

# IWRM IN AFRICA: From Concept to Practice

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Cape Town, 10 March 2008

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Presented on behalf of the Global Water Partnership



# Outline

- Part I: Facts: water in pictures
- PART II: The IWRM theory in simple words
- PART III: The African story: IWRM in practice: emerging success stories and lessons

# Part I

Facts: water, in images

# Water is a political good!

## VOLTA RIVER, GHANA



AFRICAN LEADERS, WATER AND POWER:  
**NKRUMAH:** VOLTA DAM, VOLTA RIVER  
**NASSER:** ASSOUAN DAM, NILE RIVER  
**MOBUTU:** INGA DAM, CONGO RIVER



Enough of political  
instability and  
humanitarian  
handouts



We need peace, we need  
an enabling environment!

Gatumba, Burundi. 28.02. 2008



# Algeria: Fetzara Lake, a Ramsar site

Competition between the 3 Es...



Industrial pollution



Human pollution



# South Africa: unauthorised connection...

If you do not consult and  
convince people,  
they will make their own plan!



Angola: mother and child





**LAKE VICTORIA, KENYA**



ater  
ip

# Angola



# Mombassa, peak hour: going back home





# Transport Lake Kivu DR Congo



# Water ways, Copenhagen, Denmark



# Agriculture...

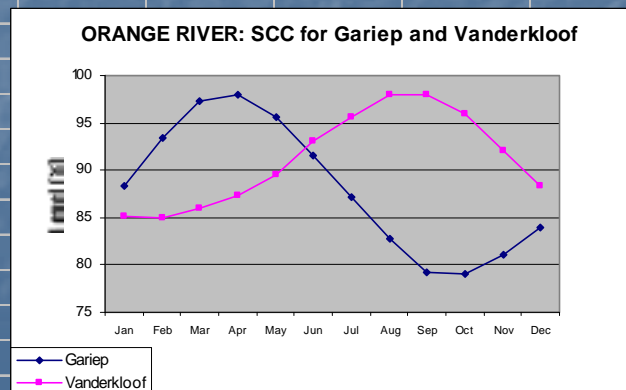


Mother Nature is sovereign!

Gariep Dam  
07h00 3 May 2001  
99.93% full

GARIEP AND VANDERKLOOF STORAGE CONTROL CURVES

Month	Gariep	Vanderkloof
Jan	88.4	85.1
Feb	93.4	85
Mar	97.3	85.9
Apr	98	87.4
<b>May</b>	<b>95.6</b>	89.6
Jun	91.6	93
Jul	87.1	95.6
Aug	82.7	97.9
Sep	79.2	98
Oct	79	95.9
Nov	81	92
Dec	83.9	88.4









## Shashe, Limpopo Rivers in the dry season



# Congo River, Kinshasa and Brazzaville: too much water: 20 000 to 80 000 m<sup>3</sup>/s

- Transfer to Lake Tchad?
- Transfer to the South (Namibia and others)?



