



# How ecosystem-based approaches to adaptation might inform NAP processes – South African experiences

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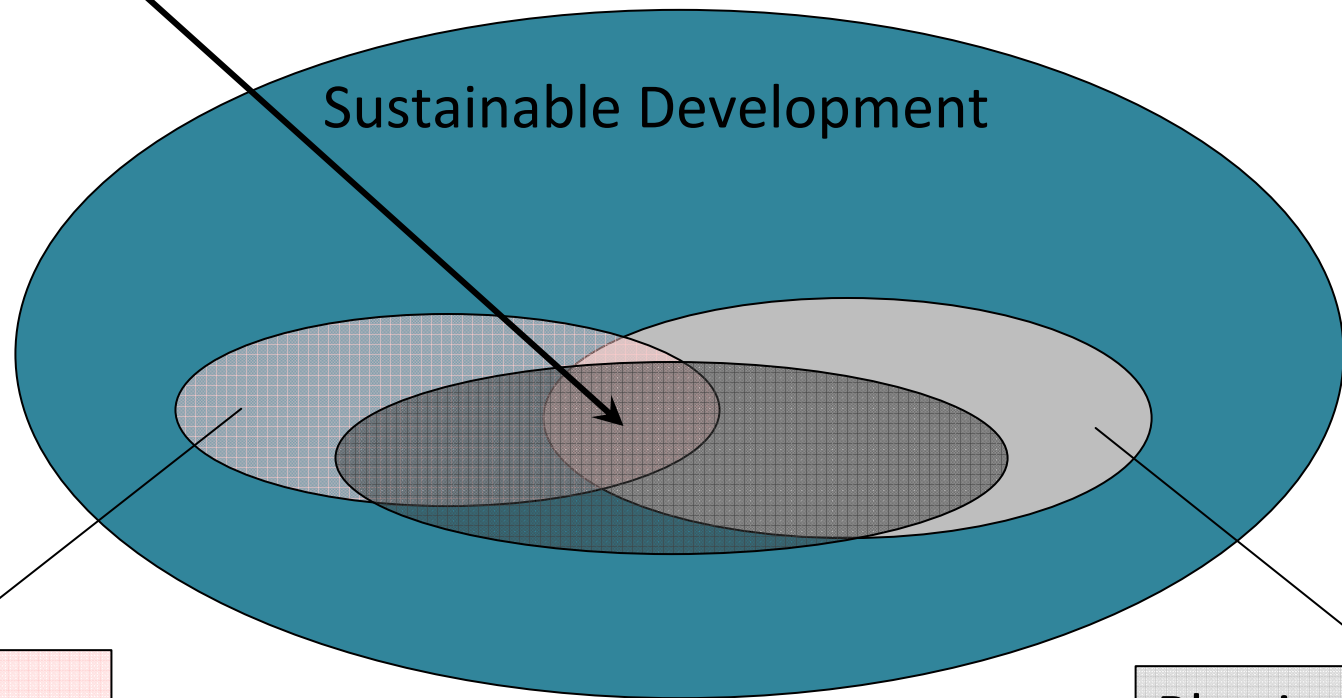


# What are Ecosystem-based Approaches to Adaptation?

- EBA's use sustainable ecosystem management to support societal adaptation to climate change
- They can ...
  - Provide and enhance ecosystem services that enable people to adapt to the impacts of climate change
  - Be applied at regional, national and local levels; and by project or programme (i.e. scalable)
  - Be cost effective, have high “multiplier” factors
  - Be more accessible to many poor and/or rural communities than “hard engineering” responses



- EBAs can be integrated into an overall adaptation strategy and a broader sustainable development strategy



Social adaptation

Physical adaptation

# SOUTH AFRICA'S VULNERABILITIES

The socio-economic factors that increase vulnerability to climate change:

- Large proportion of population has low resilience to extreme climate events (poverty; high disease burden; inadequate housing infrastructure and location, dependence on subsistence/natural resource-dependent livelihoods)
- Climate related extreme events often exacerbate existing socio-economic challenges, inequalities and vulnerabilities
- Much of SA (and Africa) has low and variable rainfall
- Significant proportion of surface water resources already fully allocated in SA



