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PERSPECTIVES on the PERFORMANCE of AGRICULTURE in SOUTH AFRICA since 1994 and IMPLICATIONS for its ROLE in ACHIEVING SUSTAINABLE FOOD SECURITY

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1. Introduction and context of this paper.

The performance of agriculture in South Africa has to be seen in the context of the economic history of the country, which saw heavy investment in (white) commercial agriculture, a key constituency of the apartheid state, through most of the 20th century. The state supported farmers through legislation such as the Cooperative Societies Acts and the Marketing Acts, through investment in research and development, infrastructure, extension services and the settlement of farmers, etc., and through protection of domestic markets from international competition. At the same time a range of measures, such as the Land Acts and the creation of the homelands, were put in place to suppress black farmers, whether in the commercial farming sector, or the communal areas of the former homelands.

Four events between 1973 and 1976 set in motion political, social and economic changes in South Africa that were to result in a new approach to agricultural policy. These included the labour unrest and 'unlawful' strikes by black trade unions in the Durban region in 1973; the OPEC oil crisis of 1973; the *coup d' etat* in Lisbon in April 1974 that resulted in the abortive invasion of Angola by South Africa in 1975; and the Soweto students' uprising of June 1976. By 1976 the economy had moved into recession, which turned into a period of prolonged stagflation that lasted until 1994. As a result, economic policy shifted in the late 1970s, with a greater focus on deregulation of the financial markets. This set in motion a process of deregulation of agriculture that was only completed in the late 1990s.

The purpose of this report is to describe how the agricultural sector performed during these times, in particular related to food security/selfsuffiecency, as well as the relationship between policies and the performance of the sector during this period.
The context of this research as it relates to issues such as the roles of agriculture in the South African economy will firstly be attended to.
The next part of the report analyse commercial agriculture; followed by an overview of farming in the communal areas of the former homelands. This will be followed by reference to food production and food price considerations.
A policy frame work to enable the agricultural sector to play a productive and supportive role in the evolving South African environment will finally be proposed.

2. The growth performance of commercial agriculture

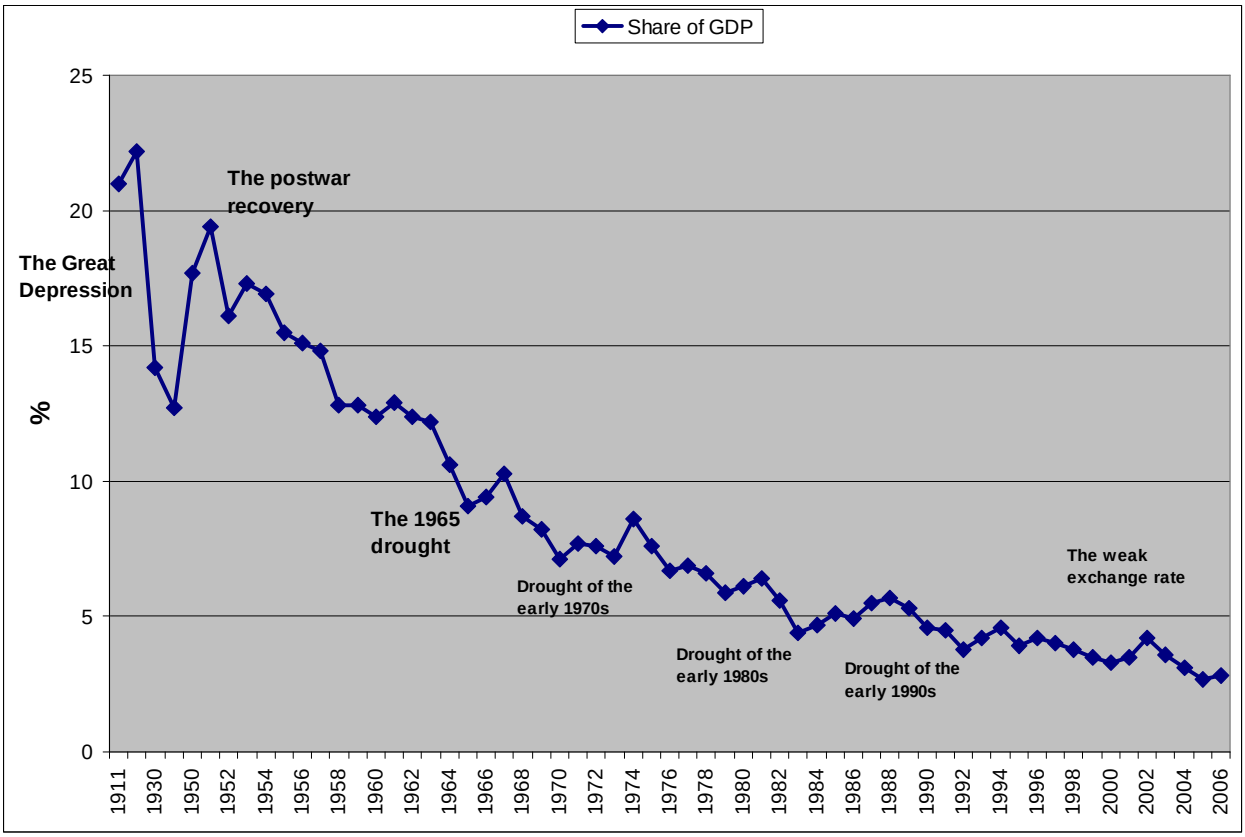
2.1 Output and GDP contribution

The performance of South African agriculture is heavily influenced by weather occurrences, as is evident from Figure 1 below, which shows the GDP contribution of the sector since the formation of the Union in 1910. As a resource-poor country, South Africa is plagued by droughts all the time, but these are often localized, and do not show up in the aggregate data. However, the data show that the current period (i.e. since the first fully democratic elections in 1994) is unusual in the era following the Second World War, as there has not been a country-wide drought for more than a decade, as opposed to severe country-wide droughts in at least one year of each of the preceding decades, the severest being in 1966, in 1982 to 1984 and in 1992/93.

Nevertheless, as will be seen later, the sector is also highly exposed to global markets: farmers receive no subsidies, and trade at the borders has been substantially liberalized. Hence the

peak in the value of output in 2002, when the Rand was at its weakest against the major international currencies, is evident.

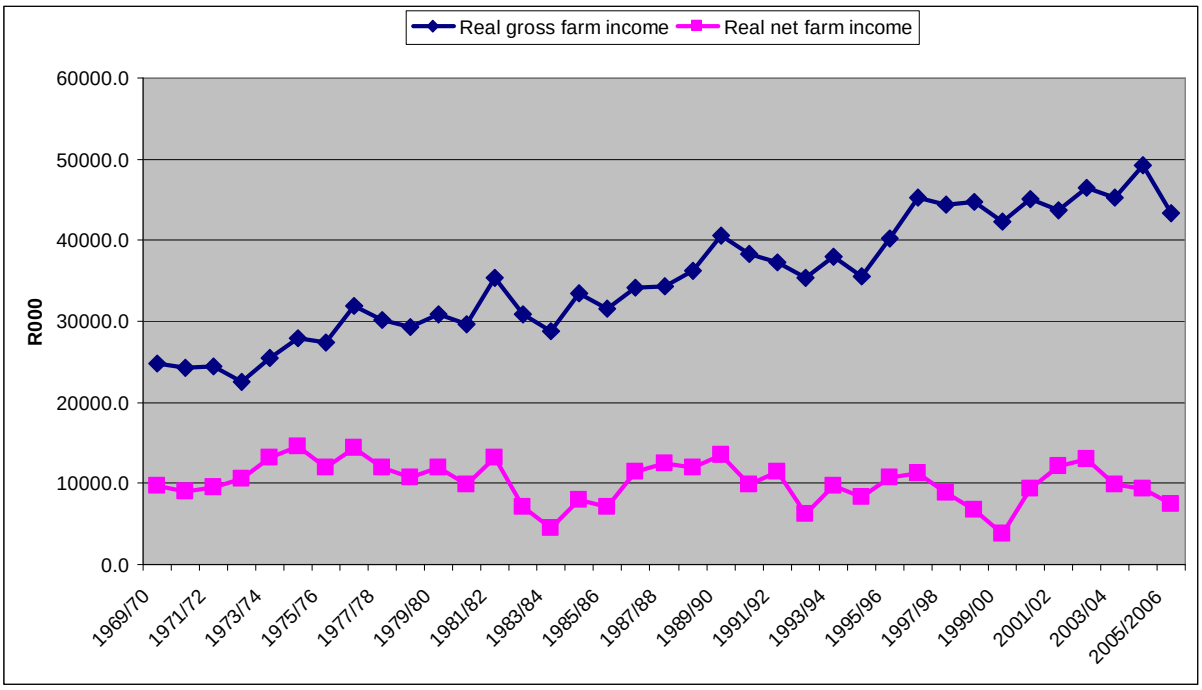
That the GDP contribution of agriculture is relatively smaller than in similar middle-income countries is not surprising, given the country's abundant mineral wealth: the total contribution of the primary sectors (agriculture, forestry, fishing, mining, quarrying, etc.) was 14.4 percent in 1990, and 10.5 percent in 2006, which is in line with the contribution in middle income countries. The GDP contribution of the manufacturing sector has also declined in recent years to under 20% in 2006. Services account for a steadily increasing share of GDP, as the South African economy has reached a relatively advanced stage of maturity.



Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

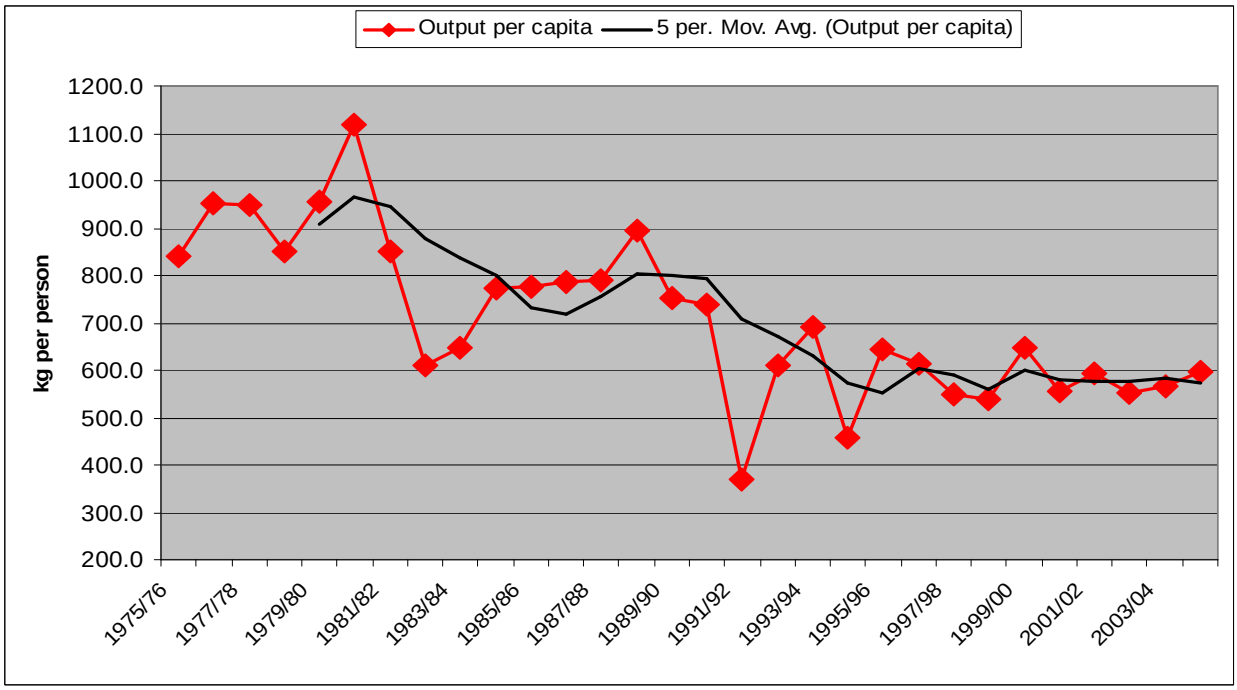
Figure 1: The contribution of agriculture to GDP since 1911

A declining share of GDP does not mean that the sector is declining, merely that the services sectors are growing faster. In this regard, Figure 2 shows real Gross and Net Farm Income over the past 4 decades. Real gross farm income has increased from around R25bn in 1970 to almost R50bn in 2006 (R90bn in nominal terms). This growth took place during a period when the South African population increased from around 20 million (1970) to some 47 million people. Figure 3 shows that the growth in physical production was not sufficient to keep pace with population growth until the middle of the 1990s, showing a declining physical production per capita until that time, and a flattening out since. This coincides with democratisation, accompanied by trade liberalisation and internal market deregulation in agriculture. Physical output increased from around 18m metric tons in 1975 to 28 million tons in 2006.



Note: Base year = 2000
Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 2: Trends in real gross and net farm income from 1970



Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 3: Output per capita since 1975/76

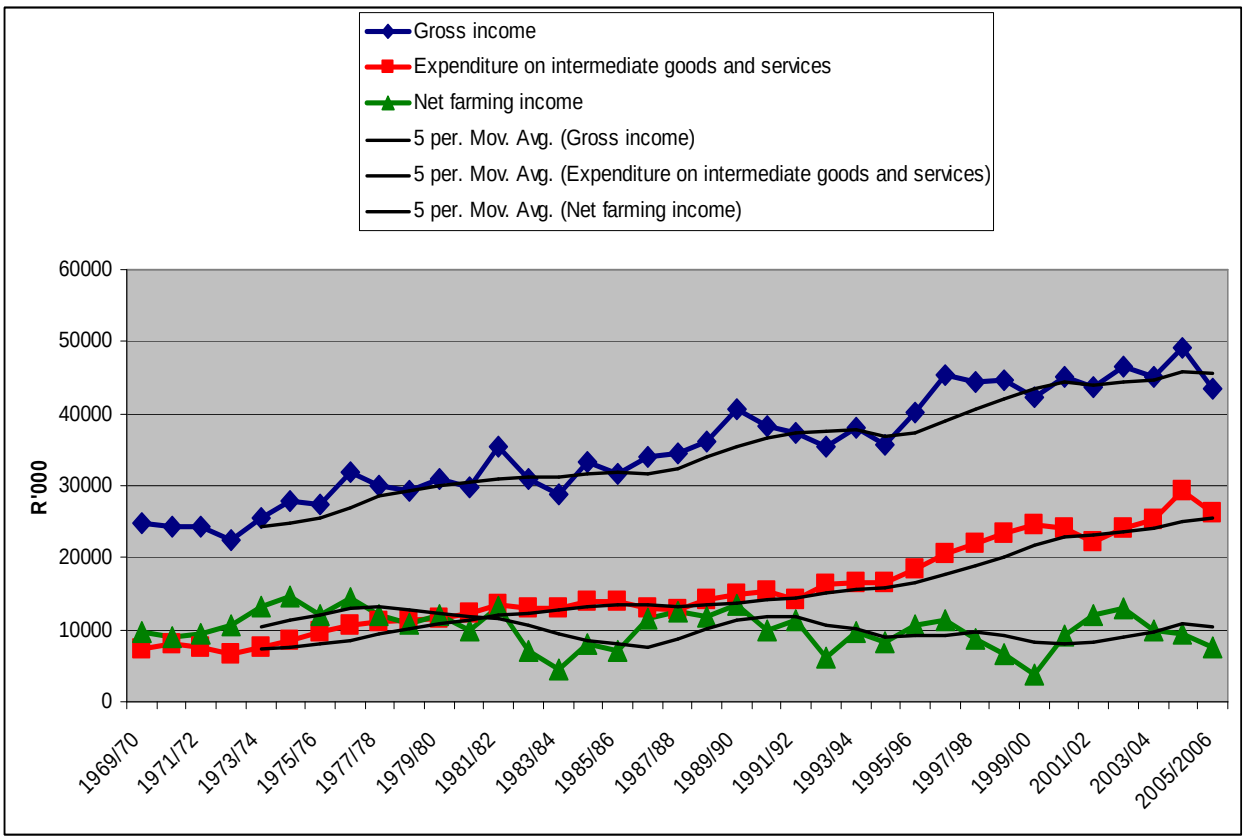
Increased physical output in the period immediately after the Second World War was

influenced by the introduction of tractors on a large scale; state investment in R&D, infrastructure, extension services and settlement of (white commercial) farmers; and a growing domestic demand coupled with guaranteed markets and guaranteed prices for most farm commodities through the Marketing Act. The seventies was also a period of rapid growth in the economy, assisted by high gold prices and high agricultural growth, but came to an end with the oil crisis in the mid-seventies. Direct government transfers to farmers plus highly supported farm prices assisted growth in the late eighties and pushed it back to the level of the early seventies. The drought in the early nineties; the process of domestic and foreign market liberalization and the instability before the 1994 elections all negatively affected growth opportunities in the sector. It was only after confidence in the democratic change was restored and on the back of a weakening exchange rate and thus higher commodity prices and export earnings that agricultural growth increased. The subsequent decline (i.e. after 2002) was the result of a strengthening currency and drought in the maize producing areas. More recently, high world food prices have resulted in a further surge in the value of output.

COMMENT: A NEW 2.2 SECTION TO ADD SOMETHING ON THE BROADER IMPACT OF AGRICULTURAL PERFOMANCE – DRAW FROM THE PROVIDE MODEL. WE MUST AGAIN EMPHASISE THIS ; IT WILL ALSO LINK UP WITH THE ROLES SECTION.

2.2 Profitability

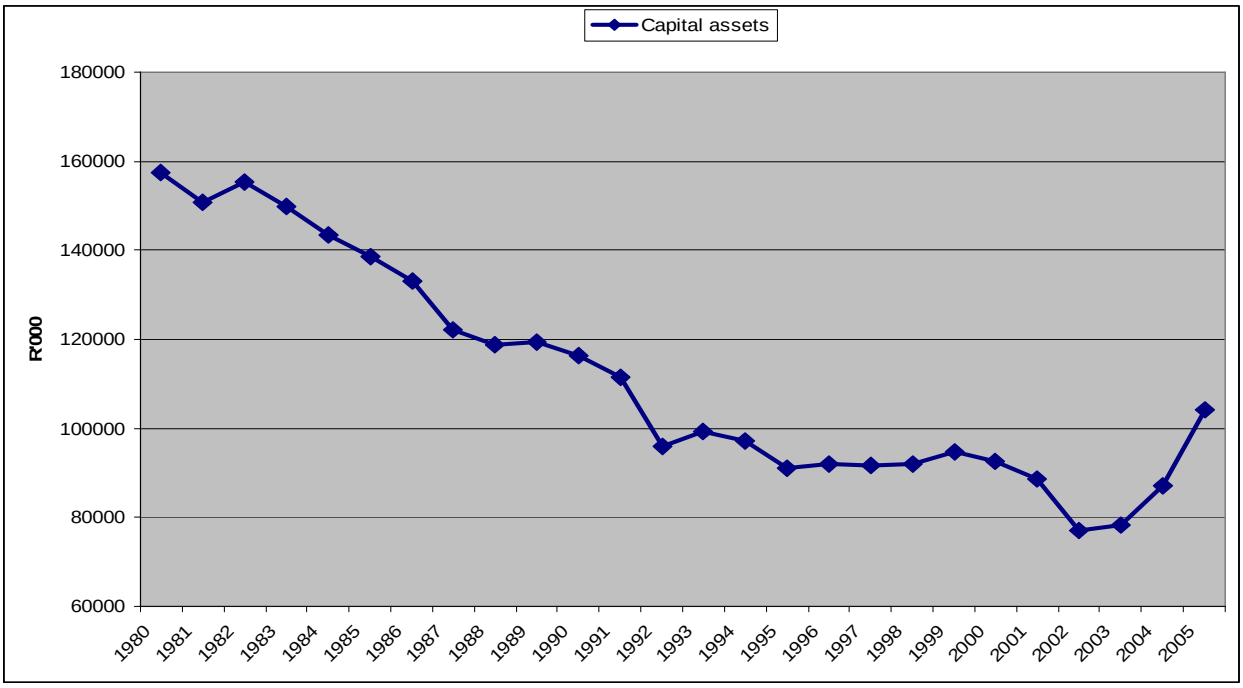
Net Farm Income (NFI) is a measure of the profitability of farming enterprises. It is calculated as gross farm income (turnover) minus depreciation, salaries and wages, interest, and rent. Figure 4 shows the trends in real gross and net farm income and the cost of intermediate goods at prices in 2000. Expenditure on intermediate goods and services tracks the upward trend in real gross farm income over the entire period, while real Net Farm Income has remained stagnant. Given that the prices of intermediate goods have risen faster than output prices, this reflects an increase in Total Factor Productivity.



Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

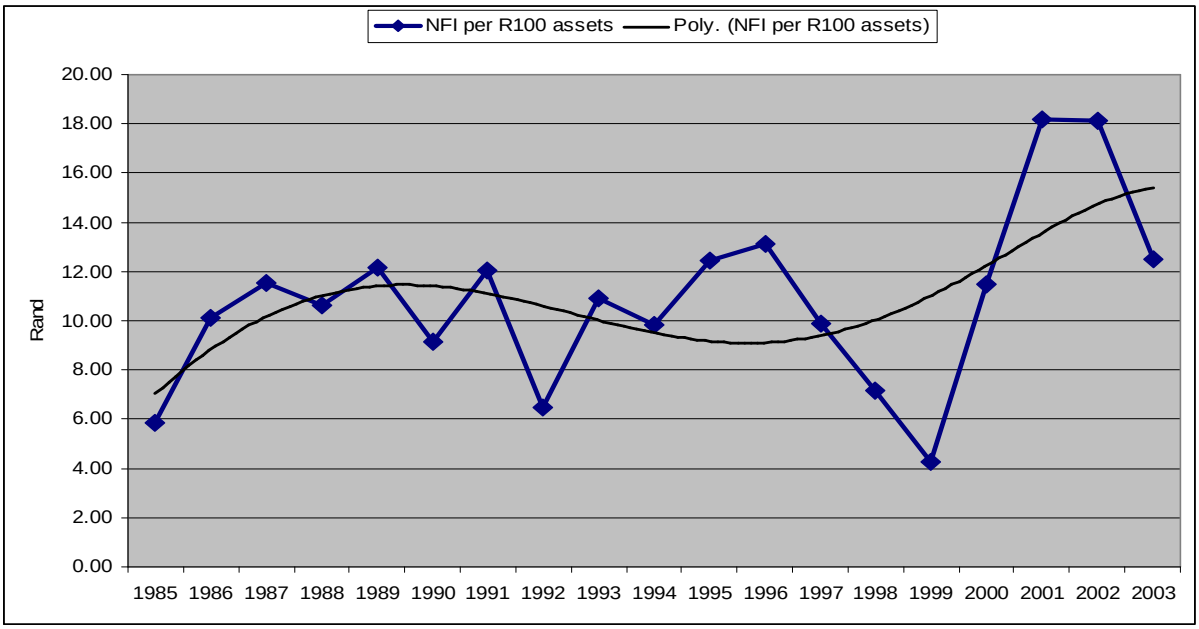
Figure 4: Real gross and net farm income, and the cost of intermediate goods

This decline in real net farm income should, however, be seen in perspective: Figure 5 shows that the value of capital assets in agriculture declined rapidly throughout the first half of the 1990s, then increased moderately in the second half of the decade as nominal land prices recovered with the upsurge in inflation and the increase in net farm income that resulted from the collapse of the exchange rate to 2002. The result (Figure 6) was that the amount of real net farm income generated from each R100 in assets increased in the second half of the decade, a reflection of improved efficiency in the use of capital.



Source: Adapted from NDA, 2006. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 5: The real value of capital assets on commercial farms

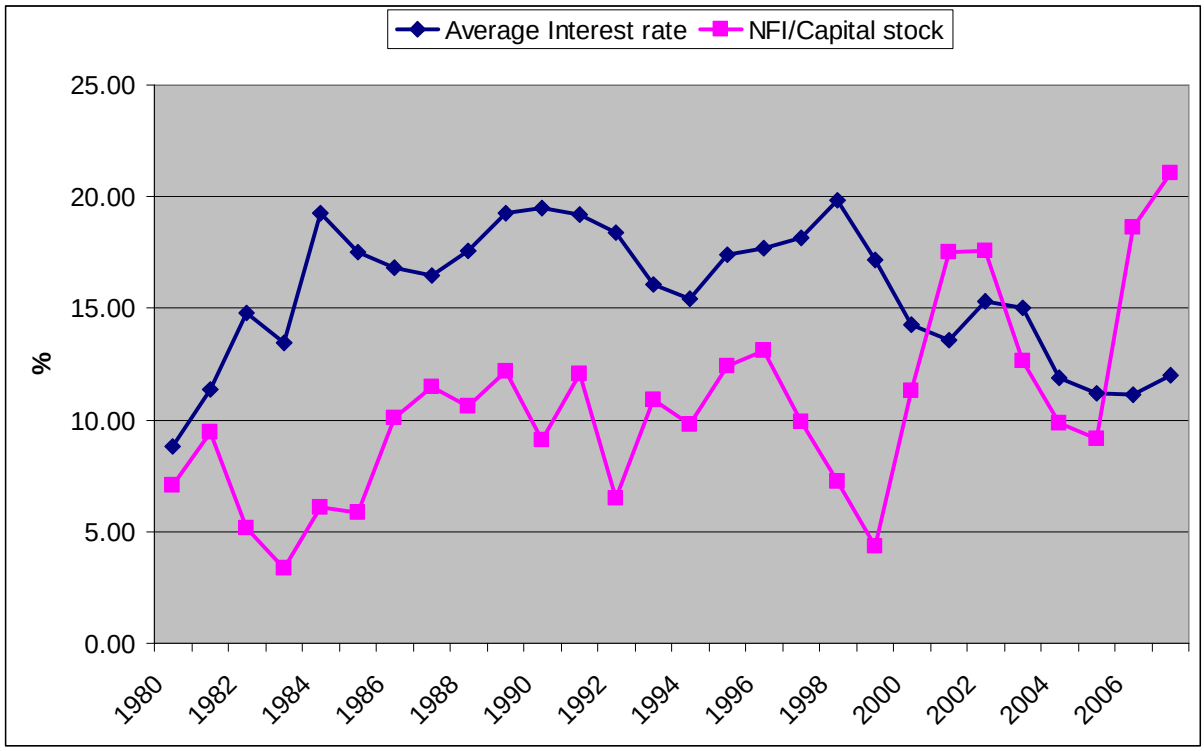


Source: Adapted from NDA, 2006. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 6: Real net farm income generated from R100 in capital assets

Net farm income can also be viewed in relation to the level of investment required to generate the return. Figure 7 shows net farm income as a percentage of total capital investment in agriculture from 1980. These data show that over the whole period, the average return on investment generated by the agricultural sector was 11%, ranging from a low of below 5% in the early 1980s to above 20% in 2007. However, these returns were lower than the average cost of borrowed capital for most of the period reviewed, which is why prudent management demands that farming enterprises borrow no more than a third of their capital requirements. The return generated from farming activities is usually well below the opportunity cost of

investment, only becoming positive in 'abnormal' situations such as the decline in the value of the Rand in 2002 and the historically high commodity prices after 2007.



Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 7: The returns to capital in agriculture

2.3 Sub-sector analysis

COMMENT: we should give an overall view on 'WHAT HAPPENED TO FARM LAND SAY VS AGRIC OUTPUT IE MORE OR LESS LAND IN PRODUCTION VS PRODUCTION VOL/VALUE AND TRENDS IN THIS CONTEXT . THE SUB SECTOR ANALYSIS CAN THEN EXPLAIN THESE TRENDS

Given that most of South Africa is unsuited to cultivation, it is no surprise that the largest component of production comes from livestock, with field crop production substantially larger than horticulture in 1989/90 but less so in 2001/06 (Table 1). These data reflect the increasing importance of horticultural exports as a share of total agricultural output. However, these aggregate changes mask a number of important changes within each of these sectors, as is explained below.

2.3.1 Field crops

The main changes in field crop production have been in the area planted, and in industry average yields. Figure **8**8 shows the area planted with the principal field crops (maize, wheat, soya beans, sugar cane and cotton). The area of maize declined after the drought in the mid-1990s, and has continued its declining trend since: by at least 40% (from 5 million hectares in 1980 to some 3 million hectares currently) over the past three decades. The area planted with wheat experienced a structural decline in the mid-1990s, from above 2 million hectares to around 1 million hectares or less since 1998/99. This represents a decline of some 50% in the

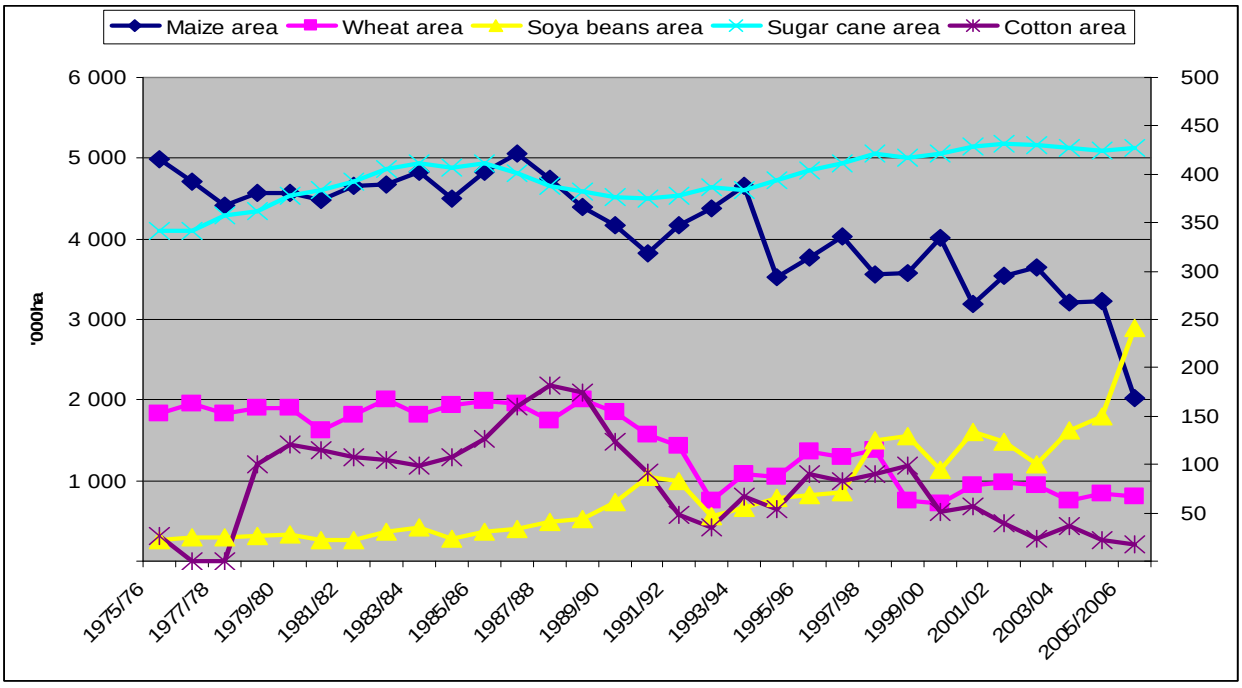
area planted over the past three decades.

Table 1: Sector shares in output since 1966

	Field crops	Horticulture	Animal production
1966-70	42.46	16.21	41.33
1971-75	44.88	16.40	38.72
1976-80	47.11	16.41	36.49
1981-85	42.02	16.40	41.59
1986-90	37.69	19.09	43.23
1991-95	32.62	22.91	44.47
1996-2000	32.98	25.09	41.90
2001-2006	30.39	26.93	42.68

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

By contrast, the area planted to sugarcane has increased by 25%, from 4 million hectares to 5 million hectares. This increase is largely the result of two trends, namely the establishment of new production areas in Mpumalanga and the establishment of a large number of small and medium scale black farmers in the industry.



Note: Maize and wheat are measured on the left axis, and sugar cane, soya beans and cotton on the right axis
Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 8: Area planted with the principal field crops

The area planted to soybeans has increased even more substantially over the past 30 years, albeit from a much smaller base. The increase has been from some 22 000 hectares in 1975/76 to almost 250 000 hectares in the past season, i.e. a six-fold increase. However, this has not been sufficient to make up for the decline in area planted to maize and wheat.

Cotton also represents an interesting case. The area planted declined from its peak of 180 000 hectares in the late 1980s to around one tenth of that (18 000 hectares) recently. This has been accompanied by an increase in cotton production in other SADC countries, especially

Zambia, as the industry tries to meet the demand for high quality hand picked cotton to counter the cost advantages of the Asian textiles industries. In this same vein, there is anecdotal evidence of an increase in cotton production among small farmers in South Africa.

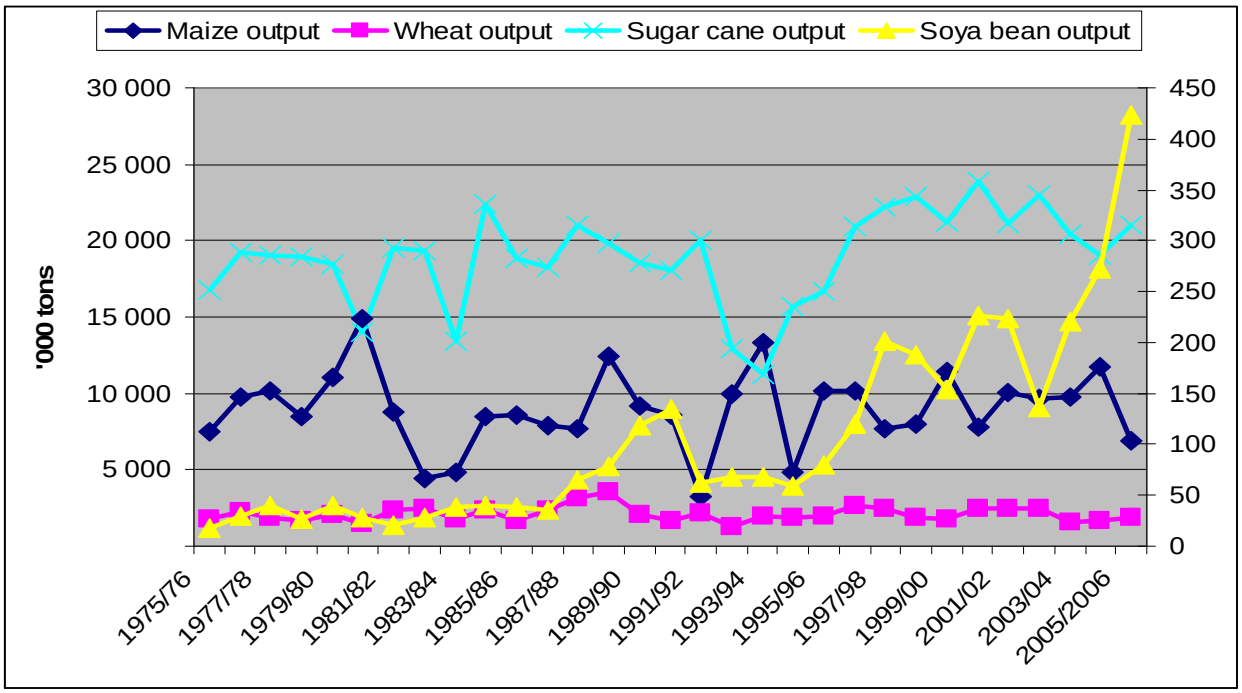
Despite this decline in the area planted with maize and wheat, gross output of these commodities has generally increased (Figure 9). The reason can be found in Figure 10: yields are generally increasing.

With deregulation, the prices of field crops generally adjusted downwards to world market levels, and thereafter fluctuated with world market prices. As a result of the pressure on profits, commercial grain farmers shifted to minimum and low-tillage production systems. The result was a rapid decline in the use of fertilisers, insecticides and herbicides, tractors, combine harvesters and other implements, and fuel. These changes allowed farmers to maintain and even increase the total output of the major field crops using fewer inputs, and hence on a lower cost base, at the same time ensuring more environmentally sustainable production.

Furthermore, most of the major field crops were sold under a 'single channel fixed price' marketing regime in terms of the old Marketing Act, characterised by pan-territorial and pan-seasonal pricing. The main consequence of pan-territorial prices was that farmers closer to the market were effectively cross-subsidising those further away. With deregulation, prices started to become regionally differentiated to reflect transport costs and regional variations in demand and supply. Another consequence was that processors, who had moved closer to the market (they paid the same price irrespective of the point of delivery) faced increased competition from small scale processors, as an increasing proportion of the maize crop is now milled by small-scale millers, both on- and off-farm (industry estimates suggest this can be as high as 30 percent of the crop). The main result of pan-seasonal pricing was that no grain was stored on-farm, and that the entire crop was sold immediately after harvest. With deregulation, there has been an increase in on-farm storage.

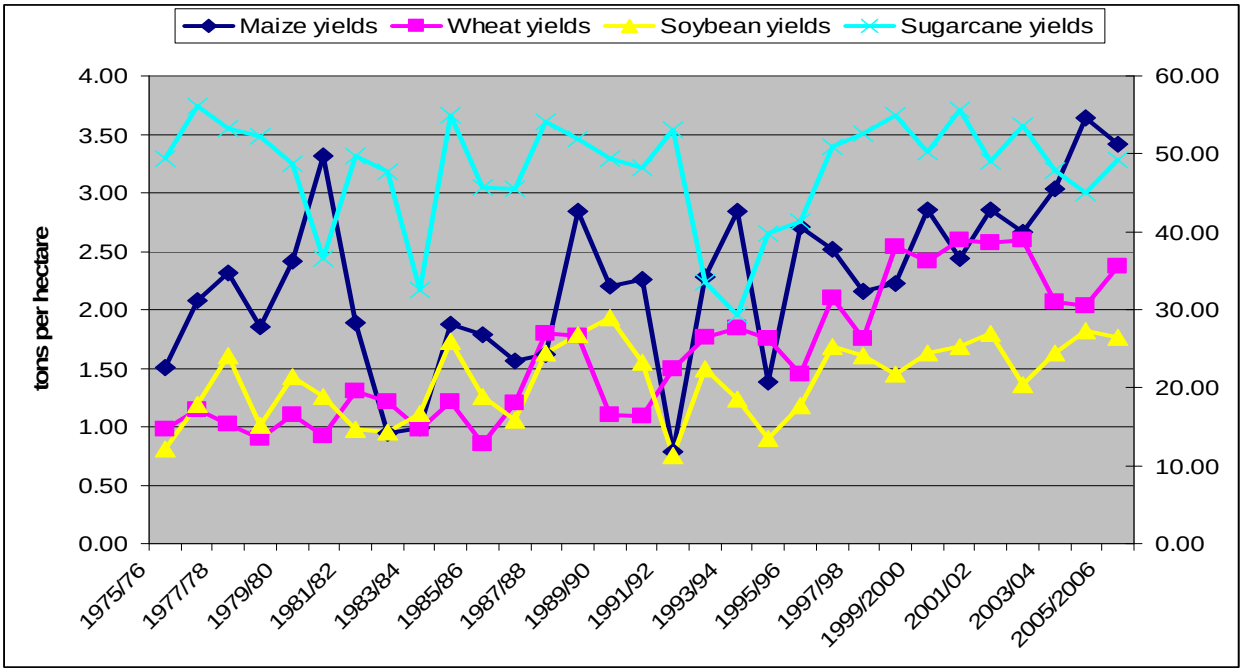
As field crop prices adjusted downwards to world market levels there was also an on-farm shift in field crop production to better quality soils, and a sectoral shift out of marginal areas such as the western parts of the North West and Free State (mainly maize), and the north-western and south eastern parts of the Western Cape (wheat). As a result, industry average yields increased at a faster rate than could be explained by technological innovation.

A notable exception in the effects of trade reform on field crop production is the sugar industry, which still enjoys high protection, partly because of the large investment in the processing of sugar, partly because the world market is heavily distorted by protectionism in the OECD countries, partly because of the large number of small-scale sugar producers, and partly because of the greater lobbying power of the industry.



Note: Maize, wheat and sugar cane are measured on the left axis, and soya beans on the right axis
Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 9: Total output of the principal field crops



Note: Sugar cane is measured on the right axis
Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 10: Yields of the principle field crops

2.3.2 Horticulture

The biggest change in the horticulture sector has been the dramatic increase in exports since the early 1990s, built on increased production. These production increases are summarised in

Table 2, while the exports are shown in Table 3 and the export shares in Table 4. Oranges make up the largest volume of production, double that of apples, while the exports of oranges, at almost 761 000 tons, are far higher than apple exports: almost 60% of the orange harvest is exported, compared to just over a third of the apple harvest. These Tables also show the rapid increase in production, and the even more rapid increase in exports, of naartjies. On the other hand, while grapefruit production has increased substantially, exports have increased at a relatively slower rate.

Table 2: Fruit production since 1980 (tons)

	Apples	Pears	Avocados	Pineapples	Oranges	Grapefruit	Lemons	Naartjies
1980-84	420125	148521	23464	217297	529496	64348	48091	26094
1985-89	464936	183573	40970	231491	567685	83033	62645	29473
1990-94	540869	223468	43462	145516	780314	104931	65976	41237
1995-99	573913	276397	61259	142501	952497	169866	90984	85905
2000-2005	636461	314766	71076	166350	1270663	313983	183354	122014

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Table 3: Fruit exports since 1980 (tons)

	Apples	Pears	Avocados	Pineapples	Oranges	Grapefruit	Lemons	Naartjies
1980-84	193271	47631	11202	3180	331275	48270	29230	54
1985-89	214549	70149	25140	2235	303921	46457	28854	1145
1990-94	225713	99701	26352	2872	358875	54823	29580	4914
1995-99	192003	108578	34567	4459	491216	114283	42634	39774
2000-2005	217764	125513	41702	4177	760853	165232	98449	81195

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Table 4: Fruit export shares since 1980 (%)

	Apples	Pears	Avocados	Pineapples	Oranges	Grapefruit	Lemons	Naartjies
1980-84	46.00	32.07	47.74	1.46	62.56	75.01	60.78	0.21
1985-89	46.15	38.21	61.36	0.97	53.54	55.95	46.06	3.88
1990-94	41.73	44.62	60.63	1.97	45.99	52.25	44.84	11.92
1995-99	33.46	39.28	56.43	3.13	51.57	67.28	46.86	46.30
2000-2005	34.21	39.87	58.67	2.51	59.88	52.62	53.69	66.55

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Table 5 summarises this discussion in terms of the relative shift in horticultural output over the past three decades. Citrus and subtropical fruit have increased their relative share, while vegetables and deciduous fruit have lost ground.

Table 5: The composition of horticultural output

	Deciduous fruit	Berries	Summer fruit	Subtropical	Citrus	Vegetables
1976-81	33.54	0.09	1.29	7.36	14.35	43.38
1982-87	34.13	0.08	1.23	7.69	11.11	45.76
1988-93	33.31	0.10	1.24	8.07	12.16	45.12
1992-97	31.52	0.08	1.32	6.08	14.39	46.61
1997-2002	31.08	0.07	1.11	7.29	16.70	43.75
2003-2005	32.16	0.06	0.98	7.48	19.30	40.02

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

The first effect of deregulation in the fruit export industries was the entry of new marketing agents, and hence a sharp decline in price and in quality delivered into a global market characterised by a rising demand for new products and a stagnant demand for conventional cultivars. Nevertheless, total fruit exports increased in volume and value in the post-deregulation era. Under the new, deregulated trading regime, producers were exposed to the shifting demand for new fruit types and varieties. While this had a negative impact on sales in the short term, it also resulted in a new investment boom as farmers adapted replanting and new plantings to reflect this change in demand.

