreases.



Pork

Similar to beef production, pork production is also projected to increase by 4% in 2005 due to low feed prices and excellent pork prices in 2004. Production will maintain a moderate growth rate over the baseline. Growth in consumption is projected to outstrip the growth in production. This will support pork prices in the long run to reach R18.49/kg in 2010. Imports will even out at approximately 12 000 tons.



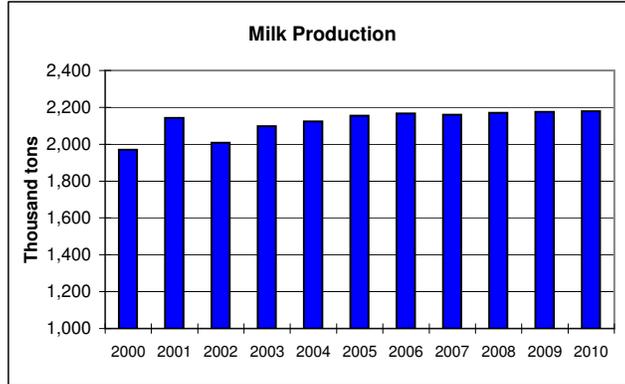
Meat

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Chicken				thousand tons					
Production	944.0	932.5	975.7	1,007.0	1,041.4	1,061.3	1,081.6	1,098.2	1,113.1
Domestic use	1,030.9	1,055.0	1,114.3	1,149.0	1,185.2	1,207.2	1,227.7	1,246.0	1,261.7
Imports	94.2	126.8	142.6	147.0	149.8	152.6	153.5	155.4	156.4
Exports	7.4	4.4	4.0	4.9	6.0	6.7	7.3	7.6	7.8
				c/kg					
Average producer price	1,158.0	1,239.0	1,242.1	1,154.7	1,219.8	1,314.5	1,389.2	1,491.5	1,584.6
Beef				thousand tons					
Production	582.0	574.9	580.1	607.9	582.1	582.2	584.0	584.2	584.7
Domestic use	627.2	630.2	637.5	660.2	641.9	643.3	645.7	647.8	649.1
Imports	51.0	61.2	63.2	58.4	65.3	66.6	67.1	68.9	69.7
Exports	5.8	5.9	5.7	6.1	5.6	5.5	5.4	5.3	5.2
				c/kg					
Average carcass price	1,269.3	1,325.2	1,329.2	1,191.4	1,323.2	1,422.1	1,494.3	1,592.4	1,675.9
Pork				thousand tons					
Production	129.6	127.6	132.4	137.9	138.4	138.9	140.8	141.8	142.8
Domestic use	131.3	136.7	151.4	144.3	147.9	148.4	149.1	149.4	150.9
Imports	8.2	17.6	21.5	9.9	12.2	12.2	11.3	10.8	11.2
Exports	6.5	4.0	2.5	3.4	2.7	2.7	3.0	3.2	3.1
				c/kg					
Average carcass price	1,298.2	1,145.3	1,321.7	1,254.9	1,390.1	1,514.5	1,612.4	1,741.1	1,849.2

Dairy

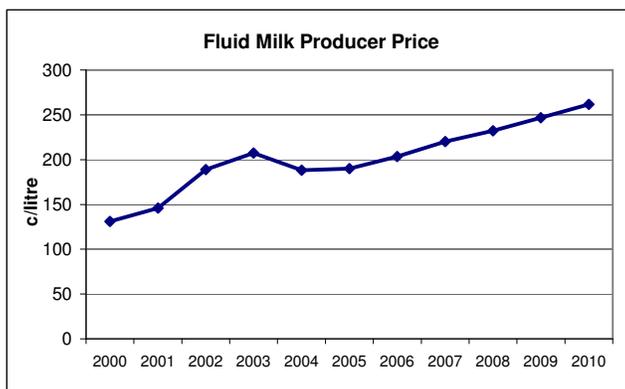
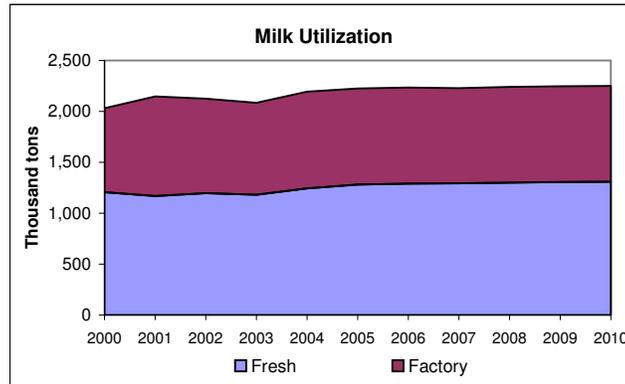
Milk Production and Utilization

