

Beaufort West dam - 2010



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**Experiences with the
Natural Resources Management (NRM) programmes
in South Africa: Reflecting on PES**

Structure

1. Biodiversity & ecosystem goods and services:

What are the issues?

- overview
- challenges/threats

2. Natural resources management programmes:

What is being done currently?

- overview
- techno-physical interventions

3. Natural resources management programmes

Potential going forward?

- PES potential

4. Challenges and PES going forward

Moving forward?

- types
- institutions & contracts
- converting economic value into financial flow
- regional and international partnerships

Urgent!



1. Biodiversity & ecosystem goods and services:

- overview
- challenges/threats



Priceless



Photos: Myles Mander

. . . yet highly valuable

The factory @ work

What catchments do:

- *It's a dam:*
 - catches, stores and releases water
 - works for people & business
 - national security
 - environmental flows
- *It's an insurance policy:*
 - delayed flows (winter water)
 - water treatment
 - dilution of waste
 - storm flow reduction
 - climate change resilience buffer
 - sediment reduction
- *It's a place:*
 - habitat
 - sense of place & culture
- *It works hard:*
 - sequesters carbon
 - provides food & fodder
 - ???

Who benefits:

- Farmers
- Rural residents
- Those in cities
 - business
 - residents
 - the gov.
- Future generations
 - NGOs
 - the gov.
- Those abroad
- ???

. . . for free . . .

. . . but what about the
landowners/users

Photo: Christo Marais



Photo: Leeanne Ezzy



Photo: Petra de Abreu

South Africa

Brickmaking – using
wood to bake mud



Photo: Rudi van Aarde

Mozambique Charcoal and charcoal making



Photos: Mario Falcao

Lesotho

Desertification & erosion due to wrong land use and lack of alternatives





Lesotho

Invasive aliens and
erosion with failed crops



South Africa

Desertification – big
time and large scale

Photo: Rudi van Aarde

South Africa

. . . and some more



Photo: Rudi van Aarde



South Africa

... and some more

Photo: Rudi van Aarde

South Africa
Mud exports



Photo: Rudi van Aarde



Chromolaena odorata
(triffid weed) from South America
is an invasive alien plant



Chromolaena

Hluhluwe-Imfolozi Park



***Chromolaena* invading land
of resource-poor farmer**



Chromolaena odorata is in Tanzania's Serengeti National Park.

Left unchecked, it may quickly swamp the Park – and potentially other parks.

These are the economic lifeblood of Tanzania, aside from the biodiversity impacts.



Controlling the invasion of *Chromolaena odorata* in the Park, using labour-intensive clearing, fire management and biological control, based on the success of South Africa's Working for Water programme.



Water hyacinth on Roodeplaat Dam



2. Natural resources management programmes:

- overview
- techno-physical interventions



Integrated natural resources management plan

Objective:

Resilient and sustainable environments and human livelihoods through integrated (packaged) natural resources management



Integrated natural resources management plan

The attacking force:

- Working for Water
- Working on Fire
- Working for Wetlands
- Working for Woodlands (Working for Land)
- Working for Energy

€100mil per year (start in 1995 with €2million)

Stated as public transfers exclusively, but now also private

Private and NGO offshoots such as “water neutral”

~40,000 people employed



President Nelson Mandela was
Patron in Chief of WfW.



Professor Kader Asmal, then Minister
of Water Affairs and Forestry,
launching WfW on 16th October 1995.



Integrated natural resources management plan

Interventions aimed at:

- Integrated veld and fire management
- Combat and control of invasive alien plants & bush encroachment
 - Restoration of natural capital (mainly woodlands)
- Facilitating secondary (value added) industries, i.e.:
 - coffins
 - energy
 - thatch



