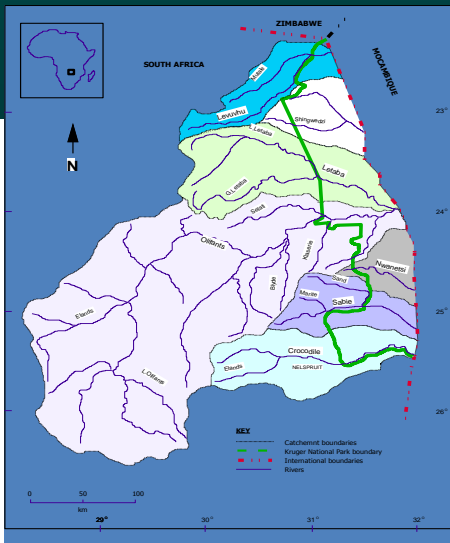


The role of feedbacks, leadership and self-organisation in adaptive management

Governance think tank
Nov 2011

Sharon Pollard



Our conceptual and orientation

- Explore water governance reform as it evolves in southern Africa
- Taking place in an increasingly **complex, dynamic** and unpredictable world
 - This is a multi-agent environment (peoples participation)
 - Acting collectively
 - Flexible and adaptive (Learn)

Transformation framework IWRM.... The need to think differently

- Pay more attention to how we think and act
- And what informs our position and perspective?



Move from linear, reductionist approaches

- Water resources problems are often systemic in nature
- (that means they have multiple causes)

Thus we need to act

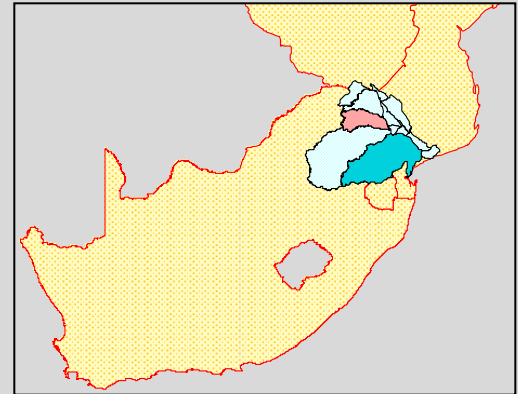
- Systemically
- collectively

Shared Rivers Initiative:

Praxis of IWRM

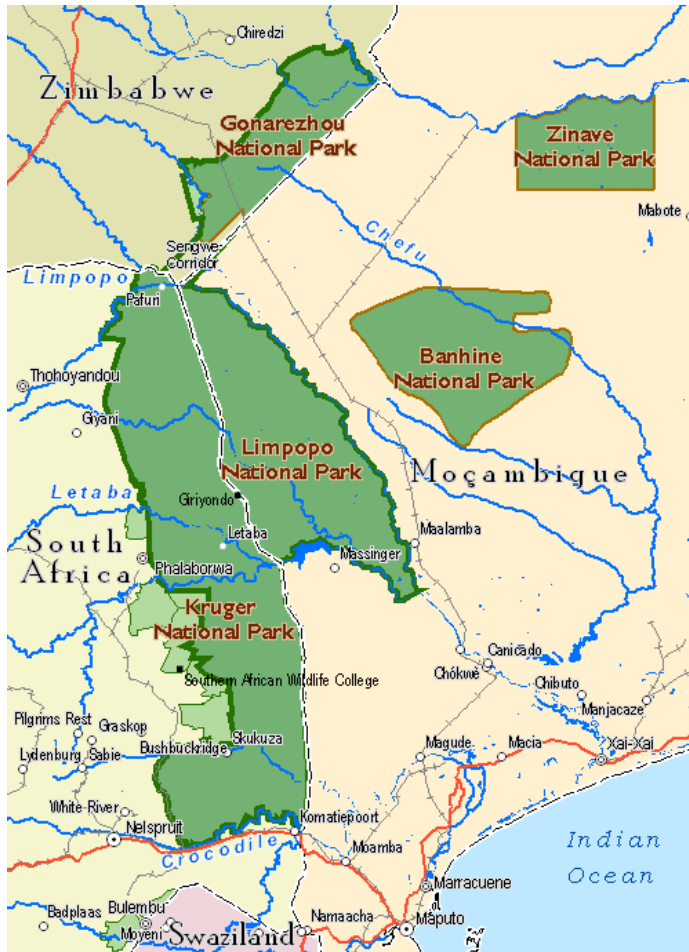
Enquiry into factors that constrain or enable meeting our commitment to sustainability in rivers of the lowveld (the EWR)

