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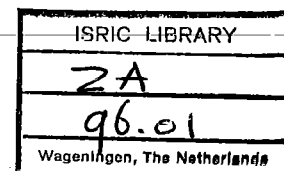


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# REPORT

for

ESKOM  
P.O. BOX 1091  
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Report Number GW/A/96/52

## POTENTIAL FOR DRY LAND CROP PRODUCTION OF THE GAUTENG STUDY AREA AND SOIL POTENTIAL FOR IRRIGATION OF THE KANGWANE STUDY AREA

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**Annexure 1: TABLES FOR EACH LAND TYPE CONTAINING INFORMATION REGARDING POTENTIAL FOR DRY LAND CROP PRODUCTION OF THE PHOEBUS - VULCAN STUDY AREA IN GAUTENG**

**Annexure 2: TABLES FOR EACH LAND TYPE CONTAINING INFORMATION REGARDING SOIL POTENTIAL FOR IRRIGATION OF THE ARNOT/CAMDEN - MAPUTO STUDY AREA IN KANGWANE**

## **1. TERMS OF REFERENCE**

The Institute for Soil, Climate and Water (ISCW) was approached by ESKOM to supply a map and digital information on potential for dry land crop production of the Phoebus - Vulcan study area in Gauteng, and potential for irrigation of the Arnot/Camden - Maputo study area in Kangwane. The study areas were supplied by ESKOM as a ReGis file.

## **2. INTRODUCTION**

Use was made of land type data. The national Land Type Survey, which has been carried out by the ISCW at a scale of 1:250 000, is a country-wide inventory of the soil, terrain and climate resources of South Africa. Each of the 69 maps which comprise South Africa, is divided into many land types, each of which can be defined as an area of land which differs significantly from all of the surrounding land types in terms of one or more of soil pattern, terrain type and macroclimate.

## **3. METHODOLOGY**

In order to classify each land type in terms of its dryland crop production potential or soil potential for irrigation, computer algorithms were developed which take into account the various soil types occurring within a specific land type, the soil properties which affect potential (such as soil form, depth, texture, drainage and structure), the occurrence of rock, dominant slopes and mean annual rainfall in the case of potential for dry land crop production. Categories employed for these parameters are set out below.

### **3.1 Soil type categories**

All the soils occurring in a land type are assigned by the algorithm to a specific soil category, depending on the soil form and series. The fifteen categories employed group together similar soils for the purposes of agricultural potential, with the lowest number referring to the soil category with the highest potential and *vice versa*. These categories are as follows:

- 1 Soils with humic topsoil horizons.
- 2 Freely drained structureless soils.
- 3 Red or yellow structureless soils with a plinthic horizon.
- 4 Excessively drained sandy soils.
- 5 Dark clay soils which are not strongly swelling.
- 6 Swelling clay soils.
- 7 Soils with a pedocutanic (blocky structured) horizon.
- 8 Imperfectly drained soils, often shallow and often with a plinthic horizon.
- 9 Podzols.
- 10 Poorly drained dark clay soils which are not strongly swelling.
- 11 Poorly drained swelling clay soils.
- 12 Dark clay soils, often shallow, on hard or weathering rock.

- 13 Lithosols (shallow soils on hard/weathering rock).
- 14 Duplex soils (where a sandy topsoil abruptly overlies a clayey, structured subsoil), often poorly drained.
- 15 Non-soil land classes (rock, erosion, wetlands and disturbed land).

### 3.2 Sub-categories

The soil categories were split on basis of leaching status into sub-categories which are defined below.

Leaching status refers to the amount of bases (nutrients) which have been removed from the soil by percolating rain water. Degree of leaching is usually a function of either the parent material (which determines the amounts available) and/or the climate (which determines the rate of leaching).

- a Dystrophic (highly leached) soils.
- b Dystrophic to mesotrophic soils.
- c Mesotrophic (moderately leached) soils.
- d Mesotrophic to eutrophic soils.
- e Eutrophic (weakly leached) soils.
- f Non-calcareous (undifferentiated dystrophic to eutrophic) soils.
- g Calcareous soils (containing lime).

### 3.3 Allocation of soils to categories and sub-categories

Soil forms and series were allocated to soil categories and sub-categories according to Table 1.

