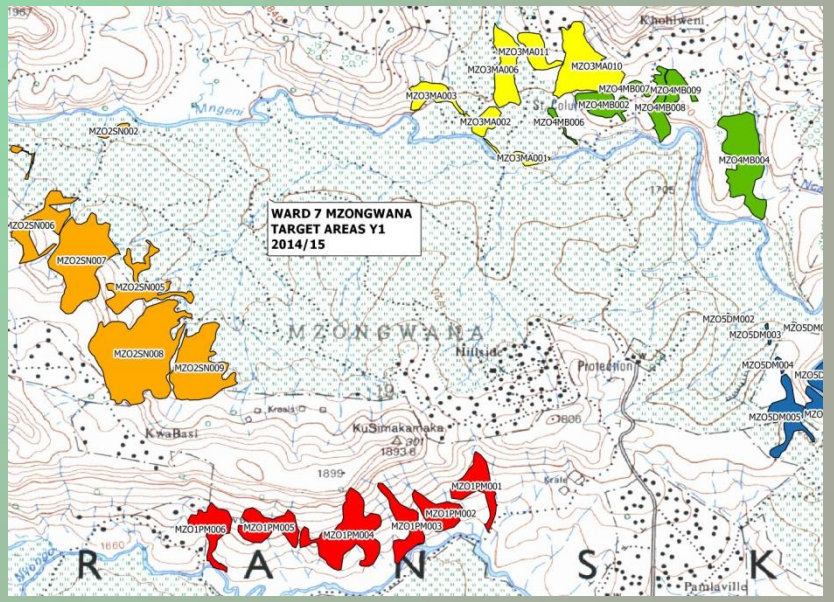
WATER SECURITY THROUGH RANGELAND STEWARDSHIP:

UCPP projects building on LUI to tackle poverty & restore landscape functions



CRITICAL ECOSYSTEM PARTNERSHIP FUND

UMZIMVUBU CATCHMENT PARTNERSHIP PROGRAMME

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

UCPP Vision:

to build stewardship capacity among community groups in the upper Umzimvubu catchment, through establishing replicable demonstration projects which restore watershed functions, and to position these groups as potential sellers (and beneficiaries) of such services to be integrated into the conservation economy.

CONSERVATION SOUTH AFRICA
Member of the CI Network

catchment restoration & water security through stewardship

ERS environmental and rural solutions

facilitation
feedback
training
policy influence
dissemination
brokering organic production PES
networking
marketing
consultation
research
monitoring
holistic planning
learning

local authorities
chief/leader
livestock owning households
crop producing households
x
y