The regions that benefited most from these changes in market conditions and the new opportunities that arose include the new table grape production areas along the Orange River in the interior of the country and the wine producing areas of the Western Cape. This expansion was driven largely by the early harvest, and hence the favourable market conditions, by production technologies such as precision irrigation, and by infrastructural investments aimed at improving air and shipping transport.

The wine industry also underwent radical structural changes. Exports, for example, increased by more than threefold in the 1990s, and from less than 10 percent of the total harvest to more than a third, driven by investment to replace current production capacity and to create new capacity. In the wine industry, this implies a smaller total crop, as high-yielding grape varieties were replaced by low-yielding 'noble' cultivars. The area under vines grew slowly, as most of the investment was targeted at replanting.

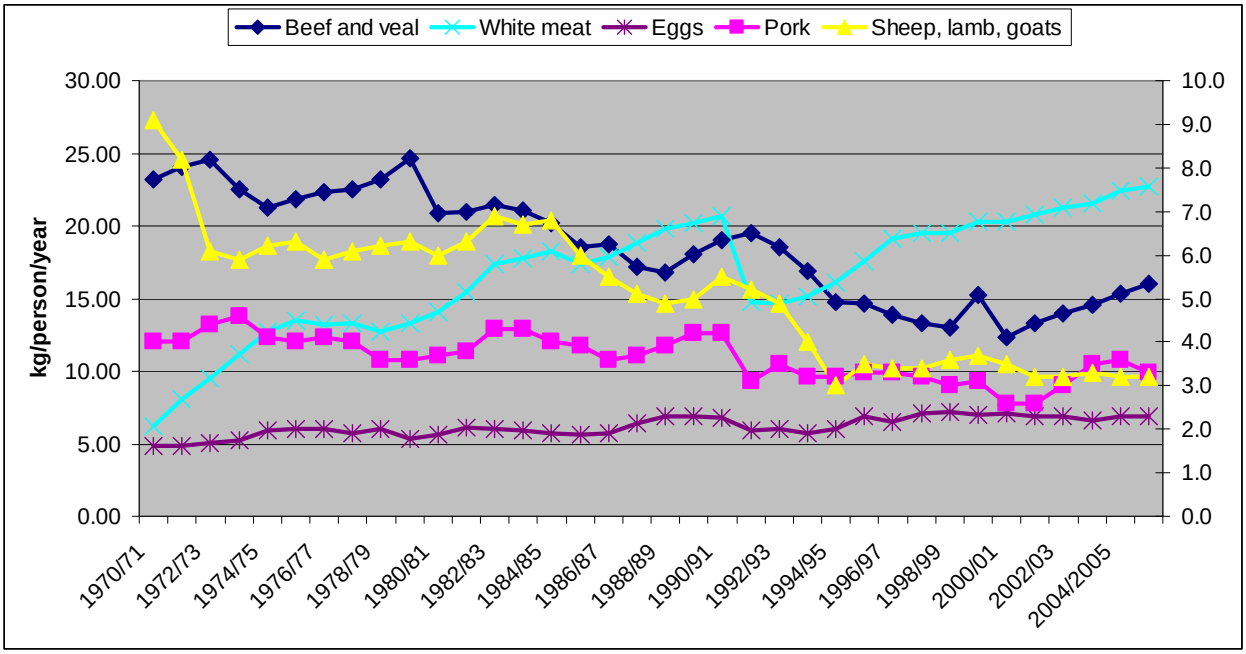
A further result of deregulation was that farmers were better able to withstand shocks in individual markets. While the bulk of deciduous fruit and citrus exports were still destined for the UK market, the concentration of exports diminished considerably, with new markets being exploited in Eastern Europe, South and East Asia, the Middle East and Africa. Producers' ability to shift a wider variety of products to a wider range of markets also provided a measure of protection against competition from heavily subsidised producers in northern hemisphere countries. New technologies resulted in an extension of the production and marketing season for these producers, thereby closing the 'marketing windows' for counter-seasonal southern hemisphere countries. This advantage was partially offset by new storage and shipping technologies for South African producers, but the reduction in state support for research and development poses a real threat to these industries.

2.3.3 Livestock

A relatively large proportion (up to 80 percent of formal sector sales) of South Africa's red meat production comes off feedlots, mostly as a final finishing phase, ostensibly because of the lack of winter grazing in the summer rainfall areas. It is not clear whether this practice increased in the post-deregulation era, although there is little evidence that it decreased. For this reason, red meat prices remained particularly sensitive to changes in the cost of animal feeds. The decline in the real price of yellow maize, oilseeds and other components of animal feeds since deregulation therefore resulted in relatively low red meat prices. As imports of animal feeds based on oilseeds increased, one of the possible locational effects was a shift in the dairy industry to the coastal regions, to production systems based on natural pasturage.

However, the biggest change with respect to livestock products has been the shift in consumption away from red meat. The data are shown in Figure 11. Consumption data for red meat are notoriously inaccurate because of the prevalence of sales into the 'informal' market

and the movement of abattoirs back to the rural areas (and even back on to farms) since deregulation. Nevertheless, the data show the expected trend towards white (poultry) meat, and way from beef and veal; sheep, lamb and goat meat; and pork.



Note: Sheep, lamb and goat meat, and pork are measured on the right hand axis.
Source: Adapted from NDA, 2006. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

Figure 11: Per capita consumption of livestock products

2.4 Balance of trade

Table 6 shows the trends in South Africa's agricultural trade since the mid-1960s. A number of important shifts can be identified from these data:

- Agriculture's share of total exports has remained at between 8 and 10 percent since the start of the 1980s (prior to this date, gold bullion exports were not included in total export data). In the second half of the 1990s the proportion increased from below 8 percent to above 9 percent, showing that during this period agriculture played the role of a catalyst of export-led growth for the country as a whole.
- The next row in the Table shows the share of exports in total agricultural production: the share declined from around a third between 1965 and 1979 to just above a fifth between 1980 and 1994, and then increased back up to the level of the earlier period. This clearly shows the effect of sanctions in the middle period. This also partly explains the relative lack of competitiveness of agriculture (to be discussed below): during the latter part of the 1990s the sector achieved little more than a re-entry into markets lost during the 1970s and 1980s.
- Exports of processed agricultural products[1] have increased faster than exports of unprocessed agricultural products – their share has increased from 40% to 60 percent

[1] These are higher value agricultural exports, as opposed to manufactured agricultural goods, i.e. food and beverages.

since 1965, with the sharpest increase occurring since 1990.

- Agricultural imports have grown faster than agricultural exports, and agriculture's share of total imports has remained relatively stable since 1970. However, the greater import propensity of the rest of the economy meant that agriculture's share of total imports declined from 6.6 to 5.2 percent after 1999.
- During this period, however, imports increased from 4.55 percent of total agricultural output to a fifth of total agricultural output.
- As a result, import cover (the ratio of agricultural exports to agricultural imports, a measure of the ability of the agricultural sector to pay for its own imports) declined drastically from 7.64:1 to 1.63:1 from 1965, and turned negative in 2007.
- In the final line of the Table total exports plus total imports are given as a proportion of total agricultural production as a measure of the 'openness' of the sector to trade. There has been a significant increase in this measure over the period under consideration.

There are, in addition, four further structural shifts in South Africa's agricultural trade portfolio that started during the 1990s that should also be noted:

- While the EU remains the largest destination for agricultural exports, there has been a rapid increase in exports to the rest of Africa, to the extent that these made up 20 percent of total agricultural exports by 2005;
- The 25 most important agricultural and food exports from South Africa were responsible for 92 percent of total export earnings after 2000, with the horticultural industry responsible for 45.1 percent of all export earnings.
- Argentina emerged as the main origin of food and agricultural imports into South Africa (largely animal feed, a consequence of the rapid increase in poultry consumption), followed by the United States, the UK, Australia and Zimbabwe. By 2000, South Africa had a positive trade balance in agricultural and food products of around R2.5bn with the non-SACU member countries of SADC, and only 3 SADC countries featured in the top 25 import sources, namely Zimbabwe, Zambia and Malawi.
- South Africa's trade balance in the manufactured goods category of food and beverages was positive for most of the second half of the 1990s; however, by 2005 imports were equal to exports, i.e. there was a neutral trade balance.

Table 6: South Africa's trade in agricultural goods since 1965

	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2005
Exports								
Total exports (Rm)	1222	2092	7305	20746	45164	72534	133623	272382
Total agricultural exports (Rm)	430	689	1412	1946	3613	5520	12132	22293
Gross value of output (Rm)	1237	2100	4234	8458	16087	25581	42349	68282
Agricultural exports as a % of total exports	35.21	32.92	19.33	9.38	8.00	7.61	9.08	8.18
Agricultural exports as a % of output	34.79	32.80	33.35	23.01	22.46	21.58	28.65	32.65
Processed agricultural exports (Rm)	182	341	724	942	2010	2865	6650	13384
Unprocessed agricultural exports (Rm)	249	347	688	1004	1604	2654	5482	8909
Processed agricultural exports/total agricultural exports	42.18	49.56	51.25	48.42	55.62	51.91	54.81	60.04
Imports								
Total imports (Rm)	1862	3243	6536	18240	32499	55122	125364	264682
Total agricultural imports (Rm)	56	174	290	870	1689	3476	8317	13687
Agricultural imports as a % of total imports	3.02	5.38	4.43	4.77	5.20	6.31	6.63	5.17
Agricultural imports as a % of output	4.55	8.30	6.84	10.29	10.50	13.59	19.64	20.05
Import cover	7.64	3.95	4.88	2.24	2.14	1.59	1.46	1.63
Openness	39.34	41.10	40.19	33.30	32.96	35.16	48.29	52.69

2.5 Investment

Investment in the agricultural sector is a function of the expectations of people within the sector, as well as prospective investors, both foreign and domestic. Unfortunately, South Africa keeps no official disaggregated data on foreign direct investment. Nevertheless, Table 7 shows real gross capital formation in agriculture over the past four decades.

Table 7: Real gross capital formation in agriculture since 1970

	Fixed capital	Working capital	Total capital
1970-74	1529	2293	3790
1975-79	1746	3111	5166
1980-84	1607	3447	4732
1985-89	1381	2437	4469
1990-94	1481	2020	3249
1995-99	1791	2509	4453
2000-2005	1929	2494	4449

Source: Adapted from NDA, 2008. *Abstract of Agricultural Statistics*. Pretoria, National Department of Agriculture

These data show that participants in the sector had started to invest in fixed capital ahead of the political and economic policy changes of the first half of the 1990s. Fixed capital formation, which declined from R1746m annually in the late 1970s to R1381m a decade later, increased to almost R2bn by 2005. Working capital investment, on the other hand, declined from almost R3.5bn annually in the first half of the 1980s to just above R2bn in 1990-94. This is largely due to the changes in management practices in the field crop sector, including the switch to minimum intervention farming, and to the increasing average age of the nation's tractor fleet as farmers, who had lost their preferential tax regime on capital purchases, kept their tractors for longer.

Table 8 shows Foreign Direct Investment (FDI) in the agricultural sector from 1994-2006. In nominal terms, the size of FDI has grown by 180% over the period, however, when this investment is adjusted by the effective exchange rate, the growth in FDI from 1994-2006 was 40%. Nevertheless, FDI levels in agriculture were extremely low in 2005: the value of total capital invested in agriculture was R 143,348 million of which R 734 million, or 0.5%, was Foreign Direct Investment.

Table 8: FDI in the agricultural sector 1994-2006

	FDI Agriculture, hunting & fishing R million	FDI Total R million	Ag as a % of Total FDI	Nominal Effective Exchange Rate 2000 base	Real Ag FDI (deflated by Effective Exchange rate)
1998	387	91,862	0.42	107.72	417
1999	406	318,630	0.13	106.32	432
2001	457	328,859	0.14	60.64	277
2002	653	370,695	0.18	75.33	492
2003	500	303,438	0.16	87.53	438
2004	719	355,088	0.20	97.74	703
2005	734	489,317	0.15	95.76	703
2006	888	611,722	0.15	81.02	719

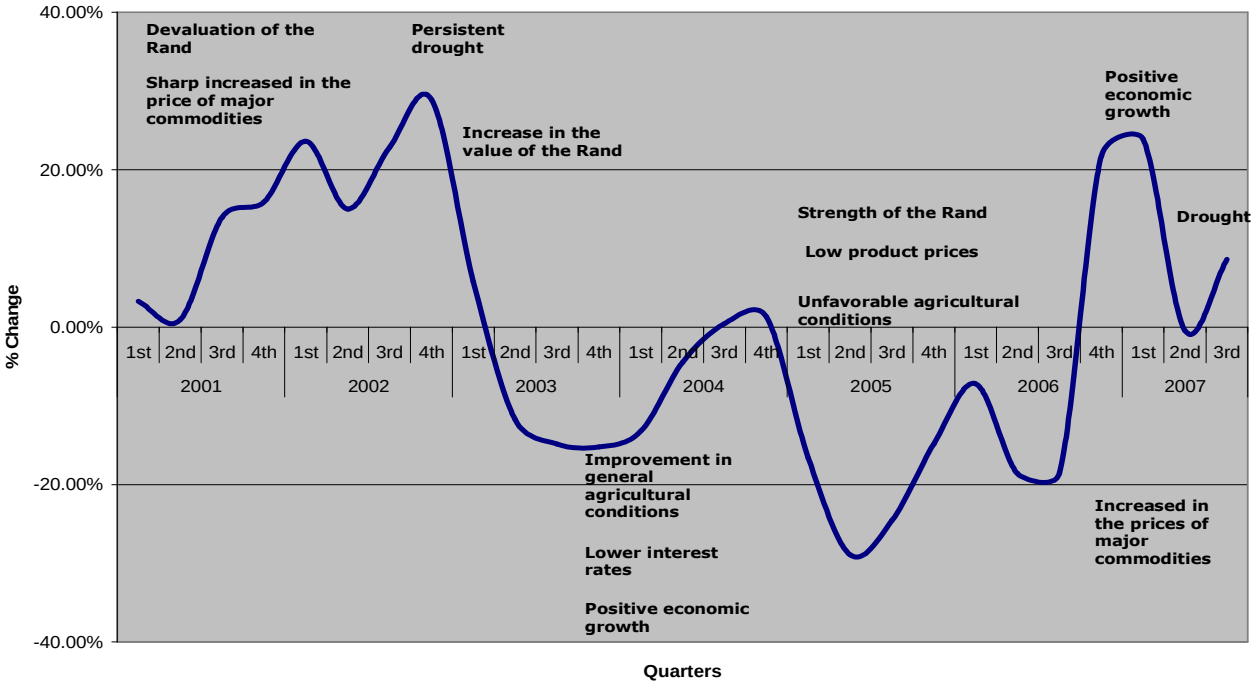
Source: Adapted from Reserve Bank (2007)[2]

[2] Reserve Bank, 2007. Quarterly Bulletin No 246: December 2007. Pretoria: Reserve Bank

If investment is driven by investor confidence, the Agricultural Business Confidence Index, developed by the Agricultural Business Chamber (ABC), provides useful insight into the sector. As the evaluation of the *Sector Plan* notes[3], "this indicator is based on the perceptions of the CEO's [or Chief Executive Officers] of all the major agribusiness firms, and in a way encapsulates all the elements of competitiveness, i.e. factor conditions, demand conditions, the performance of support services, related industries, safety and security; government attitude and policy, general sentiment and overall economic conditions." (Kirsten 2008).

As can be seen in Figure 12, from 2001 to 2002, confidence in the agricultural sector rose on the back of high commodity prices, and was stimulated by the devaluation of the Rand.

Trends in the confidence of agribusinesses in South Africa



Source: Kirsten 2008

Figure 12: Trends in the confidence of agribusiness in South Africa

Persistent drought and the strengthening of the Rand in 2003 led to a loss in confidence and a concomitant decline in the growth of agricultural investment for the period. The positive general outlook for the South African economy that prevailed in 2006, together with higher commodity prices, prompted renewed confidence in the sector and investment rose accordingly.

2.6 Competitiveness

COMMENT: THIS SECTION WILL BE UPDATED AND EXTENDED TO ALSO REFER TO THE COMPETITIVENESS STATUS OF SELECTED FOOD

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[3] Kirsten, J., 2008, Review and Evaluation of the Strategic Plan for South African Agriculture (Third Draft). Unpublished Research Report for the National Department of Agriculture

COMMODITIES AT FARM PRODUCTION -, AG PROSSESSING- AND INTRA FOOD SUPPLY CHAIN LEVELS. THIS WILL PROVIDE A MORE COMPREHENSIVE COMPETITIVENESS STATEMENT OF THE S.A. FOOD SYSTEM.

Esterhuizen[4] used the Revealed Trade Advantage Index, an extension of the well-known Revealed Comparative Advantage index, to measure the extent of competitiveness of agribusiness supply chains in South Africa. The most important conclusions drawn from this analysis are that:

- South African agriculture as a whole is no more than marginally competitive in the global market;
- South African agriculture was at its most competitive in the mid-1970s and its least competitive in 1985, but the degree of competitiveness has been increasing since 1993;
- When compared internationally, South Africa can be classified as a 'rising moderate performer' along with a number of EU member states such as Belgium, Germany, Italy, the UK, etc., as well as Canada. This is in contrast to 'winner' states such as Argentina, Brazil Chile, Australia and New Zealand, all strong competitors in our import and export markets;
- In South Africa, primary production was generally more competitive than the value-adding downstream industries during the 1990s, but that the competitiveness of both was increasing over time. Competitive subsectors that showed increasing competitiveness include maize, apples, pineapples, grapefruit and mohair, while there were no subsectors that were uncompetitive and showed decreasing competitiveness during the period 1993-2002. These trends are shown in Table 9.

Table 9: Competitiveness trends in agricultural supply chains

	Competitiveness of the primary product		
Competitiveness trend in the value chain	**Competitive**	**Marginal**	**Not competitive**
Increasing	Maize, Apples, Pineapples, Grapefruit, Mohair	Wheat, Tobacco, Chicken meat, Pork	Cotton, Barley
Decreasing	Sugar, Groundnuts, Oranges, Grapes, Wool, Plums, Hen eggs, Hides and skins	Potatoes, Sunflower, Tomatoes, Milk, Soybeans, Mushrooms, Olives, Beef	

Source: Esterhuizen, Dirk, 2006. *An evaluation of the competitiveness of the South African agribusiness sector,* University of Pretoria, Unpublished PhD thesis

2.7 Employment

Agricultural Census data show that the number of commercial farmers in South Africa declined by a fifth over the decade. Employment declined by less: in this case by 15 percent to below 1 million in 2002. More recent data[5] show that this constituted some 8.5% of the total labour force of the country, compared to 10.5% in 2001, but up from 7.5% in 2005. These data also show that one in three new jobs created in the economy as a whole in the year

[4] Esterhuizen, Dirk, 2006. *An evaluation of the competitiveness of the South African agribusiness sector.* University of Pretoria, Unpublished PhD thesis

[5] Statistics South Africa, Labour force survey September 2006. Statistical release P0210

to September 2006 was in agriculture. However, most of these additional jobs (134 000 out of 161 000) were created in subsistence agriculture, which raises legitimate concerns around the manner in which these were enumerated.

At the same time, the real cash remuneration of employees increased by 8 percent, in a period before the introduction of the minimum wage. This conforms to the finding in the Sector Determination for agriculture that real wages in the sector had increased at above the average for the country as a whole during the period 1970 -1998.[6] Despite this increase in the real wage, the unit cost of labour, measured as the ratio of the total cost of labour to the total value of output, has fluctuated, but on a declining trend, over time. In 1970, 16 cents was spent on labour for every R1 of output produced. This decreased to 13 cents in 1980, increased to 19 cents in 1994 and decreased to 17 cents in 1998. By 2001, it had again decreased to 11.7 cents.

The 1996 Agricultural Survey[7] found that the average cash wage paid to regular and casual workers in agriculture was R419 per month or R544.00 per month at 2001 prices. At a provincial level there is also considerable variation. Workers in Gauteng were paid an average of R790 per month while those in the Free State and Northern Province received R407 and R416 per month, respectively. Aside from a cash wage, workers receive additional income under the heading of 'other remuneration'. While cash wages paid varied across the provinces, the 'other remuneration' was fairly constant, and averaged to about 20 percent of total remuneration.

However, average wage data hide the distribution of wages. This is a particular problem in agriculture, where the distribution of wages consists of a clustering of workers at the lower levels and a distinct tailing off at the upper end of the distribution.

Although hard data do not exist, anecdotal evidence from all provinces suggests that evictions from farms substantially contributed to the growth of dense rural informal settlements as well as the growth of peri-urban informal settlements in both urban centres and in the *platteland.* Farmers' interests in evicting those no longer employed were, according to AgriSA, compounded by the very legislation designed to stem evictions. However, the rise in the rate of farm evictions was also an indirect effect of long-term changes in the agricultural economy, as evictions usually followed job losses. Survey data now suggests that the loss of livelihoods resulting from disemployment and evictions from farms during the 1990s outweighed the creation of new livelihoods in agriculture through land reform.[8]

3. The relative performance of the small-scale sector[9]

There has been a significant increase in the concentration of farm holdings within the commercial agricultural sector. In 1996, there were 60,000 farming units, but by 2002 this had declined to 45,000 units (or by 25%). Over roughly the same period of 1994/95 to 2002/03,

[6] Department of Labour, 2001. *The determination of employment conditions in South African agriculture.* A Report by the Department of Labour prepared together with the Centre for Rural Legal Studies, Stellenbosch and the National Institute of Economic Policy, Johannesburg

[7] Statistics South Africa, 1996. *Agricultural survey.* Pretoria, Statistics South Africa

[8] Wegerif, Marc, Bev Russell and Irma Grundling. 2005. *Still Searching for Security: The Reality of Farm Worker Evictions in South Africa.* Polokwane / Johannesburg: Nkuzi Development Association / Social Surveys.

