



South Africa and Costa Rica, Applying PES for Healthy Watershed Ecosystems

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SOUTH AFRICA

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Outline...

Water Scarcity

Watershed Services in SA

A Water-based PES South-South Learning Exchange

The way forward



Quick Facts...

- Only **1%** of earth's water is currently available for drinking (1,5-2% frozen)
- More than **1 billion people** lack reliable access to clean drinking water and **2.5 billion** lack adequate sanitation.
- **Scarcity** predominantly affects **developing countries**
- If present consumption patterns continue, two-thirds of the world's population (**4,3 bn people**) will live in water-stressed conditions by the year 2025.

Projected Water Scarcity in 2025

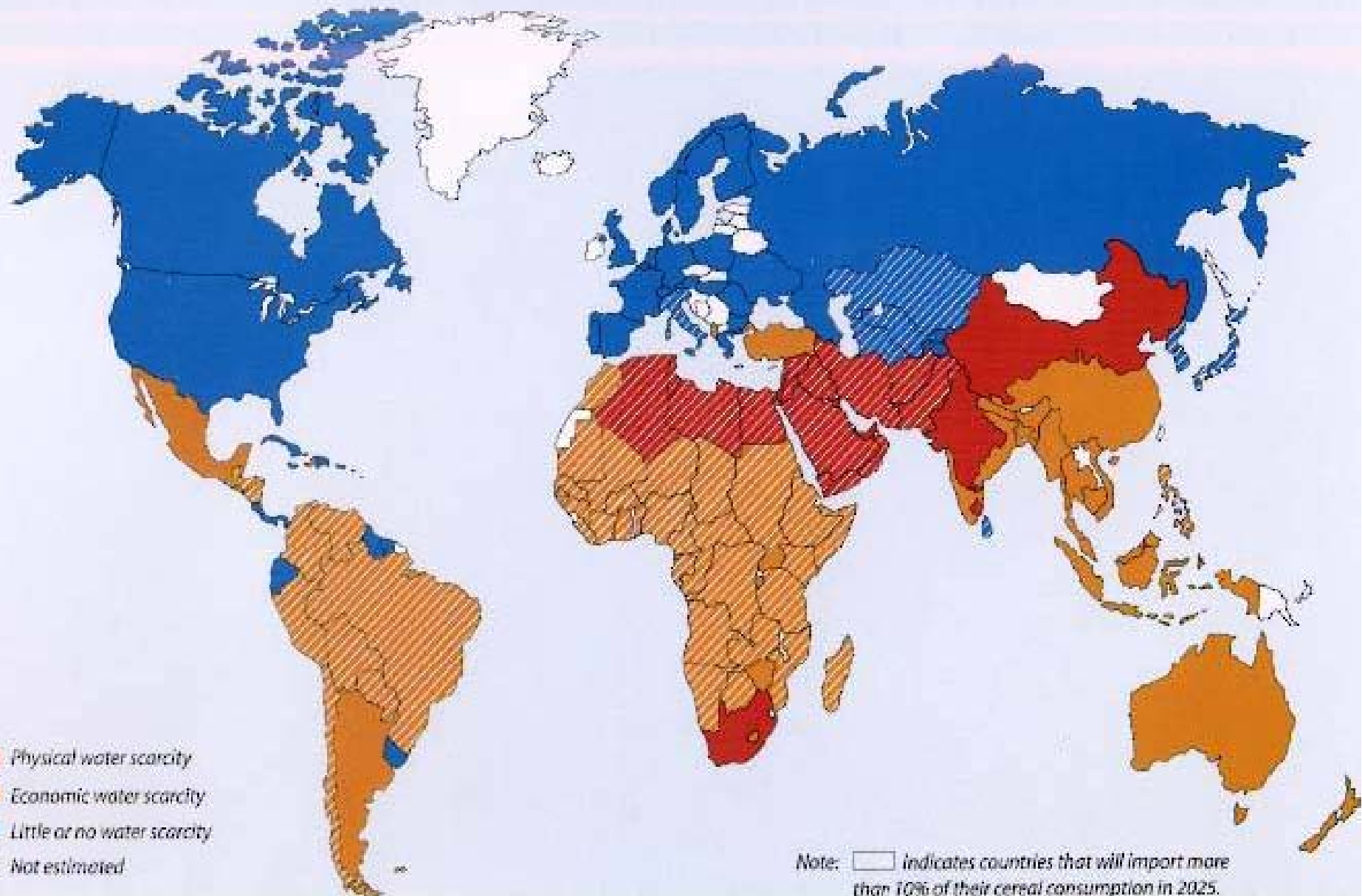
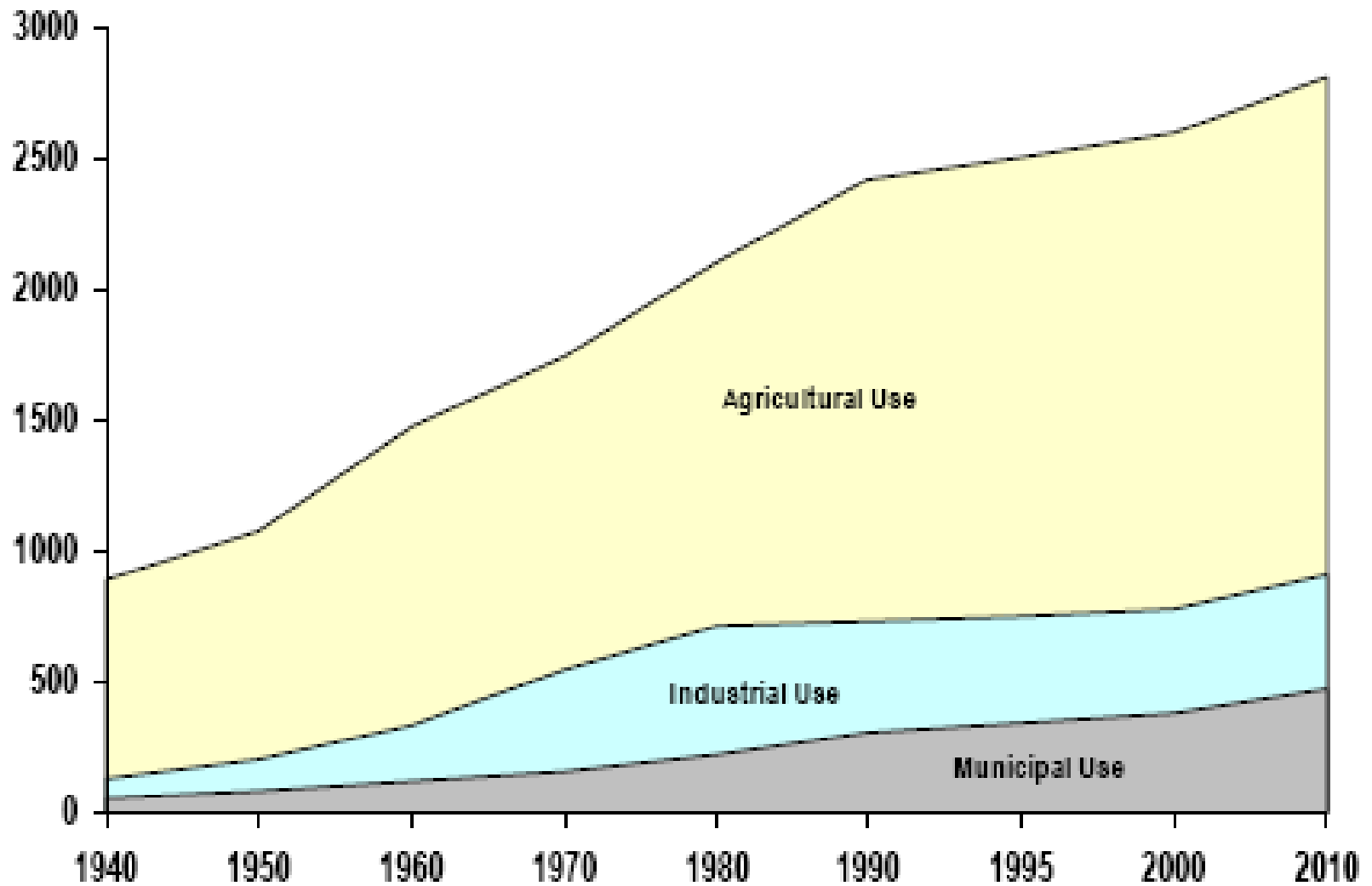


