

*Study of agricultural
Industry in the
Limpopo Province*

Executive Summary

PART I

Executive Summary of a Study of Agricultural Industry of Limpopo Province

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I. INTRODUCTION TO THE STUDY

Agriculture has been identified as one of the three pillars of economic development strategy for Limpopo Province. To actualize the role of agriculture in the province, the provincial executive council directed that a study be commissioned to provide useful managerial information to guide investment decisions to government and private investors interested in Limpopo Agricultural Sector.

The challenge concerning this sector, which needs to be addressed as a matter of urgency relates to the lack of adequate managerial and strategic information relating to the following issues

1. Natural resource base potential, level, and patterns of resource use.
2. The current size and the performance of the industry, which was not accurately quantified particularly the performance and contribution of the small holder farmers.
3. Potential size of the total industry considering the Pre-production, Production and Post production elements of the industry. An emphasis has mostly been to quantify the production or farming component.
4. Strategic and niche commodities that would contribute to national and international export, which could be a focus of the industry if clearly identified.

5. Strategic interventions required from government in areas of competitive advantage to stimulate the agricultural and rural economy especially to commercialize the small holder agriculture.
6. Kind of linkages and partnerships needed in the strategic areas.

In order to address the six challenges above an investigative “Study of the Agricultural Industry in the Limpopo Province” was commissioned with the following objectives :

1. To quantify the current and potential contribution of the various components of the agricultural industry to the provincial economy and the Provincial Growth and Development Strategy.
2. To identify strategic agricultural enterprises and clusters that can contribute to economic growth and job creation.
3. To identify strategic interventions required from government for stimulating the performance of the sector and attract investment into the sector.
4. To access the existing and necessary linkages in the sector.

The School of Agriculture, Rural Development and Forestry of the University of Venda, carried out the above study between the period of November 2002 and May 2003. The study involved intensive collection of various types of existing data on Limpopo Agricultural industry. It also involved detailed field survey of smallholders and commercial farmers in the Province using structured questionnaires. The various data collected were analysed using SPSS computer package and the results obtained have been presented in four volumes of our report.

Volume one of the report presents the situational Analysis; while volume two presents projection of the agricultural sub-sectors. Volume three presents the clusters of agricultural projects which have been identified for strategic investment at the various districts of Limpopo and volume four focuses on the required and recommended government interventions for the various sub-sectors of agricultural industry of Limpopo.

Our presentation in this executive summary is subdivided as follows:

- Section two deals with General Background to Limpopo Agriculture
- Section three summarises the contributions of agriculture to the Limpopo economy and some projections for the next 15 years for selected sub-sectors.
- Section four presents livestock situational analysis with some projections for the next 15 years.
- Sections five summarises crop production situational analysis and projections for the next 15 years.
- Section Six presents Agricultural resource situation while section seven presents Agricultural Management Services.
- The last section focuses on Policy recommendations and conclusion of the study.

II. GENERAL BACKGROUND TO LIMPOPO AGRICULTURE

Limpopo Province covers an area of 12.46 million hectares and this accounts for 10.2 per cent of the total land area of the Republic of South Africa. The province is endowed with abundant agricultural resources and it is one of the country's prime agricultural regions noted for the production of fruits and vegetables, cereals, tea, and sugar. Three distinct climatic regions can be identified in the province. These are the lowveld (arid and semi-arid) regions the middle veld, highveld, semi-arid region; and the escarpment region having sub-humid climate with rainfall in excess of 700mm per annum. These varied climates allows Limpopo Province to produce a wide variety of agricultural produce ranging from tropical fruits such as banana, mangoes, to cereals such as maize wheat, and vegetables such as tomatoes, onion, and potatoes.

A key feature of the agricultural industry of Limpopo Province is its dualism. There are two distinct types of agricultural production systems. The large scale commercial farming system, and the small holder farming system. These two systems have evolved as a result of past policies of the previous governments under the apartheid regime.

White farmers who practice large scale farming system using the most advanced production technology occupy the original Transvaal portion of the province, which covers approximately 70 percent of the total land area. These commercial farmers operate large farms, which are well organised and situated on prime land. At present there are approximately 5 000 commercial farming units in Limpopo Province (Statistics South Africa : 2002).

The small holder farms are located mostly in the former homeland areas and they cover approximately 30% of the provincial land surface area. Farming under the small holder system is characterised by low level of production technology and small size of farm holding of approximately 1.5 ha per farmer; with production primarily for subsistence and little marketable surplus. It has been estimated that there were approximately 519 000 small holder farmers in Limpopo Province by 1995 (Statistics South Africa, 1998 Report). Women constitute 80% of these

smallholder farmers. A more recent estimate by statistic's South Africa indicates that in year 2000 there were approximately 273 000 small-scale farmers operating in the former homeland areas of Limpopo Province.

The dual nature of agriculture in Limpopo Province is therefore reflected in the fact that the province has about 5 000 large scale farms with some of them having the largest areas and adopting the most technological advanced production method, while on the other hand (as a result of previous government agricultural policies), the province has over 273 000 smallholder farmers located in poverty stricken homeland areas lacking adequate infrastructure and institutional support. Most of these small holder farmers are women and they produce food crops and livestock for their family subsistence. The low income and poor resource base of these smallholder farmers are the major problems facing agricultural growth and economic development of Limpopo Province.

III. CONTRIBUTION OF AGRICULTURE TO THE ECONOMY OF LIMPOPO PROVINCE

Given the fact that 89 percent of the population of Limpopo Province can be classified as rural, agriculture plays a major role in the economic growth and development of the province. The contribution of agriculture to the provincial economy can be summarised briefly as follows:-

- Provision of food to the provincial population thus ensuring household food security for the bulk of the population in the province.
- Provision of employment for the economically active population (at commercial farm level, and at smallholder farm level).
- A major source of income to a large section of the provincial population (this includes commercial farm income, smallholder farm income and other agribusiness related income).
- A major source of foreign exchange earnings for some farmers exporting farm products (such as citrus, avocados and pineapples) to foreign countries.

- Agriculture also provides some raw materials for the manufacturing businesses in the province. (These raw materials include those for agro-processing businesses in particular). There are also linkages between agriculture and other sectors of the economy such as trade, manufacturing, transport, communication and financial services, and public or community services sector.
- Agricultural contribution to the provincial macro-economy can be inform of its gross geographical product (GGP).

The contribution of agriculture to the economy of Limpopo Province has been summarised in DBSA Report (1994). In this report, agriculture was estimated to have contributed 15.7% of the gross geographic product (GGP) of the province for (1991) period. The report also reveals that agriculture was second only to government (public or community services) which made the highest contribution for that period.

In terms of employment, the DBSA report reveals that agriculture employed 17.5% of the economically active population (in the commercial farming sub-sector); and a further 25% in the informal or subsistence smallholder farming sub-sector, thus making agriculture the most important provider of employment in the Limpopo Province.

The DBSA report also reveals the impact of the multiplier effect of the agricultural sector on the economy and concluded that only agriculture recorded a comparative advantage as an economic sector within the province.

An additional insight into the contribution of agriculture to the provincial economy can be assessed by focusing on more recent data from statistics South Africa.

Employment in the Agricultural Sector.

Table 1 presents the employment in the commercial agricultural sector of Limpopo Province as compared with other sectors of the economy for the period 1995 – 1999.

Table 1 : Employment of Agricultural Sector Compared with other sectors in Limpopo Province

	Agriculture	Mining	Manufacturing	Electricity	Construction	Trade	Transport	Finance	Comm Serv	Total
1995	99000	38000	32000	7000	24000	109000	18000	15000	283000	625000
1996	77299	29670	24986	5466	18739	85107	14016	11712	220966	488000
1997	92506	35507	29901	6541	22426	101850	16819	14016	264435	584000
1998	97891	37574	31642	6922	23731	107779	17798	14832	279830	618000
1999	109771	42134	35482	7762	26611	120859	19958	16632	313790	693000

Source : Statistics Africa.

It can be observed from Table 1 that commercial agriculture provided employment for approximately 15.84% of total number of employees in the province for the period 1995 and 2000. In the small-holder sub-sector reliable data on trend in employment were not available, but the recent survey by Statistics South Africa (2002) reported that small holder operators were estimated to be approximately 273 000 for Limpopo Province for the year 2000. This constituted approximately 30% of the economically active population in the province and in the aggregate, when the commercial and small-holder agricultural employment and combined, the agricultural sector of employment particularly in the rural areas of Limpopo Province.

Projections of Employment in Agricultural Sector

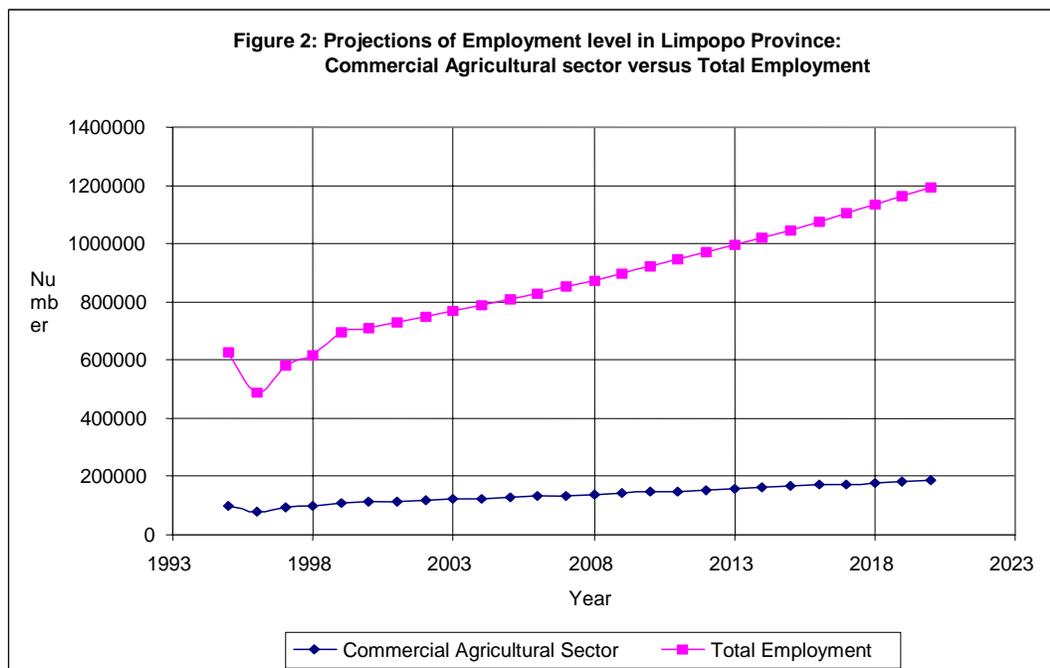
Using available time series data projections were made for employment in the Limpopo commercial agricultural sector for the next 15 years and the estimates obtained are summarised in Table 2 and Figure 2.

It can be observed from Table 2 that commercial agricultural sector is projected to employ approximately 138,500 people by year 2008. This employment is projected to increase to about 157,600 by the 2013; and approximately 179,000 by the year 2018. It should also be pointed out that the above employment figures

for the commercial agricultural sector represents approximately 15.83 percent of the total labour employment projected for the Limpopo Province for specified period. When it is realised that employment in the small-holder sector accounted for almost 30% of the total employment in the Limpopo province, the overall employment in the agricultural sector is therefore expected to be significantly higher than the projections presented here.

Table 2: Projected employment in the commercial agricultural sector of Limpopo Province

Year	Commercial Agricultural Sector	Total Employment
2008	138486	874285
2013	157569	994763
2018	179282	1131843



Agricultural Income

Table 3 summarises the farm income obtained in Limpopo Province for the period of year 2000. The total farm income was estimated as R10616 million out

of which small holder farmers in the former homelands obtained R4590 million (or 43.24%), and the commercial farmers obtained R6026million (or 56.76%).

