

*Operational EO for Water Resource
Management: Southern African*

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Introduction

- *National Water Act (1998)*
- *Information Systems*
- *Earth Observation*
- *Validation*
- *TIGER in Southern Africa*

National Water Act (1998)

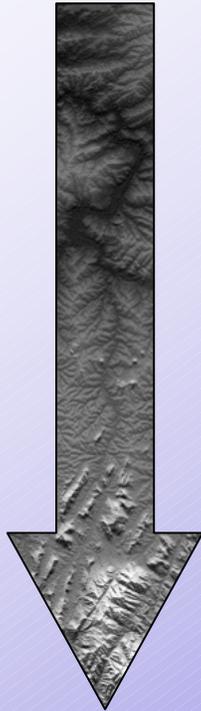
- *Chapter 4 : Water Use*

*.....general principles for regulating water use. Water use is defined broadly, and includes **taking and storing water**, activities which **reduce stream flow, waste discharges and disposals, controlled activities** (activities which impact detrimentally on a water resource), **altering a watercourse, removing water found underground** for certain purposes, and **recreation**. In general a water use must be licensed unless it is listed in **Schedule I**, is an **existing lawful use**, is permissible under a **general authorisation**, or if a responsible **authority waives the need for a licence**. The Minister may limit the amount of water which a responsible authority may allocate. In making regulations the Minister may differentiate between different water resources, classes of water resources and geographical areas.*

Registration & Licensing

- *All water users required to register*
- *Water Use License granted*
- *Uncertainty*
- *Under and over registration*
 - *Perceptions*
 - *“Mindset”*

