



# INVESTMENTS INTO ECOSYSTEM SERVICES FOR ENHANCED EFFICIENCY OF WATER SERVICE DELIVERY





# PRESENTATION OUTLINE



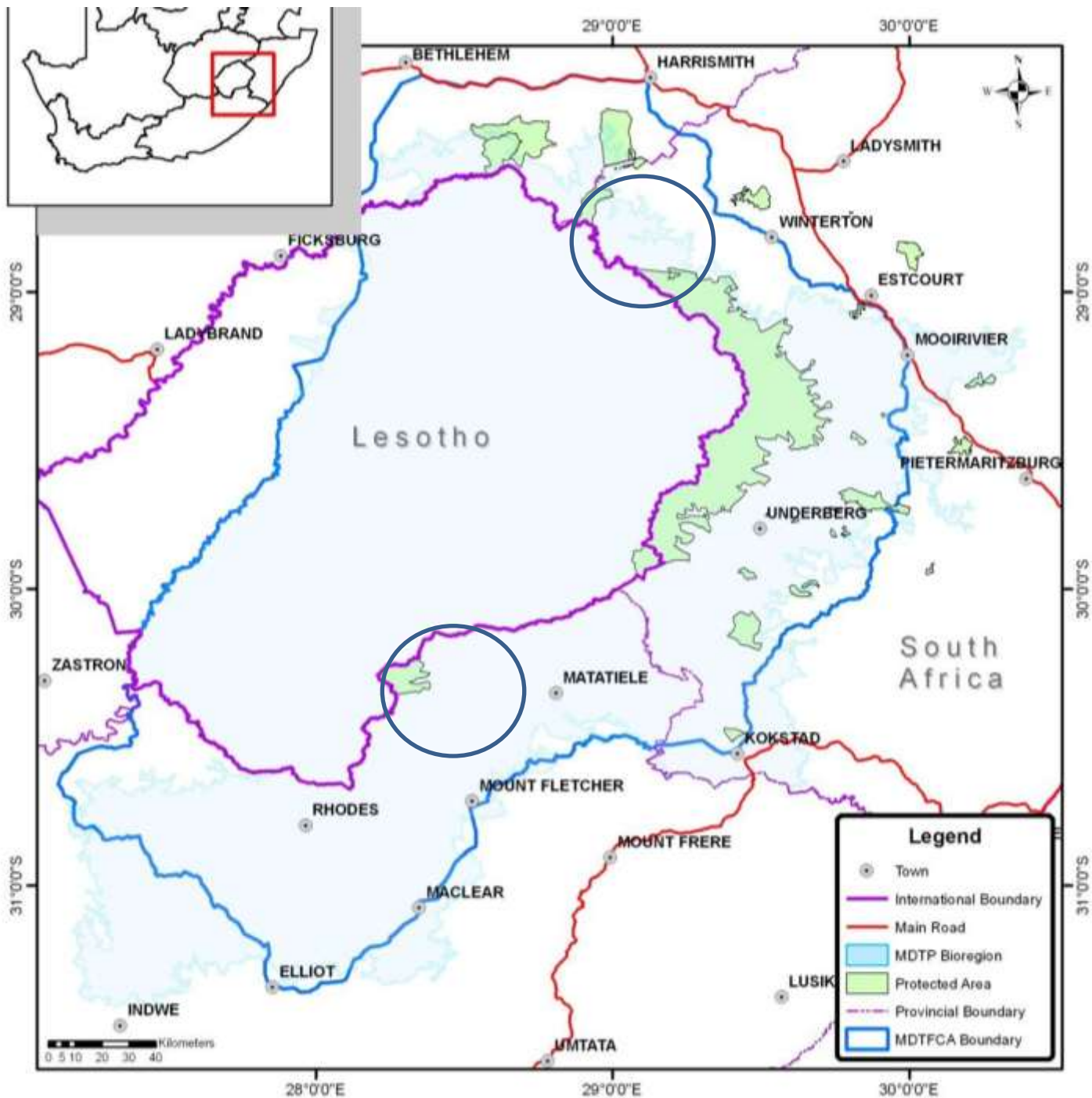
- Background
- Unpacking some of the jargon
- Lessons learned
- Where to from here
- Concluding remark/observation

# BACKGROUND



- The Maloti Drakensberg Transfrontier Project (2007): Feasibility for PES in the Drakensberg;





# BACKGROUND



- The Maloti Drakensberg Transfrontier Project (2007): Feasibility for PES in the Drakensberg;