Table 3 : Farm Income obtained in Limpopo Province (2000)

Area	Farm Income (R million)	% of total Agric Income in Limpopo Province	TOTAL RSA Agric Income
Former Homeland	4590	43.24	13938
Former RSA	6026	56.76	1197666
Total for Limpopo	10616	100.00	1211605

Source : Statistics South Africa 2002 (Report on the Survey of Large and Small scale Agriculture)

Agriculture's Contribution to GGP

The contribution of agriculture to the gross geographical product (GGP) of Limpopo Province is presented in Table 4 for the period 1993 to 2000.

Table 4: GGP of Agriculture compared with Total GGP for Limpopo Province (1993-200)

Year	Total Limpopo GGP (R million)	Limpopo Agric Sector GGP (R million)	Agric contribution of Total Limpopo GGP (%)	Comments	
1993	13002.6	2383.1	18.33	Statistics SA Survey Data	Uses Product Approach
1994	14 159	2417.1	17.07		
1995	20230	1105.1	5.46	BEPA Estimates	Uses Income Approach
1996	22129	1170.6	5.29		
1997	24252	1277.8	5.27		
1998	29480	1245.70	4.22		
1999	32665	1342.4	4.11		
2000	35768	1417.7	3.96		

Sources : Statistics South Africa figures for 1993 and 1994

BEPA Survey Figures for 1995 to 2000

* SA approach uses production or output method GGP = Value added of each product within each production process

** BEPA Estimates adopted Income Approach

GGP = Remuneration (salary & wages) plus gross operating profit plus net indirect.

A close observation of Table 4 would reveal that for the period 1993, agriculture contributed approximately 18.33% of the GGP of Limpopo Province, and in 1994 agriculture contributed 17.07% of the GGP. However, as from 1995 to 2000 the contribution of agriculture to GGP has declined to less than 6 per cent. These estimates for this latter period need further examination. What is the main reason for this substantial decline in the contribution of agriculture to the provincial GGP? The major source of this decline can be linked in to the method used by BEPA survey for the period 1995 to 2000. The BEPA survey adopted the income approach whereby GGP was defined as remuneration (wages and salaries), plus gross operating profit, plus net indirect taxes. According to BEPA this approach was better than output approach in that it reduces the under-evaluation of product which is inherent in the estimates of statistics South Africa. The statistics South African adopted the output approach, which focuses on the value added of each product within each production process.

The estimates for 1995 – 2000 for the agricultural sector, which were obtained from BEPA Survey, have resulted in under evaluation of the Limpopo agricultural sector. This may be one of the reasons why the contribution of agriculture to the provincial GGP had declined and this decline in GGP value resulted in drastic reduction in importance of the potential of the agricultural sector as a significant growth promoter of the Limpopo provincial economy.

According to BEPA survey agriculture which contributed 18.33% to GGP of the province in 1993, could only contribute about 4 percent to the provincial GGP for the year 2000. These BEPA estimates therefore appear to be an underestimation in view of the fact that commercial agriculture provided employment for 15.84 per cent of the people employed in the formal sector during this period; while employment in the small holder sector was estimated as about 30 per cent.

The contribution of agricultural sector to the Provincial GGP has therefore appeared to be largely undervalued in view of the fact that 89% of the provincial population live in rural areas where majority of the people are engaged in smallholder subsistence agricultural production to meet household food needs. Given the large subsistence sector for the provincial agriculture, and the fact that

a significant proportions of smallholder output is inform of self produced and consumed purposes, which are not involving market transactions there is a need to use the output approach (or production approach) which focuses on value added by each product This could not be undertaken in this study given the limited time available and our terms of reference.

Comparing Agricultural Contribution to GGP with other Sectoral Contributions to Provincial GGP

When we considered the contribution of agriculture with other sectoral contributions for the year 2000 using BEPA estimates, the results obtained, which are presented in Table 5), revealed significant changes in the sectoral contributions to GGP. Agricultural GGP declined from 17% in 1994 to only 4% in 2000; while manufacturing also declined from 7 per cent to 4.24 per cent during the same period.

Table 5 : Limpopo Province BEPA estimates for GGP for Agriculture and other sectors (Year 2000)

Sector	Amount (in R 000)	% of Total Provincial GGP
Agriculture and Forestry	1417754	3.96
Mining	6794863	18.99
Manufacturing	1517941	4.24
Electricity and Water	3231018	9.03
Construction	894257	2.50
Trade and Catering	6552580	18.31
Transport and Communication	1758627	4.92
Finance and Business Services	3077330	8.60
Community Services	10523418	29.42
Total for All Sectors	35767788	100.00

Source : BEPA, University of Pretoria

Agricultural Contribution to GGP by Districts

Table 6 summarizes the agricultural contribution to GGP of Limpopo Province on per district basis. It can be observed from Table 6 that the three major districts making highest contributions are Waterberg accounting for about 29 per cent of total agriculture GGP; Mopani which was responsible for contributing about 28.25 percent of total Limpopo agricultural GGP; and Vhembe district which contributed about 22.8 percent of GGP. Capricorn ranked fourth by contributing about 15 percent and the remaining two districts (Bohlabela and Sekhukhune) respectively contributed only 4.4 percent and less than 1 percent contributions to the provincial agricultural GGP. These last two areas therefore have low potentials for agricultural investments and growths. They however possess high potentials for economic development in other economic sectors as revealed in Table 7.

Table 6 : Limpopo Province GGP for Year 2000 Agricultural Contributions by Districts

District	Amount (R 000)	% of total Agric Contribution
Capricorn	212146	14.96
Bohlabela	62133	4.38
Mopani	400413	28.25
Sekhukhune	12074	0.85
Vhembe	322847	22.77
Waterberg	408141	28.79
Total Limpopo	1417754	100.00

Source : Compiled from BEPA Estimates

Table 7 : Regional and Sectoral Contribution to Limpopo GGP : 2000 (in %)

Sector	Bushbu	Bushveld	Central	Lowveld	Northern	Southern	Western	Limpopo
Agriculture	1.2	3.5	2.7	5.7	5.7	0.4	6.3	4.0
Mining	0.0	50.4	2.5	18.4	12.5	15.5	15.4	19.0
Manufacturing	2.2	1.0	7.6	4.1	3.6	4.6	5.4	4.2
Electric	4.2	19.7	5.9	8.6	5.8	3.7	7.5	9.0
Const	0.4	0.2	4.6	3.9	3.4	0.4	0.3	2.5
Trade	21.1	9.7	25.9	16.1	24.1	17.1	12.6	18.3
Transp	5.3	3.2	8.9	5.4	0.3	2.7	8.7	4.9
Bus Se	2.0	5.6	14.2	8.5	10.1	0.4	11.0	8.6
Com Service	63.5	6.8	27.8	29.3	34.6	55.2	32.9	29.4
TOTAL	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source : The Bureau for Economic and Policy Analysis (BEPA) University of Pretoria.

Linkages of Agriculture with other Sectors of Limpopo Economy

The contribution of agriculture to the Limpopo Provincial economy can be further highlighted by briefly examining the linkages between agriculture and other sectors of Limpopo economy. This is vividly presented in the input-output table for Limpopo Province as shown in 8.

Table 8 : Input-output table for Limpopo province (1988 structure)

Sector	Agriculture	Mining	Manufacturing	Electricity	Construction	Trade	Transport	Finance	Other
Agriculture	9	0	15	0	0	0	0	0	0
Mining	0	1	2	6	6	0	0	0	0
Manufacturing	27	20	45	19	37	11	8	4	19
Electricity	1	5	2	9	0	2	2	1	2
Construction	0	0	0	0	17	1	0	1	0
Trade	5	3	1	0	3	7	3	2	10
Transport	3	2	1	1	3	5	4	4	13
Finance	1	0	4	0	3	11	1	11	12
Other	1	7	3	1	3	1	1	2	8
Total Intermediate	47	38	72	36	73	38	19	24	64
Compensation of employees	18	23	15	33	21	43	50	29	25
Gross operating surplus	35	37	13	30	2	17	29	37	11
Indirect Tax	0	2	0	1	4	1	3	10	0
Gross Geographic Product	53	62	28	64	27	62	81	76	36
GROSS REVENUE	100	100	100	100	100	100	100	100	100
Contribution to GGP (%)	8	20	7	8	3	12	4	6	32

Source : Statistics South Africa.

It can be observed from this table that agriculture is interrelated to most of the other sectors of Limpopo economy. For example, manufacturing contributes about 27 percent to final agricultural output (that is, some agricultural output requires input from manufacturing sector). On the other hand, about 15 percent of final agricultural output is used as input in the manufacturing process to produce final manufactured products. Other sectors such as trade, contributes about 5 percent and transport 3 percent, financial business about 1 percent to the value of final agricultural output. These inter-sectoral linkages reveal the importance of agriculture to other sectors of the Limpopo economy. The agricultural sector encompasses not only the primary agricultural production but the pre-input and input sectors as well as financial sectors, marketing sectors and agro-processing (manufacturing) sectors. Millions of people in Limpopo Province particularly in rural areas depend on agriculture for their livelihood.

IV. LIVESTOCK SITUATION ANALYSIS AND PROJECTIONS

A full report on livestock production is presented as part volume 1 on situational analysis. Table 9 has been presented here to show the income from animal production from smallholder farms. This constitute more than half the total income that accrues to the Limpopo Province from agriculture. The general trends indicates more income in the Waterberg District followed by Mopani and Vhembe Districts. Capricorn, Bohlabela and Sekhukhune are the lowest in ranking. The ranking may in part be due to the available infrastructure and markets.

Table: 9 Income from animal production 2000 – 2002 by district (in R Million)

	Bohlabela	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg	Provincial
2000	6227	7249	19609	4576	10276	39258	14349
2001	7233	8434	20527	5466	13285	35977	15644
2002	7061	7670	23585	5347	16984	28757	15373

Information on the distribution of different grades of abattoirs or slaughter facilities for poultry and red meat are provided in the livestock production

chapter of volume 1. A closer look at the summary indicated in Table --- shows a need to develop and upgrade slaughter facilities in the Bohlabela and Sekhukhune Districts.

Table 10: Distribution of abattoirs in Limpopo Province by districts.

