

# **Mpumalanga Provincial Government**



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

### **Integrated Resource Information Report**

**Govan Mbeki**

06 May 2005

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**RESOURCE MANAGEMENT AND LAND USE PLANNING  
PRIVATE BAG X9019, ERMELO, 2350 TEL: (017) 8115811 FAX: (017) 810 1223**

# Govan Mbeki

## Summary

Highveld East is situated in the western part of Mpumalanga on the highveld. Major towns in the area are Bethal, Secunda, Evander and Leandra. Moderate summers and cold winters characterize the climate of the area. The annual rainfall, which falls mainly during summer, varies between 600 and 750 mm. The area of 2 960 km<sup>2</sup> is covered by grassland. Mixed farming is practiced in the area. Cattle (beef and dairy), sheep, maize, potatoes, sunflower seed and grain sorghum are produced. The various coal and gold mines found in this area resulted in the development of many industries, most notably the SASOL oil-from-coal plant next to Secunda.

## GENERAL INFORMATION

|                       |   |
|-----------------------|---|
| Common Name(s)        | Bethal / Highveld Ridge                     |
| Area                  | 295,897.0 ha                                |
| Coordinates           | 28°45'36"E 26°10'12"S 29°37'47"E 26°44'23"S |
| District Municipality | Gert Sibande District Municipality          |
| Region                | Gert Sibande Region                         |

## Towns

### Name

Bethal  
Evander  
Kinross  
Leandra  
Secunda  
Trichardt

## Neighbouring Municipalities

### Name

Delmas  
Dipaleseng  
Emalahleni

Lekwa  
Msukaligwa  
Steve Tshwete

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## Natural Resources

### Climate

#### Rainfall

Rainfall Range 600 to 750 mm per year

#### Temperature

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 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 |

T - Average Temperature

Tn - Average Night Temperature

Td - Average Daily Temperature

Tmax - Average Maximum Temperature

Tmin - Average Minimum Temperature

### Soils

#### Land Types

| <b>Land Type</b>   | <b>Area (ha)</b> | <b>%</b> |
|--|------------------|----------|
| Duplex soils with vertic, melanic, and/or red structured diagnostic horizo | 6,347.9          | 2.1      |
| Dystrophic and/or mesotrophic; red soils not widespread (Bb)               | 73,398.4         | 24.8     |
| Pedologically young soils (lime rare or absent) (Fa)                       | 5,098.3          | 1.7      |
| Red, dystrophic and/or mesotrophic (Ab)                                    | 5,134.4          | 1.7      |
| Vertic, melanic, and/or red structured diagnostic horizons (Ea)            | 205,621.1        | 69.5     |

### Soil Clay Contents

| <b>ClayClass</b>   | <b>Area (ha)</b> | <b>%</b> |
|--------------------|------------------|----------|
| Clay               | 58,715.4         | 19.8     |
| Clayey             | 57,524.4         | 19.4     |
| Loam               | 54,637.2         | 18.5     |
| Loam & Clay        | 12,589.1         | 4.3      |
| Loamy Sand         | 59.6             | 0.0      |
| Non-perennial pans | 63.3             | 0.0      |
| Sandy              | 478.5            | 0.2      |
| Sandy Loam         | 17,880.1         | 6.0      |
| Very Clayey        | 92,110.9         | 31.1     |
| Very Sandy         | 91.3             | 0.0      |
| Waterbodies        | 1,747.5          | 0.6      |

### Soil Depth

| <b>Soil Depth Class</b> | <b>Area (ha)</b> | <b>%</b> |
|-------------------------|------------------|----------|
| Deep                    | 55,979.6         | 18.9     |
| Medium Deep             | 55,072.4         | 18.6     |
| Medium Shallow          | 90.5             | 0.0      |
| Non-perennial pans      | 63.3             | 0.0      |
| Shallow                 | 138,908.7        | 46.9     |

|              |          |      |
|--------------|----------|------|
| Steep Slopes | 117.6    | 0.0  |
| Very Deep    | 36,869.2 | 12.5 |
| Very Shallow | 7,048.3  | 2.4  |
| Waterbodies  | 1,747.5  | 0.6  |