Figure 20: Water Withdrawals by Use

Km³ per year



Source: IWMI Water Assessment Report.

Note: Figures for 2010 represent forecasts.

Three kinds of water in South Africa..

- *“Too much;*
- *Too little;*
- *Too dirty”...*

--Peter Ashton, CSIR



Water in South Africa...

- Average rainfall in SA is 500mm well below global average of 860mm
- About 43% of SA's rain falls on 13% of the land and only 9% reaches rivers.
- Scarce underground water resources (13%)
- Climate change impacts



Stressed infrastructure...

- 95% of SA's Water is allocated
- 73% of water is caught in 7 major dams
- 4% loss of storage space due to sedimentation
- Urban demand increasing 100% every year
- In Feb 2011, SA's demand for water had outstripped its supply (forcing abstraction of the "ecological reserve")

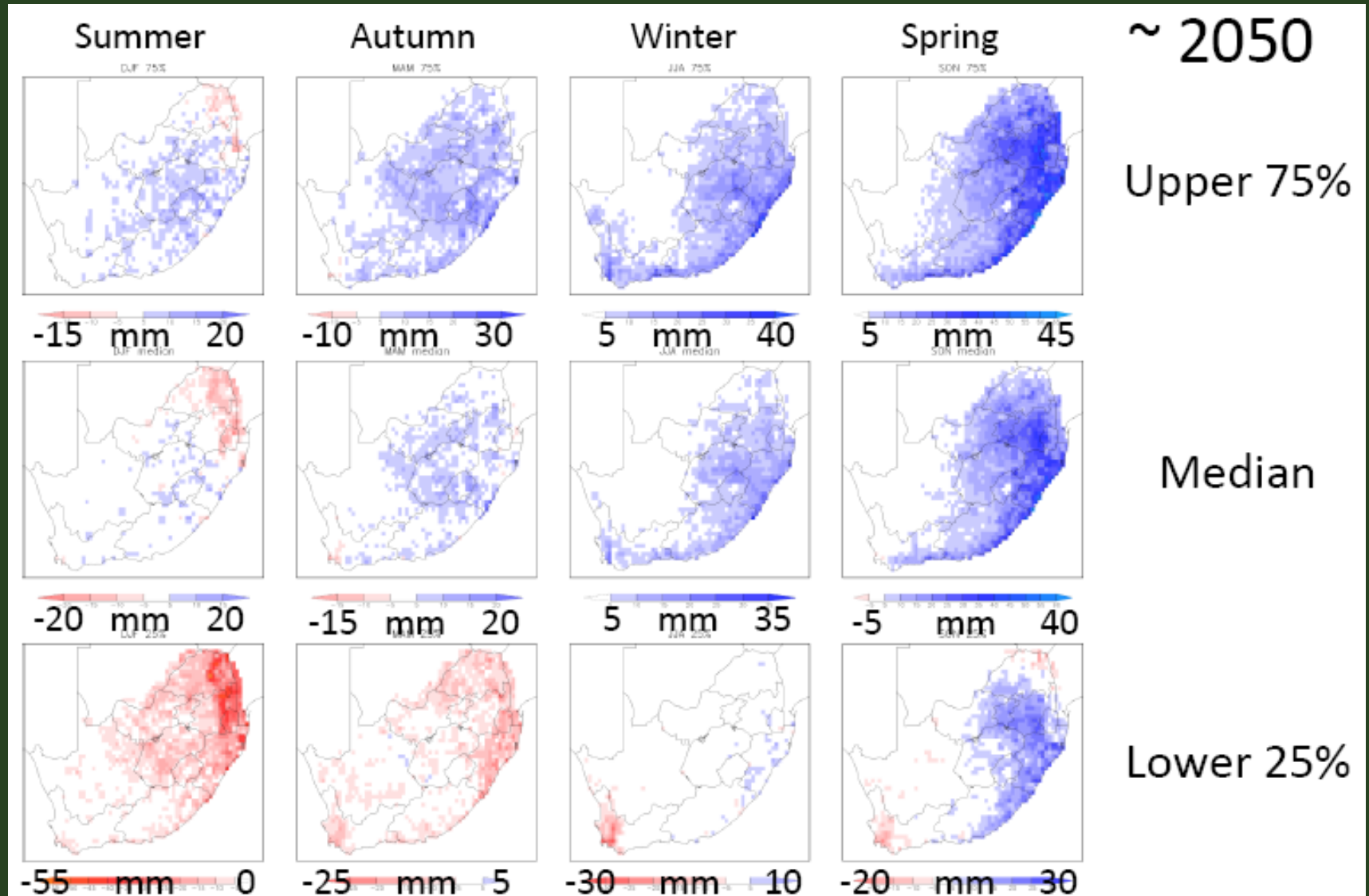


Augmented by challenges of a two-tiered economy...

- Service delivery
- Failure to enforce pollution control
- Institutional capacity
- Tariffs have increased 70% in 5 years



And the impacts of climate change...