Use of local community-based contractors to execute the task



▲ Working for Water



▲ Working for Wetlands



▲ Working for Forests



▲ Working for Energy



▼ Working on Fire

NATURAL RESOURCES MANAGEMENT PROGRAMMES



KZN Invasive Alien Species Programme ▼

Land Care/ W for Land ▼

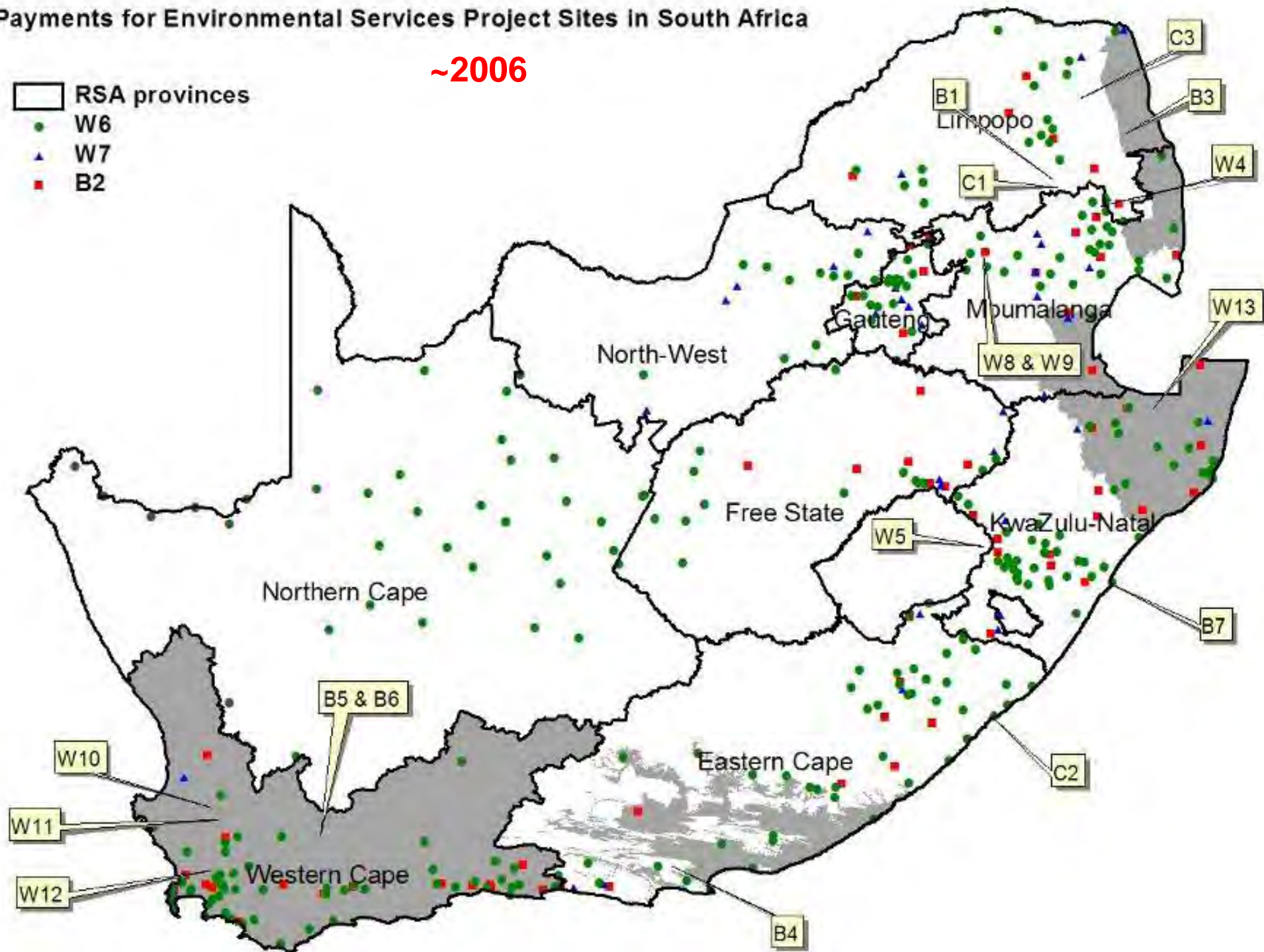
Value-added industries ▼



Payments for Environmental Services Project Sites in South Africa

~2006

- RSA provinces
- W6
- ▲ W7
- B2





House crows (India) kill young of birds & disease



Lionfish attacks young of indigenous species



Invasive rats: eat 1/3 of grain in Africa

Invasive organisms & *Working for Water* Programme



Fynbos converted to black wattle stands



Prevention is better than cure!



Zoar Wetland, Piet Retief (D. Lindley)



The Working for Wetlands Programme



95 wetlands (out of 114,000).
2,000 people employed.

