

# **Mpumalanga Provincial Government**



## **Department of Agriculture and Land Administration**

### **Integrated Resource Information Report**

#### **Emakhazeni**

06 May 2005

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**RESOURCE MANAGEMENT AND LAND USE PLANNING  
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# Emakhazeni

## Summary

Highlands is situated in the central part of Mpumalanga on the transition between the highveld and the escarpment. Major towns in the area are Belfast, Dullstroom, Machadodorp and Waterval Boven. Moderate summers and cold winters characterize the climate of the area. The area of 4 735 km<sup>2</sup> is covered by grassland. Beef and dairy cattle, sheep and maize are the main agricultural products produced in the area. Exotic forest plantations (wattle and pine) covers the steep slopes in the area. The area is renowned for trout fishing. Granite is mined near Belfast.

## GENERAL INFORMATION

Common Name(s)	Belfast / Waterval Boven / Highlands
Area	473,546.0 ha
Coordinates	29°29'23"E 25°12'36"S 30°40'12"E 25°55'47"S
District Municipality	Nkangala District Municipality
Region	Nkangala Region

### Towns

#### Name

Belfast

Dullstroom

Machadodorp

Waterval Boven

### Neighbouring Municipalities

#### Name

Albert Luthuli

Groblersdal

Mbombela

Steve Tshwete

Thaba Chweu



## Natural Resources

### Climate

#### Rainfall

Rainfall Range 550 to 1,100 mm per year

#### Temperature

Temperature Zone 35/14

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	14.2	13.8	10.8	8.9	7.4	10.9	13.9	13.5
Tn	7.5	6.5	4.9	3.6	2.8	5	6.6	7.1
Td	20.9	21.1	16.7	15.2	12	16.9	21.2	19.9
Tmax	24.7	25.3	21.2	17.2	14.6	20.2	25.4	23.6
Tmin	3.2	2.3	1.5	0.6	0.2	1.6	2.4	3.1

Temperature Zone 46/14

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	17.3	16.2	13.4	9.5	7.4	11.3	14.9	16.3
Tn	12.8	11.7	8.6	4.7	2.8	6.7	10.2	11.8
Td	21.8	20.7	18.2	14.3	12	15.9	19.6	20.8
Tmax	24.4	23.3	20.9	17	14.6	22.3	22.3	23.4
Tmin	10.2	9.1	5.8	2	1.7	4.1	7.5	9.2

Temperature Zone 46/25

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
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T	17.3	16.7	15.3	13.1	11.9	14	15.9	16.8
Tn	12.8	12.1	10.5	8.4	7.2	9.5	11.5	12.2
Td	21.8	21.3	20.1	17.8	16.6	18.5	20.3	21.4
Tmax	24.4	23.9	22.8	20.5	19.3	21	22.8	24
Tmin	10.2	9.5	7.8	5.7	4.5	6.3	9	9.6

Temperature Zone 57/14

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	20	17.5	13.8	10	7.4	13.9	17.6	18.9
Tn	17.6	14.8	10.1	5.6	2.7	10.2	14.9	16.2
Td	22.4	20.2	17.5	14.4	12.1	17.6	20.3	21.6
Tmax	23.8	21.7	19.6	16.9	14.8	19.7	21.8	23.2
Tmin	16.2	13.3	8	3.1	0	8.1	13.7	14.7

Temperature Zone 57/25

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	20	19.2	16.9	13.8	11.9	15.7	18	19.3
Tn	17.6	16.5	13.4	9.5	7.2	11.5	15.2	16.6
Td	22.4	21.9	26.4	18.1	16.6	19.9	26.8	22
Tmax	23.8	23.4	22.4	26.6	14.3	22.3	22.4	23.5
Tmin	16.2	14.9	11.4	7.1	4.5	9.1	13.8	15.1

