Income & Cost Budgets

Winter Crops – 2018

Oil & Protein Seeds Development Trust & Oilseeds Advisory Committee
OPOT OAK
Olie- & Proteïensade Ontwikkelingstrust & Oliesade Advieskomitee

PROTEïENNAVORSINGSTIGTING
PROTEIN RESEARCH FOUNDATION

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Bureau for Food and Agricultural Policy
BFAP

INCOME & COST BUDGETS FOR WINTER CROPS - 2018 SEASON

Foreword

The Protein Research Foundation (PRF) strives to make a significant contribution to the promotion of local production of protein on a sustainable basis, in order to satisfy the growing demand for protein for animal production purposes as well as the optimal utilisation thereof, which will lead to an increase in the standard of living of all people in the Republic of South Africa. The main objectives of the Protein Research Foundation (PRF) are to replace imported protein used in animal feed with locally produced protein and to encourage the better utilisation of this protein. The objectives are promoted through research funding and technology transfer.

Currently, the Protein Research Foundation (PRF), Grain South Africa (GSA), the Bureau for Food and Agricultural Policy (BFAP) and agribusinesses publish their individual cost of production programs which focusses on key summer- and winter crops produced in South Africa's key agro-ecological zones, both under dryland- and irrigation cultivation. Given the existing activities associated within the organisations and the extent of the coverage of South African agricultural production, these initiatives are integrated to compile the 2018 winter crop budgets.

It is acknowledged that regional variation will occur and that estimates will differ from farm to farm. Whilst every care has been taken in preparing this report, it is advised to adjust the estimates according to the farm's respective location, yield potential, cultivation system and/or strategies.

Tel: 012 420 5021

Email: admin@bfap.co.za

Area coverage

Table 1 and Table 2 indicates the area of coverage and include the dryland and irrigated crops. The source of data and collaborators are also included.

Table 1.1: Area coverage: Dryland

Area	Dryland Crops	Source & Collaborators
Southern Cape		
Caledon	Wheat, Barley, Canola, Oats & Lupines	Overberg Agri, GSA & BFAP
Bredasdorp	Wheat, Barley, Canola, Oats & Lupines	Overberg Agri, GSA & BFAP
Swellendam/Heidelberg	Wheat, Barley, Canola, Oats & Lupines	SSK, GSA & BFAP
Riversdal/Albertina	Wheat, Barley, Canola, Oats & Lupines	SSK, GSA & BFAP
Western Cape		
Southern Swartland	Wheat & Canola	Kaap Agri, Overberg Agri, GSA & BFAP
Moorreesburg, Malmesbury & Porterville	Wheat, Canola & Oats	Kaap Agri, Overberg Agri, GSA & BFAP
Darling-vlakte – Hopefield (Sandveld)	Wheat, Canola & Lupines	Kaap Agri, Overberg Agri, GSA & BFAP
Rooi Karoo	Wheat & Canola	Kaap Agri, Overberg Agri, GSA & BFAP
Free State		
Eastern Free State	Wheat	GSA / VKB / BFAP / Individual Farmers
Central Free State	Wheat	GSA / VKB / BFAP / Individual Farmers

Tel: 012 420 5021

Email: admin@bfap.co.za

Table 1.2: Area coverage: Irrigation

Area	Irrigated Crops	Source & Collaborators
Northern Cape		
GWK Area	Wheat, Barley & Canola	GWK, GSA & BFAP
Free State		
Eastern Free State	Wheat	GSA / VKB / BFAP / Individual Farmers
Limpopo		
Britz / Northam / Koedoeskop	Wheat & Barley	GSA, Obaro & BFAP

Yield Assumptions

Figure 1 and Figure 2 reports the yield assumptions for dryland and irrigated crops. The yield assumptions represents target yields which were determined in a round table discussion which are based on the potential in the respective regions, historic trends and expert opinions. It is important to note that intra-regional variations will occur and it is recommended that producers adjust their respective target yields based on their location and potential. Table 1.3 illustrates descriptive statistics for yield trends and projections over the period from 2005-2020.

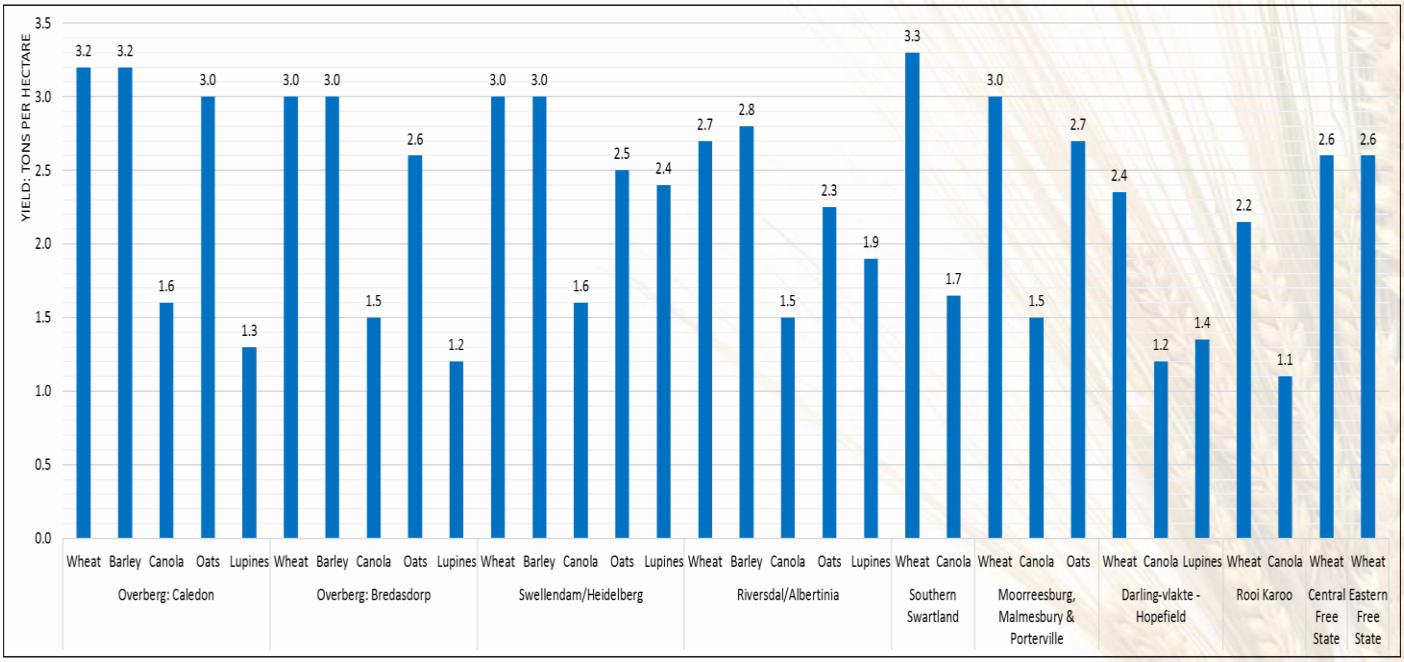

Figure 1.1: Dryland winter crop yield assumptions

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Email: admin@bfap.co.za

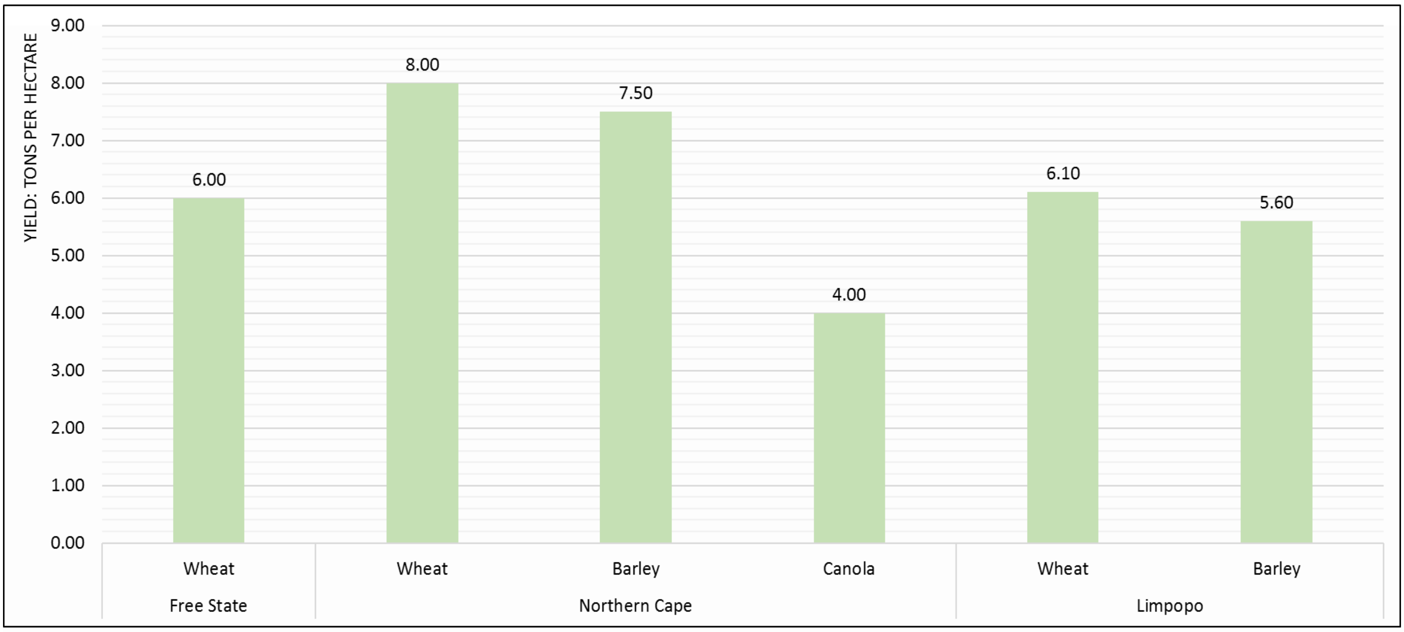

Figure 1.2: Irrigated winter crops yield assumptions

Table 1.3: Industry yield trends & projections: 2005-2025

	Wheat: Winter area	**Wheat: Summer area**	**Wheat: Irrigation**	**Barley: Winter area**	**Barley: Summer area**	**Canola**
Mean	2.6	2.7	6.2	2.9	6.3	1.3
3-year average: 2015-2017	2.5	3.1	6.7	3.3	6.0	1.3
5-year average: 2013-2017	2.7	3.1	6.5	3.1	6.4	1.4
Minimum	1.8	1.5	5.3	2.0	5.2	0.9
Median	2.6	2.7	6.2	3.0	6.5	1.3
Maximum	3.4	4.1	7.1	3.6	7.1	1.8

Source: BFAP, 2018

Crop Price Assumptions

Annually, the Bureau for Food and Agricultural Policy (BFAP) presents an outlook of agricultural production, consumption, prices and trade in South Africa over a 10-year period. The information presented is based on assumptions about a range of economic, technological, environmental, political, institutional, and social factors. The outlook is generated by the BFAP system of models. A number of critical assumptions have to be made for baseline projections. One of the most important assumptions is that normal weather conditions will prevail in Southern Africa and around the world; therefore, yields grow constantly over the baseline as technology improves. Assumptions regarding the outlook of macroeconomic conditions are based on a combination of projections developed by the International Monetary Fund (IMF), the World Bank and the Bureau for Economic Research (BER) at Stellenbosch University. Baseline projections for world commodity markets were generated by FAPRI at the University of Missouri. Once the critical assumptions are captured in the BFAP system of models, the Outlook for all commodities is simulated within a closed system of equations. This implies that, for example, any shocks in the grain sector are transmitted to the livestock sector and vice versa. Therefore, for each commodity, important components of supply and demand are identified, after which an equilibrium is established through balance sheet principles by equalling total demand to total supply.

Figure 3 illustrates the commodity price assumptions for wheat, barley and canola that were used as base price for the winter crop budgets for the 2018 production season. Table 1.4 illustrates the standard deduction

Tel: 012 420 5021
Email: admin@bfap.co.za

from the base SAFEX price as presented in Figure 1.3. The sensitivity analysis in the respective crop budgets makes provision for variation in price and yield and indicates the gross margin under each price and yield combination.

Table 1.4: Deductions from SAFEX price to derive a farm gate price per region

	Wheat	**Barley**	**Canola**
SAFEX / Derived Price: 2018	X	X (adjusted with price link)	X
- transport differential	X	X	-
- grade differential (B1, B2, B3 & UT)	Based on historic averages	B1	-
- silo, handling & administration costs	X	X	-
- statutory levies	X	X	X
+ price premiums	-	X	Back payment calculated at 10% of derived price

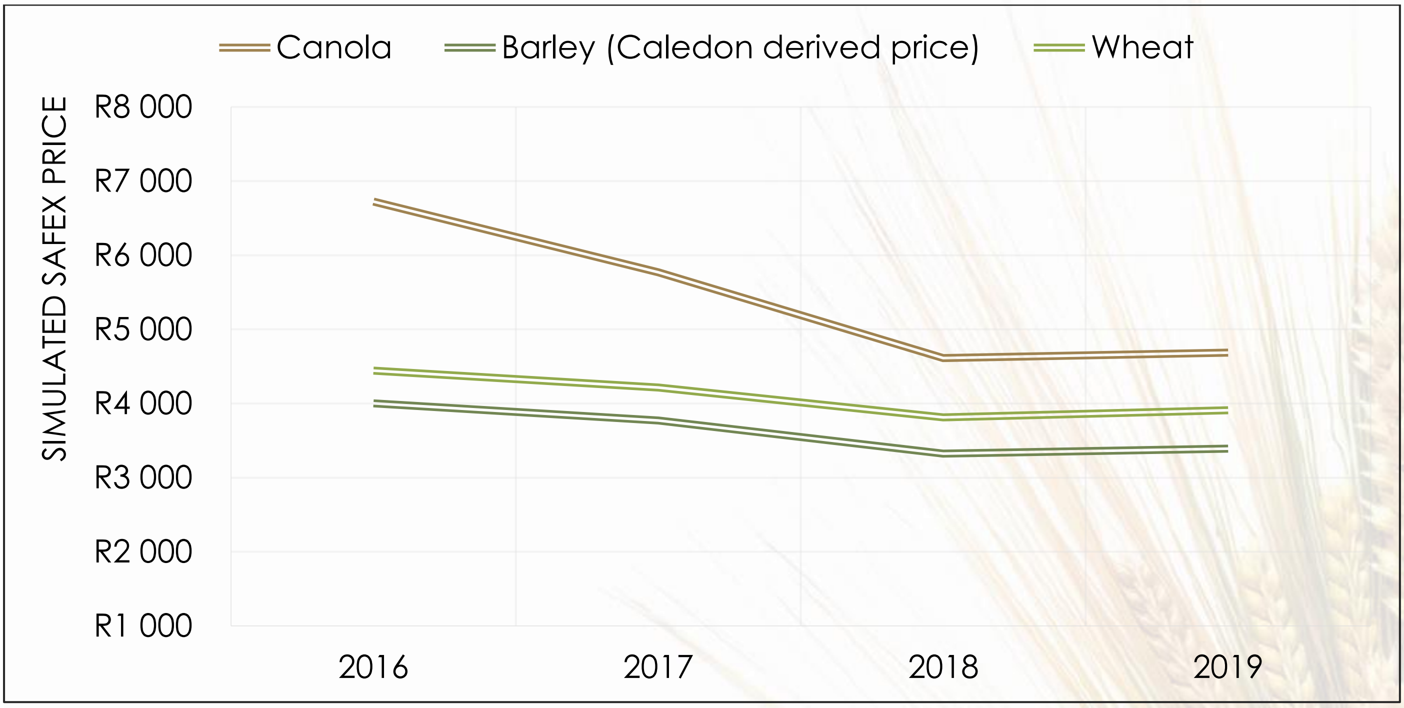

Figure 1.3: BFAP average annual commodity price projections: 2016-2019

Source: BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

INCOME & COST BUDGETS – DRYLAND PRODUCTION REGION

Southern Cape: Caledon

Table 2.1: Income & cost budgets for wheat, barley, canola, oats & lupines for Southern Cape (Caledon region) - Dryland