Table 1. Soil forms and series allocated to categories and sub-categories.

	a	c	e	f	g
Category 1	All humic soils				
Category 2	Hu10 Cv10 Gf10 Sd Oa	Hu20 Cv20 Gf20 Sd10	Hu30 Cv30 Gf30 Sd20	Oa10, 30	Hu40 Cv40  Sd30 Oa20, 40
Category 3	Av10 Gc10 Bv10 Pn10	Av20 Gc20 Bv20 Pn20	Av30 Gc30 Bv30 Pn30		

	a	c	e	f	g
Category 4	Sp Ct Vf Fw Du			Sp10, 20 Ct10, 20 Vf10, 20 Fw10, 20 Du10	Vf30, 40
Category 5	Ar			Ar10, 30	Ar20, 40
Category 6	Bo Ik Tk			Bo10, 30 Ik10 Tk10	Bo20,40 Ik20 Tk20
Category 7	Va Sw			Va10, 30 Sw10, 30	Va20, 40 Sw20, 40
Category 8	We Cf Lo Wa Kd			all all all all Kd10, 15	Kd20, 22
Category 9	Lt Hh			all all	
Category 10	Wo			Wo10	Wo20
Category 11	Rg			Rg10	Gr20
Category 12	My Mw			My10 Mw10	My20 Mw20
Category 13	Ms Gs			Ms10 Gs10	Ms20 Gs20
Category 14	Es Ss Kd			all all Kd16, 19	
Category 15	Ch Fw Ka R, P, S			all Fw30+ all	

Explanation of symbols R, P and S in Table 1:

R - Solid rock.

P - Pans. These are depressions, often wet, from which there is no surface

drainage.

S - River and stream beds.

### 3.4 Rating of categories and sub-categories

A numeric value on a scale of 1 to 10 was allocated to each category and sub-category for potential for dryland crop production and soil potential for irrigation as set out in Table 2 and Table 3 respectively. This value is an indication of the suitability of the soil for dry land crop production and for irrigation. Dashes indicate non-applicable sub-categories.

Table 2. Values assigned for the rating of soils to derive soil potential for dryland crop production in terms of soil categories and sub-categories.

	a	b	c	d	e	f	g
2	9	10	10	9	8	8	7
3	8	9	10	9	8	7	-
4	-	-	-	-	-	5	4
5	-	-	-	-	-	6	5
6	-	-	-	-	-	5	4
7	-	-	-	-	-	4	3
8	-	-	-	-	-	4	-
9	-	-	-	-	-	3	-
10	-	-	-	-	-	4	3
11	-	-	-	-	-	3	2
12	-	-	-	-	-	3	2
13	-	-	-	-	-	2	1
14	-	-	-	-	-	1	-
15	-	-	-	-	-	0	-

Table 3. Values assigned for the rating of soils to derive soil potential for irrigation in terms of soil categories and sub-categories

	a	b	c	d	e	f	g
2	10	10	10	10	10	-	6
3	6	6	6	6	6	-	-
4	-	-	-	-	-	4	3
5	-	-	-	-	-	4	4
6	-	-	-	-	-	4	3
7	-	-	-	-	-	3	2
8	-	-	-	-	-	2	1
9	-	-	-	-	-	-	-
10	-	-	-	-	-	1	1
11	-	-	-	-	-	1	1
12	-	-	-	-	-	3	2
13	-	-	-	-	-	2	1
14	-	-	-	-	-	1	-
15	-	-	-	-	-	0	-

### 3.5 Clay content

Each soil entry in a land type inventory was placed in a clay content class and rated on a scale of 0-5 by taking the average of the range of the clay content of the A horizon and placing it in one of the following classes:

#### 3.5.1 Clay content classes and ratings to derive potential for dry land crop production

Clay content class (%)	Rating
0.0 - 6.0	2.0
6.1 - 15.0	4.0
15.1 - 35.0	5.0
35.1 - 55.0	4.0
> 55 non-vertic	3.0
> 55 vertic	4.0

### 3.5.2 Clay content classes and ratings to derive soil potential for irrigation

Clay content class (%)	Rating
0.0 - 6.0	2.0
6.1 - 15.0	4.0
15.1 - 35.0	5.0
35.1 - 55.0	3.0
> 55	2.5

## 3.6 Soil depth

An estimate of the soil depth range (depth to a material which markedly restricts water and/or root penetration) is recorded for each soil entry in a land type inventory. For use in the algorithm, the mean of the depth range was taken as the depth of the soil entry. Soil depth was recorded down to 1200 mm.

For purposes of the algorithm, soil depth classes were defined and rated as follows:

### 3.6.1 Soil depth classes and ratings to derive potential for dryland crop production potential

Soil depth (mm)	Rating
0 - 300	1.00
301 - 500*	2.00
501 - 800*	3.50
801 - 1000	4.75
> 1000	5.00

\* If vertic, the soil entry was placed one depth class higher.

