

PART I REPORT- AGRICULTURE

**ASSESSMENT OF SOCIO-ECONOMIC IMPACTS**

*The Proposed Aries-Helios 765kV Transmission Power Line Project,  
Northern Cape Province*



***Prepared for Mokgope Consulting***

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Submitted by

**African Development Economic Consultants (pty) Ltd (ADEC)**

## INTRODUCTION

ADEC has assessed the socio-economic impacts of the proposed 883km, 765kV power line upgrade between the Juno substation in Western Cape Province and the Perseus substation in the Free State. These impacts form one component of an overall Environmental Impact Assessment (EIA) process for the project. The following report focuses on agricultural impacts within the **Aries-Helios section** of the project.

This assessment included a review of ESKOM's proposed project and its indicative CAPEX and operating costs; along with overall power supply, access, and grid efficiency levels along the route of the new power line. The physical ramifications of the proposed upgrade were also reviewed. This information provides a basis for understanding the scope and scale of the proposed power line and substation upgrades.

ADEC identified the possible "Impact Area" and nodes associated with the proposed power line and upgrades; and assessed existing demographic and economic conditions; and business, tourism, and agro-industrial base within the Impact Area and nodes. In Part I of this Socio-Economic Impact Assessment, ADEC analysed and forecasted the impacts of the proposed projects on agriculture, which is the primary economic activity within the Impact Area. This **Part I Report** summarises findings from this ***agricultural impact assessment***.

A subsequent Part II Report will summarise findings on the project's impacts on tourism and other economic activities. Additional analysis of socio-economic impacts related to health and environment will be determined following the Scoping Phase as possible, based on information provided by other members of the consulting team. All of these impacts, along with the Part I impacts on agriculture, are assessed and described for each of the four sections of the power line.

Again, this Phase I Report presents findings from assessment of project impacts on the agricultural sector within the *Aries-Helios Impact Area*. A subsequent report will present findings from analyses of impacts on industry, tourism, and other activities.

## Section 1. PROJECT BACKGROUND

This section presents background information on the proposed project, in terms of its purpose and motivation, geographic location, and physical ramifications. This information provided a basis for understanding the scope and scale of the proposed power line and sub-station upgrades, which in turn informs the analysis of socio-economic impacts.

### Power Line Upgrade Project Scope

Eskom is proposing to construct an 870km<sup>1</sup> 765KV power transmission line between Helios substation near Helios in the Northern Cape to Perseus substation near Boshof in the Free State. This linear power line upgrade development comprises of core electric power infrastructure, ancillary structures, excavation (i.e. earth removal), road and access route construction, and erection of overhead cableways.

### Aries-Helios Section

Three alternative corridors are being considered for the power line. According to Eskom<sup>2</sup>, the power line upgrade is divided into four sections that link five existing substations. The power line corridors pass through towns and informal settlement areas, farm portions, and other land uses. This report focuses on the **Aries-Helios Section** of the power line, as described below.



The Aries – Helios section involves the construction of approximately 175km, 765kV power line and substations upgrade from Aries substation near Kenhardt in the Northern Cape to Helios substation near Loeriesfontein in the Northern Cape Province.

<sup>1</sup> ADEC's calculation, which compares with Eskom's indicated 880 km.

<sup>2</sup> Eskom EIA (environmental Impact Assessment) Applications lodged with authorities in the jurisdictions that the Power Line would pass through.

## **Project Motivation & Objectives**

The proposed power line project is driven by ESKOM's goal to supply reliable power in meeting the increasing needs of electricity users during all time periods. In order to achieve this, ESKOM needs to construct, upgrade, and maintain its infrastructure of transmission power lines and substations. ESKOM has called for strengthening the transmission network in tandem with the growing demand for electricity.

Based on the anticipated growth in demand for electricity in the Western Cape, Northern Cape and Free State Provinces, ESKOM perceives a risk that the demand for electric power will gradually exceed supply. In the event that supply falls short of demand, then the need for load shedding would become inevitable. In order to meet demand and avoid load shedding, ESKOM has identified the need to strengthen the transmission system specifically between the Juno-Helios-Aries-Kronos-Perseus substations through the construction of the proposed 765kV transmission power line and upgrading of the substations.