	Poultry	Red Meat Registered	Red Meat Unregistered	Total
Bohlabela	0	0	0	0
Capricorn	4	5	0	9
Mopani	2	5	0	7
Sekhukhune	1	0	7	8
Vhembe	2	35	36	73
Waterberg	8	11	7	26
Total	17	56	50	123

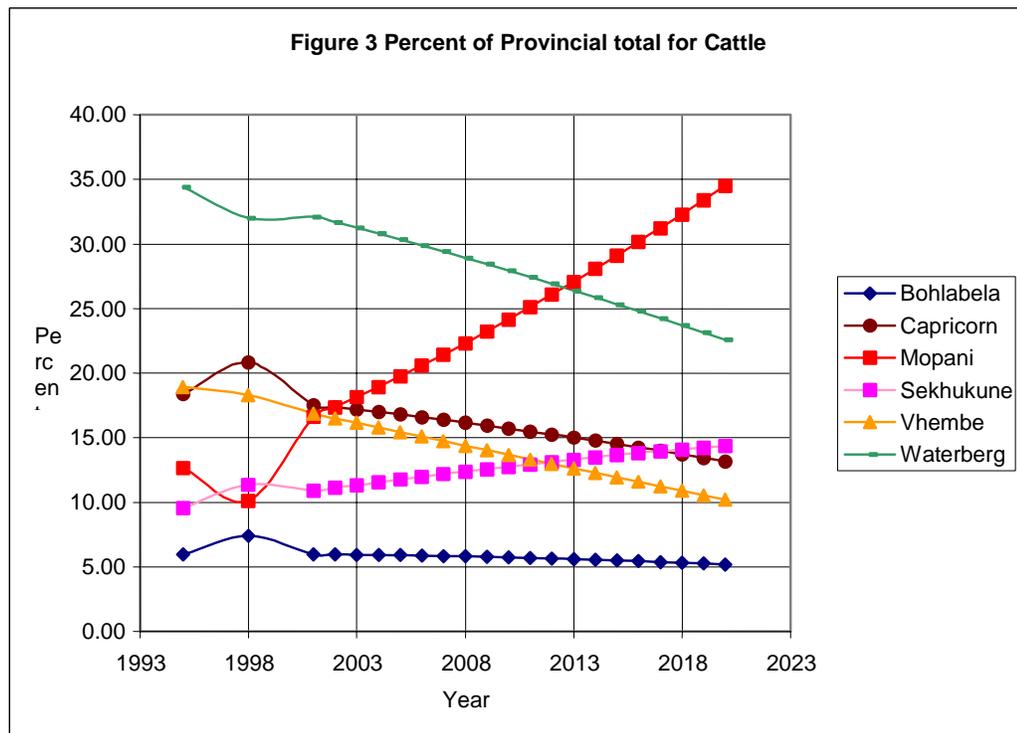
Livestock Projections per district

Livestock projections per district have been presented in Figures 3, 4 and 5, together with their accompanying tables.

The cattle projections by district are shown in Figure 3. A close observation reveals that a downward trend for Waterberg, Capricorn and Vhembe Districts over the next fifteen years; but an upward trend for Bohlabela and Sekhukhune Districts for the same period.

Table 11: Projections of the percentage share of Provincial Cattle Herds by District

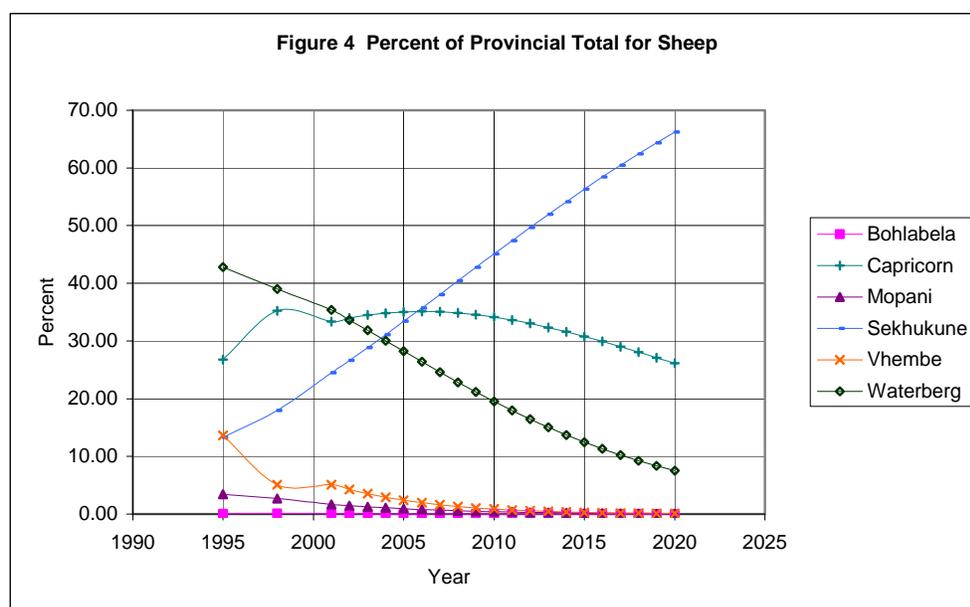
	Bohlabela	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg
2008	5.81	16.17	22.33	12.37	14.38	28.94
2013	5.60	15.01	27.07	13.32	12.61	26.39
2018	5.31	13.71	32.30	14.10	10.89	23.69



The district projections for sheep shown in Figure 4 seem to follow the same pattern as the projections for cattle. The pattern shows a declining trend for Waterberg and Vhembe districts, but an upward trend for Sekhukhune District.

Table 12: Projection of the percentage share of Provincial Sheep by District

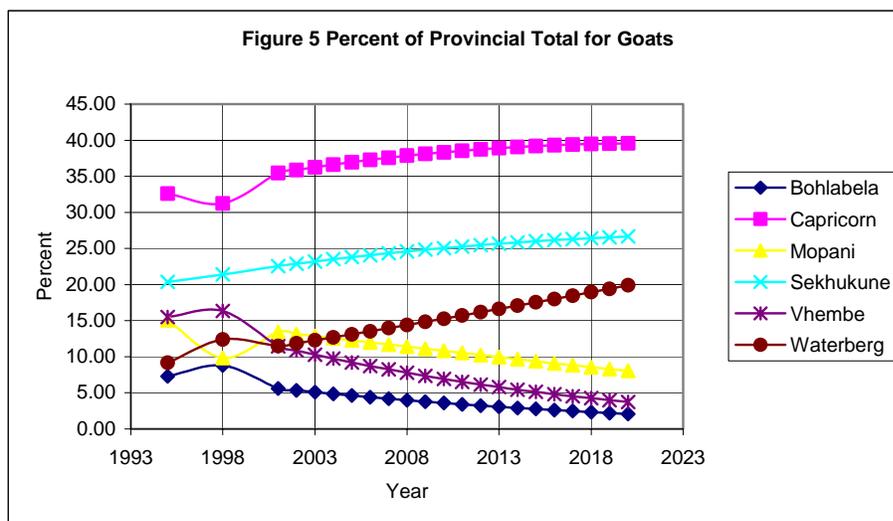
	Bohlabela	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg
2008	0.01	34.87	0.56	40.40	1.31	22.85
2013	0.00	32.35	0.24	51.93	0.44	15.04
2018	0.00	28.07	0.09	62.44	0.14	9.26



The projection for goats is presented in Figure 5 and Table 13. These projections reveal a rising trend for Sekhukhune and Waterberg but a declining trend for Bohlabela, Vhembe and Mopani Districts.

Table 13: Projections of the percentage share of Provincial Goats by District

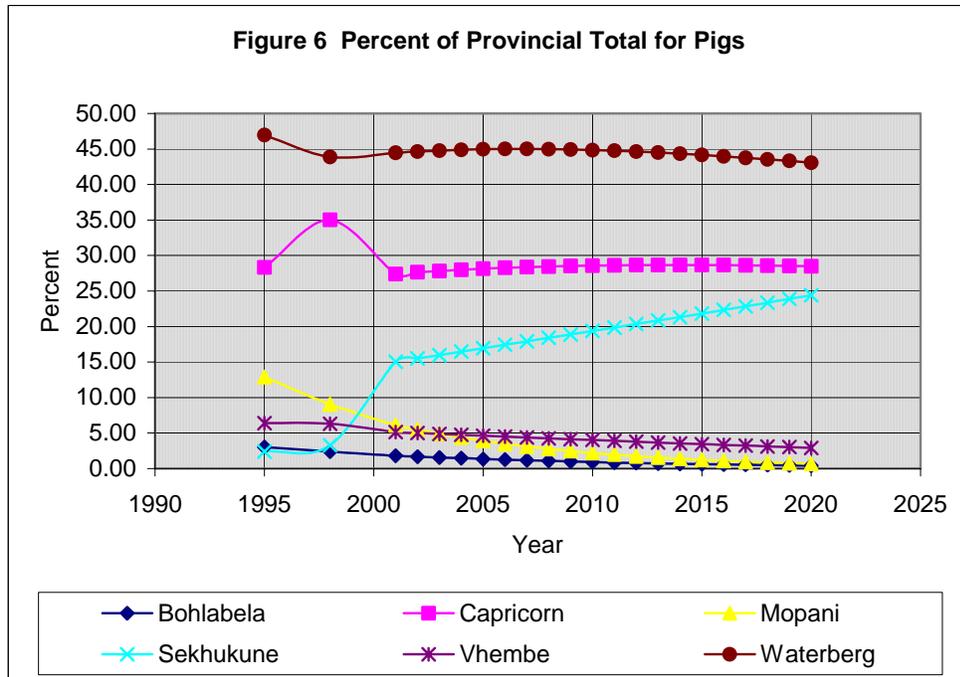
	Bohlabela	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg
2008	3.99	37.85	11.39	24.59	7.78	14.40
2013	3.08	38.91	9.94	25.66	5.79	16.62
2018	2.34	39.47	8.56	26.44	4.26	18.94



The district projections for Pigs are presented Table 14 and in Figure 6. A close observation of this figure reveals a rising trend for Sekhukhune but a declining trend for Bohlabela and Vhembe Districts.

Table 14. Percentage share of Provincial Pigs by District

	Bohlabela	Capricorn	Mopani	Sekhukune	Vhembe	Waterberg
2008	1.08	28.47	2.78	18.40	4.27	44.99
2013	0.73	28.68	1.55	20.85	3.68	44.50
2018	0.49	28.59	0.86	23.38	3.13	43.55



Separating communal and commercial livestock projections.

Further projections of livestock have been made by separating them into commercial and communal ownership types. Figure 7 and 8 reveal communal and commercial cattle projections per district; while Figures 9 and 10 present the communal and commercial pigs projections per district. A close observation of Figures 6 and 7 would reveal an increasing trend for communal cattle ownership for Waterberg district, but a declining trend in commercial cattle ownership for Waterberg district for the period of projection. The same increasing trend is observed for communal cattle ownership for Vhembe, Capricorn and Bohlabela districts; whereas the trend in commercial cattle ownership is expected to decline in Vhembe district for the next 15 years.

Commercial pigs production is expected to increase for Mopani district (Figure 10) whereas communal pigs production for Mopani district is expected to decline over the projected period. Figures 9 and 10 present the projections details for other districts with respect to pigs.