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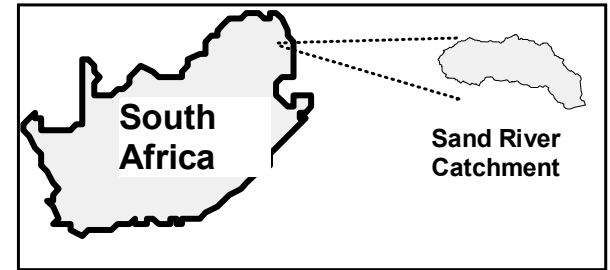
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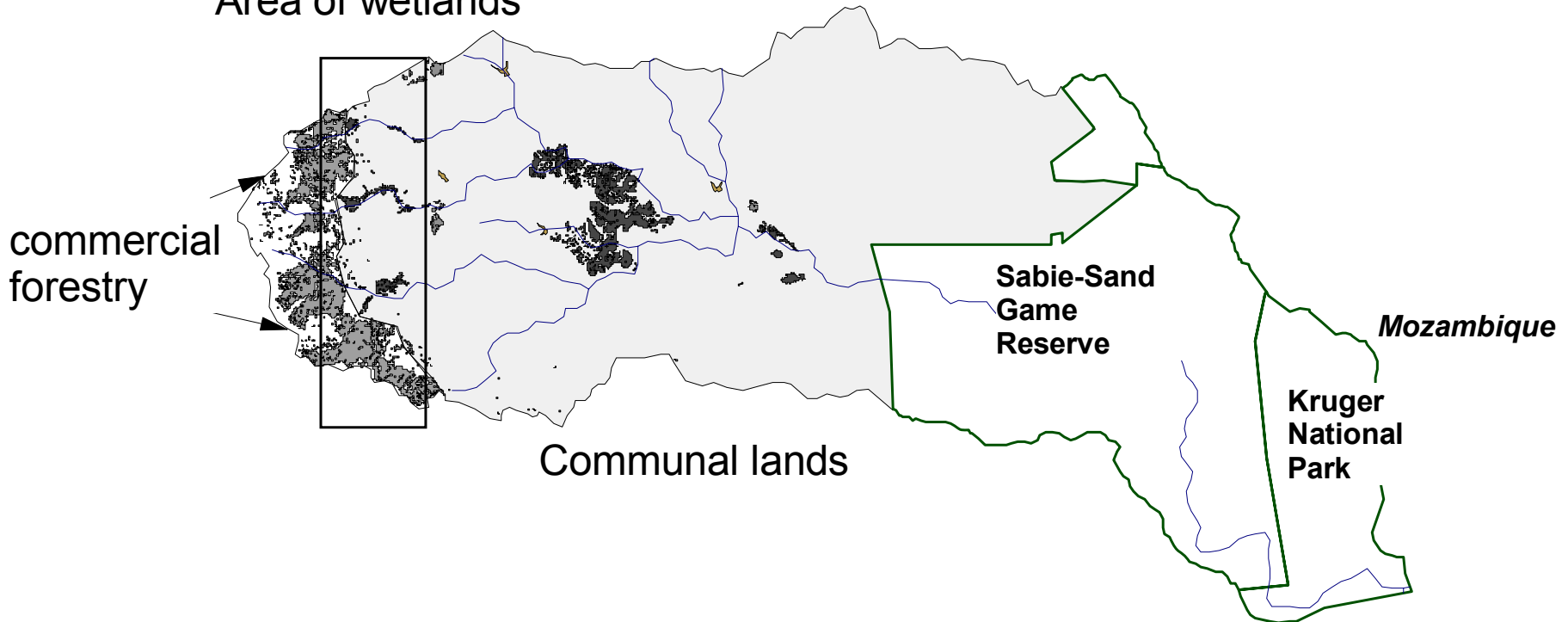


# Case study – wetland restoration

## The Sand River catchment



### Area of wetlands



# Value of wetland resources

- **70% of the local people use wetlands in some way**
- **25% depend entirely on wetlands as their only source of food and income**
- **Wetlands contribute about 40% of the food grown locally**
- **Wetlands are a critical “fall-back” when other crops fail**

# Extreme events and human use

- **36,000 tons of soil lost**
- **860 farming plots lost**
- **215 farmers lost resource**
- **2,155 people lost significant part of their food security.**

- **The wetland now contributes provisioning services estimated at R3,466 per household per year to some 70% of local households**
- **Value of the livelihood benefits (R1,995,885) provided by the rehabilitated wetland is more than double the cost of the rehabilitation interventions (R947,328)**





Alien tree species invading the watersheds of the Western Cape.  
The increased water use is negating investments in dams





## **BERG RIVER DAM**

Yield = 81million m<sup>3</sup>

@ R2.6 Billion

Investment

The clearing of riparian areas alone between 1998 and 2006 increased yield by more than 30 million m<sup>3</sup> or 40% of the yield of the Berg River (Skuifraam) Dam, at an investment of only R116 million.

Critical increase with future rainfall reductions projected under climate change



The Natural Resource Management Programmes are part of the South African Government's Expanded Public Works Programme, which addresses developmental needs in labour-intensive ways.



# Key points relating to EBAs experience in South Africa

- Large value “multipliers”
- Enhance sustainable development
- Short-, medium- and long-term
- Action-oriented, scaleable, stimulatory
- Multiple long term benefits
- Enhance resilience under climate scenario uncertainty
- EBAs “lense” highlights multiple opportunities, integration
- Trade-offs between services can be important



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