Temperature Zone 57/35

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
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T	20	14.3	17.9	15.5	14.2	16.6	18.7	19.4
Tn	17.6	16.5	13.8	9.5	7.4	11.8	15.2	16.6
Td	22.4	21.1	22	21.5	21	21.4	22.2	22.2
Tmax	23.8	23.7	24.3	24.9	24.9	24.1	24.2	23.8
Tmin	16.2	14.9	11.5	6.1	3.5	9.1	13.2	5

Temperature Zone 57A/25

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	20	19.2	16.9	15.8	11.9	15.7	18	19.3
Tn	17.6	16.5	13.4	9.5	7.2	11.5	15.2	16.6
Td	22.4	21.9	26.4	18.1	16.6	19.9	26.8	22
Tmax	23.8	23.4	22.4	26.6	14.3	22.3	22.4	23.5
Tmin	16.2	14.9	11.4	7.1	4.5	9.1	13.6	15.1

Temperature Zone 67A/35

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
T	21.5	20	17.9	15.6	14.2	18	20.1	20.8
Tn	17.5	15.5	12.6	9.4	7.4	12.7	15.6	16.6
Td	25.5	24.5	23.2	21.8	21	23.7	24.6	25
Tmax	27.8	27.1	26.2	25.3	24.9	26.3	27.2	27.4
Tmin	15.2	12.9	9.6	5.9	3.5	9.7	13	14

Temperature Zone 77/25

	DJF	Mar	Apr	May	JJA	Sep	Oct	Nov
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T	23.5	20.9	17.5	14.2	12	17.6	21	22.2
Tn	17.8	15.4	12.4	9.5	7.2	12.5	15.5	16.9
Td	29.2	26.4	22.6	18.9	16.8	22.7	26.5	27.5
Tmax	32.5	29.5	25.5	21.6	19.5	25.6	29.6	30.5
Tmin	14.5	12.3	9.5	6.8	4.5	9.6	12.4	13.9

T - Average Temperature

Tn - Average Night Temperature

Td - Average Daily Temperature

Tmax - Average Maximum Temperature

Tmin - Average Minimum Temperature

## Soils

### Land Types

Land Type	Area (ha)	%
Dystrophic and/or mesotrophic; red soils not widespread (Bb)	6,446.0	1.4
Dystrophic and/or mesotrophic; red soils widespread (Ba)	66,272.1	14.0
Eutrophic; red soils widespread (Bc)	1,986.5	0.4
Exposed rock areas with miscellaneous soils (Ib)	70,253.1	14.8
Pedologically young soils (lime rare or absent) (Fa)	116,356.1	24.6
Red and yellow dystrophic and/or mesotrophic (Ac)	146,398.2	30.9
Red, dystrophic and/or mesotrophic (Ab)	2,654.0	0.6
Vertic, melanic, and/or red structured diagnostic horizons (Ea)	41,417.1	8.7
Yellow, dystrophic and/or mesotrophic (Ad)	21,762.7	4.6

### Soil Clay Contents

ClayClass	Area (ha)	%
Clay	12,994.6	2.7
Clayey	62,404.6	13.2
Loam	28,706.2	6.1
Loam & Clay	195,773.2	41.3

Loamy Sand	7,735.0	1.6
Non-perennial pans	96.5	0.0
Sandy	13,780.8	2.9
Sandy Loam	118,492.8	25.0
Very Sandy	32,821.8	6.9
Waterbodies	740.3	0.2

### Soil Depth

<b>Soil Depth Class</b>	<b>Area (ha)</b>	<b>%</b>
Deep	58,322.8	12.3
Medium Deep	29,446.2	6.2
Medium Shallow	88,424.4	18.7
Non-perennial pans	96.5	0.0
Shallow	79,890.6	16.9
Steep Slopes	133,694.0	28.2
Very Deep	39,633.5	8.4
Very Shallow	36,503.1	7.7
Very Steep Slopes	6,794.4	1.4
Waterbodies	740.3	0.2