agreement on land use and communal her with grazing plan

land stewardship agreement between land users

restored groundcover

ZAR

better livestock performance & income

improved grassland quality

healthy grassland buffering alien plant infestation

reduced erosion & topsoil loss

improved rainfall infiltration & recharge

increased land productivity & food security

clean water

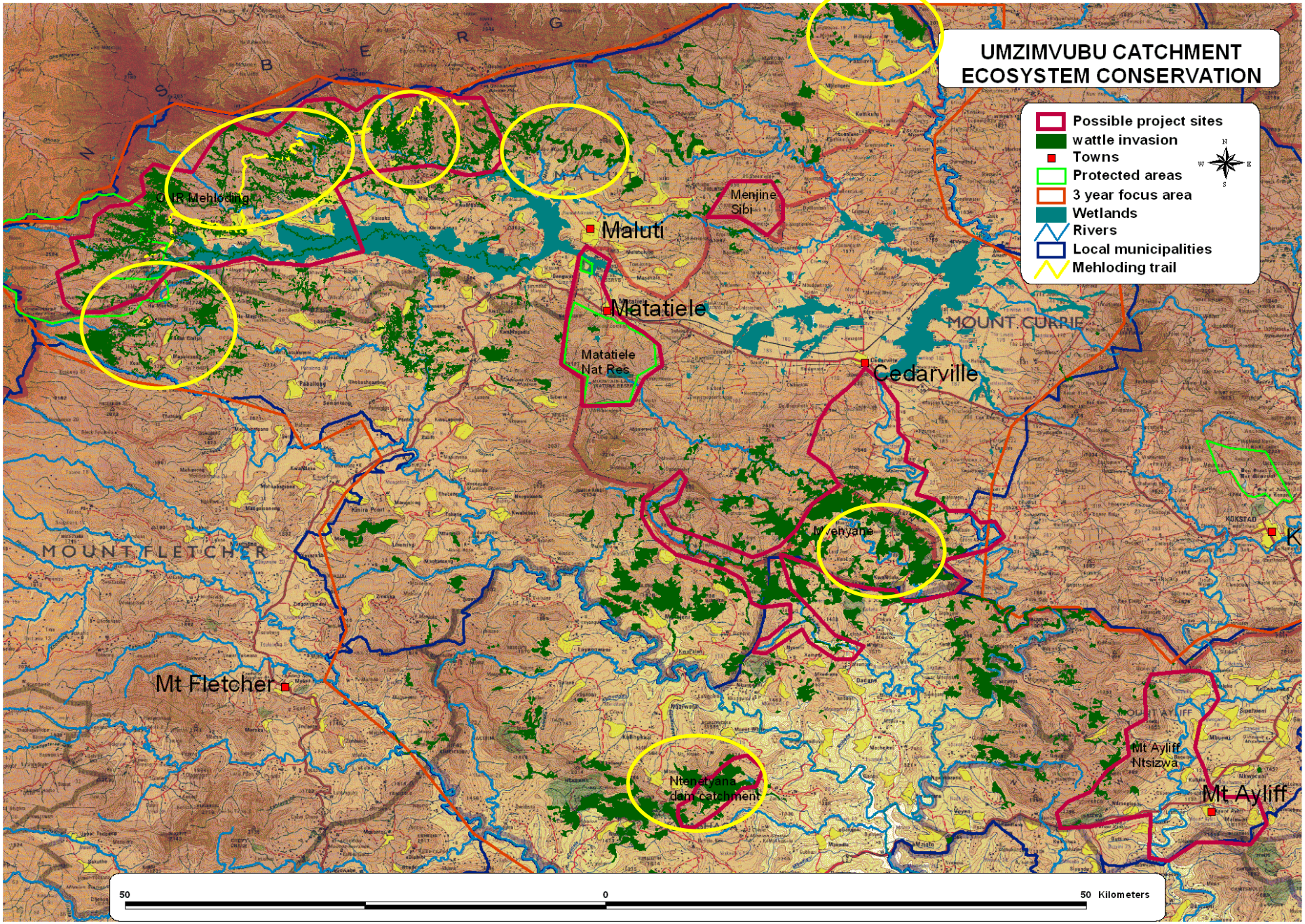
improved health people & ecosystems

longevity of water supply systems

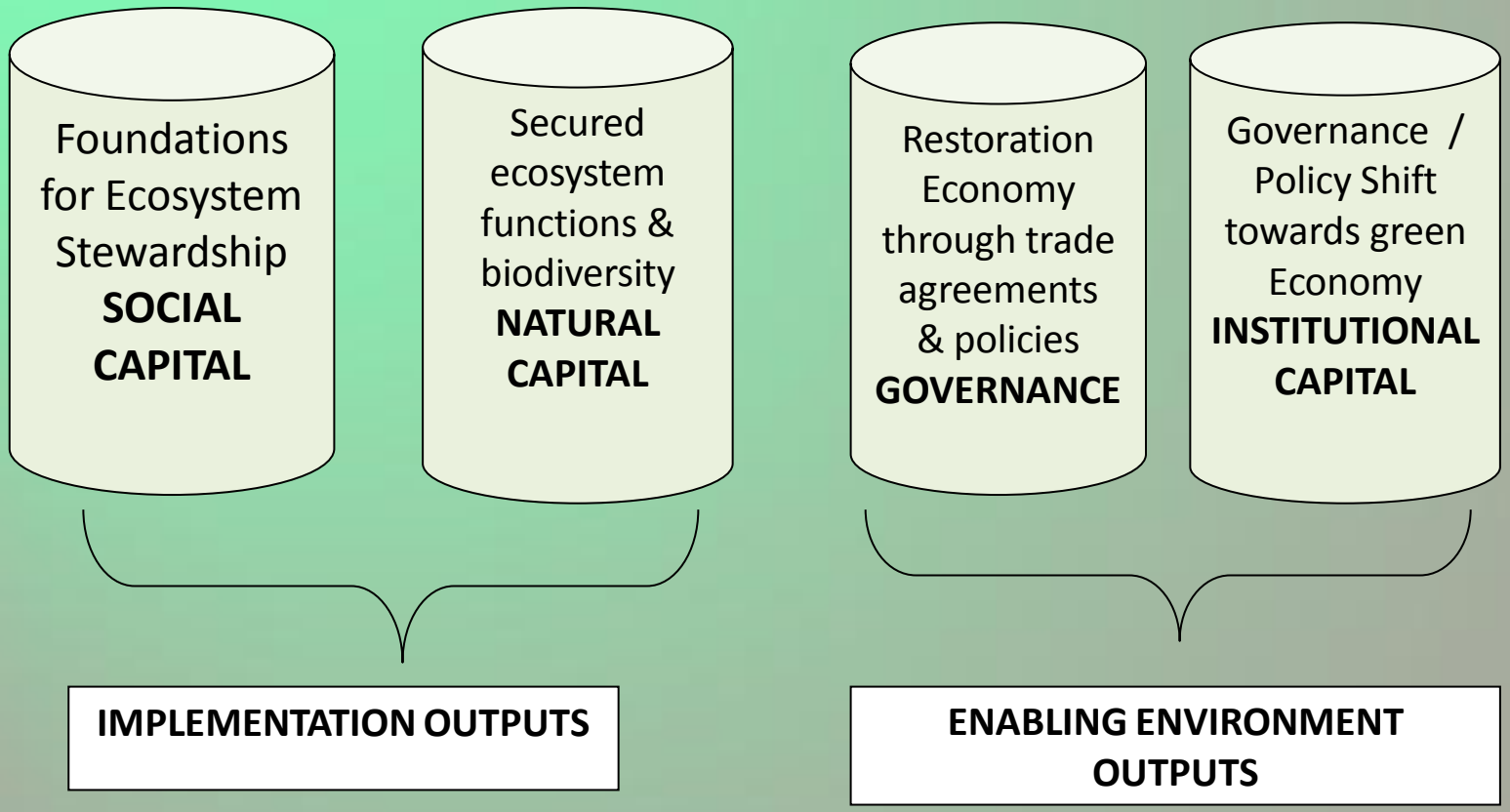
year round water security

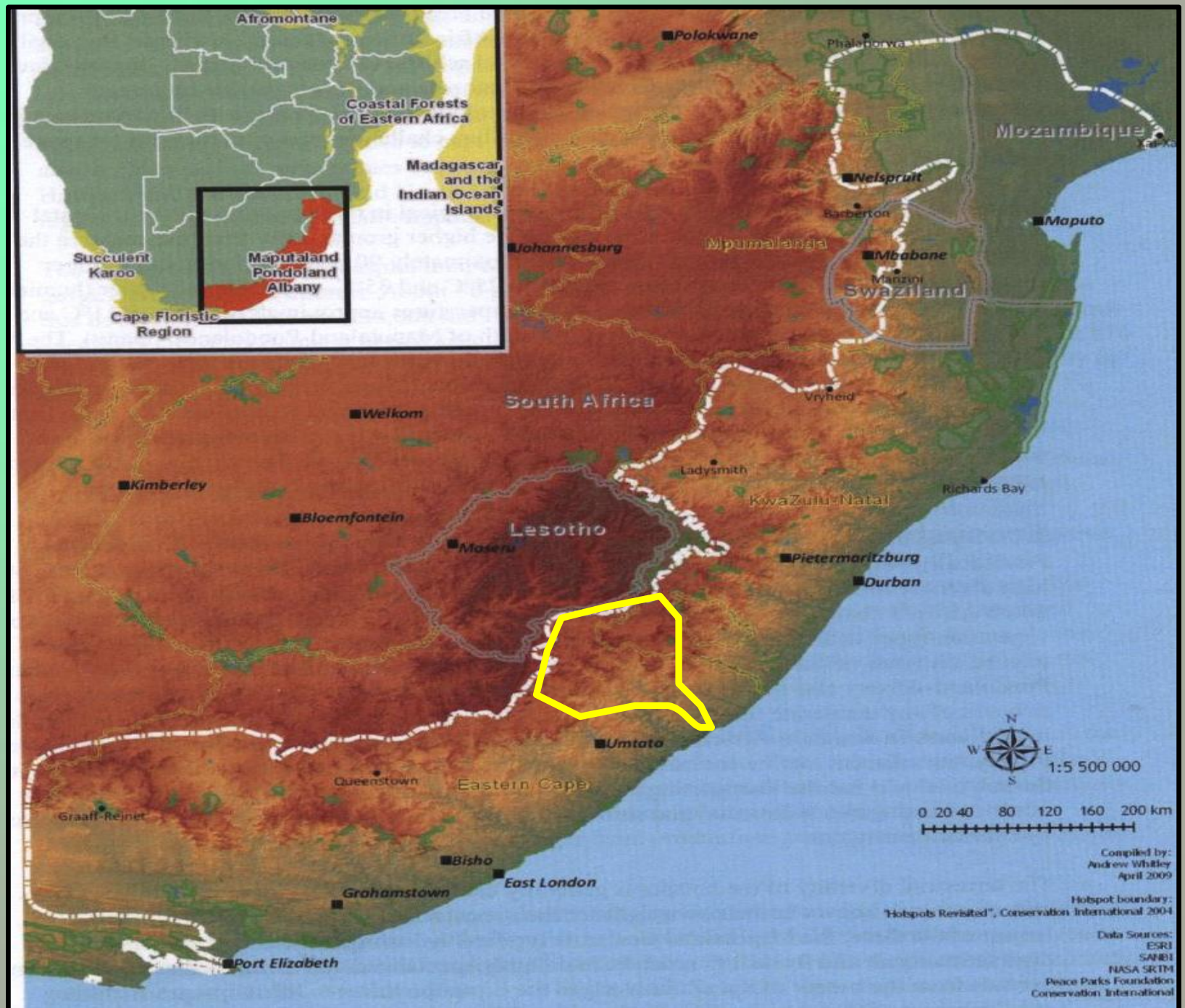