		Southern Cape: Caledon				
Crop		Wheat	Barley	Canola	Oats	Lupines
Production System		Dryland	Dryland	Dryland	Dryland	Dryland
1) INCOME						
Yield: Deterministic	T/HA	3.20	3.20	1.60	3.00	1.30
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R3 813	R4 613	R2 900	R3 250
Total deductions	R/TON	R726	R709	R4	R-	R-
- Transport differential	R/TON	R560	R560	R-	R-	R-
- Grade differential	R/TON	R60	R96	R-	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R53	R4	R-	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75	R461	R-	R-
Net Farm Gate Price	R/TON	R3 087	R3 084	R5 070	R2 900	R3 250
GROSS INCOME	**R/HA**	**R9 878**	**R9 869**	**R8 112**	**R8 700**	**R4 225**
2) VARIABLE EXPENDITURES						
Contracting	R/HA	R-	R-	R-	R-	R-
Crop insurance	R/HA	R28	R33	R27	R29	R14
Fertilizer	R/HA	R2 349	R2 219	R2 021	R1 910	R424
Lime	R/HA	R94	R94	R94	R94	R94
Seed	R/HA	R646	R560	R1 112	R400	R834
Fuel	R/HA	R657	R633	R584	R645	R596
Herbicide	R/HA	R654	R630	R630	R410	R720
Insecticide	R/HA	R160	R190	R190	R120	R163
Fungicides	R/HA	R640	R960	R390	R400	R440
Marketing costs	R/HA	R37	R47	R13	R-	R-
Repairs and maintenance	R/HA	R636	R636	R596	R634	R607
Casual labour	R/HA	R13	R13	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-	R-	R-
Other expenditure	R/HA	R115	R120	R110	R93	R93
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R6 029**	**R6 134**	**R5 780**	**R4 747**	**R3 998**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R1 884**	**R1 917**	**R3 613**	**R1 582**	**R3 075**
3.1) GROSS MARGIN:	**R/HA**	**R3 849**	**R3 735**	**R2 332**	**R3 953**	**R227**
3.2) GROSS MARGIN:	**R/TON**	**R1 203**	**R1 167**	**R1 457**	**R1 318**	**R175**

Source: Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021

Email: admin@bfap.co.za

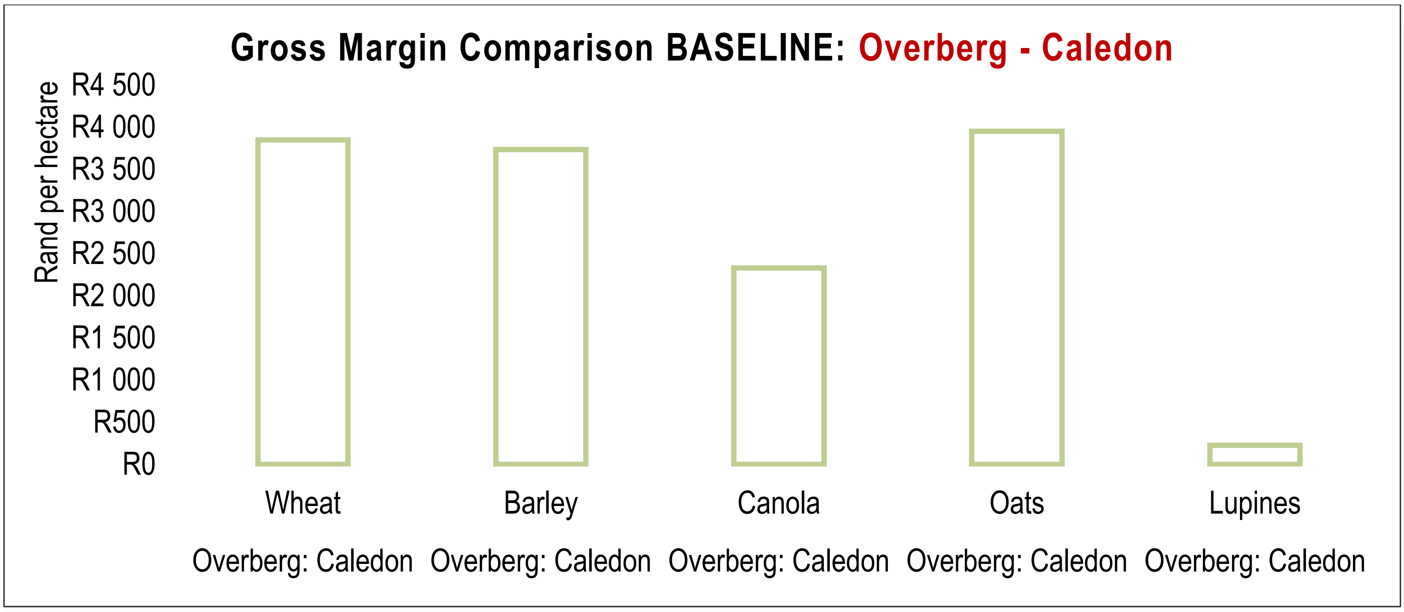

Figure 2.1: Gross margin comparison – Baseline: Southern Cape: Caledon region

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - CALEDON

	YIELD (T/HA)						
PRODUCERS PRICE	2.25	2.50	3.00	**3.20**	3.50	3.75	4.00
R2 087	-R 1 333	-R 812	R 232	**R 649**	R 1 275	R 1 797	R 2 319
R2 337	-R 771	-R 187	R 982	**R 1 449**	R 2 150	R 2 735	R 3 319
R2 587	-R 208	R 438	R 1 732	**R 2 249**	R 3 025	R 3 672	R 4 319
R2 837	R 354	R 1 063	R 2 482	**R 3 049**	R 3 900	R 4 610	R 5 319
R3 087	**R 917**	**R 1 688**	**R 3 232**	**R 3 849**	**R 4 775**	**R 5 547**	**R 6 319**
R3 337	R 1 479	R 2 313	R 3 982	**R 4 649**	R 5 650	R 6 485	R 7 319
R3 587	R 2 042	R 2 938	R 4 732	**R 5 449**	R 6 525	R 7 422	R 8 319
R3 837	R 2 604	R 3 563	R 5 482	**R 6 249**	R 7 400	R 8 360	R 9 319
R4 087	R 3 167	R 4 188	R 6 232	**R 7 049**	R 8 275	R 9 297	R 10 319

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - CALEDON

	YIELD (T/HA)						
PRODUCERS PRICE	2.25	2.50	3.00	**3.20**	3.50	3.75	4.00
R2 084	-R 1 444	-R 923	R 119	**R 535**	R 1 161	R 1 682	R 2 203
R2 334	-R 882	-R 298	R 869	**R 1 335**	R 2 036	R 2 619	R 3 203
R2 584	-R 319	R 327	R 1 619	**R 2 135**	R 2 911	R 3 557	R 4 203
R2 834	R 243	R 952	R 2 369	**R 2 935**	R 3 786	R 4 494	R 5 203
R3 084	**R 806**	**R 1 577**	**R 3 119**	**R 3 735**	**R 4 661**	**R 5 432**	**R 6 203**
R3 334	R 1 368	R 2 202	R 3 869	**R 4 535**	R 5 536	R 6 369	R 7 203
R3 584	R 1 931	R 2 827	R 4 619	**R 5 335**	R 6 411	R 7 307	R 8 203
R3 834	R 2 493	R 3 452	R 5 369	**R 6 135**	R 7 286	R 8 244	R 9 203
R4 084	R 3 056	R 4 077	R 6 119	**R 6 935**	R 8 161	R 9 182	R 10 203

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - CALEDON

	YIELD (T/HA)						
PRODUCERS PRICE	1.00	1.25	1.40	**1.60**	2.00	2.50	2.75
R4 070	-R 1 710	-R 693	-R 82	**R 732**	R 2 360	R 4 395	R 5 412
R4 320	-R 1 460	-R 380	R 268	**R 1 132**	R 2 860	R 5 020	R 6 100
R4 570	-R 1 210	-R 68	R 618	**R 1 532**	R 3 360	R 5 645	R 6 787
R4 820	-R 960	R 245	R 968	**R 1 932**	R 3 860	R 6 270	R 7 475
R5 070	**-R 710**	**R 557**	**R 1 318**	**R 2 332**	**R 4 360**	**R 6 895**	**R 8 162**
R5 320	-R 460	R 870	R 1 668	**R 2 732**	R 4 860	R 7 520	R 8 850
R5 570	-R 210	R 1 182	R 2 018	**R 3 132**	R 5 360	R 8 145	R 9 537
R5 820	R 40	R 1 495	R 2 368	**R 3 532**	R 5 860	R 8 770	R 10 225
R6 070	R 290	R 1 807	R 2 718	**R 3 932**	R 6 360	R 9 395	R 10 912

Tel: 012 420 5021
Email: admin@bfap.co.za

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): OVERBERG - CALEDON							
YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.75	-R 6 389	-R 6 202	-R 6 014	**-R 5 827**	-R 5 639	-R 5 452	-R 5 264
1.00	-R 5 309	-R 5 059	-R 4 809	**-R 4 559**	-R 4 309	-R 4 059	-R 3 809
1.25	-R 4 229	-R 3 917	-R 3 604	**-R 3 292**	-R 2 979	-R 2 667	-R 2 354
1.40	-R 3 581	-R 3 231	-R 2 881	**-R 2 531**	-R 2 181	-R 1 831	-R 1 481
1.60	**-R 2 717**	**-R 2 317**	**-R 1 917**	**-R 1 517**	**-R 1 117**	**-R 717**	**-R 317**
2.00	-R 989	-R 489	R 11	**R 511**	R 1 011	R 1 511	R 2 011
2.50	R 1 171	R 1 796	R 2 421	**R 3 046**	R 3 671	R 4 296	R 4 921
2.75	R 2 251	R 2 938	R 3 626	**R 4 313**	R 5 001	R 5 688	R 6 376
3.00	R 3 331	R 4 081	R 4 831	**R 5 581**	R 6 331	R 7 081	R 7 831

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Southern Cape: Bredasdorp

Table 2.2: Income & cost budgets for wheat, barley, canola, oats & lupines for Southern Cape (Bredasdorp region) - Dryland

		Southern Cape: Bredasdorp				
Crop		Wheat	Barley	Canola	Oats	Lupines
Production System		Dryland	Dryland	Dryland	Dryland	Dryland
1) INCOME						
Yield: Deterministic	T/HA	3.00	3.00	1.50	2.60	1.20
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R3 813	R4 613	R2 900	R3 250
Total deductions	R/TON	R726	R709	R4	R-	R-
- Transport differential	R/TON	R560	R560	R-	R-	R-
- Grade differential	R/TON	R60	R96	R-	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R53	R4	R-	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75	R461	R-	R-
Net Farm Gate Price	R/TON	R3 087	R3 084	R5 070	R2 900	R3 250
GROSS INCOME	**R/HA**	**R9 261**	**R9 252**	**R7 605**	**R7 540**	**R3 900**
2) VARIABLE EXPENDITURES						
Contracting	R/HA	R-	R-	R-	R-	R-
Crop insurance	R/HA	R31	R31	R25	R25	R13
Fertilizer	R/HA	R1 931	R1 843	R2 004	R1 318	R959
Lime	R/HA	R68	R68	R68	R68	R68
Seed	R/HA	R599	R519	R1 046	R411	R717
Fuel	R/HA	R670	R682	R626	R664	R647
Herbicide	R/HA	R786	R768	R909	R457	R649
Insecticide	R/HA	R216	R264	R566	R134	R479
Fungicides	R/HA	R719	R1 041	R385	R435	R106
Marketing costs	R/HA	R37	R47	R13	R-	R-
Repairs and maintenance	R/HA	R652	R657	R649	R687	R682
Casual labour	R/HA	R13	R13	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-	R-	R-
Other expenditure	R/HA	R106	R108	R101	R91	R91
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R5 828**	**R6 042**	**R6 404**	**R4 302**	**R4 424**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R1 943**	**R2 014**	**R4 269**	**R1 655**	**R3 687**
3.1) GROSS MARGIN:	**R/HA**	**R3 433**	**R3 211**	**R1 201**	**R3 238**	**-R524**
3.2) GROSS MARGIN:	**R/TON**	**R1 144**	**R1 070**	**R801**	**R1 245**	**-R437**

