BFAP
bureau for food and agricultural policy

SOUTH AFRICAN AGRICULTURAL OUTLOOK

BFAP Baseline JUNE 2006

by

THE BUREAU FOR FOOD AND AGRICULTURAL POLICY (BFAP)

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ACKNOWLEDGEMENTS

Foreword

The Bureau for Food and Agricultural Policy (BFAP) was founded in 2004 with the purpose of facilitating decision-making in the South African agricultural sector as well as training of individuals in order to increase the amount of analytical and research skills available to the sector. BFAP is housed as an independent program within the Department of Agricultural Economics, Extension and Rural Development at the University of Pretoria, the Department of Agricultural Economics at the University of Stellenbosch, and the Department of Agricultural Economics at the Provincial Department of Agriculture, Western Cape. 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 possible market and policy changes and the possible impacts of these changes on domestic markets and farm profitability and 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 could be. Pro-active actions can thus flow from the use 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; WineTech, THRIP programme of the Department of Trade and Industry (DTI) and Eskort.

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 the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri and its staff 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
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Purpose and Background

The baseline simulations presented in the BFAP Baseline 2006 should be regarded as one of the tools in the whole decision-making process.

The simulations tell us what the possible outcome could be given a certain set of assumptions .

However, external factors that influence the agricultural industry change constantly, hence the simulation results should be evaluated critically. Because of variability and uncertainty underlying the agricultural sector, not only the baseline simulations should be used in the process of making decisions, but also other sources of information, experience, and other planning and decision-making techniques.

The baseline is a simulation of the South African grain, livestock, dairy and wine sector models under agreed policy, macroeconomic and demographic 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 of how different policy options as well as macro economic and demographic variables, are likely to affect the supply and demand of agricultural products in South Africa.

The baseline does NOT constitute a forecast, but rather a benchmark of what could happen under a particular set of assumptions. Inherent uncertainties including policy changes, weather, and other market variations ensure that the future is highly unlikely to match baseline projections. Recognizing this fact, BFAP incorporates scenario planning and stochastic analyses together with the model simulations in the process of attempting to understand the underlying risks and uncertainties of agricultural markets .

This publication contains the deterministic baseline projections with single point estimates as well as some results from stochastic simulations for the maize and wheat industry. Macroeconomic assumptions are based on projections prepared by Global Insight, the Actuarial Society of South Africa and ABSA. 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 2006 Outlook.

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Executive Summary

Land Use

The area for main field crops (maize, wheat, sunflower, sorghum and soybean) declined from 2002 to 2006. The area is projected to increase slightly during 2007, after which it remains between 4 million hectares and 4,2 million hectares. The impact on land use of the possible introduction of biofuel production from maize, soybeans and other field crops is not taken into account in this projection.

Main SA field crop area
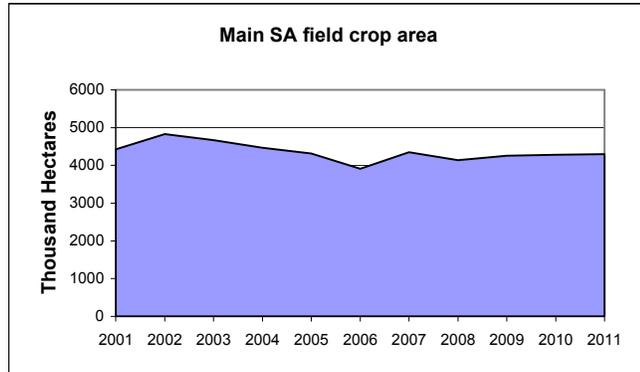
Human and Feed Cereal Consumption

Cereal consumption by humans is projected to decrease due to the projected decrease in per capita consumption of white maize. Feed consumption is expected to remain stable during 2006 compared to 2005, but an increase in feed consumption is projected in 2007 due to lower feed costs and increased demand for meat products. Feed consumption is projected to grow at a constant rate over the baseline period.

Human and Feed Cereal Consumption
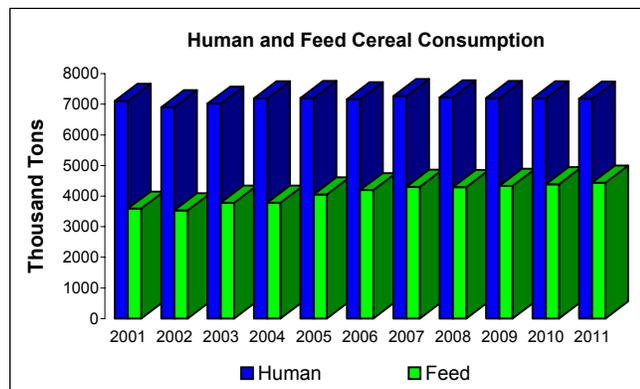
Oilseeds Feed Consumption

Changing consumer preferences due to economic development and urbanization, causes consumers to substitute grain products for meat, vegetables, fruit and dairy products. The increase in demand for meat is projected to impact on oilseeds feed consumption. It is projected that feed consumption of oilseeds will increase over the baseline period to reach a possible level of 1,3 million tons in 2011.

Oilseeds Feed Consumption

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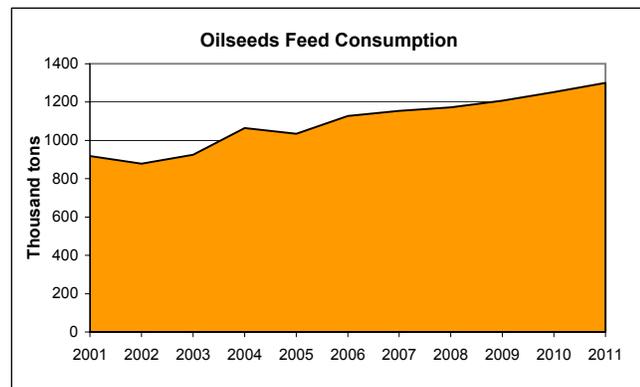
Executive Summary

Field Crop Prices

Maize prices are projected to increase during 2006, but are projected to decrease during 2007 in response to increased plantings. The wheat price is projected to increase slightly over the baseline period in response to a depreciating exchange rate as well as slightly increasing world prices. Sunflower prices are projected to remain above R2000/ton during the period 2006 to 2008 after which it increases slightly. Soybean prices are projected to increase because of an increase in demand for oilseeds used as feed to produce meat products.
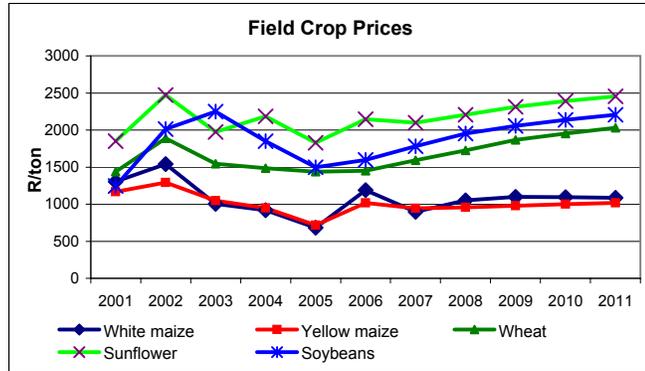
Meat Prices

Changing consumer preferences in terms of substituting grain products for meat and other foodstuffs are projected to increase demand for all types of meat products and subsequently increase meat prices over the long run. However, meat prices are projected to first enter a decreasing trend in 2007 and 2008 from record price levels in 2005 and 2006. The projected depreciating exchange rate partly mitigates the pressure of imports of meat products on domestic meat prices.
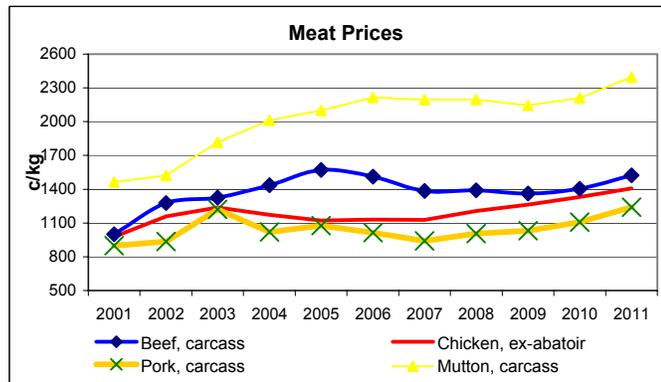
Dairy Prices

During 2005, dairy prices decreased in response to an appreciation of the exchange rate. The decreasing dairy price trend is projected to continue during 2006, after which the price of most dairy products increases over the remaining baseline period. The projected increasing trend in dairy prices from 2007 onwards can be ascribed to slightly lower fresh milk production, an increase in per capita consumption of dairy products, and more expensive imports caused by a depreciating exchange rate. Consumers are projected to substitute grain products for meat, dairy, fruit and vegetables. The reasons for the changing consumer preferences are economic development and urbanization.

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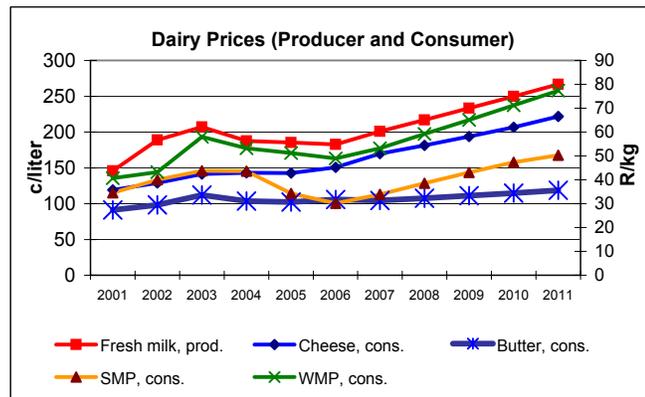
Executive Summary

Per Capita Grain Consumption

The per capita consumption of maize (maize meal) is projected to decrease over the baseline period. However, the per capita consumption of wheat (bread) is projected to increase at a decreasing rate over the baseline period. This increase in per capita bread consumption can mainly be attributed to urbanization and the projected increase in disposable income for a larger share of the population. Rice appears to be a strong substitute for maize meal and bread as consumer incomes increase and preferences change.

Per Capita Grain Consumption

kg/capita

White maize   Wheat
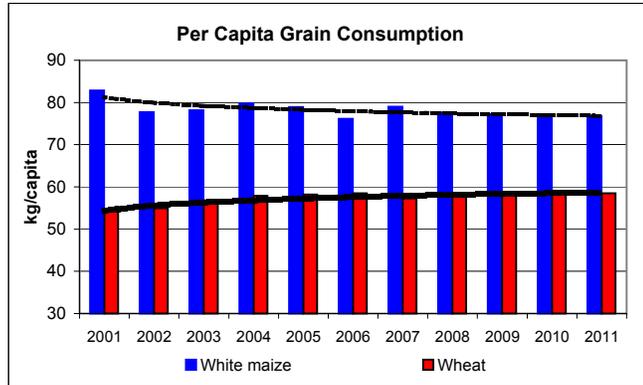
Per Capita Milk and Meat Consumption

The per capita consumption of beef is projected to remain relatively constant with a marginal increase from 2008 onwards. Consumers are expected to increase per capita consumption of both chicken and milk at a decreasing rate. The reasons for the increase in per capita consumption of especially chicken and milk, is due to economic development and urbanization.

Per Capita Milk and Meat Consumption

kg/capita

Milk   Beef   Chicken

3
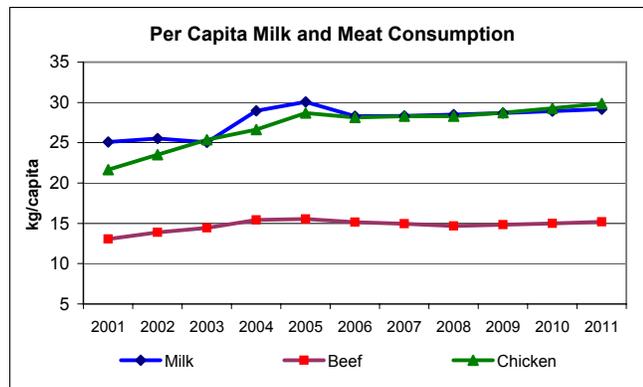
Executive Summary

Gross Income

Real gross income of the agricultural sector is derived from field crops, animal production and horticulture activities. It has shown a declining trend since 2002. However, real gross income is projected to increase starting from 2007. Annual average growth of gross income is projected at 3,3% for the period 2007 to 2011. The impact of the possible introduction of biofuels on gross income has not been taken into account in the projection.

Real Gross Income: Agricultural Sector
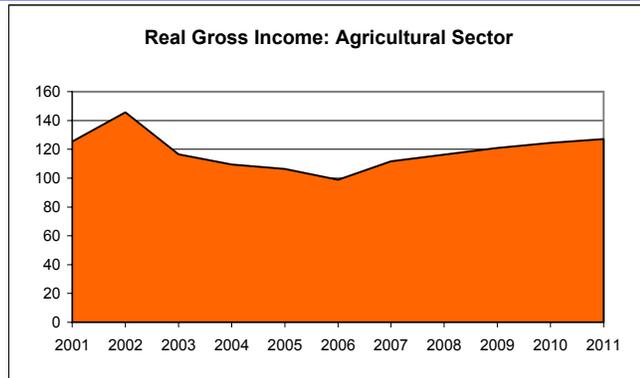
Gross Value Added

The gross value added of the agricultural sector is the contribution of the sector to the total GDP of the economy. It has exhibited a downward trend from 2002 to 2005. This downward trend is projected to continue during 2006. However, the projected higher gross income for 2007 is likely to reverse the downward trend. An annual average growth rate of 3% is expected from 2007 to 2011. The reason for the change in trend is mainly that the benefits of economic growth will spil over to agriculture such as increased demand for livestock products.

Real Gross Value Added: Agricultural Sector
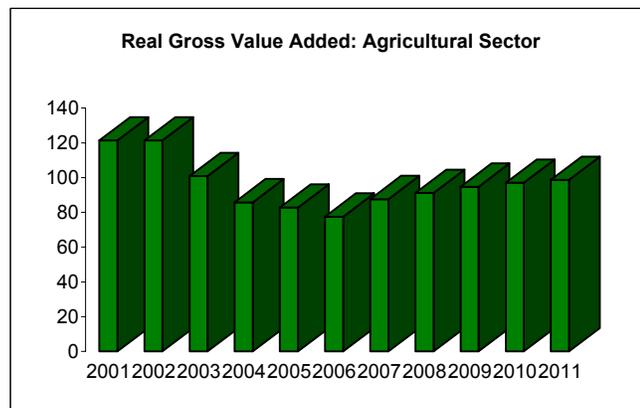
Gross Value of Field Crops

During the past decade, the gross value of field crops displayed significant variability in response to fluctuations in markets and climate, among others. It has shown a continued decline in the past three years as a result of a fall in the price of major crops and it is expected to reach its lowest level in 2006. However, it is projected to increase marginally at a 1% annual average growth rate from 2007 to 2011.

Real Gross Value of Field Crops
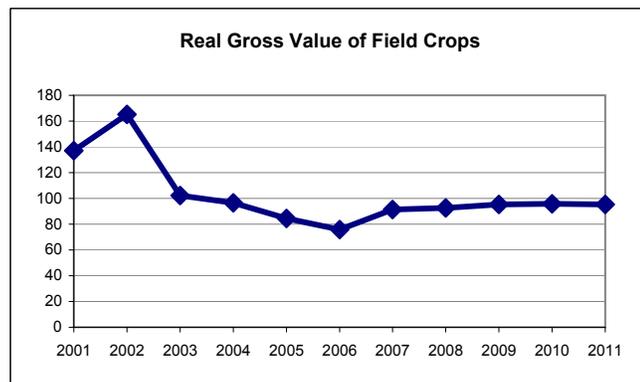
Gross value of Animal Production

Animal production accounts for the highest source of income for the agricultural sector. More than 40% of the gross income of the sector is derived from this activity. The real gross value of animal production indicates in general an upward trend for the past five years with a peak in 2004 and 2005. The real gross value of animal production is projected to decline in 2006 and 2007 but is projected to increase from 2008 onwards.