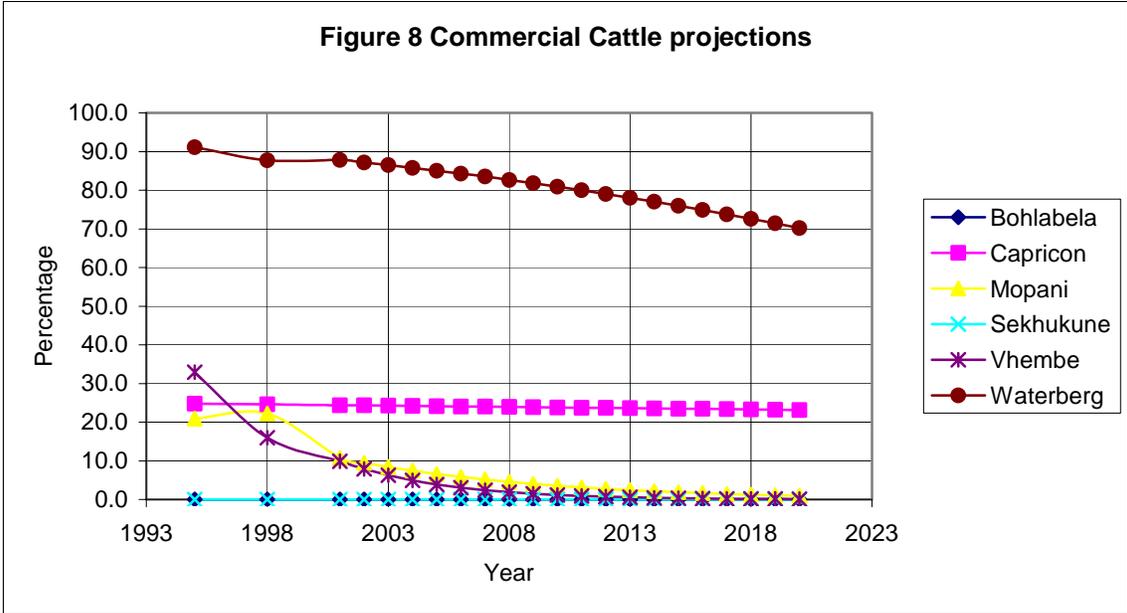
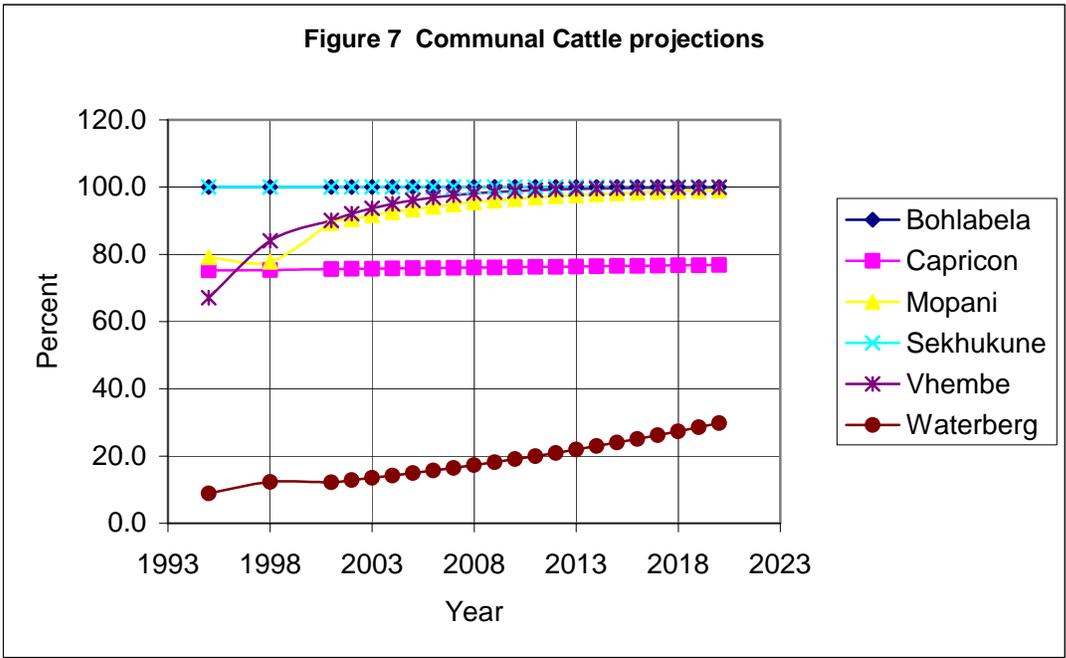


Figure 9 Communal Pigs projections

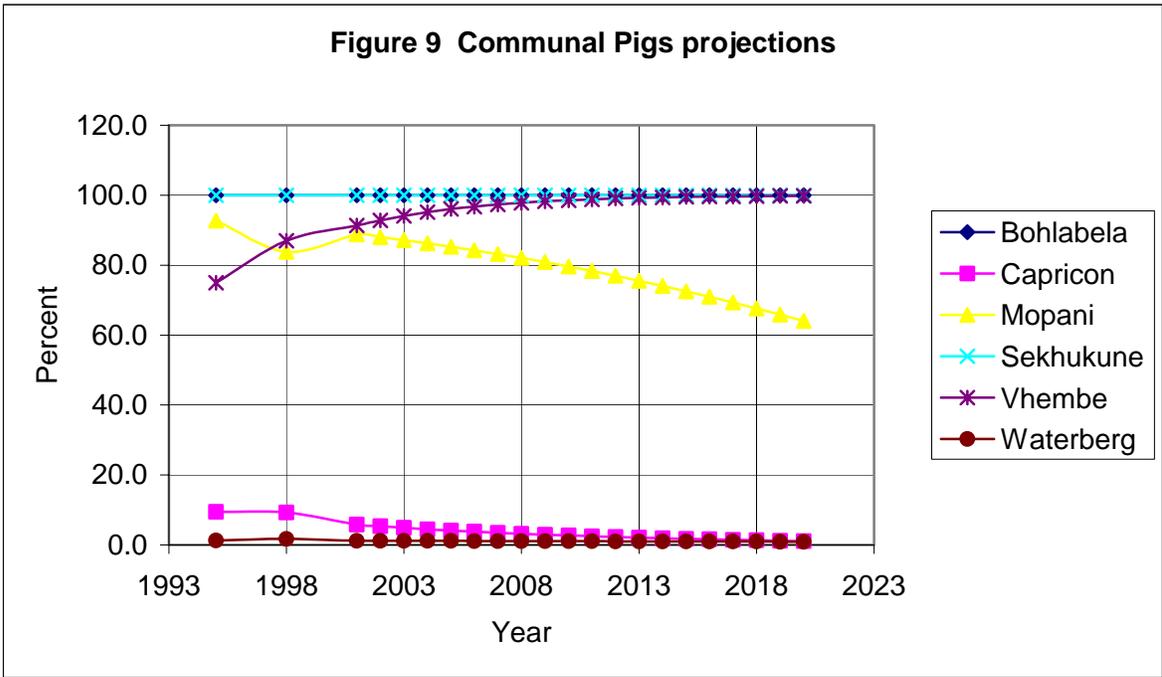
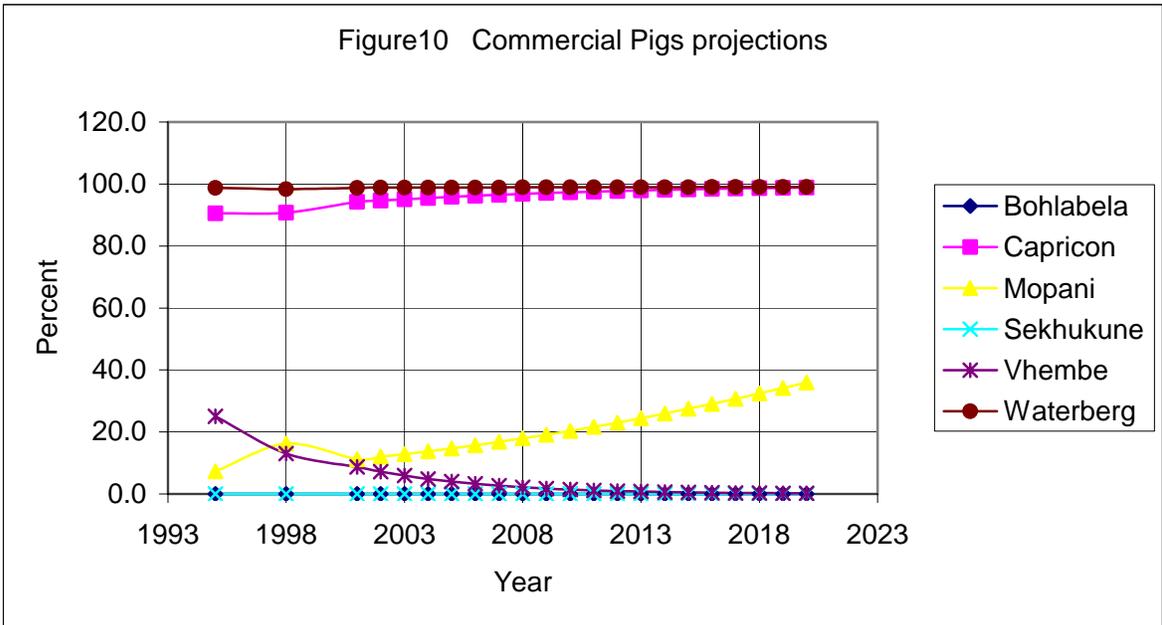


Figure10 Commercial Pigs projections



V. CROPS SITUATIONAL ANALYSIS AND PROJECTIONS

Details of the situational analysis for crops have been presented in volume one of our report and based on our field survey among small-holder farmers information on crop production for the small-holders sector are summarised here in terms of estimated crop area, output and income both horticultural crops and field crops. Table 15 summarises our findings for horticultural crops while Table 16 summarises our findings for field crops.

It can be observed from Table 15 that the average cultivated area for fruit crop was estimated at 2.61ha. This was followed by banana (1.44ha) and tomatoes (1.37ha). In terms of income earned by the small-holders tomatoes ranked highest with R57.4 million followed by vegetables R55.8 million and fruit trees R49.2 million. The field crop situations for small-holders revealed that maize had the highest crop area cultivated (2.86ha). This was followed by sunflower (2.59ha); sorghum (1.53ha); cowpeas (1.23ha) and groundnut (1ha)

Table 15: Estimates of output and income levels for selected horticultural crops produced by smallholder farmers in Limpopo Province (2002)

(estimates are based on hectarage, output and income information for 2002 as reported by respondents during field work)

Crop	Estimated Mean Cultivated area (ha)	Estimated mean output (kg)	Estimated Mean Income from crop (Rand)	Estimated Proportion of smallholders cultivating stated crop	Estimated Total Area (ha) cultivated in Province by smallholders	Estimated total output in Province (tons)	Estimated value (Rand) per ton)	Estimated total Value earned by smallholders in Limpopo (millions of Rand)
Tomatoes	1.37	344.70	1553.45	0.14	50651	12744	4506.67	57.433
Sugarcane	0.84	181.36	609.77	0.02	3869	835	3362.21	2.808
Watermelon	0.92	330.71	995.28	0.04	10004	3596	3009.52	10.823
Vegetables	1.15	431.27	1412.85	0.14	45459	17048	3276.02	55.850
Potatoes	0.93	493.43	968.44	0.02	5592	2967	1962.67	5.823
Bananas	1.44	157.50	244.56	0.01	5711	625	1552.76	0.970
Fruit trees	2.61	787.19	3461.75	0.05	37062	11178	4397.60	49.157

Table 16: Estimates of output and income levels for selected field crops produced by smallholder farmers in Limpopo Province (2002)

(estimates are based on hectareage, output and income information for 2002 as reported by respondents during field work)

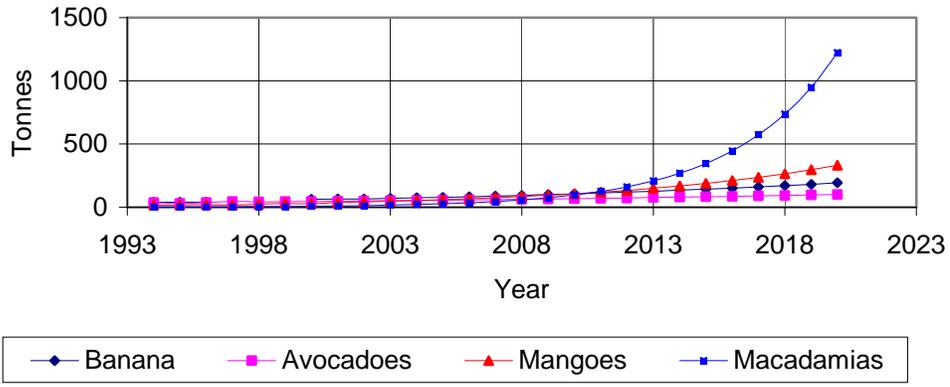
Crop	Estimated Mean Cultivated area (ha)	Estimated mean output (kg)	Estimated Mean Income from crop (Rand)	Estimated Proportion of smallholders cultivating stated crop	Estimated Total Area (ha) cultivated in Province by smallholders	Estimated total output in Province (tons)	Estimated value (Rand) per ton	Estimated total Value earned by smallholders in Limpopo (millions of Rand)
Maize	2.86	1318.34	4130.39	0.66	518447	238982	3133.02	748.737
Sorghum	1.53	235.42	921.06	0.04	18790	2891	3912.41	11.312
Beans	0.99	134.89	420.76	0.09	24190	3296	3119.28	10.281
Groundnut	1.00	372.24	1454.18	0.11	31087	11572	3906.57	45.206
Sunflower	2.59	373.63	1968.64	0.01	3645	526	5268.96	2.770
Cowpeas	1.23	256.53	706.78	0.02	7710	1608	2755.16	4.430

In terms of estimated value of small-holders field crop output maize ranked the highest with an estimated value of about R748.7 million. This was followed by groundnut R45 million and sorghum with a value of R11.3 million. Beans and cowpeas were hold-estimated value of R10.3 million and R4.4 million while sunflower had only R2.7 million.

