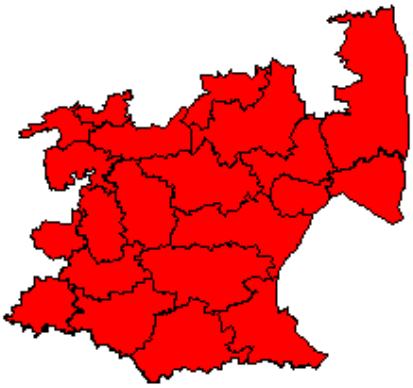
Department of Agriculture & Land Administration
Mpumalanga Province

RESOURCE INFORMATION REPORT: MPUMALANGA



"THE PLACE WHERE THE SUN RISES"

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EXECUTIVE SUMMARY

Mpumalanga is a modern and progressive province situated in the eastern part of South Africa. Mozambique and Swaziland border it in the east, Gauteng in the west, Limpopo (Northern Province) in the north, Free State and KwaZulu-Natal in the south.

The Mpumalanga Province with its capital in Nelspruit occupies an area of 78 370 km^2 or 6.4% of the total area of South Africa. The area has a well-developed network of roads and railways, making it highly accessible. Approximately 3 million people live in the Province, which accounts for 7% of the total RSA population. It has a gross geographic product of over R28 billion which is 8.1% of South Africa's GGP.

Mpumalanga is mainly situated on the high plateau grassland known as the highveld. The highveld stretches for hundreds of kilometers eastwards, until it rises towards mountain peaks and deep valleys of the Escarpment in the north-east. From the escarpment it plunges hundreds of meters down to the low-lying area known as the lowveld.

The climate of Mpumalanga is as diverse as the other natural resources. This is a summer-rainfall area divided by the escarpment into the Highveld with cold frosty winters and moderate summer, and the Lowveld with mild winters and subtropical climate. During winter the Highveld and Escarpment sometimes experience snow. The annual rainfall falls mainly during summer in the form of heavy thundershowers.

The province falls mainly within the Grassland Biome. In the northern part of the province the vegetation changes to that of the Savanna Biome. Small patches of the Forest Biome are found on the Escarpment.

The diverse climate in the province makes the production of a wide variety of crops possible. The lowveld are renown for citrus and sub-tropical fruits, while the highveld produce much of the summer grains, such as maize and grain sorghum. Exotic tree plantations, such as pine, gum and wattles cover most of the hills in the Escarpment.

Mpumalanga has a great historical, scenic and wildlife diversity. Mpumalanga is rated as one of South Africa's popular tourist destinations. The cultural heritage of the province is as diversified as the natural resources. From the Ndebele beadwork and house paintings in the north west to the crafts of the lowveld. Attractions range from game viewing and bird watching, to scenic drives. Hiking trails, a myriad of waterfalls, patches of indigenous forest and a variety of nature reserves are ideal ecotourism opportunities.

Industrial development is closely linked to the abundance of mineral and coal resources within the province. Some of the biggest power stations in the Southern Hemisphere, and SASOL, the petroleum-from-coal instillation is located on the rich coal reserves of the highveld. Steel, vanadium, coal, and gold are some of the mining export of the province. The province produces a large quantity of the exotic timber in South Africa.

GENERAL INFORMATION

Name	Mpumalanga
Geographical Size (Hectare)	7,942,744 ha
Location	28°30' - 32°00'E, 24°00' - 27°30'S
Capital	Nelspruit
Provincial Neighbor(s)	Gauteng, Free State, KwaZulu-Natal and Limpopo
International Neighbor(s)	Mozambique and Swaziland

Map: Location

Map: Infrastructure

AGRICULTURAL INFORMATION

Crop Production

The following crops are produced in Mpumalanga:

Field Crops	
Summer Cereals	Maize, Grain Sorghum
Winter Cereals	Wheat, Barley
Oilseeds	Sunflower Seed, Soy Beans, Groundnuts
Legumes	Dry Beans
Fodder Crops	Lucern, Teff
Other	Sugarcane, Cotton, Tobacco