Source: Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

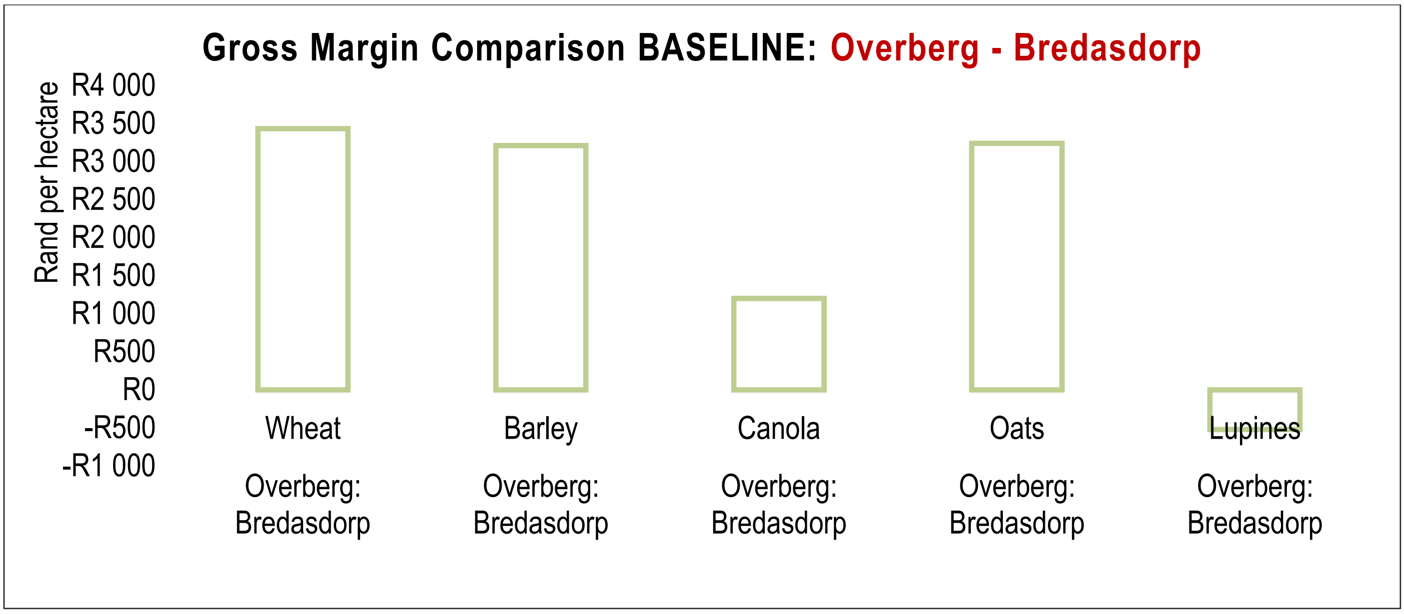

Figure 2.2: Gross margin comparison – Baseline: Southern Cape: Bredasdorp region

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - BREDASDORP

	YIELD (T/HA)						
PRODUCERS PRICE	2.25	2.50	2.75	**3.00**	3.25	3.50	3.75
R2 087	-R 1 132	-R 610	-R 89	**R 433**	R 955	R 1 477	R 1 998
R2 337	-R 570	R 15	R 599	**R 1 183**	R 1 767	R 2 352	R 2 936
R2 587	-R 7	R 640	R 1 286	**R 1 933**	R 2 580	R 3 227	R 3 873
R2 837	R 555	R 1 265	R 1 974	**R 2 683**	R 3 392	R 4 102	R 4 811
R3 087	**R 1 118**	**R 1 890**	**R 2 661**	**R 3 433**	**R 4 205**	**R 4 977**	**R 5 748**
R3 337	R 1 680	R 2 515	R 3 349	**R 4 183**	R 5 017	R 5 852	R 6 686
R3 587	R 2 243	R 3 140	R 4 036	**R 4 933**	R 5 830	R 6 727	R 7 623
R3 837	R 2 805	R 3 765	R 4 724	**R 5 683**	R 6 642	R 7 602	R 8 561
R4 087	R 3 368	R 4 390	R 5 411	**R 6 433**	R 7 455	R 8 477	R 9 498

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - BREDASDORP

	YIELD (T/HA)						
PRODUCERS PRICE	2.25	2.50	2.75	**3.00**	3.25	3.50	3.75
R2 084	-R 1 352	-R 831	-R 310	**R 211**	R 732	R 1 253	R 1 774
R2 334	-R 790	-R 206	R 377	**R 961**	R 1 544	R 2 128	R 2 711
R2 584	-R 227	R 419	R 1 065	**R 1 711**	R 2 357	R 3 003	R 3 649
R2 834	R 335	R 1 044	R 1 752	**R 2 461**	R 3 169	R 3 878	R 4 586
R3 084	**R 898**	**R 1 669**	**R 2 440**	**R 3 211**	**R 3 982**	**R 4 753**	**R 5 524**
R3 334	R 1 460	R 2 294	R 3 127	**R 3 961**	R 4 794	R 5 628	R 6 461
R3 584	R 2 023	R 2 919	R 3 815	**R 4 711**	R 5 607	R 6 503	R 7 399
R3 834	R 2 585	R 3 544	R 4 502	**R 5 461**	R 6 419	R 7 378	R 8 336
R4 084	R 3 148	R 4 169	R 5 190	**R 6 211**	R 7 232	R 8 253	R 9 274

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): OVERBERG - BREDASDORP

	YIELD PRICE (R/TON)						
	0.75	1.00	1.25	**1.50**	1.75	2.00	2.25
R4 070	-R 3 351	-R 2 334	-R 1 316	**-R 299**	R 719	R 1 736	R 2 754
R4 320	-R 3 164	-R 2 084	-R 1 004	**R 76**	R 1 156	R 2 236	R 3 316
R4 570	-R 2 976	-R 1 834	-R 691	**R 451**	R 1 594	R 2 736	R 3 879
R4 820	-R 2 789	-R 1 584	-R 379	**R 826**	R 2 031	R 3 236	R 4 441
R5 070	**-R 2 601**	**-R 1 334**	**-R 66**	**R 1 201**	**R 2 469**	**R 3 736**	**R 5 004**
R5 320	-R 2 414	-R 1 084	R 246	**R 1 576**	R 2 906	R 4 236	R 5 566
R5 570	-R 2 226	-R 834	R 559	**R 1 951**	R 3 344	R 4 736	R 6 129
R5 820	-R 2 039	-R 584	R 871	**R 2 326**	R 3 781	R 5 236	R 6 691
R6 070	-R 1 851	-R 334	R 1 184	**R 2 701**	R 4 219	R 5 736	R 7 254

Tel: 012 420 5021
Email: admin@bfap.co.za

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): OVERBERG - BREDASDORP							
YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.50	-R 7 677	-R 7 552	-R 7 427	**-R 7 302**	-R 7 177	-R 7 052	-R 6 927
0.75	-R 6 597	-R 6 409	-R 6 222	**-R 6 034**	-R 5 847	-R 5 659	-R 5 472
1.00	-R 5 517	-R 5 267	-R 5 017	**-R 4 767**	-R 4 517	-R 4 267	-R 4 017
1.25	-R 4 437	-R 4 124	-R 3 812	**-R 3 499**	-R 3 187	-R 2 874	-R 2 562
1.50	**-R 3 357**	**-R 2 982**	**-R 2 607**	**-R 2 232**	**-R 1 857**	**-R 1 482**	**-R 1 107**
1.75	-R 2 277	-R 1 839	-R 1 402	**-R 964**	-R 527	-R 89	R 348
2.00	-R 1 197	-R 697	-R 197	**R 303**	R 803	R 1 303	R 1 803
2.25	-R 117	R 446	R 1 008	**R 1 571**	R 2 133	R 2 696	R 3 258
2.50	R 963	R 1 588	R 2 213	**R 2 838**	R 3 463	R 4 088	R 4 713

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021
Email: admin@bfap.co.za

Southern Cape: Swellendam/Heidelberg

Table 2.3: Income & cost budgets for wheat, barley, canola, oats & lupines for Southern Cape (Swellendam/Heidelberg) - Dryland

		Southern Cape: Swellendam/Heidelberg				
Crop		Wheat	Barley	Canola	Oats	Lupines
Production System		Dryland	Dryland	Dryland	Dryland	Dryland
1) INCOME						
Yield: Deterministic	T/HA	3.00	3.00	1.60	2.50	2.40
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R3 813	R4 613	R2 900	R3 250
Total deductions	R/TON	R726	R709	R4	R-	R-
- Transport differential	R/TON	R560	R560	R-	R-	R-
- Grade differential	R/TON	R60	R96	R-	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R53	R4	R-	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75	R461	R-	R-
Net Farm Gate Price	R/TON	R3 087	R3 084	R5 070	R2 900	R3 250
GROSS INCOME	**R/HA**	**R9 261**	**R9 252**	**R8 112**	**R7 250**	**R7 800**
2) VARIABLE EXPENDITURES						
Contracting	R/HA	R-	R-	R-	R-	R-
Crop insurance	R/HA	R26	R31	R27	R24	R26
Fertilizer	R/HA	R1 560	R1 560	R1 696	R1 515	R893
Lime	R/HA	R85	R85	R85	R85	R85
Seed	R/HA	R960	R465	R695	R420	R858
Fuel	R/HA	R433	R441	R441	R431	R413
Herbicide	R/HA	R1 465	R1 303	R1 020	R625	R933
Insecticide	R/HA	R260	R112	R629	R106	R130
Fungicides	R/HA	R602	R1 121	R439	R610	R224
Marketing costs	R/HA	R37	R47	R13	R-	R-
Repairs and maintenance	R/HA	R612	R649	R625	R612	R536
Casual labour	R/HA	R13	R13	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-	R-	R-
Other expenditure	R/HA	R-	R-	R-	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R6 053**	**R5 828**	**R5 682**	**R4 441**	**R4 110**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 018**	**R1 943**	**R3 551**	**R1 776**	**R1 713**
3.1) GROSS MARGIN:	**R/HA**	**R3 208**	**R3 424**	**R2 430**	**R2 809**	**R3 690**
3.2) GROSS MARGIN:	**R/TON**	**R1 069**	**R1 141**	**R1 519**	**R1 124**	**R1 537**

Source: SSK, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

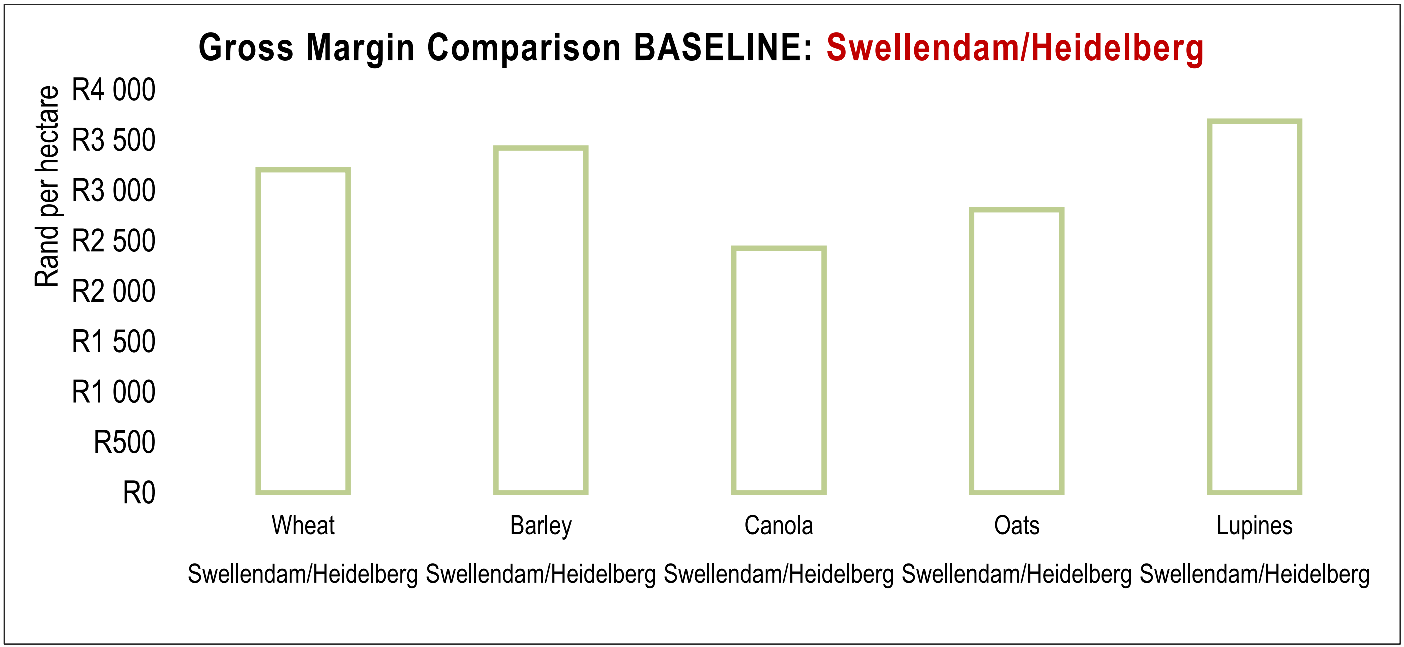

Figure 2.3: Gross margin comparison – Baseline: Southern Cape: Swellendam/Heidelberg

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): SWELLENDAM/HEIDELBERG

PRODUCERS PRICE	YIELD (T/HA) 2.25	2.50	2.75	**3.00**	3.25	3.50	3.75
R2 087	-R 1 357	-R 836	-R 314	**R 208**	R 730	R 1 251	R 1 773
R2 337	-R 795	-R 211	R 374	**R 958**	R 1 542	R 2 126	R 2 711
R2 587	-R 232	R 414	R 1 061	**R 1 708**	R 2 355	R 3 001	R 3 648
R2 837	R 330	R 1 039	R 1 749	**R 2 458**	R 3 167	R 3 876	R 4 586
R3 087	**R 893**	**R 1 664**	**R 2 436**	**R 3 208**	**R 3 980**	**R 4 751**	**R 5 523**
R3 337	R 1 455	R 2 289	R 3 124	**R 3 958**	R 4 792	R 5 626	R 6 461
R3 587	R 2 018	R 2 914	R 3 811	**R 4 708**	R 5 605	R 6 501	R 7 398
R3 837	R 2 580	R 3 539	R 4 499	**R 5 458**	R 6 417	R 7 376	R 8 336
R4 087	R 3 143	R 4 164	R 5 186	**R 6 208**	R 7 230	R 8 251	R 9 273

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): SWELLENDAM/HEIDELBERG

PRODUCERS PRICE	YIELD (T/HA) 2.25	2.50	2.75	**3.00**	3.25	3.50	3.75
R2 084	-R 1 139	-R 618	-R 97	**R 424**	R 945	R 1 466	R 1 987
R2 334	-R 576	R 7	R 591	**R 1 174**	R 1 758	R 2 341	R 2 925
R2 584	-R 14	R 632	R 1 278	**R 1 924**	R 2 570	R 3 216	R 3 862
R2 834	R 549	R 1 257	R 1 966	**R 2 674**	R 3 383	R 4 091	R 4 800
R3 084	**R 1 111**	**R 1 882**	**R 2 653**	**R 3 424**	**R 4 195**	**R 4 966**	**R 5 737**
R3 334	R 1 674	R 2 507	R 3 341	**R 4 174**	R 5 008	R 5 841	R 6 675
R3 584	R 2 236	R 3 132	R 4 028	**R 4 924**	R 5 820	R 6 716	R 7 612
R3 834	R 2 799	R 3 757	R 4 716	**R 5 674**	R 6 633	R 7 591	R 8 550
R4 084	R 3 361	R 4 382	R 5 403	**R 6 424**	R 7 445	R 8 466	R 9 487

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): SWELLENDAM/HEIDELBERG

YIELD PRICE (R/TON)	1.00	1.25	1.50	**1.60**	2.00	2.25	2.50
R4 070	-R 1 612	-R 595	R 423	**R 830**	R 2 458	R 3 475	R 4 493
R4 320	-R 1 362	-R 282	R 798	**R 1 230**	R 2 958	R 4 038	R 5 118
R4 570	-R 1 112	R 30	R 1 173	**R 1 630**	R 3 458	R 4 600	R 5 743
R4 820	-R 862	R 343	R 1 548	**R 2 030**	R 3 958	R 5 163	R 6 368
R5 070	**-R 612**	**R 655**	**R 1 923**	**R 2 430**	**R 4 458**	**R 5 725**	**R 6 993**
R5 320	-R 362	R 968	R 2 298	**R 2 830**	R 4 958	R 6 288	R 7 618
R5 570	-R 112	R 1 280	R 2 673	**R 3 230**	R 5 458	R 6 850	R 8 243
R5 820	R 138	R 1 593	R 3 048	**R 3 630**	R 5 958	R 7 413	R 8 868
R6 070	R 388	R 1 905	R 3 423	**R 4 030**	R 6 458	R 7 975	R 9 493