# Adaptation to seasonal variability: harvesting of groundwater when surface flow has stopped





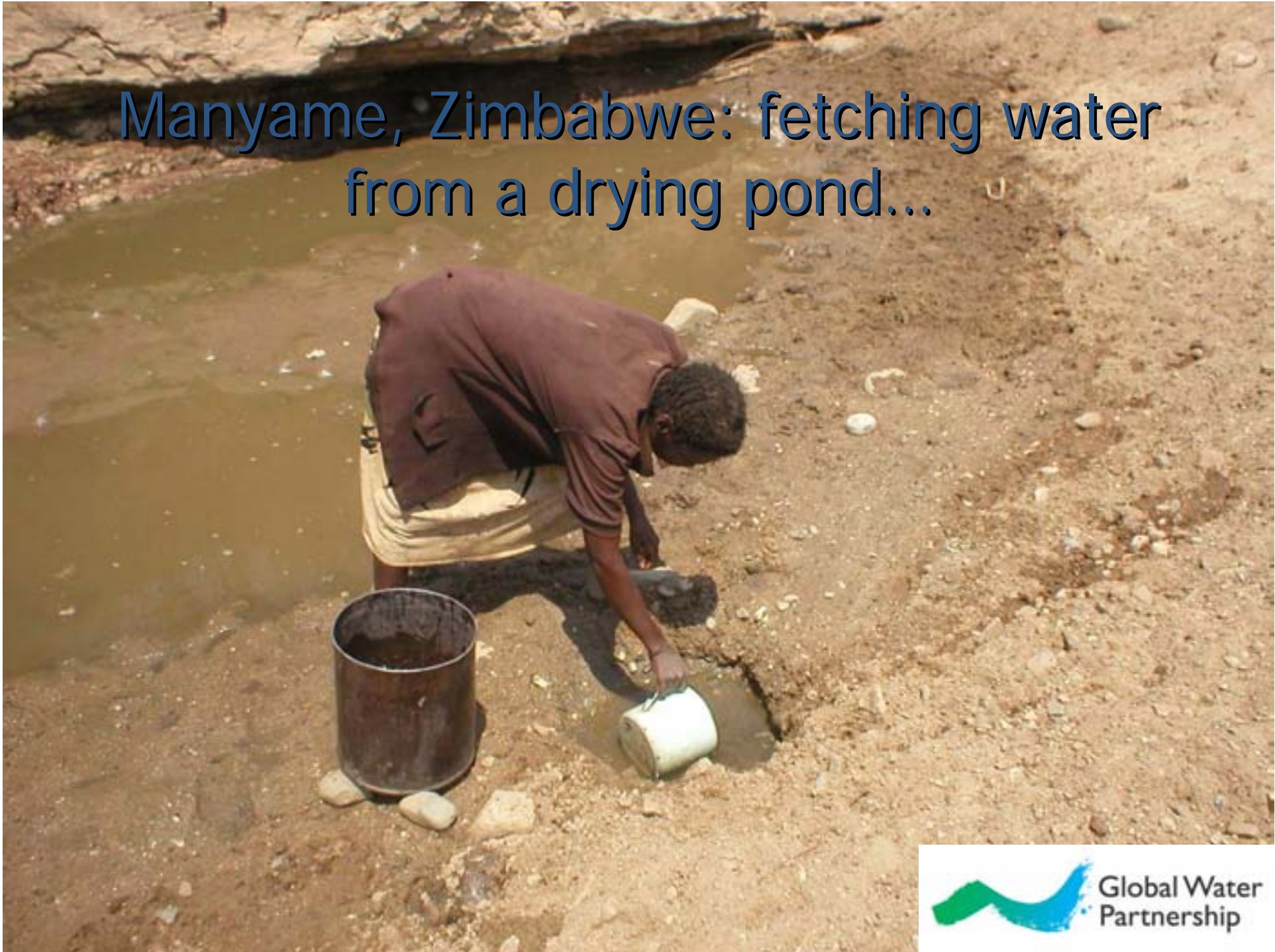
Floods in  
Crocodile (East) in 2000



### Flow gauging stations

- Many were damaged by these floods
- Or the limits of the discharge table were exceeded

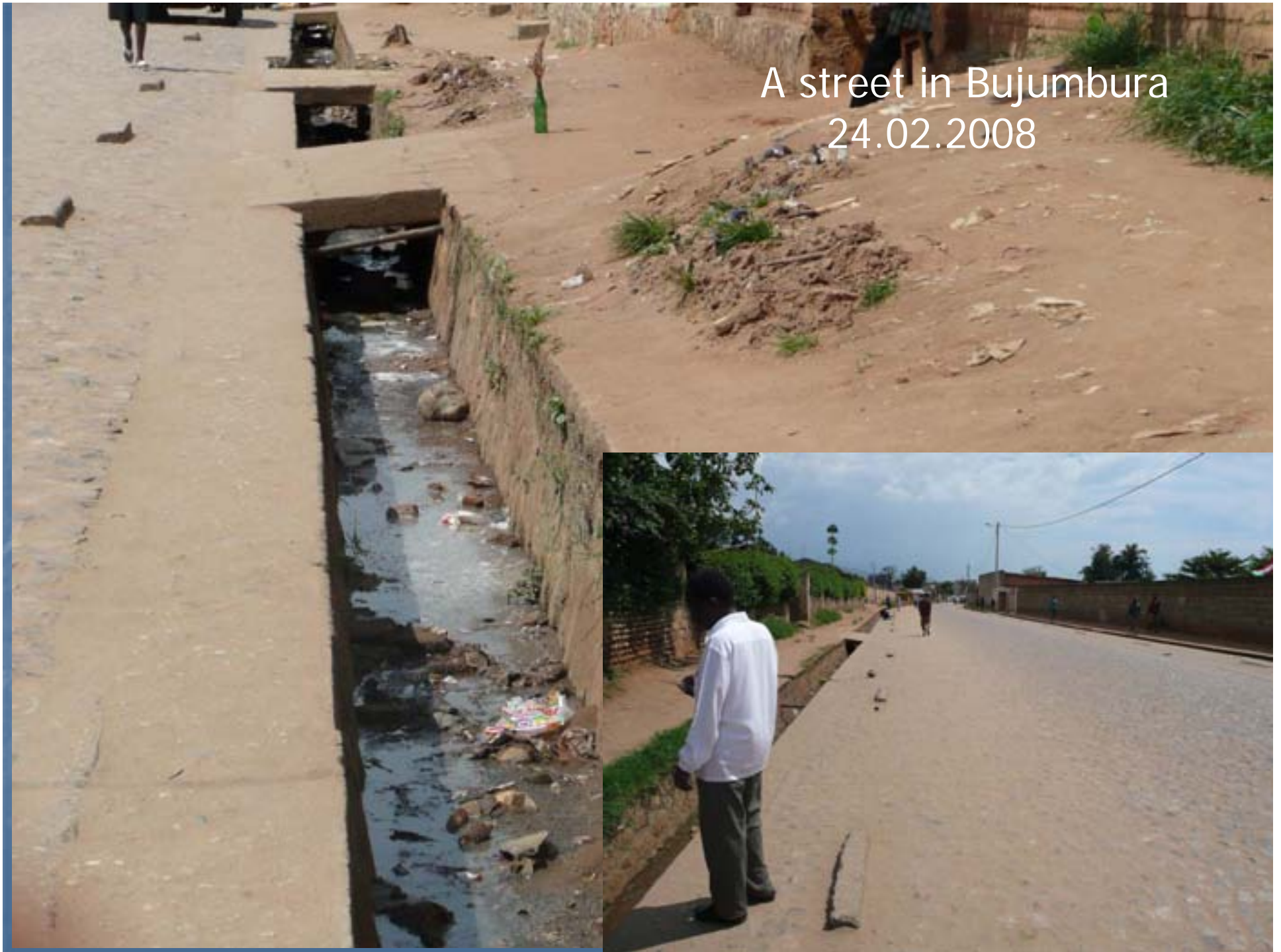
Manyame, Zimbabwe: fetching water from a drying pond...