- Concerns..Olifant's flows...
- 2005 – stopped flowing for 33 days
 - 10 in September
 - 23 in October



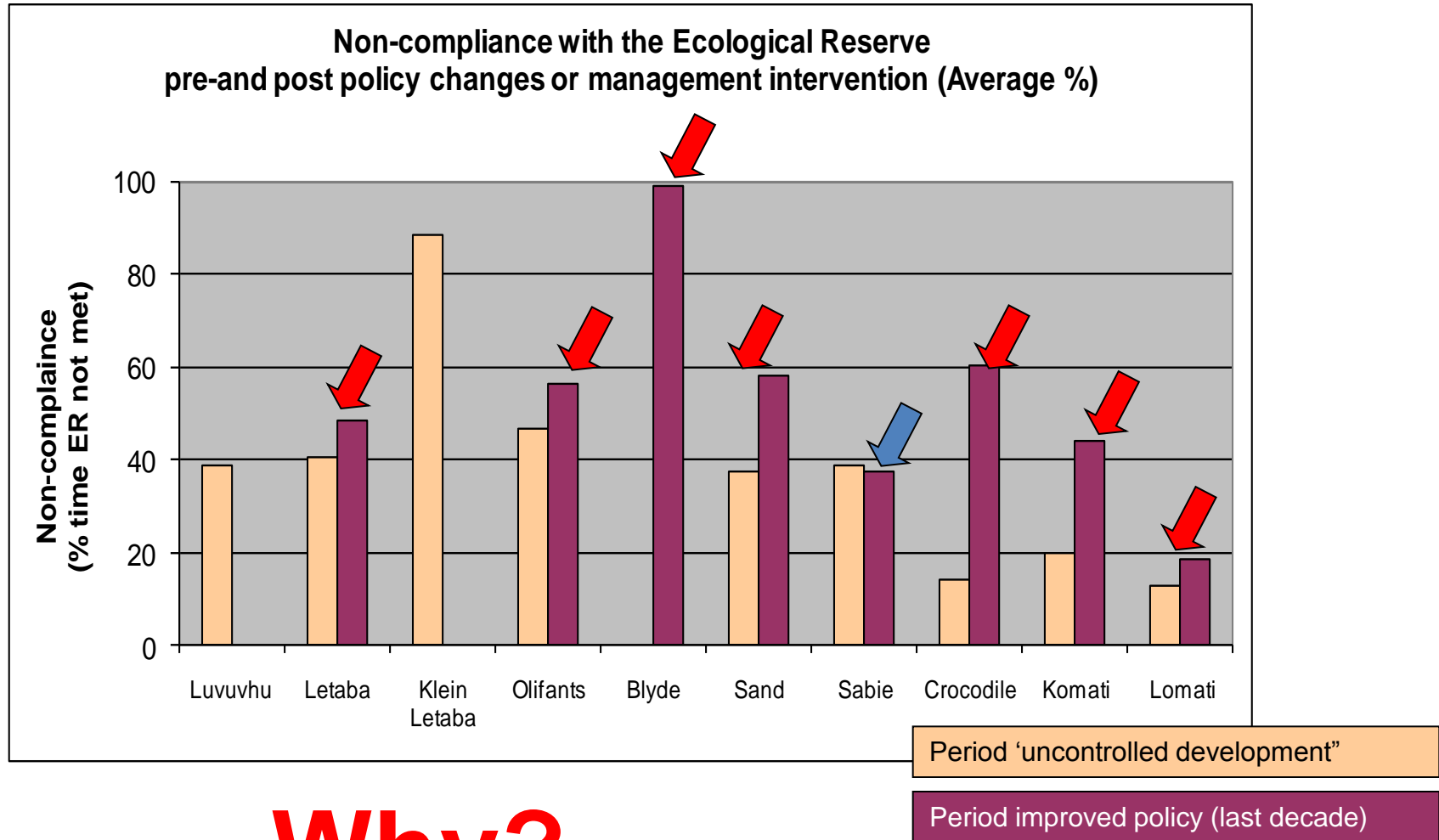
Context

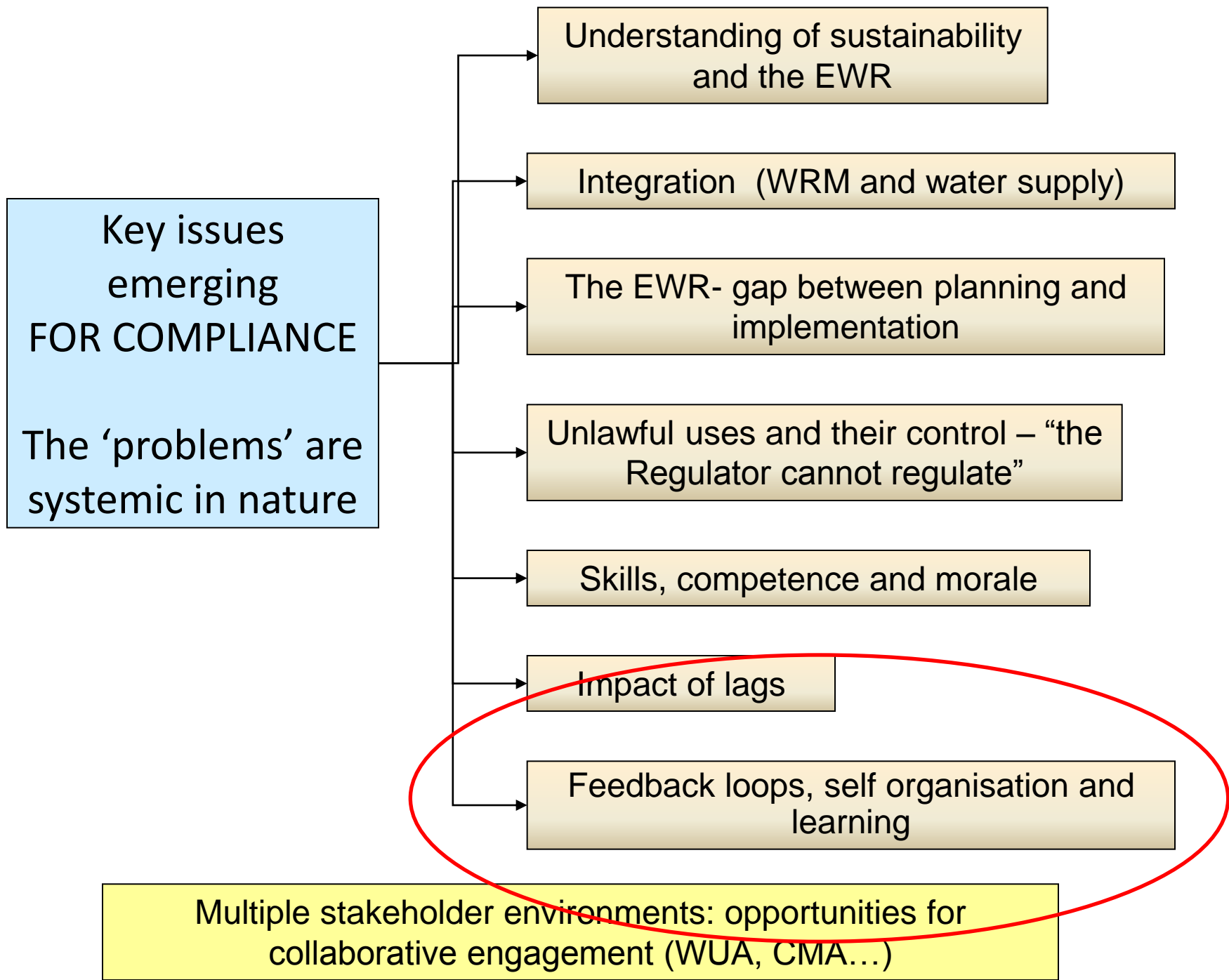
South Africa, Swaziland, Mozambique



- South Africa – upstream, highest water demand
- Swaziland and Mozambique downstream
- Mozambique – emerged from brutal civil war; need for economic growth
- Part of various international agreements e.g. IIMA (water); trans-frontier parks