	Upper Thukela	Upper Umzimvubu
Total benefits, no restoration costs	0.21	0.19
Total benefits, total cost	0.31	0.48
Total additional baseflow: m <sup>3</sup>	12,869,204	3,936,842
Sediment reduction: t/y	1,884,379	7,381,437
Sediment reduction: m <sup>3</sup> /y	1,256,252	4,920,958
Total Management Costs: R/y	R3,795,061	R9,202,899
Total Restoration Costs over 7 years R/y	R31,945,410	R260,652,840

# BACKGROUND



- The Maloti Drakensberg Transfrontier Project (2007): Feasibility for PES in the Drakensberg;
- SANBI's National Grassland Programme (2009): Feasibility for PES in the grassland biome; and
- PES brokerage in the upper uThukela and Umzimvubu catchments.

# UNPACKING SOME OF THE JARGON



- The way the concept is packaged can make a difference: recent Nature Conservancy poll:
  - out of 16 terms used to describe the benefits of nature, "ecosystem services" ranked 13th, and "natural capital" ranked 15th.
  - the number one ranked term was "nature's value"
- Perhaps it depends on the audience.....

JARGON	AUDIENCE
Ecosystem goods and services	Peers?
Ecological infrastructure	Treasury Water resource planners
Natural capital	Economists
Natural life support systems	Local Govt. and Planners Public





## ECOSYSTEM SERVICES

### Supporting

- NUTRIENT CYCLING
- SOIL FORMATION
- PRIMARY PRODUCTION
- ...

### Provisioning

- FOOD
- FRESH WATER
- WOOD AND FIBER
- FUEL
- ...

### Regulating

- CLIMATE REGULATION
- FLOOD REGULATION
- DISEASE REGULATION
- WATER PURIFICATION
- ...

### Cultural

- AESTHETIC
- SPIRITUAL
- EDUCATIONAL
- RECREATIONAL
- ...