# South Africa: pipe burst in city center

Develop (build) infrastructure, operate and maintain it

A street in Bujumbura  
24.02.2008



# Part II

The IWRM theory in simple words  
( the GWP way)

# Life abounds at the intersection of three natural resources

- Land

- Air

+ Energy

- Water

# Land related issues

## Ownership

- State
- Communal/tribal
- Private

## Land use

- Soil erosion
- Degradation

# Air related issues

- **No ownership**
- **Air pollution**
- **CO<sub>2</sub> and other gases & global warming**

# Water related issues

## Variability in

- **State** (liquid, vapour, solid)
- **Space** (humid and arid areas)
- **Time** (wet and dry seasons)

- **Ownership?**
- **Source?**
- **Freshwater?**
- **Quantity?**
- **In high demand:**  
(population, standard of living)

Is it true that the next war will be about water?

**Need for integrated management!**

# So, what is Integrated Water Resources Management (IWRM)?

- IWRM is defined as '*a process that promotes the co-ordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare on an equitable manner without compromising the sustainability of vital ecosystems.*' (GWP, 2000).

# IWRM (Rio-Dublin) Principles

1. Fresh Water is a *finite and vulnerable resource*, essential to sustain life, development and the environment
2. Water development and management should be based on a *participatory approach*, involving users, planners and policy-makers at all levels
3. *Women play a central role* in the provision, management and safeguarding of water
4. Water has an economic value in all its competing uses and should be recognised as *an economic good*.

Often, an IWRM Project deals with a combination of the 3 Es,  
In our context:

**Relevant**

**ECOSYSTEM SUSTAINABILITY**

Enabling  
Environment

# ROLE OF INFRASTRUCTURE ?

Management Instruments

Assessment  
Information  
Allocation tools

Policies  
Legislation

Institutional Roles

Central-local  
Public- private  
River basin

**ECONOMIC EFFICIENCY**

**Truly relevant**

**SOCIAL EQUITY**

**Extremely relevant!!!**



# The IWRM Framework

## A. Enabling environment

- A1. Policies
- A2. Legislation
- A3. Financing & incentive structures

## B. Institutional roles

- B1. Creating an organization framework
- B2. Institutional capacity building

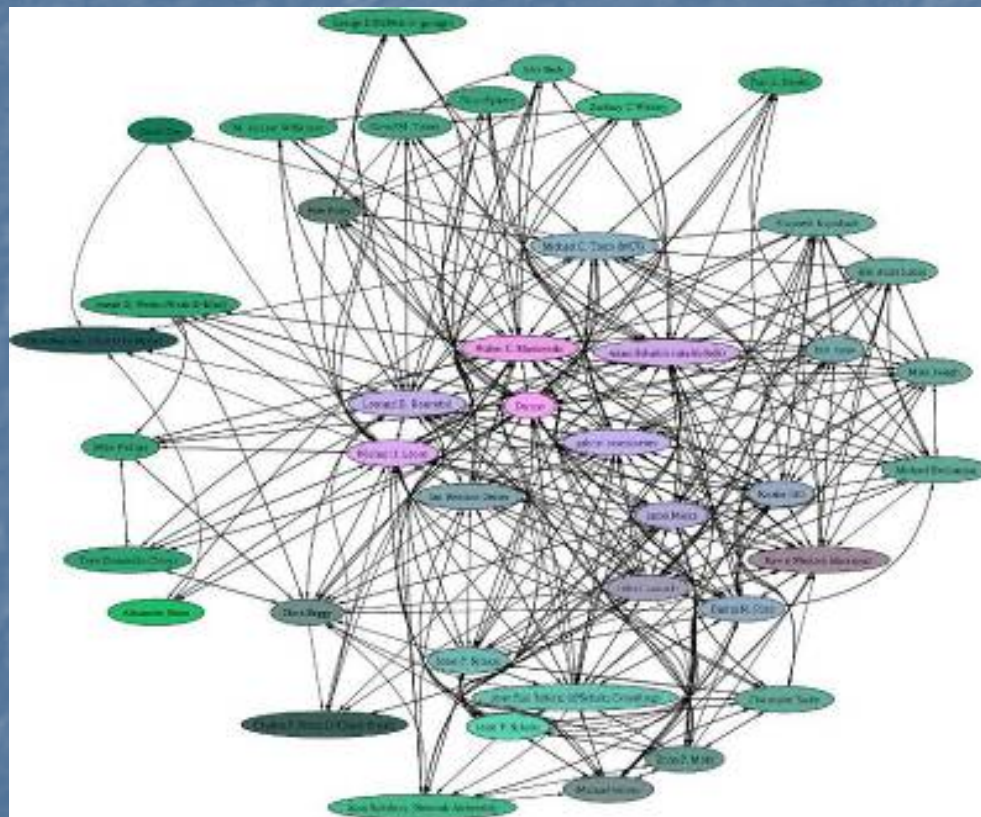
## C. Management instruments

- C1. Water resources assessment
- C2. Plans for IWRM
- C3. Efficiency in water use (WDM)
- C4. Social change instruments
- C5. Conflict resolution
- C6. Regulatory instruments
- C7. Economic instruments
- C8. Information exchange

# Misconceptions

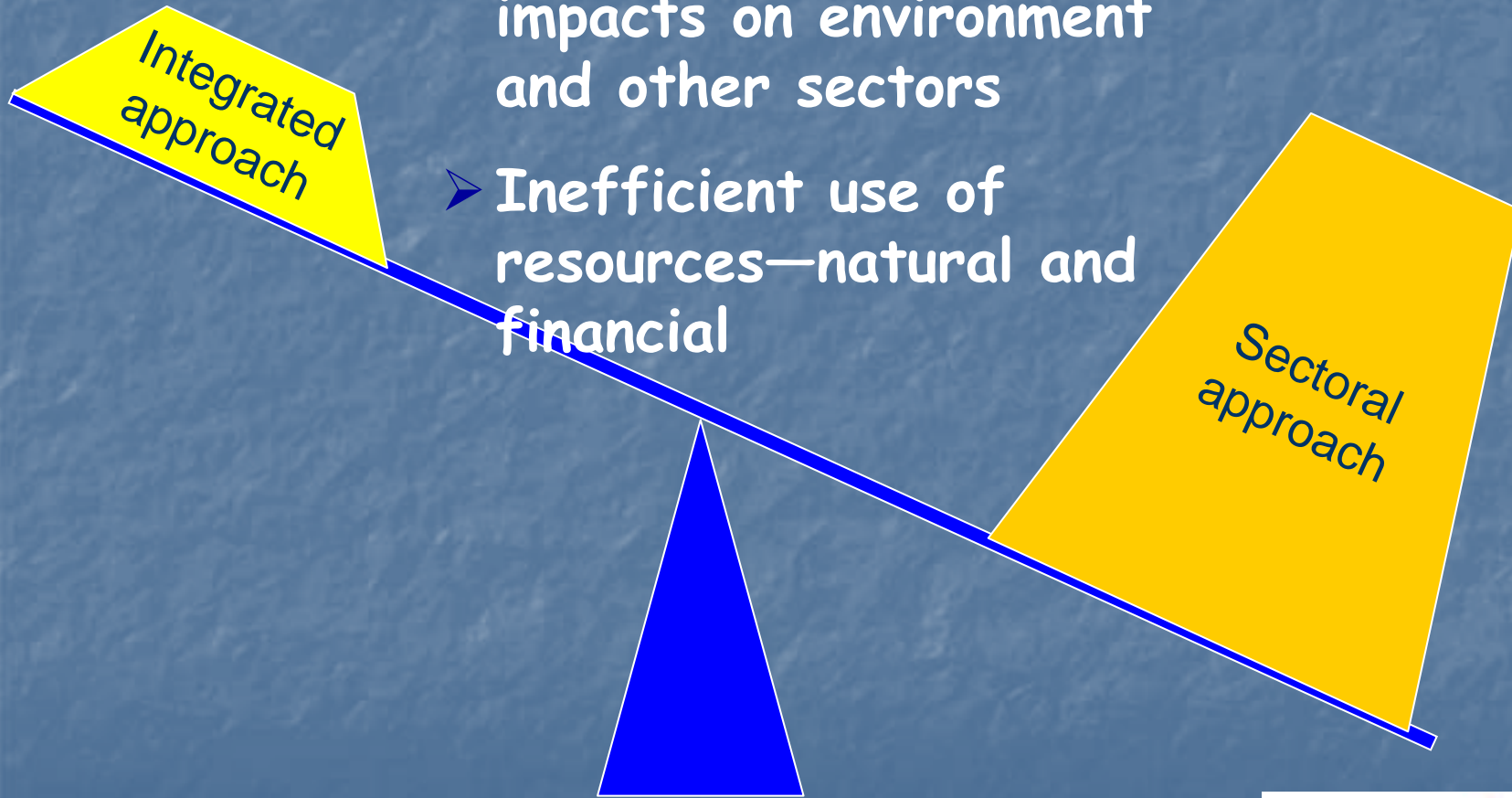
1. IWRM demands wholesale integration. **(NOT True)**