Horticultural Crops	
Vegetables	Potatoes, Tomatoes, Cabbage, Onion, Carrots, Green Beans, Green Mealies
Citrus	Oranges, Lemons, Grapefruit, Naartjies
Sub-tropical Fruit	Avocados, Pineapples, Bananas, Mangoes, Paw-Paws
Deciduous Fruit	Apples, Pears, Peaches, Plums/Prunes, Table Grapes
Other	Nuts, Coffee and Tea

Livestock Production

Type	**Number**
Cattle	1,072,784
Sheep	1,161,503
Goats	118,553
Pigs	88,480

Type	Number
Horses	14,500
Donkeys & Mules	4,633
Poultry	12,878,884

Source: Stock Census: Mpumalanga (Mpumalanga Veterinary Epidemiology Centre, 1998)

DALA

Infrastructure

Head Office	Nelspruit	Tel: (013) 766 0000
Gert Sibande Regional Office	Ermelo	Tel: (017) 819 2076/9
Ehlanzeni Regional Office	Nelspruit	Tel: (013) 759 4000
Nkangala Office	KwaMhlanga	Tel: (013) 947 2551 947 2586 947 2674

DEMOGRAPHIC INFORMATION

Population

Class	Number	%
African	2,497,834	89.2
Coloured	20,283	0.7
Indian	13,083	0.5
White	253,392	9.0
Other	16,120	0.6
Total	2,800,711	

Gender

Class	Number	%
Male	1,362,028	48.6
Female	1,438,683	51.4

Age Breakdown

Class	Number	%
0-4	326,049	11.6
5-19	973,006	34.7
20-29	515,290	18.4
30-49	635,841	22.7

Class	Number	%
50-64	186,010	6.6
Over 65	115,289	4.1
Age Unknown	49,227	1.8

Employment

Class	Number	%
Employed	605,925	67.1
Unemployed	297,290	32.9

Economic active population amongst those aged 15 - 65 years

LAND UTILISATION

Land Cover

Class	Area (ha)	%
No Data	13	0.0002
Barren rock	951	0.01
Cultivated: permanent - commercial dryland	11,549	0.1
Cultivated: permanent - commercial irrigated	17,551	0.2
Cultivated: permanent - commercial sugarcane	44,635	0.6
Cultivated: temporary - commercial dryland	1,097,875	13.8
Cultivated: temporary - commercial irrigated	117,621	1.5
Cultivated: temporary - semi-commercial/subsistence dryland	95,183	1.2
Degraded: forest and woodland	106,015	1.3
Degraded: thicket & bushland (etc)	12,060	0.2
Degraded: unimproved grassland	16,357	0.2
Dongas & sheet erosion scars	1,586	0.02
Forest	26,932	0.3
Forest and Woodland	1,397,998	17.6
Forest plantations	710,889	9.0
Herbland	7	0.0001
Improved grassland	3,102	0.04
Mines & quarries	47,777	0.6
Thicket & bushland (etc)	827,599	10.4
Unimproved grassland	3,255,611	41.0
Urban / built-up land: commercial	1,077	0.01
Urban / built-up land: industrial / transport	8,380	0.1
Urban / built-up land: residential	87,487	1.1
Urban / built-up land: residential (small holdings: grassland)	4,069	0.1
Waterbodies	40,194	0.5
Wetlands	10,223	0.1

Map: Land Cover

Description: Land Cover

NATURAL RESOURCE INFORMATION

Climate

Rainfall

Annual Rainfall (mm) = < 500 - >1600

Map: Annual Rainfall

Temperature Zones

Mpumalanga is divided into 21 temperature zones.

Map: Temperature Zones

Frost

Frost occurs

Geology

The geological history of South Africa is a long and complex one, which goes back some 3.7 billion years. The keystone on and around which the rest of the geological formations of South Africa have developed is the Kaapvaal Craton, which underlies the northeastern part of the country. It is made up largely of Archaean gneisses and granitoids (Basement Complex), along with lesser volumes of metamorphosed, volcanosedimentary rocks (greenstone belts).

In Mpumalanga the Basement Complex is found in the Lowveld and as scattered patches in the Southern Highveld. This stratum consists of various rocks such as dolerite, granite, gneiss, gabbro, norite, tuff, and shale. The gneiss and granites are weakly mineralised but do host pegmatite minerals (including feldspar, mica, and silica), corundum, graphite, and epigenetic copper and gold in places.

