

*Department of Environment Affairs,
Natural Resource Management
Programmes: Developing a Platform for
Mainstreaming Watershed Services*

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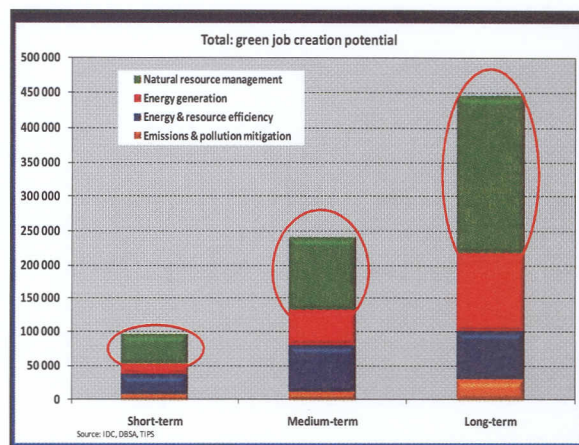
environmental affairs
Department of Environment Affairs
REPUBLIC OF SOUTH AFRICA

looking for water
Patron in Chief
Nelson Mandela

BURNING ON FIRE
PREVENT

Workshop waterheds

EXPANDED PUBLIC WORKS PROGRAMME
CONTRIBUTING TO A NATION AT WORK

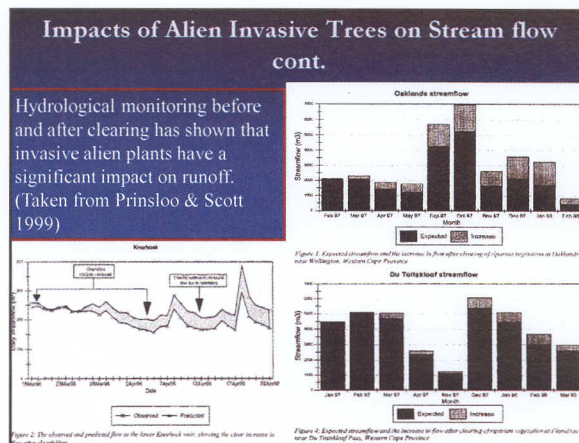


Case study 1: Water

- What is the purpose of this case study?
- What was the research question? What methodology does it use?
- Key aspects, findings and lessons learnt – highlighting a few examples and opportunities for localization of inputs and how it could relate to green infrastructure, such as renewable energy or other services or resource inputs?
- What are the policy conclusions or recommendations?
- How do they/could they have implications for the greening of infrastructure?
- Are you able to recommend guidelines, toolkits or frameworks to facilitate the greening of infrastructure programmes?
- What is required to change the way we think about and deliver infrastructure?

So, where are we and where do we need to be?

- Current
 - 23,915 full time equivalent employment opportunities needing an annual turnover of R1.882 billion (**\$260 million**).
- Future demand
 - 230,824 full time equivalent employment opportunities needing an annual turnover of R57,271 billion (**\$7.5 billion**).