- 2. Sectoral decision-making should be abandoned entirely **NOT TRUE.**



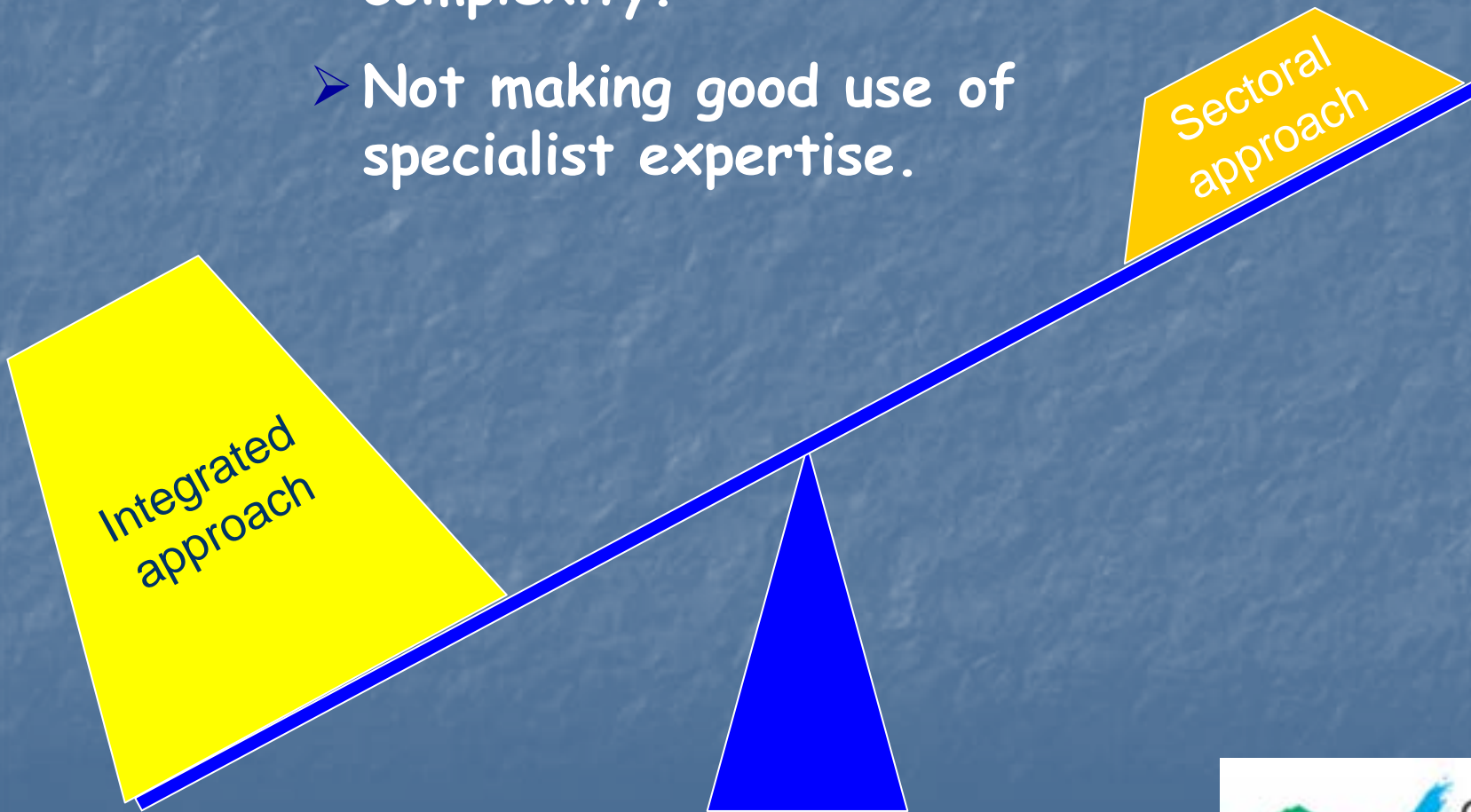
# Risks of fully sectoral approach

- Overlooking negative impacts on environment and other sectors
- Inefficient use of resources—natural and financial



# Risks of fully integrated approach

- Getting mired in complexity.
- Not making good use of specialist expertise.



# Finding a balance

Each country should decide where integration makes sense based on social, political and hydrological situation.

Integrated approach

Sectoral approach

# Part III

IWRM in Africa: emerging success stories and lessons:

Regional

Countries

Local – various scales

1. Are policies and laws adequate?  
How to get funds to implement the laws?

2. Are institutions functional and with the required capacity?

The IWRM iterative loop

3. What instruments are in place to facilitate the implementation of the laws?

4. Is there measurable progress towards the MDGs and the 3Es?

# 1. Regional / RBO level

- ECOWAS: WRCU – a full IWRM programme
- Nile Basin Initiative – several countries, from Burundi to Egypt.
- SADC – A protocol for shared water courses