[9] This section is based on Tregurtha, Norma, Nick Vink and Johann Kirsten, 2008. Presidency Fifteen Year Review Project: Review of agricultural policies and support instruments 1994-2007. Pretoria, Unpublished

the area farmed declined by 10%. That suggested a consolidation of landholding into larger units of ownership and production. Smaller and less efficient commercial farmers, unable to take advantage of scale economies, have been forced out of the sector, and their farms were acquired and integrated into neighbouring units.
With respect to the difference between the commercial and small-scale agriculture, there has always been an expectation that the transformation of South African agriculture would result in a wider range of farm sizes; a diminution in the stark differences between commercial and 'traditional' agriculture; and a less marked border between the commercial and communal farming areas. The remainder of this section considers the extent to which South Africa's agricultural dualism has been transformed since 1994, and includes a discussion of the change which has occurred within the small-scale agricultural sector.

Data on the small-scale farming sector are not readily available: the last survey that directly focused on this group of farmers was a once-off survey conducted by the Department of Agriculture and StatsSA in 1999. Information extracted from the annual *General Household Survey* does shed some light on the general direction of change with respect to small-scale farmer participation. The information presented here draws on that survey data, and is supplemented by a number of industry case-studies.

3.1 An overview of small-scale farmers

Of the estimated eight million households living in the non-metro areas of South Africa, 17%, or 1.3 million households, have access to land for farming purposes. Most of those households (97%) engage in some farming activity, largely on relatively small plots of land Table 10). Geographically, these households are clustered in the former homeland areas, with 64% of these households living in 10 districts. Six of those districts have been declared presidential poverty nodes.

Table 10: South African households' access to agricultural land

	Number (Weighted)	**%**
<0.5 ha	831,871	64.5
0.5ha-1ha	235,454	18.3
1ha-5ha	138,196	10.7
5 ha-10ha	38,146	3.0
10-20ha	11,940	0.9
20+ha	34,546	2.7
Unknown	17,556	-
Total	1,307,710	100%

Source: General Household Survey 2006

Small-scale farming households rely on multiple livelihood strategies, of which farming production makes an important, although small, contribution. The most important source of income for the majority of these farmers is from social grants – pensions, child support grants, etc. Some 96% of household heads are black, and 56.5% are women. A total of 64.1% of these farming households spend less than R800 per month, while 20.8% fall in the R800 - R1,200 band.

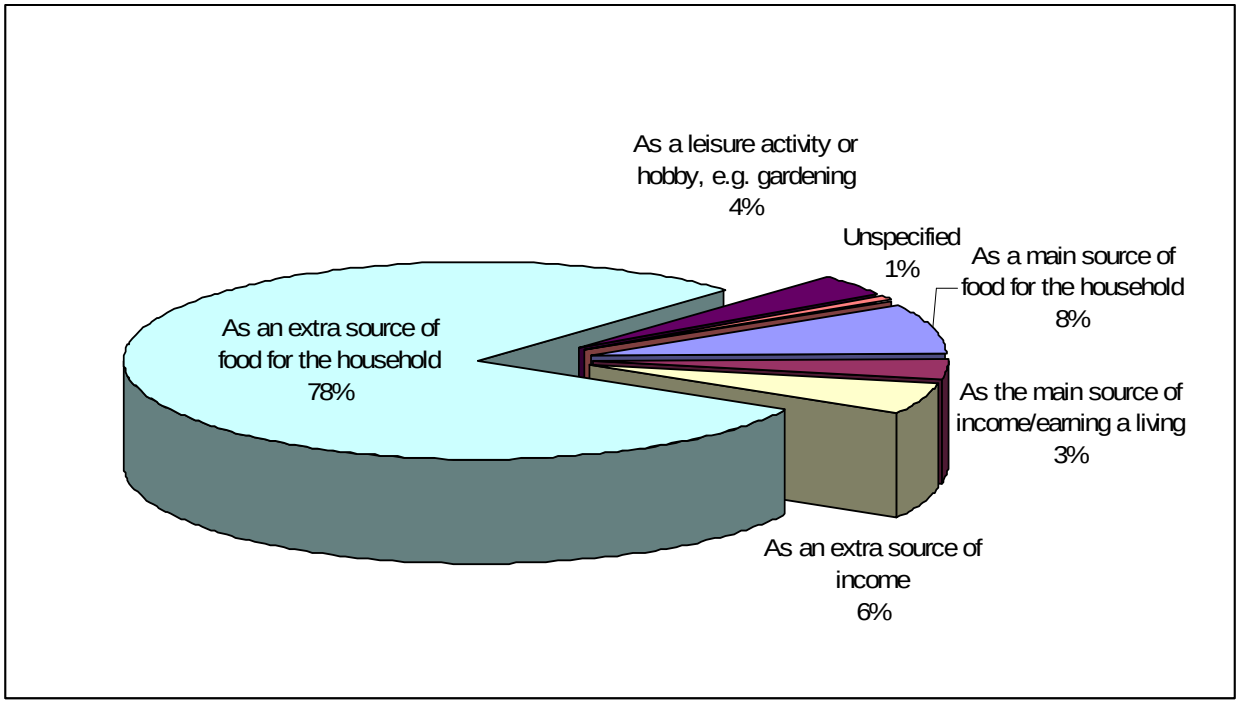
Typically, these households undertake farming to supplement household food requirements, as is evident in Figure 13. Estimates of the contribution of subsistence agriculture to household incomes (in cash and kind) range from 6 to12 percent for rural dryland settlements and between 24 to 30 percent for irrigated land. Land represents an important livelihood asset

for the rural poor. Subsistence farmers typically adopt a transitional type of livelihood portfolio and undertake farming when other sources of income fall away. Life histories of rural households with access to land showed that at some stage in the past, the majority of these households had been forced to rely on farming their plots for income, in response to a livelihood shock[10].

Table 11: Main income source, small-scale non-metro households with access to land

	Households Weighted[11]	%
Salaries and/or wages	292,229	22.9
Remittances	237,189	18.6
Pensions and grants	642,520	50.4
Sales of farm products	47,787	3.7
Other non-farm income	39,680	3.1
No income	12,188	1.0
Unspecified	3,781	0.3
Total	1,275,374	100

Source: General Household Survey 2006



Source: Labour Force Survey

Figure 13: Principal reason South African farmers engage in agricultural production

While changes in the contribution of agriculture to household incomes over time are unclear, changes in access to land suggest it's role as an asset is decreasing.

[10] Van Averbeke W. and Mohamed S., 2006, Smallholder Irrigation Schemes in South Africa: Past Present and Furture. Paper presented at the 2nd Symposium of the SACID, 15-17 November 2006 Mpumalanga

[11] The General Household Survey is an annual survey conducted by StatsSA. In 2006, 28,000 households participated in the survey. "Weighted" indicates that the survey results have been used as weights to provide an indication of the absolute numbers for the country's population as a whole.

By comparing data for the period 2002 and 2006, as is shown in Figure 14, the following trends can be observed:

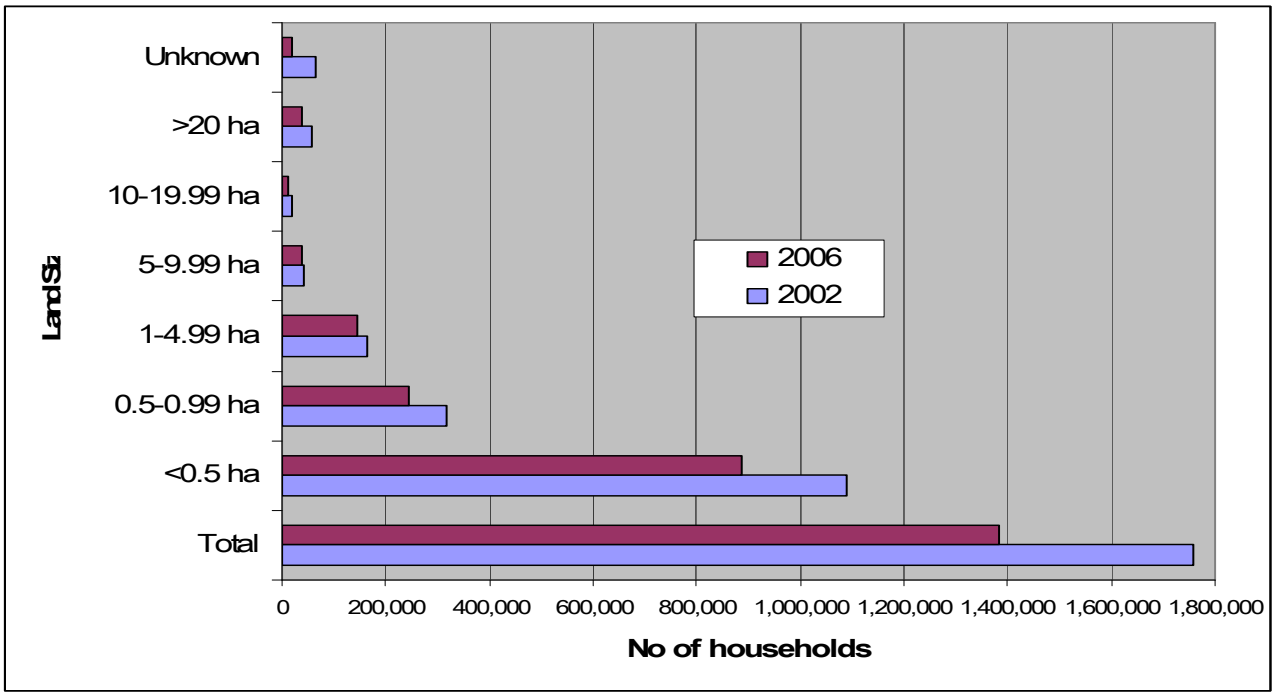
- In absolute terms, the number of South African households with access to land for farming purposes declined from 1.8 million in 2002 to 1.4 million in 2006 (or a decline of -21%).
- The relative decline in land access was even greater. In 2002, 15.33% of all South African households indicated they had access to land, but by 2006 this had decreased to 10.65%.
- The largest relative loss in access was experienced by those with access to very small land parcels (i.e. marginal subsistence farmers with less than one hectare).

Field crop production (particularly maize) is the main activity undertaken by small-scale farmers, followed by animal production and horticulture. The following three industry case-studies – from the maize, sugar and cotton sectors – illustrate the changes underway in small-scale agricultural production and productivity in greater detail.

3.2 Small-scale maize production

The South African Crop Estimate Committee[12] defines a subsistence farmer as a person who produces crops primarily for his/her own consumption. While the absolute number of South African households that grow maize to supplement household food requirements is unknown, information on the area under subsistence maize production, as well as subsistence output levels, is shown in Table 12. These data reveal how the area under subsistence maize production has declined by more than 50% for the period 1998/99 to 2006/07, while subsistence maize production has declined even further. Average yields achieved by subsistence farmers have remained relatively unchanged.

[12] CEC (Crop Estimates Committee), 2007, **Summer Crops – 6th Production Forecast**. http://www.nda.agric.za/



Source: General Household Survey (2002) and (2006)

Figure 14: Changes in land access 2002 -2006

Table 12: Maize production: commercial vs. subsistence

	Production Area *(Ha)			Production Tons		
	Commercial	**Subsistence**	**Total**	**Commercial**	**Subsistence**	**Total**
1998/99	2904700	662683	3567383	6,715,500	454615	7170115
1999/00	3230440	583403	3813843	10,140,940	421861	10562801
2000/01	2707905	515310	3223215	7,225,140	258124	7483264
2001/02	3016880	516579	3533459	9,731,830	317134	10048964
2002/03	3184950	465944	3650894	9391450	286055	9677505
2003/04	2843300	360810	3204110	9482000	228070	9710070
2004/05	2810000	413440	3223440	11450000	265948	11715948
2005/06	1600200	432246	2032446	6618000	317056	6935056
2006/07	2551800	345266	2897066	4127400	213738	4341138

Source: Crop Estimates Committee (various years)

Direct yield per hectare comparisons between commercial and subsistence maize producers, which are shown in Table 13, are not strictly accurate for two reasons. First, commercial farmers follow a relatively high-input/high-output production system, while the latter typically follow a low-input/low-output model. For example, in June 2005 production costs per hectare were R5,041 for commercial farmers in the Eastern Cape, while for subsistence farmers in the same area they averaged at R 1,615 per hectare[13]. Second, conventional yield measurement surveys may not be accurate, owing to the irregular shape of arable lands; the system of intercropping; and the consumption of part of the crops before harvest.

[13] Manona, S., 2005. Smallholder agriculture as local economic development (LED) strategy in rural South Africa: exploring prospects in Pondoland, Eastern Cape. Thesis submitted in partial fulfillment of MPhil (LAS), University of the Western Cape.

Table 13: Maize yields: commercial vs. subsistence

	Yield tons/ha			Production as % of total		Yields
	Commercial	Subsistence	Total	Commercial	Subsistence	Subsistence/ Commercial
1998/99	2.31	0.69	2.01	0.94	0.06	0.30
1999/00	3.14	0.72	2.77	0.96	0.04	0.23
2000/01	2.67	0.50	2.32	0.97	0.03	0.19
2001/02	3.23	0.61	2.84	0.97	0.03	0.19
2002/03	2.95	0.61	2.65	0.97	0.03	0.21
2003/04	3.33	0.63	3.03	0.98	0.02	0.19
2004/05	4.07	0.64	3.63	0.98	0.02	0.16
2005/06	4.14	0.73	3.41	0.95	0.05	0.18

Source: Own calculation based on CEC (various years)

3.3 Small-scale sugar cane production

A large number of small-scale agricultural producers have traditionally been involved in the sugar industry as cane growers. Table 14 shows how this number has declined over the past 10 years, with the result that small-growers' share of industry output declined from 18.4% in 1997/98 to 10% currently. The average scale of operation of individual growers is small (less than three hectares); farming is undertaken typically on a part-time basis, and use is made of contractors to undertake harvesting and transport.

Table 14: Small-scale cane growers: production statistics 1995-2006

	Number	Deliveries Tons cane	Tons delivered per farmer	Area Under Cane Ha	Area Harvested Ha
1995/96		2,545,210		85,254	55,678
1996/97		3,690,301		93,085	65,930
1997/98		4,073,955		87,520	65,212
1998/99	27,886	3,421,667	123	82,753	67,192
1999/00		3,104,559		82,831	66,239
2000/01		3,565,556		85,033	69,738
2001/02	30,286	3,035,301	100	85,215	69,144
2002/03	28,599	2,900,643	101	83,769	63,941
2003/04	26,711	2,236,071	84	83,027	67,352
2004/05	23,577	2,225,085	94	78,870	65,846
2005/06	23,470	2,349,591	100	78,571	62,402
2006/07	18,954	2,030,443	107	74,226	57,459

Source: Cane Growers

The yield of small growers, as a percentage of average industry yields, is also declining (Table 15). One possible explanation is that the more efficient small-scale growers have been able to take advantage of land reform opportunities and have migrated into the category of commercial farmers. Table 16 shows the sugar industry's impressive increase in PDI participation since 1999.

Table 15: Small-scale cane growers' relative productivity 1995-2006

	Small sugar growers % of total Production	Yields Small sugar growers Tons/ha	Average Yield for the total industry Tons/ha	Small growers yields as % of average industry yields
1995/96	15.3%	45.71	61.03	0.75
1996/97	17.7%	55.97	69.71	0.80
1997/98	18.4%	62.47	74.49	0.84
1998/99	15.0%	50.92	72.23	0.71
1999/00	14.7%	46.87	67.54	0.69
2000/01	15.0%	51.13	73.75	0.69
2001/02	14.4%	43.90	64.77	0.68
2002/03	12.6%	45.36	71.41	0.64
2003/04	11.0%	33.20	62.47	0.53
2004/05	11.7%	33.79	60.08	0.56
2005/06	11.2%	37.65	65.83	0.57
2006/07	10.0%	35.34	66.11	0.53

Source: Cane Growers

Table 16: PDI participation in the sugar cane production 1999-2006

	Total number of registered cane Growers	Total number of PDI registered cane Growers	Total Area Under Cane (AUC) Ha	PDI Area Under Cane	PDI AUC/Total AUC
1999	1724	152	281,770	13,244	4.70
2000	1784	190	290,063	17,497	6.03
2001	1753	224	295,518	20,990	7.10
2002	1756	260	299,424	23,009	7.68
2003	1767	302	299,919	28,605	9.54
2004	1743	327	306,290	32,346	10.56
2005	1729	341	306,425	37,064	12.10
2006	1716	358	310,396	42,397	13.66

Source: Cane growers

3.4 Small-Scale Cotton Production

As indicated earlier, cotton production in South Africa has been declining over the past twenty years. Small-scale cotton farmers in South Africa have not been unaffected by this shift – their average area under production has declined from 13,000 ha in 1996/97 to 4,000 ha in 2006/2007 (Table 17). While their current relative contribution to total South African cotton production is largely unchanged from 1996 levels, within the period there have been considerable changes. The crisis the industry experienced in 2002/2003 prompted the formulation of the Cotton Industry Strategic Plan. One of the core strategies of this plan was the development of small-scale producers and this, to some extent, has helped stem their exit from the industry.

In 2005 Randela[14] identified the most important factors that determine small cotton farmer commercialization levels. Statistically significant variables making a positive contribution included; access to loan finance, an ability to speak English (and thus the ability to enter into contract farming arrangements), age, own transport and access to market information. This provides important clues as to what issues need to be addressed if small farmer production levels are to increase.

3.5 Summary

In summary, what the three industry cases described here illustrate is that small-holder production has declined over the past ten years. Their productivity lags behind the commercial sector: moreover, this divide appears to be growing. A number of micro-level surveys of small-holder agriculture have established that small-scale South African farmers face a number of binding constraints that limit production and productivity. These include agronomic factors such as disease and adverse climatic conditions coupled with a lack of adequate information on how to manage these events; institutional factors such as insecure land tenure and access to production credit to purchase inputs; as well as declining agricultural support services such as research and the provision of extension services.

Table 17: Small-scale cotton production 1996-2006

	Number of small scale producers	Ha under production	Production No of 200 kg bales	Average ha per farmer	Yield kg/ha	Small –scale producers % contribution to total production
96/97	3655	13022	14496	3.56	222.6	12.2
97/98	3062	14496	20472	4.73	282.5	12
98/99	3604	9433	16728	2.62	354.7	7.6
99/00	3486	8094	4045	2.32	100.0	3.5
00/01	3312	4404	7302	1.33	331.6	4.7
01/02	3688	10916	8730	2.96	159.9	9.7
02/03	465	1476	1232	3.17	166.9	1.8
03/04	1935	5348	12380	2.76	463.0	9.3
04/05	1737	3508	7693	2.02	438.6	7.7
05/06	2849	7759	10993	2.72	283.4	15.2
06/07	2305	3945	7495	1.71	380.0	13.8

Source: Cotton SA

4. Agricultural policy since 1994[15]

A number of policy initiatives were referred to in section 2 of this report. The purpose here is to provide more information on the agricultural sector policies that have been put in place and implemented since 1994, and to provide some evidence on the impact of these policies. In this regard, trade, marketing, land, natural resource, labour and financial market, and technology

[14] Randela, R., 2005. Integration of emerging cotton farmers in the commercial agricultural economy. Thesis submitted in fulfilment of the degree PhD (Agric), University of the Free State.

[15] This section is based on Norma Tregurtha, Nick Vink and Johann Kirsten, 2008. Presidency Fifteen Year Review Project: Review of agricultural policies and support instruments 1994-2007. Pretoria, Unpublished

development and transfer policies are discussed, followed by an assessment of AgriBEE policy.

The performance of the agricultural sector and the policy changes introduced post-1994 should be seen within the context of the broader policy framework which government has set for the sector. Since 1994, the strategic direction of the agricultural sector has been shaped by three main policy documents: the *White Paper on Agricultural Policy*; the *Agricultural Policy in South Africa* discussion document; and the *Strategic Plan for South African Agriculture*. More recently, the *Accelerated and Shared Growth Initiative for South Africa (ASGISA*) identified a critical role for the agricultural sector in stimulating employment and building the second economy.

The *White Paper on Agricultural Policy*, released in 1995 was not a traditional policy document but rather a statement of the broad principles guiding policy development in the sector. Its principles were derived from the Reconstruction and Development Programme (RDP), and influenced the vision set for the sector, namely to become[16]:

> *A highly efficient and economically viable market-directed farming sector, characterised by a wide range of farm sizes, which will be regarded as the economic and social pivot of rural South Africa and which will influence the rest of the economy and society.*

The *White Paper* also contained a list of specific agricultural policy goals which included:

i. Developing a new order of economically viable, market-directed commercial farmers, with the family farm as the basis of that economic activity.
ii. Broadening access to agriculture *via* land reform, with enhancement from adequate agricultural policy instruments, and supported by means of the provision of appropriate services.
iii. Providing financial systems which focus on the resource-poor and beginner farmers, and which enable them to purchase land and agricultural inputs.
iv. Supporting trade in and the marketing of agricultural products which reflect market tendencies.
v. Undertaking agricultural production based on sustainable use of natural agricultural and water resources.
vi. Developing and enhancing agriculture's important role in the regional development of Southern Africa and other countries.