Tel: 012 420 5021
Email: admin@bfap.co.za

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): SWELLENDAM/HEIDELBERG							
YIELD PRICE (R/TON)	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.75	-R 5 650	-R 5 463	-R 5 275	**-R 5 088**	-R 4 900	-R 4 713	-R 4 525
1.00	-R 4 570	-R 4 320	-R 4 070	**-R 3 820**	-R 3 570	-R 3 320	-R 3 070
1.25	-R 3 490	-R 3 178	-R 2 865	**-R 2 553**	-R 2 240	-R 1 928	-R 1 615
1.50	-R 2 410	-R 2 035	-R 1 660	**-R 1 285**	-R 910	-R 535	-R 160
1.60	**-R 1 978**	**-R 1 578**	**-R 1 178**	**-R 778**	**-R 378**	**R 22**	**R 422**
2.00	-R 250	R 250	R 750	**R 1 250**	R 1 750	R 2 250	R 2 750
2.25	R 830	R 1 392	R 1 955	**R 2 517**	R 3 080	R 3 642	R 4 205
2.50	R 1 910	R 2 535	R 3 160	**R 3 785**	R 4 410	R 5 035	R 5 660
2.75	R 2 990	R 3 677	R 4 365	**R 5 052**	R 5 740	R 6 427	R 7 115

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Southern Cape: Riversdal/Albertinia

Table 2.4: Income & cost budgets for wheat, barley, canola, oats & lupines for Southern Cape (Riversdal/Albertinia) - Dryland

		Southern Cape: Riversdal/Albertinia				
Crop		Wheat	Barley	Canola	Oats	Lupines
Production System		Dryland	Dryland	Dryland	Dryland	Dryland
1) INCOME						
Yield: Deterministic	T/HA	2.70	2.80	1.50	2.25	1.90
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R3 813	R4 613	R2 900	R3 250
Total deductions	R/TON	R726	R709	R4	R-	R-
- Transport differential	R/TON	R560	R560	R-	R-	R-
- Grade differential	R/TON	R60	R96	R-	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R53	R4	R-	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75	R461	R-	R-
Net Farm Gate Price	R/TON	R3 087	R3 084	R5 070	R2 900	R3 250
GROSS INCOME	**R/HA**	**R8 335**	**R8 635**	**R7 605**	**R6 525**	**R6 175**
2) VARIABLE EXPENDITURES						
Contracting	R/HA	R-	R-	R-	R-	R-
Crop insurance	R/HA	R23	R28	R25	R22	R20
Fertilizer	R/HA	R1 415	R1 415	R1 550	R1 370	R823
Lime	R/HA	R85	R85	R85	R85	R85
Seed	R/HA	R892	R446	R695	R403	R858
Fuel	R/HA	R433	R441	R441	R431	R413
Herbicide	R/HA	R1 465	R1 303	R1 020	R625	R933
Insecticide	R/HA	R260	R112	R629	R106	R130
Fungicides	R/HA	R602	R1 121	R439	R610	R224
Marketing costs	R/HA	R37	R47	R13	R-	R-
Repairs and maintenance	R/HA	R612	R649	R625	R612	R536
Casual labour	R/HA	R13	R13	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-	R-	R-
Other expenditure	R/HA	R-	R-	R-	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R5 836**	**R5 662**	**R5 535**	**R4 276**	**R4 035**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 162**	**R2 022**	**R3 690**	**R1 900**	**R2 124**
3.1) GROSS MARGIN:	**R/HA**	**R2 499**	**R2 974**	**R2 070**	**R2 249**	**R2 140**
3.2) GROSS MARGIN:	**R/TON**	**R925**	**R1 062**	**R1 380**	**R1 000**	**R1 126**

Source: SSK, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

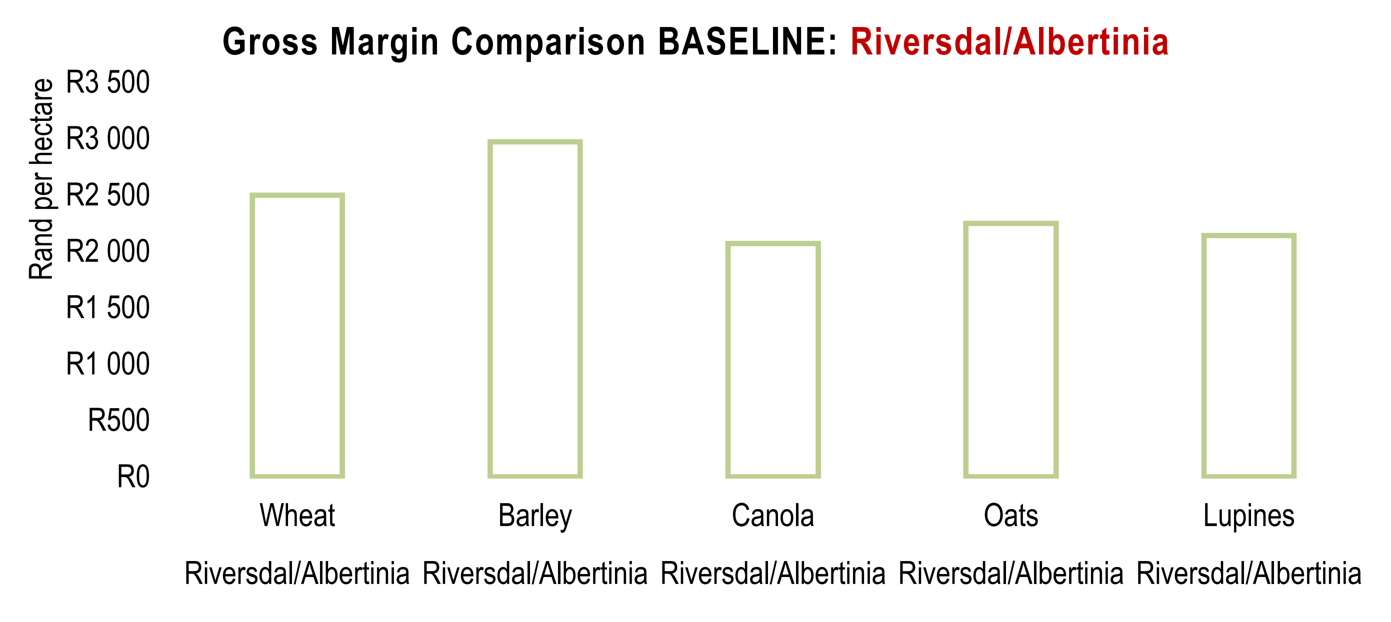

Figure 2.4: Gross margin comparison – Baseline: Southern Cape: Riversdal/Albertinia

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): RIVERSDAL/ALBERTINIA

	YIELD (T/HA)						
PRODUCERS PRICE	2.00	2.25	2.50	**2.70**	3.00	3.25	3.50
R2 087	-R 1 662	-R 1 141	-R 619	**-R 201**	R 425	R 946	R 1 468
R2 337	-R 1 162	-R 578	R 6	**R 474**	R 1 175	R 1 759	R 2 343
R2 587	-R 662	-R 16	R 631	**R 1 149**	R 1 925	R 2 571	R 3 218
R2 837	-R 162	R 547	R 1 256	**R 1 824**	R 2 675	R 3 384	R 4 093
R3 087	**R 338**	**R 1 109**	**R 1 881**	**R 2 499**	**R 3 425**	**R 4 196**	**R 4 968**
R3 337	R 838	R 1 672	R 2 506	**R 3 174**	R 4 175	R 5 009	R 5 843
R3 587	R 1 338	R 2 234	R 3 131	**R 3 849**	R 4 925	R 5 821	R 6 718
R3 837	R 1 838	R 2 797	R 3 756	**R 4 524**	R 5 675	R 6 634	R 7 593
R4 087	R 2 338	R 3 359	R 4 381	**R 5 199**	R 6 425	R 7 446	R 8 468

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): RIVERSDAL/ALBERTINIA

	YIELD (T/HA)						
PRODUCERS PRICE	2.00	2.25	2.50	**2.80**	3.00	3.25	3.50
R2 084	-R 1 494	-R 973	-R 452	**R 174**	R 591	R 1 112	R 1 633
R2 334	-R 994	-R 410	R 173	**R 874**	R 1 341	R 1 924	R 2 508
R2 584	-R 494	R 152	R 798	**R 1 574**	R 2 091	R 2 737	R 3 383
R2 834	R 6	R 715	R 1 423	**R 2 274**	R 2 841	R 3 549	R 4 258
R3 084	**R 506**	**R 1 277**	**R 2 048**	**R 2 974**	**R 3 591**	**R 4 362**	**R 5 133**
R3 334	R 1 006	R 1 840	R 2 673	**R 3 674**	R 4 341	R 5 174	R 6 008
R3 584	R 1 506	R 2 402	R 3 298	**R 4 374**	R 5 091	R 5 987	R 6 883
R3 834	R 2 006	R 2 965	R 3 923	**R 5 074**	R 5 841	R 6 799	R 7 758
R4 084	R 2 506	R 3 527	R 4 548	**R 5 774**	R 6 591	R 7 612	R 8 633

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): RIVERSDAL/ALBERTINIA

	YIELD (T/HA)						
PRODUCERS PRICE	0.75	1.00	1.25	**1.50**	1.75	2.00	2.25
R4 070	-R 2 483	-R 1 465	-R 448	**R 570**	R 1 587	R 2 605	R 3 622
R4 320	-R 2 295	-R 1 215	-R 135	**R 945**	R 2 025	R 3 105	R 4 185
R4 570	-R 2 108	-R 965	R 177	**R 1 320**	R 2 462	R 3 605	R 4 747
R4 820	-R 1 920	-R 715	R 490	**R 1 695**	R 2 900	R 4 105	R 5 310
R5 070	**-R 1 733**	**-R 465**	**R 802**	**R 2 070**	**R 3 337**	**R 4 605**	**R 5 872**
R5 320	-R 1 545	-R 215	R 1 115	**R 2 445**	R 3 775	R 5 105	R 6 435
R5 570	-R 1 358	R 35	R 1 427	**R 2 820**	R 4 212	R 5 605	R 6 997
R5 820	-R 1 170	R 285	R 1 740	**R 3 195**	R 4 650	R 6 105	R 7 560
R6 070	-R 983	R 535	R 2 052	**R 3 570**	R 5 087	R 6 605	R 8 122

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): RIVERSDAL/ALBERTINIA							
YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.50	-R 5 874	-R 5 749	-R 5 624	**-R 5 499**	-R 5 374	-R 5 249	-R 5 124
0.75	-R 4 794	-R 4 606	-R 4 419	**-R 4 231**	-R 4 044	-R 3 856	-R 3 669
1.00	-R 3 714	-R 3 464	-R 3 214	**-R 2 964**	-R 2 714	-R 2 464	-R 2 214
1.25	-R 2 634	-R 2 321	-R 2 009	**-R 1 696**	-R 1 384	-R 1 071	-R 759
1.50	**-R 1 554**	**-R 1 179**	**-R 804**	**-R 429**	**-R 54**	**R 321**	**R 696**
1.75	-R 474	-R 36	R 401	**R 839**	R 1 276	R 1 714	R 2 151
2.00	R 606	R 1 106	R 1 606	**R 2 106**	R 2 606	R 3 106	R 3 606
2.25	R 1 686	R 2 249	R 2 811	**R 3 374**	R 3 936	R 4 499	R 5 061
2.50	R 2 766	R 3 391	R 4 016	**R 4 641**	R 5 266	R 5 891	R 6 516

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Western Cape: Southern Swartland

Table 2.5: Income & cost budgets for wheat & canola for Southern Swartland - Dryland

		Southern Swartland	
Crop		Wheat	Canola
Production System		Dryland	Dryland
1) INCOME			
Yield: Deterministic	T/HA	3.30	1.65
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R4 613
Total deductions	R/TON	R726	R4
- Transport differential	R/TON	R560	R-
- Grade differential	R/TON	R60	R-
- Marketing, handling & statutory levies	R/TON	R107	R4
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R461
Net Farm Gate Price	R/TON	R3 087	R5 070
GROSS INCOME	**R/HA**	**R10 187**	**R8 366**
2) VARIABLE EXPENDITURES			
Contracting	R/HA	R-	R-
Crop insurance	R/HA	R29	R28
Fertilizer	R/HA	R2 597	R2 414
Lime	R/HA	R139	R139
Seed	R/HA	R676	R1 112
Fuel	R/HA	R438	R335
Herbicide	R/HA	R987	R483
Insecticide	R/HA	R89	R119
Fungicides	R/HA	R590	R365
Marketing costs	R/HA	R37	R13
Repairs and maintenance	R/HA	R673	R639
Casual labour	R/HA	R13	R13
Aerial spray	R/HA	R-	R-
Other expenditure	R/HA	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R6 267**	**R5 658**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R1 899**	**R3 429**
3.1) GROSS MARGIN:	**R/HA**	**R3 920**	**R2 707**
3.2) GROSS MARGIN:	**R/TON**	**R1 188**	**R1 641**