Real Gross Value of Animal Products

4
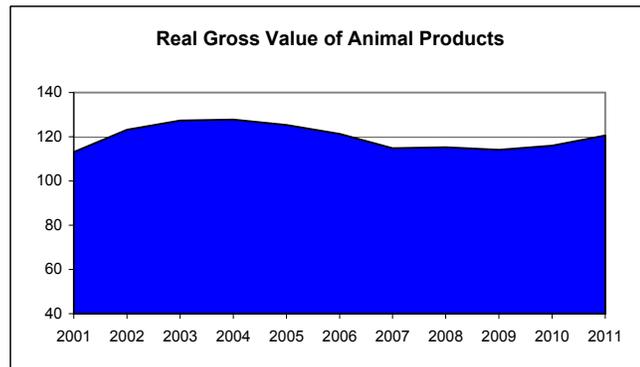
Macroeconomic assumptions

Macroeconomic assumptions are based on projections prepared by Global Insight, ABSA, and the Actuarial Society of South Africa.

Population

Population growth is a key driver in the demand for food products. The population projection underlying the 2006 baseline is that of a population reaching a maximum of 47.7 million in 2007 after which it will start decreasing to a level of 47,2 million in 2011. The main reasons for the declining trend are: less children per family due to changing lifestyles and HIV/Aids related deaths.

Total population of SA
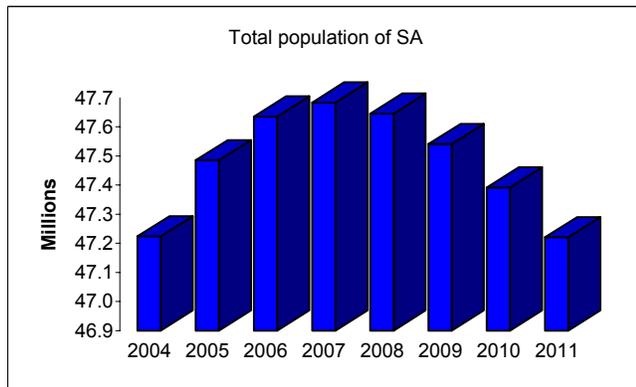
Exchange Rates

The Rand/Dollar exchange rate remains a strong driving factor of price levels and trade volumes of food products in the South African agricultural sector. During the past decade, significant exchange rate variability has been experienced. The baseline projection for the Rand/Dollar projects a gradually depreciating Rand of R6,36/US $ in 2006 to levels of R7,72 against the US Dollar in 2011. Probabilistic simulations of the exchange rate are presented on page 14 with the purpose of indicating possible impacts of a varying exchange rate on maize prices.

Exchange Rate
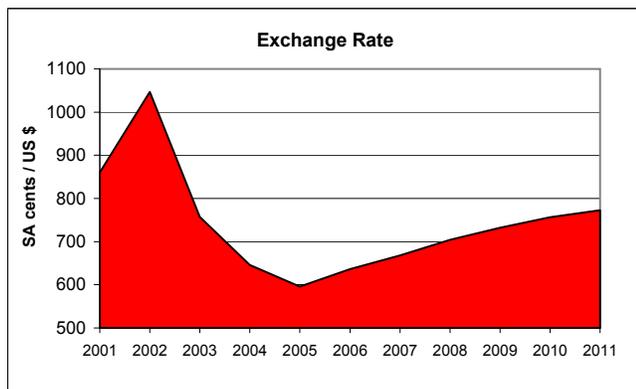
GDP Per Capita

The South African economy has performed increasingly well in terms of growth over the past couple of years. Some reasons for the improved growth were stable monetary and fiscal policy, a relatively stable world economy, as well as the materialization of a strong black middle socio-economic class. This stimulated consumer demand, leading to strong growth in some sectors of the economy. The baseline projection in terms of economic growth assumes economic growth to continue, although at a slightly decreasing rate. Given this assumption, real GDP per capita is projected to increase to approximately R21 000 in 2011.

Real GDP per Capita
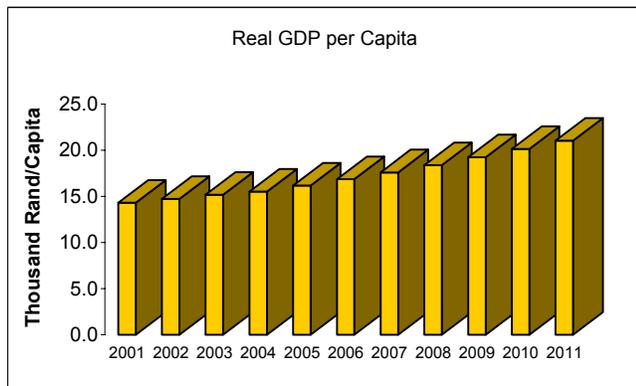
Macroeconomic assumptions

	2003	2004	2005	2006	2007	2008	2009	2010	2011
millions									
Total population of SA	47.1	47.2	47.5	**47.6**	47.7	47.6	47.5	47.4	47.2
SA cent/US $									
Exchange rate	757.0	646.0	596.0	**636.0**	667.8	703.9	732.6	756.6	772.7
thousand rand (constant 1995)									
Real GDP per capita	15.2	15.5	16.2	**16.9**	17.6	18.4	19.2	20.1	21.0
index (2000 = 100)									
GDP deflator	124.1	131.4	138.1	**145.1**	151.4	158.2	165.2	172.1	179.1
CPI: food	131.8	135.0	141.9	**149.1**	155.6	162.5	169.7	176.8	183.9
Weighted interest rate index	92.4	75.9	72.4	**72.4**	72.4	72.4	72.4	72.4	72.4
PPI: agricultural goods	155.6	142.0	128.0	**105.0**	110.3	115.8	121.6	127.6	134.0
US $/barrel									
Brent Crude Oil Price	25.2	32.8	60.0	**62.0**	63.9	65.9	68.1	70.2	72.3

Baseline policy assumptions

The baseline contains all currently agreed policies on an international as well as domestic level. In this case it implies 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. Simple ad valorem tariffs are applied in the case of oilseeds and wheat. 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.

	2004	2005	2006	2007	2008	2009	2010	2011
			R/ton					
Maize import tariff: ref.price = US$ 110	9.3	41.8	**36.9**	0.4	0.0	0.0	0.0	0.0
Wheat import tariff: 2% of FOB	9.6	17.7	**18.9**	20.4	21.8	23.3	24.4	25.3
Sunflower seed import tariff: 9.4% of FOB	194.9	175.4	**188.8**	207.2	220.0	229.5	236.8	242.1
Sunflower cake import tariff: 6.6% of FOB	50.7	47.2	**49.3**	53.9	56.1	58.2	59.7	60.6
Sorghum import tariff: 3% of FOB	18.2	16.7	**20.0**	21.8	23.6	25.2	26.6	27.5
Soybean import tariff: 8% of FOB	127.6	123.0	**126.5**	138.0	149.5	156.3	162.0	167.0
Soybean cake import tariff: 6.6% of FOB	87.4	83.4	**93.9**	101.5	107.4	111.0	114.4	117.1
			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)	482.7	458.7	**470.8**	481.0	492.6	493.9	495.0	493.0
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 *FAPRI 2006 U.S. and World Agricultural Outlook* were used for this baseline. (available at http://www.fapri.missouri.edu)

Cereals

World wheat production is expected to expand in 2006/07 because of recovered wheat production mainly in Australia and Argentina. Subsequently, wheat prices are projected to decline during 2006/07. The wheat price is projected to increase marginally over the baseline period. Projected growth in maize consumption used for animal feed is expected to be one of the main underlying drivers of the maize price during the baseline period. Although high maize stock levels currently exist in the world, the projected increase in maize consumption as feedstock as well as usage in biofuel production is expected to drive maize prices upwards.

Cereal Prices

US $ /ton

- Yellow maize, US No.2, fob, Gulf
- Wheat US No2 HRW fob (ord) Gulf
- Sorghum, US No.2, fob, Gulf
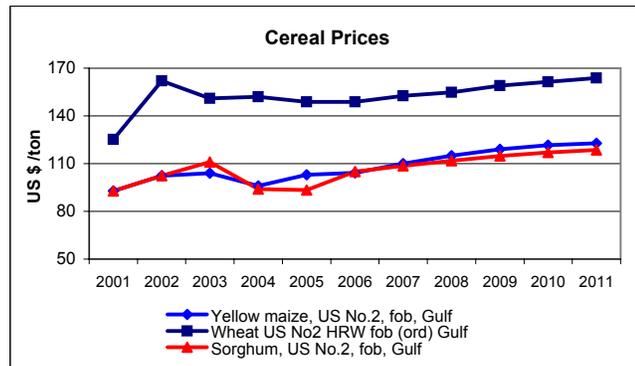
Oilseeds

World soybean production is projected to increase significantly over the baseline period, with Brazil and Argentina leading the increase. China is expected to increase imports of soybean. Balanced increases in both demand and supply are projected to cause soybean prices to remain relatively stable. The decrease in sunflower seed prices during 2005/06 is ascribed to increased supplies. Increasing per capita vegetable oil demand is projected to support sunflower prices slightly over the baseline period.

Oilseed Prices

US $/ton

- Sunflower seed, EU CIF Lower Rhine
- Soybean seed: Arg. CIF Rott
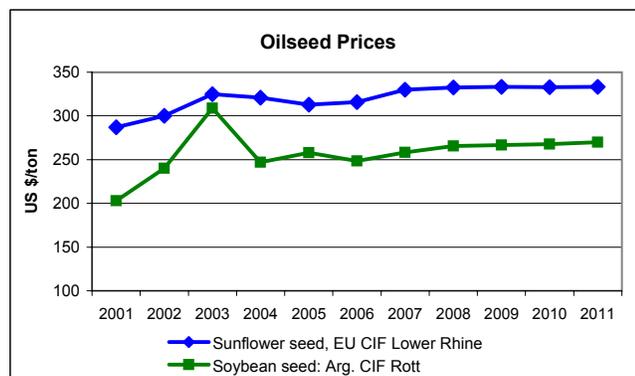
Meat

Sanitary and Phitosanitary issues have been one of the main factors impacting world livestock markets during the past couple of years. Expectations are that this will continue as markets recover from shocks such as BSE and AI. Projections are that consumption, production and trade are to recover gradually during the baseline period, pressuring prices. Per capita consumption of beef, poultry and pork is projected to increase in response to sustained world economic growth.

Meat Prices

US $/ton

- Nebraska, direct fed-steer
- Chicken, U.S. 12-city wholesale
- Hogs, U.S. 51-52% lean equivalent

9
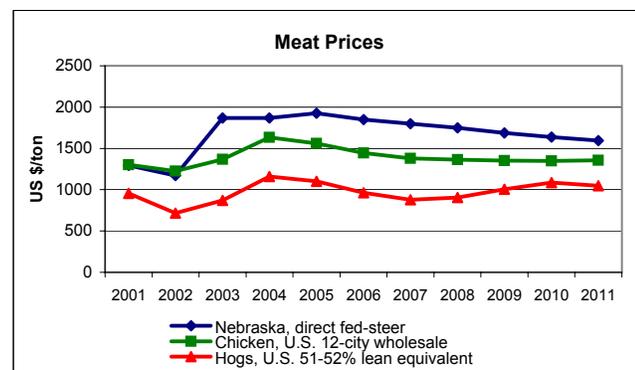
World prices

Dairy

Sustained world economic growth causing increases in income, along with population growth and urbanization act as strong "pull" forces for dairy prices over the baseline period. Gradual increases in milk production especially in China, India, Brazil, Uruguay, Argentina, Australia and New Zealand are projected. The balanced increase in both demand and supply is projected to stabilize price movements, and cause prices to move around levels slightly higher than present.

Dairy Prices - FOB Northern Europe
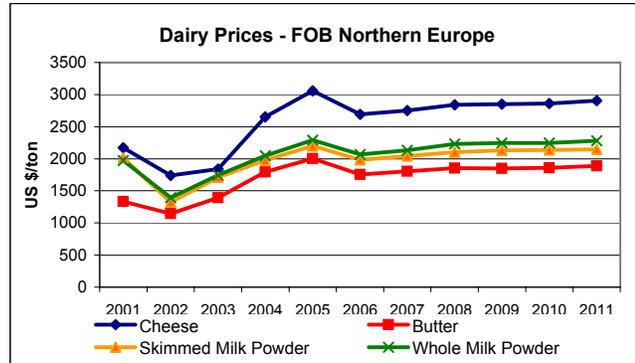
|	2005	2006	2007	2008	2009	2010	2011
World prices in dollars		**US$/ton**					
Yellow maize, US No.2, fob, Gulf	102.99	**104.19**	109.95	115.07	119.09	121.63	122.90
Wheat US No2 HRW fob (ord) Gulf	148.75	**148.75**	152.55	154.81	159.06	161.41	163.71
Sorghum, US No.2, fob, Gulf	93.31	**105.06**	108.68	111.78	114.78	117.03	118.50
Barley, U.S. Portland	93.90	**106.44**	106.87	109.77	113.13	117.11	120.98
Canola / Rapeseed Pri - EU 00 cif Hamburg	262.00	**262.81**	270.37	271.45	269.70	269.11	268.95
Sunflower seed, EU CIF Lower Rhine	313.00	**315.80**	330.14	332.56	333.26	333.00	333.30
Sunflower cake(pell 37/38%) , Arg CIF Rott	120.00	**117.40**	122.32	120.86	120.28	119.49	118.89
Sunflower oil, EU FOB NW Europe	703.00	**705.00**	726.01	729.93	732.82	737.66	743.40
Soybean seed: Arg. CIF Rott	258.00	**248.60**	258.26	265.55	266.72	267.64	270.12
Soybean cake(pell 44/45%): Arg CIF Rott	212.00	**223.80**	230.39	231.18	229.56	229.19	229.71
Soybean oil: Arg. FOB	469.00	**443.01**	471.29	491.77	502.36	511.98	522.99
Fishmeal: 64/65%, c&f Hamburg	659.00	**670.97**	690.72	693.08	688.22	687.13	688.67
Cheese	3,058.33	**2,689.46**	2,749.15	2,842.48	2,850.70	2,859.90	2,905.44
Butter	2,004.17	**1,754.76**	1,802.68	1,853.03	1,848.85	1,859.79	1,890.79
Skimmed Milk Powder	2,200.00	**1,983.26**	2,040.34	2,100.70	2,130.69	2,134.45	2,145.58
Whole Milk Powder	2,289.58	**2,069.11**	2,131.93	2,232.64	2,245.40	2,243.44	2,282.07
Nebraska, direct fed-steer	1,924.19	**1,850.42**	1,800.82	1,749.38	1,685.55	1,635.51	1,594.95
Chicken, U.S. 12-city wholesale	1,561.31	**1,444.49**	1,378.02	1,363.17	1,350.42	1,349.81	1,354.24
Hogs, U.S. 51-52% lean equivalent	1,103.41	**963.23**	877.92	907.13	1,004.18	1,085.96	1,048.62