### 3.6.2 Soil depth classes and ratings to derive soil potential for irrigation

Soil depth (mm)	Rating
0 - 300	0.00
301 - 500	1.00
501 - 800	2.00
801 - 1000	4.00
> 1000	5.00

### 3.7 Soil-rock complex

The percentage of the land type occupied by a soil-rock complex (defined as an area where outcropping rock and soil (usually shallow) occurs in such a complex pattern that it is not possible to map each separately) is given per land type. The presence of large areas of soil-rock complex in a land type is thus severely limiting for mechanical crop production. Soil entries which are unploughable due to the presence of large stones and boulders, are included in the calculation of the percentage of the soil rock complex per land type.

### 3.8 Soil potential per land type

The soil potential of each land type was determined by multiplying the category rating, clay content rating, depth rating and the percentage occurrence of each soil entry. The results of all entries were added and divided by the total percentage of the area occupied by soil within the land type (non-soil land classes excluded). The results were classed as follows:

#### 3.8.1 *Soil potential classes and ratings for dry land crop production*

Soil potential classes were subsequently given a rating varying between 1.0 and 5.0

Soil potential class	Value range	Rating
Low	0 - 69	1.0
Low to moderate	70 - 109	2.0
Moderate	110 - 129	3.5
Moderate to high	130 - 149	4.5
High	150 - 250	5.0

#### 3.8.2 *Soil potential classes for irrigation*

Class	Description	Value range
1	Low	0 - 24
2	Low to moderate	25 - 74
3	Moderate	75 - 124
4	Moderate to high	125 - 174
5	High	175 - 250

### 3.9 Mean annual rainfall

The mean annual rainfall of each land type was obtained by combining all available weather station data for that land type.

The following classes of mean annual rainfall were defined (only for determining potential for dryland crop production) and a rating varying between 0.25 and 5.00 was given as indicated below:

Class (mm)	Rating
0 - 450	0.25
451 - 500	1.00
501 - 550	1.75
551 - 600	2.50
601 - 650	3.25
651 - 700	3.50
701 - 750	3.75
751 - 800	4.00
801 - 850	4.25
851 - 900	4.50
901 - 1100	4.75
> 1100	5.00

### 3.10 Terrain Type

The terrain type of each land type is expressed as a code (e.g. A4) of which the letter gives an indication of the percentage level land and the number provides a measure of the local relief (an estimate of the average difference in metres over the land type between the highest and lowest points in the landscape).

Percentage level land is estimated in terms of four classes:

- A - More than 80% of the area has slopes less than 8%.
- B - 50 to 80% of the area has slopes less than 8%.
- C - 20 to 50% of the area has slopes less than 8%.
- D - Less than 20% of the area has slopes less than 8%.

Local relief is expressed in terms of six classes:

- 1 0 - 30 m
- 2 30 - 90 m
- 3 90 -150 m
- 4 150-300 m
- 5 300-900 m
- 6 >900 m

The percentage level land was chosen as the terrain parameter to represent dominant slope in calculating dryland crop production potential, and was given the

following rating:

Class	Rating
A	4.0
B	3.5
C	3.0
D	1.0

### 3.11 Potential for dryland crop production

An index of the potential of each land type for dryland crop production was calculated by multiplication of the soil potential rating, mean annual rainfall rating and terrain form rating. The maximum is 100, thus classes have been set as follows:

Index	Class	Description
0 - 20	1	Low
21 - 40	2	Low to moderate
41 - 60	3	Moderate
61 - 80	4	Moderate to high
81 - 100	5	High

## 4. RESULTS

### 4.1 Maps showing potential for dryland crop production and soil potential for irrigation

Plotted maps of potential for dryland crop production of the Phoebe - Vulcan study area in Gauteng and potential for irrigation of the Arnot/Camden - Maputo study area in Kangwane accompany this report. The maps are also supplied digitally as the self-extracting files GAUTENG.EXE AND KANGWANE.EXE on hard discs (ISCW GIS Project No. 05096). Information on the steps followed to supply the maps digitally in a ReGis format is given in the file README.DOC which is also supplied on hard disc.