Watershed Services from SA Ecosystems

Flows

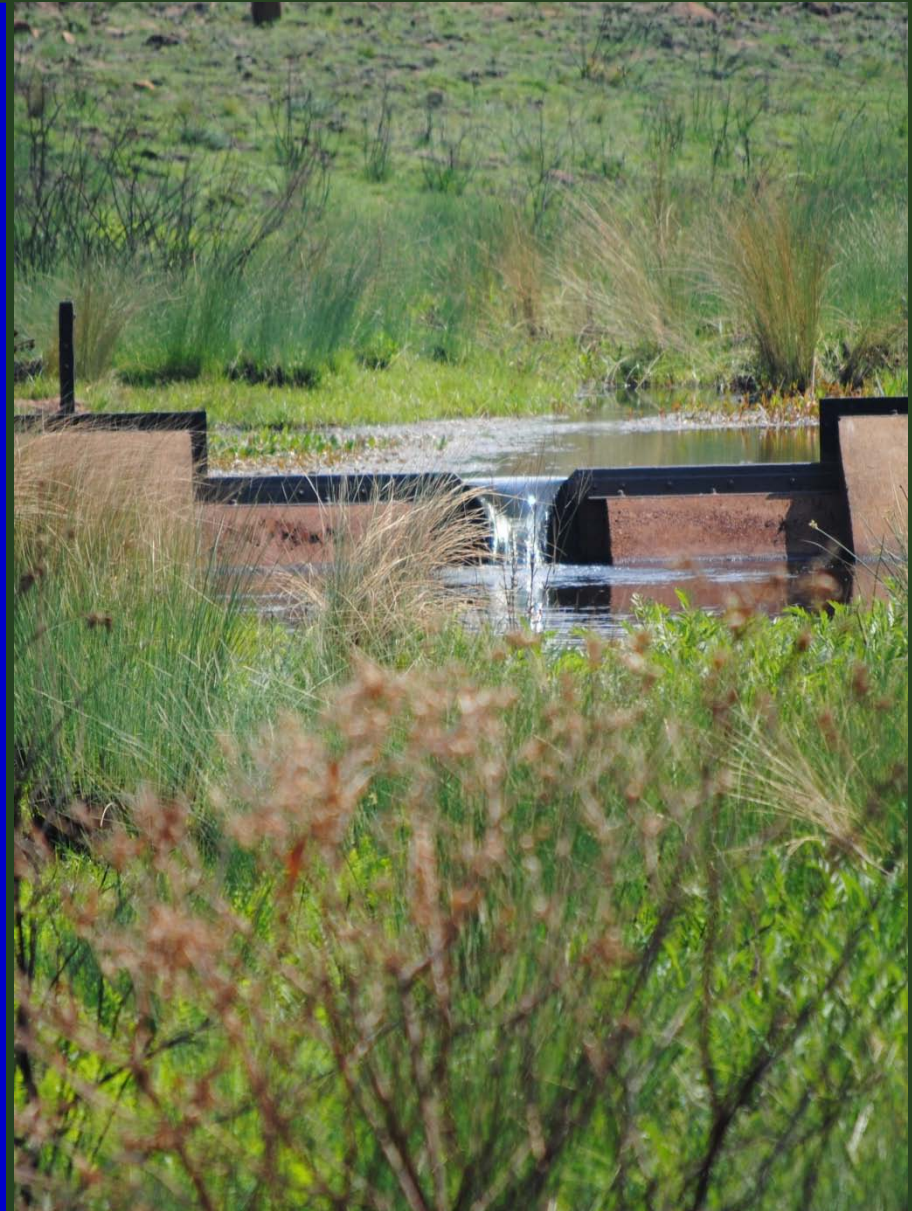
- Flood/high flows
- Low Flows
- Yield from water infrastructure
- Ecological Reserve

Sediments

- Siltation of dams

Water quality

- Purification
- Waterweed management



Degradation affecting water...



Desertification



Bush Encroachments & Invasives



And From this!!





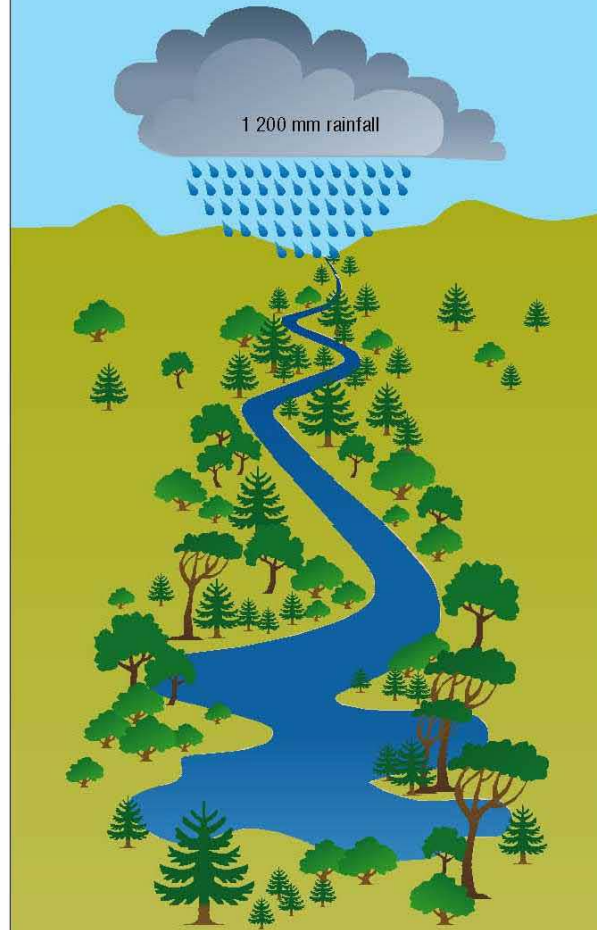
Impacts of Invasive Alien Trees on Stream Flow

TODAY:



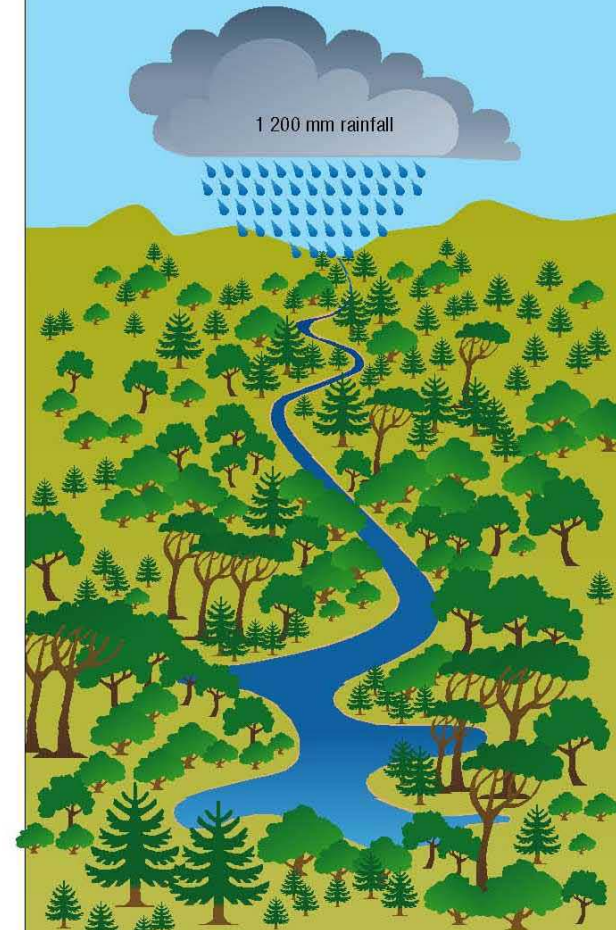
Run-off in river: 472 mm
(Taken to be 100% here)
Cost to clear: R 100 / hectare