The Barberton Supergroup represents the greenstone belts in Mpumalanga. This stratum is found in the Barberton and northern part of the Eerstehoek districts. The greenstones are economically important, hosting many gold, antimony, copper-zinc, iron, asbestos, talc, mercury, magnesite and gemstone deposits. Rocks found in this stratum are arenite, conglomerate, shale, lava, pyroclastic, lutaceous arenite and volcanic rocks. The Barberton Mountain Land is the most-significant gold-producing greenstone belt in South Africa. A small patch of the Murchison Supergroup is found in the northern part of the Kruger National Park and is a source of antimony. Rocks in this stratum include lava and schist.

Large sedimentary basins of the Kaapvaal Craton hold some of South Africa's richest mineral resources. The sedimentary strata of the Witwatersrand Supergroup and its West Rand Group (lower layers of Witwatersrand Supergroup) and Central Rand Group (upper layers of Witwatersrand Supergroup) are, in Mpumalanga, confined to the Balfour district. This stratum constitutes the world's largest largest repository of gold. They were deposited between 3 074 and 2 714 million years ago. Rocks that typically forms part of this strata are quartzite, conglomerate and shale. The Pongola Supergroup is of similar strata and is found in the Piet Retief and eastern part of the Ermelo districts. This stratum was deposited during the same time period and host gold, through at lower concentrations. Rocks in this stratum include basalt, andesite, quartsite, shale and hornfels.

Volcanic and sedimentary rocks of the Ventersdorp Supergroup, which overlies the Witwatersrand Supergroup, host gold concentrations along parts of their basal contact with the Witwatersrand strata. The Ventersdorp Supergroup is found in the Balfour and small patches in the western part of Standerton district. Rocks found in this stratum include andesite and tuff.

The infilling of the Transvaal basin took place between 2600 and 2100 million years ago to form the Transvaal Sequence. This stratum is located in the north-western part of Mpumalanga, and stretches from Pilgrim's Rest to Delmas.

The Bushveld Complex intruded the Transvaal Supergroup sediments about 2 050 million years ago. The complex covers the northern part of the Northern Highveld. The economic value of this stratum is the significant resources of chrome, platinum, cobalt, copper, nickel, vanadium, tin, flourite, black norite, red syenite, titaniferous magnetite, .uranium, baddeleyite, gold, silver, vermiculite and merchant grade phosphate (apatite).

The Waterberg Group covers a part of the Transvaal Sequence in the Kwamhlanga, Witbank and Middelburg districts. This stratum was formed between 2 050 and 90 million years ago.

The vast Karoo basin, that covers about two-thirds of South Africa, hosts the fluviodeltaic sediments and coals of the extensive Ecca Group. The southern part of Mpumalanga up to the southern half of Witbank, Middelburg, Belfast, the western half of Carolina, Delmas, Kriel, Ermelo, Bethal, Balfour, Standerton, Amersfoort, Volksrust, Wakkerstroom, patches in Piet Retief district are covered by the Ecca Group. Sediments of the Karoo Sequence are also found in the north-western part and on the eastern border of Mpumalanga.

Source: Council for GeoScience, Pretoria

Soils

Broad Soil Patterns

Broad Soil Type	Area (ha)	%
Red, dystrophic and/or mesotrophic (Ab)	442,655	5.6
Red and yellow dystrophic and/or mesotrophic (Ac)	715,216	9.0
Yellow, dystrophic and/or mesotrophic (Ad)	69,891	0.9
Red, high base status > 300 mm deep (no dunes) (Ae)	312,467	3.9
Red and yellow, high base status (Ah)	12,957	0.2
Dystrophic and/or mesotrophic; red soils widespread (Ba)	931,868	11.8
Dystrophic and/or mesotrophic; red soils not widespread (Bb)	1,061,236	13.4
Eutrophic; red soils widespread (Bc)	69,910	0.9
Eutrophic; red soils not widespread (Bd)	139,461	1.8
Plintic catena: upland duplex and/or margalitic soils common (Ca)	280,749	3.5
Duplex soils with red B horizons (Da)	5,174	0.1
Duplex soils with vertic, melanic, and/or red structured diagnostic horizons (Dc)	153,175	1.9
Vertic, melanic, and/or red structured diagnostic horizons (Ea)	1,403,261	17.7
Pedologically young soils (lime rare or absent) (Fa)	938,120	11.9
Pedologically young soils (lime occurs regularly) (Fb)	800,948	10.1
Grey regic sands (Ha)	26,971	0.3