# EXAMPLES ...

ECOWAS: GETS A % ON IMPORT TAXES

SADC PROTOCOL; RWP & S

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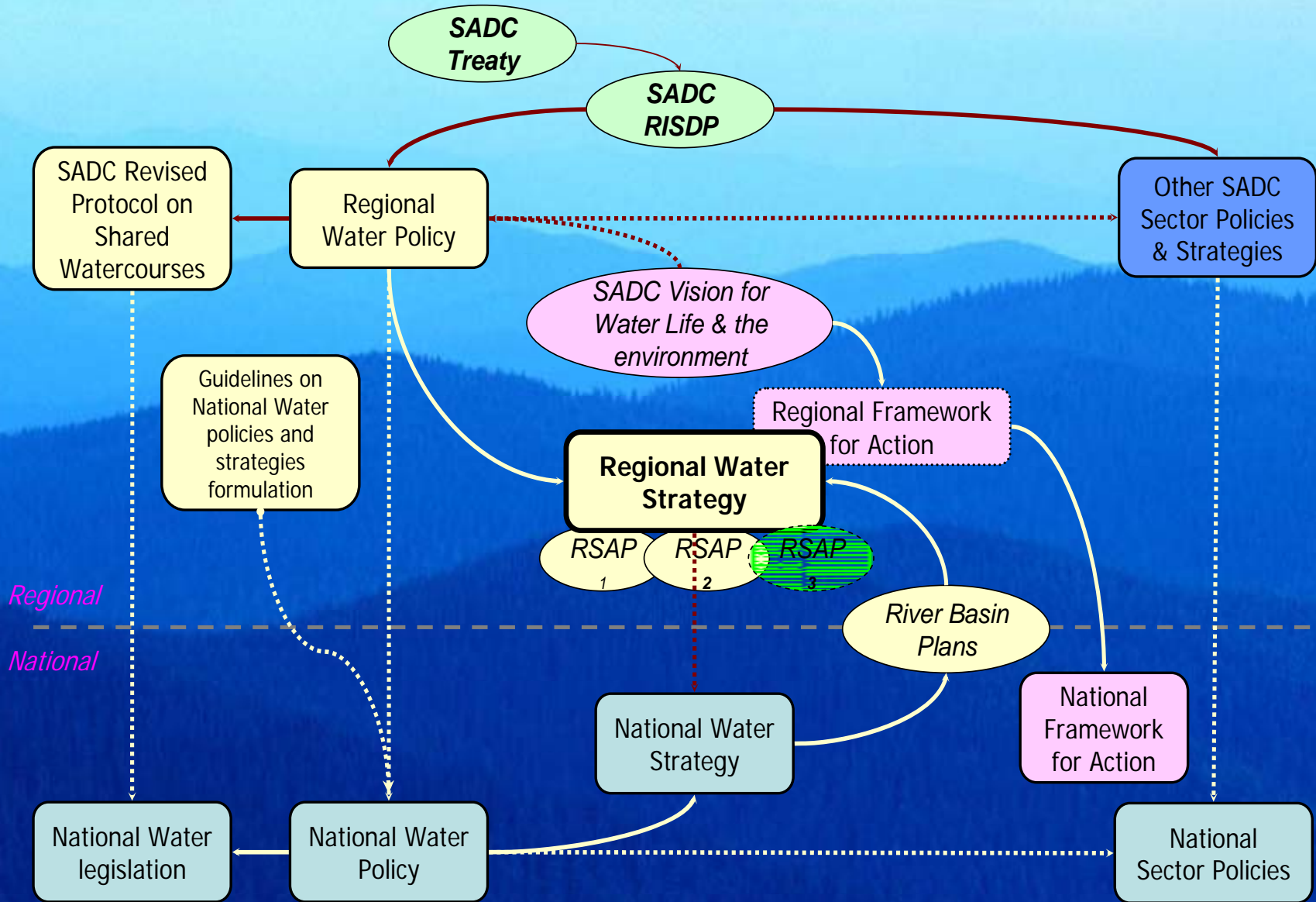
RBOs: Senegal, Volta, Nile, Okavango

Various forms, yet not enough

# The SADC context...

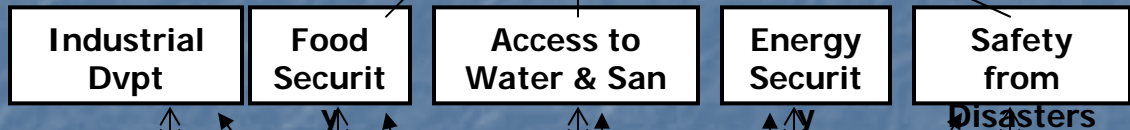
- 15 shared rivers
- A Protocol for shared watercourses which is IWRM compliant, a regional water policy and strategy
- River Basin Commissions being established, often after difficult negotiations which have lasted years... (how much did all these meetings cost?)
- Southern Africa is firmly engaged on a path for the sustainable management of its water resources...