### Soil Form Association

<b>Soil Form Association Class</b>	<b>Area (ha)</b>	<b>%</b>
Ar, My, Va	1,565.0	0.3
Av, Gc, We, Cv	8,552.6	1.8
Hu (30%), Sd (30%)	60,196.6	12.7
Hu, Av, Cv, Gc	37,003.0	7.8
Hu, Sd, Sw, Gs	94,558.6	20.0
Hu-dominant	1,323.9	0.3

Lithosols, Cv, Gc, Hu	2,955.7	0.6
Lithosols, Cv, Va	13,064.6	2.8
Lithosols, Hu, Cv, Gc	70,465.5	14.9
Lithosols, Hu, Cv, Sd, Sw	146,687.1	31.0
Non-perennial pans	96.5	0.0
Rg, Ar	10,878.5	2.3
Sd, Bo, My, Ar, Hu	25,458.2	5.4
Waterbodies	740.3	0.2

## Topography

### Elevation

Range (m)	Area (ha)	%
1101 - 1200	7,565	1.6
1201 - 1300	9,078	1.9
1301 - 1400	12,103	2.6
1401 - 1500	21,181	4.5
1501 - 1600	48,414	10.2
1601 - 1700	92,289	19.5
1701 - 1800	183,064	38.7
1801 - 1900	63,543	13.4
1901 - 2000	22,694	4.8
2001 - 2100	7,565	1.6
2101 - 2200	6,052	1.3

### Slope

Class	Area (ha)	%
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Level (0 - 3%)	94,487	20.
Moderate (4 - 15%)	231,215	48.8
Steep (16 - 25%)	64,473	13.6
Very Steep (25+%)	83,371	17.6

## Vegetation

### Acocks Veld Type (1975)

Acocks Veld Type	Area (ha)	%
Bankenveld (61)	131,299	27.7
Lowveld (10)	17,511	3.7
Lowveld Sour Bushveld (9)	45,671	9.6
Mixed Bushveld (18)	1,226	0.3
North-eastern Sandy Highveld (57)	237,297	50.1
Piet Retief Sourveld (63)	20,446	4.3
Sourish Mixed Bushveld (19)	20,095	4.2

## Water Resources

### Dams

Dam	Primary Drainage Region	River	Capacity
Belfast	Olifants		

### Drainage Regions

Drainage Region / Catchment				
Primary	Secondary	Tertiary	Area	%
Elands	Elands	Elands River	179,864.0	38.0
Komati	Komati	Upper Komati	91,339.0	19.3
Elands	Elands	Moses River	53,240.8	11.2

Olifants	Olifants	Klein Olifants River	4,417.6	0.9
Steelpoort	Steelpoort	Steelpoort River	143,921.9	30.4
Steelpoort	Steelpoort	Watervals River	762.8	0.2

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## Land Utilisation

### Land Cover (1995)

Class	Area (ha)	%
Cultivated: temporary - commercial dryland	51,720.9	10.9
Cultivated: temporary - commercial irrigated	3,188.6	0.7
Forest	1,732.9	0.4
Forest and Woodland	26,134.2	5.5
Forest plantations	52,438.5	11.1
Mines & quarries	1,337.1	0.3
Thicket & bushland (etc)	35,495.9	7.5
Unimproved grassland	298,703.2	63.1
Urban / built-up land: industrial / transport	110.2	0.0
Urban / built-up land: residential	1,324.7	0.3
Waterbodies	1,335.7	0.3
Wetlands	24.3	0.0

### Silos

Silo	Owner	Commodities	Capacity (Ton)
Stoffberg	OTK	Maize (White & Yellow), Soya beans, Sorghum, Sunflower, Wheat	95,077
Wonderfontein	OTK	Maize (White & Yellow), Soya beans, Sunflower	59,077