#### Soil Form Association

| Soil Form Association Class | Area (ha) | %    |
|-----------------------------|-----------|------|
| Ar, My, Va                  | 41,555.7  | 14.0 |
| Ar-dominant                 | 119,238.9 | 40.3 |
| Av, Gc, We, Cv              | 53,641.0  | 18.1 |
| Hu, Av, Cv, Gc              | 12,144.0  | 4.1  |
| Hu, Sd, Sw, Gs              | 188.4     | 0.1  |
| Hu-dominant                 | 3,739.7   | 1.3  |
| Lithosols, Cv, Va           | 5,592.6   | 1.9  |
| Lithosols, Hu, Cv, Gc       | 90.5      | 0.0  |
| Lithosols, Hu, Cv, Sd, Sw   | 1,543.4   | 0.5  |
| Non-perennial pans          | 63.3      | 0.0  |
| Rg, Ar                      | 56,352.3  | 19.0 |
| Waterbodies                 | 1,747.5   | 0.6  |

#### Topography

##### Elevation

| Range (m)   | Area (ha) | %    |
|-------------|-----------|------|
| 1501 - 1600 | 75,722    | 25.6 |
| 1601 - 1700 | 220,175   | 74.4 |

##### Slope

| Class | Area (ha) | % |
|-------|-----------|---|
|-------|-----------|---|

|                    |         |      |
|--------------------|---------|------|
| Level (0 - 3%)     | 210,882 | 71.3 |
| Moderate (4 - 15%) | 85,015  | 28.7 |

## Vegetation

### Acocks Veld Type (1975)

| Acocks Veld Type                   | Area (ha) | %    |
|------------------------------------|-----------|------|
| Bankenveld (61)                    | 16,744    | 5.7  |
| Themeda Veld or Turf Highveld (52) | 279,154   | 94.3 |

## Water Resources

### Dams

| Dam              | Primary Drainage Region | River | Capacity |
|------------------|-------------------------|-------|----------|
| Bossiesspruit    | Vaal                    |       |          |
| Trichardsfontein | Vaal                    |       |          |

### Drainage Regions

| Drainage Region / Catchment |               |                      |           |      |
|-----------------------------|---------------|----------------------|-----------|------|
| Primary                     | Secondary     | Tertiary             | Area      | %    |
| Olifants                    | Olifants      | Upper Olifants River | 101,775.6 | 34.4 |
| Wilge                       | Wilge         | Wilge River          | 14,346.0  | 4.8  |
| Suikerbosrand               | Suikerbosrand | Suikerbosrand River  | 15,001.3  | 5.1  |
| Vaal                        | Vaal          | Bo-Vaal River        | 48,206.5  | 16.3 |
| Vaal                        | Vaal          | Vaal-Watervals Rive  | 116,567.9 | 39.4 |

## Land Utilisation

### Land Cover (1995)

| <b>Class</b>   | <b>Area (ha)</b> | <b>%</b> |
|--|------------------|----------|
| Cultivated: temporary - commercial dryland                     | 98,949.6         | 33.4     |
| Cultivated: temporary - commercial irrigated                   | 283.3            | 0.1      |
| Forest plantations   | 1,045.2          | 0.4      |
| Improved grassland   | 617.6            | 0.2      |
| Mines & quarries   | 4,280.0          | 1.4      |
| Thicket & bushland (etc)                                       | 166.3            | 0.1      |
| Unimproved grassland   | 179,662.7        | 60.7     |
| Urban / built-up land: commercial                              | 89.2             | 0.0      |
| Urban / built-up land: industrial / transport                  | 1,912.7          | 0.6      |
| Urban / built-up land: residential                             | 5,606.3          | 1.9      |
| Urban / built-up land: residential (small holdings: grassland) | 201.6            | 0.1      |
| Waterbodies  | 1,934.7          | 0.7      |
| Wetlands   | 1,147.9          | 0.4      |

### Silos

| <b>Silo</b> | <b>Owner</b> | <b>Commodities</b>                                     | <b>Capacity (Ton)</b> |
|-------------|--------------|--|-----------------------|
| Bethal      | OTK          | Maize (White & Yellow), Sunflower                      | 142,308               |
| Kinross     | OTK          | Maize (White & Yellow), Soya beans, Sorghum, Sunflower | 36,538                |
| Leslie      | OTK          | Maize (White & Yellow), Soya beans, Sorghum, Sunflower | 106,077               |
| Trichardt   | OTK          | Maize (White & Yellow), Soya beans, Sorghum, Sunflower | 40,769                |