## **Project Physical Components**

The physical components of ESKOM's power line project include activities central and/or incidental to the proposed power line development under review as part of the EIA (environmental impact assessment) process. These activities constitute the physical components of the project, as summarised below.

### **Electricity Infrastructure**

The project will involve construction of electricity infrastructure between Aries substation and Helios substation. This includes expansion of facilities (e.g. spillage dams, etc.) for the transmission line and upgrading of substations.

### **Roads Access Routes**

Another component of the project will be the development of roads for construction, operation, and maintenance of the proposed power line. Certain existing access routes would also be widened for this purpose.

### **Fuel & Hazardous Material Storage**

The project also involves construction of facilities or infrastructure to store or handle dangerous goods (i.e. petrol, diesel, hazardous matter, etc.). These storage facilities would be built to handle the temporary needs of the project's construction phase.

### **Cableways**

The core power transmission line would utilize aerial (above-ground) cableways to transmit electricity. The cableways would interconnect the substations described above.

### **Communications Facility**

A telecommunication mast would be erected and installed for communication purposes.

### **Land Transformation**

Temporary land transformation would occur at strategic locations during the construction phase of the power line.

### **Land Use Zoning Change**

Zoning for agriculture uses would be changed (to facilitate construction) for those parcels of land located along the route of the proposed power line.

### **Removal of Vegetative Cover**

Vegetation covering five hectares of land would be removed within the transmission corridors to give way for the construction of the proposed power line. Around 75% or more of this vegetative cover is comprised of indigenous plant and fauna. Eskom has noted that significant portions of the Impact Area comprises of dry land with limited flora and fauna.

### **Camps and Associated Project Infrastructure**

Camps and associated project infrastructure may be established to within 32 meters of watercourses. The Impact Area is diverse in terms of geology, hydrology, topography, and other physical characteristics that may impact on where specific project-related activities are located during and after construction.

## **Land Take-Up by Use**

The construction of the power line and associated road works would take up roughly 1,083 hectares of land (power structure and roads) along the 883 km corridor. This estimate is based on standard Eskom servitude requirements (i.e., footprint of 2.126 square metres (or 52.1 metres by 40.8 metres) for a 765kV guyed V suspension power structure). Eskom ordinarily utilizes three types of power structures i.e. 702 B: 765 kV guyed-V tower (52.1 metres by 40.8 metres), 703 B: 765 kV guyed-V tower (52.6 metres by 36.8 metres), and 701 C: Self-Supporting Suspension tower (14.5 metres by 14.5 metres) depending on terrain, altitude and course trajectory. The project's total power line and road works land utilisation are summarised below, with **Aries-Helios** highlighted.

Table 1. POWER LINE &amp; ROAD LAND USE, WESTERN CAPE, NORTHERN CAPE &amp; FREE STATE, 2013

Section	Locality (Province)	Land Take-Up (Hectares)		TOTAL	Share
		Power Structure	Roads		
Helios – Juno	W. Cape & N. Cape	59.7	112.0	171.7	15.9%
Aries – Helios	N. Cape	74.6	140.0	214.6	19.8%
Aries - Kronos	Northern Cape Province	76.7	144.0	220.7	20.4%
Kronos - Perseus	N. Cape & Free State	165.2	310.4	475.6	43.9%
<b>TOTAL</b>		<b>376.2</b>	<b>706.4</b>	<b>1,082.6</b>	<b>100%</b>
Share		34.8%	65.2%		

Note: Based on Eskom typical land utilisation standards as per relevant governing legislation.

Sources: Eskom and African Development Economic Consultants (pty) Ltd.

Road construction would constitute the bulk of land use (65.2% of the total), whilst power structures would utilize around 35% of the total land area. The amount of land used would be directly proportional to the relative distances of the four sections or corridors of the proposed power line. Power structures are interspaced at a distance of 500 metres (i.e. 500 metres from one structure to the next). The Kronos – Perseus Section would account for more than 40% of the total land area, whilst the smallest portion would be comprised by the Helios-Juno Section. The Aries-Helios section would account for 20% of the total. This land utilization estimate forms a basis for determining project impacts on agriculture, in terms of the change in production, value of agricultural produce, and employment.