### 4.2 Attribute information

#### 4.2.1 Attributes for the Phoebe - Vulcan study area in Gauteng

The file GAUTENG.DBF contains the attributes that accompany the spatial information of the Phoebe - Vulcan study area. The following fields were used:

LANDTYPE	Land type number (related field with spatial information)
HIGH	Percentage occurrence of the high potential class
MOD_HIGH	Percentage occurrence of the moderate to high potential class
MODERATE	Percentage occurrence of the moderate potential class
LOW_MOD	Percentage occurrence of the low to moderate potential class
LOW	Percentage occurrence of the low potential class
LPOT_VAL	Average land type potential value
LPOT_CLASS	Average land type potential class
TERRAIN	Terrain type
SOIL_VALUE	Average soil potential value
SRC	Percentage land occupied by the soil rock complex
DOMINANT	Dominant soil category, the percentage occurrence and the dominant leaching status of the soil category
SUB_DOM	Sub-dominant soil category, the percentage occurrence and the dominant leaching status of the soil category
SUBSUB_DOM	Sub-sub-dominant soil category, the percentage occurrence and the dominant leaching status of the soil category

#### 4.2.2 Attributes for the Arnot/Camden - Maputo study area in Kangwane

The file KANGWANE.DBF contains the attributes that accompany the spatial information of the Arnot/Camden - Maputo study area. The following fields were used:

LANDTYPE	Land type number (related field with spatial information)
HIGH	Percentage occurrence of the high potential class
MOD_HIGH	Percentage occurrence of the moderate to high potential class
MODERATE	Percentage occurrence of the moderate potential class
LOW_MOD	Percentage occurrence of the low to moderate potential class
LOW	Percentage occurrence of the low potential class
TERRAIN	Terrain type
SOIL_VALUE	Average soil potential value
SOIL_CLASS	Average soil potential class
RAINFALL	Average annual rainfall in mm
SRC	Percentage land occupied by the soil rock complex
DOMINANT	Dominant soil category, the percentage occurrence and the dominant leaching status of the soil category
SUB_DOM	Sub-dominant soil category, the percentage occurrence and the dominant leaching status of the soil category
SUBSUB_DOM	Sub-sub-dominant soil category, the percentage

### **4.3 Tables**

Tables containing the attributes for the potential for dryland crop production study of the Phoebus - Vulcan study area in Gauteng as described in 4.2.1, are given in Annexure 1.

Likewise the tables containing the attributes for the soil potential for irrigation study of the Arnot/Camden - Maputo study area in Kangwane as described in 4.2.2, are given in Annexure 2.

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## **ANNEXURE 1**

**TABLES FOR EACH LAND TYPE PERTAINING INFORMATION REGARDING  
POTENTIAL FOR DRY LAND CROP PRODUCTION OF THE  
PHOEBUS - VULCAN STUDY AREA IN GAUTENG**

LAND TYPE : Ab2

Moderate potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	43.5
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.3
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	56.2

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	49	
TERRAIN TYPE	A2	
SOIL POTENTIAL VALUE	116	
RAINFALL (mm)	682	
SOIL ROCK COMPLEX (%)	54	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;64;c
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;18;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;16;f

\*-----\*

LAND TYPE : Ae62 Moderate - high potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	76.1
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	7.1
LOW POTENTIAL	16.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	65	
TERRAIN TYPE	A3	
SOIL POTENTIAL VALUE	154	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;82;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;5;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		11;5;f

\*-----\*

LAND TYPE : Ae63 Moderate potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	72.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	24.2
LOW POTENTIAL	3.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	59	
TERRAIN TYPE	A2	
SOIL POTENTIAL VALUE	134	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;72;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		5;24;g
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		11;2;f

\*-----\*

LAND TYPE : Ba7

Low - moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	48.8
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	8.5
LOW POTENTIAL	42.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	28	
TERRAIN TYPE	A2	
SOIL POTENTIAL VALUE	106	
RAINFALL (mm)	682	
SOIL ROCK COMPLEX (%)	20	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;34;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		3;15;d
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;12;f

LAND TYPE : Ba8 Moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	54.3
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	1.0
LOW POTENTIAL	44.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	46	
TERRAIN TYPE	A2	
SOIL POTENTIAL VALUE	115	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	15	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;39;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		7;16;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		3;15;d

LAND TYPE : Ba23 Moderate - high potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	65.5
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	34.5

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	70	
TERRAIN TYPE	A2	
SOIL POTENTIAL VALUE	157	
RAINFALL (mm)	681	
SOIL ROCK COMPLEX (%)	19	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;52;c
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		3;14;c
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;14;f

LAND TYPE : Bb2

Low - moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	17.5
MODERATE - HIGH POTENTIAL	6.8
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	12.1
LOW POTENTIAL	63.7

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	28	
TERRAIN TYPE	A3	
SOIL POTENTIAL VALUE	71	
RAINFALL (mm)	682	
SOIL ROCK COMPLEX (%)	11	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;32;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		3;26;b
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;20;b