Penny Park Wetland, Kokstad (J. Dini)
(149 hectares, ± 3 million cubic metres)



Working on Fire



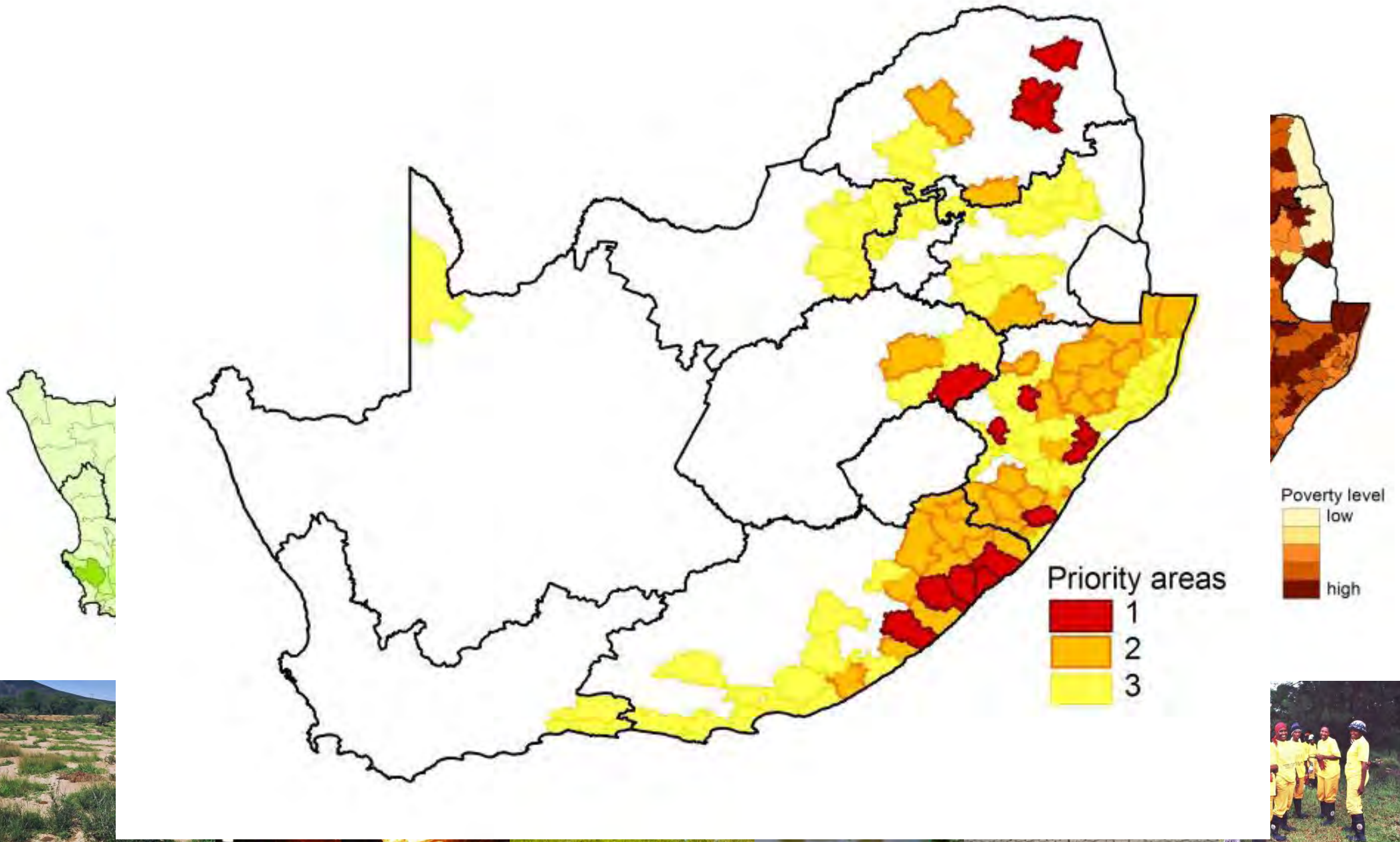
3. Natural resources management programme

- PES potential

Moving into the future now . . .



Important ecosystem factories are mainly in poor rural areas!