Source: Kaap Agri, Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

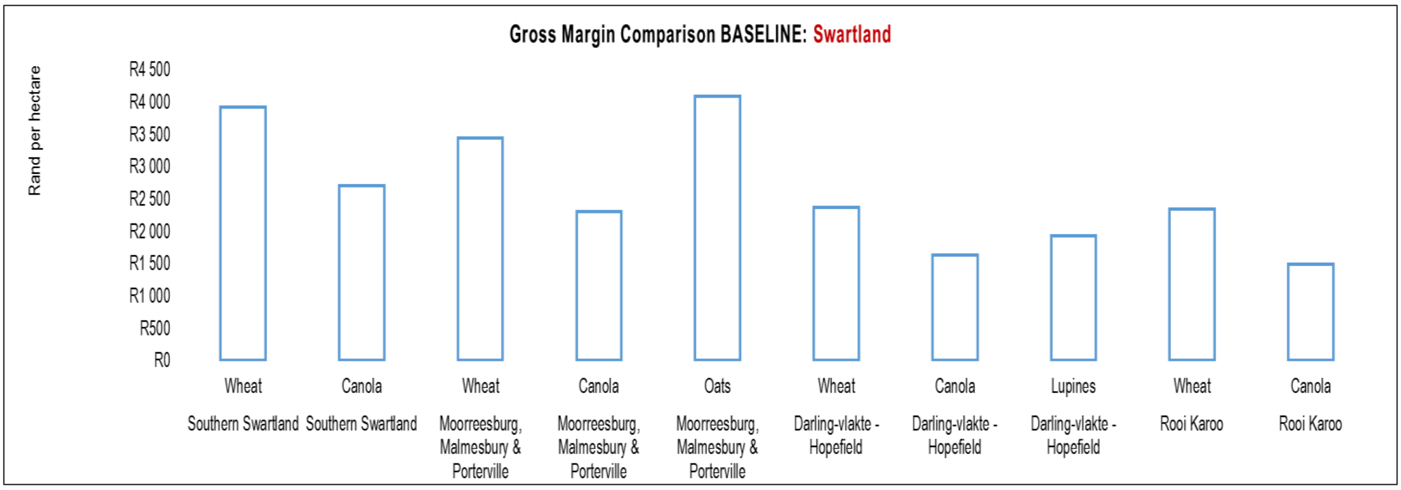

Figure 2.5: Gross margin comparison – Baseline: Western Cape: Swartland

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): SOUTHERN SWARTLAND

	YIELD (T/HA)						
PRODUCERS PRICE	2.50	2.75	3.00	**3.30**	3.50	3.75	4.00
R2 087	-R 1 050	-R 528	-R 6	**R 620**	R 1 037	R 1 559	R 2 081
R2 337	-R 425	R 160	R 744	**R 1 445**	R 1 912	R 2 497	R 3 081
R2 587	R 200	R 847	R 1 494	**R 2 270**	R 2 787	R 3 434	R 4 081
R2 837	R 825	R 1 535	R 2 244	**R 3 095**	R 3 662	R 4 372	R 5 081
R3 087	**R 1 450**	**R 2 222**	**R 2 994**	**R 3 920**	**R 4 537**	**R 5 309**	**R 6 081**
R3 337	R 2 075	R 2 910	R 3 744	**R 4 745**	R 5 412	R 6 247	R 7 081
R3 587	R 2 700	R 3 597	R 4 494	**R 5 570**	R 6 287	R 7 184	R 8 081
R3 837	R 3 325	R 4 285	R 5 244	**R 6 395**	R 7 162	R 8 122	R 9 081
R4 087	R 3 950	R 4 972	R 5 994	**R 7 220**	R 8 037	R 9 059	R 10 081

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): SOUTHERN SWARTLAND

	YIELD (T/HA)						
PRODUCERS PRICE	1.00	1.25	1.50	**1.65**	1.75	2.00	2.25
R4 070	-R 1 588	-R 571	R 447	**R 1 057**	R 1 464	R 2 482	R 3 499
R4 320	-R 1 338	-R 258	R 822	**R 1 470**	R 1 902	R 2 982	R 4 062
R4 570	-R 1 088	R 54	R 1 197	**R 1 882**	R 2 339	R 3 482	R 4 624
R4 820	-R 838	R 367	R 1 572	**R 2 295**	R 2 777	R 3 982	R 5 187
R5 070	**-R 588**	**R 679**	**R 1 947**	**R 2 707**	**R 3 214**	**R 4 482**	**R 5 749**
R5 320	-R 338	R 992	R 2 322	**R 3 120**	R 3 652	R 4 982	R 6 312
R5 570	-R 88	R 1 304	R 2 697	**R 3 532**	R 4 089	R 5 482	R 6 874
R5 820	R 162	R 1 617	R 3 072	**R 3 945**	R 4 527	R 5 982	R 7 437
R6 070	R 412	R 1 929	R 3 447	**R 4 357**	R 4 964	R 6 482	R 7 999

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): SOUTHERN SWARTLAND

YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.75	-R 6 338	-R 6 150	-R 5 963	**-R 5 775**	-R 5 588	-R 5 400	-R 5 213
1.00	-R 5 258	-R 5 008	-R 4 758	**-R 4 508**	-R 4 258	-R 4 008	-R 3 758
1.25	-R 4 178	-R 3 865	-R 3 553	**-R 3 240**	-R 2 928	-R 2 615	-R 2 303
1.50	-R 3 098	-R 2 723	-R 2 348	**-R 1 973**	-R 1 598	-R 1 223	-R 848
1.65	**-R 2 450**	**-R 2 037**	**-R 1 625**	**-R 1 212**	**-R 800**	**-R 387**	**R 25**
1.75	-R 2 018	-R 1 580	-R 1 143	**-R 705**	-R 268	R 170	R 607
2.00	-R 938	-R 438	R 62	**R 562**	R 1 062	R 1 562	R 2 062
2.25	R 142	R 705	R 1 267	**R 1 830**	R 2 392	R 2 955	R 3 517
2.50	R 1 222	R 1 847	R 2 472	**R 3 097**	R 3 722	R 4 347	R 4 972

Tel: 012 420 5021
Email: admin@bfap.co.za

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Western Cape: Moorreesburg, Malmesbury & Porterville

Table 2.6: Income & cost budgets for wheat, canola & oats for Moorreesburg, Malmesbury & Porterville - Dryland

		Moorreesburg, Malmesbury & Porterville		
Crop		Wheat	Canola	Oats
Production System		Dryland	Dryland	Dryland
1) INCOME				
Yield: Deterministic	T/HA	3.00	1.50	2.70
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R4 613	R2 900
Total deductions	R/TON	R726	R4	R-
- Transport differential	R/TON	R560	R-	R-
- Grade differential	R/TON	R60	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R4	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R461	R-
Net Farm Gate Price	R/TON	R3 087	R5 070	R2 900
GROSS INCOME	**R/HA**	**R9 261**	**R7 605**	**R7 830**
2) VARIABLE EXPENDITURES				
Contracting	R/HA	R-	R-	R-
Crop insurance	R/HA	R26	R25	R26
Fertilizer	R/HA	R2 333	R2 165	R1 605
Lime	R/HA	R139	R139	R139
Seed	R/HA	R591	R1 112	R294
Fuel	R/HA	R426	R317	R357
Herbicide	R/HA	R987	R580	R330
Insecticide	R/HA	R89	R119	R65
Fungicides	R/HA	R511	R182	R269
Marketing costs	R/HA	R37	R13	R37
Repairs and maintenance	R/HA	R660	R639	R607
Casual labour	R/HA	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-
Other expenditure	R/HA	R-	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R5 811**	**R5 304**	**R3 742**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R1 937**	**R3 536**	**R1 386**
3.1) GROSS MARGIN:	**R/HA**	**R3 449**	**R2 301**	**R4 088**
3.2) GROSS MARGIN:	**R/TON**	**R1 150**	**R1 534**	**R1 514**

Source: Kaap Agri, Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

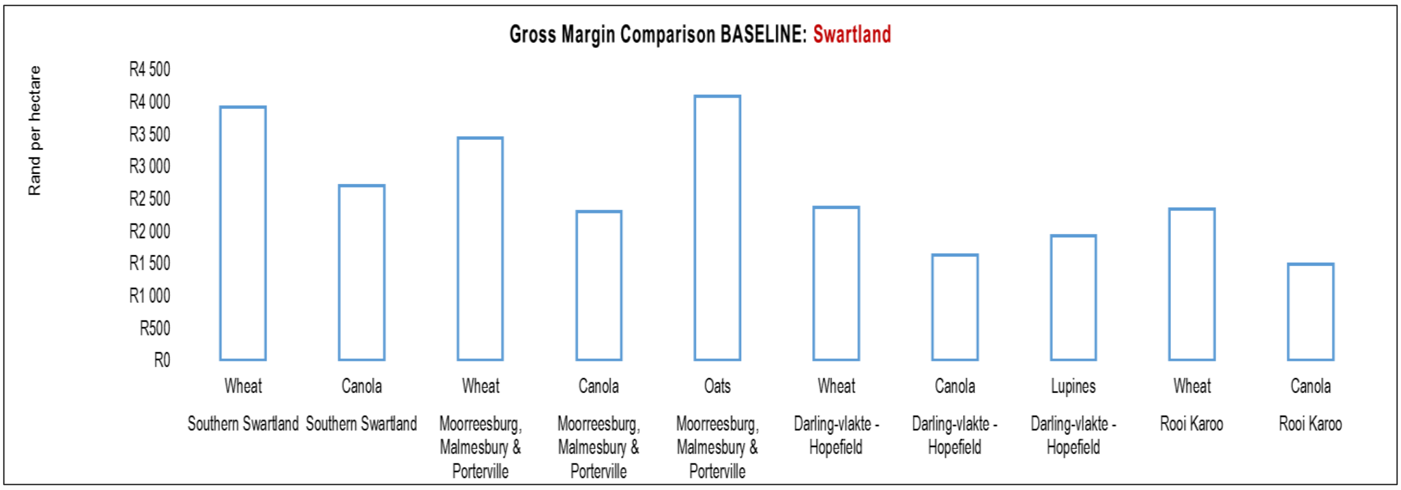

Figure 2.6: Gross margin comparison – Baseline: Swartland

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): MOORREESBURG, MALMESBURY & PORTERVILLE

	YIELD (T/HA)						
PRODUCERS PRICE	2.25	2.50	2.75	**3.00**	3.25	3.50	3.75
R2 087	-R 1 116	-R 594	-R 72	**R 449**	R 971	R 1 493	R 2 015
R2 337	-R 553	R 31	R 615	**R 1 199**	R 1 784	R 2 368	R 2 952
R2 587	R 9	R 656	R 1 303	**R 1 949**	R 2 596	R 3 243	R 3 890
R2 837	R 572	R 1 281	R 1 990	**R 2 699**	R 3 409	R 4 118	R 4 827
R3 087	**R 1 134**	**R 1 906**	**R 2 678**	**R 3 449**	**R 4 221**	**R 4 993**	**R 5 765**
R3 337	R 1 697	R 2 531	R 3 365	**R 4 199**	R 5 034	R 5 868	R 6 702
R3 587	R 2 259	R 3 156	R 4 053	**R 4 949**	R 5 846	R 6 743	R 7 640
R3 837	R 2 822	R 3 781	R 4 740	**R 5 699**	R 6 659	R 7 618	R 8 577
R4 087	R 3 384	R 4 406	R 5 428	**R 6 449**	R 7 471	R 8 493	R 9 515

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): MOORREESBURG, MALMESBURY & PORTERVILLE

	YIELD (T/HA)						
PRODUCERS PRICE	0.75	1.00	1.25	**1.50**	1.75	2.00	2.25
R4 070	-R 2 252	-R 1 234	-R 217	**R 801**	R 1 818	R 2 836	R 3 853
R4 320	-R 2 064	-R 984	R 96	**R 1 176**	R 2 256	R 3 336	R 4 416
R4 570	-R 1 877	-R 734	R 408	**R 1 551**	R 2 693	R 3 836	R 4 978
R4 820	-R 1 689	-R 484	R 721	**R 1 926**	R 3 131	R 4 336	R 5 541
R5 070	**-R 1 502**	**-R 234**	**R 1 033**	**R 2 301**	**R 3 568**	**R 4 836**	**R 6 103**
R5 320	-R 1 314	R 16	R 1 346	**R 2 676**	R 4 006	R 5 336	R 6 666
R5 570	-R 1 127	R 266	R 1 658	**R 3 051**	R 4 443	R 5 836	R 7 228
R5 820	-R 939	R 516	R 1 971	**R 3 426**	R 4 881	R 6 336	R 7 791
R6 070	-R 752	R 766	R 2 283	**R 3 801**	R 5 318	R 6 836	R 8 353

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): MOORREESBURG, MALMESBURY & PORTERVILLE

YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.50	-R 6 594	-R 6 469	-R 6 344	**-R 6 219**	-R 6 094	-R 5 969	-R 5 844
0.75	-R 5 514	-R 5 326	-R 5 139	**-R 4 951**	-R 4 764	-R 4 576	-R 4 389
1.00	-R 4 434	-R 4 184	-R 3 934	**-R 3 684**	-R 3 434	-R 3 184	-R 2 934
1.25	-R 3 354	-R 3 041	-R 2 729	**-R 2 416**	-R 2 104	-R 1 791	-R 1 479
1.50	**-R 2 274**	**-R 1 899**	**-R 1 524**	**-R 1 149**	**-R 774**	**-R 399**	**-R 24**
1.75	-R 1 194	-R 756	-R 319	**R 119**	R 556	R 994	R 1 431
2.00	-R 114	R 386	R 886	**R 1 386**	R 1 886	R 2 386	R 2 886
2.25	R 966	R 1 529	R 2 091	**R 2 654**	R 3 216	R 3 779	R 4 341
2.50	R 2 046	R 2 671	R 3 296	**R 3 921**	R 4 546	R 5 171	R 5 796

Tel: 012 420 5021
Email: admin@bfap.co.za

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021
Email: admin@bfap.co.za

Western Cape: Darling-vlakte – Hopefield

Table 2.7: Income & cost budgets for wheat, canola & lupines for Darling-vlakte – Hopefield (Sandveld region) - Dryland

		Darling-vlakte – Hopefield (Sandveld region)		
Crop		Wheat	Canola	Lupines
Production System		Dryland	Dryland	Dryland
1) INCOME				
Yield: Deterministic	T/HA	2.35	1.20	1.35
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R4 613	R3 250
Total deductions	R/TON	R726	R4	R-
- Transport differential	R/TON	R560	R-	R-
- Grade differential	R/TON	R60	R-	R-
- Marketing, handling & statutory levies	R/TON	R107	R4	R-
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R461	R-
Net Farm Gate Price	R/TON	R3 087	R5 070	R3 250
GROSS INCOME	**R/HA**	**R7 254**	**R6 084**	**R4 388**
2) VARIABLE EXPENDITURES				
Contracting	R/HA	R-	R-	R-
Crop insurance	R/HA	R20	R20	R14
Fertilizer	R/HA	R1 961	R1 854	R408
Lime	R/HA	R139	R139	R139
Seed	R/HA	R535	R1 042	R500
Fuel	R/HA	R438	R311	R315
Herbicide	R/HA	R863	R416	R485
Insecticide	R/HA	R89	R119	R46
Fungicides	R/HA	R251	R91	R80
Marketing costs	R/HA	R37	R13	R-
Repairs and maintenance	R/HA	R537	R440	R461
Casual labour	R/HA	R13	R13	R13
Aerial spray	R/HA	R-	R-	R-
Other expenditure	R/HA	R-	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R4 883**	**R4 458**	**R2 461**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 078**	**R3 715**	**R1 823**
3.1) GROSS MARGIN:	**R/HA**	**R2 372**	**R1 626**	**R1 926**
3.2) GROSS MARGIN:	**R/TON**	**R1 009**	**R1 355**	**R1 427**