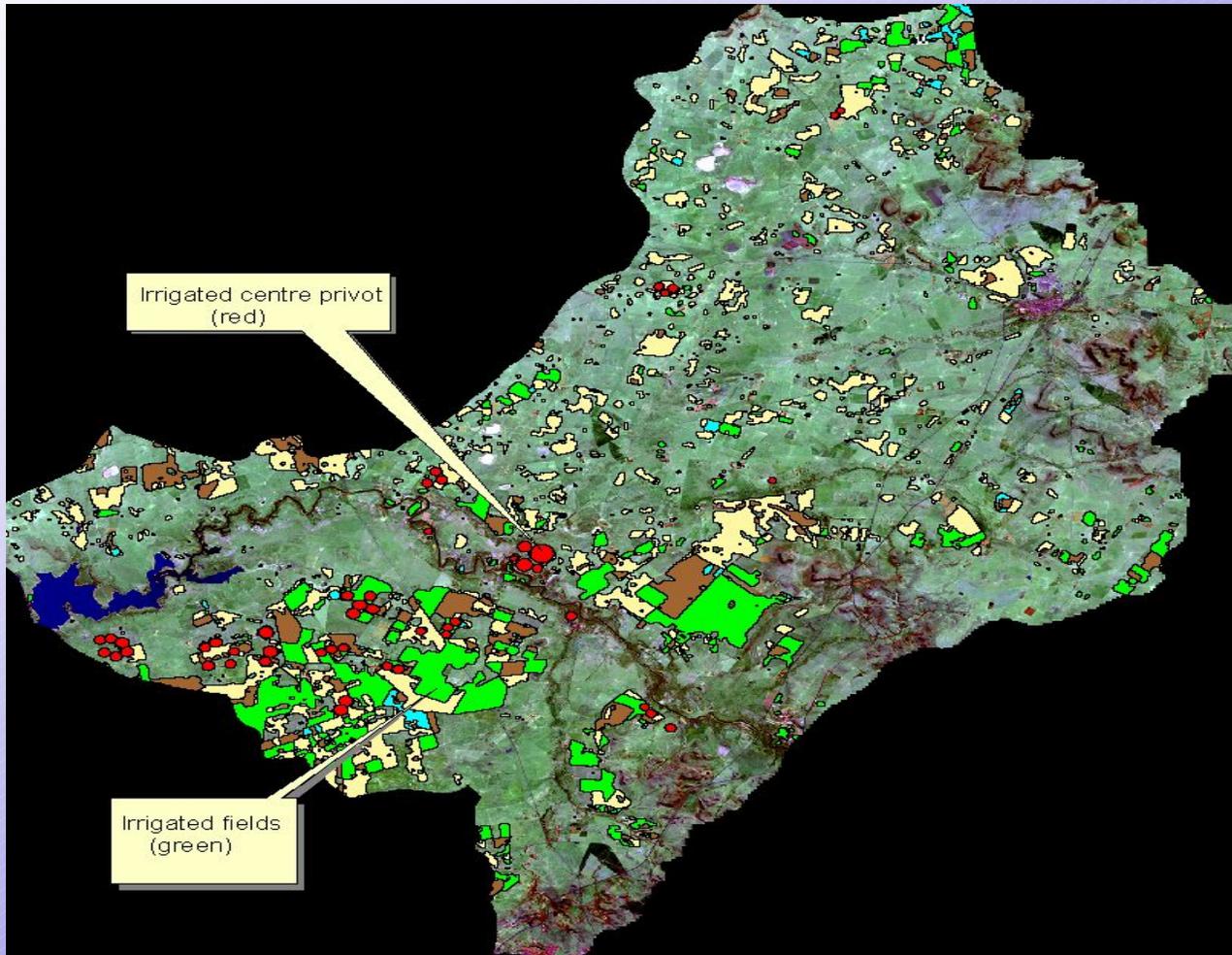
Validation

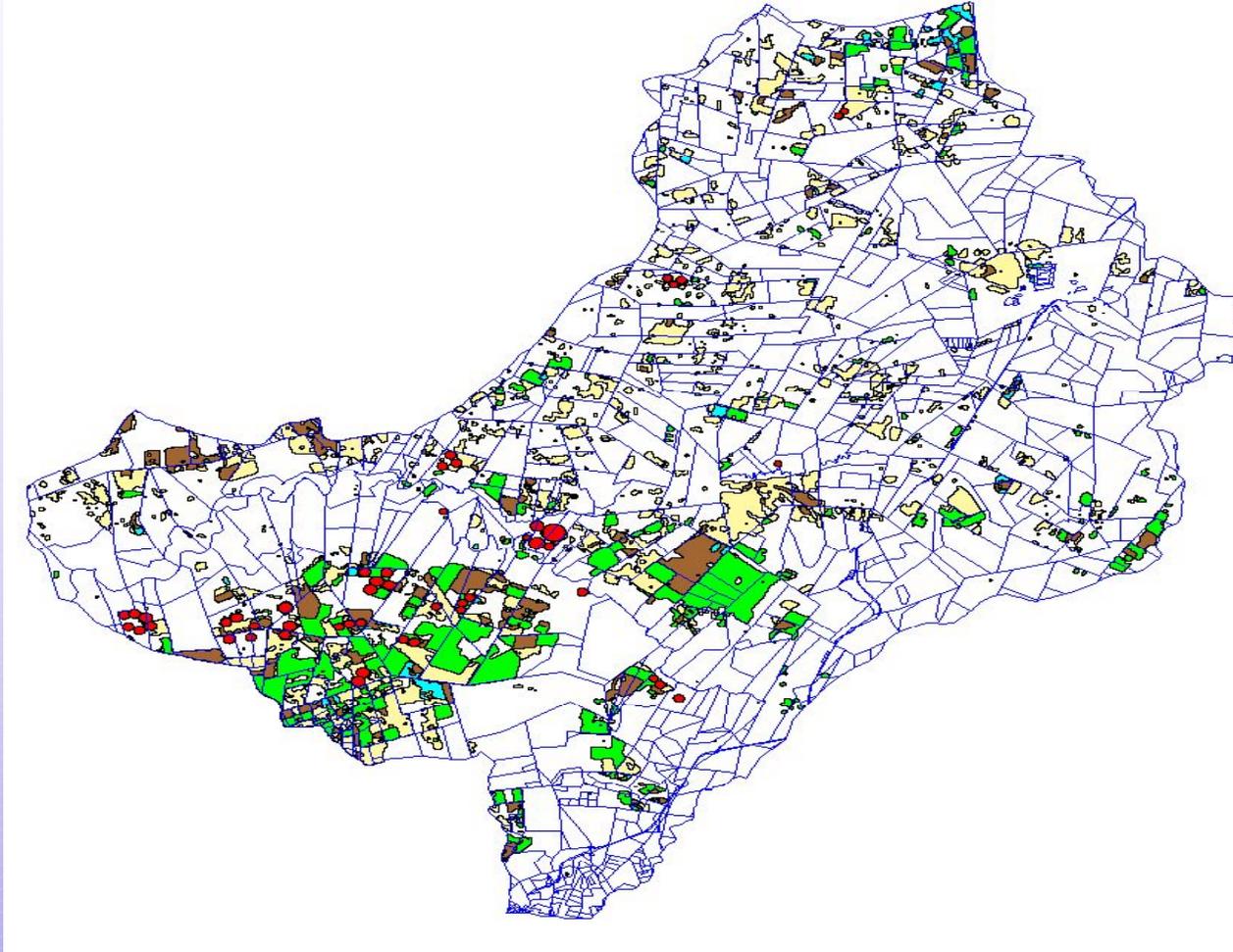


- *Landsat TM & SPOT data*
- *Digital classification*
- *Landcover maps*
- *Define irrigated areas*
- *Cadastral information*
- *Area of irrigated land per land unit*