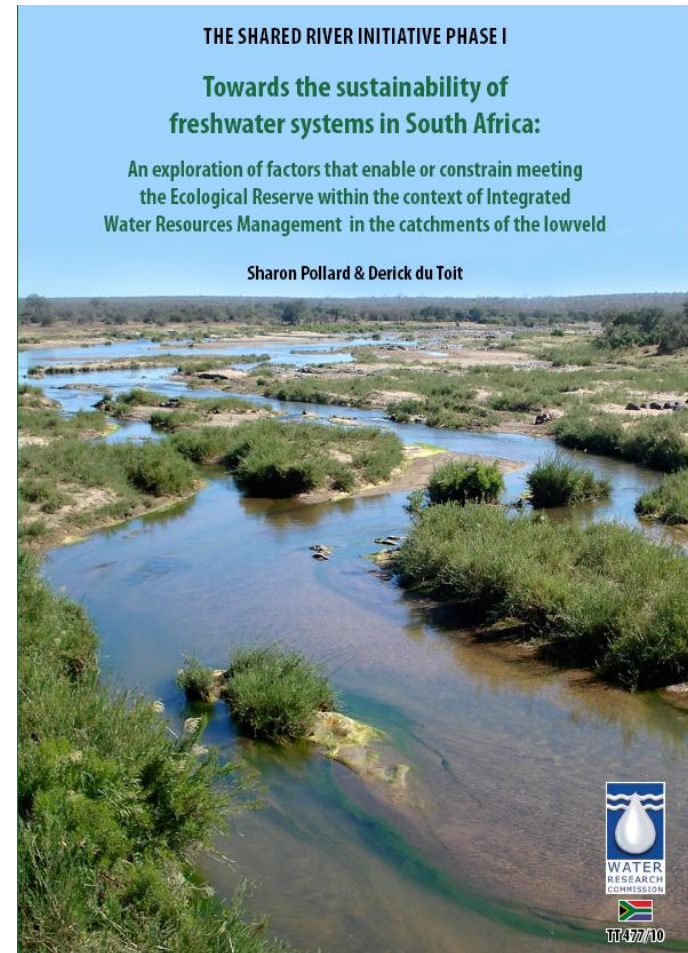
Summary: Incidence of compliance with ER flows (pre and post NWA)





Results

- All rivers are non-compliant with the EWR
- Why? Reasons vary:
 - Operationalising policy
 - collective contribution and synergies of a number of strategies, plans and practices
 - Some indications of improvement



Returning to the concept of IWRM and why is it different

Where is this happening?

- Moving from managing in silos to managing as a whole: **Integration**
- Dealing with change: Managing in **complex environments**
- Managing with people: **Stakeholder involvement**
- Managing towards a **vision**
- **Distributing benefits**: Sharing a resource based on principles
- Building **sustainable futures**



Feedback loops, self organisation and learning

- Lowveld rivers – little understanding of the systemic nature or water resource challenges
- New policies – how do we support an adaptive system that can respond to multiple “demands”
 - Do these talk to sustainability and equity?



Pollard, Biggs, du Toit (2009) WRC

Crocodile Catchment

Multiple perspectives and beliefs of water resources management in the Crocodile Catchment

(Ecology and Society)



Institutional arrangements

Error! No text of specified style in document..1: **Summary of the water related institutions of the Inkomati WMA sub-catchments.**

A = Komati Basin Water Authority; DARDLA = Agriculture, Rural Development and Land Affairs; DEDET = Department of Economic Development, Environment, and Tourism. IAPs = Interested and Affected Parties. Based on best available information.