Traditionally South Africa has been a surplus producer of milk. However, since 2000 small shortages have started to appear more frequently. Although production is expected to grow in 2005/06 to just over 2.1 billion litres mainly due to the lower feed prices, demand is still projected to outstrip supply just marginally. A marginal shortage is projected for the rest of the projection period.



Milk Price

Current projections suggest milk producer prices will be at approximately the same level in 2005 as in 2004. However, there are some indications that milk buyers are not prepared to pay the winter premium and therefore prices could even be lower in 2005. Record prices were achieved in 2003 when the average producer price for the year reached R2.07/litre. Since then, producer prices have decreased constantly. Future producer prices are expected to be supported to some extent by the constant shortage in the market over the projected period. At the current level of producer prices, milk producers (especially the producers on the highveld) find it hard to stay in business. Producer prices are expected to increase to R2.61/litre in 2010.



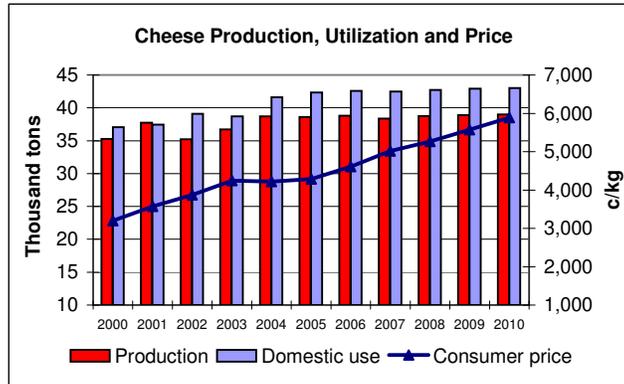
Dairy

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Fluid milk									
				billion litres					
Production	1,963.2	2,050.2	2,076.5	2,106.1	2,117.5	2,111.2	2,121.9	2,127.5	2,130.4
Fresh consumption	1,170.1	1,154.1	1,217.1	1,253.1	1,262.3	1,264.6	1,271.0	1,275.8	1,278.5
				thousand tons					
Production	2,008.3	2,097.4	2,124.2	2,154.6	2,166.2	2,159.7	2,170.7	2,176.4	2,179.4
Fresh consumption	1,197.0	1,180.6	1,245.1	1,281.9	1,291.4	1,293.7	1,300.3	1,305.1	1,307.9
Factory consumption	927.4	905.1	948.4	941.9	944.1	935.3	939.6	940.5	940.7
				c/litre					
Average producer price	188.7	207.3	188.2	189.9	203.5	220.0	232.0	246.6	261.5

Dairy Products

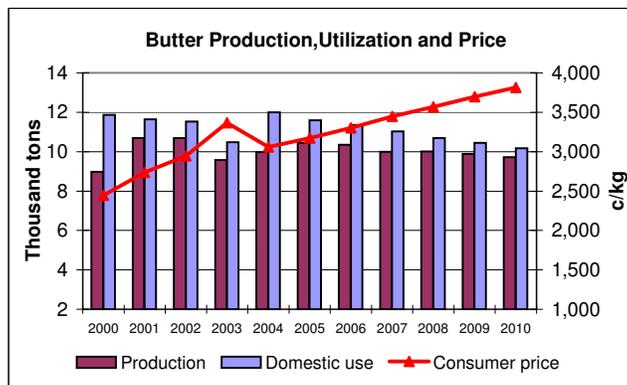
Cheese Production, Utilization and Price

Domestic cheese consumption is expected to increase as per capita income increases over the projection period. South Africa has mainly been a net importer of cheese. This is expected to remain unchanged over the baseline period as consumption grows faster than production (1.5% opposed to 0.9%). The consumer price for cheese will be supported by the market shortages. In 2003 and 2004 cheese prices levelled off with the appreciation of the exchange rate. The projected price increase is aided by the gradual depreciation in the exchange rate.