Source: Kaap Agri, Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

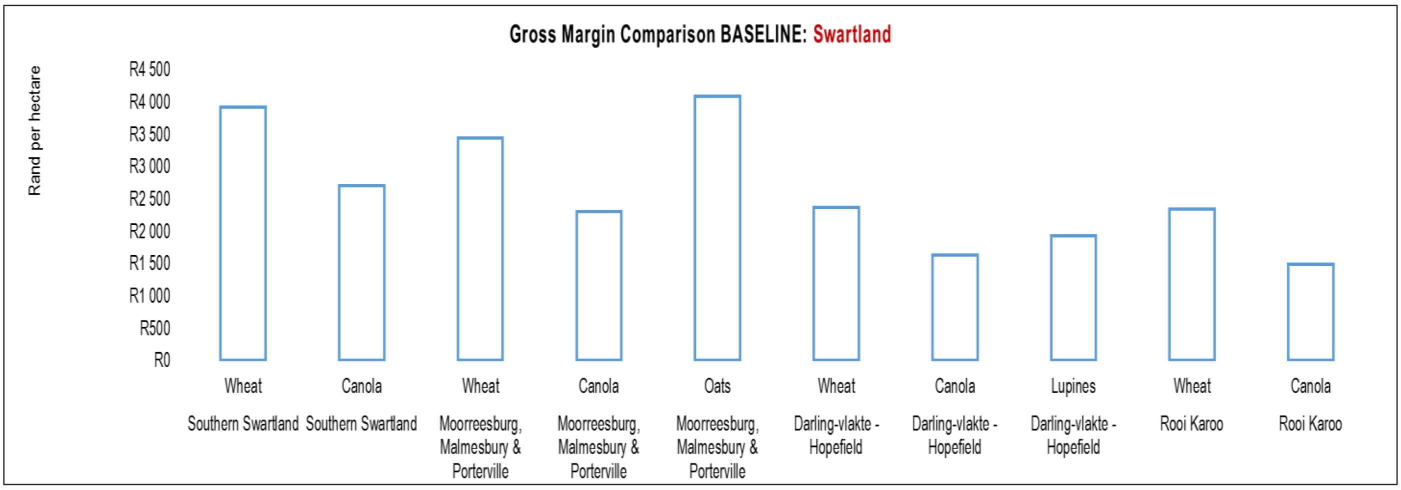

Figure 2.7: Gross margin comparison – Baseline: Swartland

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): Darling-vlakte - Hopefield

PRODUCERS PRICE	YIELD (T/HA) 1.50	1.75	2.00	**2.35**	2.50	2.75	3.00
R2 087	-R 1 752	-R 1 231	-R 709	R 22	R 335	R 856	R 1 378
R2 337	-R 1 377	-R 793	-R 209	R 609	R 960	R 1 544	R 2 128
R2 587	-R 1 002	-R 356	R 291	R 1 197	R 1 585	R 2 231	R 2 878
R2 837	-R 627	R 82	R 791	R 1 784	R 2 210	R 2 919	R 3 628
R3 087	**-R 252**	**R 519**	**R 1 291**	**R 2 372**	**R 2 835**	**R 3 606**	**R 4 378**
R3 337	R 123	R 957	R 1 791	R 2 959	R 3 460	R 4 294	R 5 128
R3 587	R 498	R 1 394	R 2 291	R 3 547	R 4 085	R 4 981	R 5 878
R3 837	R 873	R 1 832	R 2 791	R 4 134	R 4 710	R 5 669	R 6 628
R4 087	R 1 248	R 2 269	R 3 291	R 4 722	R 5 335	R 6 356	R 7 378

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): Darling-vlakte - Hopefield

PRODUCERS PRICE	YIELD (T/HA) 0.50	0.75	1.00	**1.20**	1.50	1.75	2.00
R4 070	-R 2 423	-R 1 405	-R 388	R 426	R 1 647	R 2 665	R 3 682
R4 320	-R 2 298	-R 1 218	-R 138	R 726	R 2 022	R 3 102	R 4 182
R4 570	-R 2 173	-R 1 030	R 112	R 1 026	R 2 397	R 3 540	R 4 682
R4 820	-R 2 048	-R 843	R 362	R 1 326	R 2 772	R 3 977	R 5 182
R5 070	**-R 1 923**	**-R 655**	**R 612**	**R 1 626**	**R 3 147**	**R 4 415**	**R 5 682**
R5 320	-R 1 798	-R 468	R 862	R 1 926	R 3 522	R 4 852	R 6 182
R5 570	-R 1 673	-R 280	R 1 112	R 2 226	R 3 897	R 5 290	R 6 682
R5 820	-R 1 548	-R 93	R 1 362	R 2 526	R 4 272	R 5 727	R 7 182
R6 070	-R 1 423	R 95	R 1 612	R 2 826	R 4 647	R 6 165	R 7 682

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): Darling-vlakte - Hopefield

YIELD	PRICE (R/TON) R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.25	-R 5 749	-R 5 687	-R 5 624	-R 5 562	-R 5 499	-R 5 437	-R 5 374
0.50	-R 4 669	-R 4 544	-R 4 419	-R 4 294	-R 4 169	-R 4 044	-R 3 919
0.75	-R 3 589	-R 3 402	-R 3 214	-R 3 027	-R 2 839	-R 2 652	-R 2 464
1.00	-R 2 509	-R 2 259	-R 2 009	-R 1 759	-R 1 509	-R 1 259	-R 1 009
1.20	**-R 1 645**	**-R 1 345**	**-R 1 045**	**-R 745**	**-R 445**	**-R 145**	**R 155**
1.50	-R 349	R 26	R 401	R 776	R 1 151	R 1 526	R 1 901
1.75	R 731	R 1 168	R 1 606	R 2 043	R 2 481	R 2 918	R 3 356
2.00	R 1 811	R 2 311	R 2 811	R 3 311	R 3 811	R 4 311	R 4 811
2.25	R 2 891	R 3 453	R 4 016	R 4 578	R 5 141	R 5 703	R 6 266

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.

Tel: 012 420 5021
Email: admin@bfap.co.za

- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Western Cape: Rooi Karoo

Table 2.8: Income & cost budgets for wheat & canola for Rooi Karoo - Dryland

		Rooi Karoo	
Crop		Wheat	Canola
Production System		Dryland	Dryland
1) INCOME			
Yield: Deterministic	T/HA	2.15	1.10
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R4 613
Total deductions	R/TON	R726	R4
- Transport differential	R/TON	R560	R-
- Grade differential	R/TON	R60	R-
- Marketing, handling & statutory levies	R/TON	R107	R4
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R461
Net Farm Gate Price	R/TON	R3 087	R5 070
GROSS INCOME	**R/HA**	**R6 637**	**R5 577**
2) VARIABLE EXPENDITURES			
Contracting	R/HA	R-	R-
Crop insurance	R/HA	R19	R18
Fertilizer	R/HA	R1 525	R1 493
Lime	R/HA	R139	R139
Seed	R/HA	R479	R973
Fuel	R/HA	R380	R335
Herbicide	R/HA	R787	R416
Insecticide	R/HA	R89	R119
Fungicides	R/HA	R251	R91
Marketing costs	R/HA	R37	R13
Repairs and maintenance	R/HA	R571	R477
Casual labour	R/HA	R13	R13
Aerial spray	R/HA	R-	R-
Other expenditure	R/HA	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R4 289**	**R4 087**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R1 995**	**R3 716**
3.1) GROSS MARGIN:	**R/HA**	**R2 348**	**R1 490**
3.2) GROSS MARGIN:	**R/TON**	**R1 092**	**R1 354**

Source: Kaap Agri, Overberg Agri, GSA & BFAP, 2018

Tel: 012 420 5021

Email: admin@bfap.co.za

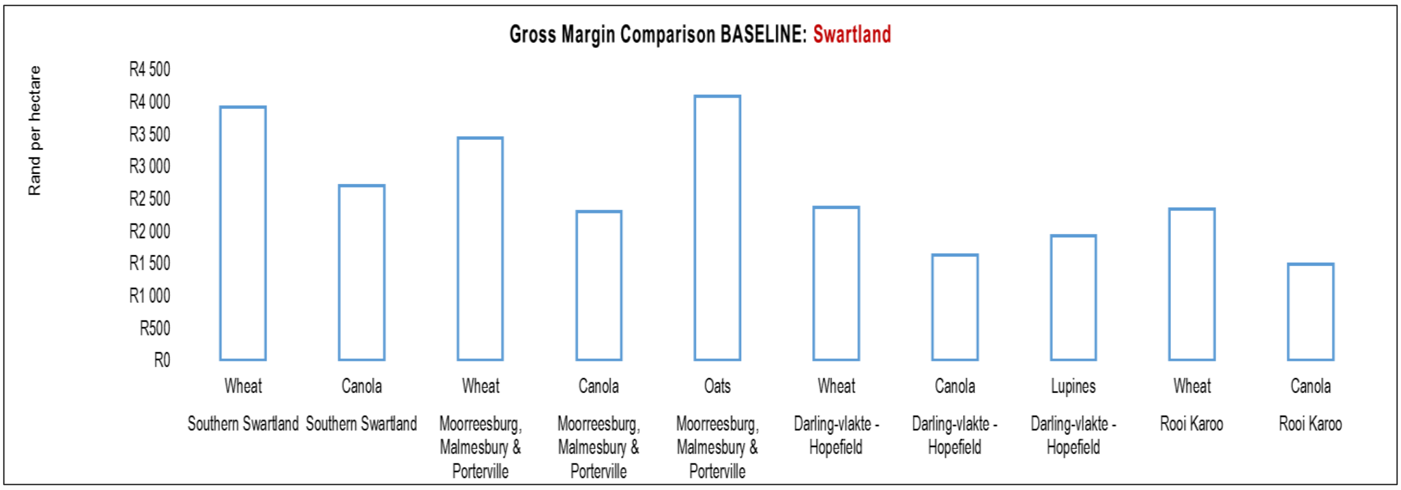

Figure 2.8: Gross margin comparison – Baseline: Swartland

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): ROOI KAROO

	YIELD (T/HA)						
PRODUCERS PRICE	1.50	1.75	2.00	**2.15**	2.25	2.50	2.75
R2 087	-R 1 159	-R 637	-R 115	**R 198**	R 407	R 928	R 1 450
R2 337	-R 784	-R 199	R 385	**R 735**	R 969	R 1 553	R 2 138
R2 587	-R 409	R 238	R 885	**R 1 273**	R 1 532	R 2 178	R 2 825
R2 837	-R 34	R 676	R 1 385	**R 1 810**	R 2 094	R 2 803	R 3 513
R3 087	**R 341**	**R 1 113**	**R 1 885**	**R 2 348**	**R 2 657**	**R 3 428**	**R 4 200**
R3 337	R 716	R 1 551	R 2 385	**R 2 885**	R 3 219	R 4 053	R 4 888
R3 587	R 1 091	R 1 988	R 2 885	**R 3 423**	R 3 782	R 4 678	R 5 575
R3 837	R 1 466	R 2 426	R 3 385	**R 3 960**	R 4 344	R 5 303	R 6 263
R4 087	R 1 841	R 2 863	R 3 885	**R 4 498**	R 4 907	R 5 928	R 6 950

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): ROOI KAROO

	YIELD (T/HA)						
PRODUCERS PRICE	0.50	0.75	1.00	**1.10**	1.25	1.50	1.75
R4 070	-R 2 052	-R 1 035	-R 17	**R 390**	R 1 000	R 2 018	R 3 035
R4 320	-R 1 927	-R 847	R 233	**R 665**	R 1 313	R 2 393	R 3 473
R4 570	-R 1 802	-R 660	R 483	**R 940**	R 1 625	R 2 768	R 3 910
R4 820	-R 1 677	-R 472	R 733	**R 1 215**	R 1 938	R 3 143	R 4 348
R5 070	**-R 1 552**	**-R 285**	**R 983**	**R 1 490**	**R 2 250**	**R 3 518**	**R 4 785**
R5 320	-R 1 427	-R 97	R 1 233	**R 1 765**	R 2 563	R 3 893	R 5 223
R5 570	-R 1 302	R 90	R 1 483	**R 2 040**	R 2 875	R 4 268	R 5 660
R5 820	-R 1 177	R 278	R 1 733	**R 2 315**	R 3 188	R 4 643	R 6 098
R6 070	-R 1 052	R 465	R 1 983	**R 2 590**	R 3 500	R 5 018	R 6 535

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): ROOI KAROO

YIELD	**PRICE (R/TON)**						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
0.25	-R 5 355	-R 5 293	-R 5 230	**-R 5 168**	-R 5 105	-R 5 043	-R 4 980
0.50	-R 4 275	-R 4 150	-R 4 025	**-R 3 900**	-R 3 775	-R 3 650	-R 3 525
0.75	-R 3 195	-R 3 008	-R 2 820	**-R 2 633**	-R 2 445	-R 2 258	-R 2 070
1.00	-R 2 115	-R 1 865	-R 1 615	**-R 1 365**	-R 1 115	-R 865	-R 615
1.10	**-R 1 683**	**-R 1 408**	**-R 1 133**	**-R 858**	**-R 583**	**-R 308**	**-R 33**
1.25	-R 1 035	-R 723	-R 410	**-R 98**	R 215	R 527	R 840
1.50	R 45	R 420	R 795	**R 1 170**	R 1 545	R 1 920	R 2 295
1.75	R 1 125	R 1 562	R 2 000	**R 2 437**	R 2 875	R 3 312	R 3 750
2.00	R 2 205	R 2 705	R 3 205	**R 3 705**	R 4 205	R 4 705	R 5 205

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.