## Section 2. EXISTING AGRICULTURAL CONDITIONS

This section presents information on the existing agricultural conditions within the region through which the proposed power line will pass. The 10 magisterial districts through which the power line would pass are distributed over three provinces (Vredendal and Vanrynsdorp in Western Cape; Calvinia, Kenhardt, Prieska, Hopetown, Herbert and Kimberly in Northern Cape; and Jacobsdal and Boshof in Free State). Agricultural production and value has been calculated for the individual magisterial districts through which the power line would pass. Similarly, agricultural employment within the Impact Area provinces has been analysed. The **Aries-Helios Section** of the power line passes primarily through the Kenhardt and Calvinia magisterial districts. Existing agricultural conditions in the Aries-Helios section are summarized below.

### Agricultural Land Use and Output

The primary magisterial districts through which the Aries-Helios section of the proposed power line would pass have a total of approximately 8,255 hectares in agricultural production. The region covered by this section produces roughly 52,600 tons of agricultural output per annum. Kenhardt is the more productive of the two primary districts, contributing 86% to this section's production volume in tons. The land use and production characteristics of the primary magisterial districts that comprise the section's Impact Area are presented below whilst a summary of production in the overall region is provided in the Appendix.

#### Kenhardt Magisterial District

Kenhardt has 2,133 hectares of agricultural land producing about 45,000 tons of output. The cultivated land accounts for less than 2% of total agricultural land in the overall Impact Area region. Production represents about 5% of total output. Cultivated land and production are as follows:

**Table 2. CULTIVATED LAND & PRODUCTION, KENHARDT MAGISTERIAL DISTRICT, N. CAPE, 2013**

Product	Land Area		Production	
	Hectares	Share 1/	Tons	Share 1/
Field Crops	42	2.0%	309	0.7%
Winter Cereals	20	0.9%	132	0.3%
Deciduous Fruit & Viticulture	2,051	97.1%	44,552	99.0%
<b>TOTAL</b>	<b>2,113</b>	<b>100.0%</b>	<b>44,993</b>	<b>100.0%</b>
<i>Share of land &amp; production 2/</i>		1.8%		4.5%

Notes: 1/ and 2/, *ibid.*  
Sources: Statistics SA, NDA & ADEC.

The primary agricultural products in this area include deciduous fruit and grapes, and little field crops or winter cereals are produced here. Kenhardt is predominantly a producer of deciduous fruit and grapes.

### Calvinia Magisterial District

Calvinia has 6,000 hectares of farmland that produce around 7,000 to 8,000 tons of agricultural output. Calvinia accounts for 5% of total cultivated land in the broader Impact Area region. Production in this magisterial district is minimal and represents less than 1% of overall Impact Area regional output. Land use and output are summarised below.

**Table 3. CULTIVATED LAND & PRODUCTION, CALVINIA  
MAGISTERIAL DISTRICT, NORTHERN CAPE, 2013**

Product	Land Area		Production	
	Hectares	Share 1/	Tons	Share 1/
Field Crops	180	2.9%	321	4.2%
Winter Cereals	5,954	96.9%	7,155	94.1%
Deciduous Fruit & Viticulture	8	0.1%	124	1.6%
<b>TOTAL</b>	<b>6,142</b>	<b>100.0%</b>	<b>7,601</b>	<b>100.0%</b>
<i>Share of land &amp; production 2/</i>	<i>5.2%</i>		<i>0.8%</i>	

Notes: 1/ and 2/, *ibid.*

Sources: Statistics SA, NDA & ADEC.

Production is dominated by winter cereals, which uses almost 97% of the agricultural land. Negligible amounts of field crops and deciduous fruits & grapes are cultivated in this area. Calvinia is primarily a winter cereal producer, with cereals constituting more than 94% of all crop production.

### Value of Agricultural Product

The two primary magisterial districts in this section produce agricultural output with a total value of about R234.2 million per year. Deciduous fruit and viticulture account for a significant share of this value. Cash value is also generated by winter cereals and other crops. Kenhardt contributes most towards the overall value of agricultural product in the section. A summary of the total value of agricultural output in the region is provided in the Appendix, whilst the value of crops in each of the section's two magisterial districts is highlighted below.