LAND TYPE : Bc8 Moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	36.0
MODERATE - HIGH POTENTIAL	17.5
MODERATE POTENTIAL	7.7
LOW - MODERATE POTENTIAL	1.4
LOW POTENTIAL	37.5

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	49	
TERRAIN TYPE	A4	
SOIL POTENTIAL VALUE	112	
RAINFALL (mm)	681	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;46;d
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;20;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		3;15;d

LAND TYPE : Ea3 Low - moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	7.1
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	70.2
LOW POTENTIAL	22.7

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	26	
TERRAIN TYPE	A3	
SOIL POTENTIAL VALUE	87	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		5;70;g
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;10;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;7;d

LAND TYPE : Ea30

Low - moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	15.5
MODERATE POTENTIAL	52.8
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	31.7

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	28	
TERRAIN TYPE	A3	
SOIL POTENTIAL VALUE	88	
RAINFALL (mm)	670	
SOIL ROCK COMPLEX (%)	19	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;68;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;14;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		11;7;f

\*-----\*

LAND TYPE : Ea72

Low - moderate potential

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	15.5
MODERATE POTENTIAL	52.8
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	31.7

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	26	
TERRAIN TYPE	A3	
SOIL POTENTIAL VALUE	88	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	19	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;68;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;15;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		11;7;f

\*-----\*

LAND TYPE : Fa12

Low potential

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	15.2
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	84.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	12	
TERRAIN TYPE	B3	
SOIL POTENTIAL VALUE	37	
RAINFALL (mm)	682	
SOIL ROCK COMPLEX (%)	85	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;50;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;35;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;15;d

\*-----\*

LAND TYPE : Fa18

Low potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	15.2
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	84.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	12	
TERRAIN TYPE	B3	
SOIL POTENTIAL VALUE	37	
RAINFALL (mm)	680	
SOIL ROCK COMPLEX (%)	85	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;50;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;35;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;15;d

LAND TYPE : Fb146 Low - moderate potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	24.6
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	4.1
LOW - MODERATE POTENTIAL	4.3
LOW POTENTIAL	67.1

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	23	
TERRAIN TYPE	B4	
SOIL POTENTIAL VALUE	71	
RAINFALL (mm)	640	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;52;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;27;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;9;f

LAND TYPE : Ib3 Low potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	5.4
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	94.6

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	4	
TERRAIN TYPE	D5	
SOIL POTENTIAL VALUE	12	
RAINFALL (mm)	669	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;65;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;29;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;5;d

LAND TYPE : Ib4

Low potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	4.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.5
LOW POTENTIAL	95.5

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	11	
TERRAIN TYPE	C4	
SOIL POTENTIAL VALUE	13	
RAINFALL (mm)	691	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;62;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;26;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;9;d

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LAND TYPE : Ib5

Low potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	2.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	98.0

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	11	
TERRAIN TYPE	C5	
SOIL POTENTIAL VALUE	8	
RAINFALL (mm)	716	
SOIL ROCK COMPLEX (%)	98	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;65;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;33;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;2;c

\*-----\*

LAND TYPE : Ib6

Low potential

SOIL POTENTIAL POTENTIAL CLASS	OCCURENCE (%)
HIGH POTENTIAL	4.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	0.5
LOW POTENTIAL	95.5

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	11	
TERRAIN TYPE	C5	
SOIL POTENTIAL VALUE	8	
RAINFALL (mm)	691	
SOIL ROCK COMPLEX (%)	0	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;75;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;20;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;4;d

\*-----\*

LAND TYPE : Ib7      Low potential

SOIL POTENTIAL  
POTENTIAL CLASS      OCCURENCE (%)

HIGH POTENTIAL	10.9
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.2
LOW - MODERATE POTENTIAL	8.9
LOW POTENTIAL	80.1

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	13	
TERRAIN TYPE	B3	
SOIL POTENTIAL VALUE	35	
RAINFALL (mm)	716	
SOIL ROCK COMPLEX (%)	75	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;56;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;24;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		2;16;c

\*-----\*

LAND TYPE : Ib116      Low potential

SOIL POTENTIAL  
POTENTIAL CLASS      OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	17.2
LOW POTENTIAL	82.8

DESCRIPTIVE LAND INFORMATION

LAND TYPE POTENTIAL VALUE	10	
TERRAIN TYPE	C4	
SOIL POTENTIAL VALUE	20	
RAINFALL (mm)	619	
SOIL ROCK COMPLEX (%)	81	
DOMINANT SOIL CATEGORY, %, LEACHING STATUS		15;65;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		5;17;g
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS		13;16;f