White and Yellow maize

Area and Price

The white and yellow maize areas harvested decreased in 2006 by 43% and 48%, respectively, mainly because of low producer prices during 2005. This resulted in an increase in prices to between R1 000/ton and R1 200/ton on average for 2006. The projected increase in maize prices during 2006 causes planting to increase significantly in the 2006/07 season. During the remaining baseline period, area harvested is projected to remain stable, with prices moving between R800/t and R1000/ton. Probabilistic maize price simulations are presented on pages 14 and 15. The impact of the possible introduction of biofuels have not been taken into account in the projections.
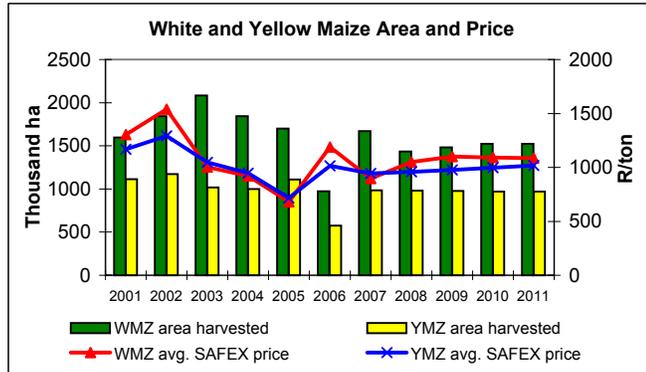
Production and Utilization

Maize production for 2006 is projected to decrease to 5,9 million tons due to the lower area harvested as well as lower yields compared to the 2004/05 season. Maize production is projected to increase above long-term average levels during 2006/07 after which it is projected to decrease during 2007/08 and then move around levels of 8,9 million tons. Human consumption is projected to decrease slightly, while animal feed consumption is projected to increase slightly. The reason is lower per capita consumption of maize as consumers substitute grain products for meat and other foodstuffs.
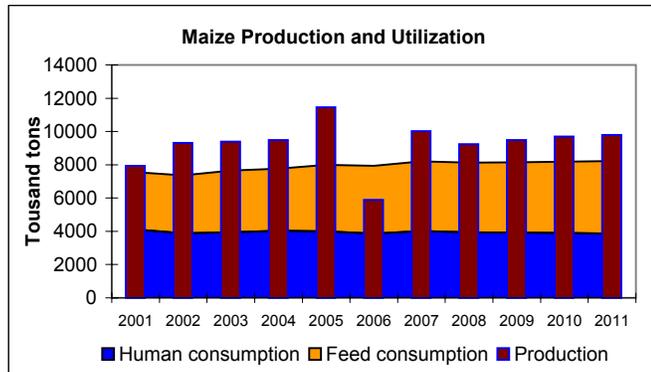
Trade

Maize exports is one of the key factors driving prices in the domestic maize market. Maize exports are projected to decrease significantly in 2006 compared to 2005 in response to lower maize production. During 2007, exports are projected to increase slightly, and then to stabilize with a possible slight increase towards the end of the baseline period. During the baseline period, white maize exports can be influenced mainly by levels of maize production in other SADC countries as well as changes in transport infrastructure and administration that either facilitate improved export efficiency or hamper exports.

White and Yellow Maize Area and Price

Maize Production and Utilization

Maize Exports
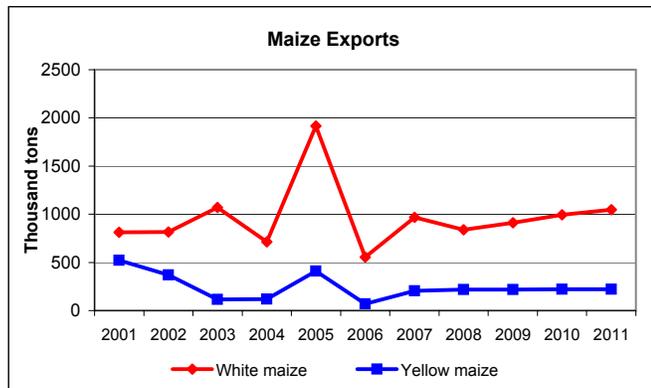
White and Yellow maize

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Area harvested				**thousand hectares**					
White maize	2,083	1,842	1,700	**973**	1,670	1,435	1,483	1,525	1,525
Yellow maize	1,017	1,001	1,110	**575**	983	981	975	970	970
Yield				**t/ha**					
White maize	3.06	3.15	3.85	**3.64**	3.67	3.70	3.73	3.76	3.79
Yellow maize	3.10	3.67	4.42	**4.10**	3.95	4.00	4.04	4.08	4.13
Production				**thousand tons**					
White maize	6,366.0	5,805.0	6,541.0	**3,538.1**	6,127.1	5,314.7	5,537.8	5,739.5	5,784.1
Yellow maize	3,026.0	3,677.0	4,909.0	**2,355.7**	3,886.2	3,924.1	3,943.0	3,962.9	4,001.6
Feed consumption									
White maize	641.0	733.0	606.0	**592.8**	728.5	652.6	646.1	669.5	691.2
Yellow maize	3,078.0	3,012.0	3,393.0	**3,471.6**	3,465.6	3,536.4	3,587.4	3,621.5	3,660.9
Human consumption									
White maize	3,687.0	3,766.0	3,746.5	**3,624.9**	3,768.0	3,699.8	3,672.4	3,652.5	3,626.2
Yellow maize	245.0	262.0	255.0	**240.2**	244.2	243.3	241.8	239.9	238.0
Total domestic use									
White maize	4,925.0	4,814.0	4,672.5	**4,462.7**	4,821.6	4,677.4	4,643.5	4,646.9	4,642.3
Yellow maize	3,809.0	3,531.0	4,280.0	**4,095.8**	3,891.7	3,961.7	4,011.2	4,043.4	4,080.9
Ending stock									
White maize	2,123.0	2,402.0	2,356.0	**998.8**	1,338.3	1,178.3	1,180.3	1,279.1	1,374.7
Yellow maize	501.0	746.0	1,291.5	**565.0**	758.5	849.4	896.4	925.8	954.2
Exports									
White maize	1,069.0	712.0	1,914.5	**554.6**	968.7	837.7	911.4	993.7	1,046.2
Yellow maize	116.0	120.0	408.5	**69.9**	205.3	217.1	219.2	220.1	220.5
Imports									
White maize	33.0	0.0	0.0	**122.1**	2.7	40.4	19.2	0.0	0.0
Yellow maize	408.0	219.0	325.0	**1,083.6**	404.3	345.5	334.5	330.0	328.2
Average SAFEX prices				**R/ton**					
White maize	1004.4	919.1	682.3	**1189.5**	895.3	1051.4	1099.3	1092.7	1086.0
Yellow maize	1047.1	946.4	716.1	**1016.0**	945.3	958.1	976.6	998.3	1018.5

Maize Stochastic Analysis

The deterministic results as presented in the preceding page do not take variations in rainfall and exchange rate into account. Hence, probability or stochastic simulations are done in order to take variation, and thus risk, into account. All the variables are presented in the form of probability distribution functions, with likely lowest value (left line), mean value (middle line) and likely highest value (right line). This does not imply that the variables cannot move outside of these values.

**Rainfall: Summer Grain Production Area**
Rainfall statistics of the past 30 years indicate a high probability of 545 mm of rainfall over the summer grain production area during the months critical for grain production (December to March). The likely minimum average rainfall is 368 mm and the likely maximum average 633 mm.

Stochastic simulation: Rainfall Summer Grain Production area (mm)
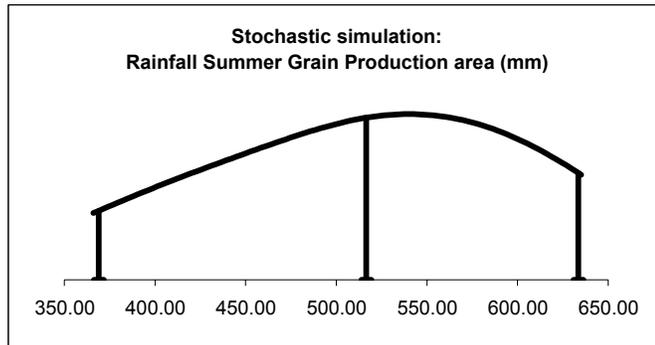
Rand/US Dollar Exchange Rate
At present international investors appear to be uncertain in terms of world economic growth prospects. Reason are high oil prices, variability and possible vulnerability in Dollar strength, recovery of the EU economy, as well as uncertainty with regards to the Middle East political future. All these factors impact on investor perceptions, which in turn influence the exchange rate strength and therefore variability in the exchange rate. Stochastic simulations were done taking a number of factors into account that could cause variability of the Rand/Dollar exchange rate. Results indicate that for 2006 on average, the Rand/$ rate could move between R5,94/US $ and R6,78/ US $ with a high probability of being R6,45/$ on average for 2006.

Stochastic simulation: Rand/$ Exchange rate for 2006
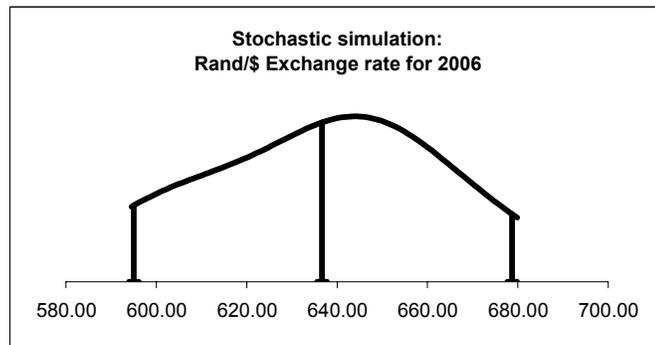
White Maize
Given the possible variation in rainfall, exchange rate, and therefore area planted with white maize,the white maize price can vary significantly during the period 2006 to 2011. Given the assumptions on rainfall and exchange rate, a possible range within which the average annual white maize can trade during the period 2007 to 2011 is between R776/ton and R1 249/ton. A possible decrease in the average annual white maize price can occur should the area planted with maize increase significantly compared to the 2005/06 area harvested. These are annual average Randfontein prices. The stochastic simulations do not take the impact of the possible introduction of biofuels into account.

Stochastic simulation: White Maize price
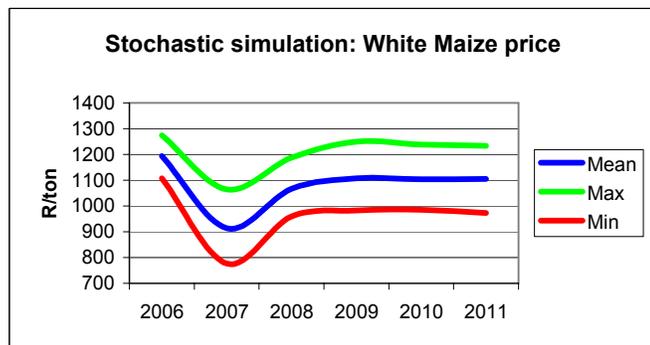
Maize Stochastic Analysis

Yellow Maize

Based on assumptions with regards to rainfall and exchange rate, along with possible change in the area planted with maize, yellow maize prices could vary significantly during the period 2007 to 2011. The average annual yellow maize price could move between R778/t and R1 207/t during the period given the assumptions. In response to a possible increase in maize area planted during 2007, yellow maize prices can decrease significantly. These prices do not indicate farm-gate prices, but annual average Randfontein prices. The stochastic simulations do not take the impact of the possible introduction of biofuels into account.

**Stochastic simulation: Yellow Maize price**
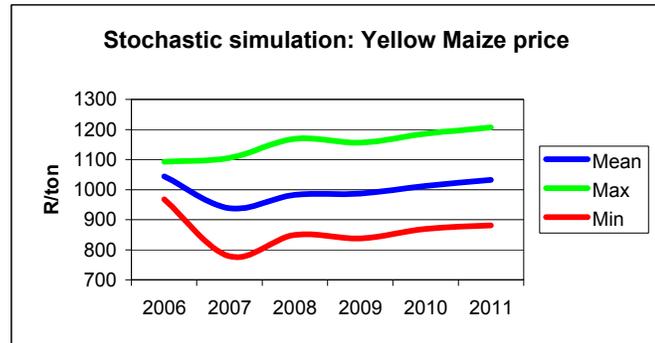
Wheat

Area and Price

The wheat summer area harvested during 2006 is projected to increase slightly compared to 2005 due to slightly higher projected prices. During 2007 the wheat summer area decreases significantly due to increased maize plantings. Wheat winter area remains relatively constant at 330 000 hectares during the baseline period. Reasons are relatively low producer prices as well as competitively priced imports. Wheat prices are projected to increase over the baseline period due to a depreciating exchange rate.

Wheat Area and Prices

Wheat summer area harvested · Wheat winter area harvested · Average SAFEX price
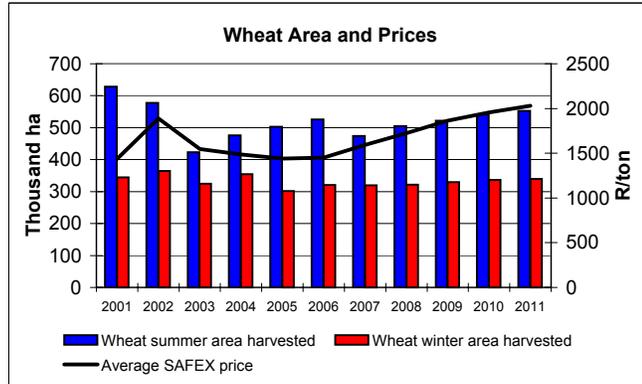
Production and Utilization

Wheat production is projected to decrease during 2007 because of a decrease in the summer area planted to wheat. Production is expected to increase slightly during the baseline period to reach a level of approximately 2,15 million tons during 2011. Domestic use remains relatively constant around levels of 2,8 million tons per annum.

Wheat Production and Utilization

Production · Domestic use
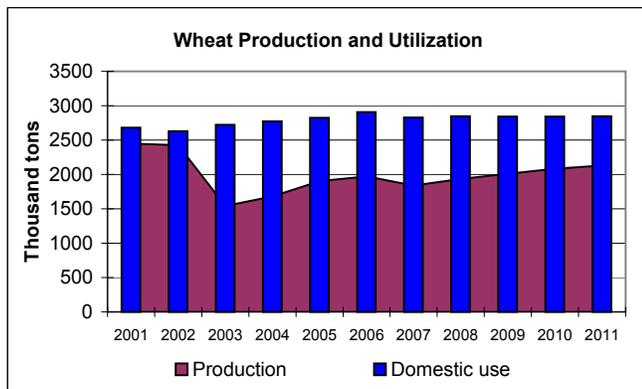
Trade

Wheat imports reached a maximum of 1,2 million tons in 2004, after which they started to decline. This declining trend in imports is projected to continue over the baseline period, although at a decreasing rate. The reasons for the declining trend are that production grows relatively faster than human consumption, as well as slightly increasing world wheat prices together with a depreciating exchange rate making imports more expensive relative to local wheat.