PROCESS

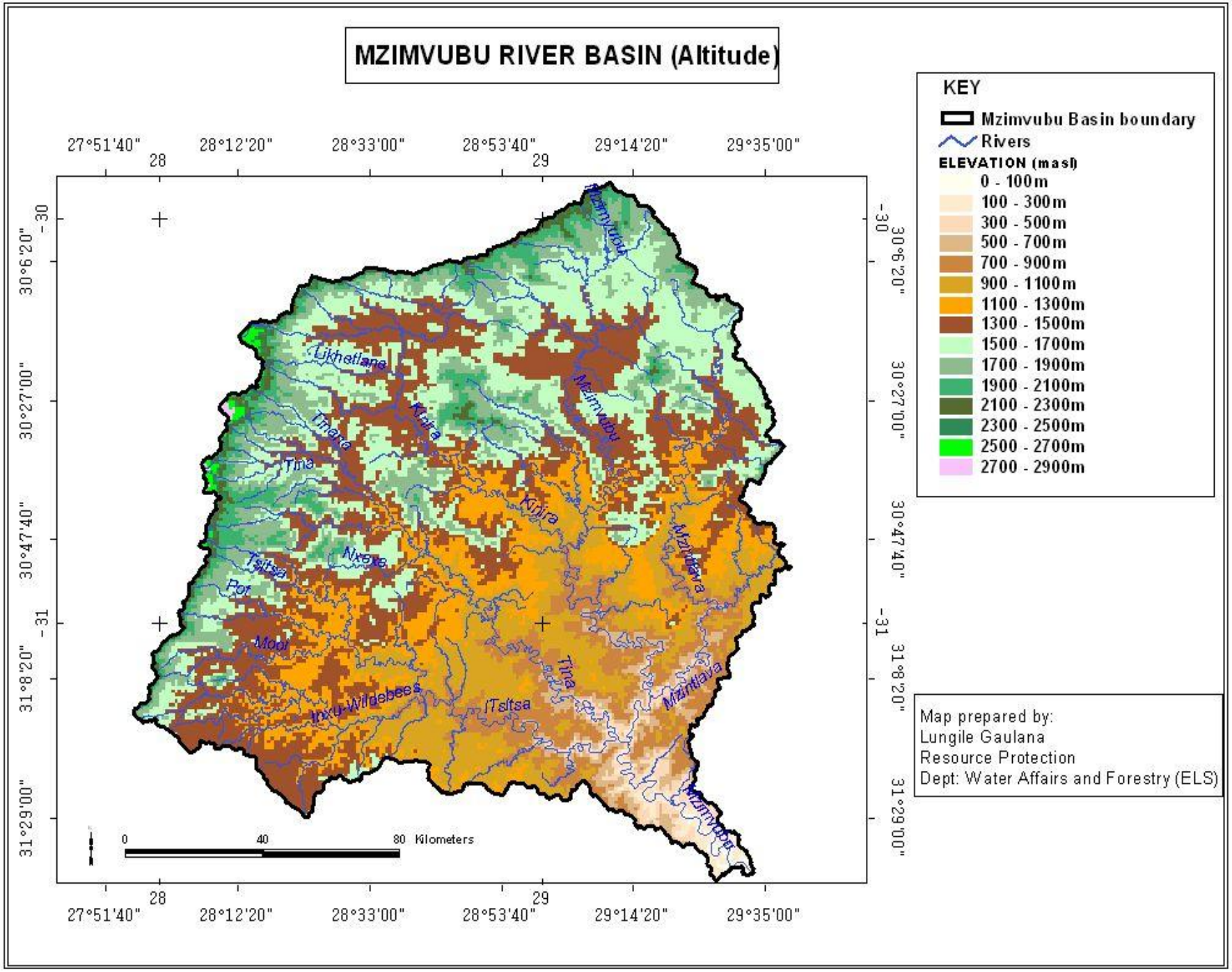
OUTCOMES & BENEFITS


UMZIMVUBU CATCHMENT
ECOSYSTEM CONSERVATION
Possible project sites
wattle invasion
Towns
Protected areas
3 year focus area
Wetlands
Rivers
Local municipalities
Mehloding trail
Maluti
Menjine
Sibi
Matatiele
Matatiele
Nat Res
Cedarville
MOUNT CURRIE
MOUNT FLETCHER
Mt Fletcher
Mvenyane
Ntenetyana
dam catchment
Mt Ayliff
Ntsizwa
Mt Ayliff
50
0
50 Kilometers

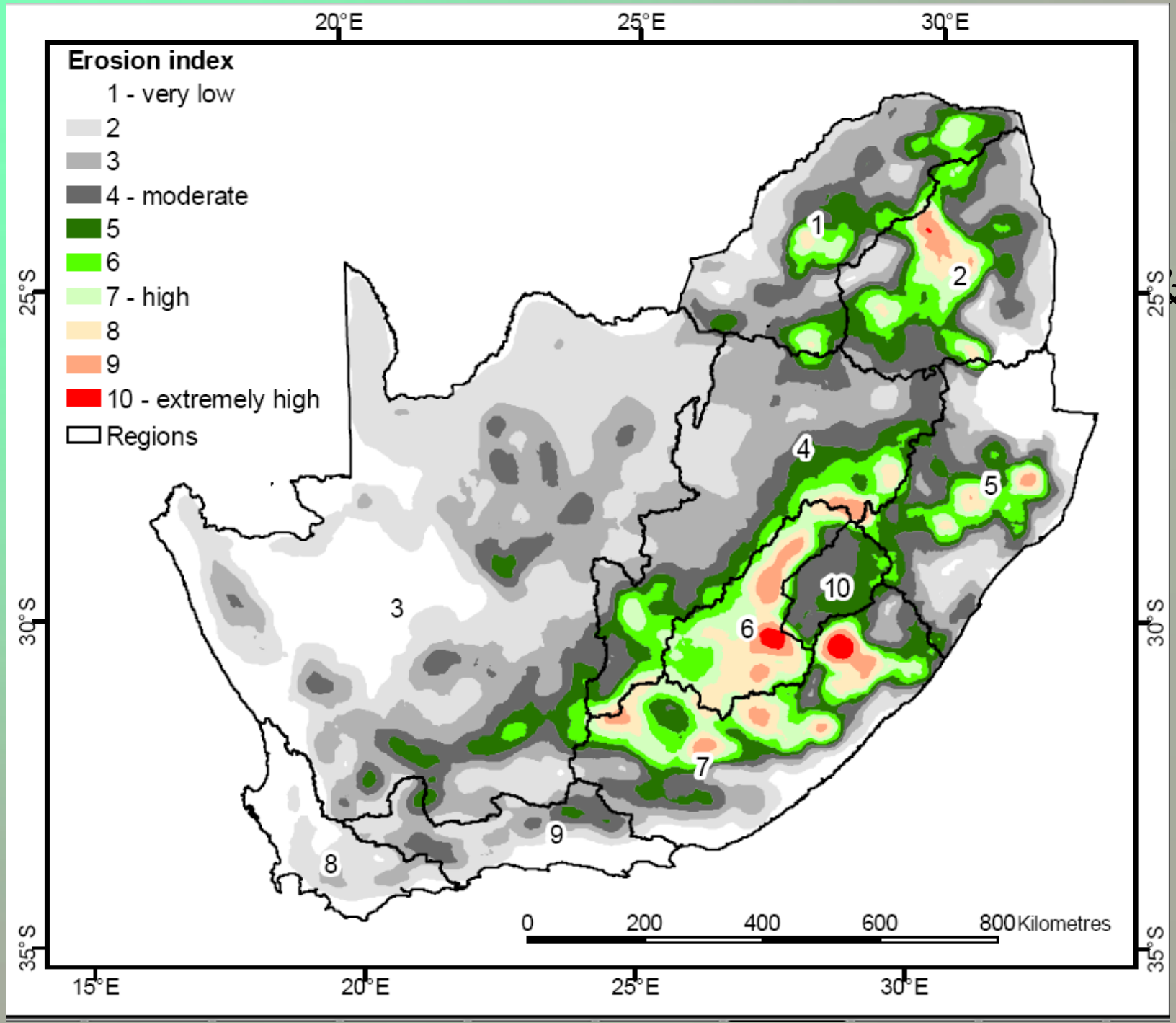
GOAL: HEALTHY ECOSYSTEM FUNCTION OF UMZIMVUBU CATCHMENT PROVIDING SERVICES AND BENEFITING PEOPLE