### Co-operatives

Location	Co-operative
Belfast	OTK
Dulstroom	OTK
Stoffberg	OTK

### Conservation Areas

Name	Authority	Area (ha)
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Dullstroom Nature Reserve  
Rocks Drift Nature Reserve  
Tullach-Mohr Nature Reserve  
Verlorenvallei Nature Reserve      Mpumalanga Parks Board      6060  
Waterval Boven Nature Reserve

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## Demographic Information

### Population Distribution and Dynamics

#### Population Group (Dominant)

	2001	1996
African	38,313	32,389
Coloured	466	187
Indian	105	167
White	4,123	4,008
Total	43,007	37,012

#### Home Language (Dominant)

	2001	1996
Afrikaans	3,983	3,691
English	803	611
IsiNdebele	9,945	7,292
IsiXhosa	275	136
IsiZulu	6,907	5,663
Sepedi	2,987	3,664
Sesotho	2,426	1,210
Setswana	379	90
SiSwati	14,364	13,239
Tshivenda	67	36
Xitsonga	755	651
Other	115	81

#### Place of Birth

	2001	1996
RSA	42,093	

SADC (Excluding RSA)	825
RestAfrica	4
Europe	71
Asia	0
North America	5
Central/South America	5
Australia/New Zealand	3

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### Citizenship

	2001	1996
RSA	42,487	36,827
SADC (Excluding RSA)	476	144
Rest of Africa	0	5
Europe	28	16
Asia	0	0
North America	12	2
Central/South America	4	0
Australia/New Zealand	0	0

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### Demographic Characteristics

#### Age

	2001	1996
Age 0 - 4	4,474	3,658
Age 5 - 14	9,089	8,221
Age 15 - 34	16,114	13,207
Age 35 - 64	11,192	9,027
Age 65+	2,139	2,062

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#### Gender

	<b>Males</b>		<b>Females</b>	
	<b>2001</b>	<b>1996</b>	<b>2001</b>	
0 to 4	2,238	1,838	0 to 4	2,235
5 to 14	4,462	4,021	5 to 14	4,627
15 to 34	8,071	6,594	15 to 34	8,043
35 to 64	5,485	4,612	35 to 64	5,707
Over 65	880	1,020	Over 65	1,258
<b>Total</b>	<b>21,136</b>	<b>18,085</b>	<b>Total</b>	<b>21,870</b>

#### Persons with Disabilities

	<b>2001</b>	<b>1996</b>
Sight	992	1,799
Hearing	380	428
Communication	90	
Physical	848	597
Intellectual	176	173
Emotional	417	
Multiple	394	129

#### Socio-Economic

##### Highest Level of Education

	<b>2001</b>	<b>1996</b>
None	6,553	5,960
Some Primary	4,024	3,182
Complete Primary	1,748	1,540
Secondary	6,926	5,482
Grade12	4,058	2,210
Higher	1,388	721

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Persons Attending Education Institutions

<b>Institution</b>	<b>2001</b>	<b>1996</b>
None	13,591	
Pre-school	424	
School	11,977	
College	59	
Technikon	24	
University	15	
Adult Education Centre	6	
Other	24	

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Economic Active Population

	<b>2001</b>	<b>1996</b>
Employed	11,716	10,807
Unemployed	5,021	3,539
No Economical Active	10,758	
Total Labour Force	16,737	

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Industry

	<b>2001</b>	<b>1996</b>
Agriculture/Forestry/Fishing	3,023	2,858
Community/Social/Personal	1,326	1,011
Construction	653	565
Electricity/Gas/Water	44	92
Financial/Insurance/Real Estate/Business	553	249
Manufacturing	885	1,004
Mining/Quarrying	624	644
Other	0	

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Private Households	1,538	1,519
Transport/Storage/Communication	519	704
Undetermined	973	1,112
Wholesale/Retail	1,582	1,138

### Occupation

	2001	1996
Clerks	706	352
Craft/Trade	1,287	1,137
Elementary	4,549	3,834
Legislators/Senior Officials	348	304
Unspecified/Not Economically Classified	0	
Plant/Machine Operators	1,322	1,209
Professionals	250	485
Service Workers	1,029	783
Agricultural/Fishery	1,052	
Technicians	493	160
Undetermined	683	