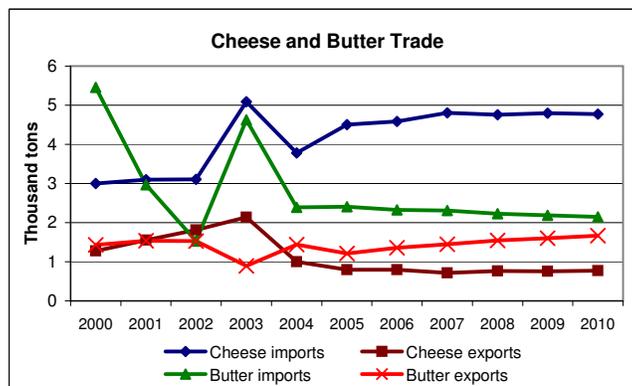
Butter Production, Utilization and Price

Butter consumption is projected to decline by 7% over the baseline to reach a level of approximately 10 000 tons in 2010. However, domestic prices will be supported by a decrease in production.



Cheese and Butter Trade

The gap between cheese imports and exports is expected to widen as domestic consumption outgrows domestic production. Current projections suggest that butter will remain a net import commodity over the next few years. However, the gap between imports and exports is projected to narrow over the baseline.



Dairy

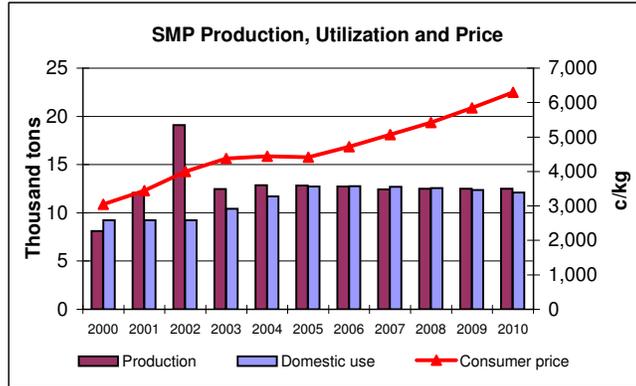
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Cheese									
				thousand tons					
Production	35.20	36.72	38.69	38.61	38.80	38.36	38.77	38.91	39.02
Domestic use	39.12	38.73	41.63	42.34	42.58	42.49	42.73	42.93	43.01
Ending stock	3.52	4.46	4.30	4.28	4.30	4.25	4.29	4.31	4.32
Imports	3.11	5.09	3.78	4.50	4.58	4.80	4.76	4.80	4.77
Exports	1.81	2.14	1.00	0.80	0.80	0.72	0.76	0.76	0.77
				c/kg					
Average consumer price	3,870.3	4,242.2	4,219.0	4,285.2	4,606.1	5,013.8	5,262.9	5,572.3	5,885.7
Butter				thousand tons					
Production	10.69	9.57	9.97	10.44	10.36	10.00	10.01	9.89	9.72
Domestic use	11.53	10.48	12.01	11.60	11.34	11.02	10.69	10.44	10.18
Ending stock	2.52	5.33	4.25	4.29	4.27	4.11	4.11	4.14	4.17
Imports	1.53	4.63	2.39	2.40	2.33	2.31	2.23	2.19	2.15
Exports	1.53	0.90	1.44	1.21	1.36	1.45	1.54	1.61	1.67
				c/kg					
Average consumer price	2,944.2	3,365.6	3,057.6	3,171.1	3,302.5	3,447.7	3,569.8	3,695.6	3,812.4