After the release of the *White Paper*, the National Department of Agriculture embarked on a process of producing a clear, coherent agricultural policy framework. There were two objectives behind that decision. First, the Department wished to outline the potential contribution of the sector to the realization of the RDP objectives (later the Growth, Employment and Redistribution (GEAR) macroeconomic strategy). Secondly, the Department wanted to specify the roles and responsibilities of government (both provincial and national) and the private sector in realizing the sector's vision.

At the end of that process, the National Department of Agriculture published a discussion document entitled *Agricultural Policy in South Africa*[17]. There were three major goals for policy reform highlighted in that document:

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[16] NDA, 1995. White Paper on Agriculture. http://www.nda.agric.za/docs/WHITEPAPER.htm

[17] NDA, 1998. Agricultural Policy in South Africa – A Discussion Document. http://www.nda.agric.za/docs/policy98.htm#Threetwo

i. Building an efficient and internationally competitive agricultural sector.
ii. Supporting the emergence of a more diverse structure of production with a large increase in the numbers of successful smallholder farming enterprises.
iii. Conserving agricultural natural resources and implementing policies and institutions for sustainable resource use.

A change of leadership within the Ministry of Agriculture delayed the formal adoption of that discussion document yet it would become a major input into the *Strategic Plan for South African Agriculture*[18] released by the Presidential Working Committee on Agriculture in 2001. The establishment of the Working Committee was an attempt to foster closer collaboration between government, the commercial farmers' union, Agri South Africa (AgriSA), and the emerging black farmers' union, National African Farmers' Union (NAFU) .

The Strategic Plan stated that a "united and prosperous agricultural sector" was the vision for South African agriculture, and that the strategic objective was to "generate equitable access and participation in a globally competitive, profitable and sustainable agricultural sector contributing to a better life for all". Three core strategies were adopted in support of:

i. Enhancing equitable access and participation in the agricultural sector.
ii. Improving global competitiveness and profitability.
iii. Ensuring sustainable resource management.

The tangible outcomes which the *Strategic Plan* was expected to deliver were:

- Increased wealth creation in agriculture and rural areas.
- Increased sustainable employment in agriculture.
- Increased incomes and increased foreign exchange earnings.
- Reduced poverty and inequalities in land and enterprise ownership.
- Improved farming efficiency.
- Improved national and household food security.
- Stable and safe rural communities, reduced levels of crime and violence, and sustained rural development.
- Improved investor confidence and greater domestic and foreign investment in agricultural activities and rural areas.
- Pride and dignity in agriculture as an occupation and sector.

Recently, an evaluation of the implementation of the *Strategic Plan for*, which assessed the extent to which the intended objectives and outcomes had been realized over the past five years was conducted. The accompanying performance scorecard suggested that good progress had been made in some areas, such as sustainable resource management, while other areas, such as equitable access and participation, still required urgent attention[19].

In contrast to the formal policy documents on agricultural policy that have progressively stressed the need for greater equity in the sector, the ASGISA strategy launched in 2006

[18] NDA, 2001. Strategic Plan for South African Agriculture. http://www.nda.agric,za/docs/sectorplan.htm

[19] Kirsten, J., 2008. Review and Evaluation of the Strategic Plan for South African Agriculture (Third Draft). Unpublished Research Report for the National Department of Agriculture

explicitly identified a number of agricultural projects and programme areas aimed at realizing more balanced agricultural growth[20]. These include:

- 50% increase in land under irrigation
- Improved livestock productivity incl. goat and goat products
- Accelerated land reform
- Bio-fuels

Within the context of these initiatives, special emphasis was placed on smallholder agricultural development and as such ASGISA signalled a policy shift towards greater support for the country's 1,3 million small-scale, resource-poor farmers.

4.1 Trade policy

4.1.1 Trade liberalisation

The key feature of post-1994 trade policy in South African agriculture has been the replacement of direct controls over imports and exports, exercised in terms of the Marketing Act of 1968, by tariffs, and the lowering of those tariffs below the bound rates agreed to in the Marrakech Agreement of 1993. Quantitative restrictions, a multitude of tariff lines, a wide dispersion of tariffs, and formula, specific and ad valorem duties and surcharges, characterised South Africa's trade regime before 1994. In agriculture, quantitative restrictions, specific duties, and price controls, import and export permits and other regulations were replaced by tariffs after South Africa became a signatory to the Marrakech Agreement. Initial progress in rationalizing the tariff regime and with lowering nominal and effective protection was fast. Between 1990 and 1999, the number of tariff lines was reduced from 12 500 in 200 tariff bands to 7 743 in 47 tariff bands or fewer than 2500 in 45 bands if the zero tariffs are ignored. The maximum existing tariff was also reduced from almost 1400% to 55% and the average economy-wide tariff fell from 28 to 7.1%. In agriculture, virtually all tariffs are now below the bound rates of the Marrakech Agreement.

The structure of protection also affects agriculture. In South Africa, the average tariff cascades from a relatively high rate on consumer goods to moderate on intermediate goods and low on capital goods. This pattern, which is typical of protection in many developing countries, implies that less progress has been made in rationalizing *effective* protection. It also results in a support to value-added production and exports. While certain manufacturing industries have benefited directly from such support (e.g. the motor vehicle and textile industries), traditional agricultural export sectors such as wine have been able to base their export strategies on growth in a protected domestic market.

In addition, countries in the Southern African region have been granted preferential access through the abolition of quantitative controls over agricultural trade within SACU, a range of bilateral treaties and the free trade agreement with SADC. Finally, South Africa has signed a free trade agreement with the EU. These changes came about in accordance with national trade policy, whose main purpose was to lower the average level of tariffs, to maintain a typical tariff escalation profile, and to simplify the tariff structure.

[20] Swart, A., 2006. A Growing Economy that Benefits All: The Accelerated and Shared Growth Initiative for South Africa. A paper presented at the Agribusness Chamber Conference 2006, 23-24 May, Lord Charles Somerset West

The three most important trade relations in the Southern African region include SACU, which exhibits the deepest level of integration, SADC and the South Africa-Zimbabwe bilateral agreement. Of the extra-regional influences, the Lomé (and now Cotonou) preferences, the Africa Growth and Opportunity Act (AGOA) of the USA, and South Africa's separate bilateral Agreement with the EU are most influential.

4.1.2 The impact of trade policy reform

The most important implications of these policies for the agricultural sector have been that:

- The prices of field crops generally adjusted downwards to world market levels, and have thereafter fluctuated with the world market price. Commercial farmers have shifted quite rapidly to minimum and low-tillage production systems and in certain cases even to no-till practices. The result has been a rapid decline in the use of inputs such as fertilisers, insecticides and herbicides, of tractors, combine harvesters and other implements, and of fuel in field crop production This has been accompanied by an on-farm shift in field crop production to better quality soils, and a sectoral shift in production out of more marginal areas such as the western parts of the North West and Free State provinces (mainly maize), and the north-western and south eastern parts of the Western Cape province (wheat). A further effect has been the adoption of crop rotation regimes, for example the introduction of crops such as medics and canola into wheat systems in the Western Cape Province and the gradual introduction of precision farming technologies. These locational and cropping pattern effects have allowed farmers to maintain total output of the major field crops while ploughing less land.
- Commercial farmers have adopted a wide variety of risk management strategies other than lower input use to cope with the greater instability that they face. These diversification strategies have been focused on income diversification (e.g. more part time farming, investment in on-farm agro-tourism facilities), and on asset diversification (large farmers have tended to diversify into different subsectors of agriculture, or into different regions within the same subsector, e.g. a maize farmer will diversify into horticulture, or a table grape farmer will buy additional land in a different production area). The result is a simultaneous consolidation of large commercial (industrial) farms with an increase in the number of smaller commercial farms, and an overall increase in the average farm size.
- The extent to which domestic producers of maize and wheat have reacted to changes in world prices has been attenuated by the application of a formula tariff, which fluctuates with the world price. The recent rapid increase in the world price, along with the devaluation of the domestic currency, created circumstances where the import tariffs should have been lowered immediately in order to cushion the effect on the farm gate prices. However, there has been widespread agreement that this mechanism was not used to good effect, as the adjustments in the tariff were delayed by red tape. As a result, the wheat tariff was changed to an *ad valorem* tariff during 2007, but at the low rate of 2%.
- South Africa has in the process also increased its imports of animal feeds based on oilseeds, as the evidence shows that commercial farmers in the country are not competitive in the production of these commodities. One of the possible locational effects of these imports has been a shift in the dairy industry to the coastal regions, i.e. to production systems based on natural pasturage.

- The notable exception in the effects of trade reform on field crop production is the sugar industry, which still enjoys high levels of tariff protection, partly because of the large investment required in the processing of sugar, partly because the world market in sugar is even more heavily distorted by the protectionism of the OECD countries than other agricultural products, partly because of the large number of small-scale sugar producers, and partly because of the greater lobbying power of the industry. Sugar producers even enjoy protection from producers in other SACU and SADC countries. While the domestic pricing structure has been liberalised to some extent in the past 8 years, the sector has not had to adjust to the same extent as have maize and wheat producers.
- The tariff structure that has resulted from the changes in trade policy in South Africa generally affords greater protection to value-added products as compared to commodities. One result is that farmers generally sell their products into oligopolistic markets, and buy their inputs from oligopsonistic suppliers, which adversely affects their terms of trade. Commercial farmers have been able to counter these effects by increasing multifactor productivity. However, continued increases in productivity are dependent on new technologies, which in turn are at least partly dependent on state funding. This issue will be discussed below.
- South Africa has traditionally been a net importer of red meat, with most imports sourced from Botswana and Namibia. The lowering of trade protection resulted in increased competition from non-traditional suppliers such as Australia (mutton and lamb) and the (subsidised) EU producers (mostly low quality beef cuts). Here the weakening exchange rate seems, however, to have resulted in a decline in these supplies in the past few years.
- The effects of trade policy changes on the horticultural sector are more the result of the new Marketing of Agricultural Products Act than of macroeconomic trade policy, and are discussed below.

The net result of these changes can be summarised in two dimensions, namely the policy space available to decision makers after the trade liberalisation; and the measure of support provided to South African farmers.

Policy space

South African agriculture lost virtually all state support during this process of trade liberalisation as well as the domestic market deregulation described in the next section. The effects of trade liberalisation were somewhat balanced by the introduction of tariff rate quota (TRQ) regimes for several products and a system of (largely now ended) variable import tariffs. However, South African agriculture is now at somewhat of a crossroads, with a body of opinion arguing that a reversion to protectionism is required, and especially so as consideration must now be given to assisting the thousands of black farmers starting their careers after acquiring land from the land reform process.

This raises the question whether South Africa is actually in a position to increase its border protection for agriculture, an issue addressed in a recent article[21]. Table 22 contains a summary of the policy space available to South African agriculture. In general, it is limited. Some 14.1 percent of the imports are 'locked' by the WTO bound rates, with an additional 7.5 percent almost at those bound rates. Another 22.9 percent is effectively 'locked' with at

[21] Sandrey, R., O. Oyewumi, B. Nyhodo and N. Vink, 2007. South African agriculture protection: how much policy space is there? tralac Working Paper No 4/2007 March 2007. Stellenbosch, tralac.

least fifty percent sourced from the EU/SADC combined with an additional 15.2 percent 'almost locked' with at least 40 percent of the imports from these same destinations. This gives a total of 59.7 percent that is, for all practical purposes, locked into the current tariff policy regime.

Table 18: Summary of the policy space available

No policy space, as applied rates are at bounds ($378.2m, 14.1 $ of total imports					
Rice	$230.0m	Other animal prod	$46.5m	Coffee	$37.7m
Limited space, as EU/SADC imports combined > 50% ($611.8m, 22.9% total)					
Spirits etc	$185.8m	Processed food	$129.3m	Cotton	$69.0m
Very limited space, as EU/SADC imports still > 40% ($406.3m, 15.2% total)					
Tobacco	$77.7m	Animal feeds	$67.3m	Fats/oils	$61.4m
Very limited space, as applied rates are close to bounds ($200.8m, 7.5% total)					
Casein	$111.0m	Cocoa/choc	$69.6m	Spices	$20.2m
Policy space, but a major animal feedstuff ($391.4m, 14.6% total)					
Palm oil	$128.6m	Soybean cake	$118.7m	Soybean oil	$110.0m
Policy space but a staple food ($180.6m, 6.7% total)					
Wheat	$180.6m				
Yes, there is clear policy space ($507.5m, 19.0% total)					
Poultry	$147.2m	Sugar products	$69.2m	Pork	$47.3m

Source: Sandrey et al (2007)

Of the remaining imports, another 14.6 percent constitute animal feed inputs. Any increase in these tariffs will directly pass a cost increase on to South African poultry and meat producers, and ultimately on consumers. Imports of wheat (6.7% of the total) are also sensitive. While there is policy space to increase the wheat tariff, South Africa is a net importer of this staple food. This leaves a grand total of 19.0 percent of all imports where at least some policy space is available. Even here, most of these imports are subject to WTO TRQ obligations and thus not totally under the control of South African trade policy authorities.

Support to South African farmers

South African agriculture has been subjected to analyses by the FAO[22], the OECD[23], and the World Bank[24] in the past few years (Vink, 2003; OECD, 2006; Kirsten et al 2007) These institutions have used a range of different measures to describe the extent and the nature of state intervention in the agricultural sector. The results are summarised in Table 19.

The high PSE (Producer Support Equivalent)[25] in 1992/3 was the result of a huge once-off increase in direct income support to farmers, from R250m the previous year, to R2.6bn (Rimmer 1993). This came in the form of a drought relief package, announced by the

[22] Vink, N, 2003. Macroeconomic and sector policy changes in South African agriculture, 1996-2002. FAO Project on the Roles of Agriculture in Developing Countries. Rome: FAO

[23] OECD, 2006. Review of Agricultural Policies: South Africa. Paris: Organisation for Economic Cooperation and Development

[24] Kirsten, Johann, Lawrence Edwards and Nick Vink, 2007, Distortions to Agricultural Incentives in South Africa, World Bank Agricultural Distortions Working Paper 38, December

[25] The Producer Support Estimate (PSE) is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures, regardless of their nature, objectives or impacts on farm production or income. The Producer Support Estimate (PSE) is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures, regardless of their nature, objectives or impacts on farm production or income (OECD 2006).

Government in 1992, which consisted of R2.4bn in debt relief. On average, these estimates of support to agriculture reflect the change in policy from the protection in the 1970s and 1980s to a more liberal market in the 1990s and early 2000s. This is consistent with the abolition of the Control Boards and trade liberalization under the Marrakech Agreement on Agriculture. Furthermore, they underscore the unequal nature of global agricultural markets.

Note that South Africa's stance against domestic support does not preclude increasing its current levels of support to farmers. As South Africa is currently classified in the WTO as a developing country, the current proposal on domestic support makes provision for trade distorting support under the *de minimus* rule equal to 5% of the total value of agricultural production. In addition, the proposal also makes provision for the introduction of a new Blue Box support category to accommodate trade distorting support that imposes production limits so that over-production is curbed. The permissible level of support under this box is a further 5% of the value of production.

Table 19: Measures of support to South African agriculture

			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
South Africa	**Based on OECD 2007 NPC**	**NRA**					10.80	18.95	8.20	13.61	9.23	9.86	5.51	2.21	8.61	5.51	
	Kirsten *et al*, 2000	**PSE**							1.78	10.89	4.18						4
	Helm & van Zyl	**PSE**	11.56	13.69	16.74	31.04	14.50										
	Kirsten *et al*, 2006	**TRA**					8.33	7.45	0.05	5.50	-7.79	-3.58	-3.42	-7.72	-5.33	0.80	
OECD countries	**OECD**	**PSE**	32	35	33	35	34	32	29	29	33	35	33	29	32	31	30

Notes: PSE = Producer support estimate; TRA = Total rate of assistance. Both measure direct and indirect support to farmers, with the indirect support measured as the difference between world and domestic prices. NPC = Nominal Protection Coefficient
Sources: OECD (2006), Kirsten et al (2000) Kirsten et al (2007) Helm and Van Zyl (1994)

4.2 Marketing policy

4.2.1 Marketing deregulation

Until early in 1998 the marketing of most agricultural products in South Africa was extensively regulated by statute, based on the original Marketing Act (some 70% of agricultural output by value), the Cooperative Society's Acts (in the case of ostriches and wattle bark) or by industry-specific statutes (such as the Sugar Act and the Wine and Spirit Control Act). Most products were regulated under the 22 marketing schemes introduced from 1931 and especially from the time of the 1937 Marketing Act (consolidated in the Marketing Act of 1968).

Beginning two decades ago, the industry faced increasing pressures for deregulation, a process that was accomplished in two phases over this period. The major change in the first phase was the extensive deregulation of state agricultural marketing schemes within the framework of the Marketing Act of 1968. The origins of this change can be found in the shift in monetary policy in the late 1970s and fiscal strategies in the 1980s, which undermined the complex structure of protection, price support and cross-subsidies on which agricultural support was founded. Yet isolation from the world market, accompanied by the increased isolation of the country in social, cultural, political and intellectual spheres during the 1980s, meant that the deregulation steps that did take place were aimed at the domestic market. Foreign trade still largely consisted of managing imports and exports in order to manipulate domestic prices (e.g. maize, wheat), or of monopoly export schemes (e.g. for fruit). The first real steps in opening the agricultural sector to world market influences came with the Marrakech Agreement of the GATT in 1993, when all direct controls over agricultural imports were replaced by tariffs.

The most sweeping change was, however, brought about by the Marketing of Agricultural Products Act, No 47 of 1996. This new Act represented a radical departure from the marketing regime to which farmers had become accustomed in the period since the 1930s. While far reaching, the deregulation that had taken place since the 1980s was piecemeal, uncoordinated, and accomplished within the framework of the old Marketing Act, with the result that any policy changes could easily be reversed. The new Act changed the way in which agricultural marketing policy would henceforth be managed in South Africa, not least by opening the sector to world market influences in a manner that could hardly have been anticipated a decade earlier. The Marketing of Agricultural Products Act, No 47 of 1996 set up the National Agricultural Marketing Council (NAMC), whose immediate task was to dismantle the existing Control Boards, and subsequently to manage and monitor state intervention in the sector.

Act 47 of 1996 sets its objectives as the promotion of efficiency in the agricultural sector, increased market access, the optimisation of export earnings, and the promotion of the viability of the sector. Further, the Act states that intervention is only allowed on condition that at least one of these objectives is substantially furthered without being substantially to the detriment of any of them. In addition, the National Agricultural Marketing Council (NAMC) was set up, with the main function of monitoring any intervention in the market that has been allowed in terms of the Act. This formulation means that the calculus has changed. The main function of the institutions created under the previous Act (the Control Boards and the National Marketing Council) was to implement market interventions. In contrast, the main function of the NAMC is to monitor those few interventions that are permitted to ensure that

they do not create market distortions that could adversely affect the welfare of the agricultural sector or the country at large, as measured by the objectives of the Act.
It is evident that the effects of deregulation differed between the field crop, the horticultural and the livestock subsectors of agriculture, partly because of their different modes of production, and partly because the nature of control under the old Act differed between different commodities. Each of these is discussed in turn:

4.2.2 The impact of marketing deregulation

Field crops
The discussion above showed the real impact of trade policy reform on the performance of the field crop sector. Yet the process of deregulation of the agricultural marketing system encompassed more than just a change in the trade regime. The most important changes included the abolition of pan-territorial and pan-seasonal pricing mechanisms, the concomitant changes to physical access to the market, and to the food processing sector, and a range of institutional impacts:

- Most of the major field crops were sold under a 'single channel fixed price' marketing regime, characterised by pan-territorial and pan-seasonal pricing. The main consequence of pan-territorial prices was that farmers closer to the market were effectively cross-subsidising those further away that faced higher transport costs. With deregulation, prices started to become regionally differentiated to reflect transport costs and regional variations in demand and supply. Another consequence was that processors moved closer to the market, as they also paid the same price irrespective of the point of delivery. The main result of pan-seasonal pricing was that no grain was stored on-farm, and that the entire crop was sold immediately after harvest. This had a tendency to cause havoc on the money markets, especially when the maize crop was harvested, as farmers were paid in full on delivery to the cooperatives. The result was an over-supply of storage capacity, arguably also incorrectly located.
- Another feature of the regulated market was that the price differentials between different grades and cultivars of grains did not reflect differential demand. This was particularly evident in the wheat industry, where wheat produced in the Western Cape, for example, was unsuited to the production of bread, while there were few incentives to produce for specific baking qualities, or for the production of pasta, etc.
- With deregulation, the major grain industries (maize, wheat) become more differentiated as the location of production shifted in response to differential prices across space and over time. One of the first manifestations was that an increasing proportion of the maize crop is now milled by small-scale millers, both on- and off-farm (industry estimates suggest this can be as high as 30% of the crop). This has impacted the rural areas in three ways. First, there are increased opportunities for small and medium scale businesses in processing and distributing maize and maize products. This increased activity in the rural areas has provided a stimulus to rural economies. Second, there has been a marked increase in agro-tourism throughout the country. While agro-tourism has long been a feature of the wine industry, there has been a marked increase in farm stores, farm stays, etc. in most parts of the country. Third, small-scale farmers have, in theory at least, better access to the market than before, as the cooperatives that acted as agents under the single channel schemes would only take delivery in bulk. However, the slow pace of land reform (see below) means that few new entrants to agriculture have been able to take advantage of these benefits.