Wheat Trade

Exports · Imports
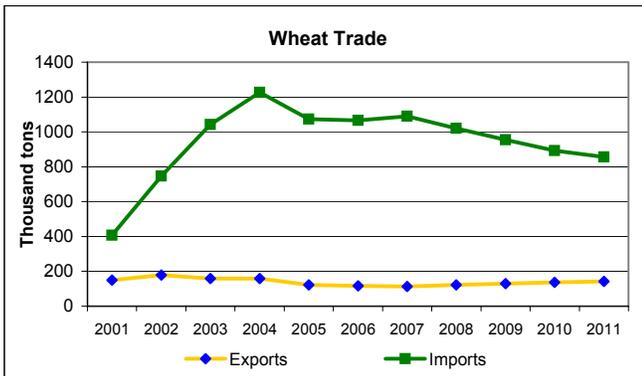
Wheat

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Area harvested				**thousand hectares**					
Summer area	423.0	476.0	503.0	**525.6**	473.6	505.1	521.9	541.4	552.9
Winter area	325.0	354.0	302.0	**321.0**	320.1	322.0	330.1	336.1	339.6
Average yield				**t/ha**					
Summer area	2.4	2.4	2.5	**2.7**	2.7	2.7	2.8	2.8	2.8
Winter area	1.6	1.5	2.1	**1.7**	1.7	1.7	1.7	1.7	1.7
Total wheat				**thousand tons**					
Production	1,540.0	1,680.0	1,905.0	**1,970.6**	1,838.0	1,937.4	2,007.7	2,082.0	2,130.4
Feed consumption	50.0	23.0	41.0	**98.7**	76.9	72.5	67.3	65.1	63.9
Human consumption	2,652.0	2,734.0	2,762.0	**2,788.0**	2,731.2	2,754.1	2,755.7	2,757.7	2,762.7
Domestic use	2,723.0	2,773.0	2,825.0	**2,906.4**	2,827.7	2,846.3	2,842.7	2,842.5	2,846.3
Ending stocks	598.0	574.0	606.0	**619.4**	607.0	597.1	586.2	580.8	579.7
Exports	158.0	158.0	122.0	**116.2**	113.1	121.7	130.0	137.6	142.0
Imports	1,042.0	1,227.0	1,074.0	**1,065.4**	1,090.4	1,020.8	954.1	892.7	856.8
				R/ton					
Average SAFEX price	1,546.0	1,486.6	1,439.4	**1,452.2**	1,591.5	1,725.4	1,864.9	1,954.4	2,030.2

Stochastic Analysis: Wheat 2006

For the wheat industry, a stochastic overview is provided specifically for the 2006/07 season and not over the baseline. Three variables were identified that are likely to cause most variability in the local wheat market namely the exchange rate, rainfall and the world price. All the variables are presented in the form of probability distribution functions, with likely lowest value (left line), mean value (middle line) and likely highest value (right line). This does not imply that the variables cannot move outside of these values.

Exchange Rate

At present international investors appear to be uncertain in terms of world economic growth prospects. Reasons are high oil prices, variability and possible vulnerability in Dollar strenght, recovery of the EU economy, as well as uncertainty with regards to the Middle-East political future. All these factors impact on investor perceptions, which in turn influence the exchange rate's strength and therefore variability in the exchange rate. Stochastic simulations were done taking a number of factors into account that could cause variability of the Rand/Dollar exchange rate. Results indicate that for 2006 on average, the Rand/$ rate could move between R5,94/$ and R6,78/$ with a high probability of being R6,45/$ on average for 2006.
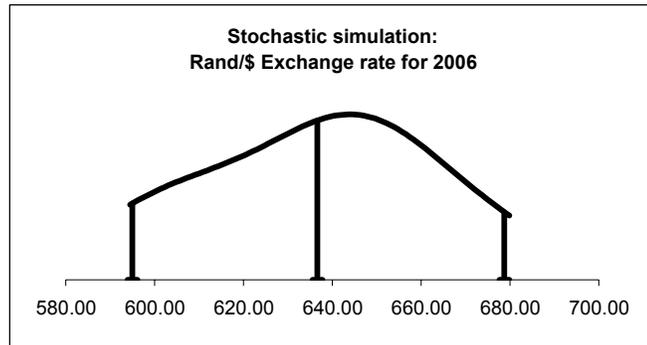
Rainfall: Summer Rainfall Region

Rainfall statistics of the past 30 years indicate a high probability of 185 mm of rainfall over the critical months influencing wheat production in the summer rainfall region. The likely minimum rainfall is 103 mm and the maximum 277 mm. Important to note is that this stochastic rainfall differs from the rainfall that was used in the stochastic analysis of white and yellow maize because the critical months that influence maize and wheat production are different.
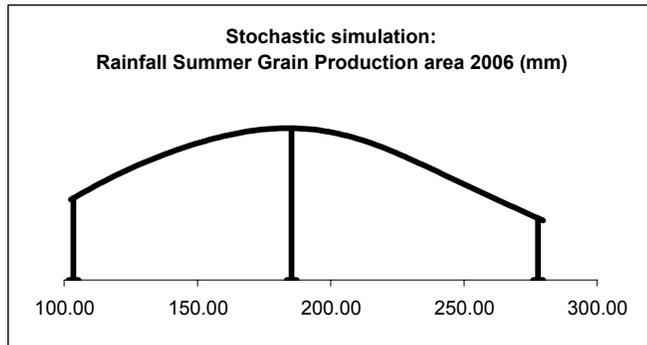
Rainfall: Winter Rainfall Region

Rainfall statistics of the past 30 years indicate a high probability of 280 mm of rainfall over the critical months influencing wheat production in the winter rainfall region. The likely minimum rainfall is 195 mm and the maximum 378 mm.

Stochastic simulation:
Rand/$ Exchange rate for 2006

580.00 600.00 620.00 640.00 660.00 680.00 700.00

Stochastic simulation:
Rainfall Summer Grain Production area 2006 (mm)

100.00 150.00 200.00 250.00 300.00

Stochastic simulation:
Rainfall Winter Grain Production area 2006 (mm)

180.00 230.00 280.00 330.00 380.00
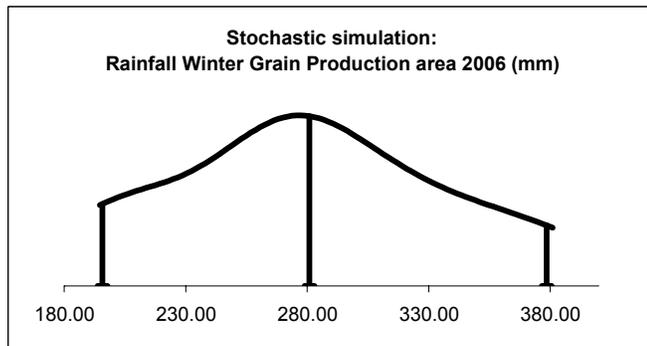
Stochastic Analysis: Wheat 2006

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 $156/ton for the 2006/07 season. The FAPRI 2006 baseline projects a price of $157,5/ton.

Stochastic simulation:
US Hard Red Winter Price 2006 ($/ton)
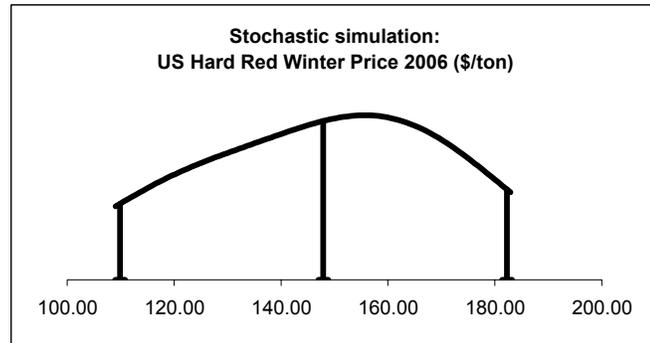
Wheat Price

Due to variations in the exchange rate, rainfall and the world wheat price, it is likely that the SAFEX wheat price will vary between R1412/ton and R1738/ton. The stochastic simulation of the SA Wheat price suggests that there is a high probability that the average wheat price for 2006 will trade at approximately R1478/ton.

Stochastic simulation:
SA Wheat Price 2006 (R/ton)
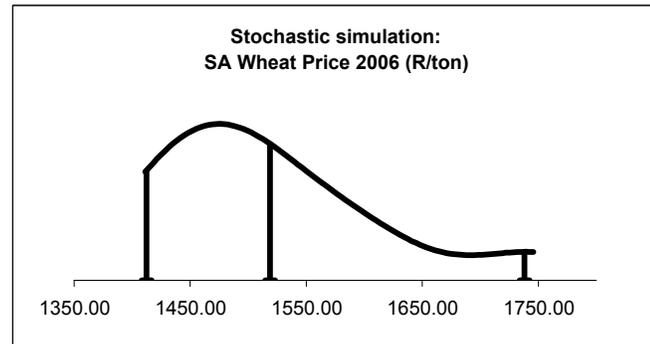
Sorghum

Area and Price

During the past couple of years significant variation has occurred in the sorghum area harvested and sorghum prices. Maize is normally the dominant crop and therefore influences the area planted to sorghum. The sorghum price for 2006 is projected to increase significantly compared to 2005 due to a relatively small area planted to sorghum. The sorghum area however increases in 2007 due to higher prices in 2006. Prices are projected to increase slightly from 2007 onwards, with area harvested remaining relatively stable.

Sorghum Area and Price
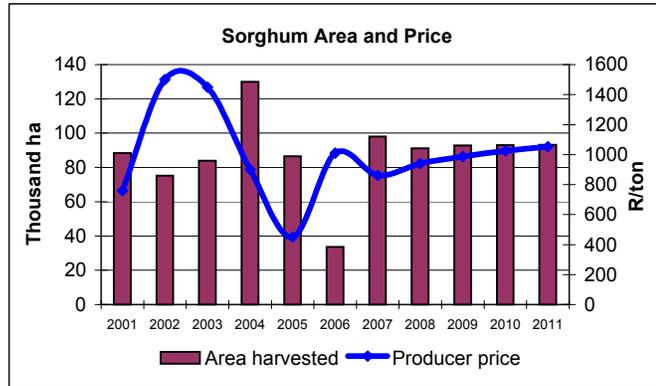
Production and Utilization

Although production has varied significantly during the past four years, it is projected that sorghum production will stabilize at approximately 270 000 tons per annum. Consumption is however decreasing over the baseline period as consumer preferences change towards premium and other beers, away from traditional beers.

Sorghum Production and Utilization
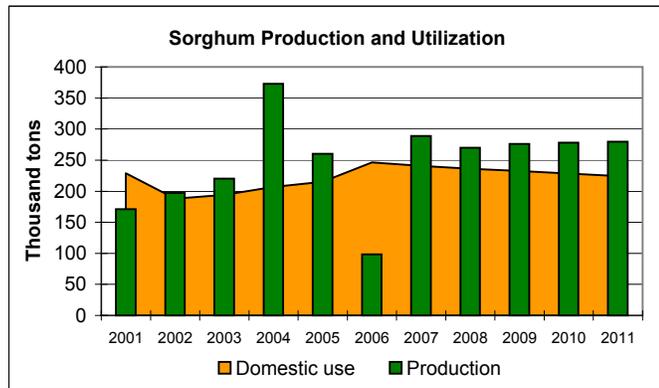
Stocks and Trade

The significant decrease in production of sorghum during 2006 is projected to cause imports of sorghum of around 84 000 tons during 2006. The decrease in production is also expected to influence stock levels, causing a decrease in stocks until 2008 after which stocks are projected to stabilize.

Sorghum Stocks and Net Exports

19
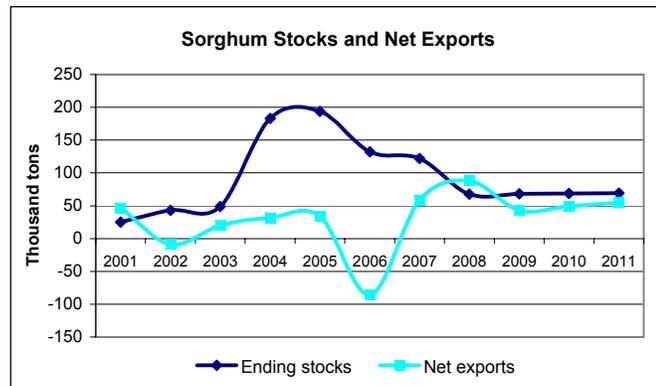
Sorghum

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
				thousand hectares					
Area harvested	84.0	130.0	86.5	**33.5**	98.0	91.3	92.9	93.1	93.2
				t/ha					
Average yield	2.8	2.9	3.0	**2.9**	2.9	3.0	3.0	3.0	3.0
				thousand tons					
Production	220.0	373.0	260.0	**98.3**	288.7	270.0	275.9	277.9	279.4
Feed consumption	10.0	10.0	12.0	**29.2**	29.7	27.9	27.1	25.8	25.1
Human consumption	169.0	170.4	171.4	**201.9**	200.8	198.3	195.5	192.5	189.3
Domestic use	194.0	207.0	215.0	**246.2**	240.5	236.3	232.6	228.2	224.4
Ending stocks	49.0	183.0	194.0	**132.2**	122.1	67.7	68.2	68.6	69.0
Net exports	20.0	32.0	34.0	**-86.1**	58.3	88.1	42.8	49.2	54.5
				R/ton					
Average producer price	1,450.0	900.0	450.0	**1,010.2**	862.0	940.9	986.0	1,025.4	1,053.5

Barley

Area and Price

Barley is mainly produced for beer production in South Africa, and therefore has to compete against high quality imported barley from mainly Canada and Australia. Barley competes with wheat in the Southern Cape and the area is projected to remain relatively constant. An increase in area can however occur if barley plantings in irrigation areas increase. The barley price is projected to increase due to a depreciating exchange rate, making imports more expensive.

Barley Area and Price

Chart showing Area harvested (Thousand ha, left axis 0–100) as bars and Producer price (R/ton, right axis 0–2000) as a line, for years 2001–2011.
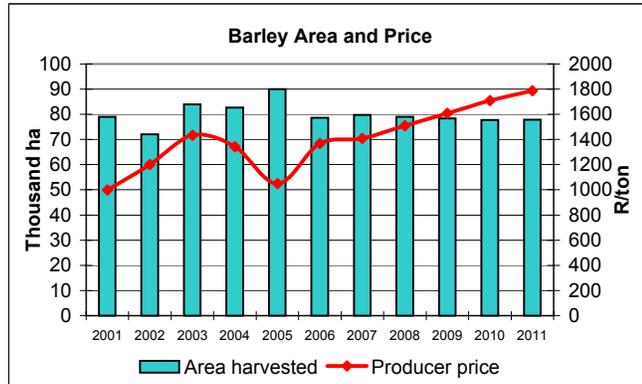
Production and Utilization

Due to relatively stable demand for South African barley because of it's use in the production of specific beers, demand for local barley is projected to remain constant. This impacts on production of barley which is therefore also expected to remain fairly constant. On top of a stable demand for South African barley, use of imported barley of which the characteristics differ from South African barley is expected to increase. Imported barley is mainly used in the production of premium beers. Therefore, total domestic use of barley is projected to increase.

Barley Production and Utilization

Chart showing Production (green) and Domestic use (blue) in Thousand tons (0–450) for years 2001–2011.
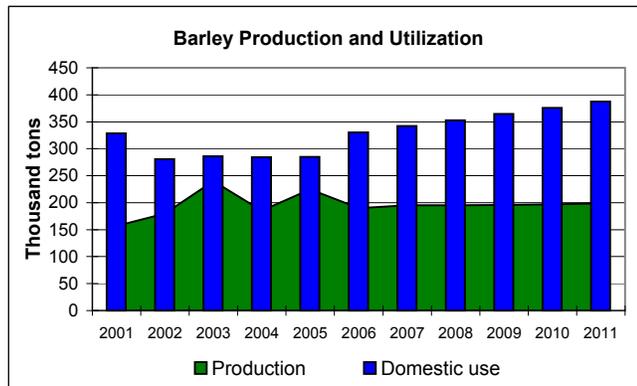
Trade

Demand for premium beers is expected to increase during the baseline period due to economic development and urbanization. This impacts on the demand for imported barley mainly from Canada and Australia of which the barley characteristics differ from local barley. Net imports are therefore projected to increase over the baseline period although the exchange rate is projected to depreciate. A significant increase in barley imports is projected for 2006 due to increased domestic use.