## Kenhardt Magisterial District

Agricultural products cultivated in Kenhardt magisterial district are valued at R226 million, accounted for about 5% of the total value of output in the broader Impact Area region.

**Table 4. AGRICULTURAL VALUE, KENHARDT  
MAGISTERIAL DISTRICT, N. CAPE, 2013**

Product	Value (R'000)	Share 1/
Field Crops	R 275	0.1%
Winter Cereals	R 136	0.1%
Deciduous Fruit & Viticulture	R 225,177	99.8%
<b>TOTAL</b>	<b>R 225,589</b>	<b>100.0%</b>
<i>Share of regional value 2/</i>	4.5%	

Notes: 1/ and 2/, *ibid.*  
Sources: Statistics SA, NDA & ADEC.

Deciduous fruit and viticulture generate nearly all of the agricultural value in this area. The value of field crops and winter cereals is negligible, as they account for a 0.2 % of the agricultural value in the magisterial district.

## Calvinia Magisterial District

Calvinia generates almost R9.0 million in total value of agricultural output per annum. This relatively small amount accounts for less than 1% of the total value of agricultural production in the broader regional Impact Area region. The district's agricultural value is dominated by the winter cereals, which account for over 90% of the value of crops produced in this area. The value of field crops and deciduous fruits is nominal. The magisterial district's values are summarised below.

**Table 5. AGRICULTURAL VALUE, CALVINIA  
MAGISTERIAL DISTRICT, N. CAPE, 2013**

Product	Value (R'000)	Share 1/
Field Crops	R 374	4.3%
Winter Cereals	R 8,049	93.2%
Deciduous Fruit & Viticulture	R 210	2.4%
<b>TOTAL</b>	<b>R 8,634</b>	<b>100.0%</b>
<i>Share of land &amp; production 2/</i>	0.2%	

Notes: 1/ and 2/, *ibid.*  
Sources: Statistics SA, NDA & ADEC.

## Employment Base

Employment and other economic trends were analysed as they relate to the agricultural sector of the broader regional economy. The analysis focuses on the three provinces through which the proposed power line corridors would extend – Western Cape, Northern Cape, and Free State - and compares trends within this region to those nationwide. (The Aries-Helios section is located within the Northern Cape province). This analysis demonstrates that employment fell between 2008 and 2013 within the region, mirroring trends throughout South Africa that have seen the nation buffeted by the global recession, changing technologies, and foreign competition.

## Agricultural Employment

Western Cape has 126,000 formal agricultural jobs, accounting for about 17% of the nation's total formal agricultural employment of 739,000. The Free State, with a reputation as the nation's "Bread Basket," has nearly 90,000 agricultural workers or 12% of the total. Meanwhile, the Northern Cape has about 46,000 agricultural workers, or 6% of South Africa's total.

Nationwide, agricultural employment fell by nearly 120,000 between 2008 and 2012. However, just in recent months, this downward trend appears to have finally reversed, with an increase of 79,000 jobs or 3% during the first quarter of 2013. Agricultural employment growth in the Western Cape has followed the national trend closely, with an increase of 3.1% to date in 2013. However, the Free State has rebounded more quickly, with 1<sup>st</sup>-quarter growth of 9.2%. In contrast, the Northern Cape has remained in negative growth, with the loss of 3,000 agricultural jobs so far in 2013. Overall, the three provinces together lost 44,000 agricultural jobs between 2008 and 2012, accounting for nearly 16% of its total farming employment base.

**Table 6. AGRICULTURE EMPLOYMENT TRENDS, WESTERN CAPE, NORTHERN CAPE & SOUTH AFRICA ('000), 2008 – 2012**

Province	2008	2012	2013 1/	Change 2008-2012		
				Number	Per Cent	Per Year
Western Cape	148	120	126	-28	-18.9%	-4.7%
<b>N. Cape</b>	<b>50</b>	<b>49</b>	<b>46</b>	<b>-1</b>	<b>-2.0%</b>	<b>-0.5%</b>
Free State	80	65	89	-15	-18.8%	-4.7%
Sub-Total	278	234	261	-44	-15.8%	-4.0%
<b>RSA</b>	<b>780</b>	<b>660</b>	<b>739</b>	<b>-120</b>	<b>-15.4%</b>	<b>-3.8%</b>

Note: 1/ First Quarter 2013 (January to March)

Source: Statistics South Africa and African Development Economic Consultants (pty) Ltd.