Inkomati WMA	
Regional	DWA Regional Office (RO) Oversight and WRM functions other than those delegated to ICMA
	DWA Satellite offices
	Inkomati Catchment Management Agency (ICMA) - Initial delegated functions (S80) and S19,20
Other regional offices	DARDLA (Agriculture, Rural Development and Land Affairs)
	LandCare and CCAW
	Department Economic Development, Environment, and Tourism (DEDET)
	Department of Mineral Resources (DMR)
Other Strategic	Eskom

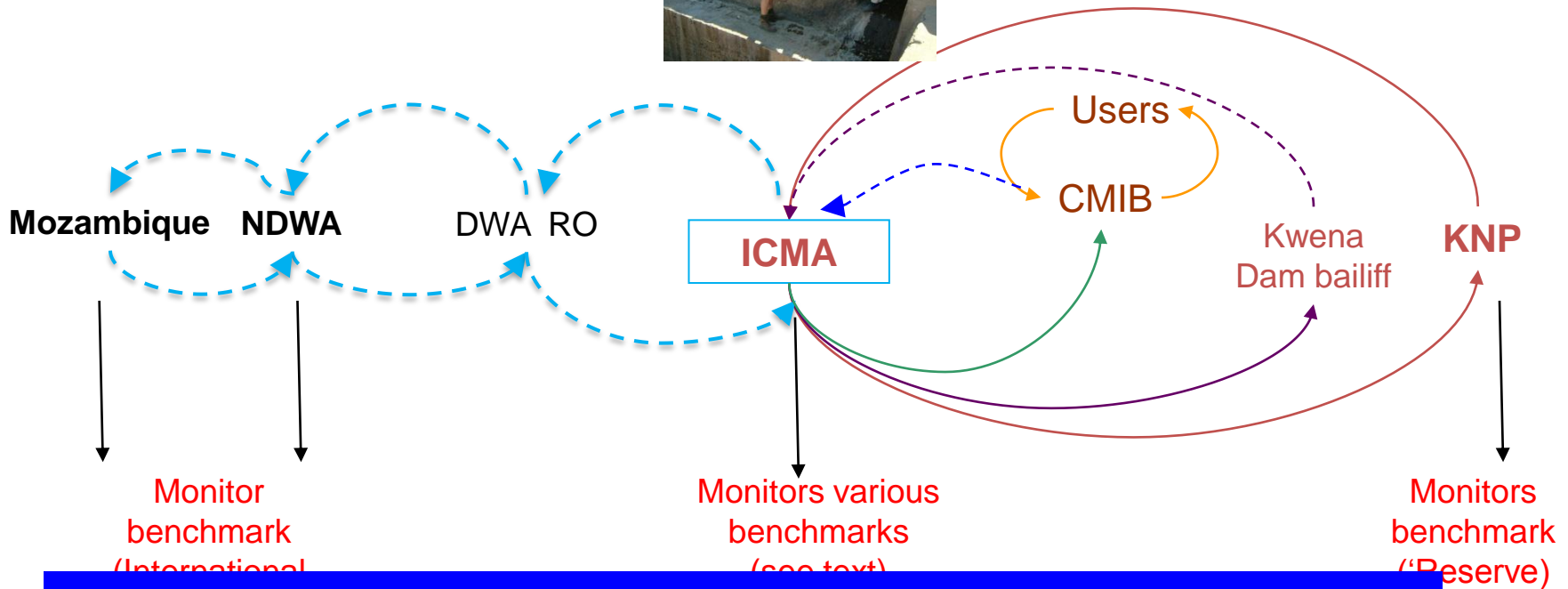
	Sabie-Sand Catchment	Crocodile Catchment	Komati Catchment
Committees/ Forums			
Management Committees	(Not formally established)		
Joint Management Committees	Dingleydale IMC New Forest IMC Champagne CPA		
Stakeholder Forums	Sabie-Sand Catchment Forum	Crocodile Catchment Forum	Komati Catchment Forum
Water User Groups (WUGs)			
	Sabie River IB (~10km downstream of Sabie to Hazyview; focus on irrigation canal)	Crocodile Major IB White River Valley Sand River IB Kapp MIB Elands IB See Deli. 7 for minor IBs	3 IB operating in 'districts' Komati IB Kaalrug (Mhlambanyathi River) Lomati ID (Lomati River) Elands River WUA (former IB) Upper Komati WUA (new)
Water Users			
Industry	Various	Various	Various
Community	Various – small to medium	Various - small to large	Various - small to large
Small (unnamed)	Various small operations	Various	Various
Conservation	KNP	KNP	MTPA
	Sabie-Sand Wildtuin	MTPA	