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## **ANNEXURE 2**

**TABLES FOR EACH LAND TYPE PERTAINING INFORMATION REGARDING  
SOIL POTENTIAL FOR IRRIGATION OF THE  
ARNOT/CAMDEN - MAPUTO STUDY AREA IN KANGWANE**

LAND TYPE : Ab42

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	27.0
MODERATE - HIGH POTENTIAL	12.3
MODERATE POTENTIAL	45.0
LOW - MODERATE POTENTIAL	2.5
LOW POTENTIAL	12.8

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	128
AVERAGE SOIL POTENTIAL CLASS	4: Moderate - high
SOIL ROCK COMPLEX (%)	15
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;80;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;9;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	3;5;a

LAND TYPE : Ab46

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	2.1
MODERATE POTENTIAL	36.9
LOW - MODERATE POTENTIAL	34.0
LOW POTENTIAL	27.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	59
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	0
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;73;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;19;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;8;f

LAND TYPE : Ab47

SOIL POTENTIAL  
POTENTIAL CLASS

OCCURENCE (%)

HIGH POTENTIAL	39.8
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	36.8
LOW POTENTIAL	23.4

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C3
SOIL POTENTIAL VALUE	102
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	16
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;77;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;16;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;7;f

LAND TYPE : Ab48

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	82.5
LOW - MODERATE POTENTIAL	7.5
LOW POTENTIAL	9.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D5
SOIL POTENTIAL VALUE	99
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	15
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;91;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;5;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;4;f

\*-----\*

LAND TYPE : Ab49

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	54.3
LOW - MODERATE POTENTIAL	16.0
LOW POTENTIAL	27.8

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	B3
SOIL POTENTIAL VALUE	70
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	28
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;72;b
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;23;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;5;f

\*-----\*

LAND TYPE : Ab50

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	15.3
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	23.3
LOW - MODERATE POTENTIAL	32.5
LOW POTENTIAL	29.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	78
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	57
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;71;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;17;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;9;f

\*-----\*

LAND TYPE : Ab60

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	41.5
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	25.0
LOW - MODERATE POTENTIAL	11.3
LOW POTENTIAL	20.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	B3
SOIL POTENTIAL VALUE	115
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	55
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;75;d
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;17;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	6;5;g

LAND TYPE : Ac77

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	3.0
MODERATE POTENTIAL	24.9
LOW - MODERATE POTENTIAL	45.5
LOW POTENTIAL	26.2

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	53
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	45
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;74;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;19;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;7;f

LAND TYPE : Ac78

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	63.5
LOW - MODERATE POTENTIAL	12.0
LOW POTENTIAL	20.5

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C3
SOIL POTENTIAL VALUE	68
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	1
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;80;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;10;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	8;7;f

LAND TYPE : Ac94

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	54.3
LOW POTENTIAL	45.7

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	29
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	42
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;54;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;31;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;15;f

LAND TYPE : Ac95

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	29.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	15.8
LOW POTENTIAL	54.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	B3
SOIL POTENTIAL VALUE	66
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	68
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;45;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;28;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;26;f

LAND TYPE : Ae105

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	31.3
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	8.5
LOW - MODERATE POTENTIAL	15.8
LOW POTENTIAL	43.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	B3
SOIL POTENTIAL VALUE	80
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	29
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;52;d
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;33;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;10;f

LAND TYPE : Ba67

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	27.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	15.0
LOW - MODERATE POTENTIAL	24.0
LOW POTENTIAL	34.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	A3
SOIL POTENTIAL VALUE	87
AVERAGE SOIL POTENTIAL CLASS	3: Moderate
SOIL ROCK COMPLEX (%)	28
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;32;d
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	8;29;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;13;f

LAND TYPE : Ea73

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	24.8
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	46.5
LOW - MODERATE POTENTIAL	20.0
LOW POTENTIAL	8.8

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	A2
SOIL POTENTIAL VALUE	128
AVERAGE SOIL POTENTIAL CLASS	4: Moderate - high
SOIL ROCK COMPLEX (%)	19
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;78;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	7;8;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	6;7;f

LAND TYPE : Fa166

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	10.3
LOW - MODERATE POTENTIAL	8.5
LOW POTENTIAL	81.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	B4
SOIL POTENTIAL VALUE	20
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	20
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;41;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	8;35;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;10;c

LAND TYPE : Fa169

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	5.6
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	14.4
LOW POTENTIAL	79.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	18
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	93
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;38;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;23;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;20;d

