

DBSA Knowledge Week 08

Ensuring Water security in the 21st Century: Southern Africa (SADC)'s Challenges









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1. Introduction

- Statements relating to water as a source of modern wars have become clichés.
- Enmities arising from access to and use of water are ancient and run deep.
- However, broader & more sophisticated approaches are now required to understand 21st C water threats.
- Worldwide water resources are under threat from growing demands and pollution / contamination levels.



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1. Introduction [contd]

- SADC's water situation is no exception to current worldwide concerns about water security, [[SADC Water Sector Vision](#)]
 - A state like Lesotho is poor in natural resources, but earns its valuable foreign exchange from water incomes.
 - In Botswana, a large part of fresh water originates outside its borders.
 - South Africa accounts for a huge water use in SADC, but only ~10% resource in SA.

Hence SADC sees water as a major vehicle of cooperation and integration



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2. Water Security (WS)

- What is Water Security and who determines it? [see [GWP](#) and [Grey/Claudia](#)]
 - those affected must determine WS!
- What factors influence WS?
 - Hydrological environment
 - Water governance environment
 - Social-economic context
 - Geopolitical environment
 - Future environment

2. Water Security (contd 1)

- Investments needed to achieve WS will be determined by factors such as:
 - Water uses, costs & the management of related risks.
 - infrastructure to abstract raw water and treat it to desired acceptable quantity and quality.
 - infrastructure to regulate water courses and ensure acceptable levels of risks against water-related risks.



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2. Water Security (contd 2)

SUMMARY:

- The need for water security is a human security issue as well.
- Conflicts over water resources and environmental degradation have the potential to intensify [see]



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Water resources in SADC, A selection of Potential Conflict Issues [van Wyk, J. (1998)]

River	Potential Conflict Issues
Orange	Embraces 4 countries but the Lesotho Highland Water Project involves only South Africa and Namibia
Limpopo	South Africa, Botswana and Zimbabwe have plans to extract water from its tributaries. Mozambique has a minor share and an imbalance exists in this regard.
Save	Most of the water resources of the Save lie in Zimbabwe., leaving Mozambique with an imbalance.
Okavango	Zimbabwe is not a member of the Okavango River Basin Commission. Botswana and Namibia are currently involved in a case in the International Court of Justice.
Cunene	Local water demands are low as the river lies in a sparsely populated area. Opposition to the hydro-electrical project in the Epupa scheme was voiced.
Zambezi	Runs through 8 member states of SADC. The Zambezi River Authority (ZRA) involves only 2 of these states. Angola and Zambia did not sign 1 st SADC Protocol on Shared Watercourse Systems (then).
Rovuma	Mozambique is denied most of the water of the Save and Limpopo. The Rovuma could be an important resource for development in this country.
Zaire	Forms border between DRC and Angola. Other 3 non-SADC countries in the basin .Potential conflict could arise out of its vast surplus of water (ten times that of the Zambezi) The Inga Rapids have the largest single hydroelectric energy potential in the world.



3. Ensuring water security in the 21st C

- WS levels are determined by established water institutions and infrastructures [[see](#)] 02
- Establishing common grounds to ensure shared benefits is thus priority:
 - Recognising that water 01 is everybody's (including politicians) business is crucial, [[see KRBD project Pics](#)]
 - Awareness of true value of water 03 is key
- Invest in water institutions and seek cooperation with neighbours.

Slide 9

- 01** - harmonised policies and institutional structures - it has been noted that trans-boundary water linkages/developments have been threatened by different water rights and legislation in the states.
- win-win approaches, with sustainable benefits for affected local settlements and environment protection at large
02569, 2008/10/27
- 02** The Institutional weakness in SADC has been cited as one of the most important obstacles in achieving water security (especially its inability to resolve conflicts)
02569, 2008/10/27
- 03** Rich nations may use this against poorer and/or ignorant states
02569, 2008/10/27

3. Ensuring WS in the 21st C [Contd]

- Increase stock of transfer schemes and/or multipurpose developments of water infrastructures without limiting benefits in donor basins/states.
- Investing in watershed management to increase productivity & reduce risks
- Interventions beyond the water sector