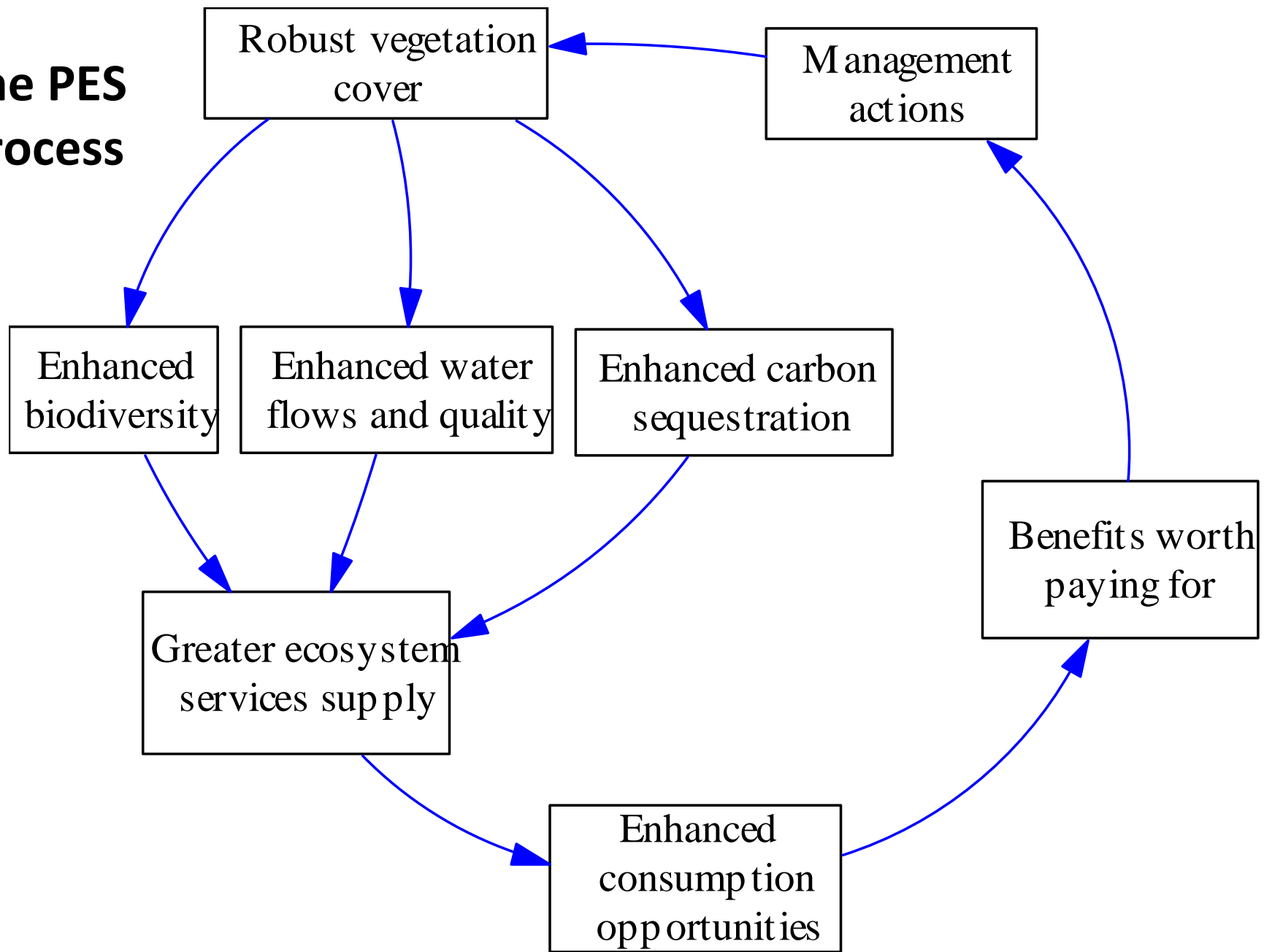
PES & RNC offers:

- Among the cheapest water augmentation schemes
- Avoid loss of 16% of country's water (IAPs only) – E1b/year in economic value; valuable considering 98,8% already allocated and utilised
- Use of IAPs = 720MW power generation (2%); value = E300m/y
 - REDD(+) = E900m over 15years in carbon