## **Summary**

Agriculture is the primary economic activity throughout much of the Impact Area for the proposed power line. Within the Aries-Helios magisterial districts through which the power corridor would extend, there is about 8,260 hectares of land in cultivation. A large share of this land is engaged in the cultivation of deciduous fruit and grapes, along with winter cereals.

The value of agricultural product within this section is concentrated in one category – deciduous fruit and viticulture. And, much of this value is concentrated in the Kenhardt area. Thus, agricultural value is highly concentrated in terms of both product and location.

Agricultural employment within the broader region has fallen between 2008 and 2012 in tandem with national economic indicators, partly as a result of global recession. Other factors, including foreign competition and changing technologies that have improved productivity, also impact on employment levels. During the first quarter of 2013, agricultural employment has once again increased within Western Cape and Free State, although Northern Cape's agricultural has lagged in its rebound since the recession.

### Section 3. AGRICULTURAL IMPACTS

The impacts of the proposed power line project on agriculture throughout this section of the Impact Area are presented herein. The impacts were determined based on the amount of land that would be taken out of production as a result of the project, and the resulting loss in agricultural output, value, employment, and income overall and within each of the four sections of the proposed power line corridor.

#### Summary of Project Impacts

The Aries - Helios section would stretch 175km from the Aries substation near Kenhardt in the Northern Cape to Helios substation near Loeriesfontein, also in the Northern Cape. As noted previously, this section would pass through two magisterial districts, namely Calvinia and Kenhardt. The impacts of this corridor on agricultural output, value, employment, and income are summarised below.

**Agricultural Output & Value.** A total of 215 hectares of cultivated land would be taken out of production (due to land used for construction of towers) for *Helios-Juno 765kV Transmission Power Line Project, Western Cape and Northern Cape Provinces*, equivalent to 2 tons of agricultural output. The loss of this output translates into an impact on value of approximately R11,000 per year.

Table 7.                    **AGRICULTURAL IMPACTS  
ARIES - HELIOS SECTION, 2013**

Item	Volume & Value Loss
Hectarage	215
Production (Tons)	2
Rand Value (R'000)	R 11

Sources:                    NDA, Statistics SA & ADEC.

**Employment & Earnings.** There would be no measurable loss of jobs in this section of the corridor, although there would be a slight loss of earnings equivalent to about R5,000 per year. Employment and earnings impacts are summarised below.

**Table 8. AG. EMPLOYMENT IMPACTS, ARIES - HELIOS SECTION, 2013**

<b>Category</b>	<b>Number</b>	<b>Earnings</b>
Skilled	0	R 994
Unskilled	0	R 2,768
Casual & seasonal	0	R 1,029
<b>TOTAL</b>	<b>0</b>	<b>R 4,790</b>

Sources: NDA, Statistics SA & ADEC.

**Caveats.** There are a number of caveats relating to these impact estimates. First and foremost, it must be emphasized that these total impacts are based on average production and value data for the Impact Area and its component magisterial districts. Thus, the data do not represent the specific impacts to any individual farmers, producers, or property owners. No data was collected from individual farmers, producers or property owners for the purposes of this analysis, which lacked scope for more detailed analysis of impacts on individual farms or land holdings. Second, because the impacts are based on averages, they draw from the existing mix of products, output and value assigned based on the survey data collected by Statistics South Africa in its latest Agricultural Census. Thus, the mix of products along the power line corridor represented in these numbers is assumed to be equivalent to the mix of products in 2007 within each of the specific magisterial districts in the Impact Area. Obviously, there would be variation in the amount of land in production, the types of products, output generated, and value of products throughout the power line corridor that may not equate exactly to these factors in the magisterial districts' overall.