Crop Projections

Based on existing trend observed for various crops our projections for these crops have been presented in Figures 11 to 15. Figures 11 to 12 are for horticultural crops while Figures 13; 14; and 15 are for fieldcrops. The observed trends for most crops are usually upward and the details are presented in our volume two of this report.

**Figure11 :Projections of Production Levels for Horticultural Crops:
Bananas, Avocadoes, Mangoes and Macadamias**



**Figure 12: Projections of production Levels for Horticultural Crops:
Potatoes, Onions, Tomatoes**

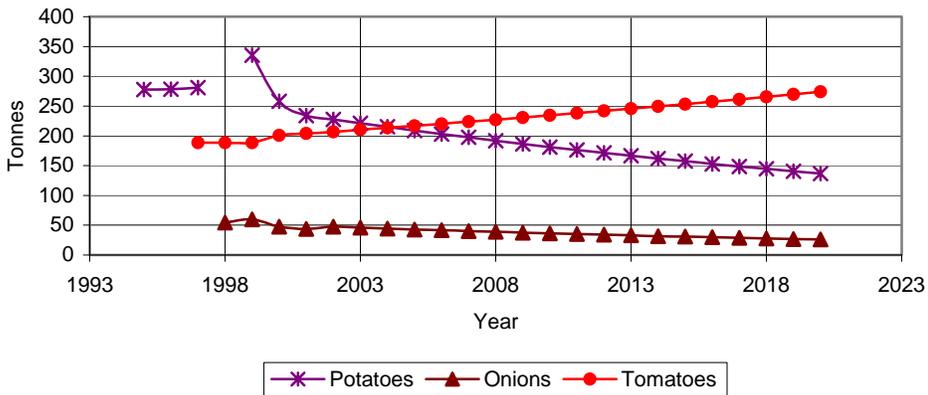


Figure 13: Projections of Production Levels for Field Crops: Maize, Wheat, Sorghum

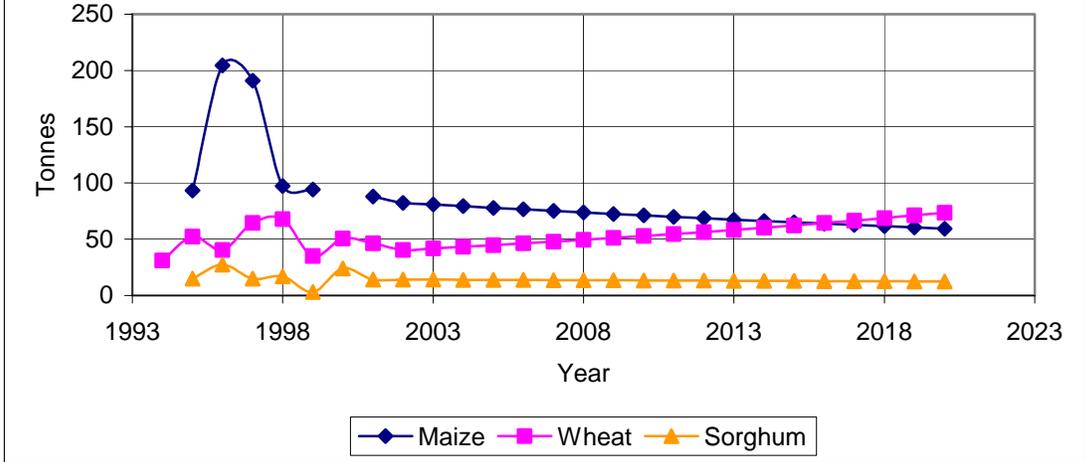
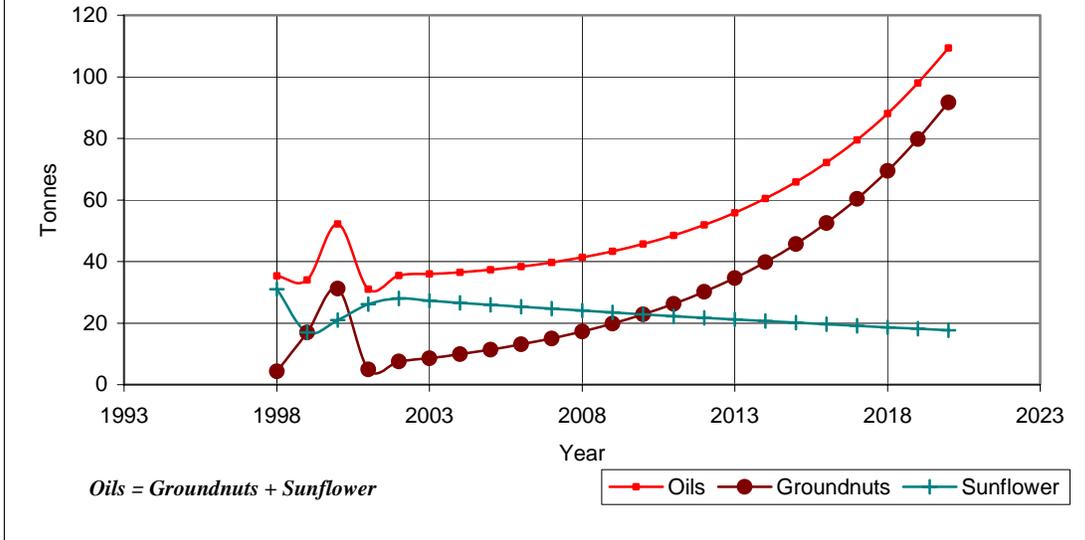
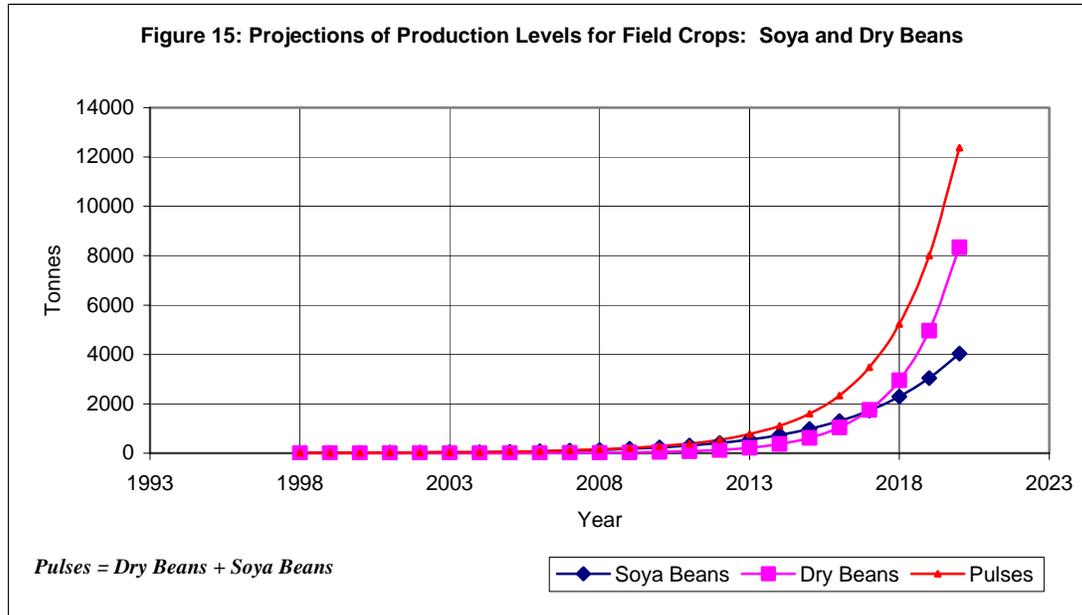


Figure 14: Projections of Production Levels for Field Crops: Groundnuts and Sunflower





VI. AGRICULTURAL RESOURCES

Limpopo Province has diverse soils, which vary in productivity. The soils are also vulnerable to various forms of degradation (physical, chemical and biological) and hence appropriate management strategies are critical if productivity of the soils is to be improved and sustained.

Based on the characteristics of the soils, climate and topography in the Limpopo province, the land capability groups constitute the following proportions:

- (i) 37.7% suitable for Arable farming
- (ii) 50.1% suitable for grazing
- (iii) 12.2% suitable for wildlife.

Table 17 shows the land utilization in Limpopo province both in Developing Agriculture in the former homelands and commercial Agriculture

Table 17. Land utilization in Limpopo Province

Farm	Total area ¹⁾	Farm land ²⁾	Potentially arable land	Grazing land	Nature conservation	Forestry	Other ³⁾
	ha	Ha	ha	ha	ha	ha	ha
Developing agriculture in former homelands	3 612 400	3 394 518	530 700	2 863 818	127 200	6 060	84 622
Commercial Agriculture	8 348 200	7 153 772	1 169 742	5 984 030	1 034 400	59 350	100 678
Total	11 960 600	10 548 290	1 700 442	8 847 848	1 161 600	65 410	185 300

Source: Development Bank of South Africa

- 1) Farmland plus nature conservation land plus forestry land plus other
- 2) Potential arable land plus grazing land
- 3) Land use other than agriculture, nature conservation and forestry

The total land area of the province is 11 960 600 ha of which 88.2% (10 548 290 ha) constitute farmland. Of the total farmland, 14.7 and 14% constitutes potential arable land in Developing Agriculture in the former homelands and Commercial Agriculture, respectively. Dry-land cultivation on a commercial basis is only possible on the Springbok flats. Irrigated farming is predominant in the province.

However, there is inadequate knowledge of specific vulnerabilities and management requirements and also very little data have been collected over time on soils degradation. Soils maps showing irrigation capability, soil capability, land capability, erodibility and topsoil pH of the province are included in the on soil. For effective management, however, the following key recommendations are crucial:

- The government should strive to subsidize soil analyses cost, especially for smallholder farmers, in order to enable as many farmers as possible be able to take their soils for analysis prior to planting their crops. This will ensure appropriate/optimum application of fertilizers (organic and inorganic) and lime.
- Provision of credit to farmers to purchase farm inputs such as fertilizers. This will ensure fertilizers are applied in sufficient amounts at the right time thereby boosting the crop yields and hence income to the farmer. Interest rate on the credit should be

flexible. Commercial farmers who enjoy economies of scale should pay market-related interest rates, as part of intensive support measure and affirmative action necessary to reduce inequalities and promote healthy economy.