Afromontane
Coastal Forests of Eastern Africa
Madagascar and the Indian Ocean Islands
Succulent Karoo
Maputaland Pondoland Albany
Cape Floristic Region
Polokwane
Phalaborwa
Mozambique
Nelspruit
Barberton
Maputo
Johannesburg
Mpumalanga
Mbabane
Manzini
Swaziland
Vryheid
South Africa
Welkom
Kimberley
Ladysmith
Richards Bay
KwaZulu-Natal
Bloemfontein
Lesotho
Maseru
Pietermaritzburg
Durban
Umtata
Queenstown
Eastern Cape
Graaff-Reinet
Bisho
East London
Grahamstown
Port Elizabeth
N
W
E
S
1:5 500 000
0 20 40 80 120 160 200 km
Compiled by:
Andrew Whitley
April 2009
Hotspot boundary:
"Hotspots Revisited", Conservation International 2004
Data Sources:
ESRI
SANBI
NASA SRTM
Peace Parks Foundation
Conservation International

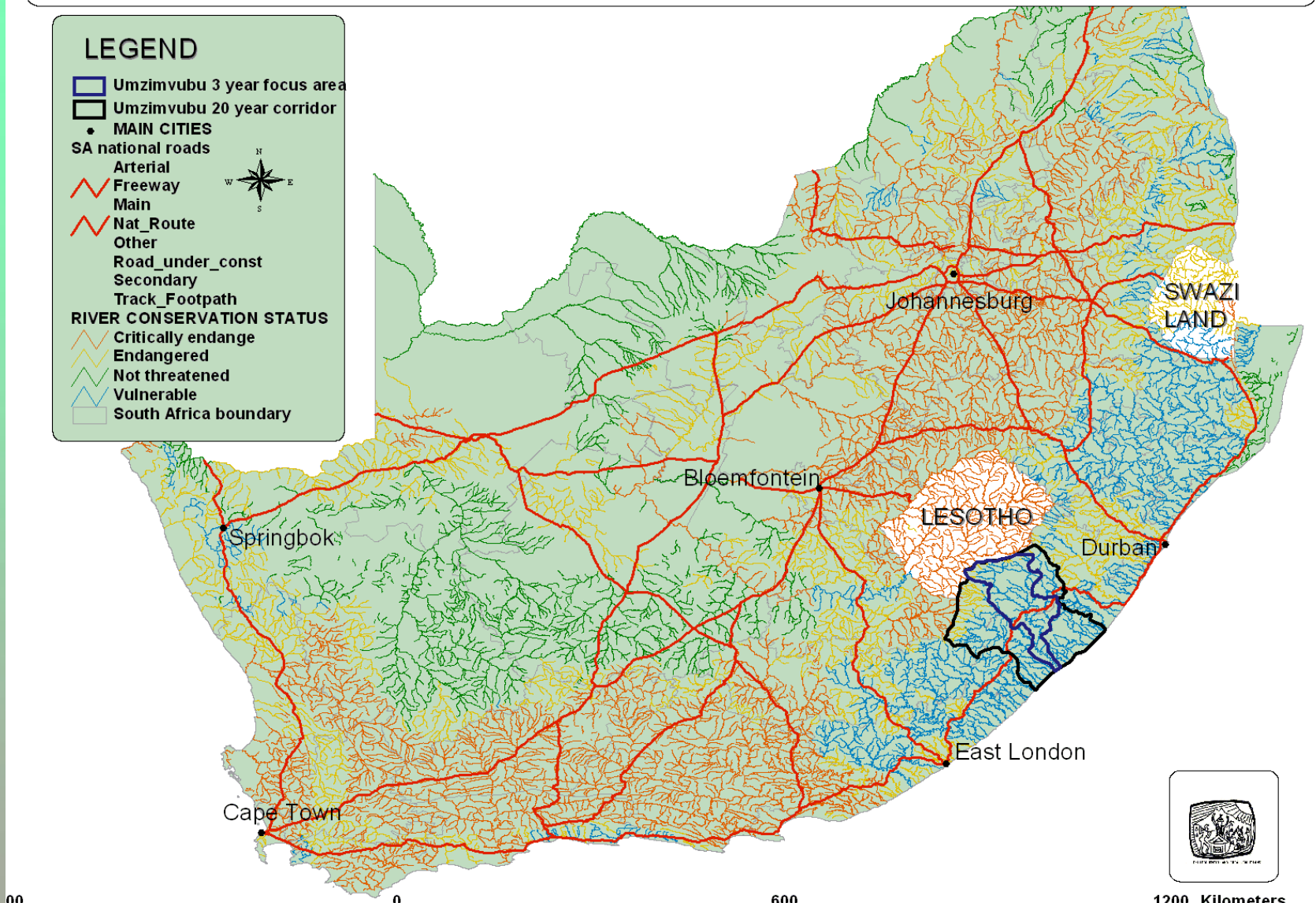

MZIMVUBU RIVER BASIN (Altitude)
KEY
Mzimvubu Basin boundary
Rivers
ELEVATION (masl)
0 - 100m
100 - 300m
300 - 500m
500 - 700m
700 - 900m
900 - 1100m
1100 - 1300m
1300 - 1500m
1500 - 1700m
1700 - 1900m
1900 - 2100m
2100 - 2300m
2300 - 2500m
2500 - 2700m
2700 - 2900m
27°51'40"
28°12'20"
28°33'00"
28°53'40"
29°14'20"
29°35'00"
28
29
30°6'20"
30°27'00"
30°47'40"
31°8'20"
31°29'00"
-30
-31
Mzimvubu
Lukhetlane
Kinira
Tina
Nxaxa
Tsitsa
Pot
Mooi
Inxu-Wildebees
/Tsitsa
Mzintlava
0
40
80 Kilometers
Map prepared by:
Lungile Gaulana
Resource Protection
Dept: Water Affairs and Forestry (ELS)

RURAL SETTLEMENTS COMPRISE APPROX 70% OF UPPER CATCHMENT


Erosion index
1 - very low
2
3
4 - moderate
5
6
7 - high
8
9
10 - extremely high
Regions
20°E
25°E
30°E
15°E
25°S
30°S
35°S
1
2
3
4
5
6
7
8
9
10
0
200
400
600
800
Kilometres

UMZIMVUBU CATCHMENT CONSERVATION CORRIDOR WITHIN RIVER CONSERVATION STATUS IN SOUTH AFRICA

CONSERVATION SOUTH AFRICA
Member of the CI Network




PRODUCTIVE COMMERCIAL LAND USE, with
40% HABITAT TRANSFORMATION,

Fast Facts about the Umzimvubu Catchment:

- **20,000km2**

is the area of the Mzimvubu River catchment

- **900 million**

cubic tons is what the Mzimvubu River Basin is estimated to hold

- **5%**

of this resource is only used

- **700-1500 mm**

of rainfall which makes it an area with one of the highest mean annual rainfalls in South Africa

- **2,500 million m3**

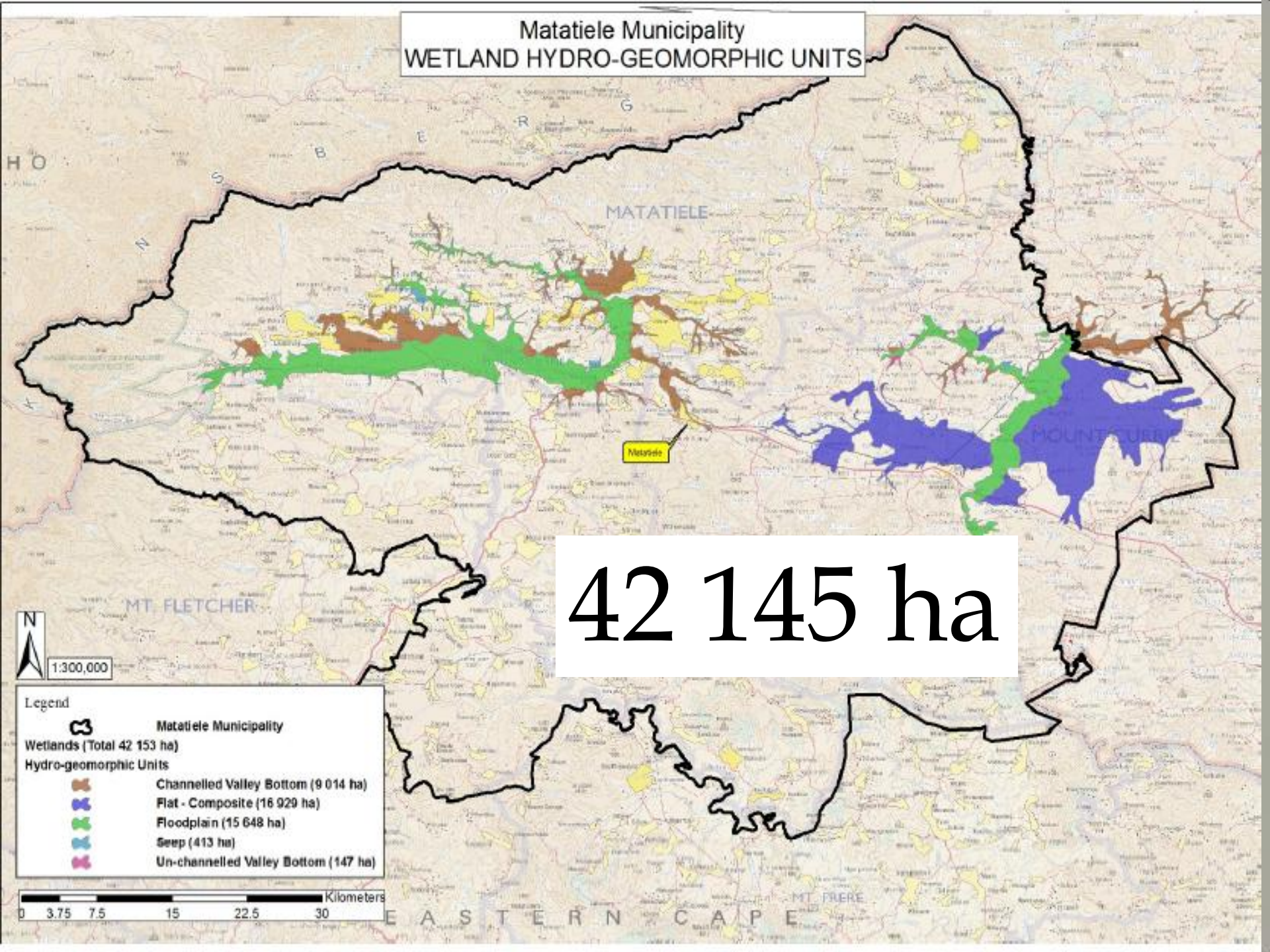
is its natural mean annual run-off (MAR)

- **50 tons**

is the estimated soil loss per year, per hectare!

UPPER SYSTEM MAIN TRIBUTARIES

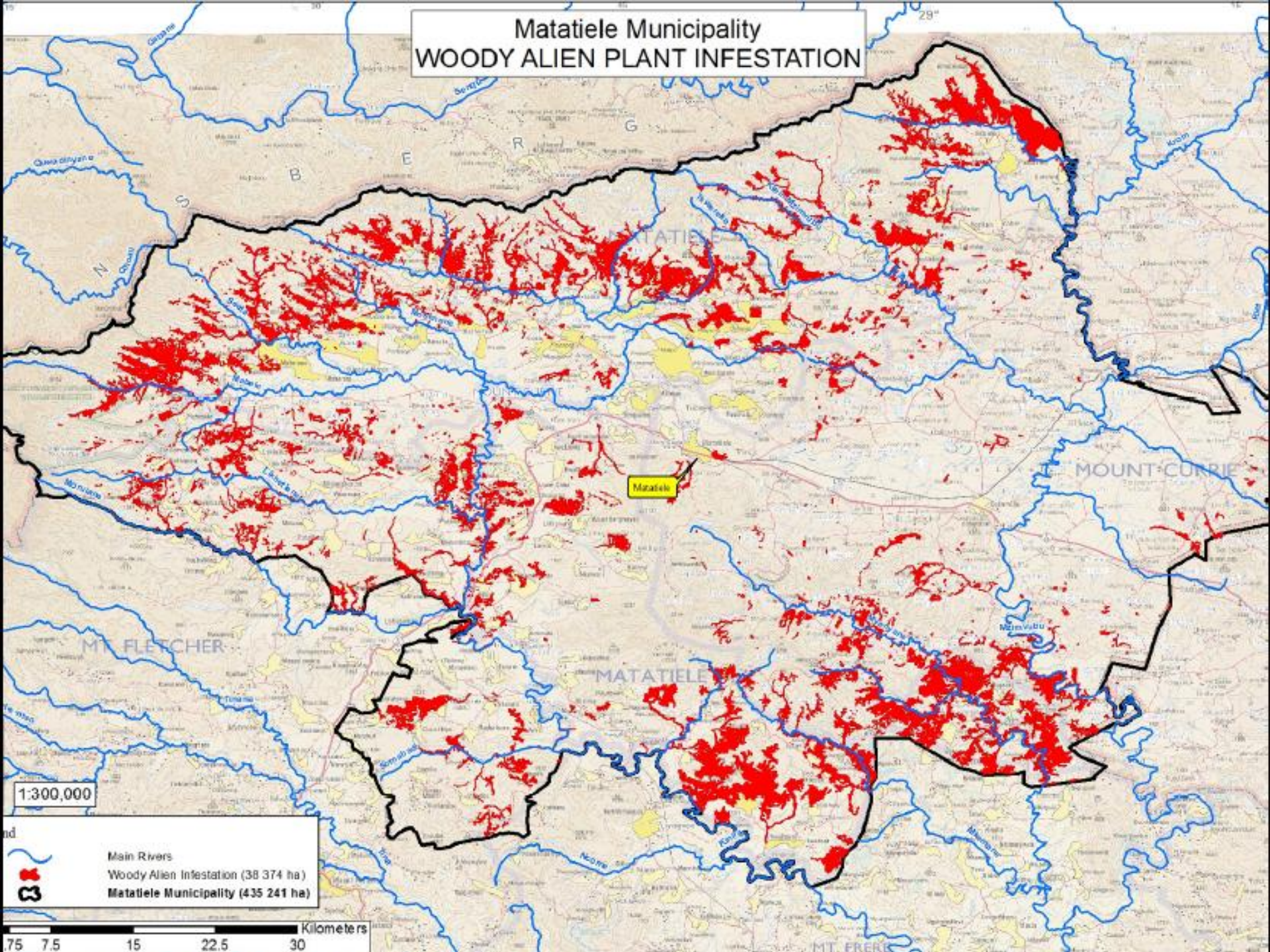
- KINIRA
- SEETA
- LEBELLE
- MAFUBE
- TSWEREKA
- MGENI


