Wetlands Programmes

Wetland restoration: maximizing the returns on investments in ecological infrastructure

Dr. Farai Tererai
Improve regulating, provisioning and cultural benefits:

- Hydrological benefits
  - Water quality
  - Baseflow maintenance
  - Sediment regulation
  - Flood management
  - Groundwater dis/recharge
- Biodiversity – *species and habitat*
- Biogeochemical cycles
- Human livelihood

**Introduction**

**Value of wetlands**
Pollution

Masiphumele wetland in CT; Images by Heidi Nieuwoudt
Urbanisation
Presentation outline

- Link to NBRES SO2
  - Relevant thematic areas
- Link to NDP, MEA and SDGs
- Intro to NRM & Wetlands
- Research description
- Some findings
- Keymessages
**Link to NBRES SO2**

- *SO2: Investments in ecological infrastructure enhance resilience and ensure benefits to society*
- Wetlands are SES that constitute EI
- Most threatened (CC) ecosystem type yet deliver disproportionately important *functions and services*
- *Investing in their protection, sustainable use and rehabilitation secures human livelihood*
Other relevant thematic areas

• Biodiversity Economy
• Rehabilitation and restoration *(Improving efficiencies in government spending and delivery)*
• Natural capital
• Global change
• Research that specifically *addresses* Sa’s policy priorities via the *NDP, NBSAP and NBRES*
Fulfilling South Africa’s commitments set by the Sustainable Development Goals
Fulfilling South Africa’s commitments set by the Millennium Ecosystem Assessment

<table>
<thead>
<tr>
<th>LAND MANAGEMENT INTERVENTIONS</th>
<th>IMPROVED ECOSYSTEM SERVICES</th>
<th>IMPROVED HUMAN WELLBEING</th>
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<tbody>
<tr>
<td>Clear invasive alien plants, especially in mountain catchments and riparian areas</td>
<td>Increased water yield</td>
<td>Decreased exposure to natural disasters (fire, floods etc.)</td>
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<td>Clean and Maintain buffers of natural vegetations along streams and rivers</td>
<td>Flood risk reduction</td>
<td>Improved food security</td>
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<td>Prescribed burning for fuel load reduction and fire belts to improve livelihood security</td>
<td>Improved water quality through filtering of pollutants and toxins</td>
<td>Improved health</td>
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<td>Restore degraded/denuded land to reduce soil erosion</td>
<td>Improved soil water retention and nutrient status</td>
<td>Improved fisheries</td>
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<td>Reinstate buffers of natural vegetation between agricultural crops and rivers</td>
<td>Increased baseflow in dry season – assurance of water supply</td>
<td>Safe and plentiful drinking water</td>
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<td>Restore degraded landscapes e.g. bush encroachment</td>
<td>Fire risk reduction</td>
<td>Improved livelihood security</td>
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<tr>
<td>Rehabilitation of wetlands</td>
<td>Reduced sediment load in rivers</td>
<td>Adaptation to climate change</td>
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<td>Improved biodiversity conditions</td>
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<td>Improved carbon balance</td>
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<td>Improved livelihood security</td>
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National Development Plan imperatives

Poverty alleviation (11 million jobs by 2030):
• NRM programmes impart skills - labour-absorbing industries
• Creates jobs for interim poverty relief

Environmental sustainability and resilience -
• We invest in conservation and rehabilitation of wetland ecosystems to enhance their resilience – community resilience
Department of Environmental Affairs

A prosperous and equitable society living in harmony with our natural resources

Key DEA outcomes

- ENVIRONMENTAL ECONOMIC CONTRIBUTION OPTIMISED
- ECOLOGICAL INTEGRITY SAFEGUARDED & ENHANCED
- SOCIALLY TRANSFORMED & TRANSITIONED COMMUNITIES

Vision

- Working for Water
- Working for Wetlands
- Working for Ecosystems
- Value-added industries
- Working for Forests
- Working on Fire

PRIVATE AND CONFIDENTIAL
# Working for Wetlands

<table>
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<th>High-level goals</th>
<th>Activities</th>
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<td><strong>Rehabilitate wetlands to restore hydrological functions that underpin water flow and quality regulation</strong></td>
<td>• <strong>Major</strong> Infrastructure interventions (e.g. concrete and major gabion structures)</td>
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<td></td>
<td>• <strong>Minor</strong> infrastructure interventions (e.g. chutes, IAP control and re-vegetation)</td>
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<td>• <strong>Sustainable use</strong> and <strong>protection</strong> of intact and restored wetlands</td>
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Since 2004, Just under **R1 billion** invested in **about 1300 wetlands**; about **27 000 jobs** created; just under **R3million p/days** (**250 000 training**)
Project description

• Rationale
  • EI is a sustainable and most cost effective life support system

• Problem statement
  • 120 wetlands pa with Limited budget vs >240 000 wetlands; 20 – 58% lost; 48% C. END. Budget will always be limiting

• Research focus:
  – How Working for Wetlands has endeavoured to maximise RoI in the face of limiting resources

• Research question:
  – How can we stretch the rand value?
Increase our footprint?

- **Extension** – supporting other depts., municipalities, NGOs, private companies?
- **Compliance** (wetland legislation?)—long term vision – supporting the green scorpions?
- Institutional & policy collaboration/partnerships (*SDG 17*)
- **Advocacy**
Comprehensive planning process

**PHASE 1**

- **New Intervention Identified**
  - A problem requiring intervention has been identified.

- **Identified for Maintenance**
  - An existing intervention has been identified as requiring maintenance.

**PHASE 2**

- **PLANNED**
  - The intervention details have been designed and included in a rehabilitation plan.

**PHASE 3**

- **IN PROGRESS**
  - The intervention has been included in a PIP and is currently being implemented.

**M & E**

- **ACTIVE**
  - Implementation is complete and the intervention is functioning.
    - Intervention has fulfilled its purpose to the extent that M&E is no longer necessary.
    - Condition of intervention deteriorates or ceases to operate effectively.

**ABANDONED**

- At various points during this process, the plan may be abandoned.
Catchment approach

Optimise EI benefits and maximise impact
“Softer” interventions strategy

Early intervention
Innovation

Problem

“Soft” – time 4 months; 1.4mil for three interventions
• high risk of failure if poorly done

“Hard” – time 3yrs, cost = 6mil, footprint
• Fairly durable, but maintenance may be costly
State of M & E

Description:
Repeat measurement = monitoring

Evaluation:
Evaluation criteria:
- Effectiveness
- Efficiency
- Sustainability

Inputs ➔ Activities and Outputs ➔ Outcomes/Effects ➔ Impact

Efficiency
Effectiveness
Sustainability

Target Group/ Beneficiaries
Key messages

• *Resources* will *always* be *limiting* — innovate to stretch the Rand value

• *Work done* and *not reported, monitored or evaluated* is as good as *not done*
What we do not know/we know

Managers

Researchers

Planners

Identify WHAT, implement

Potential for Stretching the R

Development of the HOW

Uptake of findings
Further questions

• At what stage of wetland degradation do we make the most positive impact? *Thresholds*?

• Do we have *sufficient policy and legal provisions* to protect wetlands? (3R done; action)

• How do we ensure *sustainability*?
Farai Tererai, PhD (Stell)
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