- Ensure soil conservation measures are undertaken by farmers, especially in areas vulnerable to erosion, such as steep slopes.
- Urgent need to promote agro-forestry for soil management, including control of erosion and maintenance and improvement of soil fertility.
- Where specific soil productivity problem is identified, there will be need to set up experiment(s) / project(s) either the participation of farmers, to address the problem. This should be done in the collaboration with either the relevant agricultural Research Institute or University.
- Regular expert advice on irrigation practices and monitoring of the irrigation schemes for the purposes of Identifying of any major potential problem that exists or could arise.
- The government should adopt regular training of agricultural technicians on appropriate soil management strategies that can be adopted by farmers under both rainfed and irrigated agriculture. This can be done through regular workshops with follow-up plans for assessment of the impact on soil management.

Climate and Water Resources

It has already been noted that Limpopo Province is relatively a dry area, with average annual rainfall in the region of 400 mm. However, the rivers that run through the province plus the inter-basin transfer provide water for irrigation for about 200 irrigation schemes that have been established. One of the greatest problems affecting agriculture in South Africa is the scarcity of water. Nevertheless, the demand for water is increasing all the time and there is competition for water from other sectors of the economy. A close look at Table 18 shows that even though the demand for irrigation water has been increasing, the percentage water use against the total consumption has been falling with time from 52.2% in 1980 to a projected value of 45.9% in 2010. But since the population is increasing, it means that a unit quantity of water will have to produce more food than

before so as to feed the increasing population. Either new technologies will have to be developed that can save water or the irrigation efficiency of the existing projects will have to be improved one way or another. This applies to all irrigation projects in South Africa and especially the small-scale irrigation projects. As IAE (1997) puts it, a 5% increase in irrigation efficiency could result in a water saving of 550 million m³ per year which was enough to supply the domestic demand for the Durban-Pietermaritzburg area in the year 2000.

Table 18. Expected volume and percentage of water use against the total for RSA

Sector	1980		1990		2000		2010	
	(10 ⁶ m ³ /a)	(%)						
Direct consumption								
Domestic	1,516	9.3	2,281	12.0	3,220	14.4	4,477	17.3
Industry	1,031	6.3	1,448	7.6	2,043	9.1	2,961	11.4
Mining	466	2.9	511	2.7	582	2.6	649	2.5
Power Plants	282	1.7	444	2.3	779	3.5	900	3.5
Irrigation	8,504	52.2	9,695	50.9	10,974	48.9	11,885	45.9
Stock watering	262	1.6	288	1.5	316	1.4	368	1.4
Nature Conservation	178	1.1	182	1.0	187	0.8	191	0.7
Indirect consumption								
Decreased runoff due to forestry	1,284	7.9	1,427	7.5	1,570	7.0	1,700	6.6
Ecological demand: estuaries and lakes	2,768	17.0	2,767	14.5	2,787	12.3	2,767	10.7
TOTAL	16,291	100	19,043		22,458	100	25,898	100

Source: Institute for Agricultural Engineering (IAE) – Agricultural Research Council (1997)

There is very little land in the Province that can be developed for irrigation purposes. But since the demand for water is higher than the supply, it is recommended that the government should start thinking of identifying sources of water that can be developed to meet the future demand.

1. Research into more drought resistant crops that are suitable for the Limpopo Province should be conducted with the aim of reducing water used in the agricultural sector.
2. Research in the development of cheap and more efficient technologies for application of water is required.
3. It was observed that land degradation is taking place in the Limpopo Province which leads to poor quality water. It is recommended that the PDA should educate farmers on appropriate land and water management practices.

VII. AGROPROCESSING SUB-SECTOR

Food and agro-food processing

The South African Food processing sector has a turnover of R57 billion, employs 183 000 people and accounts for 2.4% of gross domestic product (GDP), 3.2% to total export and 15% of the manufacturing sector accounts and 2.6% to total employment (CTA Working Document No. 8014; June 2000). Because of its strong backward linkages with the agricultural sector, the food-processing sector is directly affected by agricultural output and prices, which are vulnerable to climatic condition. The food-processing sector is also driven by other factors such as the overall economic growth, private consumption expenditure and investment.

The sector consist of about eleven downstream agricultural sub-sectors, namely meat processing, dairy products, preservation of fruits and vegetables, canning and preserving of fish, vegetable and animal oils and fats, grain mill products, bakery products, sugar mills and refineries, cocoa, chocolate and sugar confectionery, and other food products. Meat processing is the single largest food sub-sector, contributing one quarter of total food production, followed by grain milling and animal feeds sub-sectors, accounting for 13% and 10% of food output respectively. The other sub-sectors each contribute between

4% and 9% of the overall production. In line with standard industrial classification codes, the distilleries and wine sub-sectors is generally grouped under the beverage sector rather than the food processing sector. For the purpose of the present study on the Agricultural Industry of the Limpopo Province, distilleries and the wine sub-sector will be regarded as a food-processing sub-sector. In South Africa this sector provides 31% of the beverage sector's contribution to GDP. In a recent report of a study by Imani Dev (Pty)Ltd in collaboration with N Hill CAP (CTA Working Document No 8014 of 2000). The sub-sectoral performance and growth projection for the food processing industry for the period 1991 – 1996 and 1997 – 2001 shows that while domestic production for the food processing sector envisaged negative growth over the period 1991 – 1996, the sectors production is set to grow during the 1997 – 2001 period. From an employment point of view, the food-processing sector recorded a 2.3% average annual rate of decline in employment over the 1991 – 1996 period. While this negative trend was expected to be reversed by the turn of the century pushing up the rate of growth to 2% in 2001. This type of analysis should be done for the Limpopo Province to see how the food processing industry performed during the corresponding period.

The report is also of the view that the South African Food Sector is facing a unique challenge in that lower tariffs and freer trade seems to force sectoral player to become more competitive, whilst consumers are demanding better quality convenience, health protection and variety food. According to the report the sector is also expected to promote “food security” as well as assisting in reducing malnutrition by feeding the poorer sections of the population. In addition to this, the food sector is expected to contribute to economic empowerment through job creation and the provision of support to small business especially in the rural areas.

Like the rest of the Republic of South Africa, large, medium, small and the micro food processing industry abound in the Limpopo Province. Whereas most of the large and medium scale food or agro-food processing food industry would belong to the formal or the so-called commercial sectors, the majority of the small scale and the micro food processing industries would be in the informal sectors of the food industry. Furthermore

it seems that the majority of the large to medium scale food processing plants are located close to the main centres of raw material production or commercial farms. This observation to some extent may also be true for the small scale and micro food processing sectors except that the majority of them are in the rural areas or areas of low external input agricultural system.

Another characteristic of the food industry relates to ownership pattern, whereas the majority of the food industries in the formal sector are owned by whites, the bulk of the food industries in the informal sector are owned by blacks or the disadvantaged groups in the community.

Table 19 shows some of the medium to large-scale food processing plants operating in the province. The micro food enterprises employing 1 – 5 people and the small scale food processing ventures employing about 5 – 10 abound in the province especially in the rural areas where they carry out mainly customized services like grain milling, packing of fresh fruits and vegetables, etc. A number of small-scale bakeries, small-scale fruit juice bottling and jam-making enterprises are also well dispersed in the rural areas.

Most of these small-scale food processors respond to local needs and build on traditional knowledge and skills. Many of them use local resources and their facilities/factories can be owned, managed and maintained locally. By combining well-established principles and appropriate equipment with good standard of quality assurance and hygiene, small enterprises should be able to make high quality, marketable products.

In addition to the above observations many of the small-scale food/agro-processing enterprises also have the following characteristics:

- ease of management and control
- use a high proportion of low-cost, locally available equipment and raw materials
- based on, and building on indigenous technology/knowledge
- dependent on local markets for their products

- small capital investment requirements
- adaptable to local conditions and changing markets
- some operations are small scale decentralized production which has a smaller negative effect on the environment
- generally suitable for women entrepreneurs

Despite the numerous opportunities and great potential for small-scale food processors, they still have to overcome several disadvantages and constraints if they have to compete with large businesses, multinational companies and imported food products, all of which have the advantage of economies of scale in their production, and have the financial resources to advertise and diversify their products.

Table 19 : Medium to Large scale food processing plants in Limpopo Province

INDUSTRY	LOCATION	PRODUCT
Easy Abattoir	Sibasa	Poultry
NTK Roller Mills	Shayandima	Maize meal
Sasko Bakery	Shayandima	Bread & Confectionery
Valley Farms	Levubu	Fruits (concentrates)
Levubu Cannery	Levubu	Fruits & Vegetables
Royal Macadamia	Levubu	Macadamia Nuts
Dinner mates	Louis Trichardt	Meat
Limpopo Dairy	Louis Trichardt	Milk & Dairy products
Giants Cannery	Makhado	Vegetables
Tiger Mills	Musina	Vegetables
Granor Passi	Tzaneen	Fruits (concentrates)
Letaba Citrus Processors	Tzaneen	Fruit (concentrates)
Hygienik Dairy	Polokwane	Milk & Dairy
South African Breweries	Polokwane	Clear Beer
Coca Cola	Polokwane	Carbonated Non-alcoholic beverages
Enterprise	Polokwane	Meat (sausages)
United national Breweries	Polokwane	Sorghum Beer
Granor Passi	Polokwane	Fruits (concentrates)
Cassava Starch Processing	Mara	Cassava starch and other derivatives

Source : Own compilation

Future challenge relates to the need of empowerment policies and strategies in view of the fact that the majority of the food industries in the formal sector are owned by whites, the bulk of the food industries in the informal sector are owned by blacks or the disadvantaged groups in the community.

VIII. AGRICULTURAL MANAGEMENT SERVICES

Existing Agricultural policies

This sections deals with the existing agricultural policies and institutions involved with agriculture and rural development of Limpopo Province. The policies identified include national policies on Land Reform and Land Redistribution, marketing policies, agricultural financial policies, etc. At the provincial level the policy guiding principles and framework were identified while the overall goal of these policies is to improve the quality of life of the rural people through the provision of equitable access to resource use and the promotion of commercial production among the small-scale and emerging farmers in the province.

These goals and specific provincial policy guidelines have been developed into nine specific agricultural programmes which are being implemented by the provincial government. The successful implementation of these programmes will require the support and cooperation of the private sector, farmers organisations, and all other stakeholders concerned with the development of Agricultural Industry of the Province.

Agricultural extension is expected to support farmers to make their own production and marketing decisions by providing appropriate information on a wide range of alternatives available to these farmers throughout the province. How far has the provincial government successfully implemented all these policies over the past seven years? However, our recent discussions with the Provincial Department of Agriculture reveals

that the provincial government has used the above policy framework to set up eight specific priority programmes.

Farm Power and Mechanisation

The small-scale and commercial farming scenarios in South Africa are very different. On one hand we have a highly developed tractor mechanised commercial farming sector, while on the other hand, we have a small scale marginalised farming sector.

The main power source for on-farm tillage and transport work in the commercial sector is the tractor. It has been estimated that there is on average between 3 and 14 tractors on a given commercial farm, depending on the size of the farm, the farming system and the location of the farm (Simalenga et al. 2002). Self-propelled combine harvesters are used on some large farms while farmers on smaller farms make use of harvesting contractors. The use of single axle tractors has increased in the horticultural farming sector where most units are used for seedbed preparation (rotavating, ridging) and grass cutting. Very few, if any are used for field cropping in the commercial farming sector. Farm level processing machinery such as hammer-mills are largely PTO-driven while pumps are either electrically (in most cases) driven or driven by petrol or diesel engines. Electric power is available on almost all-commercial farms.

The commercial farming sector is effectively supported by agricultural training as well as Research and Development institutions. It also enjoys a favourable support through private sector's supply of inputs and marketing agencies., while the small scale farming sector is totally neglected. (Dibbits and Wanders 1988).