\*-----\*

LAND TYPE : Fa310

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	1.8
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	3.5
LOW - MODERATE POTENTIAL	19.0
LOW POTENTIAL	75.8

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	17
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	94
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;43;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;24;a
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;23;f

\*-----\*

LAND TYPE : Fa312

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	1.8
LOW - MODERATE POTENTIAL	15.0
LOW POTENTIAL	82.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D5
SOIL POTENTIAL VALUE	4
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	96
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;57;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;25;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;18;b

\*-----\*

LAND TYPE : Fa313

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	0.0
LOW - MODERATE POTENTIAL	35.8
LOW POTENTIAL	64.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D5
SOIL POTENTIAL VALUE	14
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	86
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;48;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;36;a
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;17;f

LAND TYPE : Fa317

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	22.7
LOW - MODERATE POTENTIAL	22.6
LOW POTENTIAL	54.1

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	34
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	65
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;46;c
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;37;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;17;f

LAND TYPE : Fa318

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	22.7
LOW - MODERATE POTENTIAL	23.2
LOW POTENTIAL	53.5

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	35
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	65
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;46;c
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;37;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;17;f

LAND TYPE : Fa333

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	29.3
LOW - MODERATE POTENTIAL	10.0
LOW POTENTIAL	59.5

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	35
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	72
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;41;c
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;34;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;24;f

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LAND TYPE : Fa334

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	3.0
MODERATE - HIGH POTENTIAL	8.0
MODERATE POTENTIAL	16.2
LOW - MODERATE POTENTIAL	37.5
LOW POTENTIAL	34.9

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	51
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	71
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;64;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;19;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;9;f

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LAND TYPE : Fa335

SOIL POTENTIAL

POTENTIAL CLASS	OCCURENCE (%)
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HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	2.6
MODERATE POTENTIAL	11.2
LOW - MODERATE POTENTIAL	34.7
LOW POTENTIAL	51.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D4
SOIL POTENTIAL VALUE	29
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	86
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;49;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;33;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;19;f

\*-----\*

LAND TYPE : Fa336

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	19.9
LOW - MODERATE POTENTIAL	38.2
LOW POTENTIAL	41.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	37
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	77
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;59;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;28;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;13;f

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LAND TYPE : Fa337

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	21.7
LOW - MODERATE POTENTIAL	31.3
LOW POTENTIAL	47.1

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	37
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	77
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;53;a
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;27;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;16;f

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LAND TYPE : Fa341

SOIL POTENTIAL

POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	6.0
LOW - MODERATE POTENTIAL	0.0
LOW POTENTIAL	94.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	D5
SOIL POTENTIAL VALUE	6
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	92
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;37;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;34;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;16;d

LAND TYPE : Fa342

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.0
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	30.0
LOW - MODERATE POTENTIAL	9.0
LOW POTENTIAL	61.0

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	38
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	32
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;38;b
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;34;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	8;20;f

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LAND TYPE : Fb161

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	8.5
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	17.8
LOW - MODERATE POTENTIAL	23.5
LOW POTENTIAL	50.3

DESCRIPTIVE LAND INFORMATION

TERRAIN TYPE	C3
SOIL POTENTIAL VALUE	51
AVERAGE SOIL POTENTIAL CLASS	2: Low - moderate
SOIL ROCK COMPLEX (%)	71
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;49;e
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;22;f
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;20;f

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LAND TYPE : Fb162

SOIL POTENTIAL  
POTENTIAL CLASS OCCURENCE (%)