LIFE ON EARTH - BIODIVERSITY

## CONSTITUENTS OF WELL-BEING

### Security

- PERSONAL SAFETY
- SECURE RESOURCE ACCESS
- SECURITY FROM DISASTERS

### Basic material for good life

- ADEQUATE LIVELIHOODS
- SUFFICIENT NUTRITIOUS FOOD
- SHELTER
- ACCESS TO GOODS

### Health

- STRENGTH
- FEELING WELL
- ACCESS TO CLEAN AIR AND WATER

### Good social relations

- SOCIAL COHESION
- MUTUAL RESPECT
- ABILITY TO HELP OTHERS

### Freedom of choice and action

OPPORTUNITY TO BE ABLE TO ACHIEVE WHAT AN INDIVIDUAL VALUES DOING AND BEING

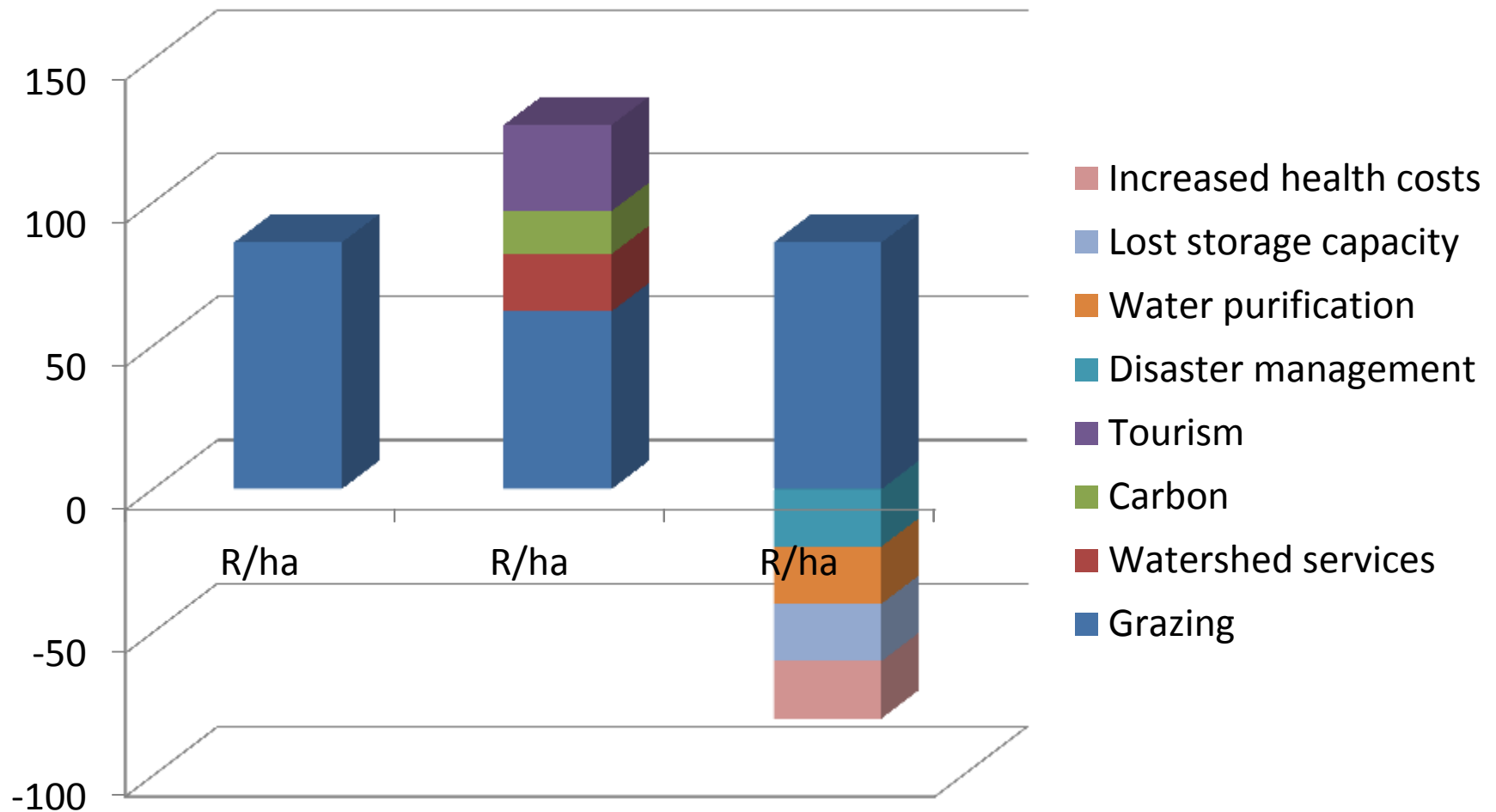
ARROW'S COLOR  
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH  
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Source: Millennium Ecosystem Assessment



**A comparison of sustainable and unsustainable range management costs and benefits**

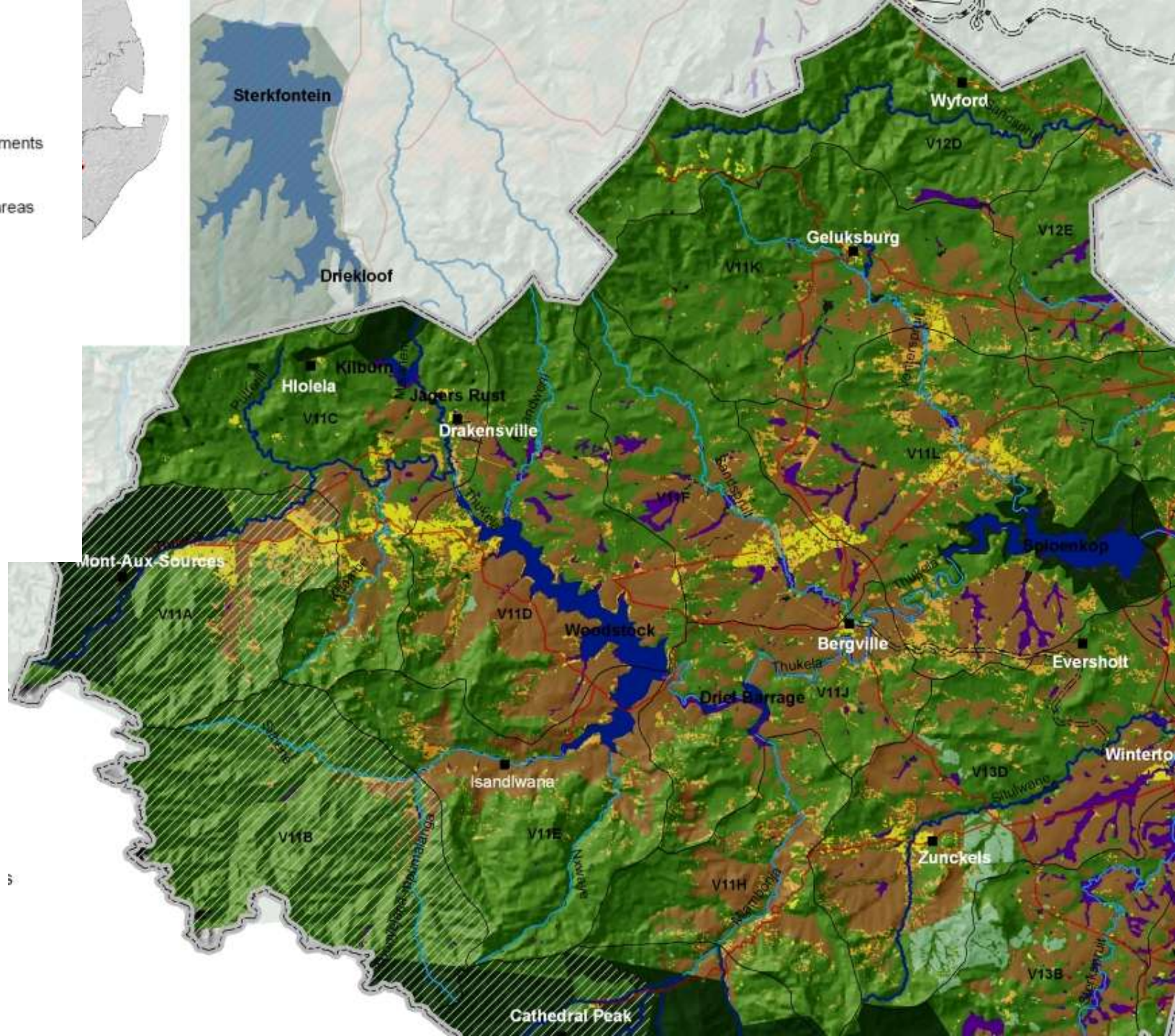
# LESSONS LEARNED (SO FAR ...)