### Co-operatives

| <b>Location</b> | <b>Co-operative</b> |
|-----------------|---------------------|
| Bethal          | OTK                 |
| Kinross         | OTK                 |
| Leslie          | OTK                 |

Conservation Areas

| <b>Name</b> | <b>Authority</b> | <b>Area (ha)</b> |
|-------------|------------------|------------------|
| No Records  |                  |                  |

## Demographic Information

### Population Distribution and Dynamics

#### Population Group (Dominant)

|          | 2001    | 1996    |
|----------|---------|---------|
| African  | 185,456 | 164,491 |
| Coloured | 2,366   | 2,390   |
| Indian   | 2,055   | 2,402   |
| White    | 31,870  | 38,488  |
| Total    | 221,747 | 209,659 |

#### Home Language (Dominant)

|            | 2001    | 1996   |
|------------|---------|--------|
| Afrikaans  | 30,339  | 35,801 |
| English    | 6,518   | 7,410  |
| IsiNdebele | 19,427  | 15,332 |
| IsiXhosa   | 15,997  | 14,974 |
| IsiZulu    | 111,684 | 99,194 |
| Sepedi     | 5,244   | 4,710  |
| Sesotho    | 14,598  | 12,903 |
| Setswana   | 1,900   | 1,142  |
| SiSwati    | 9,250   | 8,503  |
| Tshivenda  | 835     | 715    |
| Xitsonga   | 5,095   | 4,875  |
| Other      | 862     | 1,191  |

#### Place of Birth

|     | 2001    | 1996 |
|-----|---------|------|
| RSA | 215,765 |      |

|                       |       |
|-----------------------|-------|
| SADC (Excluding RSA)  | 5,170 |
| RestAfrica            | 92    |
| Europe                | 580   |
| Asia                  | 87    |
| North America         | 7     |
| Central/South America | 42    |
| Australia/New Zealand | 3     |

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### Citizenship

|                       | 2001    | 1996    |
|-----------------------|---------|---------|
| RSA                   | 218,671 | 204,660 |
| SADC (Excluding RSA)  | 2,784   | 4,108   |
| Rest of Africa        | 29      | 30      |
| Europe                | 201     | 225     |
| Asia                  | 87      | 19      |
| North America         | 6       | 7       |
| Central/South America | 25      | 48      |
| Australia/New Zealand | 4       | 2       |

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### Demographic Characteristics

#### Age

|             | 2001   | 1996   |
|-------------|--------|--------|
| Age 0 - 4   | 21,670 | 20,759 |
| Age 5 - 14  | 42,620 | 39,706 |
| Age 15 - 34 | 84,517 | 82,880 |
| Age 35 - 64 | 66,438 | 58,129 |
| Age 65+     | 6,503  | 5,711  |

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#### Gender

|              | <b>Males</b>   |                | <b>Females</b> |                |
|--------------|----------------|----------------|----------------|----------------|
|              | <b>2001</b>    | <b>1996</b>    | <b>2001</b>    |                |
| 0 to 4       | 10,705         | 10,204         | 0 to 4         | 10,965         |
| 5 to 14      | 21,124         | 19,590         | 5 to 14        | 21,496         |
| 15 to 34     | 42,312         | 43,482         | 15 to 34       | 42,205         |
| 35 to 64     | 35,577         | 33,830         | 35 to 64       | 30,861         |
| Over 65      | 2,601          | 2,340          | Over 65        | 3,902          |
| <b>Total</b> | <b>112,319</b> | <b>109,446</b> | <b>Total</b>   | <b>109,429</b> |

#### Persons with Disabilities

|               | <b>2001</b> | <b>1996</b> |
|---------------|-------------|-------------|
| Sight         | 4,737       | 9,369       |
| Hearing       | 2,471       | 2,752       |
| Communication | 349         |             |
| Physical      | 2,844       | 2,612       |
| Intellectual  | 793         | 723         |
| Emotional     | 1,318       |             |
| Multiple      | 1,271       | 754         |

#### Socio-Economic

##### Highest Level of Education

|                  | <b>2001</b> | <b>1996</b> |
|------------------|-------------|-------------|
| None             | 22,382      | 24,685      |
| Some Primary     | 22,514      | 19,589      |
| Complete Primary | 9,029       | 9,478       |
| Secondary        | 43,132      | 40,300      |
| Grade12          | 28,829      | 19,223      |
| Higher           | 10,139      | 7,128       |