Earth Observation

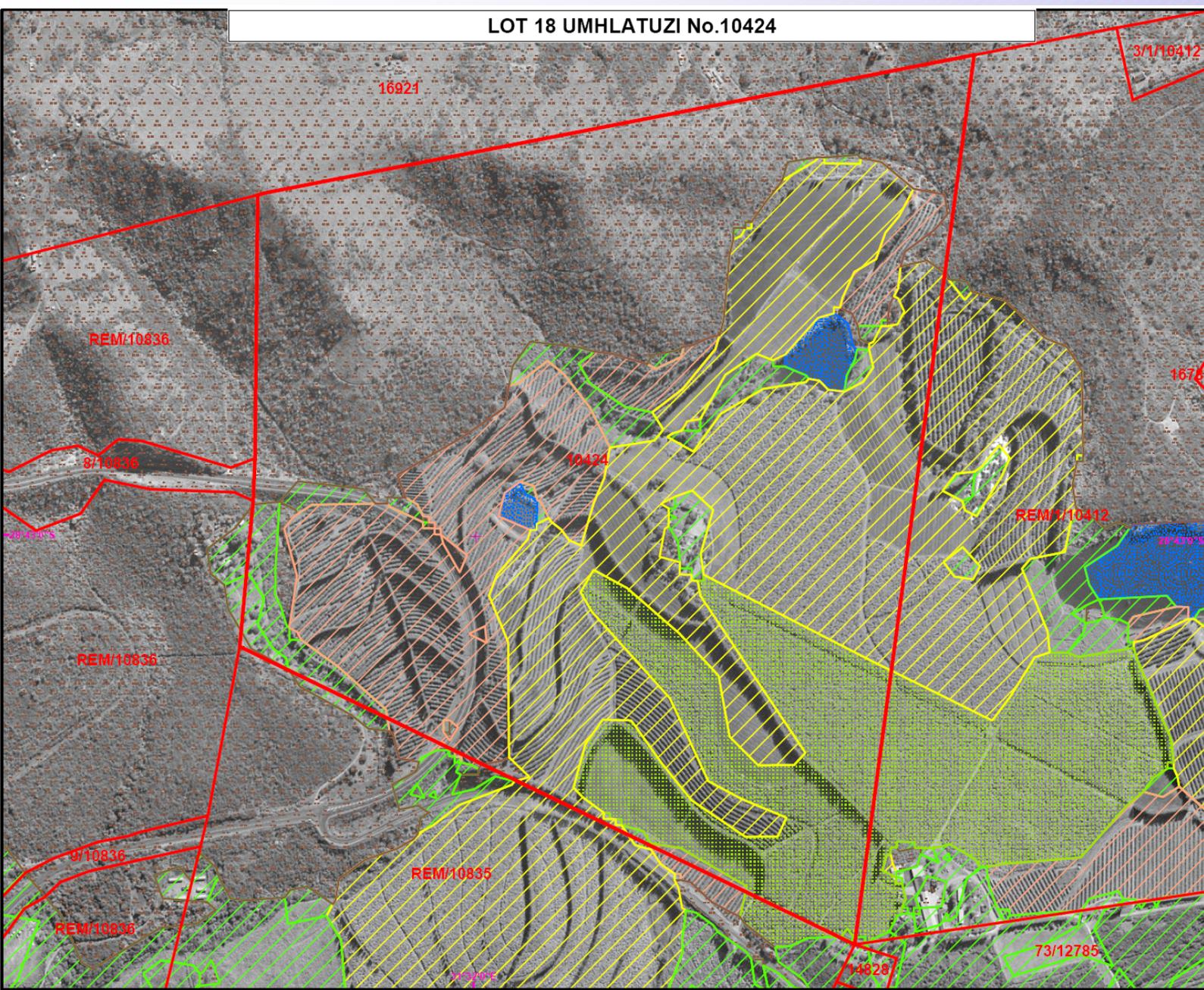






LOT 18 UMHLATUZI No.10424

LEGEND - Satellite Data



-  Area Under Bananas = 37.485 Ha
-  Area Under Citrus = 20.475 Ha
-  Area under Veges/Irri Cash Crop = 16.362 Ha
-  Area Under S/Cane Comm Dry = 0 Ha
-  Area Under S/Cane Comm Irri = 6.484 Ha
-  Area under S/Cane Emerge Irri = 0 Ha
-  Area Under Cloud / Shadow = 0 Ha
-  Area Under Plantation Clearfelled = 0 Ha
-  Area Under Plantation = 0 Ha
-  Area Under Water (Natural) = 0 Ha
-  Area Under Water (Man-made) = 1.328 Ha
-  Background \ Unclassified Area = 43.326 Ha

 Property Boundary
 Property Area = 126 Ha
 Satellite Coverage = Full



0 137.5 275 Meters

Scale 1:6000

Orthophoto Date: 2000
 Satellite Date: December 2003

WARMS REGISTRATION NUMBER:

21004468

PROPERTY DESCRIPTION:

LOT 18 UMHLATUZI No.10424

PROPERTY OWNER:

** For Info Refer To Registrar Of Deeds **

WARMS APPLICANT:

BEDHLANE FARMS (PTY) LTD

 15 Acacia Avenue
 Westville 3630
 Tel: (031) 266 9316
 Fax: (031) 266 9366

Date : 03/09/2004	Projection: Transverse Mercator	Spheroid : L031
File No.: G50116	Drawing No : 001	Revision No : 001



Department: Water Affairs & Forestry

Consultation

- *Farmer consulted*
 - *Irrigation Equipment*
 - *Methods*
 - *Conveyance*
 - *Storage*
- *SAPWAT Model*
- *Comparison with Volumetric Data in WARMS*
- *Water Use Lawful / Unlawful?*

Opportunities/Constraints

- *Opportunities*
 - *Reduce costs*
 - *Improve data collection methods*
 - *Add value to databases*
 - *Improve implementation of legal process*
- *Constraints*
 - *Accuracy uncertainties*
 - *Institutional understanding – value/limitations*
 - *Capacity required*

Broader Context

- *Move from Project based work to...*
- *Operational methods*
 - *Information Products/Services*
 - *Input to GIS & Models*
- *Develop capacity & capability for this*
 - *Technical*
 - *Institutional*
 - *Policy governance level*
- *TIGER Initiative*

ESA TIGER Initiative

- *Promote appropriate application of EO for Integrated Water Resource Management*
- *Support sustainable development*
- *Technical transfer*
- *Capacity Building – technical/institutional*
- *International, Regional & National Partnerships for **Sustainability***
 - *Water Affairs, Research, Private Industry*

Conclusions

- *Progressive Water Legislation*
- *Piloting of EO products to validate information collection*
- *Information supporting policy decisions*
- *TIGER – partnership to develop EO-based information services and network that can meet common goals and priorities*

Acknowledgements

- *Department of Water Affairs & Forestry*
- *GeoTerraImage*
- *Geospace MHP*