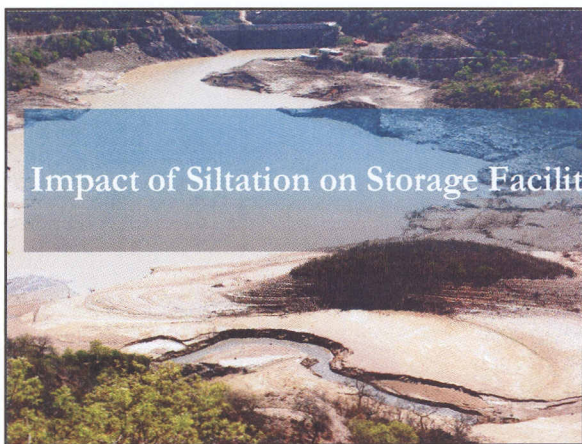
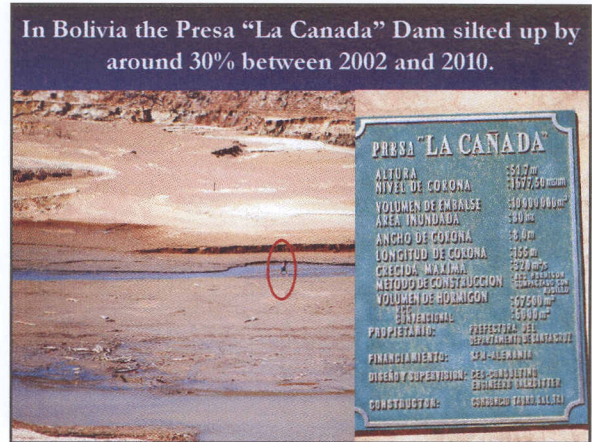
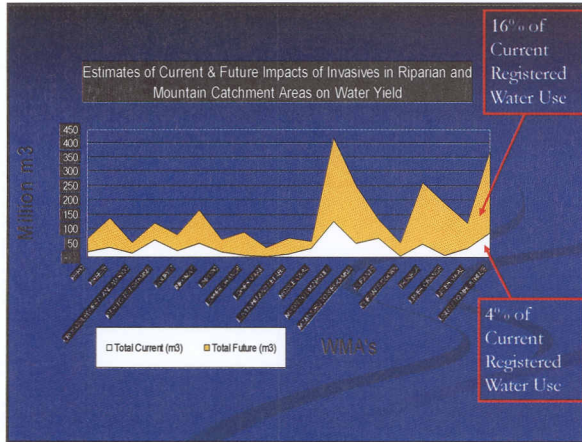


The Upper End of the Water Value Chain: What are Watershed Services?

- Flows
 - Flood/high flows
 - Low Flows
 - Yield from water infrastructure
 - Ecological Reserve
- Sediments
 - Siltation of dams
- Water quality
 - Purification costs
 - Waterweed management costs
 - Health risks

RIPARIAN VERSUS NON-RIPARIAN STREAM FLOW REDUCTION

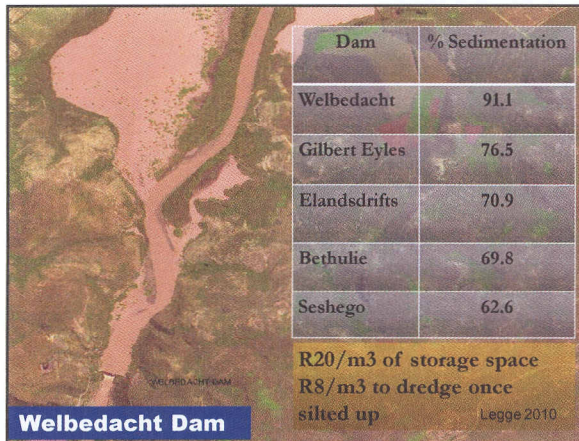
	Treatment	First Year Increase in Streamflow after Treatment (m ³ /ha cleared)	Ratio of Riparian/Non-Riparian Increase
Westfalia (Limpopo)	Clear riparian indigenous forest	5 445	2.0
	Clear non-riparian indigenous forest	2 700	
Witklip (Mpumal.)	Clear riparian scrub & pines	7 965	1.9
	Clear non-riparian pines	4 045	
Biesevlei (W Cape)	Clear riparian pines	11 505	3.4
	Clear non-riparian pines	3 430	



RSA Dams Big 5 Legge 2010

Total siltation of 718 million m³ or 4% loss in storage space.

Dam	Storage Capacity (million m ³)	% Sediment
Gariep	5343	11.9
Pongolapoort	2267	3.2
Sterkfontein	2617	0.0
Vaal	2610	-
Vanderkloof	3187	0.3



Water and Natural Resource Policy Development

- Mainstreaming through capturing watershed services in the *National Water Resources Strategy* and *Water Pricing Strategy*

Water Quality

Land Management impacts on Water Quality

The poorer the quality the *happier* the Waterweeds and micro organisms posing potential health risks

Increasing the costs of purification and reticulation

The National Water Resources Strategy cont.