## Summary

The construction of the proposed 765kV power line between the Aries and Helios substations would take an estimated **215 hectares** of agricultural land out of cultivation. The reduction in agricultural land would result into a loss of **2 tons** of annual agricultural production, the bulk of which would occur in Kenhardt Magisterial District. The fall in production would result in a total reduction in agricultural value of **R11,000** per annum. Most of this impact would occur in Kenhardt. The reduction in production would result in the loss of the equivalent of less than **one agricultural job**, and there would be the loss of about R5,000 per year in employee earnings spread throughout this section of the Impact Area. These impacts would vary across the area, owing to variation in the amount of land taken out of production, productivity, value, and other variables across the affected magisterial districts. Still, most of the impacts in this section are concentrated in one product category, **deciduous fruits & viticulture**, within one magisterial district: **Kenhardt**.

**APPENDIX TABLES**

Table 1. SUMMARY AGRICULTURAL PRODUCTS AND LAND AREA, MAGISTERIAL DISTRICTS IN IMPACT AREA, 2013

Product	Vredendal		Vanrynsdorp		Calvinia		Kenhardt		Prieska		Hopetown		Herbert		Kimberly		Jacobsdal		Boshof		TOTAL	
	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Ha	Share	Hectares	Share		
Field Crops	178	1.5%	-	0.0%	180	2.9%	42	2.0%	9,380	49.7%	-	0.0%	16,715	55.1%	4,336	58.6%	3,966	54.9%	18,427	65.7%	53,224	44.8%
Winter Cereals	4,279	35.4%	2,708	64.4%	5,954	96.9%	20	0.9%	8,744	46.3%	-	0.0%	12,483	41.1%	4,526	37.8%	1,574	21.8%	3,032	10.8%	43,320	36.5%
Oil seeds	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	20	3.2%	-	0.0%	-	0.0%	381	5.3%	2,939	10.5%	3,340	2.8%
Fodder Crops	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	0	0.0%	-	0.0%	-	0.0%	815	11.3%	612	2.2%	1,427	1.2%
Vegetables	1,010	8.3%	176	4.2%	-	0.0%	-	0.0%	657	3.5%	602	96.8%	1,043	3.4%	-	0.0%	491	6.8%	3,058	10.9%	7,037	5.9%
Citrus Fruit	132	1.1%	5	0.1%	-	0.0%	-	0.0%	-	0.0%	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	137	0.1%
Deciduous Fruit & Viticulture	6,503	53.7%	1,315	31.3%	8	0.1%	2,051	97.1%	108	0.6%	0	0.0%	97	0.3%	111	3.6%	-	0.0%	-	0.0%	10,193	8.6%
<b>TOTAL</b>	<b>12,102</b>	<b>100%</b>	<b>4,204</b>	<b>100%</b>	<b>6,142</b>	<b>100%</b>	<b>2,113</b>	<b>100%</b>	<b>18,889</b>	<b>100%</b>	<b>622</b>	<b>100%</b>	<b>30,338</b>	<b>100%</b>	<b>8,973</b>	<b>100%</b>	<b>7,227</b>	<b>100%</b>	<b>28,068</b>	<b>100%</b>	<b>118,678</b>	<b>100%</b>
Share of Total	10.2%		3.5%		5.2%		1.8%		15.9%		0.5%		25.6%		7.6%		6.1%		23.7%		100.0%	

Note: Land area in hectares for magisterial districts.

Sources: Statistics South Africa, National Department of Agriculture, and African Development Economic Consultants (pty) Ltd.