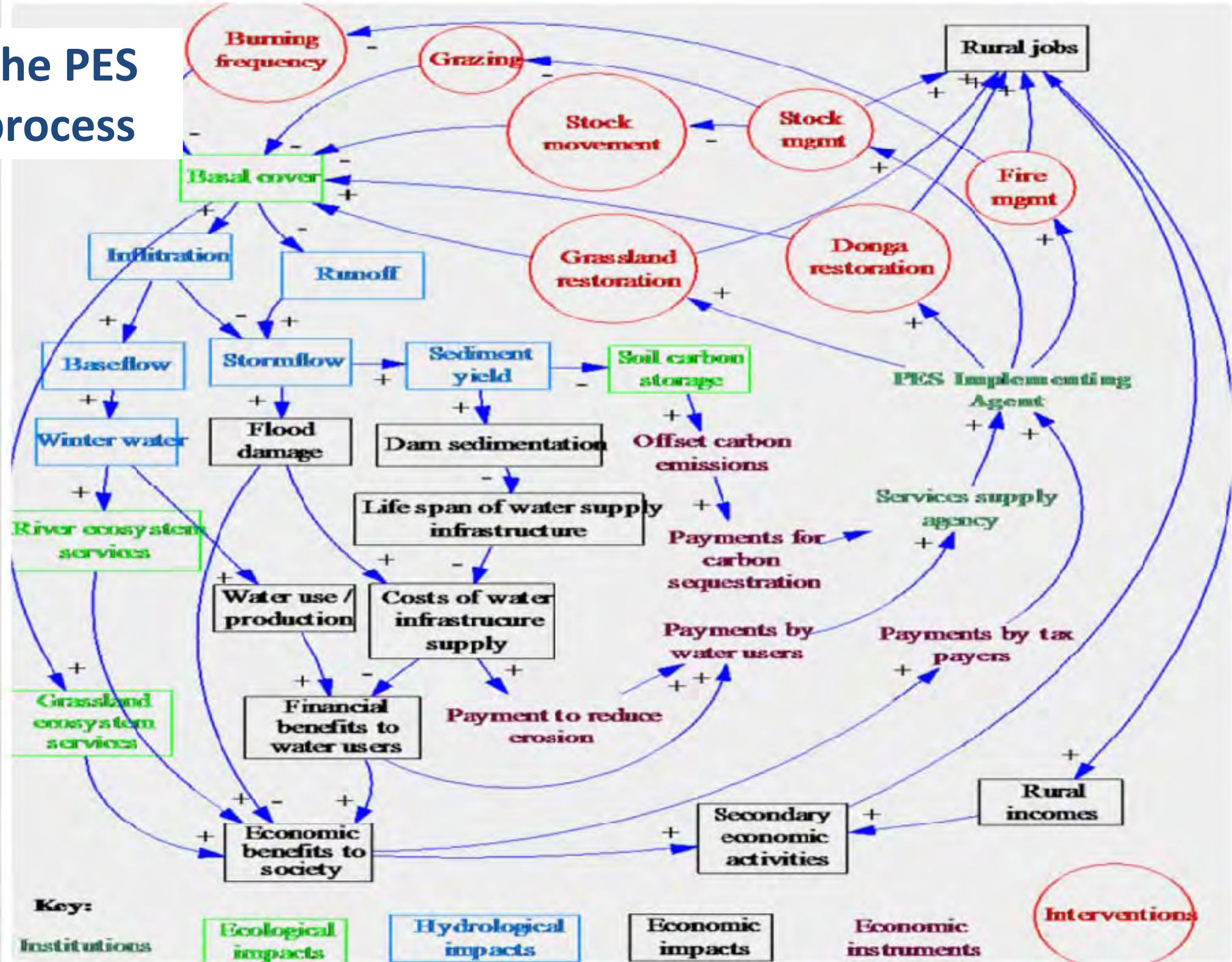
**Creating 115 million person-days of work
(for 50,000 people) per year for 15 years**