Dairy Products

SMP Production, Utilization and Price

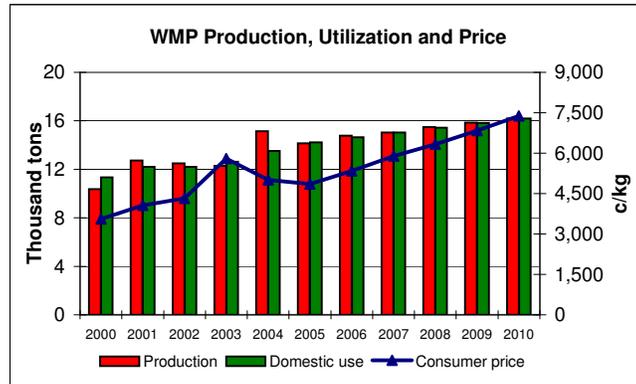
Historical data shows a high level of volatility in the production of skimmed milk powder (SMP); e.g. 21 300 tons in 1998 compared to 5 840 tons in 1999 and 19 090 tons in 2002.

Production is expected to stabilize around 12 500 tons with a slightly declining trend. After the increase in 2003 and 2004, consumption is projected to remain relatively constant over the baseline. Similar to cheese, the price increase is aided by the gradual depreciation in the exchange rate.



WMP Production, Utilization and Price

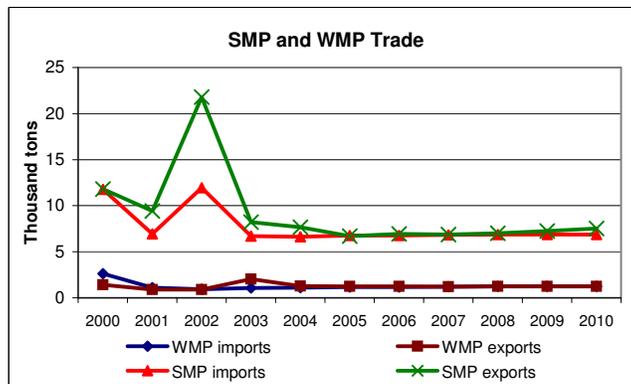
Whole milk powder (WMP) production increases by 14.5% over the baseline. Prices will recover from the low levels projected for 2005 to reach R7.37/kg in 2010. Domestic production is projected to equal domestic consumption.



SMP and WMP Trade

SMP exports peaked in 2002 with the high level of production. SMP imports and exports are expected to moderate from the historical highs to a level of approximately 6 800 tons.

Little trade is projected for WMP over the baseline.



Dairy Products

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Skimmed milk powder (SMP)				thousand tons					
Production	19.09	12.45	12.88	12.83	12.73	12.43	12.50	12.51	12.51
Domestic use	9.23	10.42	11.71	12.72	12.78	12.70	12.55	12.37	12.12
Ending stocks	1.87	2.40	2.55	2.75	2.55	2.26	2.04	1.79	1.53
Imports	11.95	6.70	6.64	6.77	6.78	6.84	6.86	6.87	6.87
Exports	21.80	8.21	7.65	6.69	6.93	6.86	7.02	7.25	7.52
				c/kg					
Average consumer price	3,996.0	4,379.7	4,445.7	4,409.9	4,720.3	5,072.4	5,422.1	5,847.5	6,293.8
Whole milk powder (WMP)				thousand tons					
Production	12.50	12.29	15.13	14.14	14.78	15.03	15.48	15.86	16.20
Domestic use	12.21	12.63	13.53	14.21	14.65	15.04	15.44	15.84	16.19
Ending stocks	3.02	1.71	3.14	3.00	3.07	3.05	3.10	3.13	3.15
Imports	0.92	1.07	1.09	1.16	1.17	1.22	1.23	1.24	1.25
Exports	0.91	2.04	1.27	1.23	1.23	1.22	1.23	1.23	1.24
				c/kg					
Average consumer price	4,324.0	5,797.7	5,011.0	4,854.0	5,339.8	5,897.5	6,325.1	6,842.0	7,376.0