Tel: 012 420 5021

Email: admin@bfap.co.za

- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Free State

Table 2.9: Income & cost budgets for wheat for Eastern & Central Free State - Dryland

		Eastern Free State	Central Free State
Crop		Wheat	Wheat
Production System		Dryland	Dryland
1) INCOME			
Yield: Deterministic	T/HA	2.60	2.60
SAFEX SIMULATED / DERIVED PRICE: **2018**	R/TON	R3 813	R3 813
Total deductions	R/TON	R436	R439
- Transport differential	R/TON	R270	R273
- Grade differential	R/TON	R60	R60
- Marketing, handling & statutory levies	R/TON	R107	R107
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R-
Net Farm Gate Price	R/TON	R3 377	R3 374
GROSS INCOME	**R/HA**	**R8 780**	**R8 772**
2) VARIABLE EXPENDITURES			
Contracting	R/HA	R688	R688
Crop insurance	R/HA	R553	R702
Fertilizer	R/HA	R1 578	R1 578
Lime	R/HA	R520	R353
Seed	R/HA	R286	R286
Fuel	R/HA	R722	R722
Herbicide	R/HA	R240	R240
Insecticide	R/HA	R139	R139
Fungicides	R/HA	R-	R-
Marketing costs	R/HA	R113	R113
Repairs and maintenance	R/HA	R627	R627
Casual labour	R/HA	R-	R-
Aerial spray	R/HA	R-	R-
Other expenditure	R/HA	R-	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R5 467**	**R5 449**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 103**	**R2 096**
3.1) GROSS MARGIN:	**R/HA**	**R3 313**	**R3 323**
3.2) GROSS MARGIN:	**R/TON**	**R1 274**	**R1 278**

Source: VKB, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

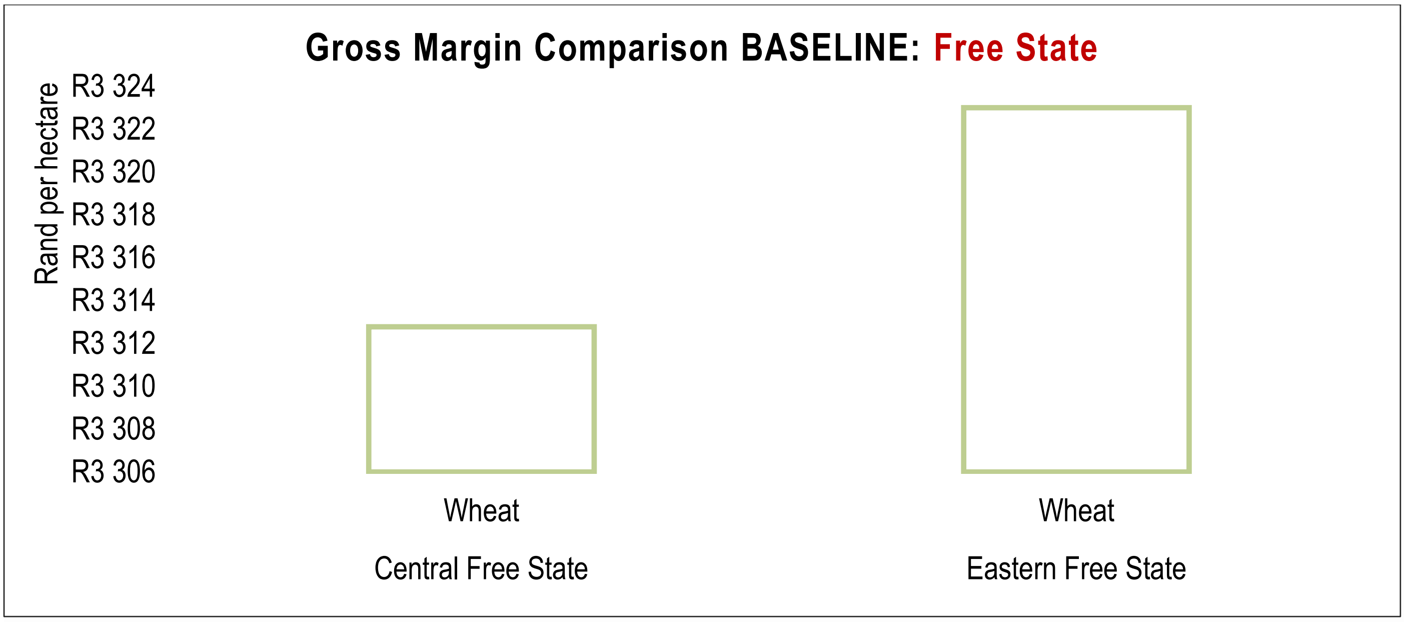

Figure 2.9: Gross margin comparison – Baseline: Free State (Eastern & Central regions)

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): CENTRAL FREE STATE

	YIELD (T/HA)						
PRODUCERS PRICE	1.75	2.00	2.25	**2.60**	2.75	3.00	3.25
R2 377	-R 1 308	-R 713	-R 119	**R 713**	R 1 069	R 1 664	R 2 258
R2 627	-R 870	-R 213	R 443	**R 1 363**	R 1 757	R 2 414	R 3 070
R2 877	-R 433	R 287	R 1 006	**R 2 013**	R 2 444	R 3 164	R 3 883
R3 127	R 5	R 787	R 1 568	**R 2 663**	R 3 132	R 3 914	R 4 695
R3 377	**R 442**	**R 1 287**	**R 2 131**	**R 3 313**	**R 3 819**	**R 4 664**	**R 5 508**
R3 627	R 880	R 1 787	R 2 693	**R 3 963**	R 4 507	R 5 414	R 6 320
R3 877	R 1 317	R 2 287	R 3 256	**R 4 613**	R 5 194	R 6 164	R 7 133
R4 127	R 1 755	R 2 787	R 3 818	**R 5 263**	R 5 882	R 6 914	R 7 945
R4 377	R 2 192	R 3 287	R 4 381	**R 5 913**	R 6 569	R 7 664	R 8 758

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): EASTERN FREE STATE

	YIELD (T/HA)						
PRODUCERS PRICE	1.75	2.00	2.25	**2.60**	2.75	3.00	3.25
R2 374	-R 1 295	-R 701	-R 108	**R 723**	R 1 079	R 1 673	R 2 266
R2 624	-R 857	-R 201	R 455	**R 1 373**	R 1 767	R 2 423	R 3 079
R2 874	-R 420	R 299	R 1 017	**R 2 023**	R 2 454	R 3 173	R 3 891
R3 124	R 18	R 799	R 1 580	**R 2 673**	R 3 142	R 3 923	R 4 704
R3 374	**R 455**	**R 1 299**	**R 2 142**	**R 3 323**	**R 3 829**	**R 4 673**	**R 5 516**
R3 624	R 893	R 1 799	R 2 705	**R 3 973**	R 4 517	R 5 423	R 6 329
R3 874	R 1 330	R 2 299	R 3 267	**R 4 623**	R 5 204	R 6 173	R 7 141
R4 124	R 1 768	R 2 799	R 3 830	**R 5 273**	R 5 892	R 6 923	R 7 954
R4 374	R 2 205	R 3 299	R 4 392	**R 5 923**	R 6 579	R 7 673	R 8 766

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021
Email: admin@bfap.co.za

Northern Cape

Table 3.1: Income & cost budgets for wheat, barley & canola for Northern Cape - Irrigation

Area		Northern Cape: Irrigation		
Crop		Wheat	Barley	Canola
Production System		Irrigation	Irrigation	Irrigation
1) INCOME				
Yield: Deterministic	T/HA	8.00	7.50	4.00
SAFEX SIMULATED PRICE / PRODUCER PRICE: 2018	R/TON	R3 813	R3 813	R4 613
Total deductions	R/TON	R623	R599	R4
- Transport differential	R/TON	R450	R450	R-
- Grade differential	R/TON	R66	R96	R-
- Marketing, handling & statutory levies	R/TON	R107	R53	R4
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75	R461
Net Farm Gate Price	R/TON	R3 190	R3 191	R5 070
GROSS INCOME	**R/HA**	**R25 522**	**R23 931**	**R20 280**
2) VARIABLE EXPENDITURES				
Contracting	R/HA	R1 300	R1 300	R1 400
Crop insurance	R/HA	R2 297	R2 154	R608
Fertilizer	R/HA	R8 354	R7 147	R4 201
Lime	R/HA	R1 307	R1 307	R-
Seed	R/HA	R1 300	R1 200	R844
Fuel	R/HA	R730	R731	R730
Herbicide	R/HA	R392	R392	R1 337
Insecticide	R/HA	R1 087	R148	R631
Fungicides	R/HA	R-	R487	R1 256
Marketing costs	R/HA	R-	R-	R-
Repairs and maintenance	R/HA	R677	R677	R677
Casual labour	R/HA	R-	R-	R-
Irrigation: Water	R/HA	R718	R718	R718
Irrigation: Electricity	R/HA	R2 474	R2 474	R2 474
Aerial spray	R/HA	R-	R-	R-
Other expenditure: Scheduling / Irrigation Equipment R&M	R/HA	R532	R532	R532
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R21 168**	**R20 121**	**R14 617**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 646**	**R2 683**	**R3 654**
3.1) GROSS MARGIN:	**R/HA**	**R4 353**	**R3 810**	**R5 663**
3.2) GROSS MARGIN:	**R/TON**	**R544**	**R508**	**R1 416**

Source: GWK, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

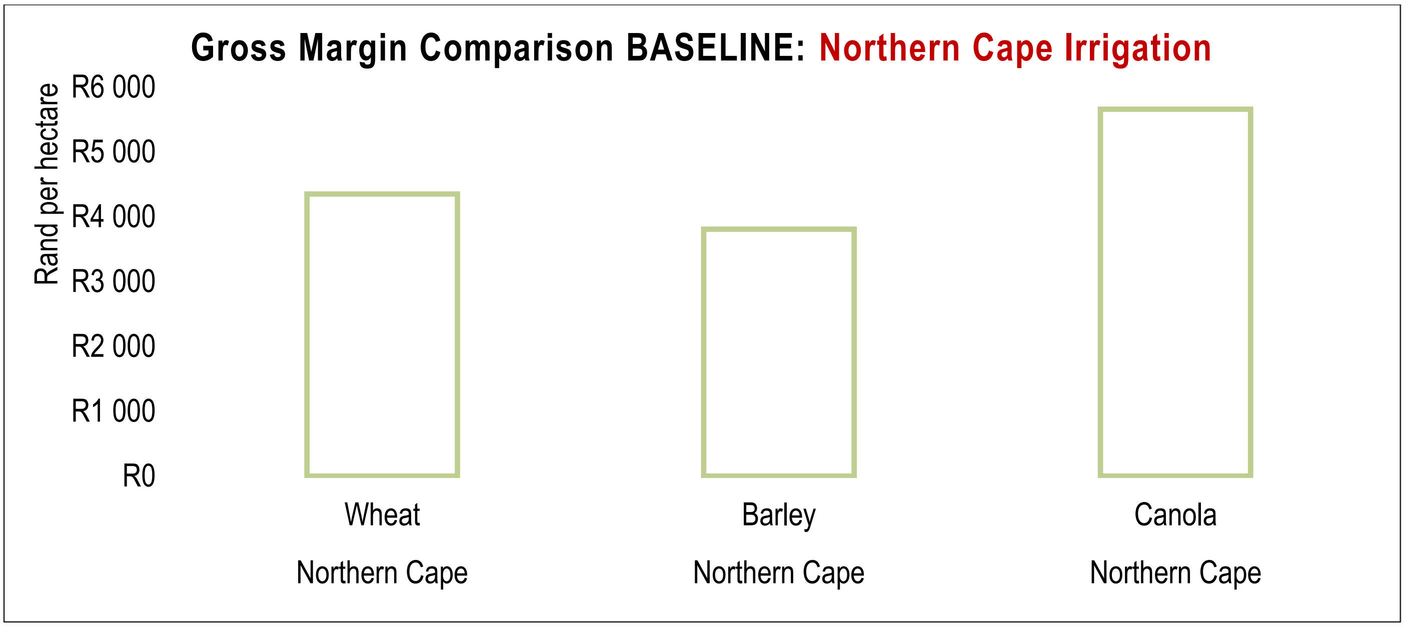

Figure 3.1: Gross margin comparison – Baseline: Northern Cape Irrigation

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): NORTHERN CAPE - IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	7.25	7.50	7.75	**8.00**	8.25	8.50	8.75
R2 190	-R 5 289.17	-R 4 742	-R 4 194	**-R 3 647**	-R 3 099	-R 2 551	-R 2 004
R2 440	-R 3 477	-R 2 867	-R 2 257	**-R 1 647**	-R 1 036	-R 426	R 184
R2 690	-R 1 664	-R 992	-R 319	**R 353**	R 1 026	R 1 699	R 2 371
R2 940	R 148	R 883	R 1 618	**R 2 353**	R 3 089	R 3 824	R 4 559
R3 190	**R 1 961**	**R 2 758**	**R 3 556**	**R 4 353**	**R 5 151**	**R 5 949**	**R 6 746**
R3 440	R 3 773	R 4 633	R 5 493	**R 6 353**	R 7 214	R 8 074	R 8 934
R3 690	R 5 586	R 6 508	R 7 431	**R 8 353**	R 9 276	R 10 199	R 11 121
R3 940	R 7 398	R 8 383	R 9 368	**R 10 353**	R 11 339	R 12 324	R 13 309
R4 190	R 9 211	R 10 258	R 11 306	**R 12 353**	R 13 401	R 14 449	R 15 496

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): NORTHERN CAPE - IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	6.75	7.00	7.25	**7.50**	7.75	8.00	8.25
R2 191	-R 5 333	-R 4 785	-R 4 238	**-R 3 690**	-R 3 142	-R 2 595	-R 2 047
R2 441	-R 3 646	-R 3 035	-R 2 425	**-R 1 815**	-R 1 205	-R 595	R 16
R2 691	-R 1 958	-R 1 285	-R 613	**R 60**	R 733	R 1 405	R 2 078
R2 941	-R 271	R 465	R 1 200	**R 1 935**	R 2 670	R 3 405	R 4 141
R3 191	**R 1 417**	**R 2 215**	**R 3 012**	**R 3 810**	**R 4 608**	**R 5 405**	**R 6 203**
R3 441	R 3 104	R 3 965	R 4 825	**R 5 685**	R 6 545	R 7 405	R 8 266
R3 691	R 4 792	R 5 715	R 6 637	**R 7 560**	R 8 483	R 9 405	R 10 328
R3 941	R 6 479	R 7 465	R 8 450	**R 9 435**	R 10 420	R 11 405	R 12 391
R4 191	R 8 167	R 9 215	R 10 262	**R 11 310**	R 12 358	R 13 405	R 14 453

CANOLA SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): NORTHERN CAPE - IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	3.25	3.50	3.75	**4.00**	4.25	4.50	4.75
R4 070	-R 1 390	-R 372	R 645	**R 1 663**	R 2 680	R 3 698	R 4 715
R4 320	-R 577	R 503	R 1 583	**R 2 663**	R 3 743	R 4 823	R 5 903
R4 570	R 235	R 1 378	R 2 520	**R 3 663**	R 4 805	R 5 948	R 7 090
R4 820	R 1 048	R 2 253	R 3 458	**R 4 663**	R 5 868	R 7 073	R 8 278
R5 070	**R 1 860**	**R 3 128**	**R 4 395**	**R 5 663**	**R 6 930**	**R 8 198**	**R 9 465**
R5 320	R 2 673	R 4 003	R 5 333	**R 6 663**	R 7 993	R 9 323	R 10 653
R5 570	R 3 485	R 4 878	R 6 270	**R 7 663**	R 9 055	R 10 448	R 11 840
R5 820	R 4 298	R 5 753	R 7 208	**R 8 663**	R 10 118	R 11 573	R 13 028
R6 070	R 5 110	R 6 628	R 8 145	**R 9 663**	R 11 180	R 12 698	R 14 215

Tel: 012 420 5021
Email: admin@bfap.co.za

CANOLA MARGIN ABOVE / BELOW WHEAT (GROSS MARGIN PER HECTARE): NORTHERN CAPE - IRRIGATION							
YIELD	PRICE (R/TON)						
	R 4 320	R 4 570	R 4 820	**R 5 070**	R 5 320	R 5 570	R 5 820
3.00	-R 6 011	-R 5 261	-R 4 511	**-R 3 761**	-R 3 011	-R 2 261	-R 1 511
3.25	-R 4 931	-R 4 118	-R 3 306	**-R 2 493**	-R 1 681	-R 868	-R 56
3.50	-R 3 851	-R 2 976	-R 2 101	**-R 1 226**	-R 351	R 524	R 1 399
3.75	-R 2 771	-R 1 833	-R 896	**R 42**	R 979	R 1 917	R 2 854
4.00	**-R 1 691**	**-R 691**	**R 309**	**R 1 309**	**R 2 309**	**R 3 309**	**R 4 309**
4.25	-R 611	R 452	R 1 514	**R 2 577**	R 3 639	R 4 702	R 5 764
4.50	R 469	R 1 594	R 2 719	**R 3 844**	R 4 969	R 6 094	R 7 219
4.75	R 1 549	R 2 737	R 3 924	**R 5 112**	R 6 299	R 7 487	R 8 674
5.00	R 2 629	R 3 879	R 5 129	**R 6 379**	R 7 629	R 8 879	R 10 129