Multi-agent involvement

- States
 - Mozambique
 - Swaziland
- National Departments
- Regional offices (DWA)
- Water users/catchment forum
 - Agriculture
 - Municipalities
 - Industry
 - Forestry
 - mining



Crocodile River: Emerging self-organisation and feedback loops



Leadership, self-organisation and multi-scale feedbacks

Leadership and Multi-scale functional feedback loops for water governance

'Promise' to the public...

INFORM	CONSULT	INVOLVE	COLLABORATE
Promise to the public:	Promise to the public:	Promise to the public:	Promise to the public:
<i>We will keep you informed</i>	<i>We will keep you informed, listen to and acknowledge concerns and aspirations provide feedback on how public input influenced the decision</i>	<i>We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how the public input influenced the decisions</i>	<i>We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible</i>

IWRM Task	Nature of participation
1. A vision for the resource	
	Collaborate
2. Set a class for the resource	
	Collaborate
3. Set the Reserve	
	Inform
4. Set Resource Quality Objectives (RQOs)	
	Consult
5. Determine the allocatable resources	
	Inform
6. Draw up an allocation plan	
	Collaborate
7. Call for license application	
	Involve
8. Issue water use licenses	
	Inform
9. Audit compliance of licence holders	
	Involve
10. Monitor resource status	
	Involve
11. Review CMS as a whole	
	Collaborate