10-20 YEARS:



Run-off in river: 303 mm
(36% reduction)
Cost to clear: R 1 000 / hectare

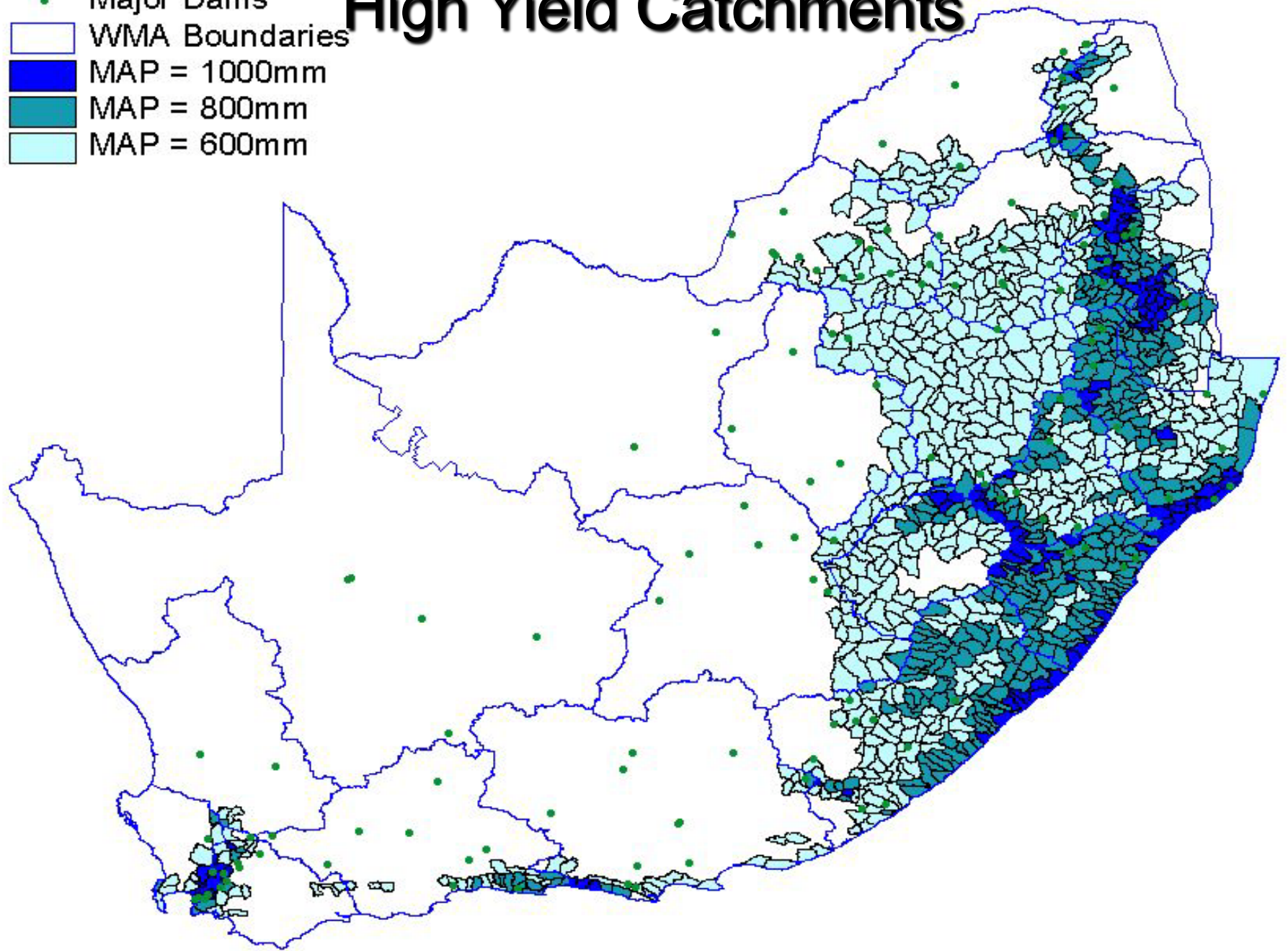
20-40 YEARS:



Run-off in river: 123 mm
(74% reduction)
Cost to clear: R 4 000 / hectare

High Yield Catchments

- Major Dams
- WMA Boundaries
- MAP = 1000mm
- MAP = 800mm
- MAP = 600mm



PES Philosophy

Ecosystems are in people's hands

- Protecting areas **with local people** in private, communal + traditional lands
- Conserving it has a cost

People will not conserve unless:

- It is **beneficial** to them
- They have the tools to make it happen

PES is about making conservation-based land management attractive

- Concrete and poverty alleviation benefits in exchange for effective and measurable conservation/sustainable use commitments