Barley Net Imports

Chart showing Net Imports (Thousand tons, 0–240) as a line for years 2001–2011.

21
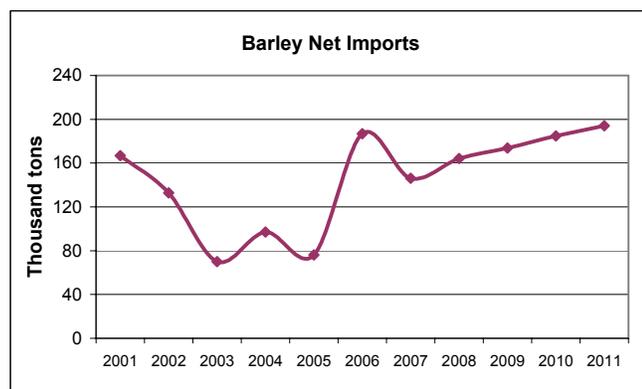
Barley

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
				thousand hectares					
Area harvested	84.0	82.7	90.0	**78.7**	79.8	79.0	78.4	77.8	77.8
				t/ha					
Average yield	2.9	2.2	2.5	**2.4**	2.4	2.5	2.5	2.5	2.6
				thousand tons					
Production	240.0	185.0	225.0	**189.8**	195.1	195.4	196.1	196.8	199.0
Domestic use	286.2	284.0	285.0	**330.0**	342.1	352.9	364.2	375.6	387.6
Human consumption	266.0	262.0	265.0	**306.8**	318.3	328.4	339.0	349.9	361.4
Ending stock	102.0	100.0	116.0	**162.7**	161.7	168.2	173.8	179.7	185.3
Net imports	70.0	97.0	76.0	**186.9**	146.0	164.1	173.8	184.7	194.1
				R/ton					
Average producer price	1,433.0	1,342.3	1,050.0	**1,368.0**	1,407.5	1,509.2	1,608.7	1,708.0	1,788.2

Sunflower

Area and Price

The sunflower price for 2006 is projected to increase compared to 2005 levels. The price increase is caused by a lower than expected area harvested, higher international prices due to high oil prices as well as a depreciating exchange rate. Area harvested is projected to increase during 2007 and 2008 because of relative better profitability compared to maize. This impacts on price, and prices are therefore expected to remain around levels of R2100/ton. Area is expected to decrease slightly during the remaining baseline period. Prices are expected to follow an increasing trend due to a depreciating exchange rate as well as a decreasing harvested area.
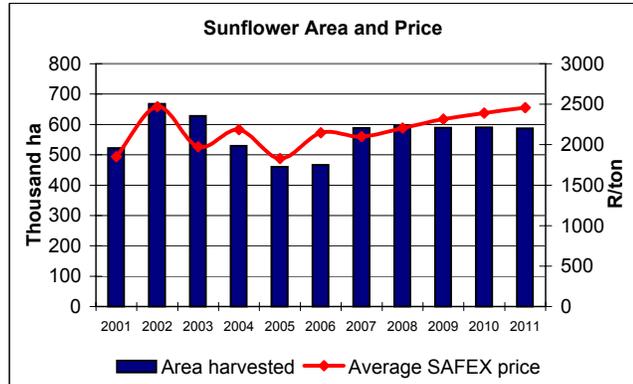
Seed Production and Utilization

Sunflower seed production is projected to exceed the utilization of seed by local crushers in 2007. 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.
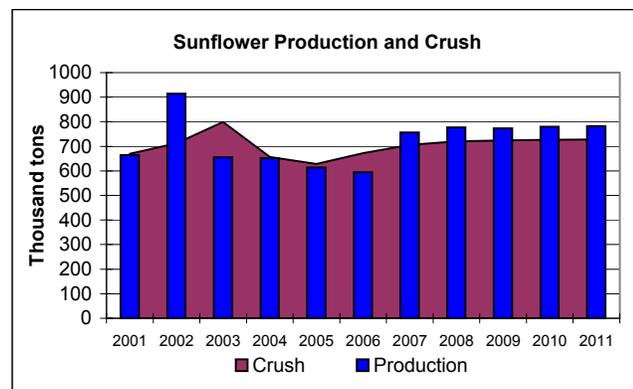
Cake Utilization and Price

Currently, sunflower cake trades at approximately R1150/ton, which is lower than the projected prices for 2006. It is expected that local cake prices will be supported by a constant increase in the consumption of cake in the feed market and the projected increase in the soybean cake price. These products compete in the protein 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 354 000 tons in 2011.
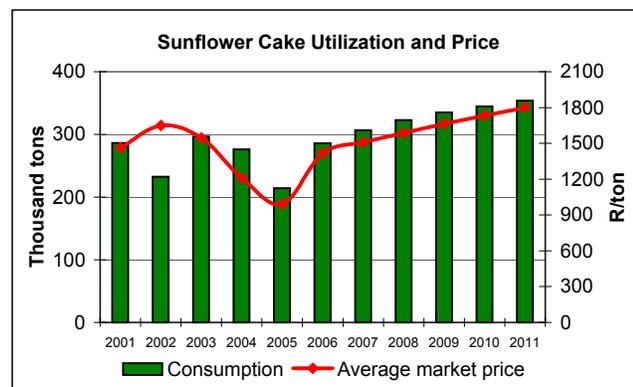
Sunflower

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Sunflower seed				thousand hectares					
Area harvested	628	530	460	**466**	588	598	589	590	587
				t/ha					
Average yield	1.38	1.23	1.34	**1.28**	1.29	1.30	1.31	1.32	1.33
				thousand tons					
Production	656	651	614	**595**	757	777	773	780	782
Crush	799	657	628	**672**	707	720	724	727	728
Domestic use	816	674	641	**687**	719	732	736	739	740
Ending stock	125	120	100	**102**	151	156	155	157	158
Net Imports	2	18	6	**94**	11	-40	-38	-38	-41
				R/ton					
Average SAFEX price	1,974	2,185	1,828	**2,145**	2,098	2,208	2,315	2,391	2,457
Sunflower cake				thousand tons					
Production	336	276	264	**282**	297	302	304	305	306
Domestic use	296	276	214	**286**	307	323	335	345	354
Change in Stock	44	32	56	**69**	71	72	72	72	72
Net imports	5	32	6	**73**	81	93	103	112	120
				R/ton					
Average market price	1,545	1,210	992	**1,419**	1,508	1,585	1,663	1,733	1,800

Soybeans

Area and Price

The harvested soybean area increases significantly during 2006. Despite the increase in area, prices are projected to increase due to increased demand for soybeans to use as animal feed. Area harvested is projected to first decrease from 2006 levels until 2008, and then to follow an increasing trend. Prices are projected to follow an increasing trend over the baseline period due to strong demand for animal feed use. The impact of the possible introduction of biodiesel from soybeans is not included in the baseline projections.
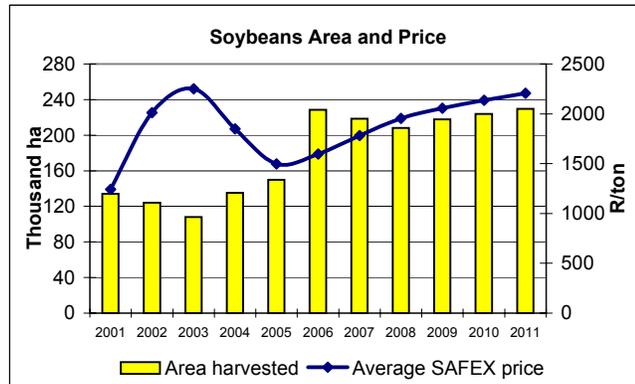
Seed Production and Utilization

Soybean production for 2006 is projected at 400 000 tons. This will be the largest crop in the history of South Africa and represents an increase of 50% from 2005. Production is projected to remain fairly stable at these levels. Currently 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 12% until 2011. The big question is whether surplus production will be consumed by the biofuels market or will domestic prices decrease for the surplus to be consumed in the protein market.
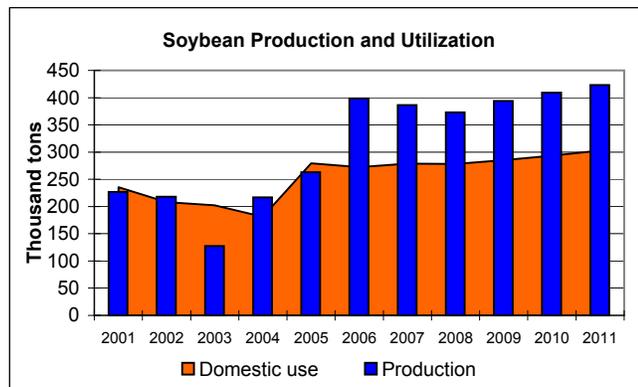
Cake Utilization and Price

Soybean cake consumption is projected to increase to 684 000 tons in 2011. Domestic cake production only amounts to approximately 20 000 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 R2507/ton in 2011. The local production of soybean cake can sharply increase with the introduction of biofuel production from soybeans. This will influence local price formation drastically.

Soybeans Area and Price

Soybean Production and Utilization

Soybean Cake Utilization, Imports and Price
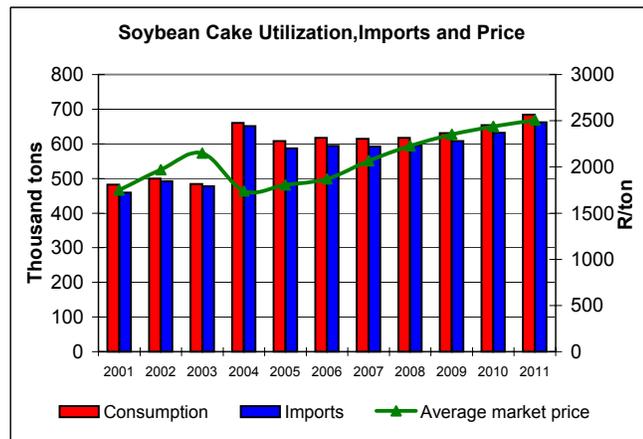
Soybeans

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Soybeans				thousand ha					
Area harvested	108	135	150	**229**	218	208	218	224	230
				t/ha					
Average yield	1.18	1.61	1.75	**1.74**	1.77	1.79	1.81	1.83	1.84
				thousand tons					
Production	127.2	217.0	262.9	**398.7**	386.3	373.1	394.1	409.0	423.1
Feed consump.full fat	144.3	128.1	212.0	**184.9**	191.2	191.3	198.0	206.4	215.5
Crush	7.5	11.5	25.7	**26.3**	26.3	26.0	26.2	26.2	26.2
Domestic use	202.1	181.0	279.4	**272.2**	278.5	278.4	285.2	293.7	302.7
Ending stock	48.7	100.5	89.1	**92.7**	91.4	88.1	86.4	86.0	86.4
Net imports	18.3	15.8	5.1	**-122.9**	-109.1	-98.1	-110.6	-115.7	-119.9
				R/ton					
Average SAFEX price	2,250	1,850	1,497	**1,596**	1,780	1,954	2,057	2,135	2,207
Soybean cake				thousand tons					
Production	6.0	9.2	20.6	**22.5**	22.4	22.2	22.3	22.3	22.3
Domestic use	483.8	660.6	607.9	**617.2**	614.4	617.7	630.6	654.2	684.3
Net imports	477.8	651.4	587.4	**594.7**	592.0	595.5	608.3	631.9	662.0
				R/ton					
Average market price	2,150	1,740	1,805	**1,871**	2,067	2,228	2,353	2,438	2,507

Chicken Meat

International

The outbreak of AI, particularly in Asia, has affected the poultry market, which posted a weak 0.6% growth in trade in 2004. International trade is projected to recover with a growth rate of 2.2% over the rest of the decade. US prices are also projected to increase at an average rate of 0.3% per annum..

Imports and Exports

Brazilian chicken production and exports are projected to continue expanding with exports capturing a larger portion of the international market. Brazilian exports to South Africa continue to make up a substantial portion of the domestic market , with an average annual of increase of 6.3%. Imports are projected to supply approximately 16.8% of local consumption during the period 2006-2011. South African exports remain relatively small over the 2006-2011 projection period, with an average of 1.27 thousand tons.

Production and Consumption

South African chicken production is projected to expand by an average of 1.6% a year to reach 1.13 million tons in 2011. The higher production is as a result of strong domestic demand and higher ex abattoir prices, which are projected to reach an average price of R14.07/kg in 2011.

In the long term consumers are expected to continue eating chicken at an average additional 430g of chicken per person per year. This brings the total consumption of chicken to approximately 1.4 million tons in 2011.

The projected increase in per capita poultry consumption is positvely correlated with South Africa's GDP per capita growth. Potential growth in poultry expenditure by the "new black middle income class" is seen to be one of the major drivers for this increase in per capita consumption (refer to the section on consumer trends for further information).

South African chicken industry projections have been made assuming that "business continues as usual" and that there is no outbreak of Avian Influenza in South Africa or in Brazil.

Chicken Production,Utilization and Price

Chicken Imports and Exports

Per Capita Chicken Consumption
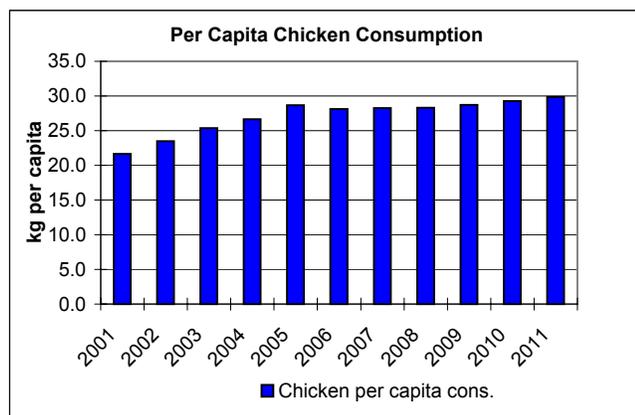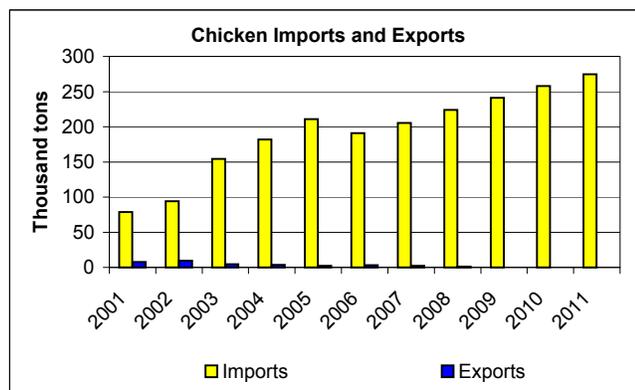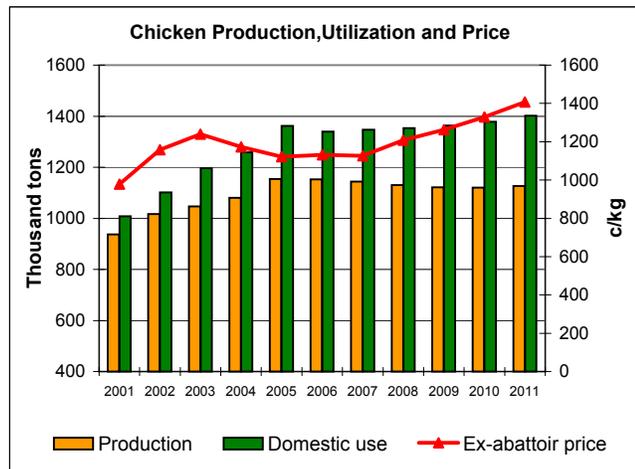
Chicken Meat

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Chicken				**thousand tons**					
Production	1,047.2	1,080.0	1,153.4	**1,152.2**	1,143.8	1,130.7	1,121.4	1,120.8	1,126.8
Domestic use	1,196.6	1,258.3	1,362.3	**1,340.0**	1,346.9	1,353.8	1,362.7	1,378.6	1,401.5
Imports	154.1	182.0	211.1	**190.9**	205.5	224.1	241.3	257.8	274.7
Exports	4.7	3.7	2.2	**3.2**	2.4	1.1	0.0	0.0	0.0
				c/kg					
Average producer price (ex abbatoir)	1,239.0	1,173.0	1,121.0	**1,131.4**	1,127.0	1,207.2	1,262.7	1,329.9	1,407.3

Red Meat

Beef

Beef production is projected to decline slightly in 2006 (due to producers building herd stock), then remain constant until it starts increasing again in 2009 onwards. Domestic demand is expected to soften in response to record level beef prices in 2005 and 2006. For the remaining baseline period beef consumption is projected to grow at a moderate rate due to projected growth in personal disposable income of the South African population. Prices are projected to decline until 2008, but are projected to start increasing again by 2009 and remain increasing over the baseline period.