- The abolition of pan-territorial and pan-seasonal pricing has also had interesting consequences for the rural finance sector. Under the control schemes, the Control Boards appointed agents, mostly farmer co-operatives, to carry out the physical functions of receipt of the crop, payment, storage, and onward consignment to the processors. These input supply co-operatives therefore became effective regional monopolies, which enabled them to become preferred suppliers of seasonal credit to farmers. They generally used the Land Bank as their preferred source of funds. With deregulation, however, the commercial banks have been able to expand their share of this market.
- An additional consequence of the abolition of pan-territorial and pan-seasonal pricing has been the advent of a wide range of strategies (increased part-time farming, contract farming, strategic selling throughout the season, price hedging, etc.) and institutions (the agricultural futures market, or SAFEX, grain trading firms, brokerage firms, etc.) that have enabled farmers to participate in the market with greater certainty and lower transactions costs. These institutional changes have generally served to lower the transactions costs of market participation. Price hedging instruments such as SAFEX are mainly used by to hedge or insure against price risk and thus manage farmers' liquidity in a deregulated market. SAFEX price formation for field crops is generally considered efficient (see caveat below) and a true reflection of prices in the domestic market. Thus by using SAFEX instruments effectively, farmers can minimise their price risk which in turn lowers their cost of doing business. The uptake of SAFEX derivates amongst South African farmers has not been scale neutral for two reasons. The first relates to contract size, a 100 ton contract is the only contract size traded on SAFEX and this translates into a farmer threshold entry level of above 50 ha in the case of maize. The second reason relates to the substantial legal and financial knowledge, computer literacy and infrastructure requirements such as electricity and internet access, that are needed to be able to make full use of these market instruments.
- A recent investigation into the performance of SAFEX identified a number of potential weaknesses in the operation of the market that might have contributed to high food prices and price volatility observed in the era of deregulation. The main recommendation flowing from this investigation was the need to revisit a number of the rules and regulations governing SAFEX with respect to restrictions on the size of the trading position taken as well as limiting the opportunistic behaviour of traders.

Livestock

Control over the livestock industry was exercised in terms of a wide range of marketing control schemes. Red meat and eggs were controlled under 'surplus removal (price support)' schemes, whereby a floor price was set, with the relevant Board responsible for manipulating supply in order to maintain prices above this floor. In the case of red meat, the main consuming areas were designated as 'controlled' areas, and meat could only be sold there under a permit. Meat could also only be slaughtered in approved abattoirs, most of which were in the controlled areas. This created an artificial shortage in the consumer market and an artificial surplus in the producing areas, with the result that the holders of permits gained windfall rents. Wool and milk were controlled under 'single channel pool' schemes.

The major sources of animal feeds were also controlled, with maize under a single channel fixed price scheme, and oilseeds and lucerne under single channel pool schemes. The poultry industry was never subjected to statutory control.

The effects of deregulation on the livestock subsector have received relatively little attention, partly because of the heterogeneity of the sector, and partly because of the lack of reliable data, especially on consumption of red meat. Some effects include:

- An increase in the proportion of red meat sold in the informal sector directly into poor urban and peri-urban communities. Live sheep and cattle are bought on the farm, or even delivered to these townships, and slaughtered at the roadside, where the meat is sold raw or cooked in various forms. While it is known that this trade makes up a substantial proportion of total red meat sales, its exact magnitude has not been estimated. Similarly, there is an active market in pig and poultry by-products such as offal, chicken heads and feet (colloquially known as 'walkie-talkie'), etc.
- Deregulation resulted in a rapid increase in the number of smaller abattoirs in the rural areas, mostly on-farm facilities that are combined with retail outlets or that supply directly to retailers in the formal market. One of the results is that the large metropolitan abattoirs are all running at less than a third of capacity, leading to severe financial problems for the holding company, Abakor.
- A relatively large proportion (up to 80% of formal sector sales) of South Africa's red meat comes of feedlots, mostly as a final finishing phase, ostensibly because of the lack of winter grazing in the summer rainfall areas. It is not clear whether this practice has increased in the post-deregulation era, although there is little evidence that it has decreased. For this reason, red meat prices are particularly sensitive to changes in the cost of animal feeds. The decline in the real price of yellow maize, oilseeds and other components of animal feeds since deregulation has, therefore, resulted in relatively low red meat prices, at least until the recent increase in grain prices.

Horticulture

Most of South Africa's fresh vegetable and subtropical fruit industry escaped controls under the old agricultural marketing regime, while the domestic market for fresh deciduous and citrus fruit was deregulated in the 1970s. Hence, the focus here is on exports of deciduous and citrus fruit. These products were marketed under 'single channel pool' schemes, whereby producers had to channel their produce into a pool operated by a statutory monopoly empowered by the Deciduous Fruit and Citrus Control Boards respectively. The main implications of the deregulation of these industries include the effect on the quality and quantities exported, as well as the destination of exports:

- The main advantage of the single channel export schemes was, obviously, the ability to manage the price of exports, and more specifically to use the monopoly power to keep prices high. The main disadvantage was that products were pooled (i.e. individual producers had no incentive to deliver a quality higher than the average), that prices were maintained at high levels by restricting output, that there was little incentive to develop new markets, and that there was little incentive to save on marketing costs. The result was that South African production lagged behind that of its competitors, that the country became vulnerable to changes in individual clients, given its concentration on the most lucrative short-term markets, that the country lagged in innovating new cultivars, and that the marketing costs were high. Deregulation changed the calculus in each of these dimensions.
- The first effect of deregulation in the fruit export industries was the entry of literally hundreds of marketers, and hence a sharp decline in price and in quality delivered into a global market characterised by a rising demand for new products and a stagnant demand for conventional cultivars. In this regard, the apple industry was hardest hit, and

experienced a decline in exports in the period immediately after deregulation in the mid to late-1990s. As apples are grown in only a few specialised areas, these areas experienced a negative impact on farmer incomes and employment, while the impact on the wider economy was limited. Nevertheless, total fruit exports increased in volume and value in the post-deregulation era.

- Under the new, deregulated trading regime, producers were more exposed to the shifting demand for new fruit types and varieties. While this had a negative impact on sales in the short term, it has also resulted in a new investment boom as farmers have shifted replanting and new plantings to reflect this change in demand. In the citrus industry, for example, the Western Cape producing area has been favoured over Mpumalanga, Limpopo and Eastern Cape provinces, as the demand shifted to easy-peelers, which are more suited to the climate, with the result that the Western Cape has become the largest source of citrus exports.
- A further result of deregulation is that farmers are now better able to withstand shocks in individual markets. While the bulk of deciduous fruit and citrus exports are still destined for the UK market, the concentration of exports has diminished considerably, with new markets being exploited in Eastern Europe, South and East Asia, the Middle East and Africa. There is also anecdotal evidence that competition between marketers has resulted in a lowering of supply chain costs, although the market for shipping space and harbour facilities is not competitive, and South African exporters face higher costs than those of their competitors.
- Producers' ability to shift a wider variety of products to a wider range of markets has also provided a measure of protection against competition from heavily subsidised producers in northern hemisphere countries. New technologies have resulted in an extension of the production and marketing season for these producers, thereby closing the 'marketing windows' for counter-seasonal southern hemisphere countries. This advantage has been partially offset by new storage and shipping technologies for South African producers, but the reduction in state support for research and development presents a real threat to the deciduous fruit and citrus industries.
- The regions that have benefited most from these changes in market conditions and the new opportunities that have arisen as a result of deregulation include the new table grape production areas along the Orange River in the interior of the country, and the wine producing areas of the Western Cape. Table grape exports from South Africa have grown fastest among the different varieties of deciduous and citrus exports, largely because of the rapid expansion in production capacity in the Northern Cape province. This expansion has been driven largely by the early harvest, and hence the favourable market conditions, by production technologies such as precision irrigation, and by infrastructural investments aimed at improving air and shipping transport.
- The wine industry has also undergone radical structural changes. Exports have, for example, increased by more than threefold over the past decade, and from less than 10% of the total harvest to more than a third. These changes have been driven by investment to replace current production capacity and to create new capacity. In the wine industry, this implies a smaller total crop, as high-yielding grape varieties are replaced by low-yielding 'noble' cultivars. This also implies that the area under vines has grown only slowly, as most of the investment is targeted at replanting. Nevertheless, new areas in the Western Cape, including the Malmesbury district on the West Coast, and the Southern Cape have been the focus of a rapid expansion in wine grape production. At the same time the processing capacity of the industry has also been expanded, with new wineries being set up, mostly in the traditional high-quality producing areas of Stellenbosch and Paarl.

Fresh Produce Markets

As indicated earlier, fresh produce was never subject to regulation under the old marketing act. National fresh produce markets (NFPM) form an integral, although diminishing, part of the price-making, distribution and marketing of fresh produce in South Africa. There are 18 commission-drive NFPM in South Africa with the four largest NFPM (Johannesburg, Tshwane, Cape Town and Durban) representing 74% of the turnover and volume throughput of all NFPM. Annually more than 2,860,000 tons of fresh produce is traded through these markets.

Since the introduction of the new agricultural marketing act in 1996, NFPM have shown virtually no growth at a time when the production of fresh produce in the country has increased dramatically. In the case of potatoes, for example, in 1996 67% of all potatoes traded in South Africa were sold through NFPMs. By 2006 this had dropped to 42%.

As state owned assets, the declining competitiveness and efficiency of NFPM (as a marketing channel) is of concern in light of their important role in providing services to producers and consumers of fresh produce, and in particular to low income consumers and the informal sector. In addition, concerns have been raised about the apparent slow pace of transformation of NFPM and market access problems black producers face in trying to supply to NFPM.
From 2001-2006 the National Agricultural Marketing Council (NAMC) undertook a number of investigations into the current state of NFPM and a number of recommendations have been put forward to the Minister of Agriculture as to how these markets should be restructured to provide better value to producers and consumers.

The recommendations include amongst others:

- The ownership and management of NFPM should be separated – in the current system local municipalities tend to own and operate NMFP as a departments and/or corporate entities within their existing structures.
- A national coordinating body should be set up to coordinate matters relating to NFPM across the country. Such a body should monitor and address the following issues namely;
    - the transformation of NFPM,
    - the rationalisation of legislation governing the ownership and operation of NFPM,
    - infrastructure backlogs at NFMP,
    - the introduction of food safety and traceability requirements as well as the enforcement of quality standards

Food Prices

Price controls for bread, maize meal and dairy products were abolished in 1991 and from that point onwards retail prices were set by market forces. The initial impact of deregulation and trade liberalisation in the 1990s, was a decline in producer prices for cereals and as a result food price inflation kept pace with overall inflation levels in the economy until 2001. However, the depreciation of the Rand in 2002 and the concomitant sharp rise in major commodity and food prices led the Cabinet to announce the establishment of a Food Price Monitoring Committee in response to this crisis.

The objective of the Food Price Monitoring Committee was to carry out an investigation into the pricing of foodstuffs and operation of price formation mechanisms within a number of

food product value chains in order to ally suspicions that industry role players were unfairly increasing the prices of basic foods. The Committee concluded that the increase in commodity prices (aided by world price movements and the exchange rate) was primarily responsible for the sharp rise in food price inflation. However, they also found that when commodity prices fell back to pre-1991 levels, there was a long lag before this decline was reflected in food price levels. Market structure and information transmission mechanisms in the economy, were cited as the main reasons for the long downward correction of food prices.

The Committee provided a series of recommendations as to what needed to be done in order to ensure fair competition in the South African food and agricultural sector. These recommendations included the need:

i. To institutionalise a food price monitoring system that was able to gather and disseminate food price information on a regular basis;
ii. For government to intervene to reduce poverty and improve food security to help households cope with food price increases;
iii. To more adequately monitor the agro-food competitive environment.

Following the recommendations of the Food Price Monitoring Committee, the National Agricultural Marketing Council now regularly publishes a Food Cost Review. Furthermore, over the past three years the Competition Commission has investigated and remedied anti-competitive behaviour in a number of food industries (e.g. dairy, grain storage and bread).

The poverty alleviation action is largely being addressed through the Integrated Food Security Strategy (IFSS), adopted by the Cabinet in 2002. In part it was a reaction to the high prices of basic food items at that time; however it was also prompted by the need to consolidate, harmonise and integrate the different food security programs being implemented by the various government departments. The Department of Agriculture was designate as the lead agency of the IFSS.

The Emergency Food Relief Programme, a sub-programme of the IFSS, was launched in 2002 and food parcels were distributed to households in need as an emergency measure. Later, it was realized that this approach was not sustainable and the strategy shifted focus towards the provision of agricultural starter packs to households and communities that had access to land in rural and urban areas in order to stimulate agricultural production.

With time the Agriculture Starter Pack Programme (ASP) has evolved into the Household Food Production Programme (HFPP). HFPP is a more comprehensive initiative whereby provinces are encouraged to change their implementation methodology and not only focus on starter pack distribution but also assist in the development and transfer of suitable inputs, technologies, information as well as training and capacity building[26]. As part of this mandate a number of the provinces launched separate projects/programmes to give content to this vision. These include:

- Siyazondla and Siyakhula/Massive Food Programme in the Eastern Cape
- Siyavuna in KZN
- Masibuyele Emasimini in Mpumalanga

[26] Skweyiya, Z., 2006. Minister of Social Development Zola Skweyiya: Social Sector Cluster media briefing 7 July 2006. http://www.info.gov.za/speeches/ 2006.

- Homestead Food Garden Programme in Gauteng

The objective of the HFPP is to ensure sustainable household level food security for vulnerable households and to reduce overall food insecurity by half by 2014. The overall target for the 2006/2007 financial year under the HFPP was 62,000 households, and it was reported that this target had been exceeded.

4.3 Land and Resource Management

4.3.1 Land reform

The Department of Land Affairs, successor to the Department of Regional and Land Affairs, completed the process of land reform policy design with its White Paper in 1997, while implementation of the programme had already started in 1994. Land reform policy in South Africa consists of land restitution, tenure reform and redistribution programmes. Briefly, *restitution* deals with historical land rights and the return thereof, *tenure reform* examines forms of land holding while *redistribution* is focuses on the transformation of existing, racial biased land ownership patterns.

With respect to *redistribution*, from 1995 to 1999 this was implemented by means of a *Settlement/Land Access Grant* (SLAG). SLAG was a small grant (R16 000, later increased to R 20 000) made available to poor households, usually organised in groups, to buy land on the open market. Initially, the Department of Land Affairs spent a lot of time and effort in mobilising communities and assisting them to access SLAG grants to acquire land. However, the Department's own research showed that, in most cases, farms financed with land grants and settled by groups of households, were too small to support all of the beneficiaries as full-time farmers. The Department of Land Affairs anticipated that emerging farmers would use the grant to leverage loan finance for additional land. However, most creditworthy farmers did not qualify for a land grant as the means test applied to potential beneficiaries precluded individuals with a monthly household income greater than R1 500.

Thus, a new approach to land reform was proposed after extensive consultation and planning during the course of 1999 and 2000. The Land Reform for Agricultural Development (LRAD) programme provided for an extended scale of grants, dependent on an increasing own contribution, thus aiming to assist in the establishment of a class of commercial black farmers. It was argued at the time that the initiative would also fail unless implementation was well planned and well co-ordinated, unless support services for agriculture, i.e. research, extension, finance, information, infrastructure were in place to provide the conducive environment for a vibrant and successful agricultural sector, and unless the problem of bureaucratic centralisation was addressed.

This support did not initially materialise and as failure rates among land reform projects increased, the need for better coordination between the Departments of Land Affairs and Agriculture around post-settlement support became essential. The Comprehensive Agricultural Support Programme (CASP) launched by the Departments of Agriculture and Land Affairs in 2004, was an attempt to better co-ordinate support services.

In order to ensure that land and agrarian reform moved to a new trajectory that contributed to the higher path of growth, employment and equity by 2014" in 2006 the DLA introduced the Proactive Land Acquisition Strategy (PLAS) by the state for targeted groups in the land

market. The PLAS moves from the premise that there is a need or demand for land, it might either be quantified through IDPs or other state driven processes. Here the state proactively targets land acquisition and matches this with the demand or need for land.

In February 2008, the Minister of Agriculture and Land Affairs announced the launch the Settlement and Implementation Support (SIS) strategy for Land and Agrarian Reform. While the specific detail of the strategy is not yet known, the emphasis of SIS is on post-settlement support and on the need to make land reform "Every body's business". This strategy highlights the need to locate land reform projects within local government structures and ensure that all projects are embedded in the Integrated Development Plans, in the Local Economic Development Plans and in the Provincial Growth Development Strategies.

Despite all efforts to speed up land reform, the net effect of the land programme has been limited. After almost 14 years of state sponsored land reform slightly more than 4 million ha of the available agricultural land in South Africa has been transferred through the formal programme. Furthermore government recently admitted that the failure rate of new land reform projects could be as high as 50%.

Tables 20 and 21 show the contribution that the various land reform initiatives have made to the overall performance of land reform disaggregated by year and by province.

Table 20: Redistribution: total hectares redistributed per province: 1995-2006/2007

	1995-2001	2002	2003	2004	2005	2006	2007*	Total
Redistribution: SLAG and LRAD	684,363	321,532	181,138	186,799	842,856	122,016	77,359	2,416,067
Redistribution: PLAS				18,673	13,629	85,270	16,319	133,891
State Land Transfers								29,422
Total								2,579,380

Source: Kirsten (2008)

Table 21: Restitution: Statistics on settled restitution claims (1995 – 31 March 2007)

Province	Total number of claims	Hectares transferred to claimants*	Number of restitution projects with agricultural activities
Eastern Cape	16 116	72 075	19
Free State	2 582	44 464	8
Gauteng	13 148	7 557	2
KwaZulu-Natal	14 576	435 190	37
Limpopo	2 789	356 042	49
Mpumalanga	2 429	213 360	45
Northern Cape	3 673	305 389	16
North West	3 655	213 659	71
Western Cape	15 499	3 115	4
TOTAL	74 417	1 650 851	251

* Assuming that the majority of hectares would be rural

Source: Kirsten (2008)

While the objective of the land reform programme is to support previously disadvantaged households acquire land, the objective of CASP is to ensure they are successful and thus retain land ownership. The primary aim of CASP is to provide agricultural support to targeted

beneficiaries of the land reform and agrarian reform programme within six priority areas, namely:

- Information and technology management
- Technical and advisory assistance and regulatory services
- Marketing and business development
- Training and capacity building
- On/off farm infrastructure and product inputs
- Financial support

The need for CASP flows from the recommendations of the Strauss Commission report, which recommended that black farmers, especially the beneficiaries of the land reform programme, should be supported through the provision of farmer support services. CASP was designed to establish fiscal transfer mechanisms to streamline and align service delivery within the three tiers of government.

CASP is targeted to support four different levels of clients within the farming continuum:

- The hungry & vulnerable – Though this group is primarily the responsibility of the Department of Social Development, they are supported through advice and during food emergencies through food packs and for those families who are ready, the introduction of the agriculture starter pack.
- Subsistence and household food producers – This includes the beneficiaries of the special programme on food security (SPFS) and the Integrated Food and Nutrition Programme (IFSNP) where the provision of the agriculture starter pack is made.
- Farmers - specifically the beneficiaries of the LRAD and other strategic programmes e.g. SLAG, Restitution, Redistribution, Tenure Reform
- Agricultural macro-system within the consumer environment – this category includes commercial farmers to ensure that business and the regulatory environment is conducive to support agricultural development and food safety.

Substantial funds were made available for CASP in its first years of operation (some R750 million in the 2004-2007 period), yet questions regarding its efficacy remain, largely because the small farmers who need the most support (i.e. those in the former homelands) have been designed out of the programme - the bulk of the funds have been channelled to emerging farmer clients for the provision of on-farm infrastructure, training and capacity building, marketing and business development. Table 22 shows the number of projects and CASP beneficiaries as well as the percentage of the budget spent.

Table 22: Number of projects & farmers benefited from CASP

Year	Budget (R'000)	Expenditure (R'000)	% Spent	# of Projects	# of Beneficiaries
2004/2005	200	109 571	55%	510	46 553
2005/2006	250	210 671	84%	1 069	53 206
2006/2007	341	321 091	94%	572	67 366
2007/2008 (December 07)	415	268 494	64%	845	60 276

Source: Kirsten (2008)

4.3.2 The effects of land reform

Despite the well-formulated land reform policy and well-funded land reform programme, comprising programmes for land restitution, land redistribution and tenure reform, progress has been slow, to the extent that less than 5% of commercial farm land has been transferred. Production conditions in the communal farming areas have remained largely unchanged or may even have worsened, and that tenure forms have hardly changed in the communal areas despite attempts to provide greater tenure security.

There is also no evidence that the supposed beneficiaries of land reform are better off as a result of their participation in the programme. Empirical evidence, in fact, shows that private transfers, some funded by mortgages from the Land Bank or the commercial banks, have occurred at a higher rate than that of state transfers. Nevertheless, there are some examples of land reform that have had local impacts, and that possibly serve as examples for future land reform:

- The best-known example of small farmer success in South Africa is the 20,000 small cane growers in the sugar industry (discussed earlier). While the support programme to small-scale cane growers in KwaZulu-Natal predates the land reform programme by a few decades, it has recently been expanded considerably in Mpumalanga province where new sugar cane plantations have been established.
- During the early 1990s a project was launched to encourage the development of a land rental market on cropland in the communal areas by encouraging the traditional authority to adopt measures that would lower the transactions costs of land rental. As expected, this experiment has had interesting efficiency and equity results.
- A number of farm worker share equity schemes have been set up, mostly in the fruit export industries in the Western Cape, whereby farm workers use the land reform grant to buy shares in an operating farm business, mostly on the farm where they work. While the financial performance of these schemes still needs to be independently assessed, these schemes have attracted significant private sector investment.
- Concerns about the vulnerability of small producers of wool led the National Wool Growers Association and the government to set up a new wool marketing channel by building and equipping shearing sheds in villages throughout the Transkei and Ciskei region. In a first phase the focus was on the provision of material support (shearing shed, equipment and for some villages, a dipping tank). In the second phase, institutional support was provided to increase access to information on breeding and training for proper shearing and grading, access and knowledge on the use of inputs, and a market outlet. The NWGA also organises contact with the brokers to market the wool. The NWGA prescribes that candidate villages should have a minimum number of sheep, but more importantly an active farmers association, whereby the wool farmers form a local ‘Wool Growers’ Association’.
- There are a range of empowerment schemes in aquaculture and mariculture (mussels, oysters, seaweed, abalone) that are situated along the west and south coasts of the country that have the potential benefit of undermining the considerable poaching that has taken place in these areas, in addition to providing new opportunities to small-scale producers.
- Similarly, there are a range of agricultural projects aimed at the production of specialty products such as rooibos tea, honeybush tea, indigenous flowers, medicinal plants,

essential oils, hydroponics and organic products whose purpose is to build new markets and to empower new producers.