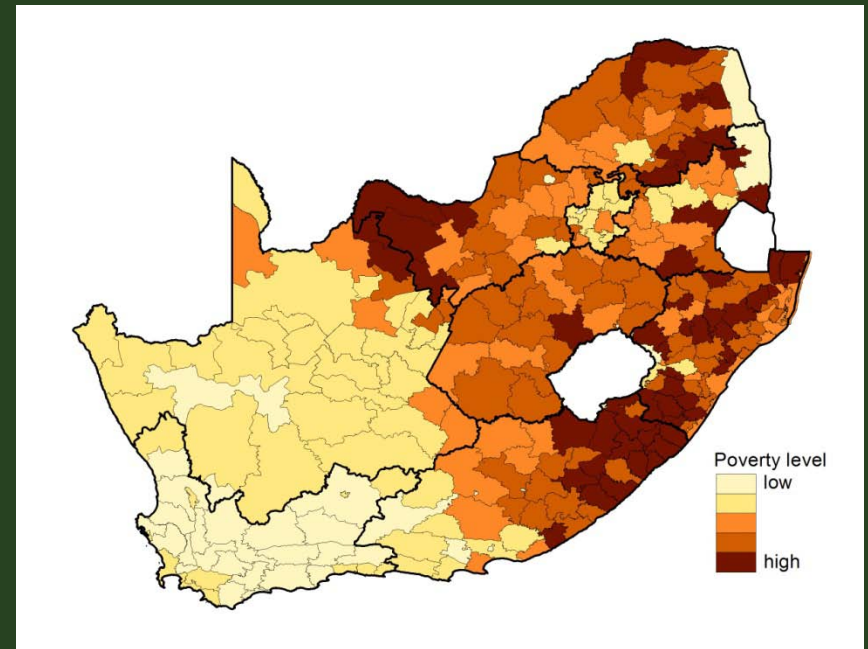
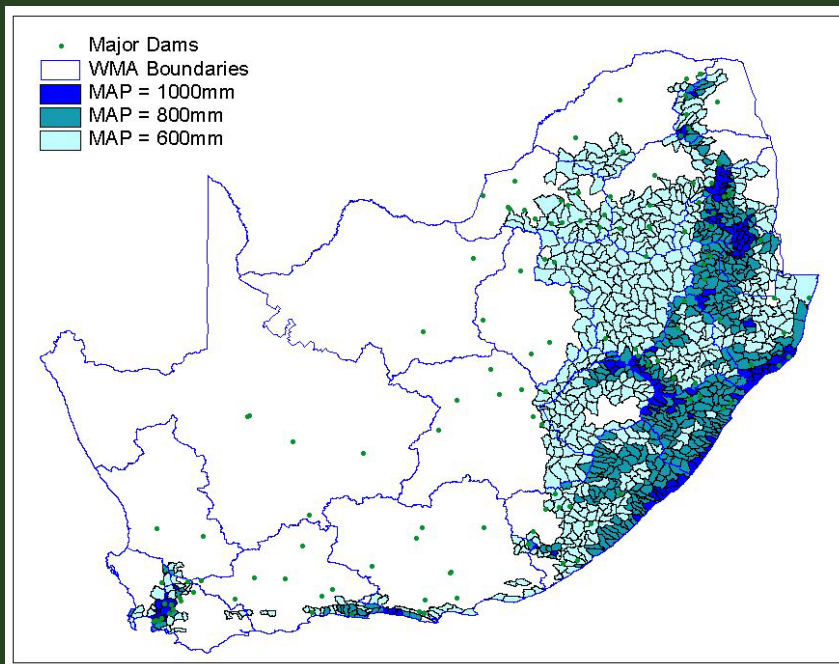


Enabling conditions for PES in SA

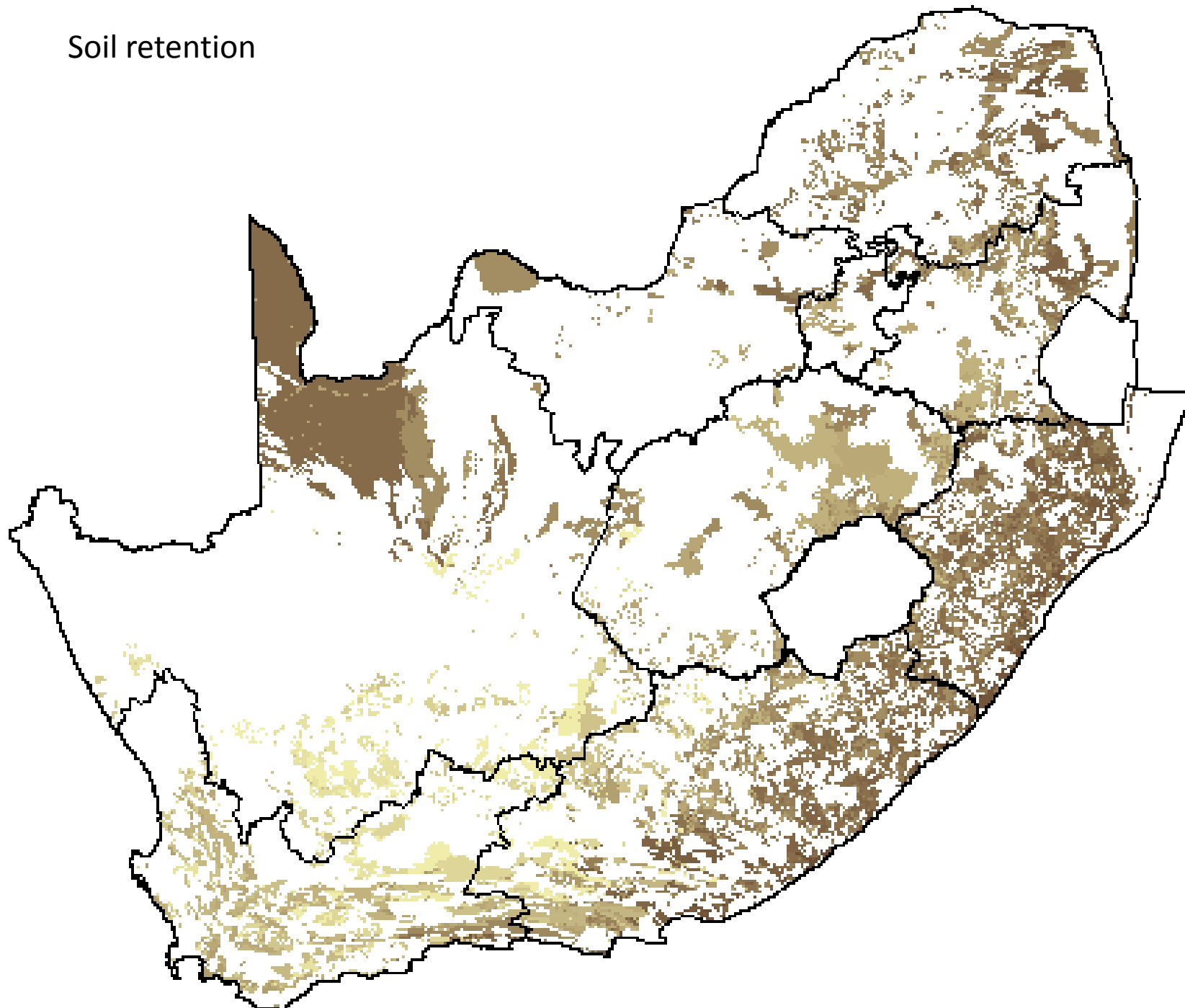
- Good science
- Good policy framework
- New fiscal measures in early policy development phase
- Existing “Working for...” projects have sound science and valuations
- Strong civil society
- Existing markets



Particularly compelling...