Beef Prodution, Utilization and Price
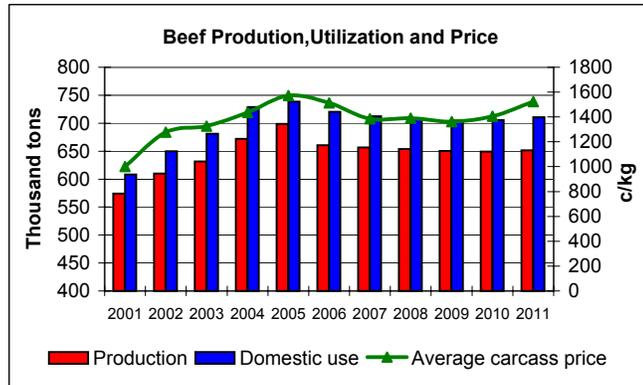
Pork

Pork production is projected to peak in 2006 as a result of high pork prices and low feed costs in 2005. Prices are projected to decrease in 2006 and 2007. After 2008, production is expected to increase but at a decreasing rate. Consumption is projected to increase from 2008 onwards at a rate slightly faster than that of production, causing an increasing price trend over the baseline period.

Pork Production and Utilization
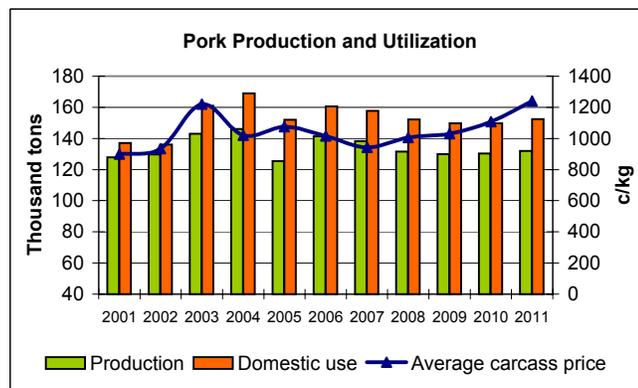
Mutton

Mutton follows a similar trend as beef but prices are projected to decrease only marginally in 2007 and 2008. Prices are supported by a decrease in slaughterings as well as a decrease in imports. Production is expected to increase after 2008 but at a decreasing rate. Similar to the other red meats, consumption of mutton is projected to increase from 2008 onwards at a rate slightly faster than that of production, causing an increasing price trend over the baseline period.

Mutton Production and Utilization
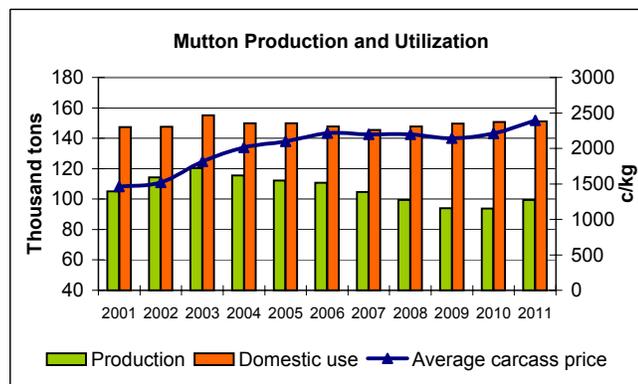
Red Meat

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Beef				thousand tons					
Production	631.8	672.2	698.8	**660.3**	656.6	653.6	650.3	649.4	651.5
Domestic use	681.0	728.8	738.7	**720.2**	712.3	708.9	705.1	705.5	710.8
Imports	55.6	61.0	62.5	**62.6**	58.7	58.4	57.9	59.0	62.1
Exports	6.4	4.4	2.2	**2.8**	3.0	3.1	3.1	3.0	2.8
				c/kg					
Average carcass price	1,325.5	1,436.3	1,572.5	**1,512.7**	1,385.4	1,391.1	1,362.6	1,405.1	1,523.1
Pork				thousand tons					
Production	143.1	146.1	125.4	**141.3**	138.2	131.6	129.9	130.2	131.9
Domestic use	161.0	169.0	152.0	**160.6**	157.6	152.2	149.8	149.8	152.4
Imports	17.9	22.9	26.6	**22.0**	22.1	23.1	22.6	22.4	23.1
Exports	0.0	0.0	0.0	**2.7**	2.7	2.5	2.8	2.9	2.6
				c/kg					
Average carcass price	1,219.8	1,020.1	1,075.4	**1,015.1**	941.8	1,005.9	1,030.2	1,108.6	1,241.4
Mutton				thousand tons					
Production	120.3	115.5	112.2	**110.7**	109.1	111.1	114.0	115.8	117.2
Domestic use	155.0	149.9	149.9	**147.7**	145.4	147.7	149.8	150.7	151.1
Net Imports	34.7	34.4	37.7	**37.0**	36.3	36.6	35.7	34.9	33.9
				c/kg					
Average carcass price	1,818.1	2,012.6	2,100.5	**2,215.8**	2,277.5	2,418.1	2,541.9	2,662.4	2,778.6

Milk

Milk Production and Utilization

During 2005 milk production increased slightly in response to lower feed costs. However, because of higher projected maize prices for 2006, feed costs are expected to increase and hence production is likely to decrease. Milk production is increasingly being moved to the coastal regions in South Africa due to variability in maize prices and relatively low producer prices putting pressure on profit margins of milk producers. Because areas available for grazing at the coast are limited, production is projected to remain relatively constant over the baseline period. Utilization of milk is projected to increase slightly due to increased consumption of fresh and processed dairy products. Reasons for increased consumption include changing consumer preferences due to increased personal disposable income. Utilization of milk is projected to remain above production of milk during the baseline period.

Milk Price

Since 2003 producer prices have remained fairly constant, and even decreased slightly at the end of 2005 due to low maize prices and hence lower feed costs and increased supply. This trend is projected to change during 2006 as "cheap" maize is worked out of the market. Due to projected increased maize prices in 2006, the milk price is projected to start increasing in 2007 (R2,02/litre) and remain increasing over the baseline period. A reason for the increasing price trend from 2007 onwards is due to demand for milk projected to remain above production of milk. Due to a depreciating exchange rate, imports of dairy products are expected to become more expensive, hence giving further impetus to price increases.

Milk Production

Milk Utilization

Fluid Milk Producer Price
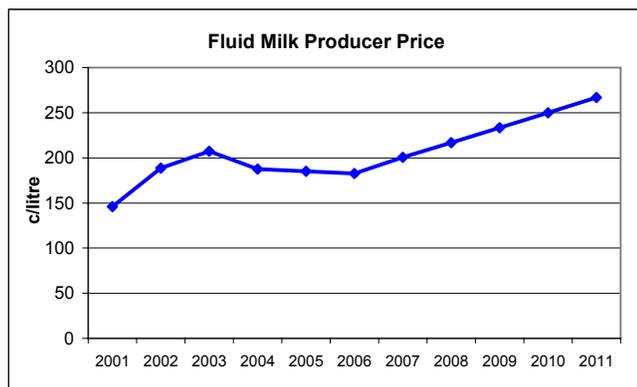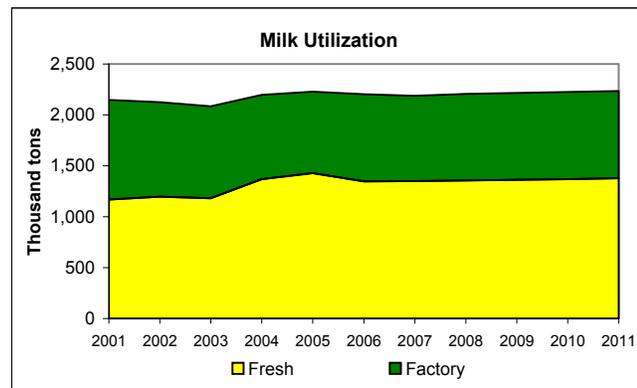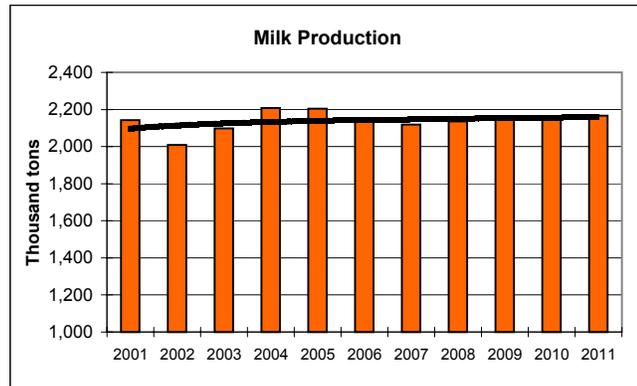
Milk

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Fluid milk				**billion litres**					
Production	2,050.2	2,158.6	2,155.6	2,085.5	2,071.3	2,087.6	2,096.7	2,107.3	2,117.3
Fresh consumption	1,154.1	1,336.7	1,396.0	1,317.5	1,320.1	1,326.6	1,333.0	1,339.2	1,345.8
				thousand tons					
Production	2,097.4	2,208.3	2,205.2	**2,133.5**	2,119.0	2,135.6	2,144.9	2,155.8	2,166.0
Fresh consumption	1,180.6	1,367.4	1,428.1	**1,347.8**	1,350.4	1,357.2	1,363.7	1,370.0	1,376.7
Factory consumption	905.1	830.0	800.0	**854.9**	837.7	847.7	850.5	855.0	858.5
				c/litre					
Average producer price	207.3	187.5	185.2	**182.7**	200.7	216.8	233.3	249.9	266.9

Cheese and Butter

Cheese Production, Utilization and Price
Domestic cheese consumption is expected to
increase from 2007 onwards 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 2004
and 2005 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.

Cheese Production, Utilization and Price
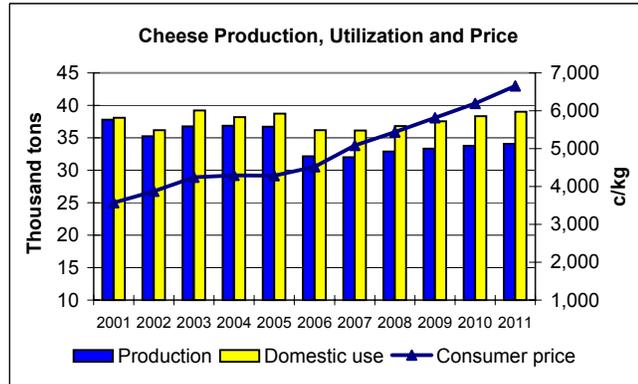
Butter Production, Utilization and Price
Butter consumption is projected to remain
constant at approximately 12 000 tons over the
baseline period. However, domestic prices will
be supported by a decrease in production and
reach a level of R35/kg in 2011.

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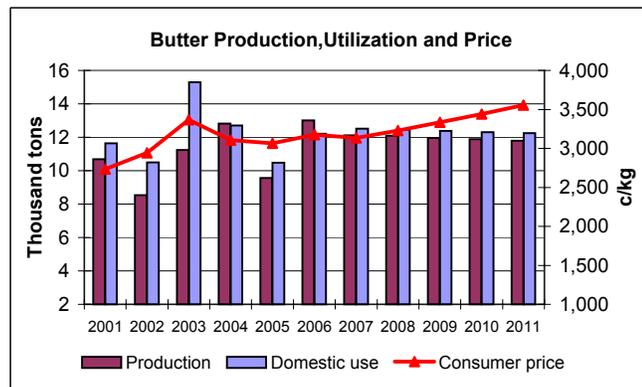
Cheese and Butter Trade
The gap between cheese imports and exports
is expected to widen as domestic consumption
outgrows domestic production. Current
projections suggest that butter will remain a net
import commodity over the next few years.
However, the gap between imports and exports
is projected to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

Cheese and Butter Trade
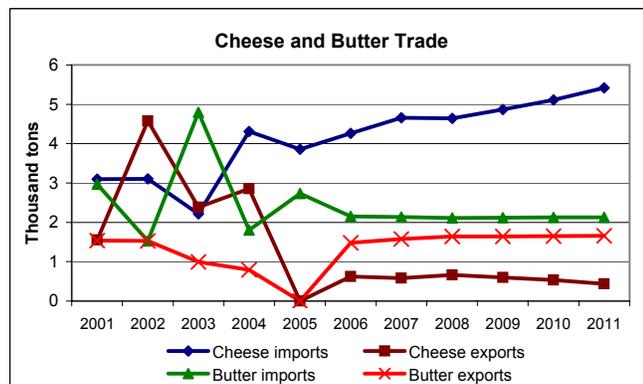
Cheese and Butter

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Cheese				thousand tons					
Production	36.77	36.88	36.72	**32.15**	32.01	32.91	33.31	33.80	34.09
Domestic use	39.20	38.20	38.73	**36.19**	36.15	36.81	37.53	38.32	39.04
Ending stock	4.46	4.01	4.01	**3.61**	3.55	3.63	3.68	3.74	3.77
Imports	2.21	4.31	3.86	**4.26**	4.66	4.64	4.86	5.11	5.42
Exports	2.39	2.86	0.00	**0.62**	0.58	0.66	0.60	0.53	0.44
				c/kg					
Average consumer price	4,242.2	4,295.3	4,285.0	**4,521.2**	5,086.8	5,439.9	5,814.8	6,195.6	6,654.8
Butter				thousand tons					
Production	11.23	12.81	9.57	**13.01**	12.12	12.09	11.96	11.88	11.80
Domestic use	15.30	12.70	10.48	**12.20**	12.51	12.45	12.38	12.31	12.24
Ending stock	5.33	2.75	2.75	**4.23**	4.40	4.51	4.56	4.60	4.63
Imports	4.79	1.81	2.74	**2.15**	2.14	2.11	2.12	2.12	2.13
Exports	1.00	0.79	0.00	**1.48**	1.58	1.64	1.64	1.65	1.66
				c/kg					
Average consumer price	3,365.6	3,107.2	3,065.0	**3,176.5**	3,133.1	3,229.8	3,333.9	3,441.6	3,555.2

SMP and WMP

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, 19 090 tons in 2002 and 12 450 in 2005. Production is expected to stabilize around 9 500 tons with a slightly inclining trend. Consumption is projected to increase over the baseline to a level of 12 980 tons in 2011. Similar to cheese, the price increase is aided by the gradual depreciation in the exchange rate.