Power sources for tillage and transport in the smallholder farming sector are tractors, oxen, donkeys, horses and mules and hand labour. In the past, farming in the rural communities was highly developed using animal traction constituting an indigenous technology in South Africa (Starkey 1995). However, with the introduction of the policies of subsidized tractor hiring services, animal traction development was

discouraged. Most of these government tractor hiring schemes which were established in different rural regions are not operational and facing serious management and financial problems.

Many of them are out-of operation which have left farmers with no source of power for their farming operations (Fischer 2000, Simalenga and Joubert 1997, Khatu et al 2002)

Almost all previously government owned tractor hiring schemes have been abandoned and tractors are now in private ownership. These tractors are most often in poor condition, bought as second-hand, and are unable to do proper tillage. The tractors are also on average older than 10-15 years making them unreliable. The owners of the tractors in most cases do not have the expertise to repair and maintain the tractors and a lack of capital and the availability of spares also contributes to many tractors in rural areas standing idle. Where tractors are running they are used mainly for contract plowing during the season with a very small percentage of contractors owning planters. The tractors are also used for transport work during the harvesting and off-season.

Oxen are still the main power source for animal draft and they are used for plowing, planting, weeding and transport. The population expansion in the rural areas is however contributing to the pressure on available grazing land and this has already lead to the use of cows and smaller teams of animals (4-6) as compared to 8-12 in the mid 20th century. Minimum grazing systems will in future play a bigger role in feeding of the animals. Donkeys are used mainly in drier parts of the country such as the Northern region for plowing , weeding and transport, both as pack animals and for pulling carts and wagons. Horses and mules are used for riding, plowing, weeding, transport. Manual labour still contributes largely to farming operations in especially subsistence level farming. Soil tillage, weeding and transporting is done by hand with wheelbarrows as the main tool for transport. Processing and pumping equipment is also mainly hand powered. Electricity has over the past 8 years become available to more and more rural areas.

Private tractor service providers have now emerged in some irrigation schemes such as Tshiombo. These service providers are struggling to operate on a cost-recovery basis due

to the low tariffs charged to subsistence farmers. In addition, it is obvious that ploughing of small scattered plots constitutes a highly inefficient and costly operation. Few farmers can be reached at the right time, and the dilemma becomes most apparent at planting time, when available tractors or draft animals are just not enough to plant the crops on time.

Table 20 shows a result of a survey show that less than half of respondents in the Capricorn region and just over 10% of respondents in the Vhembe region feel that they planted their crops on time.

Table 20: Time of crop establishment and weeding labour

	Capricorn Region	Vhembe Region	Overall
Tilled on time	45.5%	13.4%	9.9%
Enough labour for weeding	35.2%	28.0%	31.5%

Source: Schuh 1999.

Except in regions with high production and profitable (cash crops) farming systems, tractor hiring may not constitute a sustainable solution for most smallholder subsistence farmers. Despite the poor image and neglected support by policy makers and trainers, animal traction has survived and is still widely been used by smallholder farmers in rural areas (Starkey 1995, Simalenga and Joubert 1997).

A current survey on the utilization and management of draft animal power in Vhembe district has revealed that over 50% of farmers still use draft animals (mainly donkeys and cattle) for agricultural operations and rural transport (Maroge 2002). Table 21 and Table 22 show the estimated level of utilization of various power sources in the Province.

Table 21: Farm power utilization for tillage operations

	Capricorn Region	Vhembe Region	Overall
Tractor ploughing	81.6%	29.5%	55.7%
Hand hoe tillage	11.7%	51.1%	31.7%
Ox ploughing	Data not available	18.1%	Data not available
Donkey ploughing	Data not available	19.8%	

Source: Schuh, 1999

Table 22: Farm power, tools and equipment ownership

Equipment	All Regions	Power Source	Overall
Handhoes	81.0%	Donkeys	0.8%
Ploughs (Ox)	4.6%	Oxen	9.0%
Ploughs (donkeys)	1.7%	Tractor	2.7%
Ploughs (Tractors)	0.8%		

Source: Schuh, 1999

In summary, various studies and reports have revealed the following information:

- ◆ Both types of mechanization inputs, tractors and draft animal power co-exist in most rural areas and they do need supporting activities
- ◆ Tractors and their associated equipment are in demand, the major limiting factor is finance for purchases and the cash available to the customers of contractors
- ◆ There is a strong industrial and trade network supporting and promoting motorised power. Intervention in this area should aim at making tractor services available, effective and environmentally compatible
- ◆ Draft animals on the other hand have no one to advocate and lobby for them. Field survey have revealed most rural farmers have animals which they can use as source of power. Strategic programmes and intervention are urgently required to support farmer's initiatives.
- ◆ There is a very low utilization of renewable energy technologies such as solar PV systems or bio-gas technologies

- ◆ On-farm and rural transport is limited to wheelbarrows and picks ups (bakkie). Intermediate Means of Technology (IMTs) such as bicycles or donkey carts can provide the much need user friendly transport in rural areas.
- ◆ There is a need to promote agro-processing rural based industries and marketing to create employment and income generating activities.

In South Africa, mechanization has been identified as one of the areas, which have not received enough attention in the past, especially in the former homeland areas. The use of draft animals has been systematically discouraged. The state supported, tractor hire schemes which offered low cost subsidized services to farmers as an alternative to draught animal power were not successful and have now been abandoned mainly due to budgetary and timeliness constraints. Many government tractors were made available to aspiring entrepreneurs after having been refurbished and such entrepreneurs encouraged providing contract tractor services to small scale farmers. It is beginning to appear that this system as with the government tractor service, could fail for the same reasons. Small-scale farmers are now often faced with a shortage of farm power, which is particularly acute during the field preparation planting and cultivation period, often resulting in late planting inadequate weed control and poor yields.

South African commercial agriculture has followed a capital-intensive growth path while considerable agricultural resources (human and material) lie unused or under-utilized in the former homeland areas. Further, the entrepreneurship abilities of black farmers were suppressed for a long period of time. These factors are largely responsible for creating the extreme dualism and inequalities in the development of South African agricultural. On the one hand there exists an advanced fully mechanized farming system as found in the commercial farming areas, while on the other there exists a rather inefficient, inadequately mechanized and unsustainable farming system typical of the small scale and subsistence farming areas. There is therefore, a need to have a comprehensive agricultural mechanization strategy to provide empowerment initiatives to the marginalised and improve the mechanization bottlenecks currently experienced by the rural farmers.

Agricultural Extension

While still having financial constraints and delays, Subject Matter Specialists (SMS) shortages, skill deficiencies, lack of powers to frontline managers, poor extension management system, lack of partnership agreements with NGOs and private sector extension providers, the public service extension in Limpopo Province has been unable to deliver effectively.

Due to poor or improper management systems public extension in Limpopo Province is not effective, as there is apparently weak public research systems and lack of technical expertise and limited resources.

The study has revealed a number of important issues. Firstly, that the extension in Limpopo Province like in many countries of the world is criticized for not doing enough, not doing it well and for not being relevant.

Secondly, that agriculture is the mainstay or the backbone of Limpopo Province's economy in as far as employment, food production and export is concerned. Thirdly, that privatisation of state extension services is not the solution, but seek to forge partnerships with the private sector and NGOs to lock in the resources of these role players. Fourthly, those without an accepted policy and information transfer strategy at national and provincial level, linkages in the technology transfer process are unlikely to function effectively.

The study has also revealed that

- (a) Small Farmers Organisations (SFOs) can help make research institutions more responsive to the diversity of needs and conditions of small-scale agriculture in the Limpopo Province.
- (b) Re-training of extension officers in the Limpopo Province will enable the limitations resulting from the lack of emphasis on the social science and communication components of the existing curricula to be addressed.

- (c) Restructuring of the agricultural sector in the province has followed a gradual process, sometimes rather painfully slow.
- (d) The small-scale sector of agriculture is confronted with numerous constraints and obstacles like land, funding, extension, marketing, credit services and more than just a sympathetic ear.
- (e) The training needs of subsistence and emerging agriculture is virtually non-existing and that a greater need for training extension officers and agricultural advisors is emphasized than for personal farmer training.
- (f) The vast amount of information made available by advisors to farmers has simply had no effect. The contributing factor to this state of affairs is the distance between the processor of the information and those to whom it is supposed to be conveyed.
- (g) There is very little activity undertaken by private sector organisations in support of small farmer organisations.

The findings lead to the conclusion that:

- The structural transformation of agricultural extension systems in Limpopo Province is becoming unavoidable in view of the challenges facing agriculture today.
- Traditional approach used in the extension service programme delivery process has been found wanting and necessitate a development of an alternative approach to service delivery.
- The link-up of institutional structures with communities should be such that community structures are maintained and strengthened.
- Supervisors must be trained because their skills and knowledge can be multiplied through ward extension workers and consequently have potentially the biggest impact on uplifting the standard and quality of extension.
- Although small-scale farmers are highly motivated to become prosperous farmers, unless they are heavily supported by extensionists and receive aid from the government, the dream of

revitalising, expanding and strengthening this sub-sector will be shattered.

- While large-scale, white dominated agricultural enterprises in Limpopo Province still compose the hard core of the agricultural sector, the small-scale farming sector is becoming an important point of departure, both for land reform and the general rural development process.
- There is scope for raising agricultural production in Limpopo Province through application of appropriate scientific and indigenous knowledge. However, policies and strategies in agriculture and extension need to be coordinated and must apply participatory approaches involving the rural communities.
- Extension services need to be sustainable and in the context of the sustainable development debate as well as the White Paper on agriculture. This means that it must focus strongly on empowering people at grassroots level and poverty eradication through agricultural production and social upliftment. Sustainability is more of a direction than a process and it is therefore very difficult to pinpoint exactly what a “sustainable extension service” is, but in the South African context it must combat poverty and empower people.
- There is undoubtedly a cadre of small-scale farmers in the Limpopo Province who with the necessary institutional support have the potential to become fully-fledged commercial farmers and therefore strategies had to be formulated to promote commercial farming (entrepreneur farmers) among these disadvantaged communities.
- Any strategy to promote agricultural development in Limpopo province needs to go hand in hand with rural development programmes aimed at alleviating rural poverty through the

provision of basic needs and the promotion of income earning projects.

- Important needs for agricultural developments in the province include the provision of inputs, credit and marketing facilities, as well as access to relevant research based information which was found to be lacking in the province. A critical issue is the formulation of land tenure arrangements, which promote security. This is probably best achieved by trained facilitators assisting local communities in the decision making process leading to acceptable land reform measures.
- An issue often neglected in agricultural and rural programmes is empowerment and capacity building through institutional development at the “grass roots level”. Strong local leadership and a sense of community empowerment are essential for comprehensive and sustainable rural development in the Limpopo Province.

The major challenge seems to be the Identification of privatization of extension as alternative option to improve and increase delivery in extension services. This should include ways of seeking or forging partnerships with the private sector and NGOs to lock in the resources of these role-players.

Government can never abdicate its responsibility towards agriculture and in particular the developing sector. However, through contracting – out certain services to achieve greater efficiency warrants consideration. Collaboration can also externalize some extension cost to the other role players.

Provincial Government’s investments in agriculture

Injection of capital is a precondition for a healthy development of any sector of the economy (Okorie, 1998). Hence capital and investment funds are critical to the development and growth of agriculture in Limpopo Province. A good barometer of the

Provincial Government's commitment and investment in the agricultural sector is the annual budget. The Province's agricultural budgets from 1995 to 2002 are presented in Table 23.