Matatiele Municipality
WETLAND HYDRO-GEOMORPHIC UNITS
MATATIELE
Matatiele
MT. FLETCHER
MT. FRERE
EASTERN CAPE
42 145 ha
N
1:300,000
Legend
Matatiele Municipality
Wetlands (Total 42 153 ha)
Hydro-geomorphic Units
Channelled Valley Bottom (9 014 ha)
Flat - Composite (16 929 ha)
Floodplain (15 648 ha)
Seep (413 ha)
Un-channelled Valley Bottom (147 ha)
Kilometers
0 3.75 7.5 15 22.5 30


ALIEN PLANT INFESTATION IS OPPORTUNISTIC IN DEGRADED AREAS WHERE GRASSLAND & GROUNDCOVER IS DISTURBED

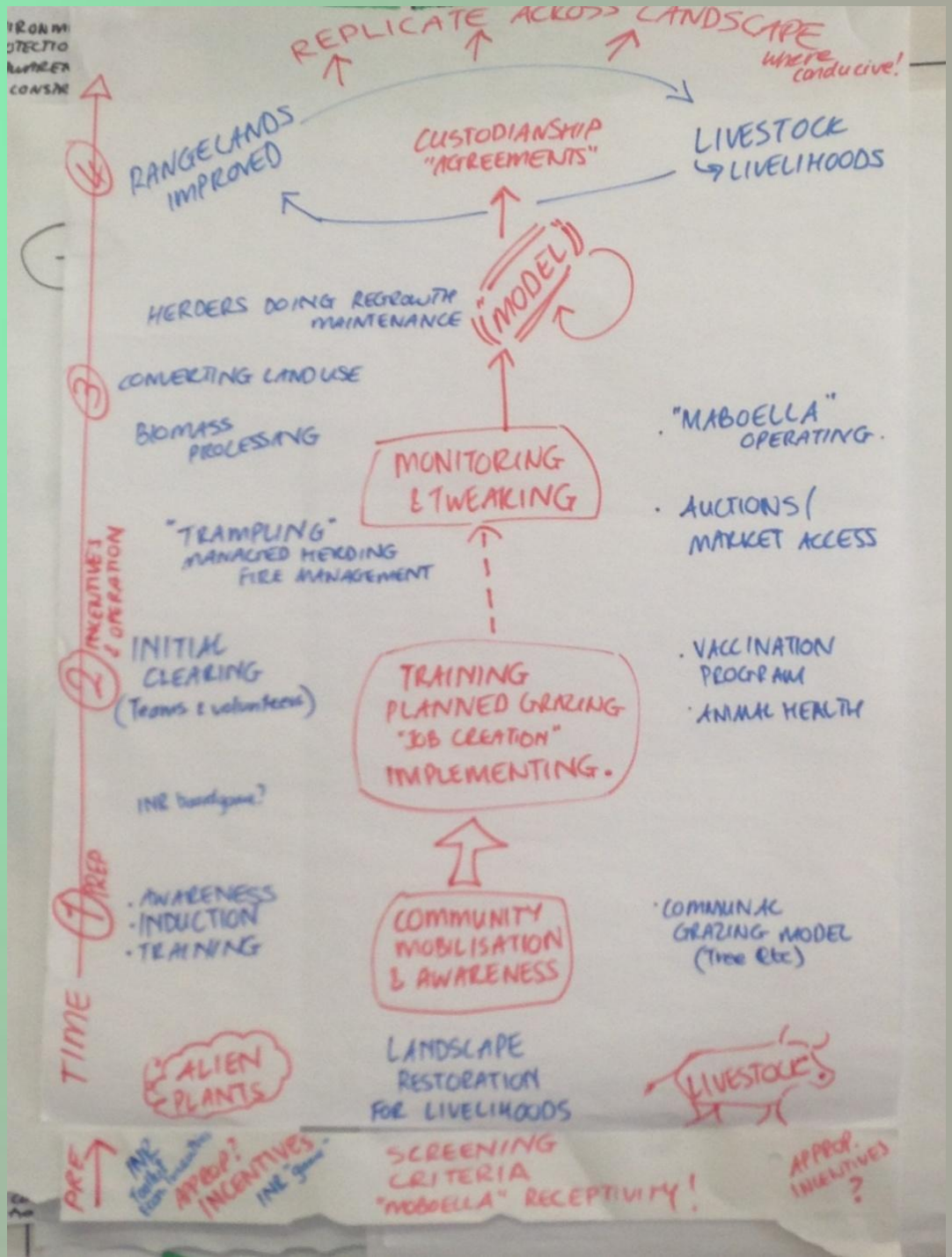

MALUTI
Ramohlakoana
Matatiele

Matatiele Municipality
WOODY ALIEN PLANT INFESTATION



LIVESTOCK BLAMED FOR DEGRADATION: CAN PROVIDE THE ULTIMATE LOW COST RESTORATION TOOL UNDER AGREED & APPROPRIATE ROTATIONAL GRAZING MANAGEMENT

LANDUSER NEGOTIATION



INCENTIVES & AGREEMENTS

PATH STABILISATION, SEED REFUGES & GRAZING SYSTEMS

INAUGURAL WARD 14 STOCK AUCTION – June 2014

No of stock offered by 9 villages	129
No of stock sold	76
% Sold	60%
Highest price	ZAR 10,050.00
Lowest price	ZAR 3,100.00
Ave R/kg offered	ZAR 11.07
Ave R/kg sold	ZAR 11.24
No owners putting up stock	66
Actual households who sold	27
Average income per household	ZAR 17 475
Total turnover	**ZAR 471,800.00**

establishing replicable demo projects which restore watershed functions

PHASE 1: CATALYSE

- EPWP / WF PROJECTS TO TACKLE INITIAL CLEARING
- ESTABLISH SAVINGS GROUPS & VALUE ADDING ACTIVITIES
- MOBILISE BENEFICIARY COMMUNITY FOR MANAGED GRAZING: LIVESTOCK HEALTH INCENTIVES & AUCTIONS

PHASE 2: MAINTAIN

- ROTATIONAL GRAZING / RESTING IMPROVES GRASSLAND
- CATTLE AS ‘MAINTENANCE TOOL’ IN CLEARED CAPPED AREAS TO RESTORE GRASS COVER
- RED MEAT MARKET ACCESS FOR INCOME GENERATION, AND INCENTIVE TO MAINTAIN GRAZING MANAGEMENT
- CITIZEN SCIENCE & ‘ROBUST’ MONITORING

Hypothesis…

By focusing on improved livestock production as the ultimate outcome, we can promote sustainable rangeland restoration and water security, poverty reduction and improved governance in communal landscapes.