SMP Production, Utilization and Price
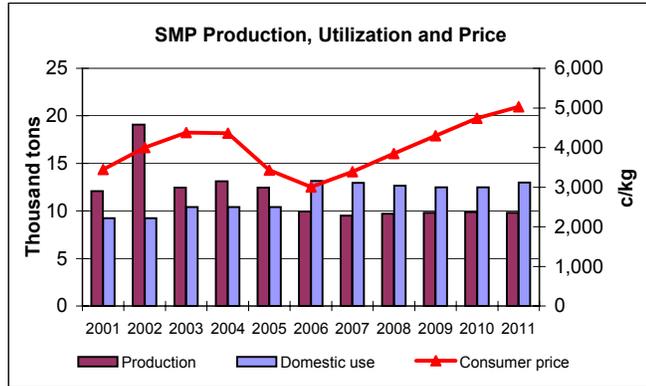
WMP Production, Utilization and Price

Whole milk powder (WMP) production increases by 11% over the baseline. Prices will recover from the low levels projected for 2006 to reach R7.72/kg in 2011. Domestic production is projected to equal domestic consumption.

WMP Production, Utilization and Price
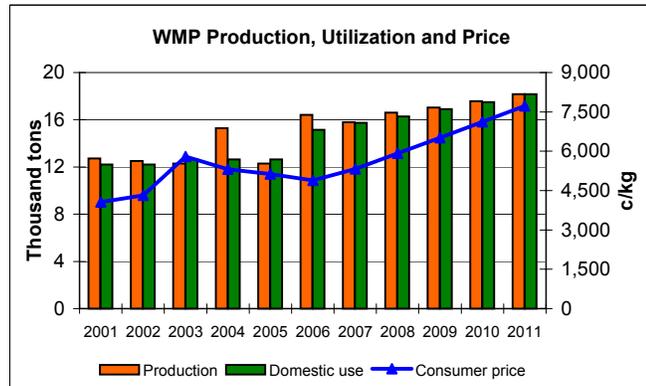
SMP and WMP Trade

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 7 100 tons of imports and 4 100 tons of exports.

Little trade is projected for WMP over the baseline.

SMP and WMP Trade

35
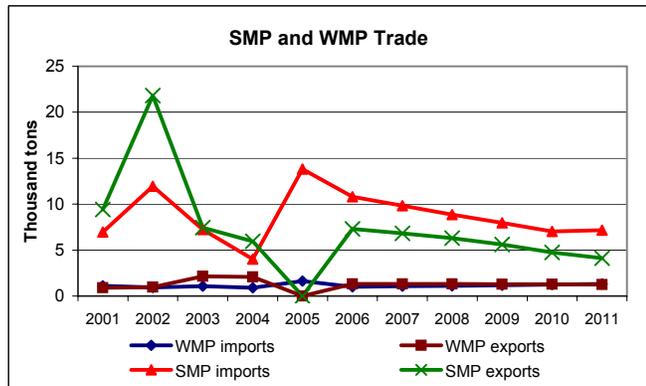
SMP and WMP

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Skimmed milk powder (SMP)				thousand tons					
Production	12.45	13.13	12.45	**9.95**	9.52	9.72	9.79	9.87	9.82
Domestic use	10.42	10.42	10.42	**13.16**	12.96	12.64	12.49	12.47	12.98
Ending stocks	2.40	1.83	1.83	**2.11**	1.67	1.31	0.98	0.68	0.56
Imports	7.23	4.01	13.81	**10.79**	9.83	8.88	7.95	7.04	7.17
Exports	7.45	5.97	0.00	**7.30**	6.83	6.32	5.59	4.73	4.13
				c/kg					
Average consumer price	4,379.7	4,361.1	3,433.0	**3,007.5**	3,389.4	3,849.4	4,301.2	4,737.2	5,026.8
Whole milk powder (WMP)				thousand tons					
Production	12.29	15.27	12.29	**16.43**	15.81	16.59	17.04	17.58	18.17
Domestic use	12.63	12.63	12.63	**15.14**	15.73	16.29	16.89	17.51	18.16
Ending stocks	1.71	2.53	2.53	**3.51**	3.35	3.44	3.47	3.52	3.58
Imports	1.08	0.90	1.64	**1.02**	1.07	1.09	1.16	1.24	1.31
Exports	2.16	2.08	0.00	**1.32**	1.30	1.30	1.29	1.27	1.25
				c/kg					
Average consumer price	5,797.7	5,318.3	5,125.0	**4,891.8**	5,320.3	5,918.3	6,510.7	7,121.7	7,726.9

Wine

Wine Prices

Real wine prices decreased in 2004 and 2005. This trend however stabilises and prices show a slight increase toward 2010/2011 due to the increased export demand.

Wine prices

Rands/litre

Good wine price
Rebate wine price
Distilling wine and grape juice price
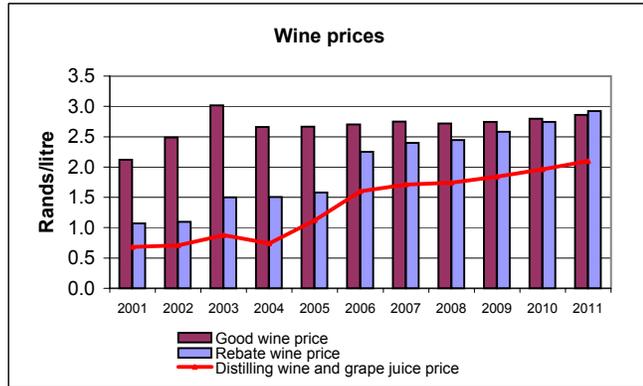
Wine exports

Wine exports increased by 12% in 2003/2004 and a further 5% in 2004/2005. Due to an assumed gradual depreciation of the Rand/US$ and Rand/Euro exchange rates, exports are expected to continue to increase. However, exports to some countries are likely to be affected by increased production in other new world countries.

Exports per country

1000 litres

UK   Netherlands   Germany   Sweden
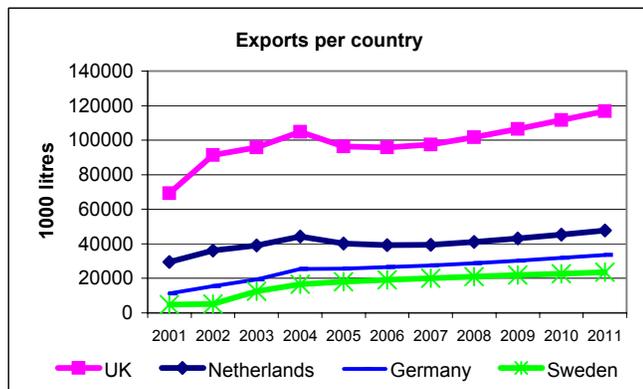
Producer Sales and Domestic Consumption

Producer sales have increased steadily between 2000 and 2005. This increase is largely due to increases in exports as domestic consumption has remained relatively stable between 300 and 400 million litres per annum. Due to the assumption of a weakening Rand/US $ and Rand/Euro exchange rate it is expected that exports and therefore total producer sales, are likely to continue to increase well into 2011.

Producer Sales and Domestic consumption

1000 Litres

Good wine producer sales   Wine domestic consumption
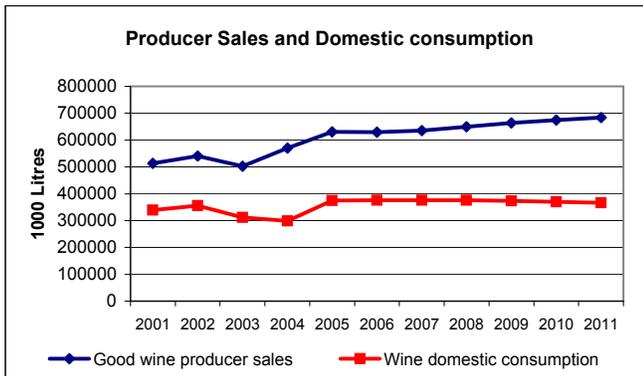
Wine

|	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Wine Sales				**thousand Litres**					
Good wine producer sales	502,794	570,566	629,980	**629,645**	635,172	649,035	663,322	674,412	683,750
Wine domestic consumption	311,884	298,969	374,065	**375,348**	375,148	375,685	373,703	370,268	365,839
Exports				**thousand Litres**					
UK	95,857	104,880	96,331	**95,765**	97,496	101,663	106,539	111,575	116,859
Netherlands	39,025	44,159	40,161	**39,201**	39,481	40,993	43,033	45,288	47,721
Germany	19,296	25,380	25,651	**26,508**	27,473	28,805	30,291	31,838	33,461
Sweden	12,469	16,530	18,038	**19,209**	20,122	20,996	21,862	22,728	23,619
Wine prices				**Rands/Litre**					
Good wine price	3.02	2.66	2.67	**2.70**	2.75	2.72	2.75	2.80	2.86
Rebate wine price	1.50	1.51	1.58	**2.25**	2.40	2.45	2.58	2.75	2.86
Distilling wine and grape juice pric	0.87	0.74	1.12	**1.60**	1.71	1.74	1.84	1.96	2.92

Wine

White vines in Production

The prices of Chardonnay and Sauvignon Blanc have shown a steady increase in real terms in 2003 and 2004. This price increase results in increased plantings of the two varieties. The increase in plantings however are only productive after four years, as can be seen on the graph. The resultant increased plantings and therefore production slows down the increase in grape prices.
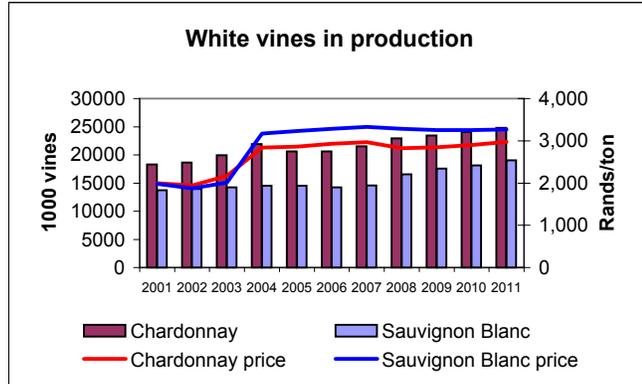
Red vines in Production

Over the past decade there has been a strong tendancy to replace old vineyards with red varieties. This is not a phenomenon unique to South Africa. The increased plantings, and thus increased production, of red wine grapes has resulted in a relative surplus not only domestically but also internationally which has resulted in the decrease in the real red grape price.
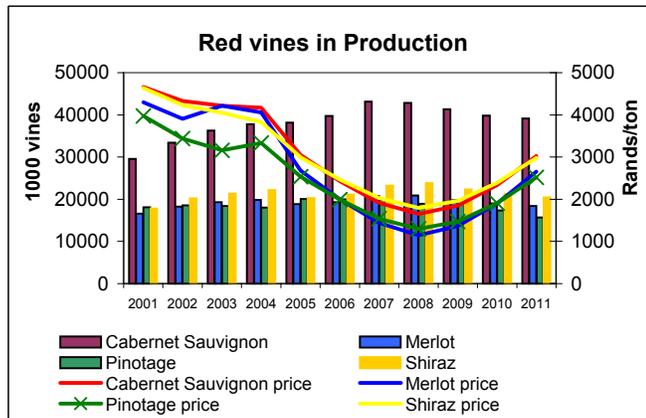
Wine Production

Drinking wine production is set to remain between 600 and 700 million litres during the baseline period.

White vines in production

Red vines in Production

Wine Production
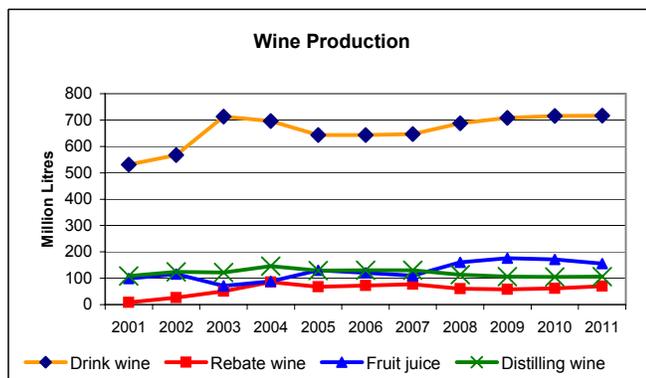
Wine

	2003	2004	2005	**2006**	2007	2008	2009	2010	2011
Number of Vines				**thousand Vines**					
Chardonnay	19,964	21,918	20,624	**20,624**	21,545	22,932	23,443	24,061	24,819
Sauvignon Blanc	14,234	14,547	14,504	**14,231**	14,585	16,540	17,577	18,162	24,819
Other variety white	117,253	114,239	113,656	**112,157**	107,206	118,289	123,504	126,531	19,035
Cabernet Sauvignon	36,252	37,749	38,148	**39,710**	43,125	42,867	41,336	39,792	125,764
Cinsaut	8,919	8,994	8,635	**8,190**	8,015	7,700	7,283	6,946	39,136
Merlot	19,331	19,838	18,849	**19,282**	20,705	20,900	19,761	19,022	6,716
Pinotage	18,368	18,060	20,083	**19,965**	19,814	18,956	18,944	17,383	18,388
Shiraz	21,363	22,182	20,261	**21,151**	23,258	23,843	22,338	21,304	15,655
Other variety red	16,433	17,269	16,691	**16,676**	17,373	17,085	18,345	18,494	20,472
Grape Prices				**Rands/Ton**					
Chardonnay price	2,173	2,841	2,863	**2,934**	2,966	2,827	2,844	2,901	2,974
Sauvignon Blanc price	2,013	3,171	3,231	**3,288**	3,333	3,285	3,252	3,253	3,270
Other variety white price	818	562	950	**966**	976	1,023	1,073	1,125	2,974
Cabernet Sauvignon price	4,215	4,168	3,044	**2,427**	1,917	1,651	1,845	2,337	3,270
Cinsaut price	2,072	2,098	1,481	**1,339**	1,227	1,170	1,196	1,271	1,168
Merlot price	4,214	4,054	2,676	**1,999**	1,441	1,149	1,362	1,901	3,023
Pinotage price	3,162	3,330	2,536	**1,988**	1,535	1,299	1,471	1,908	1,372
Shiraz price	4,052	3,833	2,995	**2,465**	2,027	1,798	1,965	2,387	2,652
Other variety red price	2,853	3,482	3,032	**2,971**	3,009	2,946	2,935	2,920	2,517
Wine Production				**Million Litres**					
Drink wine	712.66	696.79	642.92	**643.60**	646.62	687.88	708.21	715.86	2,960.87
Rebate wine	50.45	85.36	67.52	**72.07**	76.93	60.70	57.76	61.74	69.41
fruit juice	70.69	87.78	130.30	**120.39**	109.65	160.92	175.68	171.24	155.69
Distilling wine	122.21	145.77	129.47	**130.18**	130.20	113.52	106.33	104.67	716.31

Consumer trends and analyses

A profile of the SA consumer market

South Africa is a rainbow nation with 11 official languages and a wide variety of wealth groups and cultural denominations spread over urban and rural areas. The South African Advertising Research Foundation (SAARF) developed a market segmentation tool called the Universal Living Standard Measures (SU-LSM) based on the socio-economic status of an individual or group (SAARF, 2005a).

Consumers of least status form the segment SU-LSM 1 and those of the highest status SU-LSM 10.The majority of South African consumers (60.2%) fall within the lowest SU-LSM categories namely SU-LSM 1 to SU-LSM 5.