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Persons Attending Education Institutions

| <b>Institution</b>     | <b>2001</b> | <b>1996</b> |
|------------------------|-------------|-------------|
| None                   | 22,379      |             |
| Pre-school             | 2,833       |             |
| School                 | 52,865      |             |
| College                | 741         |             |
| Technikon              | 722         |             |
| University             | 299         |             |
| Adult Education Centre | 136         |             |
| Other                  | 167         |             |

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Economic Active Population

|                      | <b>2001</b> | <b>1996</b> |
|----------------------|-------------|-------------|
| Employed             | 60,681      | 67,172      |
| Unemployed           | 40,189      | 28,172      |
| No Economical Active | 50,746      |             |
| Total Labour Force   | 100,870     |             |

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Industry

|  | <b>2001</b> | <b>1996</b> |
|--|-------------|-------------|
| Agriculture/Forestry/Fishing             | 3,269       | 3,414       |
| Community/Social/Personal                | 8,038       | 6,062       |
| Construction                             | 3,617       | 2,889       |
| Electricity/Gas/Water                    | 514         | 1,048       |
| Financial/Insurance/Real Estate/Business | 3,331       | 1,755       |
| Manufacturing                            | 10,276      | 9,130       |
| Mining/Quarrying                         | 12,062      | 20,018      |
| Other                                    | 0           |             |

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|                                 |       |       |
|---------------------------------|-------|-------|
| Private Households              | 6,287 | 7,119 |
| Transport/Storage/Communication | 1,697 | 2,343 |
| Undetermined                    | 3,387 | 7,471 |
| Wholesale/Retail                | 8,193 | 6,078 |

### Occupation

|   | 2001   | 1996   |
|---|--------|--------|
| Clerks                                  | 6,814  | 4,089  |
| Craft/Trade                             | 12,345 | 11,926 |
| Elementary                              | 15,351 | 18,809 |
| Legislators/Senior Officials            | 2,316  | 2,731  |
| Unspecified/Not Economically Classified | 0      |        |
| Plant/Machine Operators                 | 8,267  | 10,371 |
| Professionals                           | 3,814  | 4,550  |
| Service Workers                         | 4,453  | 4,677  |
| Agricultural/Fishery                    | 763    |        |
| Technicians                             | 4,106  | 2,557  |
| Undetermined                            | 2,447  |        |

### Individual Monthly Income

|                      | 2001    | 1996   |
|----------------------|---------|--------|
| None                 | 148,530 | 91,533 |
| R 1 to R 400         | 9,838   | 5,432  |
| R 401 to R 800       | 18,602  | 29,500 |
| R 801 to R 1,600     | 15,297  | 12,347 |
| R 1,601 to R 3,200   | 12,275  | 8,272  |
| R 3,201 to R 6,400   | 8,339   | 11,036 |
| R 6,401 to R 12,800  | 5,763   | 3,136  |
| R 12,801 to R 25,600 | 2,240   | 689    |

|                        |     |     |
|------------------------|-----|-----|
| R 25,601 to R 51,200   | 480 | 328 |
| R 51,201 to R 102,400  | 215 | 116 |
| R 102,401 to R 204,800 | 114 |     |
| R 204,801+             | 53  |     |

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#### Travel to work

|               | 2001    | 1996 |
|---------------|---------|------|
| Bicycle       | 2,335   |      |
| Bus           | 12,942  |      |
| Car Driver    | 14,353  |      |
| Car Passenger | 11,538  |      |
| Minibus/Taxi  | 19,324  |      |
| Motorcycle    | 750     |      |
| Train         | 258     |      |
| NA            | 107,735 |      |
| Foot          | 51,921  |      |
| Other         | 591     |      |

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#### Households and Housing

##### Household Size (Average)

| Household Size | 2001   | 1996 |
|----------------|--------|------|
| 1              | 12,311 |      |
| 2              | 12,174 |      |
| 3              | 10,636 |      |
| 4              | 9,997  |      |
| 5              | 6,708  |      |
| 6              | 4,125  |      |
| 7              | 2,447  |      |
| 8              | 1,286  |      |

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|     |       |
|-----|-------|
| 9   | 844   |
| 10+ | 1,185 |

Dwelling Type (Dominant)

|             | 2001   | 1996   |
|-------------|--------|--------|
| Formal      | 36,413 | 25,501 |
| Informal    | 23,687 | 21,357 |
| Traditional | 1,422  | 1,503  |
| Other       | 192    | 147    |