# Relationships between Different Processes in SADC



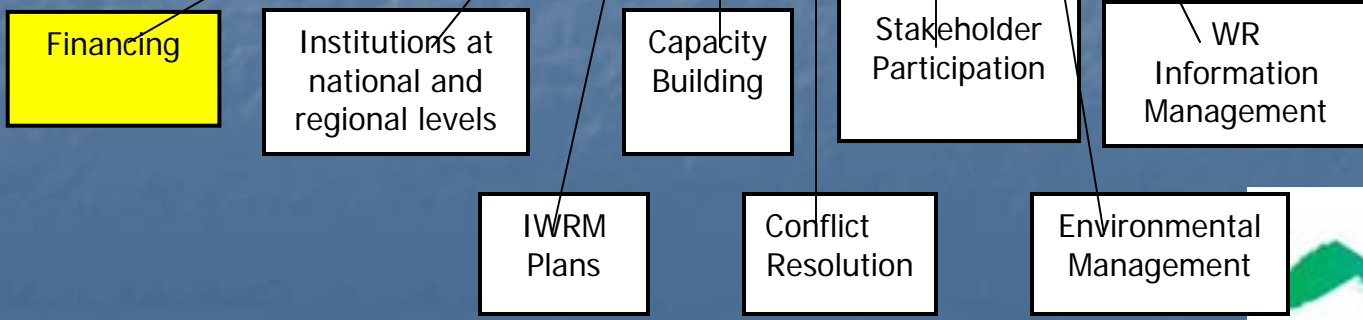


**SADC Regional  
Integration and  
Poverty  
Eradication**



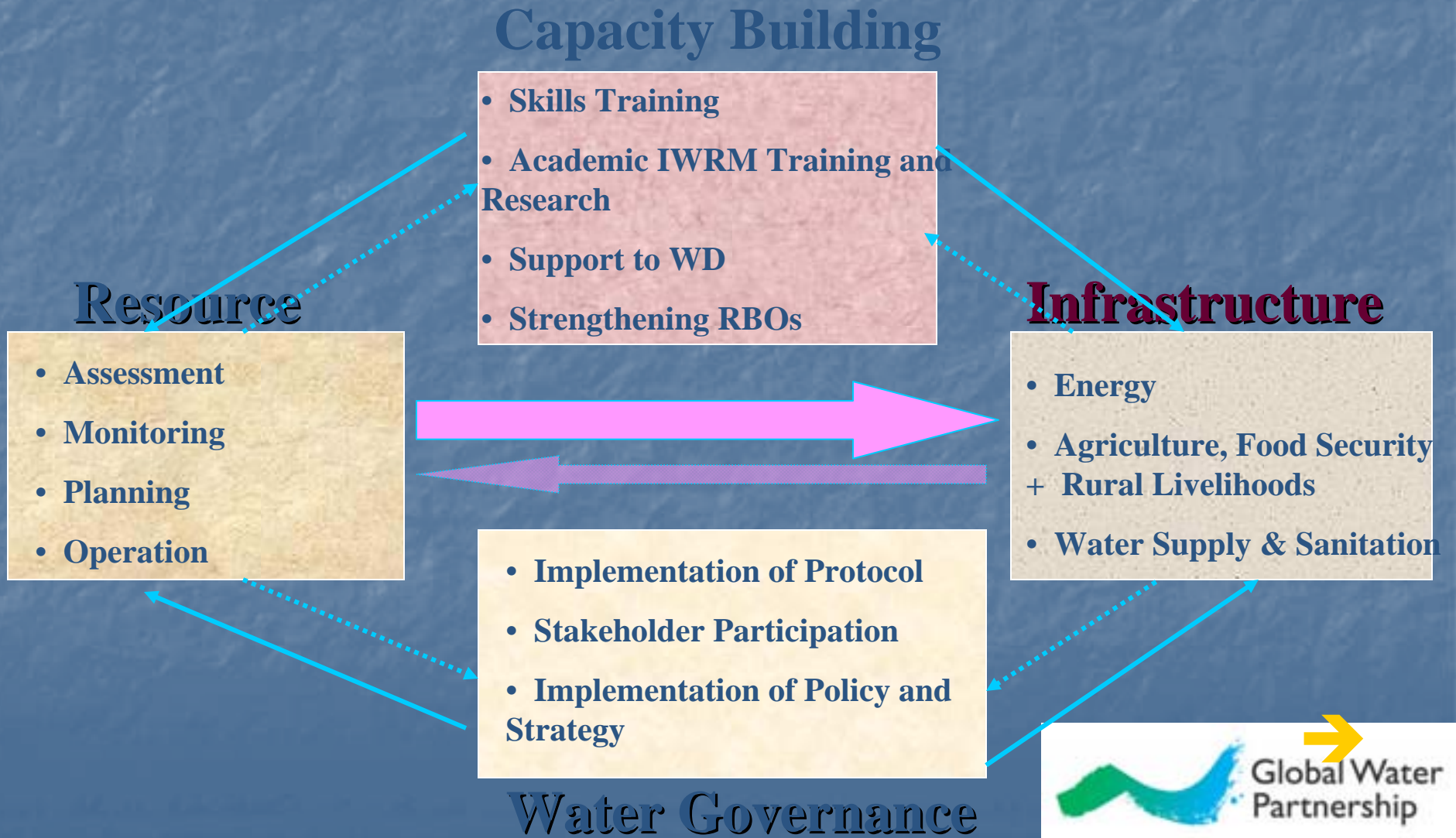
**Development without compromising the Environment**

**Integrated Water Resources Management**



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# RSAP 2 Conceptual Framework