Broad Soil Type	Area (ha)	%
Exposed rock areas with miscellaneous soils (Ib)	531,170	6.7
Expose rock with little or no soil (Ic)	18,741	0.2

Map: Broad Soil Patterns

Description: Broad Soil Patterns

Clay Contents

Class	Area (ha)	%
No Data	1,206	0.02
Very Sandy	589,550	7.4
Sandy	466,838	5.9
Loamy Sand	646,417	8.1
Sandy Loam	1,251,890	15.8
Loam	1,551,089	19.5
Loam & Clay	1,780,319	22.4
Clayey	745,569	9.4
Clay	580,200	7.3
Very Clayey	279,806	3.5
Non-perennial pans	5,545	0.1
Waterbodies	46,555	0.6

Map: Clay Contents

Description: Clay Contents

Soil Depth

Class	Area (ha)	%
No Data	1,193	0.02
Very Deep	1,468,491	18.5
Deep	1,059,825	13.3
Medium Deep	673,625	8.5
Medium Shallow	816,894	10.3
Shallow	1,184,622	14.9
Very Shallow	1,319,146	16.6
Very Steep Slopes	49,884	0.6
Steep Slopes	1,319,204	16.6
Non-perennial pans	5,545	0.1
Waterbodies	46,555	0.6

Map: Soil Depth

Description: Soil Depth

Soil Form Association

Class	Area (ha)	%
No Data	1,193	0.02
Hu-dominant	1,036,767	13.05
Hu, Av, Cv, Gc	867,698	10.92
Av, Gc, We, Cv	623,446	7.85
Lithosols, Hu, Cv, Gc	541,632	6.82
Lithosols, Cv, Gc, Hu	170,928	2.15
Lithosols, Hu, Cv, Sd, Sw	835,081	10.51
Lithosols, Cv, Va	362,526	4.56
Gs, Cf, Es	688,020	8.66
Es, Gs, Cf	192,870	2.43
Hu, Sd, Sw, Gs	454,898	5.73
Hu (30%), Sd (30%)	527,536	6.64
Sd, Bo, My, Ar, Hu	296,572	3.73
Ar, My, Va	486,293	6.12
Ar-dominant	384,909	4.84
Rg, Ar	422,514	5.32
Non-perennial pans	5,545	0.07
Waterbodies	46,555	0.59

Map: Soil Form Associations

Description: Soil Form Associations

Topography

Elevation

Range (m)	Area (ha)	%
0 – 100	280,167	0.04
101 - 200	9,105,438	1.1
201 - 300	71,022,420	8.9
301 - 400	53,091,710	6.7
401 - 500	13,728,200	1.7
501 - 600	4,342,594	0.5
601 - 700	3,782,259	0.5
701 - 800	6,023,598	0.8

Range (m)	Area (ha)	%
801 - 900	16,529,873	2.1
901 - 1000	33,339,913	4.2
1001 - 1100	20,172,048	2.5
1101 - 1200	14,428,618	1.8
1201 - 1300	29,557,654	3.7
1301 - 1400	43,706,105	5.5
1401 - 1500	46,507,778	5.9
1501 - 1600	145,687,015	18.3
1601 - 1700	194,436,132	24.5
1701 - 1800	68,360,830	8.6
1801 - 1900	13,448,032	1.7
1901 - 2000	4,342,594	0.5
2001 - 2100	1,681,004	0.2
2101 - 2200	700,418	0.1

Map: Elevation

Slope

Class	Area (ha)	%
Level (0 - 3%)	3,508,272	44.2
Moderate (4 - 15%)	2,984,810	37.6
Steep (16 - 25%)	599,993	7.6
Very Steep (25+%)	849,669	10.7

Map: Slope

Vegetation

Acocks Veld Types (Acocks, 1975)