Rooms per Household (Average)

| Room(s) | 2001   | 1996   |
|---------|--------|--------|
| 1       | 10,544 | 7,421  |
| 2       | 9,447  | 6,167  |
| 3       | 8,629  | 5,989  |
| 4       | 12,192 | 10,267 |
| 5       | 7,363  | 6,498  |
| 6       | 6,116  | 5,077  |
| 7       | 3,489  | 3,198  |
| 8       | 1,943  | 1,760  |
| 9       | 948    | 1,238  |
| 10 +    | 1,043  | 826    |

Household Income

|                    | 2001   | 1996  |
|--------------------|--------|-------|
| None               | 14,623 | 5,882 |
| R 1 to R 4,800     | 4,764  | 1,851 |
| R 4,801 to R 9,600 | 10,044 | 4,957 |

|                            |        |       |
|----------------------------|--------|-------|
| R 9,601 to R 19,200        | 12,721 | 9,655 |
| R 19,201 to R 38,400       | 10,240 | 6,216 |
| R 38,401 to R 76,800       | 5,958  | 3,795 |
| R 76,801 to R 153,600      | 5,021  | 2,769 |
| R 153,601 to R 307,200     | 2,999  | 1,499 |
| R 307,201 to R 614,400     | 832    | 137   |
| R 614,401 to R 1,228,800   | 184    |       |
| R 1,228,801 to R 2,457,600 | 124    |       |
| R 2,457,600+               | 70     |       |

#### Energy Source for Cooking (Dominant)

|             | <b>2001</b> | <b>1996</b> |
|-------------|-------------|-------------|
| Electricity | 23,422      |             |
| Gas         | 1,093       |             |
| Paraffin    | 13,305      |             |
| Wood        | 1,134       |             |
| Coal        | 21,898      |             |
| Animal Dung | 611         |             |
| Solar       | 119         |             |
| Other       | 133         |             |

#### Energy Source for Lighting (Dominant)

|             | <b>2001</b> | <b>1996</b> |
|-------------|-------------|-------------|
| Electricity | 42,556      | 25,726      |
| Gas         | 137         | 149         |
| Paraffin    | 2,573       | 2,936       |
| Candles     | 16,153      | 20,084      |
| Solar       | 70          |             |
| Other       | 225         | 0           |

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

|                         | <b>2001</b> | <b>1996</b> |
|-------------------------|-------------|-------------|
| Dwelling                | 21,074      | 25,374      |
| Inside Yard             | 23,266      | 11,651      |
| Communal Stand          | 8,164       | 10,255      |
| Communal Stand 200m+    | 7,189       |             |
| Borehole                | 433         | 1,158       |
| Spring                  | 18          | 153         |
| Rain Tank               | 69          | 330         |
| Dam/Pool/Stagnant Water | 92          |             |
| River/Stream            | 86          |             |
| Water Vendor            | 58          |             |
| Other                   | 1,265       | 148         |

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**Toilet Facilities (% Households)**

|                   | <b>2001</b> | <b>1996</b> |
|-------------------|-------------|-------------|
| Flush Toilet      | 41,525      | 35,704      |
| Flush Septic Tank | 625         |             |
| Chemical Toilet   | 162         |             |
| VIP               | 638         |             |
| Pit Latrine       | 6,539       | 4,829       |
| Bucket Latrine    | 6,537       | 4,468       |
| None              | 5,688       | 4,052       |

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**Telephone Facilities (% Households)**

|                         | <b>2001</b> | <b>1996</b> |
|-------------------------|-------------|-------------|
| Telephone and Cellphone | 8,561       |             |
| Telephone               | 4,508       | 14,317      |
| Cellphone               | 13,109      |             |

|                  |        |        |
|------------------|--------|--------|
| Neighbour        | 2,345  | 1,011  |
| Public Telephone | 28,679 | 26,865 |
| Other Nearby     | 1,769  | 2,179  |
| Other Not Nearby | 900    | 1,237  |
| No Access        | 1,843  | 3,241  |

Refuse Removal (% Households)

|                  | 2001   | 1996   |
|------------------|--------|--------|
| Municipal Weekly | 50,842 | 38,476 |
| Municipal Other  | 1,121  | 771    |
| Communal Dump    | 268    | 1,645  |
| Own Dump         | 7,618  | 4,930  |
| No Disposal      | 1,865  | 2,780  |

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