HIGH POTENTIAL	0.4
MODERATE - HIGH POTENTIAL	0.0
MODERATE POTENTIAL	4.6
LOW - MODERATE POTENTIAL	16.2
LOW POTENTIAL	78.8

DESCRIPTIVE LAND INFORMATION

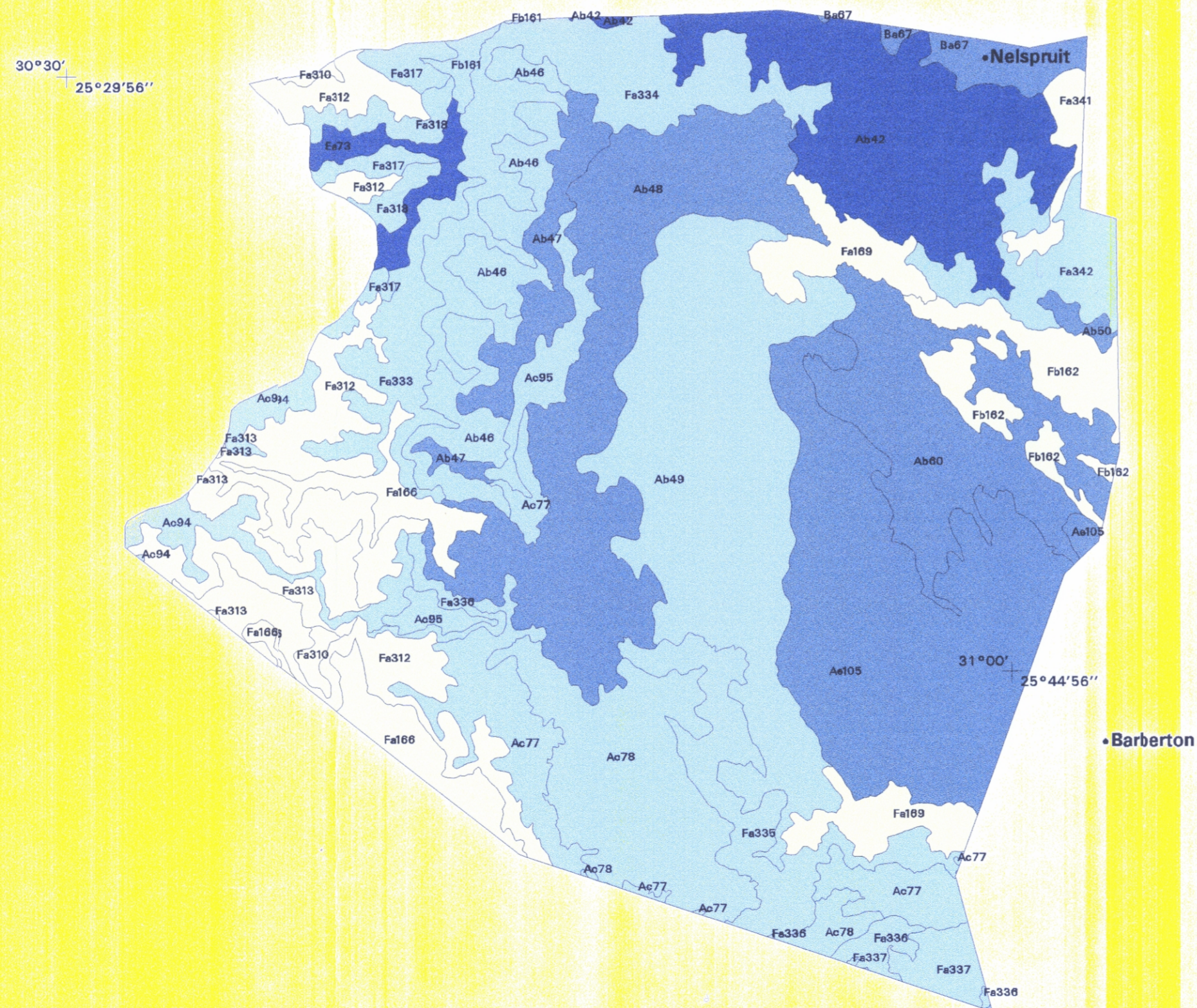
TERRAIN TYPE	C4
SOIL POTENTIAL VALUE	15
AVERAGE SOIL POTENTIAL CLASS	1: Low
SOIL ROCK COMPLEX (%)	95
DOMINANT SOIL CATEGORY, %, LEACHING STATUS	15;51;f
SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	2;21;d
SUB. SUB. DOMINANT SOIL CATEGORY, %, LEACHING STATUS	13;18;f

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A detailed geological map of the Rustenburg area. The map shows various geological units color-coded and labeled with codes such as lb116, Ae63, Ee72, Ba8, Bz23, Ea30, Fa18, Fa12, Ab2, Bb2, Ib6, Ib5, Ib4, Ib3, Fb146, and Ae62. Two towns are marked with black dots and labels: "Rustenburg" and "Brits". A river system is shown flowing from the south towards the northeast, passing through the Hartebeespoortdam area. The map includes coordinate markings at the top corners: 27°15' 25°29'56" on the left and 28°00' 25°29'56" on the right.

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# Soil Potential for Irrigation of the Arnot/Camden - Maputo Study Area



AGRICULTURAL RESEARCH COUNCIL



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## LEGEND

- 1 - Low potential
- 2 - Low to moderate potential
- 3 - Moderate potential
- 4 - Moderate to high potential
- 5 - High potential



Report number GW/A/96/52

SCALE 1:250 000