- I. Managing and using water optimally in support of social and economic development of South Africa
 1. WCWDM measures are implemented by all major water use sectors
 2. Sufficient reliable water supplies maintained through timely infrastructure development and management interventions
 3. Priority of investment in rehabilitation and upgrading of wastewater treatment plants
 4. Awareness of hydrological variability and climate change and timely responses to minimize the impacts of extreme events such as floods and droughts
 5. Allocation of adequate funding for water resources management
- II. Protecting our water resources
 1. Water quality deterioration is halted and reversed
 2. Pollution prevention is prioritised and effectively implemented
 3. Enhanced capacity of institutions that are responsible for water quality and quantity management, regulation and compliance enforcement
- III. Achieving effective water governance
 1. Institutional re-alignment to improve water management and governance
 2. Establishment of an effective regulatory framework
 3. Adoption of a strategic approach to capacity building for the water sector institutions
 4. The management capacity needed to support good water governance is built and sustained in all water management institutions;
 5. Stakeholders are empowered to participate in water management and governance

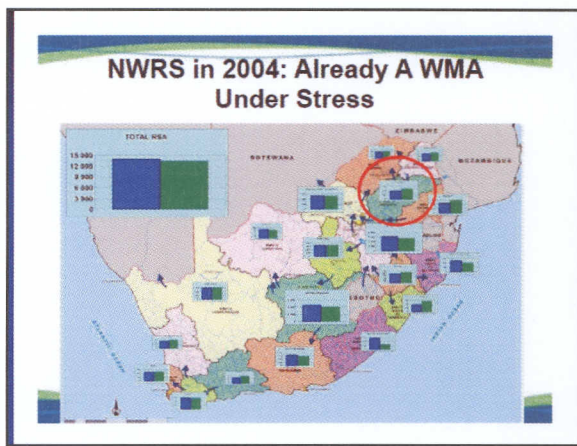
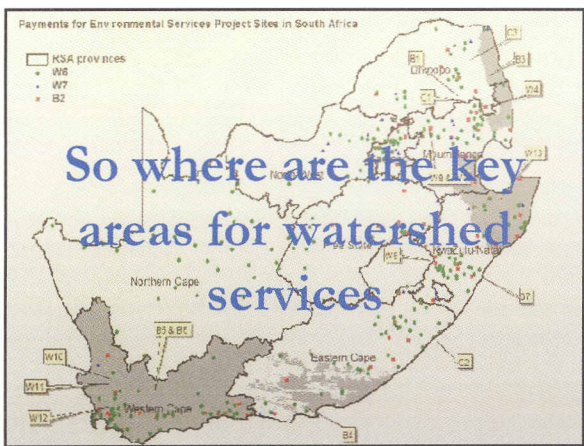
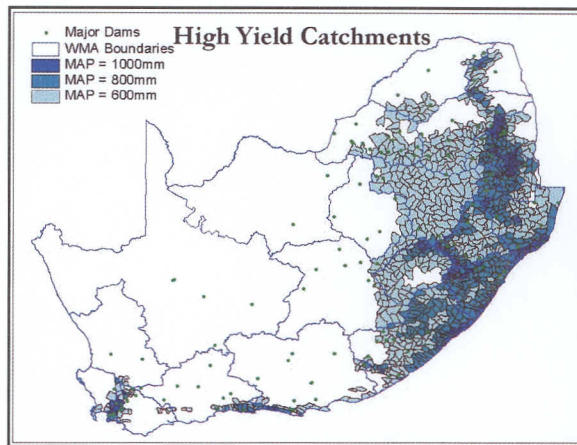
The National Water Resources Strategy cont.