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
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Tel: 012 420 5021

Email: admin@bfap.co.za

Limpopo

Table 3.2: Income & cost budgets for wheat & barley for Limpopo - Irrigation

Area		Limpopo: Irrigation	
Crop		Wheat	Barley
Production System		Irrigation	Irrigation
1) INCOME			
Yield: Deterministic	T/HA	6.10	5.60
SAFEX SIMULATED PRICE / PRODUCER PRICE: 2018	R/TON	R3 813	R3 813
Total deductions	R/TON	R383	R359
- Transport differential	R/TON	R210	R210
- Grade differential	R/TON	R66	R96
- Marketing, handling & statutory levies	R/TON	R107	R53
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-	R75
Net Farm Gate Price	R/TON	R3 430	R3 424
GROSS INCOME	**R/HA**	**R20 924**	**R19 172**
2) VARIABLE EXPENDITURES			
Contracting	R/HA	R-	R-
Crop insurance	R/HA	R1 507	R1 304
Fertilizer	R/HA	R4 973	R4 568
Lime	R/HA	R653	R653
Seed	R/HA	R850	R1 050
Fuel	R/HA	R730	R731
Herbicide	R/HA	R254	R255
Insecticide	R/HA	R703	R704
Fungicides	R/HA	R-	R-
Marketing costs	R/HA	R-	R-
Repairs and maintenance	R/HA	R541	R566
Casual labour	R/HA	R-	R-
Irrigation: Water	R/HA	R693	R630
Irrigation: Electricity	R/HA	R2 387	R2 170
Aerial spray	R/HA	R-	R-
Other expenditure: Scheduling / Irrigation Equipment R&M	R/HA	R511	R465
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R13 802**	**R13 095**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 263**	**R2 338**
3.1) GROSS MARGIN:	**R/HA**	**R7 122**	**R6 077**
3.2) GROSS MARGIN:	**R/TON**	**R1 168**	**R1 085**

Source: GSA, BFAP & Obaro, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

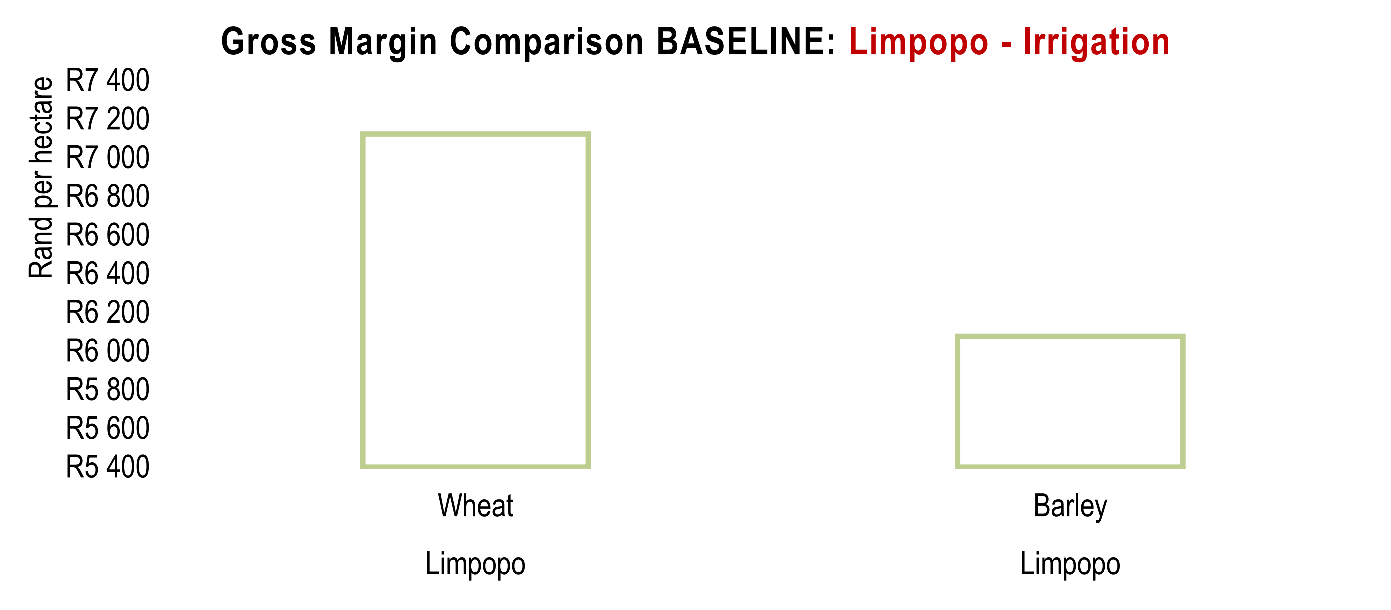

Figure 3.2: Gross margin comparison – Baseline: Limpopo Irrigation

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): LIMPOPO - IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	5.50	5.75	6.00	**6.10**	6.25	6.50	6.75
R2 430	-R 436	R 172	R 779	**R 1 022**	R 1 387	R 1 994	R 2 602
R2 680	R 939	R 1 609	R 2 279	**R 2 547**	R 2 949	R 3 619	R 4 289
R2 930	R 2 314	R 3 047	R 3 779	**R 4 072**	R 4 512	R 5 244	R 5 977
R3 180	R 3 689	R 4 484	R 5 279	**R 5 597**	R 6 074	R 6 869	R 7 664
R3 430	**R 5 064**	**R 5 922**	**R 6 779**	**R 7 122**	**R 7 637**	**R 8 494**	**R 9 352**
R3 680	R 6 439	R 7 359	R 8 279	**R 8 647**	R 9 199	R 10 119	R 11 039
R3 930	R 7 814	R 8 797	R 9 779	**R 10 172**	R 10 762	R 11 744	R 12 727
R4 180	R 9 189	R 10 234	R 11 279	**R 11 697**	R 12 324	R 13 369	R 14 414
R4 430	R 10 564	R 11 672	R 12 779	**R 13 222**	R 13 887	R 14 994	R 16 102

BARLEY SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): LIMPOPO - IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	5.00	5.25	5.50	**5.60**	6.00	6.25	6.50
R2 424	-R 978	-R 372	R 234	**R 477**	R 1 446	R 2 052	R 2 658
R2 674	R 272	R 941	R 1 609	**R 1 877**	R 2 946	R 3 614	R 4 283
R2 924	R 1 522	R 2 253	R 2 984	**R 3 277**	R 4 446	R 5 177	R 5 908
R3 174	R 2 772	R 3 566	R 4 359	**R 4 677**	R 5 946	R 6 739	R 7 533
R3 424	**R 4 022**	**R 4 878**	**R 5 734**	**R 6 077**	**R 7 446**	**R 8 302**	**R 9 158**
R3 674	R 5 272	R 6 191	R 7 109	**R 7 477**	R 8 946	R 9 864	R 10 783
R3 924	R 6 522	R 7 503	R 8 484	**R 8 877**	R 10 446	R 11 427	R 12 408
R4 174	R 7 772	R 8 816	R 9 859	**R 10 277**	R 11 946	R 12 989	R 14 033
R4 424	R 9 022	R 10 128	R 11 234	**R 11 677**	R 13 446	R 14 552	R 15 658

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021

Email: admin@bfap.co.za

Eastern Free State

Table 3.3: Income & cost budgets for wheat for Eastern Free State - Irrigation

Area		Eastern Free State: Irrigation
Crop		Wheat
Production System		Irrigation
1) INCOME		
Yield: Deterministic	T/HA	6.00
SAFEX SIMULATED PRICE / PRODUCER PRICE: 2018	R/TON	R3 813
Total deductions	R/TON	R439
- Transport differential	R/TON	R273
- Grade differential	R/TON	R60
- Marketing, handling & statutory levies	R/TON	R107
Price premiums / Canola back-payment (10% of contracted price)	R/TON	R-
Net Farm Gate Price	R/TON	R3 374
GROSS INCOME	**R/HA**	**R20 244**
2) VARIABLE EXPENDITURES		
Contracting	R/HA	R1 073
Crop insurance	R/HA	R1 619
Fertilizer	R/HA	R4 963
Lime	R/HA	R353
Seed	R/HA	R1 560
Fuel	R/HA	R610
Herbicide	R/HA	R120
Insecticide	R/HA	R265
Fungicides	R/HA	R-
Marketing costs	R/HA	R588
Repairs and maintenance	R/HA	R998
Casual labour	R/HA	R231
Irrigation: Water	R/HA	R588
Irrigation: Electricity	R/HA	R1 922
Aerial spray	R/HA	R-
Other expenditure: Scheduling / Irrigation Equipment R&M	R/HA	R-
TOTAL VARIABLE EXPENDITURE	**R/HA**	**R12 381**
TOTAL VARIABLE EXPENDITURE	**R/TON**	**R2 063**
3.1) GROSS MARGIN:	**R/HA**	**R7 863**
3.2) GROSS MARGIN:	**R/TON**	**R1 310**

Source: VKB, GSA & BFAP, 2018

Tel: 012 420 5021
Email: admin@bfap.co.za

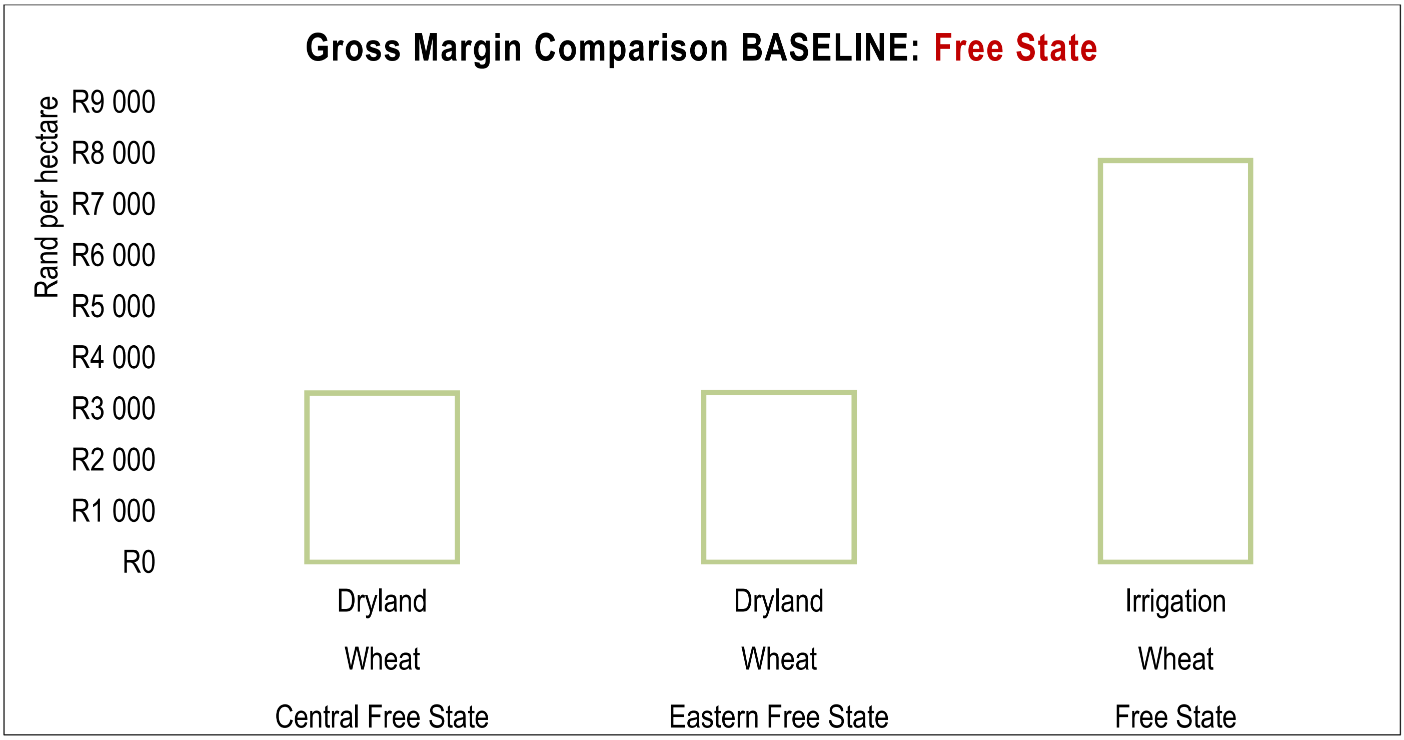

Figure 3.3: Gross margin comparison – Baseline: Limpopo Irrigation

WHEAT SENSITIVITY ANALYSIS (GROSS MARGIN PER HECTARE): FREE STATE IRRIGATION

	YIELD (T/HA)						
PRODUCERS PRICE	5.25	5.50	5.75	**6.00**	6.25	6.50	6.75
R2 374	R 82	R 676	R 1 269	**R 1 863**	R 2 456	R 3 050	R 3 643
R2 624	R 1 395	R 2 051	R 2 707	**R 3 363**	R 4 019	R 4 675	R 5 331
R2 874	R 2 707	R 3 426	R 4 144	**R 4 863**	R 5 581	R 6 300	R 7 018
R3 124	R 4 020	R 4 801	R 5 582	**R 6 363**	R 7 144	R 7 925	R 8 706
R3 374	**R 5 332**	**R 6 176**	**R 7 019**	**R 7 863**	**R 8 706**	**R 9 550**	**R 10 393**
R3 624	R 6 645	R 7 551	R 8 457	**R 9 363**	R 10 269	R 11 175	R 12 081
R3 874	R 7 957	R 8 926	R 9 894	**R 10 863**	R 11 831	R 12 800	R 13 768
R4 124	R 9 270	R 10 301	R 11 332	**R 12 363**	R 13 394	R 14 425	R 15 456
R4 374	R 10 582	R 11 676	R 12 769	**R 13 863**	R 14 956	R 16 050	R 17 143

Notes:

- The cost items reflect the input allocation based on the target yield for the respective crops.
- Although some expenditure items are zero, it is reflected in the budgets to allow for individual inclusion.
- The cost of fuel includes pre-harvest and harvesting costs with the assumption that own machinery is used.
- The costs for wheat, barley & oats seeds reflect a combination of own- and purchased seed.
- It is important to note that overhead costs are not included and should be accounted for.

Tel: 012 420 5021
Email: admin@bfap.co.za