- PES brokerage in the upper uThukela:
  - You have to have a buyer/s

SECTOR	VOLUME (M3/A)	PERCENTAGE
Dept. Water Affairs	47441000	68.04%
uThukela Water	6922982	9.93%
Agriculture	15298532	21.94%
Tourism/Conservation	63100	0.09%
TOTALS	69725614	100.00%









EAR ...)

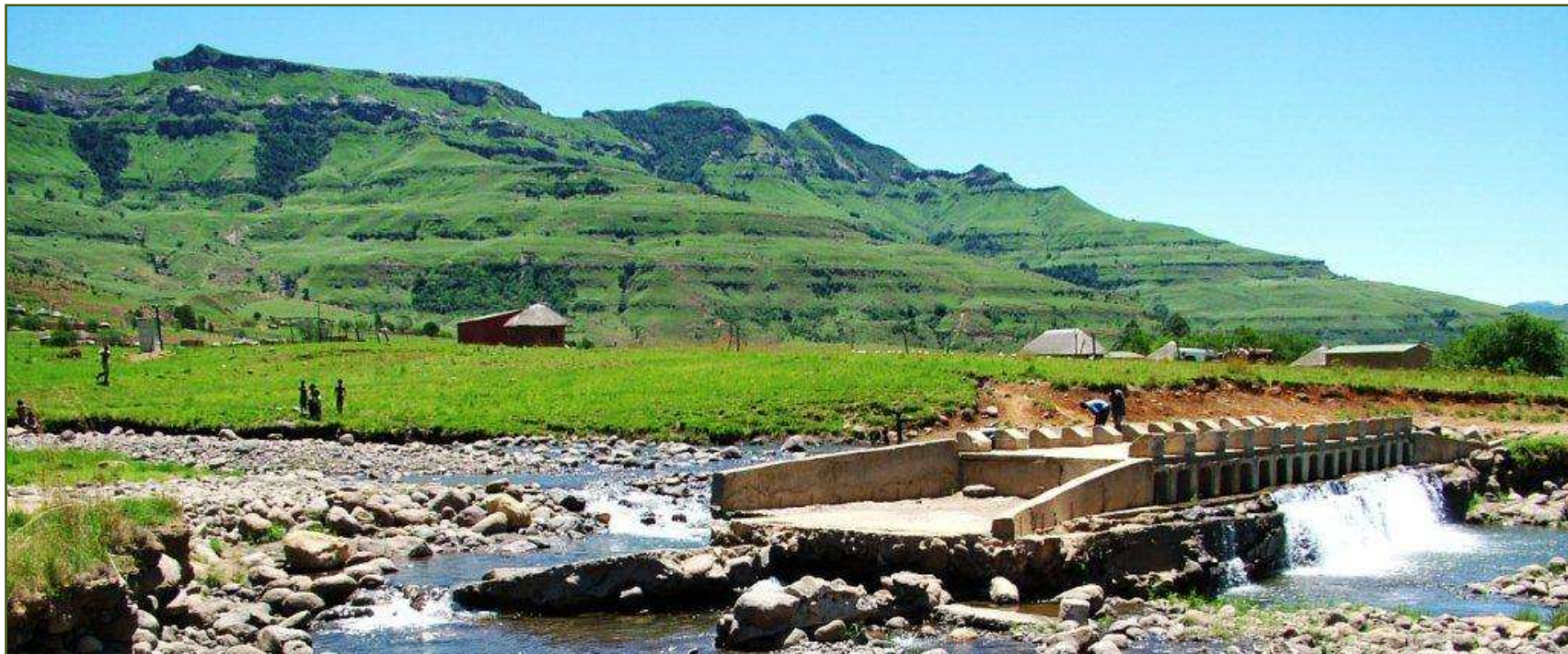
**SANBI**  
Biodiversity for Life



pper uThukela:

ver/s

ething to sell

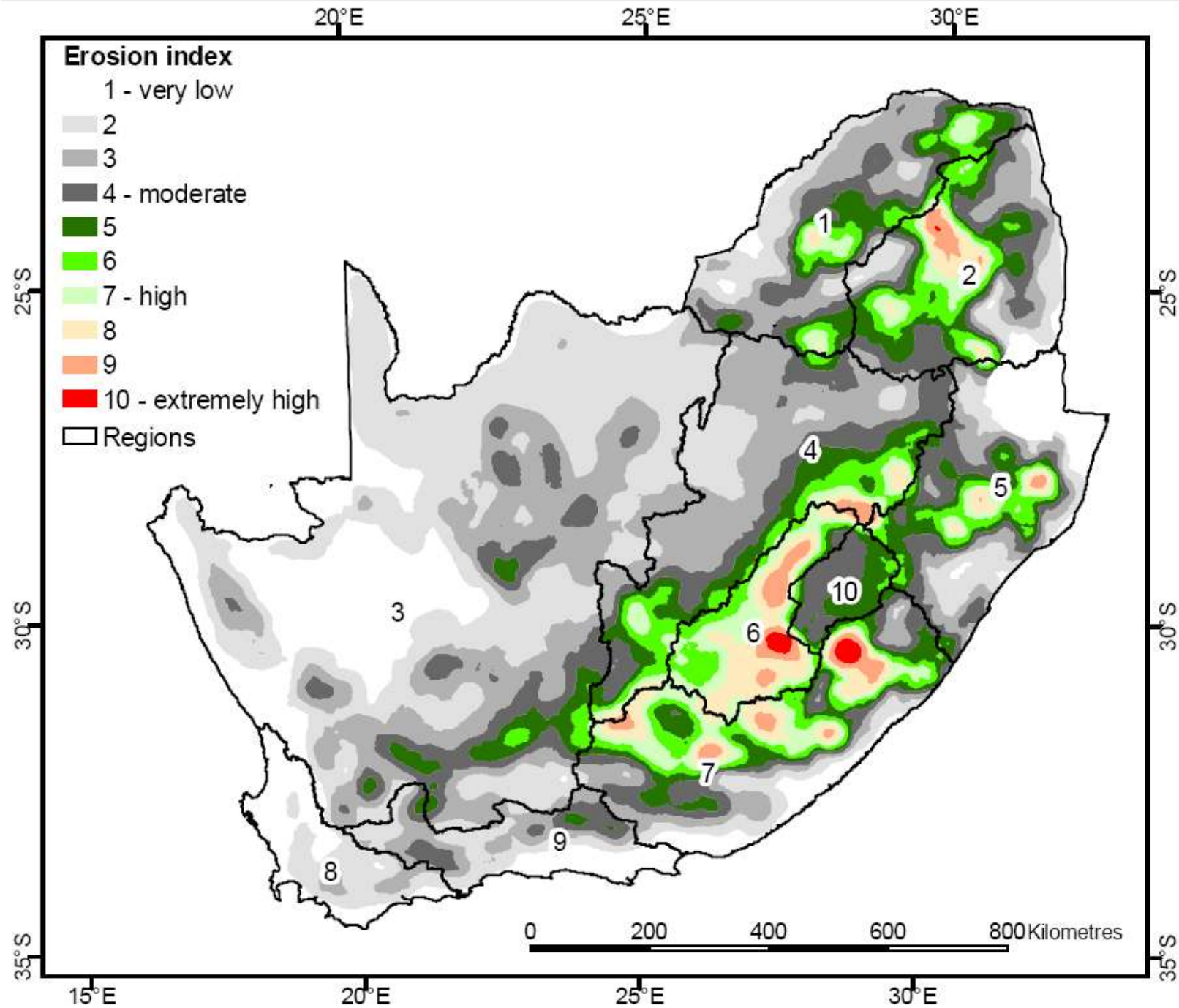




# LESSONS LEARNED (SO FAR ...)



- PES brokerage in the Umzimvubu:
  - You have to have a buyer/s:
    - very small percentage of land cover is commercial agriculture;
    - otherwise it is subsistence/communal land tenure with local government being the primary buyer.
  - You have to have something to sell.