Investments in water institutions and infrastructures must be concert [see] and attendant social & environmental costs must be management well



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4. SADC Water sector challenges

- Existence of shared water courses inevitably indicates WS challenges with respect to international water rights.
- An overall picture defines SADC's water profile as that of scarcity, with extreme temporal and rainfall variability [[see](#)],
 - Climate major influence as well
 - Allocation challenges thereof
- Pollution by upstream users and protection required against pollution present other challenges

4. SADC Water sector challenges –[contd]

- Growing importance of hydro-power from shared watercourses with equally significant implications
- Skills /Capacity challenges to prepare and implement regional projects
- Reliable data on trans-boundary water courses to facilitate planning is another challenge for existing skills
- Sustainability of trans-boundary water projects and developments
- Financing for water projects.



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5. SADC Water sector developments

- 1995 - Legal framework in form of Protocol on shared watercourse systems.
- 1996 - Established of a distinct water sector coordinating unit
- 1997- Regional Strategic Action Plan I on IWRDM (II in progress?)
- 2003- draft Regional Indicative Strategic Development Plan (RISDP).
- 2005 - Framework for Action to Achieve Vision for WEL (GWP-SA).
- Regional water strategy in progress?

SADC Water sector developments [contd]

- **HYCOS**, a capacity building project for Information Systems,
- The **FRIEND** project to increase regional co-operation for optimal use of WRs,
- **WaterNet** initiative offers graduate-level training in WRM, research/info exchange,
- Joint river basin developments and management systems,
- Recently SADC secretariat reported that a PIU is to be created to help accelerate implementation of infrastructure projects



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6. Conclusions

- Addressing SADC's developmental objectives is limited by water scarcity
- SADC's shared water bodies indicate the need for common approaches to achieve water security,
 - which must begin with understanding basin dynamics [[see Figure](#)]
 - decisions on tradeoffs and risks must be made by the basin community itself taking into account environmental, social and economic issues



5. Conclusions [contd]

- Investing in making TWM work provide political, economic and technical cooperation opportunities (g. KRBD Prj).
- While chasing targets and minimum investment platform for water security, more investments must be put in managing what exists.
- **Given on-going progress, there is need to accelerate efforts to ensure the achievement of SADC's water vision and water security.**



End

Thank you for your attention?



Bibliography

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3. Global Water Partnership Southern Africa (GWPSA). (2005). Development of a Framework for Action (FFA) to Achieve the Southern African Vision For Water, life and Environment. Retrieved from <http://www.gwpsa.org/>
4. SADC: Document prepared by SADC for RTC on 'Integrated Water Resources Development and Management in SADC'
5. SADC: Framework for Action (FFA) Regional Report: June 2005

The vision of the SADC Water Sector

"to attain the sustainable, integrated planning, development, utilisation and management of water resources that contribute to the attainment of SADC's overall objectives of an integrated regional economy on the basis of balance, equity and mutual benefit for all member States".



Global Water Partnership 2000

Water security has been defined as an overarching goal where

“ every person has access to enough safe water at affordable cost to lead a clean, healthy and productive life, while ensuring that the environment is protected and enhanced”



David Grey and Claidia W Sadoff (2008)

- To capture importance of the potentially destructive impacts that water can have, *'water security'* was defined as
 - the availability of an acceptable quantity and quality of water for health, ecosystems, livelihoods, and production (HELP?), coupled with an acceptable level of water-related risks to people, environments and economies