4.3.3 Resource management policy

As indicated earlier, South Africa's underlying agricultural resource base is poor. The country has a total surface area of 122 million ha of which only 14 % (17 million ha) is arable land. Of the arable land only 1.3 million hectares is under irrigation. Rainfall is generally low, erratic, unevenly distributed and unreliable. Approximately 91% of the country can be classified as arid, semi-arid and dry sub-humid and South African soils are generally considered to have low fertility.

Although no formal statistics are available, the agreed perception shared by all stakeholders in the agricultural sector is that South Africa's natural resources are under a severe threat of degradation. For the commercial sector, factors that have contributed to this include; monoculture cereal production, intensive tillage and limited crop rotation. For the communal areas of the country excessive firewood collection, inappropriate land use, population density and overgrazing are the main factors causing soil degradation. In aggregate, soil degradation is responsible for approximately fifty percent of land degradation, while water-logging and salinity also make a contribution.

The National Department of Agriculture, in accordance with the Conservation of Agricultural Resources Act (1983), exercises control over the use of the country's natural resources. During 2003, the Department drafted the Sustainable Utilization of Agricultural Resources (SUAR) Bill. This Bill was intended to enhance the Department's ability to manage the country's natural resource base in that it combines the Subdivision of Agricultural Land Act and the Conservation of Agricultural Resources Act as well as making provision for LandCare and Prime and Unique agricultural land principles. According to the Strategic Plan of the Department of Agriculture (2003-2006), this Bill should have been gazetted in 2003.

Land Care
The National LandCare Programme was established in 1999 to address the degradation of natural/agricultural resources in the country and improve the socio-economic status of rural communities. LandCare promotes ecologically sustainable resource utilization and management by communities and individuals and encourages opportunities for the development of business enterprises that focus on sustainable resource management. LandCare themes are grouped into two areas – the first focuses on investment (WaterCare, VeldCare, SoilCare, Eco-Technology, Agritourism Programme and Junior LandCare) while the second is aimed at providing small community grants.

- *WaterCare* targets Limpopo because of water shortages and the importance of water for irrigation in the province. Under the WaterCare project, 28 irrigation schemes have been revitalised.
- *VeldCare* targets the North West and promotes best grazing-systems and erosion-prevention practices. Economic and social development opportunities are realised by improving and maintaining grazing areas throughout rural communities.
- *SoilCare* encourages rural farmers in KwaZulu-Natal, the Eastern Cape and Mpumalanga to build innovative structures to combat soil erosion. Sustainable agricultural production systems are introduced, such as diversification, management of input and conservation tillage.

- The *Eco-Technology* component is aimed at identifying, adapting and promoting promising ecological technologies such as conservation farming and water harvesting
- *AgriTourism Programme* aims at identifying agritourism opportunities and implemented agritourism projects within the identified presidential poverty nodes.
- *JuniorCare* aims at empowering previously disadvantaged youth through training in facilitation and leadership skills, including promoting awareness of sustainable agriculture and stimulating the formation of youth clubs and projects that aim to promote other components of LandCare.

During the 2006/2007 financial year, the National Department of Agriculture spent R45m on 118 LandCare projects. A total of 72,856 beneficiaries were supported through these projects which created 201,703 part-time jobs.

Genetic resource management strategy
Within the context of the National Environmental Management Act of 1998, the Department of Agriculture launched its genetic resource management strategy. Central to this strategy is the preservation of agricultural biodiversity and promoting the sustainable use of soil and water through the enhancement of crop and livestock productivity in intensified and more sustainable farming systems. The Department has focused extensively on threatened and extinct species as a biodiversity indicator (as identified in the National Biodiversity Strategic and Action Plan of DEAT) through the collection, characterization and storage of plant genetic resources for food and agriculture from various agro-ecological zones with specific emphasis on landrace material (which is an important source for future crop development). Recently, this ex situ conservation (outside the ecosystem) has been complemented by in situ projects where plants are allowed to evolve in concert with natural evolutionary pressures.

In terms of animal genetic resources, animal breeders' societies as regulated under the Animal Improvement Act have been the main drivers of conservation of animal breeds. On a provincial level, livestock development centers, are responsible to keep and maintain animal genetic resources as pure indigenous/landrace breeds, increase the population of endangered breeds and supply stud breeders, commercial farmers and communal farmers with sires. These activities serve as important risk mitigating measures to ensure the maintenance of agrobiodiversity.

The Department has also maintained a plant variety protection system which adequately protects the intellectual property rights of new plant varieties. This system is managed in line with the prescripts of the International Union for the Protection of New Varieties of Plants (UPOV). Over the past few years the number of protected plant varieties from various genera has steadily increased providing South African farmers access to plant varieties with appropriate traits to improve agricultural production under local conditions.

Irrigation Development Strategy and Implementation
Irrigation is by far the biggest single user of run-off water in South Africa and has the potential to make a significant socio-economic contribution. South Africa's water resources are managed by the Department of Water Affairs and Forestry (DWAF) and DWAF allocates water to the sector users'. The Department of Agriculture and DWAF are working towards integrating their activities with respect to supporting the agricultural water sector.

In 2006 the Department of Agriculture developed its Irrigation Strategy, which aims to enhance the contribution of water, the most limiting natural resources in South Africa, to food

production and thus food security. Central to the Irrigation Strategy is ensuring that cooperative governance with other government institutions which are responsible for water resources and water allocation, to enable transformation of state support for agricultural water use in South Africa. The need for this transformation is rooted in four key principles namely; the need for equity, the need for good governance, the need for competitiveness and the need for sustainability.

The implementation of the Irrigation Strategy will increase the contribution of irrigated agriculture to poverty alleviation, creation of jobs and skills development. Given our context, this will also increase equity of access by historically disadvantaged individuals to irrigated agriculture, especially commercial irrigated agriculture, without compromising irrigation water use efficiency in the process. Revitalization of existing schemes and establishment of irrigation development will entail looking at the inherent qualities of the natural resources (e.g. water, climate, soils, topography etc). Successful small-farmer irrigation schemes of the past will be identified and studied in order to model revitalization or new schemes.

While the National Department of Agriculture has only just begun to implement its Irrigation Strategy, a number of provincial departments of agriculture have had irrigation development programmes in place since the late 1990s. Revitalisation of Smallholder Irrigation Schemes (RESIS) in Limpopo Province is one such example. This programme not only aimes at revitalizing selected smallholder irrigation schemes in terms of infrastructure, but also in terms of leadership, management and productivity. RESIS has dedicated one-third of its revitalisation budget to build institutional and technical capacity among farmers in order to transfer the management of the irrigation scheme to them.

4.4 Agricultural labour market reform and skills development

4.4.1 Labour policy

The rate of labour change in the agricultural sector has not been uniform over the past two decades and when analyzing South African trends, 1993 is an important reference point. Prior to 1993, South African farm workers were not covered by any labour protection or collective bargaining legislation. Farm life was regulated by paternalism and a set of informal “farm rules” dictated by the relevant farm owner. In 1993, farm workers were included under the provisions of the Unemployment Insurance Act and basic employment rights were extended to them when the Agricultural Labour Act was passed in 1993. In 1993, the provisions of the Basic Conditions of Employment Act (substantially revised in 1997) were also extended to agricultural workers. This Act stipulates minimum labour standards and prescribes, amongst others, the maximum working week, vacation and sick leave allowances and payment for overtime.

The Extension of Security of Tenure Act, ratified in 1997, ensures that occupiers of rural land earning less than R5000 per month have security of tenure. As a result of this act, landowners who wish to evict those living on farms can only terminate these rights under relatively strict conditions. Finally, minimum wages in most sectors are set by industry bargaining councils however, given that the agricultural sector was not significantly unionised and could therefore not establish a bargaining council, the Department of Labour set about establishing a minimum wage which it implemented in 2003. This sectoral determination not only set a floor on wage levels for agricultural workers but also specified what and how much could be deducted as an in-kind payment.

The progressive regulation of the agricultural labour market described here has impacted on the flexibility and unit cost of farm employment and has led to a number of structural changes in the labour market and employment patterns. The results of a number of micro-level surveys provide insight into these changes. The first of these surveys was carried out by Sunde and Kleinbooi in 1999[27]. They interviewed 112 farmers/managers and 345 woman farm workers to not only gauge the development status of these women but also to describe their location within the agricultural labour market and their access to socio-economic rights. Du Toit and Ally[28] studied 77 horticultural farms in a number of Western Cape districts to assess changes taking place in the labour absorptiveness of the Western Cape horticulture sector as well as to explore the implications of this on the livelihoods of farm workers. Finally in 2003, Conradie[29] interviewed 79 wine farm businesses in the Robertson and Worcester region to assess the initial employment impacts of the introduction of agricultural minimum wages. This survey also captured information on labour costs, workforce composition and the elasticity of demand for farm labour.

These surveys identified the following structural changes:

- **Substitution of permanent labour with temporary/part-time/seasonal labour:** Reasons cited by farmers as factors inducing this shift include the Extension of Security of Tenure (ESTA) legislation, rising labour costs due to compliance with Basic Conditions and minimum wages.
- **Increased use of labour contracting**: Du Toit and Ally found that more than 53% of the farmers they interviewed indicated that they make use of an agricultural labour contractor/broker. In such an instance the employment relationship is no longer directly between the farmer and worker. Rather, a farmer concludes an arrangement with a broker who then supplies the farmer with a team of workers. While this externalisation of labour offers agricultural producers certain advantages such as the ability to control costs and risks, for farm workers this holds serious implications in terms of livelihoods and income. Rather than being "part of the farm" the relationship between workers and farmers is increasingly an indirect one- limited to cash payment for particular tasks completed.
- **Relative increase in the number of women farm workers employed**: Sunde and Kleinbooi found a significant increase in the number of women farm workers being employed on farms in the Western Cape. The main reasons cited for this are employers' attempts to maximise the utilization of the existing on-farm labour pool (and thereby control housing costs). The shift towards mixed farming systems has helped flatten the sharp seasonal labour demand peak and enabled farmers to employ women throughout the year.
- **Job shedding as a result of minimum wages:** Six months after minimum wages had been implemented in agriculture, Conradie found the net employment effect to be less

[27] Sunde, J. and Kleinbooi K., 1999. Promoting equitable and sustainable development for women farmworkers in the Western Cape. Report on a research project undertaken by the Centre for Rural Legal Studies Stellenbosch.

[28] Du Toit, A. and Ally, F., 2002. The Externalisation an Casualization of Farm Labour in Western Cape Horticulture: A survey of patterns in the agricultural labour market in key Western Cape districts and their implications for employment justice. Unpublished research report for the Centre of Rural Legal Studies Stellenbosch and the Programme for Land and Agrarian Studies, UWC.

[29] Conradie, B, 2004. Labour, wages and minimum wage compliance in the Breërivier valley six months after the introduction of minimum wages. A paper delivered at the Agricultural Economics Association of South Africa Conference, Somerset West. September 2004.

than 1%. She goes further to note that the most important consequence of the implementation of minimum wages was not wholesale labour shedding, rather it was a slow down in job creation for permanent workers at a time when output was expanding.

- While this may have been the case in labour intensive branches of agriculture such as wine, when seen from a national perspective, the increase in job shedding in the agricultural sector as a result of minimum wages and other labour legislation was much more pronounced. As indicated earlier, more than 300,000 jobs were lost in the agricultural sector from 2002-2006.

While labour regulation appears to have negatively impacted on employment levels, there is evidence to suggest it has had a positive impact on the development status of those farm workers who continue to be employed. Using data from the 1996 and 2001 census, Tregurtha[30] compiled a composite human development indicator and then used this to compare the extent to which the development status of Western Cape agricultural workers had improved over time, and improved relative to other workers in the Western Cape economy. These findings are reported in Table 23 and show that, while the overall development status of farm workers lags behind other workers in the Western Cape economy, from 1996-2001 farm workers' managed to improve their relative position. It is expected that this trend has continued.

Table 23: Development status of Western Cape farm workers 1996-2001

	Fuzzy Score		
	1996	**2001 (base 96)**	**% change**
Agricultural workers	0.433	0.491	13.42
Workers in other sectors	0.685	0.701	2.38

The introduction of minimum wages in agriculture in 2002 accelerated the real growth of farm wages. Hlekiso and Mahlo[31] demonstrated how real agricultural wages rates increased by 65% from 2001-2005, with the biggest annual increase at the time of the implementation of the minimum wage (Tables 24 and 25).

Table 24: Monthly median wages by industry 2001-2005 (Rand at constant 2000 prices)

	2001	**2002**	**2003**	**2004**	**2005**
Agriculture, fishing and forestry	379	468	573	606	625
Mining and quarrying	1798	1734	1802	2262	2344
Manufacturing	1798	1734	1802	1616	1875
Electricity, gas and water supply	2839	2601	3276	3231	3125
Construction	1136	1266	1147	1228	1250
Wholesale and retail trade	946	1387	1392	1535	1562
Community, social and personal services	2271	2601	2457	3231	3265
Transport, storage and communication	2839	3034	3276	2827	2344
Financial intermediation, insurance, real-estate and business services	2845	3468	3276	2512	2734
Private Services	379	407	491	646	516

Source: Hlekiso and Mahlo (2006)

[30] Tregurtha, N. An approach to human development in rural Western Cape with specific reference to farm workers. MComm, University of Stellenbosch, 2005

[31] Hlekiso, T and Mahlo, N., 2006. Wage Trends and Inequity in South Africa: A comparative analysis. Labour Market Frontiers, October 2006.

Table 25: Real growth in monthly median wages by industry 2001-2005

	2001	2002	2003	2004	2005
Agriculture, Fishing and forestry	100	123	151	160	165
Mining and quarrying	100	96	100	126	130
Manufacturing	100	96	100	90	104
Electricity, gas and water supply	100	92	115	114	110
Construction	100	111	101	108	110
Wholesale and retail trade	100	147	147	162	165
Community, social and personal services	100	115	108	142	144
Transport, storage and communication	100	107	115	100	83
Financial intermediation, insurance, real-estate and business services	100	122	115	88	96
Private Services	100	107	130	170	136

Source: Adapted from Hlekiso and Mahlo (2006)

4.4.2 Agricultural education and training

The agricultural sector generally requires a variety of skills which require different training programmes and therefore different training providers. These include:

- Adult basic education and training (ABET) programmes - mainly geared to illiterate farm workers
- Farm worker training programme – technical skills
- Farmer training – Agricultural Colleges and Universities of Technology
- Diploma level training in Agriculture (for technicians, extension workers and farmers) – Agricultural Colleges and Universities of Technology
- Degree level training (researchers, subject matter specialists, extension officers, veterinarians, managers) - Universities

It is however so that Agricultural Education and Training (AET) in South Africa was severely affected by the policies of apartheid entrenching inequalities across the spectrum of skills relevant to the sector. Various initiatives within the agriculture were initiated in the post-1994 period to address these challenges as part of the broader transformation agenda.

The AET sector has for many years been plagued by a disagreement between the Department of Agriculture (mostly Provincial Departments of Agriculture) and the Department of Education regarding ownership and control of Agricultural Colleges. The future dispensation for agricultural colleges is still unresolved. This uncertainty negatively affected the academic offerings of many colleges with some even being transformed in Further Education Colleges (FET). As such this entrenched the problem of poor articulation between the different programmes and institutions and also between the formal and non-formal sub-sectors of the education and training sector.

AET also had no strategic direction that focused its development on determined priorities. The funding of the programmes was skewed and uneven across different sites of provision with former White institutions still better resourced than their historically Black counterparts. Programmes differed markedly in quality, standards, outcomes and curriculum and therefore limited the opportunities for students to change from institution to institution and created further barriers to higher education.

The Department of Agriculture initiated a process in 2002 to develop an AET Strategy in order to address these inequalities of provision. The process of developing the AET Strategy was completed with full involvement of the sector partners. The AET led to the implementation of targeted skills development initiatives and these include the external bursary scheme, the Young Professional Development Programme (Internship) and the Master Mentorship Programme. Implementation of these programmes only started in 2004 almost 10 years after the democratic government came to power.

The *external bursary scheme* main area of focus is on identified scarce and critical skills mainly in the field of Veterinary Science, Engineering, Viticulture, Biotechnology, Agric Economics, Food Science and other production skills. It seeks to eliminate skewed participation in the sector. Implementation of the scheme commenced in 2004 after the policy on external bursary was finalised in 2003. In the pursuit of its strategic goals, the Department discourages generalist agricultural degrees. Instead, specialist degrees such as Veterinary, Agricultural Engineering, and BScAgric are encouraged.

The other programme which is meant to support beneficiaries of the external bursary scheme and other young people is the *Young Professional Development Programme* previously known Experiential and Internship Programme. The purpose of the programme is to hone professional and life skills to the young graduate in an effort to prepare for the corporate world. Just like the external bursary scheme, the programme was introduced in 2004 and the progress to date is outlined below.

In an effort to support the beneficiaries of agrarian and land reform a *master mentorship programme* was introduced with effect from 2006. The programme is run in partnership with commodity organisations. On average, 5 individuals from each commodity organisation are trained as a master mentors to develop mentors and mentees within their own industry. Over the past two year more than 200 individuals have been trained as master mentors and are now responsible to lead and guide mentorship within their respective industries..

AgriSETA
An important aspect of the AET landscape in South Africa is the role of the Sector Education and Training authority for Agriculture (AgriSETA). The functions of AgriSeta are to:

- Develop a sector skills plan within the framework of the national skills development strategy;
- Implement its sector skills plan by establishing learnerships, approving workplace skills plans, allocating grants as well as monitoring education training in the sector;
- Promote learnerships by identifying workplaces for practical work experience, supporting the development of learning materials, improving the facilitation of learning and assisting in the conclusion of learnership agreements.

To date the effectiveness of AgriSETA has been limited by its inability to generate sufficient revenue under the current skills development funding model that has employers pay 1% of their wage bill into a central training fund.

Specific problems, unique to the agricultural sector that limit the viability of this funding model include:

- **Sector complexity**: The agricultural sector is complex in that it consists of a large and fragmented number of stakeholders (e.g. more than 70 commodity groups/organizations; 9 Provincial Departments of Agriculture) and is highly diversified in terms of clientele ranging from commercial farmers to emerging AgriBEE farmers;
- **Insufficient revenue base**: The sector has an insufficient revenue base as a result of the small number of employers that are paying the skills development levy and who are thus contributing to the revenue pool (as little as 3 500 employers are currently contributing). The problem is further compounded in that more than 70% of those that are contributing are classified as small enterprises (with less than 50 employees thus contribute relatively small amounts when compared to many of the other sectors). In addition the majority of the estimated 650 000 emerging farmers are at present informal or unregistered enterprises who do not pay the skills levy and thus do not contribute to the revenue pool. They are, however, in dire need of skills development and capacity building services.

The net result of these factors is that the demand for skills development in the sector far exceeds the supply and consequently AgriSETA has been confined to servicing mainly levy payers with the remainder of the sector being neglected. Despite a narrow service delivery focus (i.e. servicing levy payers only), AgriSETA is still unable to effectively meet the needs of this target group. This is illustrated by the fact that in 2007/2008, only 10% of the learnership applications could be accommodated.

While some additional funding allocations have been secured from National Skills Fund (NSF) in the past, such support has been limited. It is contended that AgriSETA's poor access to the NSF is because the latter primarily evaluates funding applications from an industrial development perspective and supports higher order qualifications (whereas the agricultural sector, given the status of education levels in the sector, more often than not requires learning interventions to commence at the lowest levels of the National Qualifications Framework). In this regard it is believed that the administrators of the NSF lack the necessary insight into the socioeconomic and political importance of the agricultural sector, and do not comprehend the need for a different training approach (e.g. via mentorships for emerging and AgriBEE farmers) in meeting the skills development needs of the sector (AgriSETA 2007).

4.4.3 Farmer support and extension services

Developing the skills base of farmers is the primary objective of extension services. In terms of the Constitution, agriculture is a provincial competency, to be carried out within the framework of national policies set by the National Department of Agriculture. One of the main functions of the provincial departments of agriculture is the provision of farmer support services. Typically these field services are offered to farmers through decentralized district offices, and bridge the gap between available technology and farmers' practices by providing technical advice, information and training.

The current government extension services resulted from the merging of two services: one that provided services to white farmers and one that served farmers in the previous homeland areas of the country. The former was made up of a relatively small numbers of well-qualified staff, often university graduates. The latter consisted of large numbers of less qualified staff. The `white' public extension service was considered highly successful until the mid-seventies when commercial farmers found that the more specialised advice they needed could be better provided by the private sector. Furthermore, in the eighties, the public extension service

appears to have increasingly focused on administrative tasks such as assisting farmers with subsidies for fencing, soil conservation, irrigation, drought relief, as well as credit through the Agricultural Credit Board.

Much of the earlier success of this service was related to the relative homogeneity of the approximately 60 000 commercial clients - extension agents knew who they were trying to serve and what they were trying to achieve. This service was focused, well-resourced and staffed by well-trained officials. In contrast, extension workers in the former homelands were generally not well trained, and were required to serve a large diverse client-base including subsistence, emerging and commercial farmers. As will be shown in the analysis below, this legacy continues to hamper service provision.