### Individual Monthly Income

	2001	1996
None	27,418	17,564
R 1 to R 400	2,837	1,904
R 401 to R 800	6,689	7,679
R 801 to R 1,600	2,815	1,260
R 1,601 to R 3,200	1,806	919
R 3,201 to R 6,400	867	997
R 6,401 to R 12,800	335	150
R 12,801 to R 25,600	138	36

R 25,601 to R 51,200	47	21
R 51,201 to R 102,400	20	11
R 102,401 to R 204,800	28	
R 204,801+	7	

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#### Travel to work

	2001	1996
Bicycle	496	
Bus	1,111	
Car Driver	1,274	
Car Passenger	2,475	
Minibus/Taxi	1,780	
Motorcycle	73	
Train	49	
NA	18,724	
Foot	16,779	
Other	245	

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#### Households and Housing

##### Household Size (Average)

Household Size	2001	1996
1	1,908	
2	1,740	
3	1,360	
4	1,387	
5	1,113	
6	738	
7	535	
8	345	

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9	222
10+	374

#### Dwelling Type (Dominant)

	2001	1996
Formal	6,622	5,549
Informal	848	1,599
Traditional	2,226	1,954
Other	26	47

#### Rooms per Household (Average)

Room(s)	2001	1996
1	1,206	1,741
2	1,403	1,145
3	1,115	1,058
4	2,910	2,605
5	1,023	1,031
6	855	715
7	462	350
8	339	212
9	172	157
10 +	237	185

#### Household Income

	2001	1996
None	1,532	603
R 1 to R 4,800	871	640
R 4,801 to R 9,600	2,743	2,219

R 9,601 to R 19,200	2,496	2,565
R 19,201 to R 38,400	1,713	1,042
R 38,401 to R 76,800	856	438
R 76,801 to R 153,600	426	189
R 153,601 to R 307,200	158	79
R 307,201 to R 614,400	57	6
R 614,401 to R 1,228,800	16	
R 1,228,801 to R 2,457,600	23	
R 2,457,600+	12	

Energy Source for Cooking (Dominant)

	2001	1996
Electricity	3,271	
Gas	138	
Paraffin	493	
Wood	2,101	
Coal	3,619	
Animal Dung	28	
Solar	34	
Other	39	

Energy Source for Lighting (Dominant)

	2001	1996
Electricity	6,984	5,048
Gas	35	44
Paraffin	334	709
Candles	2,311	3,353
Solar	27	
Other	32	0

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**Access to Piped Water (% Households)**

	<b>2001</b>	<b>1996</b>
Dwelling	3,840	4,369
Inside Yard	3,699	2,032
Communal Stand	714	617
Communal Stand 200m+	549	
Borehole	193	432
Spring	24	1,549
Rain Tank	58	111
Dam/Pool/Stagnant Water	291	
River/Stream	271	
Water Vendor	17	
Other	68	66

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**Toilet Facilities (% Households)**

	<b>2001</b>	<b>1996</b>
Flush Toilet	6,687	5,259
Flush Septic Tank	284	
Chemical Toilet	107	
VIP	358	
Pit Latrine	929	2,449
Bucket Latrine	127	68
None	1,231	1,416

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**Telephone Facilities (% Households)**

	<b>2001</b>	<b>1996</b>
Telephone and Cellphone	1,197	
Telephone	1,240	2,162
Cellphone	1,816	

Neighbour	1,339	782
Public Telephone	2,644	2,503
Other Nearby	192	999
Other Not Nearby	319	406
No Access	975	2,319

Refuse Removal (% Households)

	2001	1996
Municipal Weekly	5,962	4,375
Municipal Other	455	263
Communal Dump	103	132
Own Dump	2,521	2,915
No Disposal	683	1,414

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