Table 23. Limpopo Province's investment in agriculture, 1995 – 2002
(Provincial Budgets)

Financial Year	Total Provincial Budget (R)	Agricultural Budget (R)	Agric. as % of Total Budget
1995/96	9 424 950 000	498 756 000	5.29
1996/97	10 040 641 000	418 667 000	4.17
1997/98	10 856 478 000	487 075 000	4.49
1998/99	11 310 683 000	518 171 000	4.58
1999/00	11 993 410 000	533 571 000	4.45
2000/01	13 663 328 920	621 409 000	4.55
2001/02	15 463 920 000	621 409 000	4.02
2002/03	17 663 618 000	707 488 000	4.01

Source: Computed from data supplied by the Provincial Department of Agriculture, Polokwane

In terms of nominal values, the total provincial Budget grew from R9.425 billion in 1995/96 financial year to R17.664 billion in 2002/2003, which is equivalent of an annual growth rate of R1.177 billion (or 12.49% growth rate). On the other hand, the allocation to agricultural sector increased from R498.756 million in 1995/96 to R707.488 million in 2002/03 in nominal values. This represents an increase of R29.819 million per annum on the average (or 5.98% annual increase). Thus, the annual percent rate of increase for agriculture was less than the all sector rate.

To facilitate investment in all sectors of the economy, the Provincial Government has established the Northern Provincial Investment Initiative (NPII), which offers a wide range of services to entrepreneurs and investors, who are interested in setting up business in the Province, including green field investments. This could be in form of joint ventures with local partners or cross holdings of equity between an overseas and local partner. However, it is not clear the extent to which the agricultural sector has benefited from this initiative.

Agricultural Budget Projections

Given the available time series data on agricultural budget together with total budget for Limpopo Province for the period 1996 to 2003 we were able project the agricultural budget assuming the present trend continues for the next fifteen years in the province. The results obtained have been presented in Table 24 and Figures 16 and 17.

It should be emphasised that if the current trend continues for the next 10 to 15 years, agricultural share in the total Limpopo Provincial budget would decline from about 3.15% by year 2008; and 2.59% by year 2013; and only 2.12% by year 2018. Figure 15 compares agricultural budget at current trend with budget for Agriculture pegged at 8% of total budget. Given the importance of agriculture to the Limpopo economy and the need to sustain this importance of agriculture to the Limpopo economy over the next decade or two it is our recommendation that government needs to increase its current agricultural budget's share to about 8% to ensure that agriculture fulfils its primary role of providing household food security, income and employment for the majority of the Limpopo population who live in rural areas.

Table 24: Provincial Budget versus Agricultural Budget in Limpopo Projections

Year	Provincial Total Budget	Provincial Agric Budget	% of Provincial for Agric	<i>Agric 5%</i>	<i>Agric 6%</i>	<i>Agric 7%</i>	<i>Agric 8%</i>
2008	30263	955	3.15	1513.14	1815.77	2118.39	2421.02
2013	47399	1225	2.59	2369.93	2843.92	3317.91	3791.90
2018	74238	1573	2.12	3711.88	4454.26	5196.63	5939.01

Figure 16: Total Provincial Budget versus Agricultural Budget (millions)

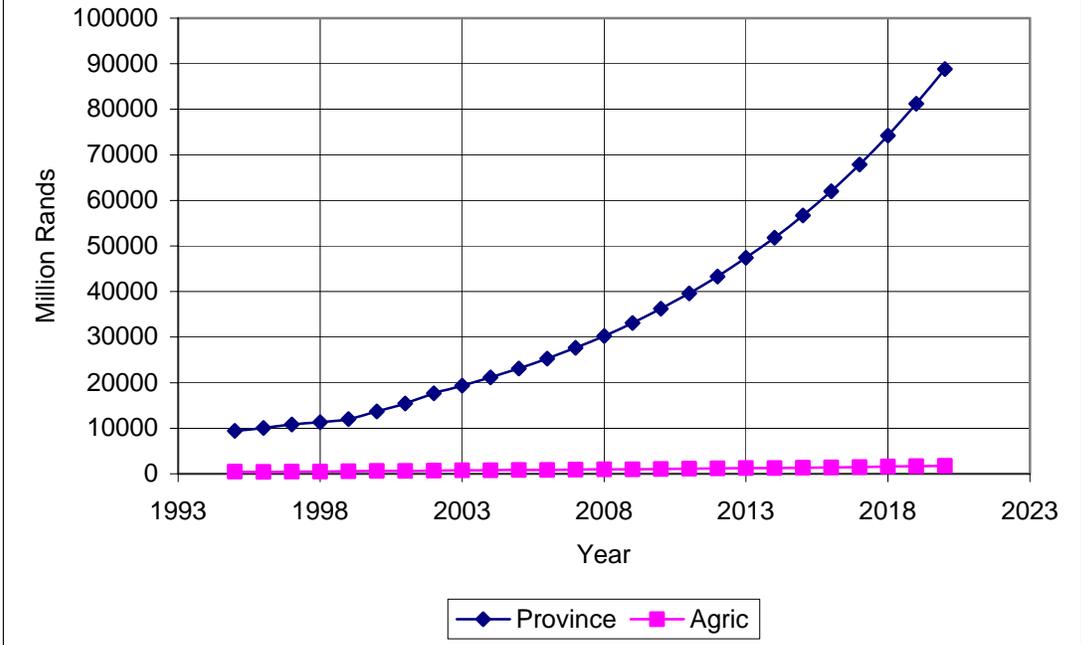
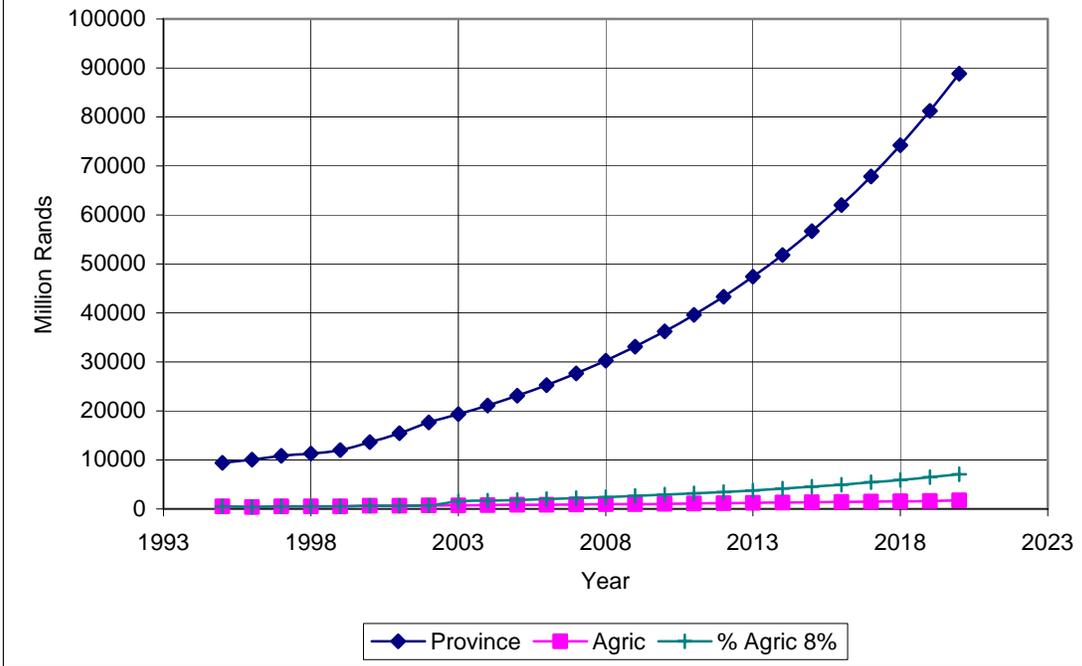


Figure 17: Provincial Budget versus Agricultural Budget
Current trends versus pegging Agric Budget at a minimum of 8% of Total Budget



We conclude that the Provincial Government should put in place a mechanism for project monitoring and financial data collection on all investments, grants and loans in the agricultural industry in the Province. A database of projects, investments, grants and loans is essential for effective planning, project management and overall agricultural industry development in the Province. Also, the Provincial Government should explore the possibility of establishing community/rural banks, owned and controlled by communities, as a means of savings mobilization, and making banking facilities and investment capital available to the smallholder farmers in particular. Finally, the Provincial Government should as a matter of necessity, consider increasing the proportion of its annual budget allocated to agriculture to 6% - 10% within the next five years.

Agricultural Marketing

The problem of marketing in agriculture has been identified as the lack of organised markets for smallholder farmers. Among others government interventions can include the following:

- Empowerment smallholder farmers in the marketing sector
- All government departments should keep data on marketing of agricultural products by small-scale subsistence farmers and commercial farmers
- The marketing unit in the Department of agriculture should be strengthened to address these challenges.

IX. SUMMARY AND CONCLUSION

This study has revealed that agriculture is a major sector of the Limpopo economy. It plays a distinct role in the provision of household food security and the provision of employment to majority of the provincial population who live in the rural areas. Agriculture also provides income for sustainable livelihood, as well as foreign exchange earnings for some provincial farmers who export their farm products to overseas markets. Agriculture provides raw materials for processing and manufacturing industries and its linkage with other sectors such as transport, trade, communications, financial services

and community services reveals its overall significance to the provincial economy. Apart from the multiplier effect of agriculture on the economy, agriculture has the potential for promoting economic growth and development of the province.

Projections done on various levels of agricultural activity indicated that the current downward spiral should not be ignored. Government is requested to intervene via several mechanisms as indicated in volume IV. The decrease in the budget of Agriculture as a proportion of the provincial budget warrants a special emphasis for government intervention. We are therefore recommending that agricultural budget should account for about 8% of the total provincial budget over the next 10 to 15 years. This is a necessary condition for reversing the current downward trend of agricultural contributions to the provincial economy.

APPENDIX I : AGRICULTURAL DATA FOR LIMPOPO PROVINCE

	1988	1993	2000	SMALLHOLD ER 2000
Number of farming units	5 455	5 053	5 000	273 000
Farm area	5 689 000 ha	5 335 00ha	6717 000	3 620200
Paid employees	120 915	93 116	109 779	
Employees' remuneration	R180 157 000	R281 055 000		
- Cash	R153 171 000	R214 383 000		
- Other	R44 986 000	R66 672 000		
Gross output	R936 612 000	R1 284 871 000		
Other expenditures	R745 151 000	R1 094 663 000		
- Current	R587 032 000	R930 969 000		
- Capital	R158 119 000	R163 694 000		
Market value of farming assets	R4 479 236 000	R5 361 720 000		
Farming debt	R773 704 000	R1 012 215 000		731M

Sources : (a) Census of Agriculture, 1988 and 1993

(b) Report on the Survey of large scale & small scale agriculture.

APPENDIX II

CENSUS OF AGRICULTURE FOR LIMPOPO PROVINCE : 1988 & 1993 SELECTED DATA

	1988	1993
Number of farming units	5 455	5 053
Farm area	5 689 000 ha	5 335 00ha
Paid employees	120 915	93 116
Employees' remuneration	R180 157 000	R281 055 000
- Cash	R153 171 000	R214 383 000
- Other	R44 986 000	R66 672 000
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- Current	R587 032 000	R930 969 000
- Capital	R158 119 000	R163 694 000
Market value of farming assets	R4 479 236 000	R5 361 720 000
Farming debt	R773 704 000	R1 012 215 000

Source : Statistics South Africa.

APPENDIX III: TOTAL RSA GDP AND AGRIC GDP FOR 1995 – 2000

Year	Total Value Added (R million)	Contribution of Agric to the Value Added	% Contribution of Agric to Total Value Added
1995	500 354	15863	3.2
1996	565 977	19922	3.5
1997	625 420	21551	3.4
1998	670 381	20500	3.1
1999	723 247	20113	2.8
2000	793 996	25375	3.2

Source : Statistics South Africa Economic Review of South African Agriculture 2000/2001

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