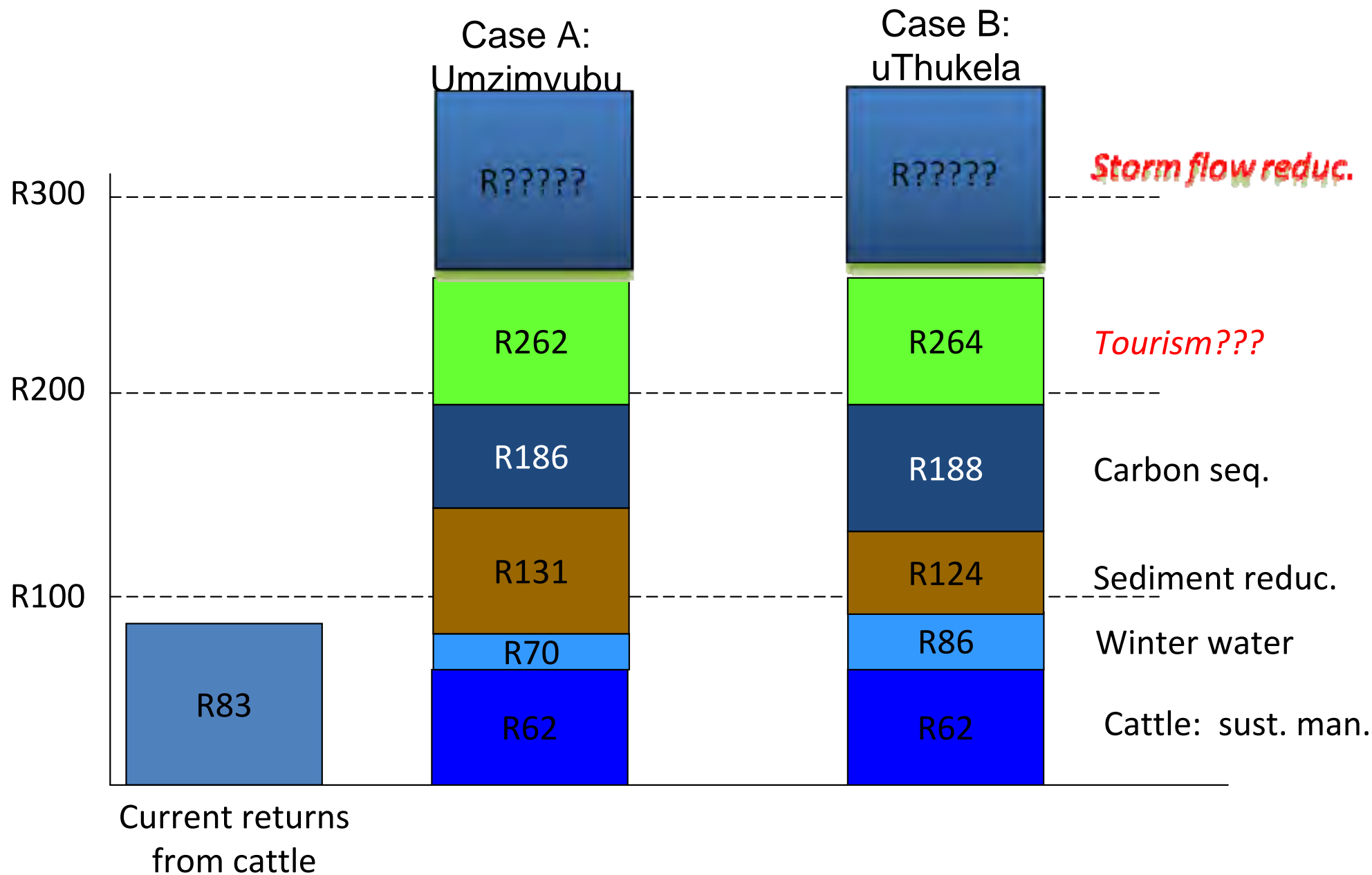
The PES process

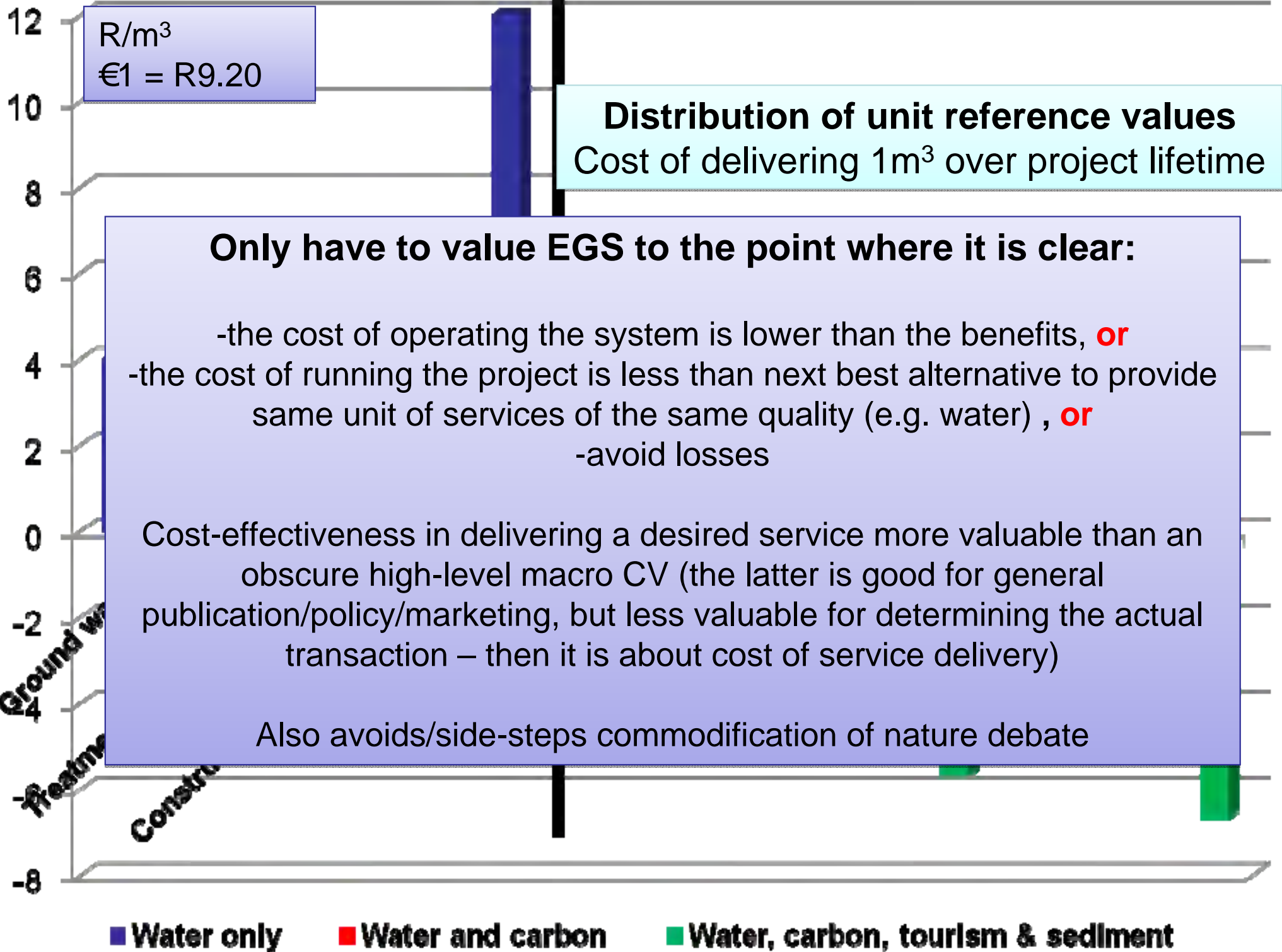


The PES process



Net return of one hectare





Lessons: A PES/RNC success formula

- having a **local champion** that can anchor the project and provide leadership;
 - a well-defined yet adaptable **strategy and management plan**;
 - sufficient **structural support**, both in cash and in kind, to enable the well-functioning of the programme;
- the presence of a **functioning organisation** in terms of i) social networks, ii) and formal inter-organisations contracts, and iii) intra-organisational stability; and
- the degree to which the project addresses **the political agenda** of the day.