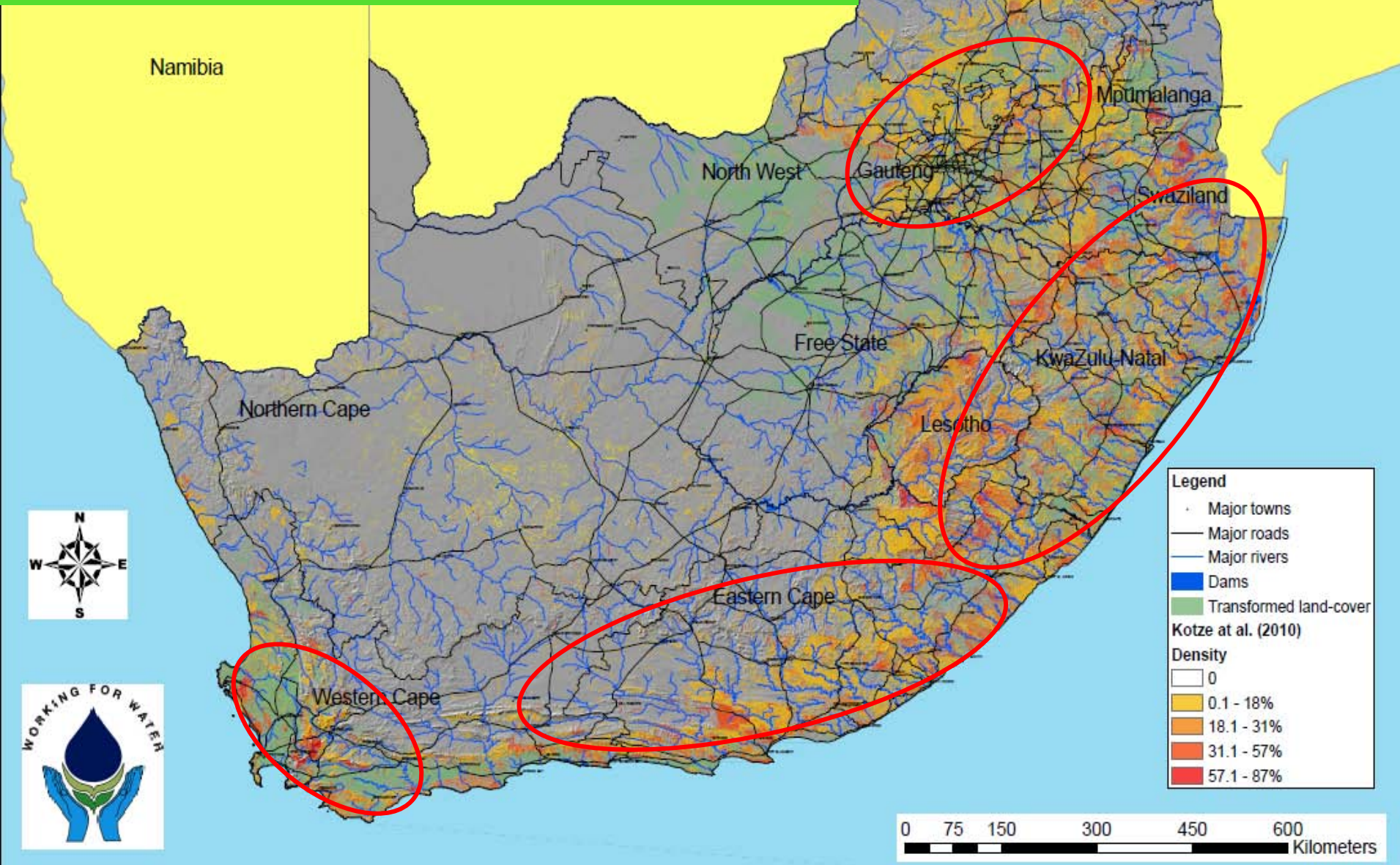


Soil retention



National Invasive Alien Plant Survey

Hectares Invaded = **20 million**
Condensed Hectares = **3.7 million**



Collaboration with Costa Rica...

- Initiated during World Bank visit by Costa Rica Former Minister, Carlos Manuel in 2009
- Freshwater as critical ecosystem service with significant PES potential with political support in both countries



A catalytic learning exchange...

- Dept of Water and Environmental Affairs
- Dept of Rural Dev't and Land Reform
- Natural Resource Management Programme (Working for...)
- SANBI
- Eastern Cape Parks and Tourism Authority
- CI Freshwater and CCG
- Climate Action Partnership
- Conservation SA



Objectives

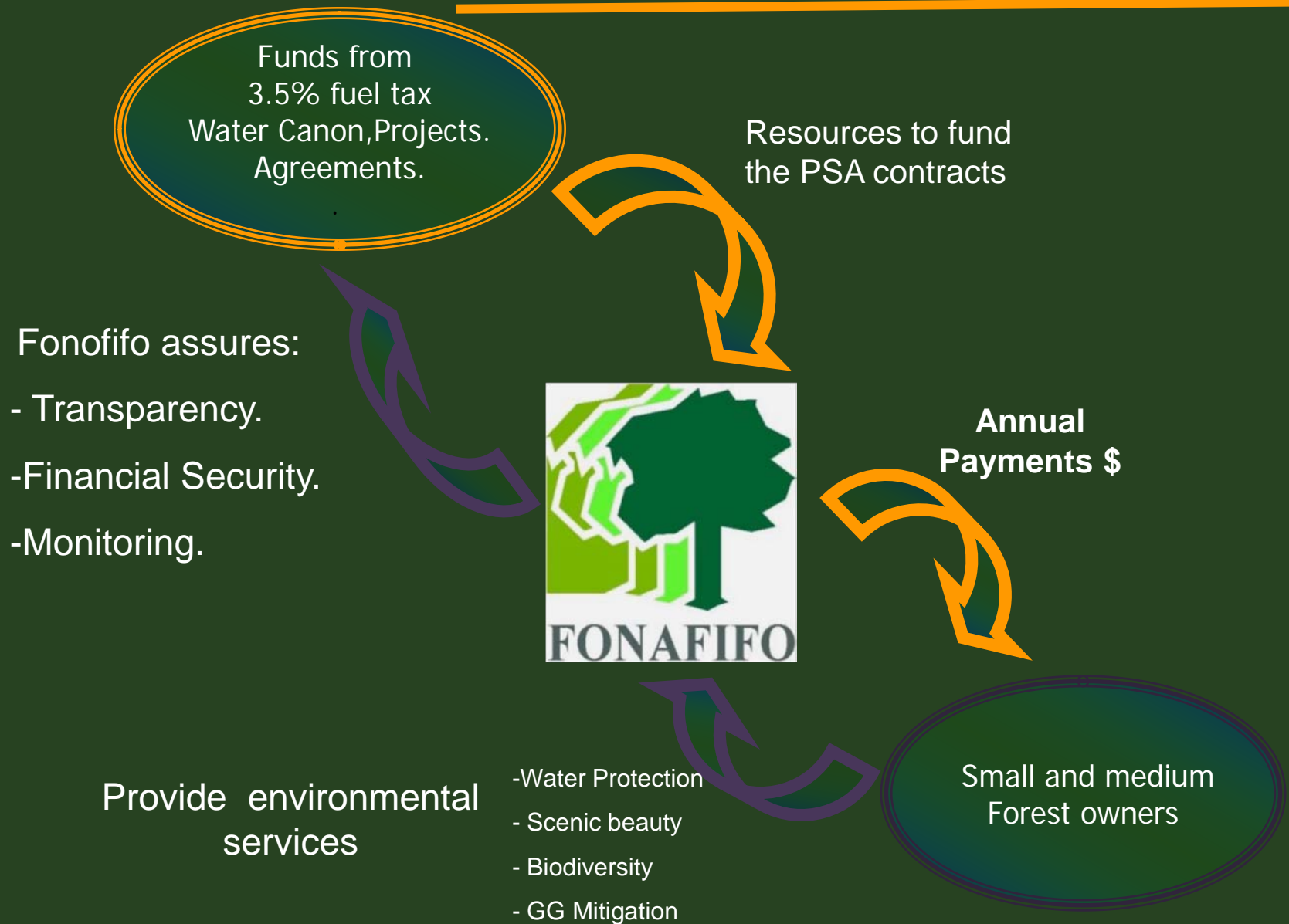
- To provide an in depth look at a national model, especially PES institutional structures and implementation details
- To build a network of PES Champions for ongoing sharing of lessons and technical expertise
- To apply the learning to the development of a national PES programme workplan for South Africa.