Veld Type	Area (ha)	%
I. Coastal Tropical Forest Types	7,467	0.1
Zululand Thornveld (6)	7,467	0.1
II. Inland Tropical Forest Types	783,370	9.9
North-eastern Mountain Sourveld (8)	326,843	4.1
Lowveld Sour Bushveld (9)	456,527	5.7
III. Tropical Bush and Savanna Type (Bushveld)	2,534,429	31.9
Lowveld (10)	1,003,072	12.6
Arid Lowveld (11)	479,140	6.0

Veld Type	Area (ha)	%
Springbok Flats Turf Thornveld (12)	19,832	0.2
Mixed Bushveld (18)	561,064	7.1
Sourish Mixed Bushveld (19)	471,323	5.9
VI. Pure Grassveld Types	2,683,771	33.8
Cymbopogon - Themeda Veld (48)	68,902	0.9
Themeda Veld or Turf Highveld (52)	1,026,970	12.9
Patchy Highveld to Cymbopogon - Themeda Veld Transition (53)	86,695	1.1
Turf Highveld to Highland Sourveld Transition (54)	205,348	2.6
Bankenveld to Turf Highveld Transition (55)	33,076	0.4
Highland Sourveld to Cymbopogon - Themeda Veld Transition (56)	3,112	0.04
North-eastern Sandy Highveld (57)	1,259,669	15.9
VIA. False Grassveld Types	1,934,210	24.4
Bankenveld (61)	1,000,795	12.6
Bankenveld to Sour Sandveld Transition (62)	146,185	1.8
Piet Retief Sourveld (63)	644,171	8.1
Northern Tall Grassveld (64)	138,146	1.7
Southern Tall Grassveld (65)	4,912	0.1

Map: Acocks Veld Types

Water Resources

Drainage Regions

Primary	Secondary	Tertiary	Area	%
A - Limpopo	A2 - Pienaars	A23 - Pienaars River	1,587	0.02
B - Olifants	B1 - Olifants	B11 - Upper Olifants River	471,533	5.9
		B12 - Klein Olifants River	239,085	3.0
	B2 - Wilge	B20 - Wilge River	269,532	3.4
	B3 - Elands	B31 - Elands River	300,841	3.8
		B32 - Moses River	475,219	6.0
	B4 - Steelpoort	B41 - Steelpoort River	400,896	5.1
		B42 - Watervals River	209,151	2.6
	B5 - Arabie	B51 - Arabie	19,492	0.2
	B6 - Blyde	B60 - Blyde River	204,496	2.6
	B7 - Timbavati	B73 - Timbavati River	178,055	2.2
C - Vaal	C1 - Vaal	C11 - Bo-Vaal River	877,534	11.1
		C12 - Vaal-Watervals River	417,908	5.3
		C13 - Klip River	174,304	2.2
	C2 - Suikerbosrand	C21 - Suikerbosrand River	87,602	1.1
V - Tugela	V3 - Slang	V31 - Slang River	34,665	0.4
W - Mfolozi	W4 - Pongola	W42 - Pongola River	137,011	1.7

Primary	Secondary	Tertiary	Area	%
	W5 - Usutu	W51 - Assegaai River	264,972	3.3
		W52 - Hlelo River	87,557	1.1
		W53 - Ngwempisi River	157,536	2.0
		W54 - Usutu River	79,719	1.0
		W55 - Mbuluzi River	166,175	2.1
		W56 - Small Usutu River	27,739	0.3
	W6 - Mbuluzi	W60 - Black Mbuluzi Rive	2,890	0.04
X - Crocodile/Komati	X1 - Komati	X11 - Upper Komati	352,709	4.4
		X12 - Seekoei Spruit	250,836	3.2
		X13 - Komati River	167,241	2.1
		X14 - Lomati River	92,607	1.2
	X2 - Elands	X21 - Elands River	309,110	3.9
		X22 - Nels River	236,642	3.0
		X23 - Shiyalongube River	164,017	2.1
		X24 - Crokodile River	334,819	4.2
	X3 - Sabi	X31 - Sabie River	223,907	2.8
		X32 - Sand River	77,702	1.0
		X33 - Onder Sabie River	144,267	1.8
	X4 - Gudzani	X40 - Gudzani Spruit	298,422	3.8

Map: Water Resources