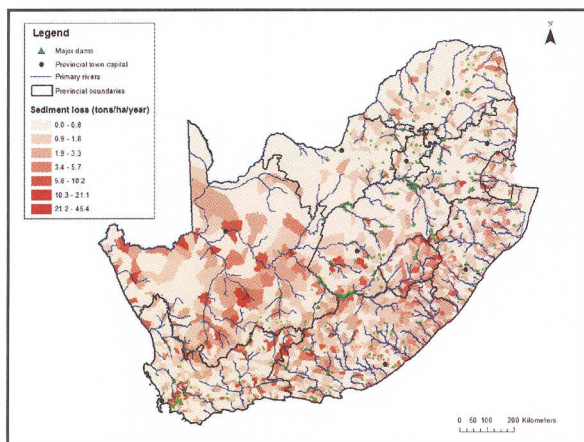
IV. Water is valued by everyone

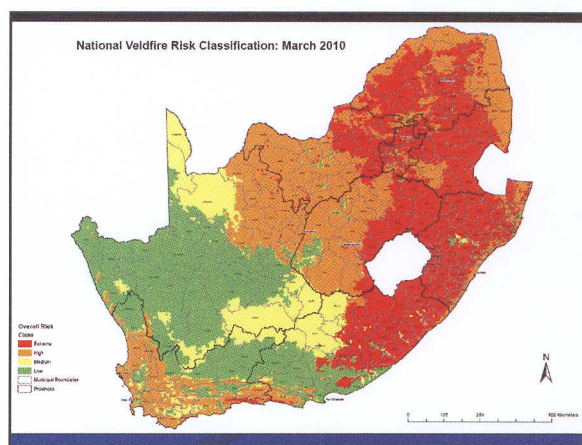
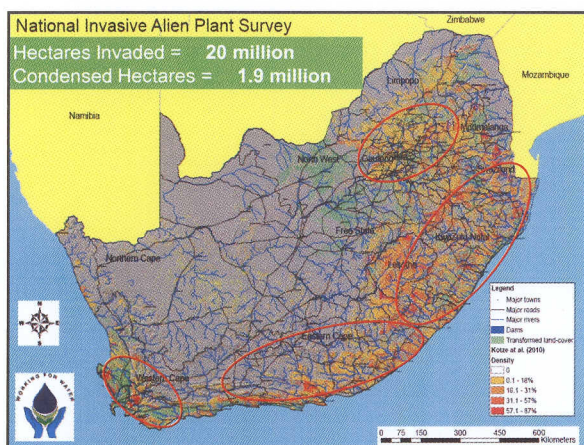
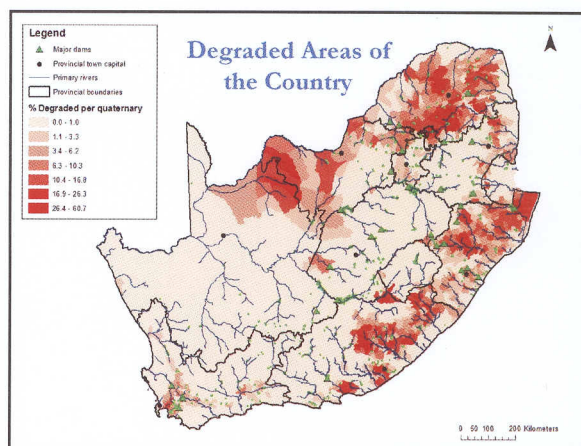
1. Implementation of public awareness campaigns for sector stakeholders about the value of water
2. Water resource management activities are financially sustainable
3. Water is priced appropriately and subsidies are well-targeted.

V. Putting water at the centre of integrated development and planning

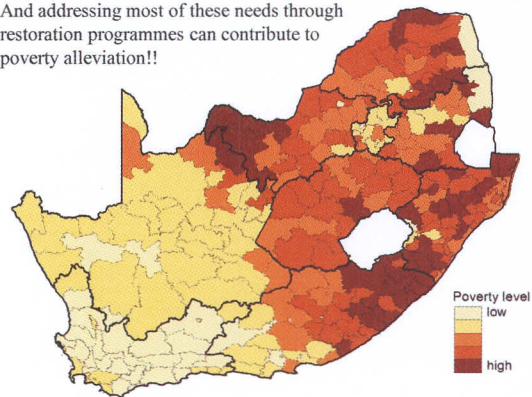
1. The role of DWA as a sector leader is strengthened and it engages effectively with all development planning activities in all spheres of government
2. Politicians, policy makers, other decision-makers and planners are aware of the role of water as a strategic resource







And addressing most of these needs through restoration programmes can contribute to poverty alleviation!!



How do we close the gap? What do we need to do to unlock investment?

- Improve primary ecological science assumptions
- Translate ecological assumptions into economic consequences of changes in the delivery of watershed services
- Improve Institutional Arrangements & Governance
 - The need to regulate land use practices for the protection of the quality and quantity of "in situ" and "ex situ" ecosystem services (amongst others watershed services)?
 - Regulating the market for watershed services itself, mainstreaming it in water sector?
 - The development of legal tools/mechanisms for *buyers and sellers* of watershed services to engage with the market?
- Awareness amongst both *buyers and sellers* of watershed services.