Maguga Dam: Sod-Turning Ceremony



Maguga Dam: Official Opening



Driekoppies Dam: Official Opening

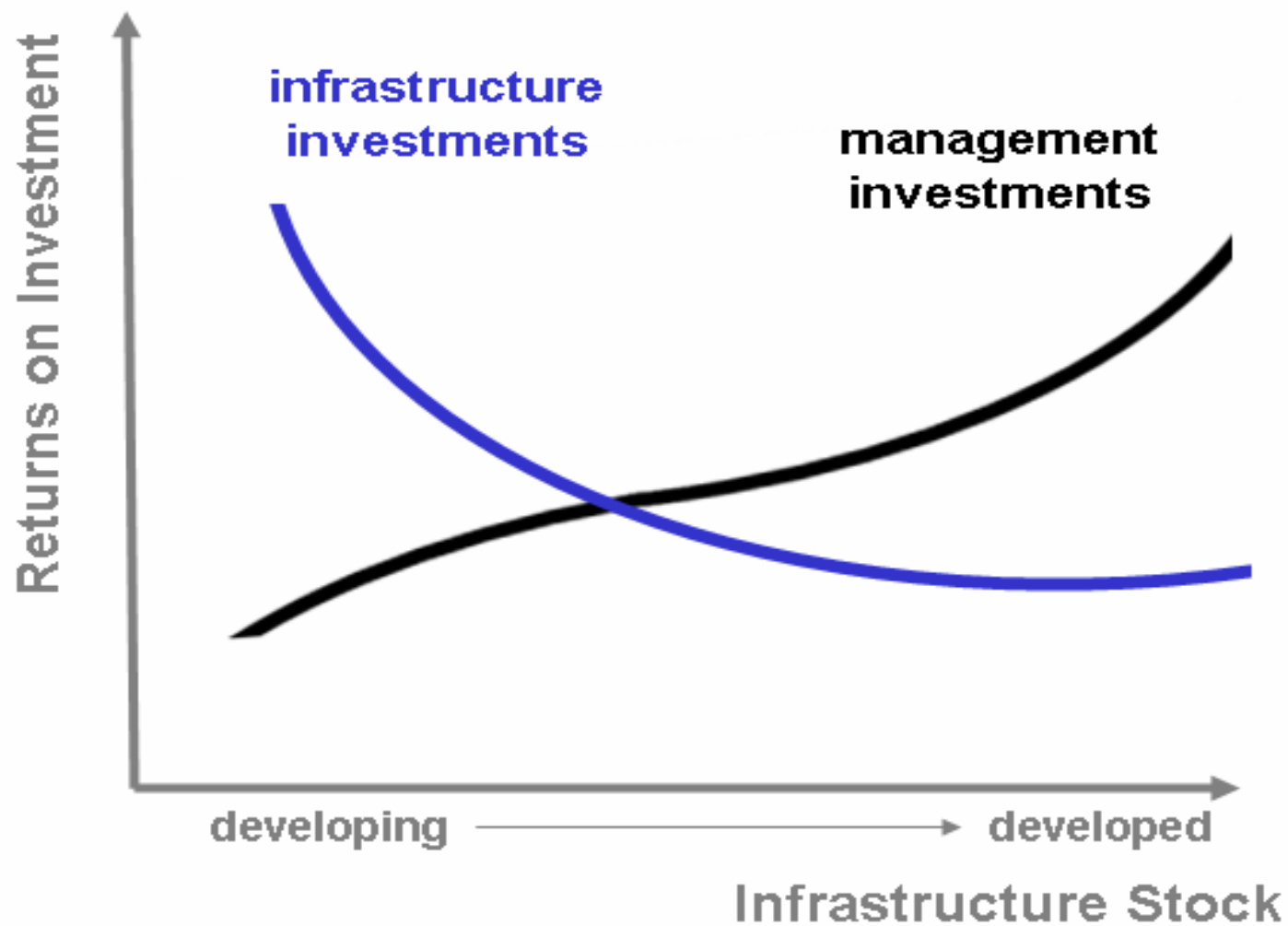
Prof K Asmal – then Minister of the DWAF, RSA