Table 2. SUMMARY AGRICULTURAL OUTPUT, MAGISTERIAL DISTRICTS IN IMPACT AREA, 2013

Product	Vredendal		Vanrynsdorp		Calvinia		Kenhardt		Prieska		Hopetown		Herbert		Kimberly		Jacobsdal		Boshof		TOTAL	
	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share	Tons	Share
Field Crops	576	0.4%	-	0.0%	321	4.2%	309	0.7%	94,986	52.7%	-	0.0%	127,449	51.6%	29,089	58.6%	20,875	38.9%	61,112	29.0%	334,718	33.4%
Winter Cereals	9,228	5.9%	2,851	10.5%	7,155	94.1%	132	0.3%	56,700	31.5%	-	0.0%	74,852	30.3%	18,756	37.8%	6,320	11.8%	6,977	3.3%	182,970	18.3%
Oil seeds	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	27	0.1%	-	0.0%	-	0.0%	974	1.8%	4,713	2.2%	5,714	0.6%
Fodder Crops	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	12,314	22.9%	1,769	0.8%	14,082	1.4%
Vegetables	36,245	23.4%	3,563	13.1%	-	0.0%	-	0.0%	25,639	14.2%	25,304	99.9%	43,026	17.4%	-	0.0%	13,193	24.6%	136,152	64.6%	283,121	28.3%
Citrus Fruit	4,488	2.9%	65	0.2%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	4,553	0.5%
Decid'sFrt&V'cture	104,576	67.4%	20,676	76.1%	124	1.6%	44,552	99.0%	2,759	1.5%	-	0.0%	1,599	0.6%	1,774	3.6%	-	0.0%	-	0.0%	176,060	17.6%
<b>TOTAL</b>	<b>155,114</b>	<b>100%</b>	<b>27,155</b>	<b>100%</b>	<b>7,601</b>	<b>100%</b>	<b>44,993</b>	<b>100%</b>	<b>180,084</b>	<b>100%</b>	<b>25,331</b>	<b>100%</b>	<b>246,925</b>	<b>100%</b>	<b>49,619</b>	<b>100%</b>	<b>53,675</b>	<b>100%</b>	<b>210,723</b>	<b>100%</b>	<b>1,001,219</b>	<b>100%</b>
Share of Region	15.5%		2.7%		0.8%		4.5%		18.0%		2.5%		24.7%		5.0%		5.4%		21.0%		100.0%	

Note: Total output in tons for magisterial districts

Sources: Statistics South Africa, National Department of Agriculture, and African Development Economic Consultants (pty) Ltd.



Table 3. SUMMARY AGRICULTURAL VALUE BY PRODUCT, MAGISTERIAL DISTRICTS IN IMPACT AREA, 2013

Product	Vredendal		Vanrynsdorp		Calvinia		Kenhardt		Prieska		Hopetown		Herbert		Kimberly		Jacobsdal		Boshof		TOTAL	
	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share	R'000	Share
Field Crops	483	0.1%	0	0.0%	374	4.3%	275	0.1%	129,183	42.4%	0	0.0%	132,567	37.5%	28,353	48.2%	20,875	35.6%	3,056,706	90.9%	3,368,817	66.7%
Winter Cereals	13,198	3.3%	5,452	7.0%	8,049	93.2%	136	0.1%	105,857	34.7%	0	0.0%	122,680	34.7%	27,196	46.3%	6,320	10.8%	12,121	0.4%	301,008	6.0%
Oil seeds	0	0.0%	0	0.0%	0	0.0%	-	0.0%	0	0.0%	156,902	80.6%	0	0.0%	0	0.0%	974	1.7%	15,014	0.4%	172,890	3.4%
Fodder Crops	0	0.0%	0	0.0%	0	0.0%	-	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7,910	13.5%	1,150	0.0%	9,060	0.2%
Vegetables	90,927	22.5%	8,290	10.7%	0	0.0%	-	0.0%	59,583	19.5%	37,886	19.4%	93,285	26.4%	0	0.0%	22,489	38.4%	278,921	8.3%	591,381	11.7%
Citrus Fruit	9,155	2.3%	83	0.1%	0	0.0%	-	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	9,237	0.2%
Dec.Frt&V'culture	290,333	71.8%	63,923	82.2%	210	2.4%	225,177	99.8%	10,240	3.4%	0	0.0%	4,668	1.3%	3,229	5.5%	0	0.0%	0	0.0%	597,780	11.8%
<b>TOTAL</b>	<b>404,096</b>	<b>100%</b>	<b>77,748</b>	<b>100%</b>	<b>8,634</b>	<b>100%</b>	<b>225,589</b>	<b>100%</b>	<b>304,864</b>	<b>100%</b>	<b>194,788</b>	<b>100%</b>	<b>353,199</b>	<b>100%</b>	<b>58,778</b>	<b>100%</b>	<b>58,568</b>	<b>100%</b>	<b>3,363,912</b>	<b>100%</b>	<b>5,050,175</b>	<b>100%</b>
Share of Region	8.0%		1.5%		0.2%		4.5%		6.0%		3.9%		7.0%		1.2%		1.2%		66.6%		100.0%	

Note: Total value of agricultural product for magisterial districts.

Sources: Statistics South Africa, National Department of Agriculture, and African Development Economic Consultants (pty) Ltd.