Programme

- 5 days
- Presentations and discussions with experts
- State visit and dialogue
- Field visits
- Action planning workshop



Costa Rica PES Model



ARRANGEMENTS OF PAYMENT FOR ENVIRONMENTAL SERVICES



Forest Protection

\$320 /ha distributed in 5 years

\$64/ha/año

2 ha min - 300 ha max

5 years contracts



Protection of the water

\$400 /ha distributed in 5 years

\$80/ha/year

2 ha min - 300 ha max

5 years contracts



Forest Protection Conservation Gaps

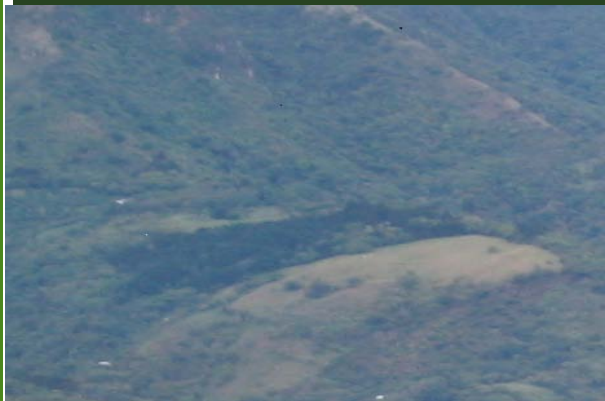
\$375 /ha distributed in 5 years

\$75/ha/year

2 ha min - 300 ha max

5 years contracts

ARRANGEMENTS OF PAYMENT FOR ENVIRONMENTAL SERVICES



Natural Regeneration

\$205/ha distributed in 5 years

\$41/ha/year

2 ha min - 300 ha max

5 years contracts



Reforestation

\$980 /ha distributed in 5 years

1-50%, 2 -20%, 3 -15%, 4 -10%, 5 -5%

1 ha min - 300 ha max

15 years contracts

Agroforestry systems

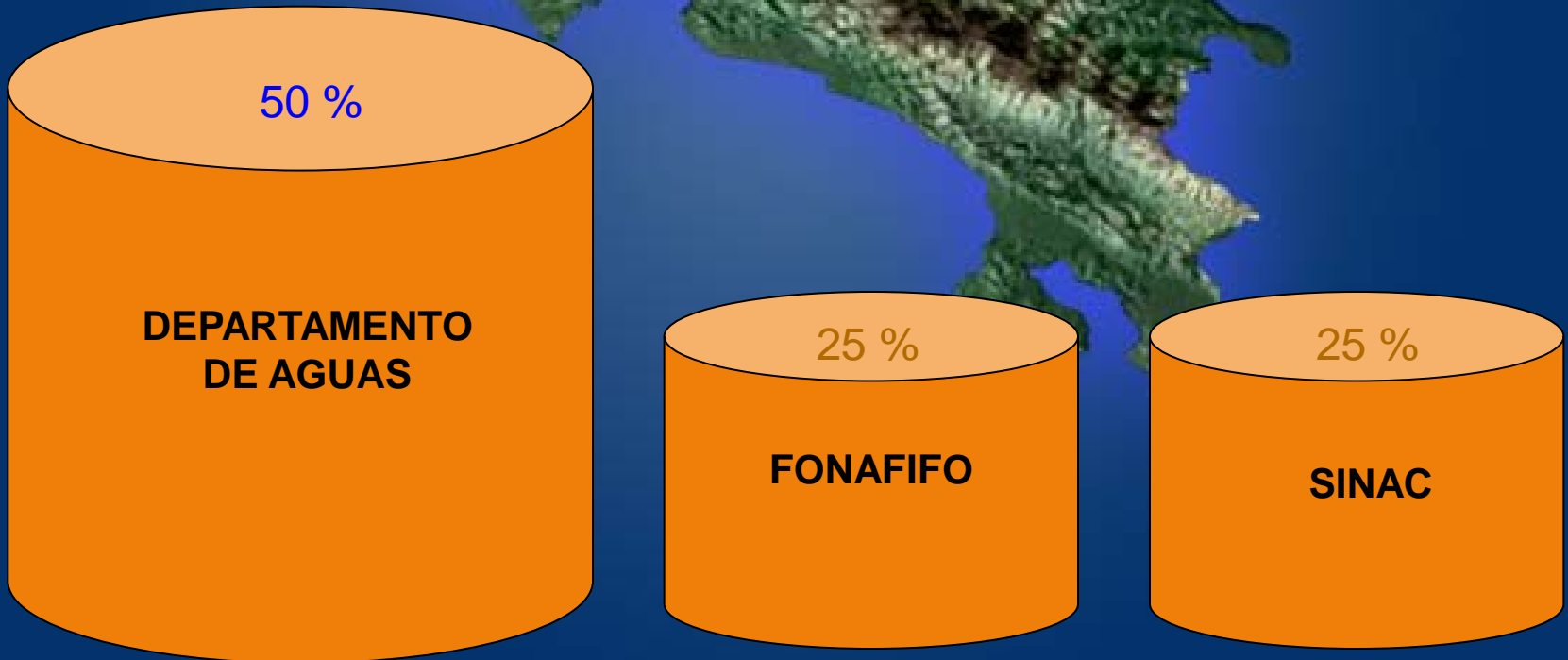
\$1.3 /árbol distributed in 3 years

1- 65%, 2- 20%, 3-15%

350 trees min - 3500 trees max

5 years contracts

10 millones de
dólares en el
año siete



SA PES Programme Draft Goal—a multi-benefit strategy...