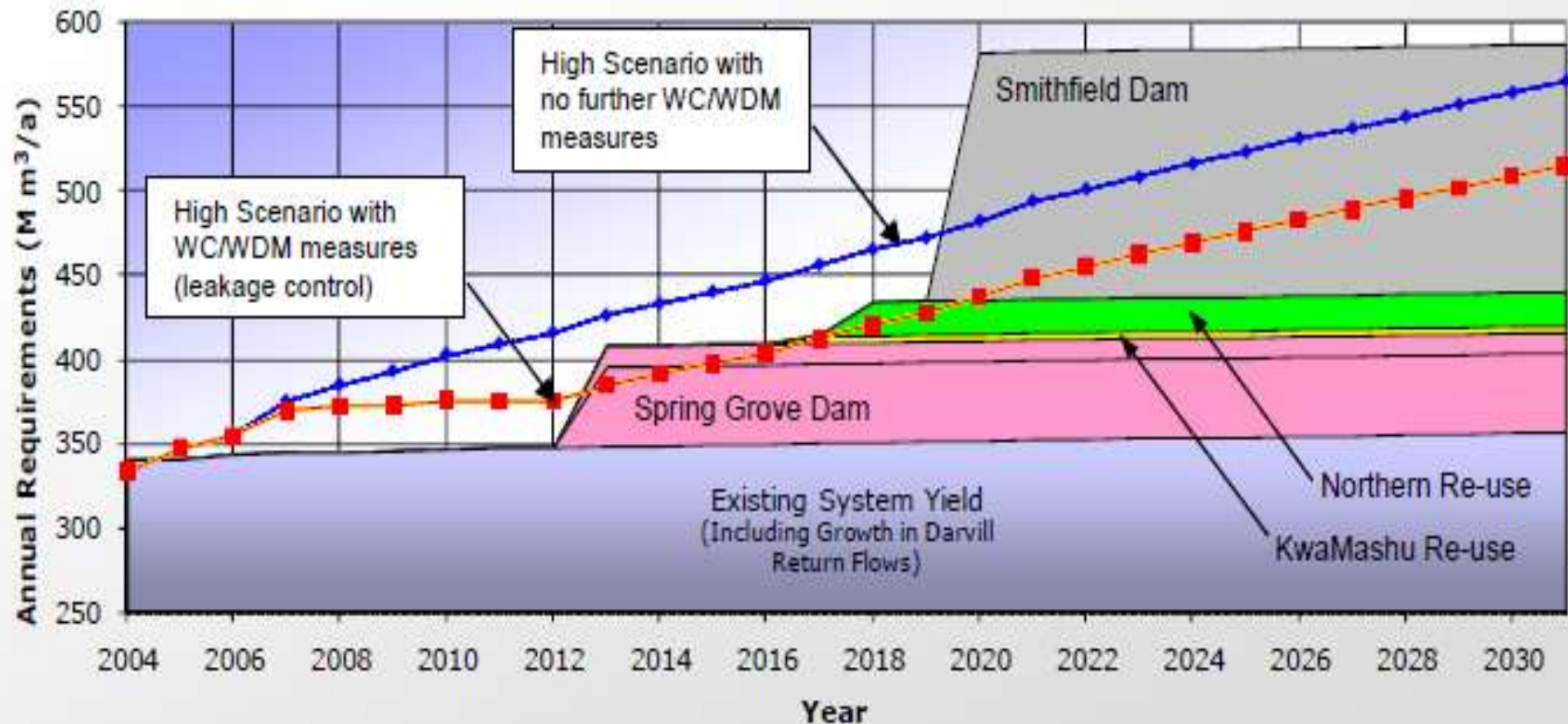
# LESSONS LEARNED (SO FAR ...)