South Africa is characterized by two parallel economies: The first / modern economy consisting of emerging- and established consumers and the second or marginalized economy.


The SU-LSM segments:
Proportion of SA population and average monthly income
(SAARF, 2005a)
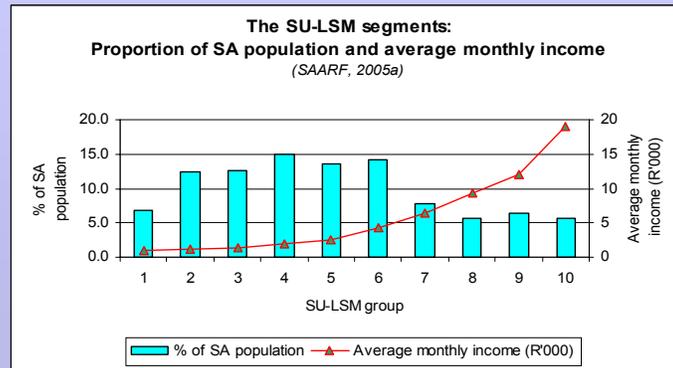
Table 1: A summary profile of the South African consumer market

Descriptor:	Marginalised consumers:	Modern consumers:	
		Emerging:	Established:
Proportion of SA population**	31.80%	42.70%	25.50%
SU-LSM classification***	SU-LSM 1 - 3	SU-LSM 4 - 6	SU-LSM 7 - 10
Average monthly household income**	SU-LSM 2: R1094 SU-LSM 3: R1417	SU-LSM 5: R2495 SU-LSM 6: R4207	SU-LSM 8: R 9247 SU-LSM 9: R11951
Unemployment****	46% - 42%	38% - 27%	18% - 4%
Rural proportion of group**	100% - 68%	44% - 9%	5% - Insignificant
Education level**	22% No schooling --->40% Post-matric qualification		
Main provincial location**	KwaZulu-Natal, E Cape, Limpopo	Gauteng, W Cape, KwaZulu-Natal	Gauteng, W Cape
Concumer Goods (FMCG) spend***	22%	37%	41%
Retail shopping frequency***	2.5 times / month	4 times / month	9 times / month
Typical purchase location***	Smaller independent stores	Major retailers	Major retailers
Share of total SA household cash expenditure*****	5.9%	28.8%	65.3%

** Source: SAARF (2005a)   *** Source: ACNielsen (2005b)   **** Percentage of consumers classifying themselves as unemployed, but seeking work   ***** Martins (2006)

The growing "new black middle class"

- +/- 10% (2 000 000) of black adults in SA.
- Purchasing power: 22% of SA total.
  43% of black consumers.
- Constant movement to more affluent segments BUT "pull-back" to cultural roots.
- Four sub-segments (refer to graph):
  1 *Mzansi-youth* (stay with parents)
  2 *Start-me-ups* (young, working, hectic social lives, show off earnings, BUT little disposable income)
  3 *Young families*
  4 *Emerged* (Slightly older, in full-time employment)
- Current growth: 50% / year
- Future expectations:
  Continued rapid growth, increasingly complex needs
(Source: Black Diamond marketing survey of the UCT Uniliver Institute 2005 / 2006)

Sub-segments in the new black middle class
(UCT Unilever Institute, 2005/2006)
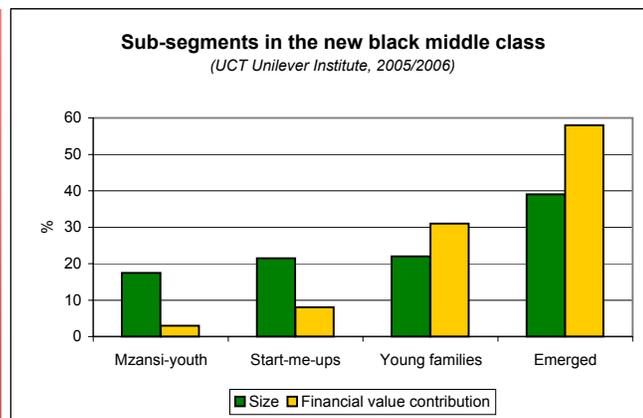
Consumer trends and analyses

Global consumer trends

1. Consumers' focus on health and diet

1.1 Healthy diet choices

Given a consumer's diet preferences, certain foods will be perceived as healthy.

Example: Popularity of high protein-low carbohydrate diets --->growth in meat/fish/eggs

1.2 Healthy staples

Consumers perceive fruit and vegetables as healthy and increase consumption of these food groups as healthy staples in their diet.

Examples: Frozen fruit, fresh ready-to-eat salads, fresh vegetables and shelf-stable fruit.

1.3 Healthy alternatives

Consumers perceived certain products as healthy alternatives for existing products.

Example: Healthier cooking oil like olive oil.

2. Consumers' focus on convenience

Consumers' pace of life is increasing leading to needs related to convenience: Fragmented eating occasions, eating-on-the-go, outsourcing time and more regular shopping.

Examples: Ready-to-eat meals, frozen pizza and portion size drinkable joghurt products.

3. Growing impact of supermarket labels

The proportion of spending on private supermarket label products is 23% in Europe and more than 30% in the UK. Private supermarket labels are usually value-for-money discount brands offering an average discount of 50% (ACNielsen, 2005a; ACNielsen 2006).

4. Age complexity

Example: Adults enjoying second youth

5. Gender complexity

Example: Women moving into male roles

6. Life stage complexity

Example: More single person households

7. Income complexity

Example: Lower income consumers buy selected luxury items (e.g. premium treats) despite limited budgets

8. Individualism

Example: More personalization required

9. Homing

Example: Growing value placed on the importance of the family

10. Connectivity

Example: Being part of a group of friends

11. Sensory experiences

Example: Seeking sensations and authenticity

12. Slow Food

Example: A movement away from mass / fast, to closer connectivity with eating pleasure and closer connectivity with the farm / shop owner.

(Sources: ACNielsen, 2004a; ACNielsen, 2005a, ACNielsen, 2006; Datamonitor, 2005; Slow Food, 2006)

This box could contain a variety of pictures related to the discussion on the global consumer trends, including the following:

Meat
Fish
Eggs
Fruit
Salad
Vegetables
Nuts
Olive branch / Olive oil
Pizza

Career women
A person shopping / pushing a trolley
A single young person
A family
Preparing food at home

Consumer trends and analyses

1. Consumers' focus on health and diet

1.1 Healthy diet choices

Health drove the growth in two of SA's fastest growing food categories during 2003/04: bottled water and yoghurt (ACNielsen, 2005a). HOWEVER, only wealthier consumers can afford the premium price (an average premium of about 30%) of health foods. This is evident from the adjacent graph.

Diet-related products attract a small wealthier proportion of the South African population (ACNielsen, 2005a).

1.2 Healthy staples

Healthy staples are the most widely available health based product types in SA. The consumption of larger quantities of fruit and vegetables is the fastest growing health activity across all the SU-LSM categories (ACNielsen, 2005a).

1.3 Healthy alternatives

SA lags behind global trends in terms of healthy alternatives like sugar substitutes, edible oils and soya based products (ACNielsen, 2005a).

2. Consumers' focus on convenience

South African consumers have increasing needs for convenience foods due to factors such as longer working hours, more women entering the work force and the current lack of efficient public transport (ACNielsen, 2005a). Convenience requirements include portable food products, prepared food products and convenient shopping locations. Examples of SA trends driven by convenience are:

* Growth in baby foods (24.5%) during 2003/04.

* During 1994 to 2004 about 1420 service station / garage forecourt stores and 547 new stores within the organized grocery retail sector opened in South Africa (ACNielsen, 2006).

The convenience trend is applicable to a wider proportion of the SA population. The graph of the take-away purchasing behaviour of the SU-LSM segments illustrates that even though the consumption of take-away food is dramatically more prominent amongst the wealthier consumers in South Africa, it is also observed amongst the lower socio-demographic groups.

Affordable convenience is an important need among SA consumers.

3. Growing impact of supermarket labels

Since SA consumers are extremely affected by price constraints, private supermarket labels are important and growing in SA, but are accounting for less than 10% annual value share and offer an average discount of 20% (ACNielsen, 2005a; ACNielsen, 2006).

Selected health product usage of the SU-LSM segments in 2005
(SAARF, 2005b)

Health driven behaviour of consumers in the SU-LSM segments in 2005
(SAARF, 2005b)

Take-away purchase behaviour of consumers in the SU-LSM segments in 2005
(SAARF, 2005b)
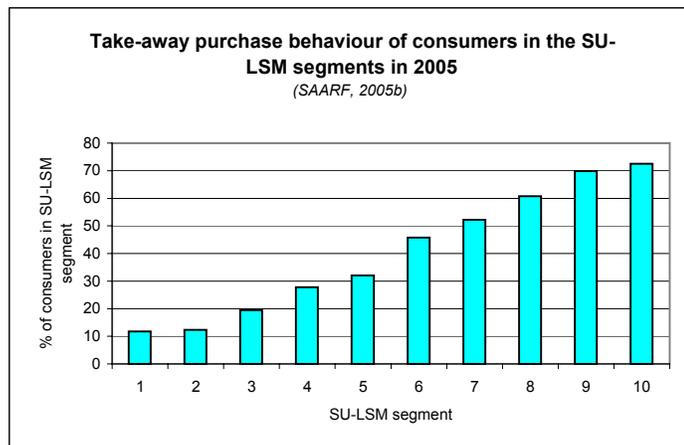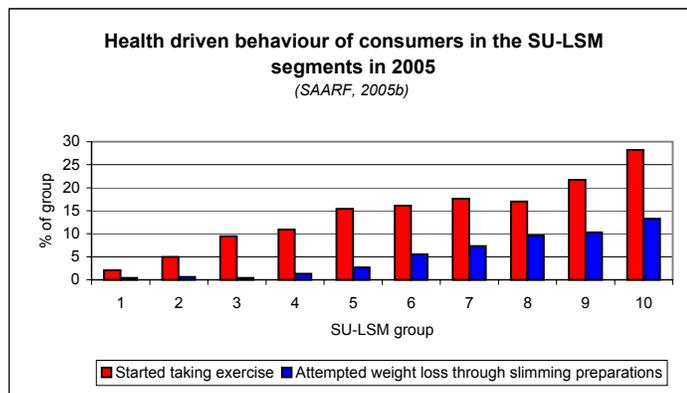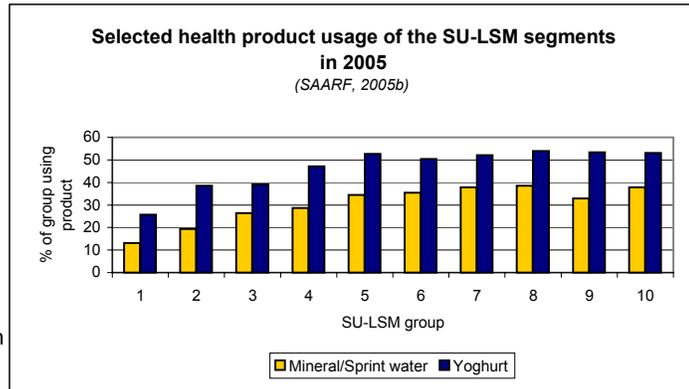
Consumer trends and analyses

South African consumer trends:
Which national factors affect food consumption in the specific SA context?

Innovation
Food manufacturers and retailers attract new customers through product innovation, by relying on consumers' willingness to try out new products and to engage in impulsive shopping behavior (ACNielsen, 2005a).
For example: The growth in the ice tea market in South Africa was mainly driven by innovation (new flavors and packaging sizes), even though health and convenience also contributed to the growth.

Wide distribution
The retail trade in SA is characterized by a wide geographic and demographic spread. This should be addressed with adequate in-store availability of food products in order to drive growth (ACNielsen, 2005a).

Population shifts
The South African population increased by 18% from 1995 to 2004 (mid-year estimates of Statistics South Africa as reported in the Abstract of Agricultural Statistics). According to Burger (2005) the number of households in SA is growing almost three times faster than the population. In terms of household size the average household size has dropped from 4,5 to 3,8 persons (Burger, 2005).

Increased availability of electricity
SA households with access to in-home electricity increased from 79.1% in 2000 to 84.9% in 2004 (SAARF, 2005b). This could also contribute to an evolution in the South African consumer basket.

The large youth market
SA has a large youth market (26.5% of the SA population is in the age category 16-24 and about 14% of the total South African population aged between 16-24 is in SU-LSM 1 to SU-LSM 4 (SAARF, 2005b)).
The SA youth market has some interesting characteristics (ACNielsen, 2004b; ACNielsen, 2004c):
* They are not necessarily responsible for shopping, but have an influence on purchases.
* They have an increasing influence on brand choice and changes, especially in food categories like flavoured alcoholic beverages and snacks.
*   They are able to cross racial lines and display minimal geographic variation.
Within the South African food sector categories with product ranges aimed at the youth market include beer, flavoured alcoholic beverages, fruit juices, flavoured milk, energy drinks, squashes, cordials, yoghurt, processed meat, hot and cold cereal, peanut butter, biscuits, snacks and cheeses.

Urbanisation
SA had an overall urbanization level of 56.26% in 2001. The African population was the least urbanized (47%) and 85% of the other groups were urbanized (Kok and Collinson, 2006). It is expected that urbanization will continue among the African population for the foreseeable future. However, urbanisation saturation is expected for the other population groups. According to the Institute for Future Research (2004) it is projected that approximately 70% of the South African population will reside in urban areas by 2030.
Urbanisation could lead to reduced agricultural production and changes in food acquisition, consumption patterns and dietary diversity. Furthermore it could increase consumers' need for affordable convenience.

Unemployment
South Africa has a 41% unemployment rate according to the broad definition of unemployment (Statistics South Africa, 2005a).
The high unemployment incidence in South Africa hampers the ability of consumers (especially less wealthy consumers) to satisfy their food needs.

HIV/AIDS
The purchasing behaviour of South African consumers could be impacted upon by the increasing prevalence of HIV/AIDS (ACNielsen, 2004b).

The availability of in-home electricity of consumers in the SU-LSM segments in 2005
(SAARF 2005b)

Demographics of the SU-LSM segments l.t.o proportion of each segment in the age group 16 to 24 *(SAARF 2005b)*
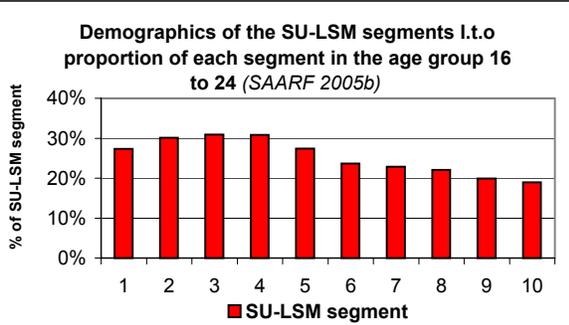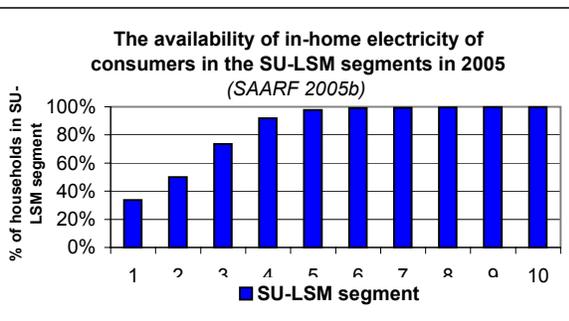
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