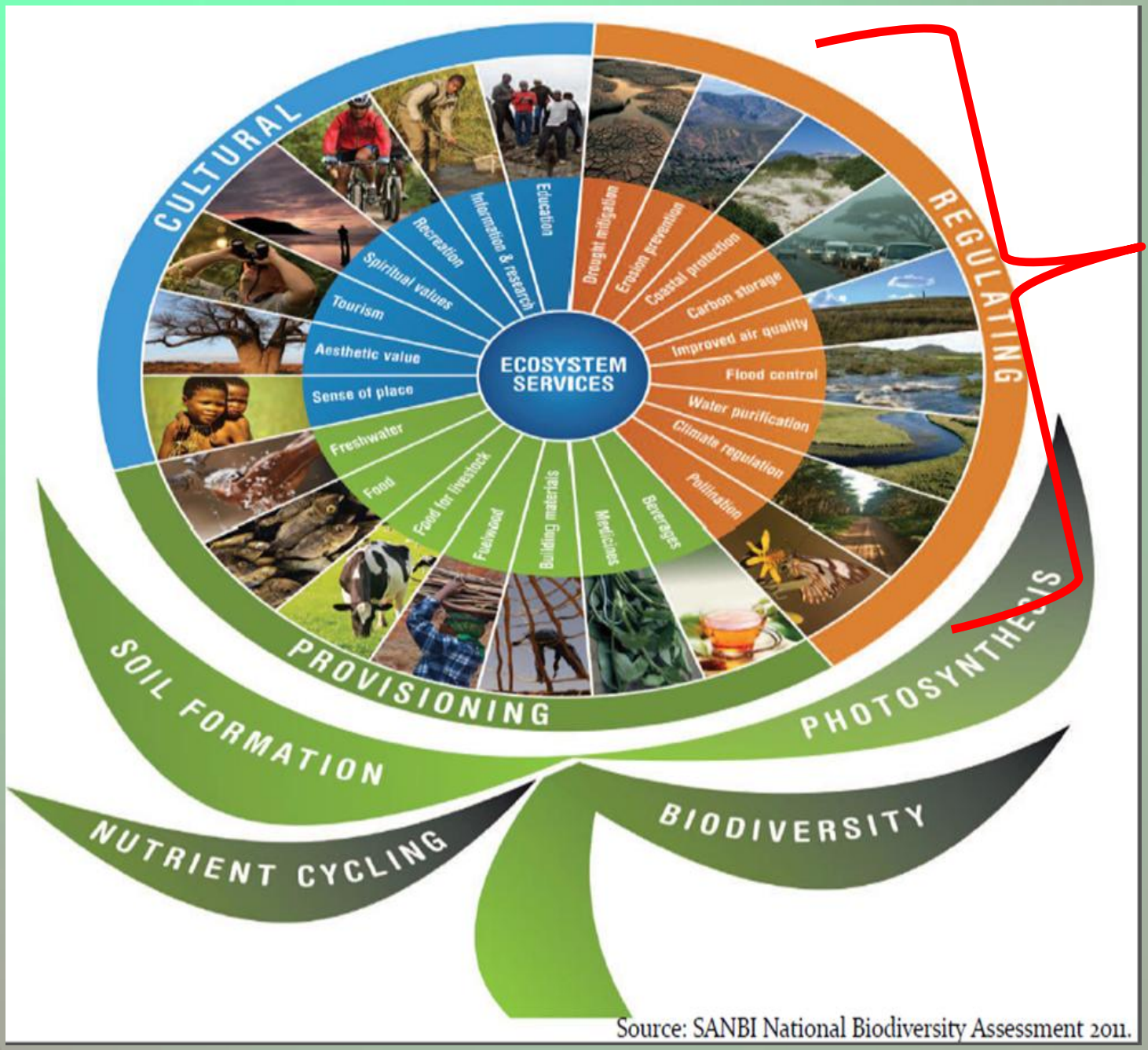
are we making any difference???

EGS MONITORING TOOLKIT

- provides baseline against which to measure trends
- supports management intervention planning
- product of collective innovation, skills, resources & needs
- citizen-science based, flexible and can be modified
- employs holistic, innovative thinking
- about a systematic approach to the landscape
- two staged approach: regular plus rigorous

UMZIMVUBU CATCHMENT PARTNERSHIP PROGRAMME

	Description	Frequency	Accuracy	Aim	Cost
Stage 1	Citizen science approach	Weekly or monthly	Low to medium	To monitor, educate, involve and change behavior.	Low
Stage 2	Rigorous Scientific approach	Seasonally or annually	High	To generate reliable information.	High



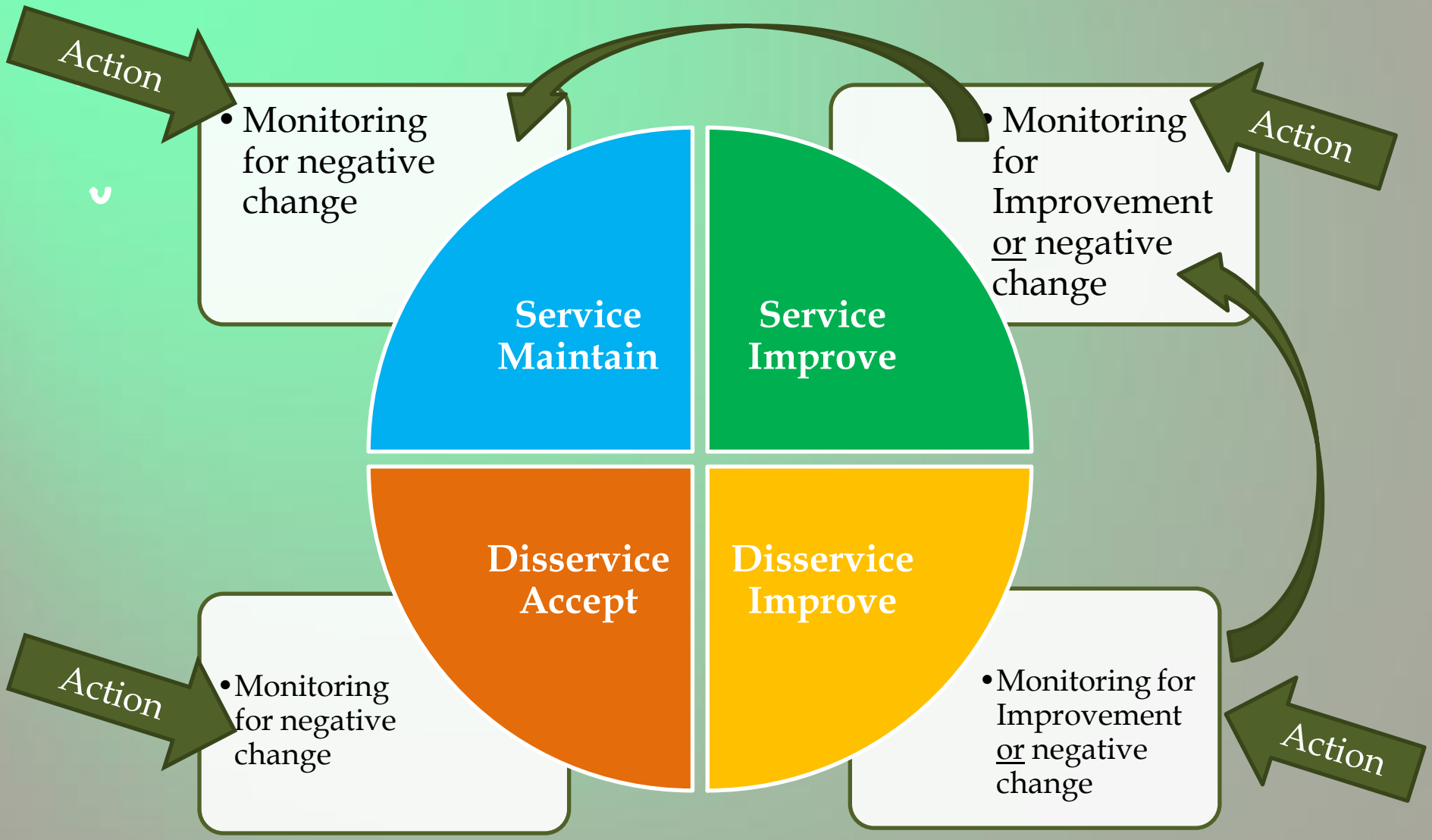
Source: SANBI National Biodiversity Assessment 2011.