- A national PES Programme contributes to the Green Economy Strategy and specific national objectives of:
 - Sustainable rural development
 - Water security
 - Biodiversity conservation
 - Appropriate response to climate change

Through addressing institutional and market shortcomings by:

- Making payments (monetary and non-monetary)
- To maintain intact ecosystems, restore degraded ecosystems, and enable sustainable land use
- In scientifically prioritised biomes and poverty nodes

		Number of Full Time Jobs	Income to people	Total budget requirement
MTEF Allocations 2012		#	R'mil	R'mill
Working for Water		15,416	433	1,238
Working for Land		3,485	98	281
Working for Wetland restoration		1,266	42	119
Working for Wetland prevention		509	13	25
Working on Fire		3,239	77	220
Total		23,915	663	1,882

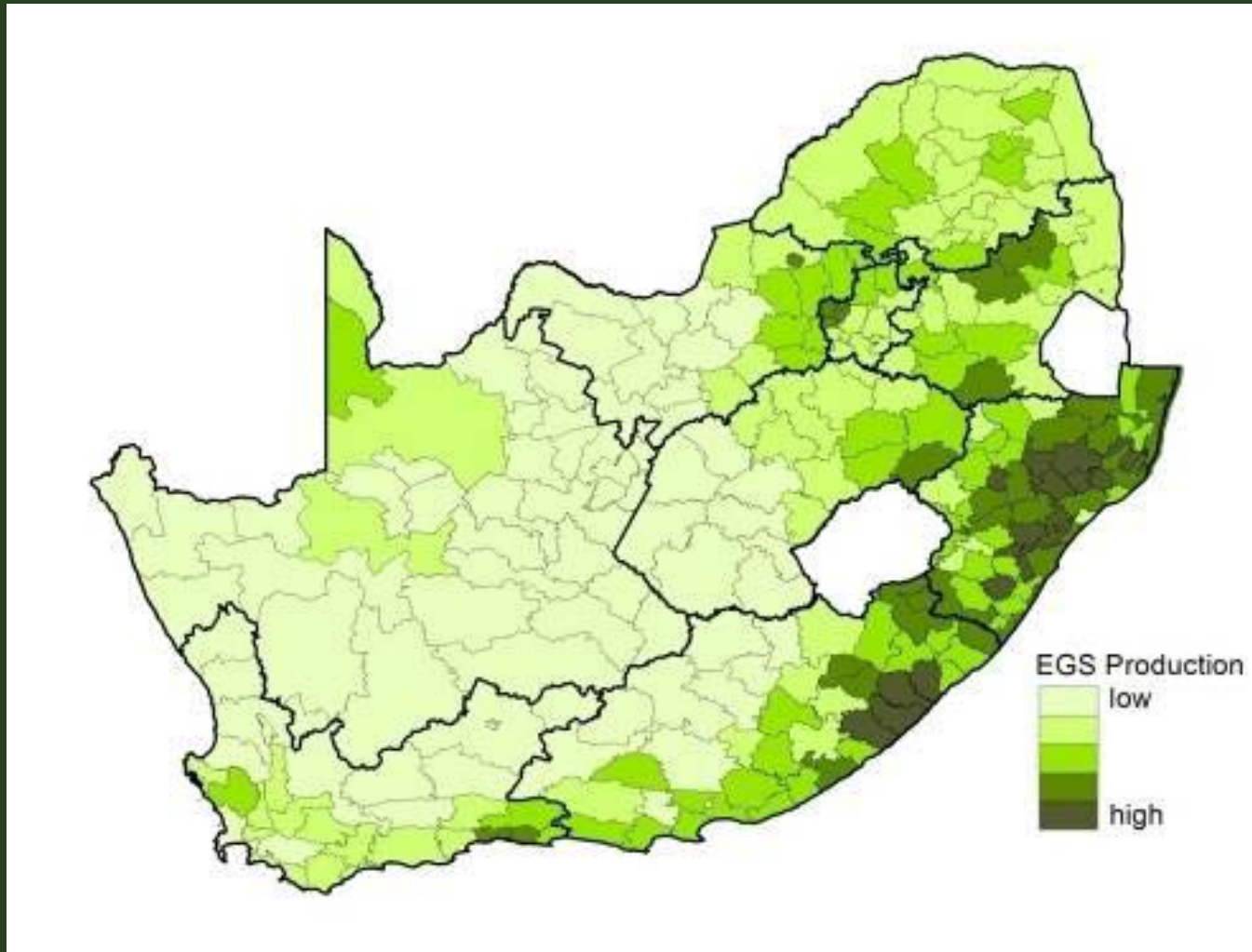
USD \$269 million

	Number of Full Time Jobs	Income to people	Total budget requirement
Estimated size of Market 2025	#	R'mil	R'mill
Working for Water	111,632	8,403	24,010
Working for Land	38,480	3,650	14,713
Working for Wetland restoration	63,749	5,276	15,073
Working for Wetland prevention	6,945	624	1,782
Working on Fire	2,976	197	395
Total	223,782	18,150	55,972
			\$7.996 billion

PES as a vehicle to move from Green Jobs to Custodianship!!



Focusing on municipalities with both services and markets...



A Multi-benefit example...

1,000,000 Kilolitres per annum would require a R5M investment over 20 years (includes a 6% inflation rate; at present value the annual contribution never exceeds R360K), and will clear 400 hectares of invasives, create 15,000 employment days and 77,000 beneficiary days per annum

National policy reflections



National fund (similar model to Drylands fund. Possibility that this could be the Drylands Fund)

Need to set the key principles (policy, criteria) so that not driven off track by specific investors

Monitoring, Auditing and Facilitating: could be done by one agent and number of agents

Auditing – conducted by organisations outside of the fund. Auditors can also be facilitators. Could be NGO,

Monitoring – inside or outside dependent on resources. Could be a national agency or NGO. SANBI will be involved

Whose programme is this?

Collective programme with ultimate responsibility resting with the Minister of Environment and Water. But partnerships are critical. Dept of Rural Development and Land Reform, NRM, NGO's, fund managing agency, SANBI, provincial authorities (define role?)

Funding: Dept or Rural Dev and Land Reform (fund on land tenure and redistribution – policy and this fund still to be developed), Water Pricing, GEF, carbon tax

Way Forward

June 13-20th

- Implementation Programme Lead Workshop (CSA)
- PES Trading Platform Workshop (SANBI)
- Degradation Fund Steering Committee (DBSA)
- Ministerial and Presidency Mtgs
- December COP— Ministerial Exchange Contact
- January 2012— Ministerial Exchange

Thank you!!!