Urgent

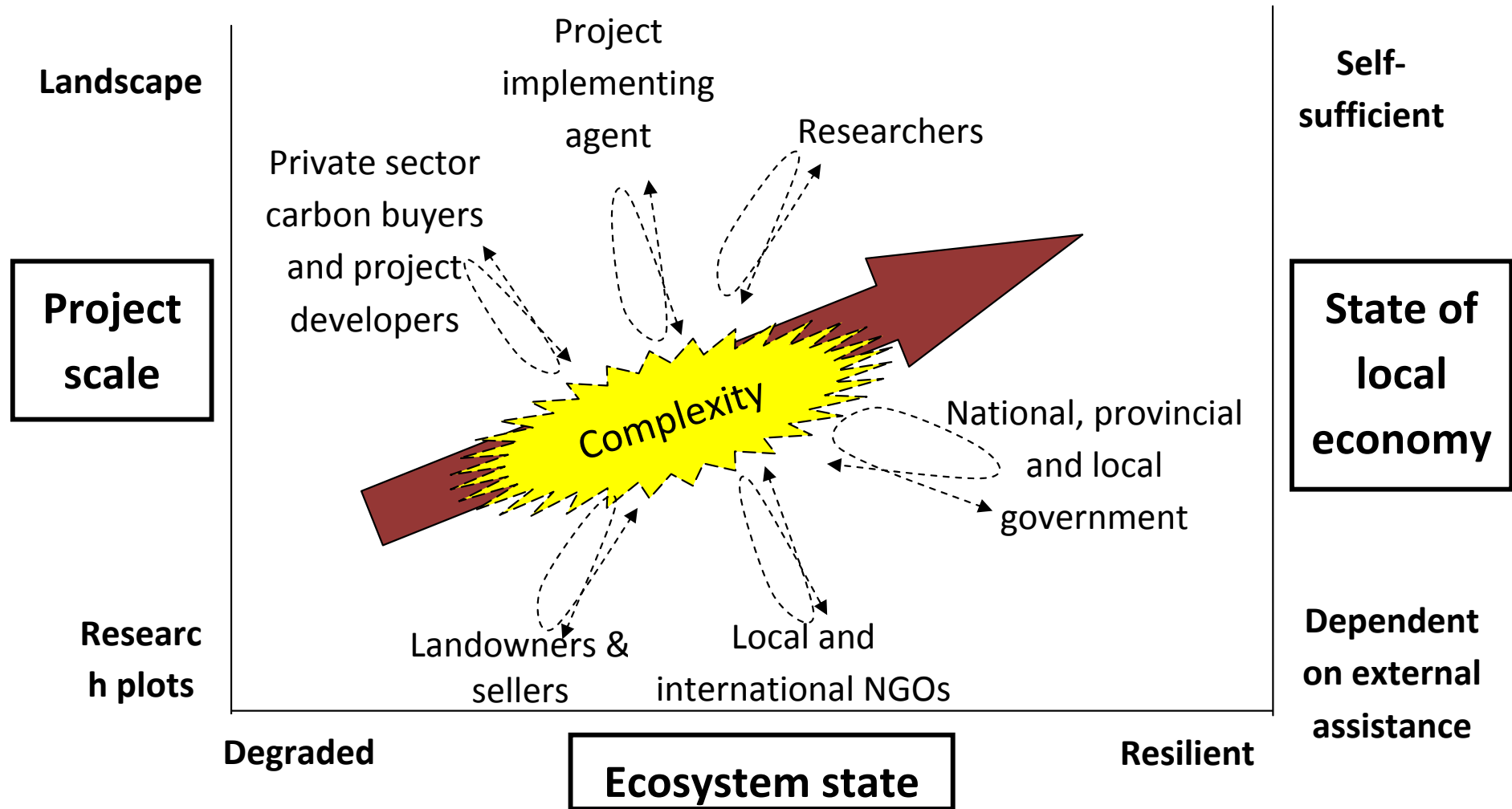
To Do:

4. Challenges and PES going forward

- types
- institutions & contracts
- converting economic value into financial flows
- regional and international partnerships



Dotted circular loop arrows depict transactors' continuous flow of learning as they engage with project complexity in formulating both restoration and market parameters.



Various types/options & challenges of PES

Public – Public

- Tax money
- ~€100m
- Limited options
- Not enough given
 - Bureaucratic
- Tax vs legislation

Private – Private (1)

- NGOs
 - WWF-SA
 - Social responsibility
 - Treatments
 - Corporates
 - Incentives for expansion

Private/Public/International – Private (2)

- Land under wildlife
 - e.g. elephants & Serengeti

• Easements?

- Biodiversity?
- Bundled approaches?
- Few early developments – needs to be expanded

Public – Private

- Trading a
- Limited exp
- Blue Ridge Platinum mine (€400m)
- No water no mine (1,8mil.m³/y)
- Invasive clearing for water
- Environmental reserve benefits

Private (2)

- Carbon trading for purposes buoyant
- PES for EGS trading non-existent
 - Big potential
- This has to be the future of PES in SA and in the rest of the world



We have basic understanding/experience:

- Resource economics indicate massive PES potential
- Technocratic & physical measures and means exist and are used

Future:

- How to convert EGS (economic) value into actual financial flows (domestic, regional and international)
 - Engaging private sector and role of trading account
 - Broadening PES type options
 - ???** PES partnerships **???**
 - Regional
 - International
 - NGOs
- Development of international PES (ecological footprint) platform (water & biodiversity/land under wildlife management)



Thank you

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www.dwaf.gov.za/wfw/

www.assetresearch.org.za

www.rncalliance.org