In 1998, direct government expenditure on extension was estimated at R515 million per annum or roughly 2.4% of agricultural GDP (NDA, 1998). By 2002, Dövel[32] found that this had more than doubled in absolute terms to R1,205 million (2,7% of agricultural GDP). As can be seen from Table 26 below, the current estimate for the cost of extension services is R1,084 million which equates to around 2.9% of agricultural GDP. This level of expenditure is relatively high by international standards - the world-wide average is estimated to be 0.9% of agricultural GDP, 1,04 % for the average African country, 1,2 % for Latin America, and less than 0,5 % for Europe and North America (Roseboom, 2004).

Table 26: Cost of extension in the various provinces of South Africa

	2002 R'000	**% of total**	**2006/07 R million**	**% of total**	**Farming households %**	**Number of extension officers 2002**
Eastern Cape	127,076	10.55	148,373	13.69	36.3	679
Free State	18,016	1.50	48,420	4.47	1.2	125
Gauteng	5,386	0.45	n.a.	-	0.8	23
Kwazulu-Natal	258,946	21.49	282,994	26.11	39	576
Limpopo	625,000	51.87	405,827	37.45	13.9	1107
Mpumalanga	57,353	4.76	81,607	7.53	2.8	153
Northern Cape	6,792	0.56	10,822	1.00	2.2	21
North West	95,703	7.94	89,735	8.28	1.7	211
Western Cape	10,710	0.89	15,988	1.48	2	39
Total	**1,204,982**	**100**	**1,083,766**	**100**	**100**	**3034**

Source: Dövel (2002), Provincial MTEF Budget Statements

In South Africa, the scope of work for extension officers has expanded significantly since 1994. Instead of servicing a relatively small number of large-scale commercial farmers, there has been a significant shift in client focus, which requires them to play new roles, including institutional development for small farmers, assisting them to get access finance and other production requirements, to market their produce; and to access second-economy government support projects (e.g. cooperatives, land reform, food security, land care). They are also expected to assist with the administration, implementation and monitoring and evaluation of such initiatives.

Farmers are in general very critical of the provincial departments of agricultures' extension capacity. In terms of extension and other technical support, other than the infrastructure

[32] Dövel, D.H., 2002. Towards and Appropriate Extension Approach for South Africa. Unpublished Research Report. South African Institute for Agriucltural Extension, University of Pretoria.

investments, little else has been provided. In cases where CASP projects are dealing with capital intensive and technically difficult production units, farmers feel that in many instances they have higher skill levels than the extension officers. Farmers also agree that extension personnel lack basic project management skills.

The poor performance of extension officers is not only applicable to the CASP programme but is an aspect criticized by all stakeholders in the agricultural sector claiming that that there has been no real progress in the delivery of extension services.

4.5 Agricultural finance

Internationally it is recognized that the particular nature of agricultural production makes it difficult and costly to finance farmers. Firstly, agriculture is concentrated in rural areas with poor infrastructure and low population densities. This increases the monitoring and client search costs for financial institutions operating in these areas. Secondly, unlike other industries, farmers not only have to contend with market risks but also with environmental factors such as weather. This places agriculture at a disadvantage when competing with other sectors for scarce funds.

Land absorbs a relatively large percentage of farmers' capital requirements and because it takes so long to generate the returns needed to pay for land, commercial banks are often hesitant to lend to this market. Finally, agriculture is usually practised by small-scale, family-owned businesses. Moreover, in South Africa, as in the rest of the world there is a skewed distribution of production with 25-30% of farms producing the bulk of the output. A large number of small-scale clients represent a higher risk to commercial financial institutions and explains their reticence to lend to the sector.

For this reason, governments world-wide have adopted a wide range of different measures to try and support farmers' access to financial services. What is interesting about the 'new world' countries such as Australia, Canada, New Zealand, South Africa and the USA, is that this intervention invariably started with an attempt to provide mortgage finance to farmers: generally a Land Bank of some description in the former Dominions, and a vehicle to create a secondary market in farm mortgage loans in the USA (Farmer Mac). In South Africa, the Land and Agricultural Bank (Land Bank) was established in 1912 for just this purpose: to provide mortgage finance to farmers. The institution was created from similar banks and/or funding agencies that had existed in the four colonies that constituted the Union of South Africa in 1910, so that even in 1912 the problem of access to such long term loans was not new.

However, when the Marketing Act of 1937 was implemented, the Land Bank became a source of funds to make the system work. For example, maize and wheat were controlled under 'single channel fixed price schemes' with pan territorial and pan seasonal pricing. The respective Boards appointed agents to handle the produce on their behalf, i.e. to store it and to dispatch it to millers when required. The Boards invariably appointed local farmer cooperatives as their agents.

Under such a scheme, farmers were paid the same price for their produce regardless of when and where it was delivered. The result was that the entire crop was taken to the agents as soon as it was harvested. As the Boards did not have the funds necessary to finance the crop, someone had to be found to do so: this became the responsibility of the Land Bank. Similarly,

storage space had to be created to store the harvest. The Land Bank was charged with the responsibility to provide the funding for this function.

The next innovation at the Land Bank was when it started providing shorter- term funds to the cooperatives in order that they could provide production credit to their members. Finally, the Land Bank also entered the retail market in short and medium-term loans to farmers to enable them to purchase moving capital as well as short-term production credit.

The government was also involved in agricultural financing through the Agricultural Credit Board, an agency within the Department of Agriculture whose purpose was to provide long and short term credit to (white) farmers who did not qualify for borrowing from the Land Bank. Effectively, therefore, the Agricultural Credit Board carried the bad loan book of the Land Bank.

By the time that the government appointed the Strauss Commission[33], the Land Bank had just taken up the responsibility to create access to financial services for small farmers, i.e. had begun to accept a development mandate. At this time, the institution was in relatively good financial health, and was able to operate without new subsidies from the state. The Strauss Commission made two recommendations that have a direct bearing on the situation in which the Land Bank now finds itself. First, the Commission recommended that the Agricultural Credit Board be closed. This recommendation was accepted and implemented by government. The assets of the Board were folded into a new programme, Mafisa, whose purpose was to increase the finances available for small farmer development. Mafisa is now administered by the Land Bank. Second, the Commission recommended that the Land Bank should receive grants from the Treasury in order to enable it to expand its developmental mandate. This recommendation was never implemented.

The Land Bank was able to attract funds from South Africa's capital markets, initially with preferential treatment in terms of the paper they sold on the market, as well as what the Strauss Commission regarded as an implicit state guarantee. In this way farmers had access to funds at below-market rates. Nevertheless, the bulk of funds used by the Land Bank came from the capital markets. The contribution of the private sector to agricultural financing was, however, not limited to this role, as the commercial banks have long also been involved in agricultural financing. In 1970, for example, the commercial banks held 21% of all farming debt, just shy of the 22% held by the Land Bank, and more than double the 10% held by the Department of Agriculture (through the Agricultural Credit Board) and the 8% held by the cooperatives. In addition, other financial institutions such as the then discount houses, merchant banks, insurance companies, etc. held a further 20.5%. In 2005, by contrast, the Land Bank held 17% of the total debt, compared to the 55% of the commercial banks and 12.5% of the cooperatives.

The conclusion, therefore, is that the changes in financing policy have had little effect: commercial farmers have had to shift to the commercial banks, which do provide capital, especially mortgage financing, at the terms and conditions that the Land Bank was able to provide in the past, and emerging farmers have not gained any appreciable sustainable access to agricultural financing.

[33] Formally the Commission of Inquiry into the Provision of Rural Financial Services

MAFISA

A number of reviews undertaken from 2000-2003 demonstrated that lack of finance was one of the major constraints limiting small-holder productivity. In 2004, government announced the establishment of a new government agency - MAFISA (Micro Agricultural Financial Institutions of South Africa) to help close this funding gap and earmarked R 1 billion for this purpose.

When MAFISA was set-up it was not intended to replacing any existing programme but rather to complement and optimise the use of established financial intermediation infrastructure and increase outreach in order to improve access to financial services by the rural poor.

Briefly, as MAFISA stands, it is a project located within the Department of Agriculture that provides funds to development finance institutions who are tasked with the responsibility of on-lending these funds, at concessionary interest rates, to predefined clients. To be eligible for funding the MAFISA credit policy states that loans are limited to a maximum of R 100,000 per farmer for a maximum period of two years, loans above R 25,000 need to be secured, the borrower needs to be a PDI with some access to land, the borrower's annual turnover must be less the R 300,000 per annum and most importantly, they should have the ability and willingness to repay the loan. Groups are also eligible fro MAFISA funding under similar conditions.

The scheme was initially piloted in three provinces namely Limpopo, Eastern Cape and Kwazulu-Natal and in July 2007 it was announced that it would be rolled-out nationally. At this stage the bulk of MAFISA loans are managed by the Land Bank.

In terms of the performance of MAFISA, most of the evidence relates to the pilot phase that ended in March 2007. At that stage MAFISA had loaned an amount of R41 million to 5,170 farmers. In terms of outreach, this was significantly higher than the target of 2000 farmers. In terms of the quality of the MAFISA loan book, it is too early to tell what percentage of the loans are likely to be repaid, however, early indications suggest a default rate of 35-40% which is higher than the target of 30%.

One of the biggest setbacks MAFISA experienced during the pilot phase was the uncovering of a fraud situation at one of the Land Bank branches administering MAFISA loans. While the full-extent of the losses involved is unknown, it is thought to involve 27 loan projects amounting to R 17.5 million. The Department of Agriculture commissioned a comprehensive forensic review of the entire MAFISA portfolio in response to this (National Treasury 2007).
The recent problems in the Land Bank (as one of the key delivery agents for MAFISA) are areas of great concern. The Department of Agriculture itself admits that in respect of MAFISA it faced major challenges. Disbursement of MAFISA loans had started late, and there had been a hiatus due to suspension by the Land Bank and expiry of the pilot agreements. Further challenges included capacity, delayed establishment of accreditation committees, prolonged process lead-times, reliance on over-worked extension offices and a need to change the mindset of end users, to address interest rates and address difficulties in accessing financial services. Many farmers are also adamant that the interest rates charged on MAFISA loans to previously disadvantaged farmers were unacceptably high.

4.6 Agricultural research and technology development

The estimated international return on investment in agricultural research and development (R&D) is high - averaging at 43% due to the significant productivity gains R&D is able to unlock. Yet, agriculture R&D is underfunded around the world. According to the World Bank (2008) there are three main reasons for this. The first relates to the political economy of public expenditure decisions that emphasize short-run returns that are politically visible. Agricultural R&D investments tend to be long term and high risk - this counts against it. Secondly, agricultural trade distortions and national agricultural policy interventions tend to artificially reduce farm gate prices and are a disincentive to both public and private R&D investment. Finally, the benefits of R&D tend to spill over to other countries and regions creating free-rider problems. More than half the benefits of R&D are generated from such spillovers.

Estimates of public R&D investment as a percentage of agricultural GDP average at 0.53% for developing countries and 2,36% for developed countries. In South Africa's case the latest available data is for 2000, and these show that from 1993 to 2000 agricultural R&D investment as a percentage of agriculture GDP increased from 2.63% to 3.04% - a level well above international norms. Anecdotal evidence suggests this level of support has declined in recent years and funding for agricultural R&D in South Africa is limited. Nevertheless the complexity of the South African national agricultural research system suggests that the available R&D resources may not necessarily be used efficiently. The South African national agricultural research system (NARS) consists of the following components: agricultural research institutes operating under the ARC, provincial departments' of agriculture research entities, university faculties of agriculture and veterinary sciences, institutes operating under the Department of Environmental Affairs, the CSIR and some semi-public research agencies supported by the industry.

In order to broaden strategic focus of agricultural research in South Africa, the Agricultural Research Council (ARC) was established in April 1992. The ARC comprises of a number of research institutes that were previously part of the Department of Agriculture, the oldest of which dates back to 1902. In 1997, the National System of Innovation guided by a new Science and Technology policy was introduced for all Science, Engineering and Technology Institutions under government control, (note that research at the provincial departments of agriculture falls outside of this policy). This policy superseded all legislation applicable to individual Science Councils. For the ARC this implied that the new directives stemming from this policy replaced all the agreed-on principles for the co-funding of research and partnerships with the private sector, as well as the autonomous status of advisory panels that were destined to play a more significant role under the original ARC vision.

One of the important points of critique leveled at the ARC in the late 1990s was that the research carried out was mainly capital intensive in nature and only benefited commercial farmers. This necessitated the introduction of a number of transformation initiatives by the ARC and its structure and management were also modified. A number of research institutes were merged, and a more entrepreneurial managerial style was adopted. Commercialization of research outputs was emphasized through cost recovery initiatives for all research and services with a view to improving research relevance and performance. Research output was refocused toward small-scale black farmers and a separate program—with ring-fenced funding from the ARC parliamentary grant—was created to deal with the issues and needs of poor farmers in "disadvantaged communities".

In the case of the research activities being carried out by the provincial departments of agriculture, funding from these departments for agricultural research began to deviate fundamentally from the formula guidelines in 1996. Provincial R&D capacity dwindled and in some cases ceased. High costs and poor restructuring plans resulted in the disappearance of agricultural research in some provinces, for example in the Eastern Cape. Only two provinces, Western Cape (Elsenburg) and Kwazulu-Natal (Cedara), have retained a fair degree of research competence, but are still severely under-funded in some aspects.

The NARS capacity to deliver research output has also been affected by the large exodus of key research staff since 1993. This trend is shown in Table 33 for certain types of research agency categories for the period 1993 to 2000. The exodus of researchers has mainly occurred in the public research services with national government (ARC) institutes experiencing the largest decline in full-time research staff. Since 2000 the ARC has lost a further 234 research staff through retirement and resignations. According to estimates included in the draft Agricultural R&D strategy in 2006, the number of research staff at the ARC declined to 467 in 2004. This decrease of 40 percent over a period of three years has had serious implications for the ARC's ability to maintain past performance (it was estimated at its establishment that the ARC would require a base capacity of 750 researchers to fulfill its functions) and one can expect that it has been the most qualified and mobile researchers that have left. The drop of 121 full-time equivalent (fte) researchers at the provincial departments of agriculture represent 605 persons, since provincial researchers typically spend about 20 percent of their time on research.

Table 27: Change in Agricultural Research Capacity (full-time equivalents), 1993-2000

Type of Agency	**Number of Researchers**		**Change**
	2000	**1993**	
National Government	675	900	-225
ARC	577	706	-129
Other National	98	194	-96
Provincial Government/ Regions	67	188	-121
Total Government	743	1088	-345
Non-profit	56	66	-10
Higher Education	125	127	-2
Private Enterprises	45	52	-8
Total	**968**	**1333**	**-365**

The ARC and the South African NARS in general, is de-capitalising in terms of researcher capacity at an alarming rate. The fact that this has been a process that has started almost 10 years ago and gathered such strong momentum in recent years is probably not surprising, since no central record of the NARS capacity exists due to the absence of an agricultural research oversight body.

A series of meetings were arranged with provincial departments of agriculture and representative agricultural bodies. Insights gained from this exercise enabled the ARC to place strategic workshops on its research agenda. This resulted in the establishment of a National Agricultural Research Forum (NARF) in 2002 to investigate solutions to the numerous constraints facing the national agricultural research system. This process has after a period of five years led to the drafting and final acceptance of a new National Agricultural Research & Development Strategy in 2007.

The point about the current agricultural research system is that no single public institutional entity has the ability to coordinate the NARS, because everybody is involved as research service providers, thus effectively competing with each other. It is for this reason that the National Agricultural Research &Development Strategy, adopted in 2007, has as its main objectives:

- To guide the Agricultural Research and Innovation System in the formation and operation of national agricultural research and development programmes;
- To mobilise resources and enhance their effective use for sustainable agricultural research and development;
- To guide the generation of knowledge and information in the agricultural sector;
- To provide a framework for developing research capacity and expertise, funding for agricultural research and innovation, focussing national efforts to strategic priorities and areas of comparative advantage; and ensuring effective technology transfer, information sharing and communication to the entire spectrum of the farming community.
- To provide an institutional framework to enhance participation of all stakeholders in agricultural research and development; and
- To engender a culture of learning and innovation through human resource development and management.

In order to achieve these objectives the National Agricultural R&D Strategy makes provision for a new governance structure which now encompass public, private and civil society organisations in order to promote both horizontal and vertical linkages in the implementation of the agricultural research and development strategy.

4.7 AgriBEE

AgriBEE is part of a wider process that is being undertaken in terms of government strategy as spelled out in the Broad-based Black Economic Empowerment Act, whose purpose is to achieve broad-based economic empowerment of black persons, “a generic term, which means indigenous Africans, Coloureds and Indians”. While the programme encompasses the whole South African economy, the focus is on the priority sectors that the government has identified in its micro-economic reform programme. These priority sectors include agriculture and agro-processing.

The Act makes provision for Codes of Good Practice, which spell out the ‘rules of the game’ for the generic and industry Scorecards, the establishment of Charter Councils, and the monitoring of progress with BEE in an industry, etc. The Scorecards identify seven elements by which the contribution to BEE of a measured enterprise will be measured, namely ownership, management control, employment equity, skills development and organisational transformation, preferential procurement, and the ‘residual’, referring to corporate social investment. In this manner, the measured contribution to BEE is broadened to encompass much more than the transfer of shares in a few large enterprises to a favoured few. A simplified scorecard has been proposed for ‘qualifying small enterprises (QSEs)’ while the smallest enterprises are ‘exempted micro enterprises (EMEs)’. For QSEs the seven elements each get an equal weight of 25%, and the measured enterprise can select any four. The actual scorecards are also simpler, which should reduce the cost of measurement.

The Act also allows sectors to propose their own BEE Charters, and to design industry-specific Scorecards. If these are in accord with Section 9 of the Act, they can become the

formal method of scoring participation in BEE by measured enterprises in that industry. To this end, the agricultural sector has drafted its own Charter that has recently achieved Section 9 status after four years of negotiation.

This charter deviates from the generic scorecard in the Codes of Good Practice in that they make specific provision for scoring bonus points for land reform initiatives, and provide a more detailed scorecard for the rural development element. These adjustments are all accommodated in the QSE scorecard as well. The main strength of the scorecard approach is the manner in which enterprises are 'linked' together through the preferential procurement element. In this manner, while participation in BEE is nominally voluntary, the policy does not share the weaknesses of some contemporary policies aimed at redress, such as the Employment Equity Act and the application of labour legislation in agriculture, where compliance is difficult to enforce because of the structure of the sector. Pressure to participate in BEE will, in other words, come from within the programme.

At the same time, the agricultural sector, and especially primary agriculture, is at a disadvantage, because of the cost of compliance: farms are expected to measure their contribution to BEE in the same manner as large corporations, with far more resources. This is somewhat mitigated by the expected lower cost of measurement for QSEs.

With respect to the implementation of AgriBEE, a AgriBEE Charter Council is in the process of being established and one of its first duties will be to revisit the indicative sector codes which, in terms of Section 9 of the Act, are subject to further consultation and discussion.

5. AGRICULTURAL PERFORMANCE WITH FOOD SUPPLY FOOD PRICES AND FOOD SECURITY

THIS IS THE HEART OF OUR WORK –MUST BE SHORT BUT POWERFUL - AND LINK TO THE PAPER ON ROLES AND ALSO WITH OUR OCT PRESENTATION AT DBSA. CONSIDER THE FOLLOWING:

(1) START WITH THE FAO GRAPH AND THEN RECENT FOOD PRICE TRENDS IN SA (IN KIRSTEN PAPER?).
(2) REFER TO FOOD SELF SUFFIECIENCY(IS DAAR NOG SO N WOORD?), FOOD BALANCE SHEETS,ETC
(3) WAAR PAS N GEDEELTE OOR HOUSE HOLD LEVEL FOOD SECURITY IN?
(3) LINK SUSTAINABLE FOOD SUPPLY TO FOOD SECURITY
(4) ADDRESS THE RATIONAAL TO MAINTAIN TRADE COMPETITIVENESS I.E. NOT TO PRODUCE FOOD AT ALL COSTS AS THIS WILL ONLY PUSH UP LOCAL CONSUMER PRICES. WHERE DO WE AGAIN LINK UP WITH LAND REFORM?
(5) WHAT SHOULD THE BALANCED POSITION BE re AN OPEN FOOD SUPPLY MARKET SYSTEM RELYING ON GLOBAL TRADE TO SUSTAIN LOW COST FOOD SUPPLY STREAMS(AS IS NOW?); HOW MUCH TRADE,;STRATEGIC RESERVES;ETC?

CONCLUDE THIS SECTION THAT SA AGRICULTURE-DRIVEN BY MARKETS AND COMMERCIALISATION INCENTIVES/CONSIDERATIONS, IS FULFILLING ITS ROLE AS FOOD SUPPLIER IN A RATHER EFFICIENT AND EFFECTIVE MANNER, WHICH CAN BE IMPROVED BUT ALSO CONSTRAINED IF THE PROPER SUPPORT SYSTEMS AND INCENTIVES ARE NOT IN PLACE, INCLUDING SYSTEMS TO

DEAL WITH SUSTAINABLE ECOLOGICAL SITUATIONS WHERE SO REQUIRED. THE WORK OF THE MIKE MULLER GROUP ON WATER AND THE UCT RESEARCH, WHICH MIGHT BE QUITE CRITICAL OF THE CURRENT INDUSTRIAL/COMMERCIAL AGRI MODEL, SHOULD ALSO INFORM THIS ASPECT.

6. SCENARIOS AND POLICY/STRATEGY OPTIONS FOR SA AGRICULTURE.

#TO BE DEVELOPED AFTER ALL SECTIONS/PAPERS ARE CONCLUDED. THIS WILL ACTIVATE THE TYPOLOGY OF SA AGRICULTURE AND DESIGN A STRATEGIC APPROACH FOR EACH EVOLVING TYPE