The Mount Fletcher Dam – completed in 2008 and photographed in May 2011

# WHERE TO FROM HERE?

- Greater uMngeni River Catchment







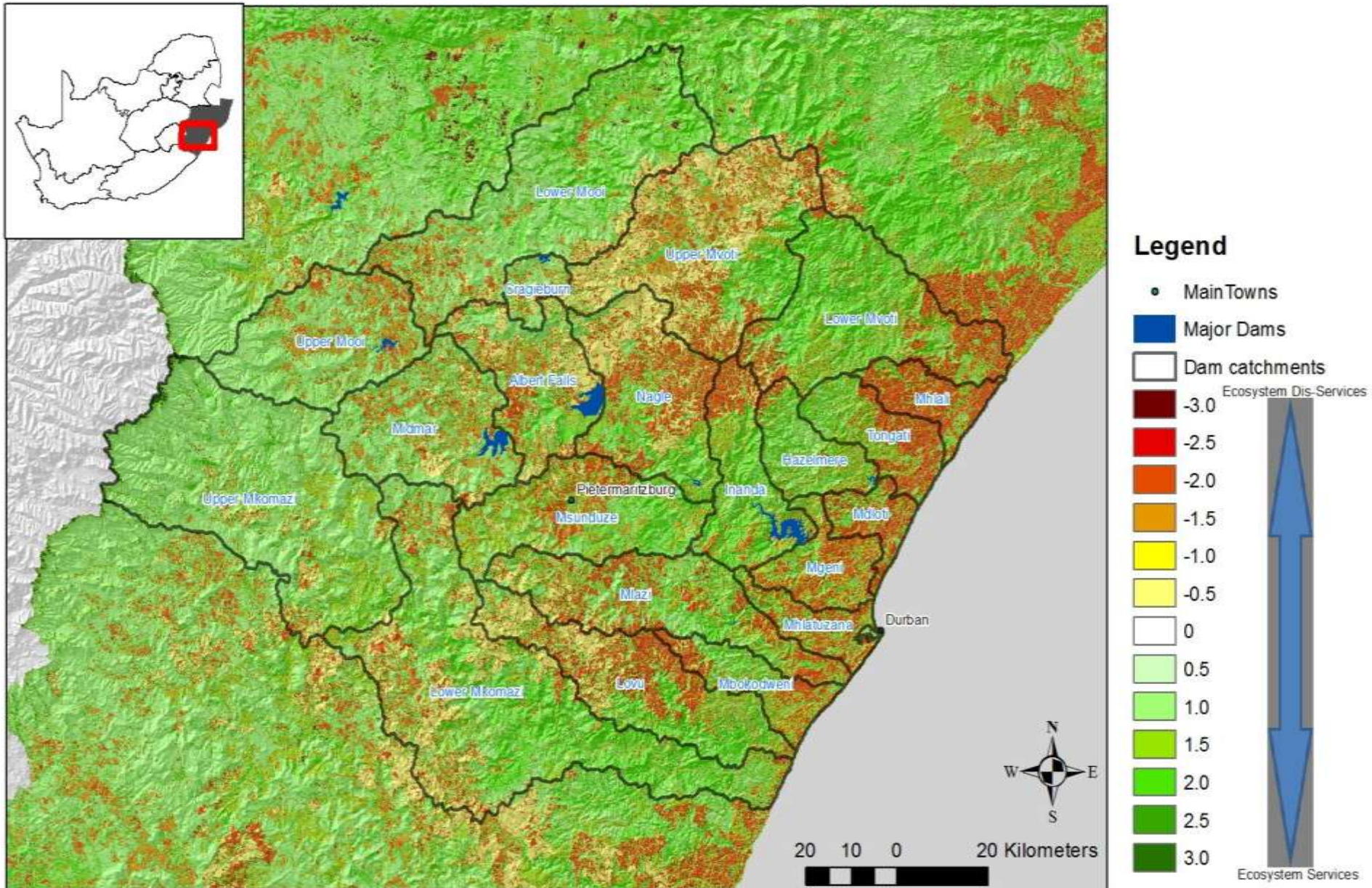






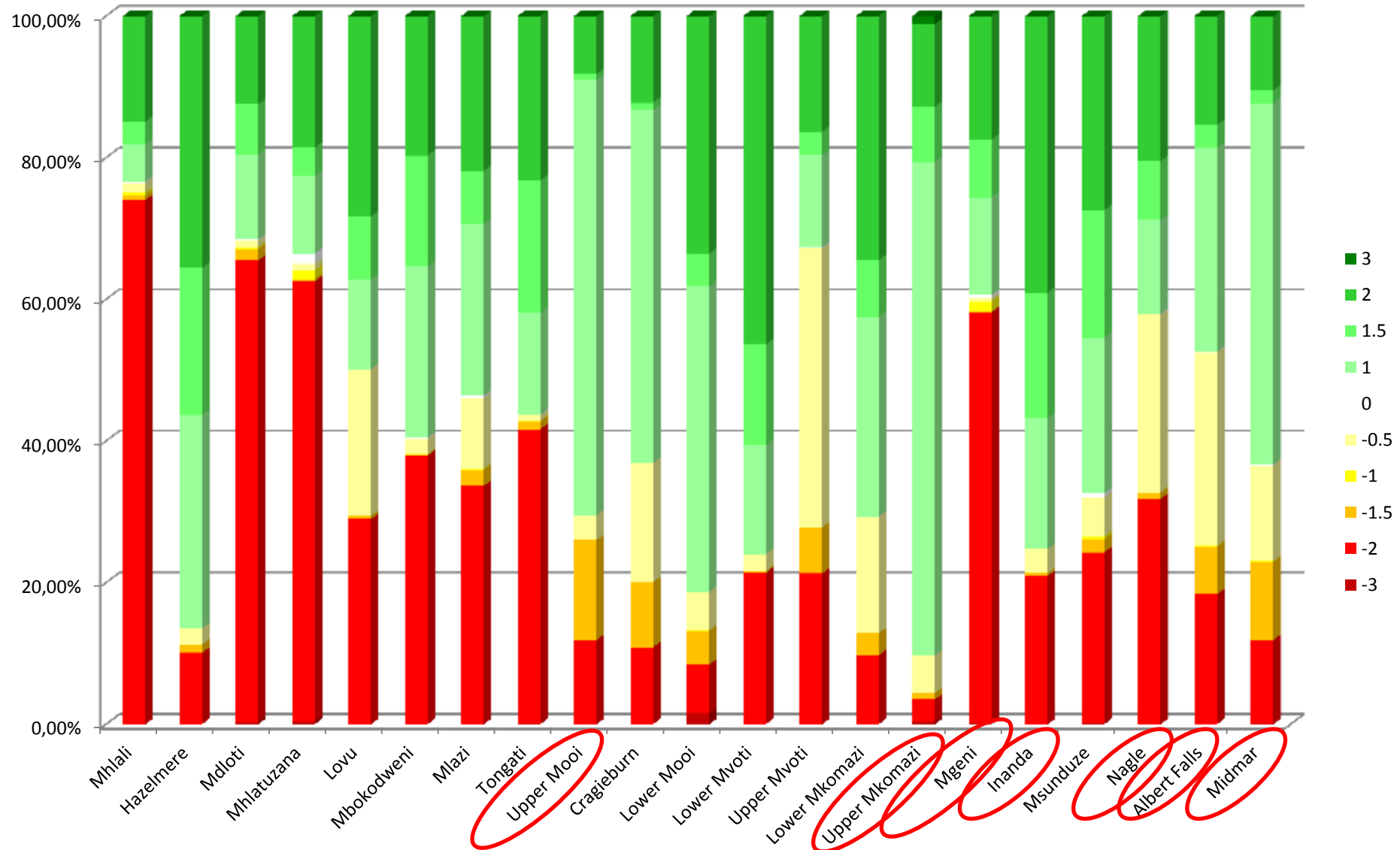
# POTENTIAL TO DELIVER ECOSYSTEM GOODS AND SERVICES

## Umgeni Catchment Area



# WHERE TO FROM HERE?

**SANBI**  
Biodiversity for Life



# WHERE TO FROM HERE?



- Umzimvubu Catchment
  - Conservation South Africa – UCPP
  - ASGISA Dam Feasibility Study:
    - The traditional approach of water resource planners and engineers to the challenges of bulk water supply is captured in a recent terms of reference for the Kinira Dam Regional Water Supply feasibility study:
    - **“Assess the potential sediment loading that is likely to occur and that needs to be accommodated in the sizing and design of the dam.”**
    - In other words – it is OK that we are losing soil from the catchments, we’ll just make the dam bigger!!



Qacha's Nek

Mohale's Hoek

Quthing

THABENG

SOMABADI

NTABELANGE

© 2012 Google  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2012 Afrigis (Pty) Ltd.  
© 2012 Cnes/Spot Image

30°40'19.44" S 28°38'03.02" E elev 1372 m

Goog

Eye

# CONCLUDING REMARK/OBSERVATION

When natural capital or ecological infrastructure is maintained and well managed, it will deliver strategically valuable goods and services.

But when mismanaged and degraded, goods will be lost and dis-services will be delivered with significant costs to society.

National Strategy for Sustainable Development (NSSD1)