Prince Sobandla – Leader of the Swazi Delegation

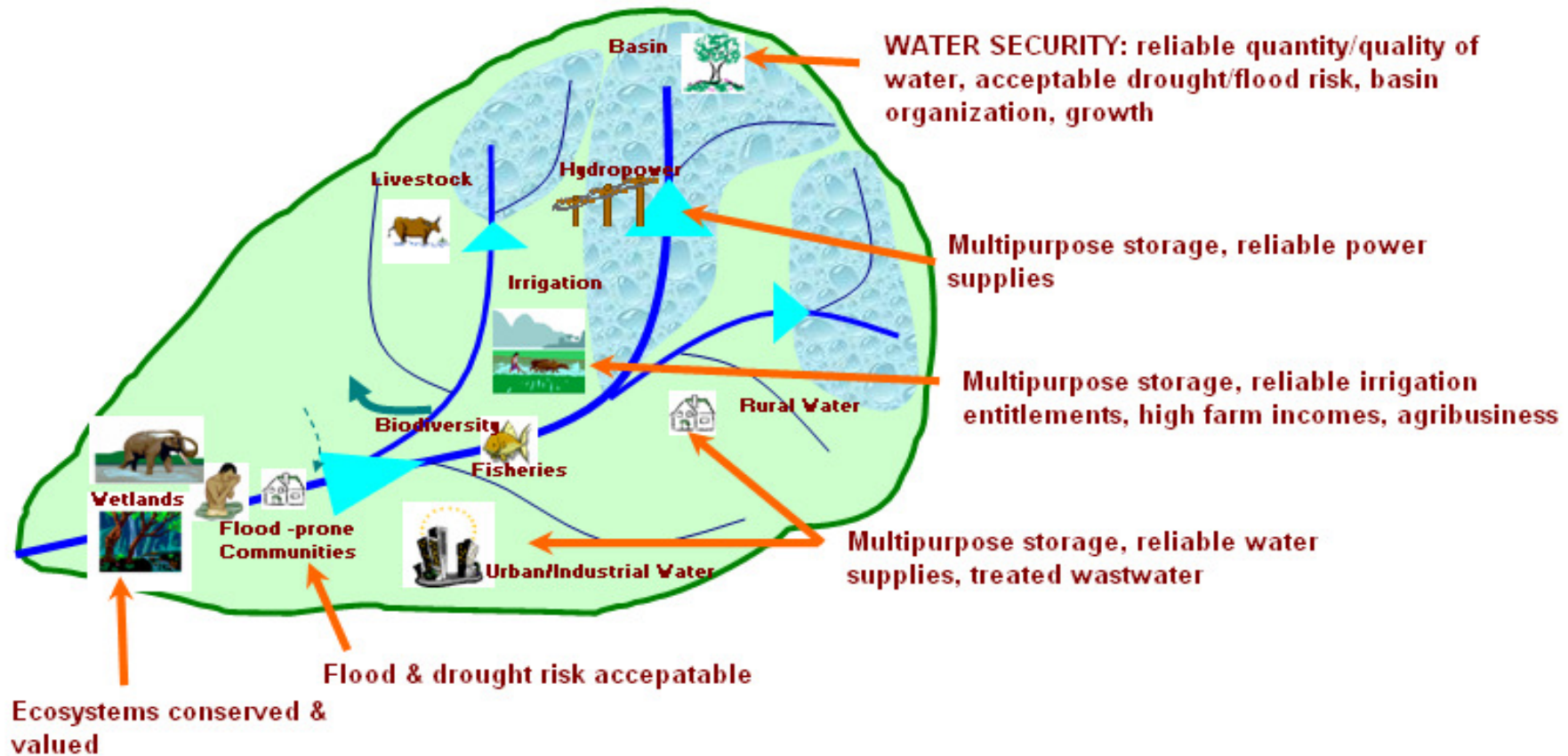


Balancing and Sequencing Investments in water infrastructure & management



Balanced Scenario & Understanding Basin Dynamics

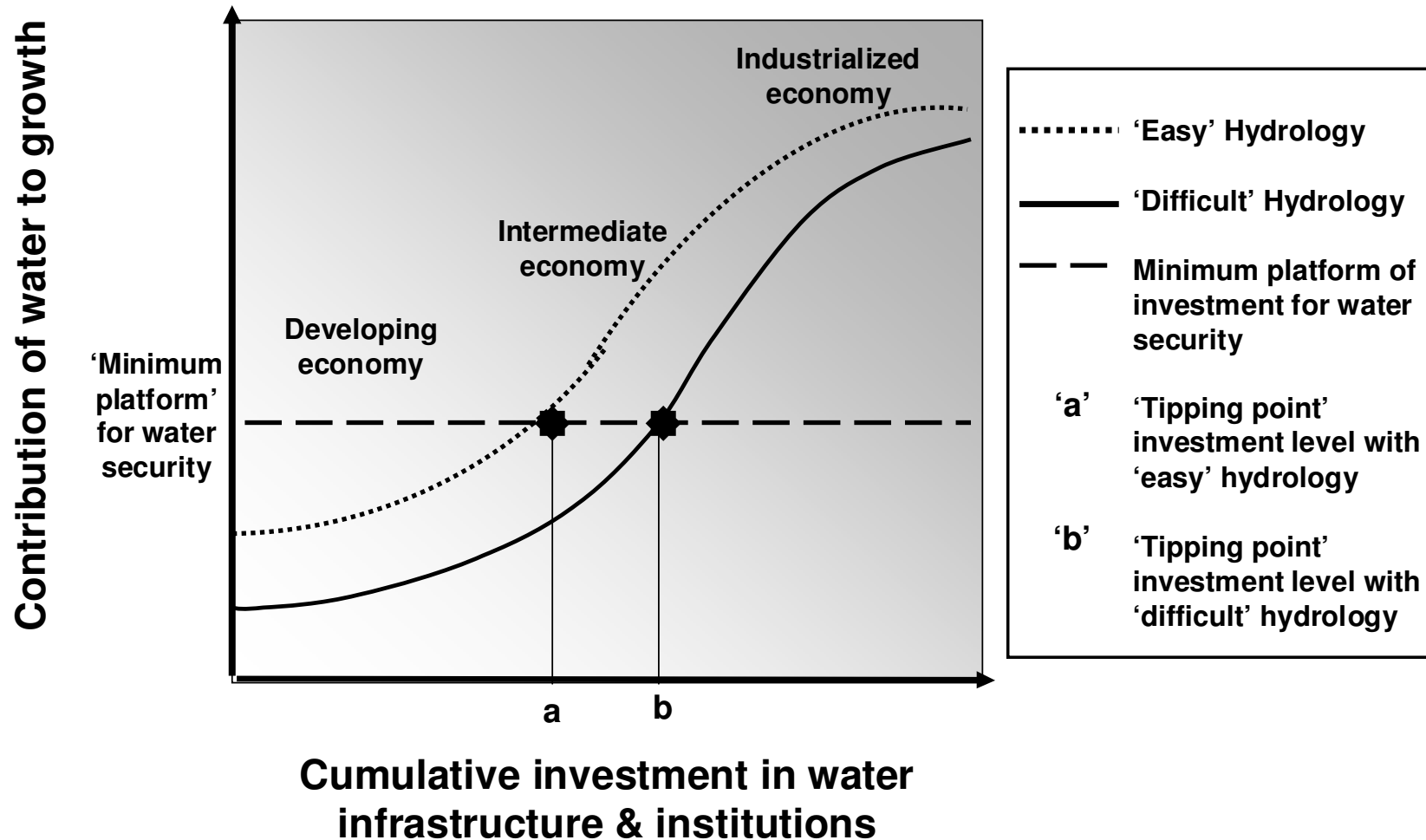
[Adapted from Gray, D. & Sadoff, C. (2008)]



Role of Water			
Productive		Destructive	
Hydropower	\$\$\$\$	Flood Vulnerability	Low
Agriculture	\$\$\$\$	Drought Vulnerability	Low
Rural/Urban Water Access	+++	Disease	Low
Environment	+++	Contamination	Low



Water and Growth S-Curve



Water Security, S-Curve and the Minimum 'Investment' Platform

'Water Security':

availability of an acceptable quantity & quality of water for health, livelihoods, ecosystems & production AND acceptable level of water-related risk to people, environment & economies

+
'Water Secure'

'Tipping Point'

-
'Water Insecure'

investments in water infrastructure & institutions

'Minimum Platform' investment needed of water infrastructure & institutions = to achieve basic 'Water Security'

Japan case study: the 'S Curve'

(Japan Water Forum, December 2005)