Our methodology is concerned with measuring change in the **regulating services** – we can measure the quality of these.

Specifically:

- **Soil protection**
- **Water Quality**
- **Base flow**
- **Biodiversity**
- **Infiltration**

LANDSCAPE CHARACTERISATION UNITS



Grassland

- Soil Protection
- Infiltration
- Biodiversity

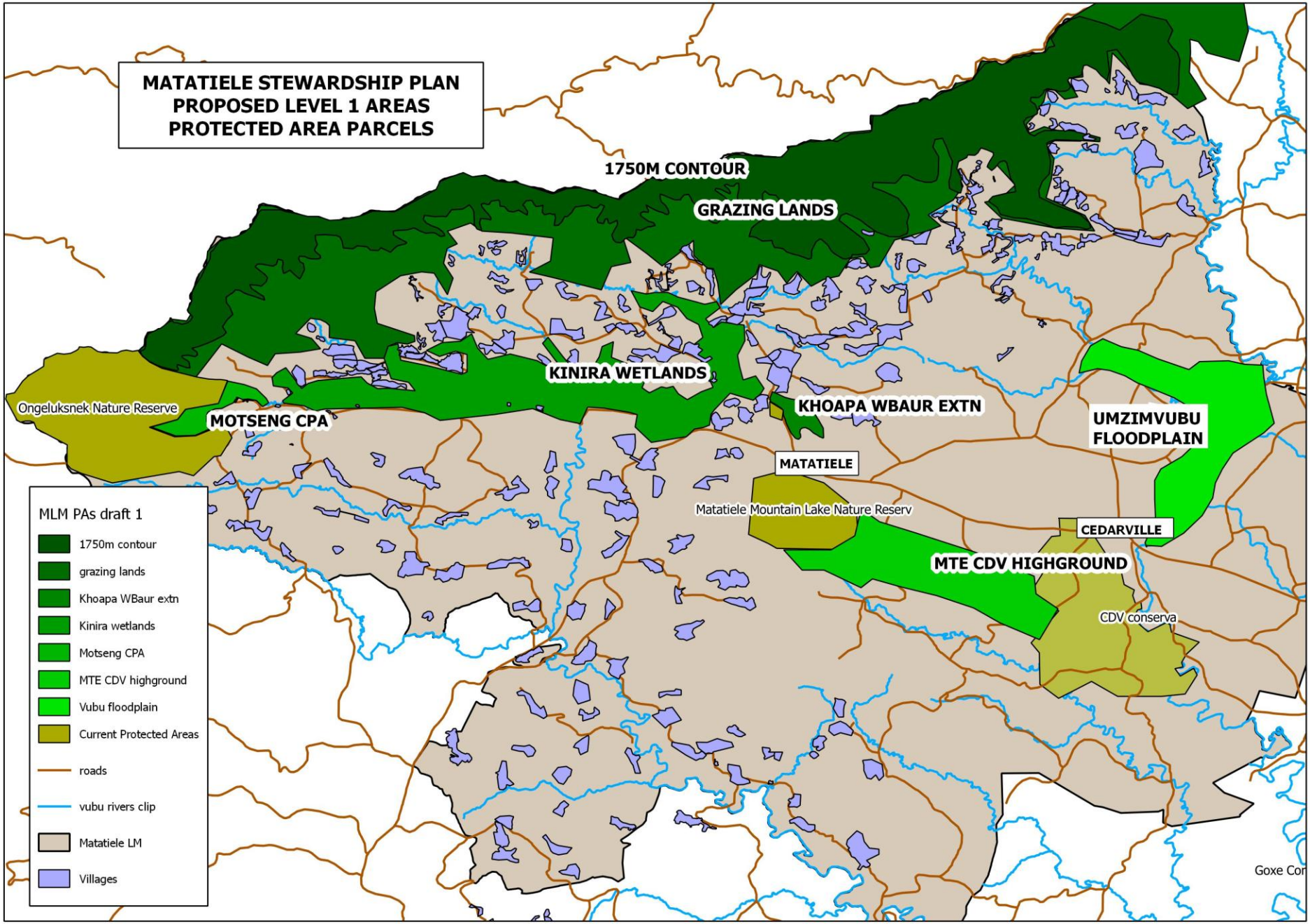
Wetland

- Water Purification
- Flood control
- Baseflow of rivers
- Water storage
- Biodiversity

Riparian

- Flood protection
- Baseflow
- Water quality
- Biodiversity

External Inputs	Wetlands	Grasslands	Riparian Areas
• Temperature • Rainfall • Extreme Events – snow etc.	• Turbidity • Soak pits • Amphibians • Staff gauge • PH	• Basal Cover • Soil cohesion • Species Diversity • Infiltration Rate • Splashboard • Extent of disservice • Fixed Point Photo	• Turbidity • Mini Sass • Temperature • PH • Conductivity • Fixed Point Photo


MATATIELE STEWARDSHIP PLAN
PROPOSED LEVEL 1 AREAS
PROTECTED AREA PARCELS
1750M CONTOUR
GRAZING LANDS
KINIRA WETLANDS
Ongeluksnek Nature Reserve
MOTSENG CPA
KHOAPA WBAUR EXTN
UMZIMVUBU
FLOODPLAIN
MATATIELE
Matatiele Mountain Lake Nature Reserv
CEDARVILLE
MTE CDV HIGHGROUND
CDV conserva
Goxe Cor
MLM PAs draft 1
1750m contour
grazing lands
Khoapa WBaur extn
Kinira wetlands
Motseng CPA
MTE CDV highground
Vubu floodplain
Current Protected Areas
roads
vubu rivers clip
Matatiele LM
Villages

UCPP FIELD TRIPS: what's to see…

INTERVENTIONS

- Alien clearing
- Erosion rehab
- Rotational grazing
- Trample sites
- EGS monitoring
- Comm. mobilisation
- Conservancy efforts

LANDSCAPE ISSUES

- Watershed location
- Wetland encroachment
- Woody infestation
- Erosion and siltation
- Riparian impacts
- Land use issues…

LIMA RURAL DEVELOPMENT FOUNDATION

Institute of Natural Resources

CONSERVATION SOUTH AFRICA
Member of the CI Network

ERS environmental and rural solutions

FIELD TRIP SITES IN UPPER UMZIMVUBU