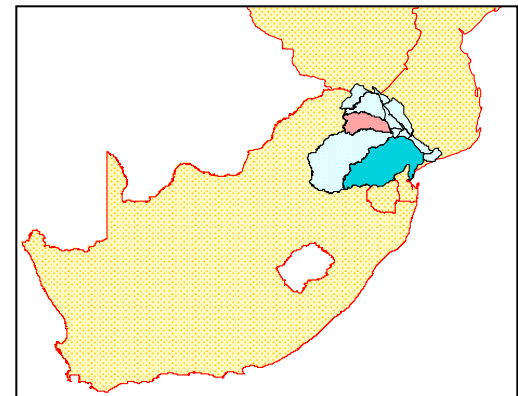
Olifants River

Almost no multi-scale
feedbacks to talk of

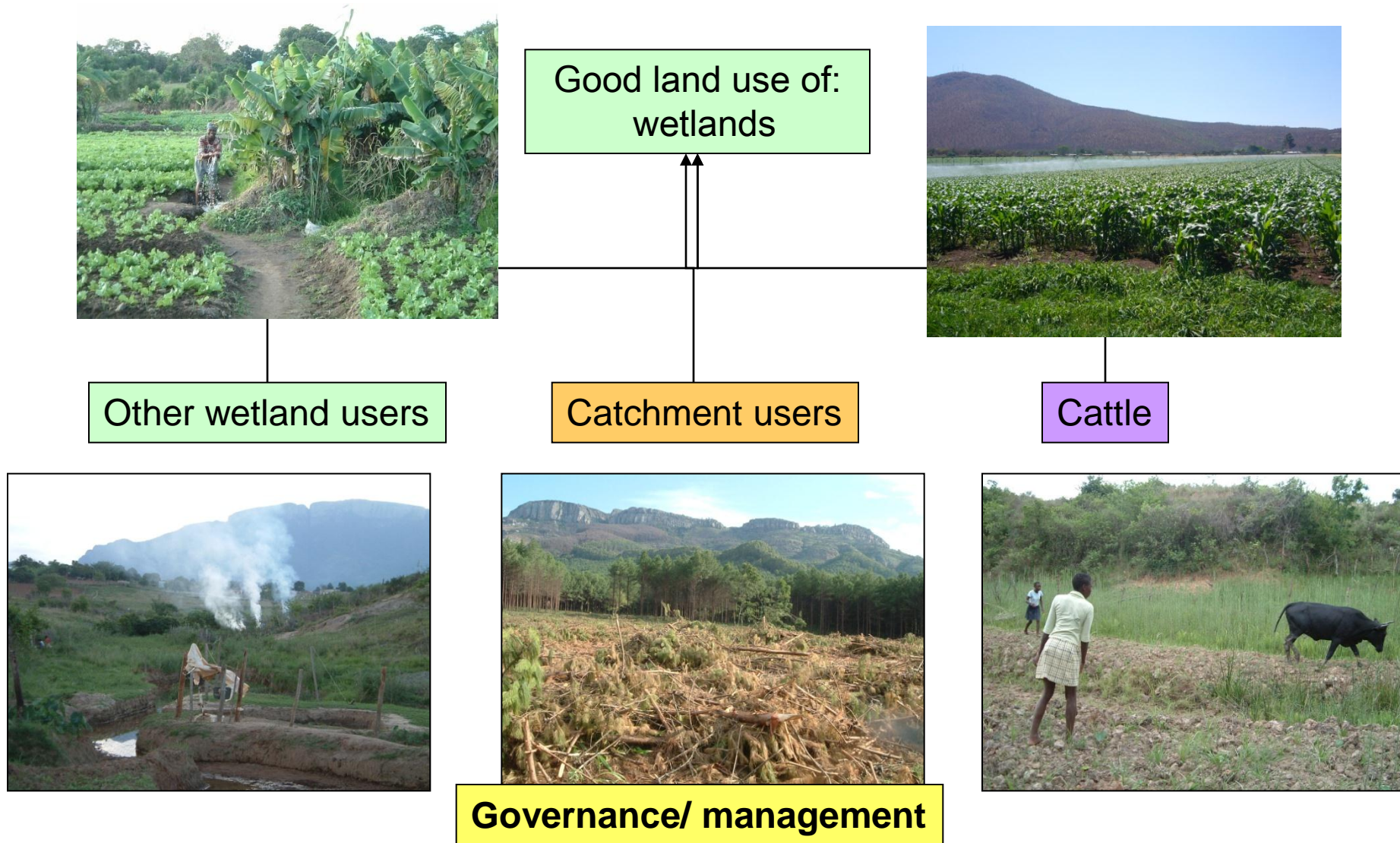
almost total lack of
leadership.

Despite local efforts,
meaningful change is not
possible under the
current governance
arrangements

there is no single
“individual” leading the
transformation in the
catchment.

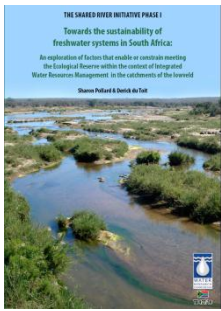


Local level: Legal pluralism



Claims on power

	Community membership	T.A. /Induna	CDF/CPF	NGO	STATE
Authority					
All		X			X
Monitor		X		X	
Responsibilities					
Abide	X				
Monitor	X	X	X		X
Report	X	X	X	X	X
Act on transgressions		X			X
Administer		X			X
Act as recourse		X			X
Ajudicate		X			X
Rights					
Access	X				
Decision-making (rules and sanctions)		X			X
Usufruct		X			X



Future directions

1. Developing an *integrated, systems view* as the basis for planning and action (supporting IWRM)
2. Support for *self-organisation* and robust, multi-scale *feedbacks* in integrated, adaptive action and management
3. Importance of *leadership and governance* for transformation and sustained action
4. Participatory and representative platforms for *collective action and learning*
5. Unlawfulness and the *regulation* of unlawful use
6. *Lags* in the implementation of the EWR and emergence of sustainability discourse need to be better understood