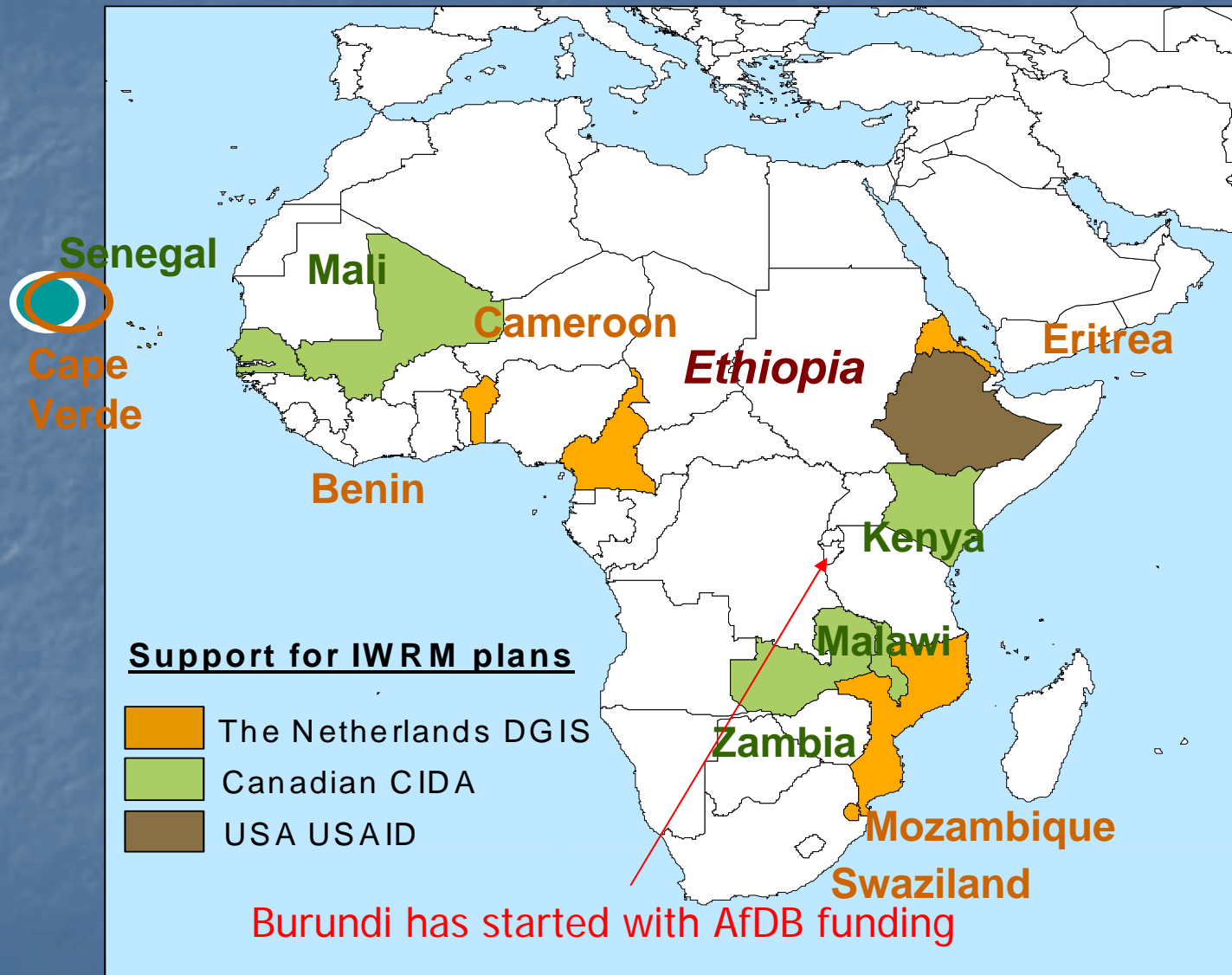
# ECOWAS

- Institutional Framework in place and functional, coordination by the WRCU.
- Several activities in the WARAP –IWRM: programme of activities to be funded by partners such as: AfDB, AWF, GEF, fGEF, EU, etc.
- Integration the activities planned by other role players (IUCN, GWP West Africa, UCC Water).

# Country level

- South Africa – legislation, institutions (not functional)
- Zimbabwe: legislation, institutions, capacity...
- IWRM and WE Planning (following the 2002 WSSD resolution)

# PAWD - GWP and Cooperating partners



# Zambezi River, Livingstone, Zambia: water and tourism

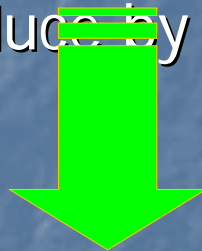


## E.g. Malawi

IWRM Plan Goal: sustainable mgt and use of water resources to contribute to economic devpt



Goal: Malawi Economic Growth Strategy  
Employment and wealth creation through sustainable mgt of resources to reduce by half people living in poverty



Contribute to Sustainable  
Devpt

# Local level: Densu River Basin,, Ghana



# Malawi, Ngolowindo Community Self Help Irrigation Scheme



  SALIMA ADD

REHABILITATION, UPGRADING,  
CROPS DIVERSIFICATION  
AND MARKETING PROJECT  
NGOLWINDO SELF HELP  
IRRIGATION SCHEME  
OCTOBER 2002 / MARCH 2005

Funded by E.U.  
Contract No. MAI/AIDCO/2002/015/9/3/0

Implementing Agency : COSPE

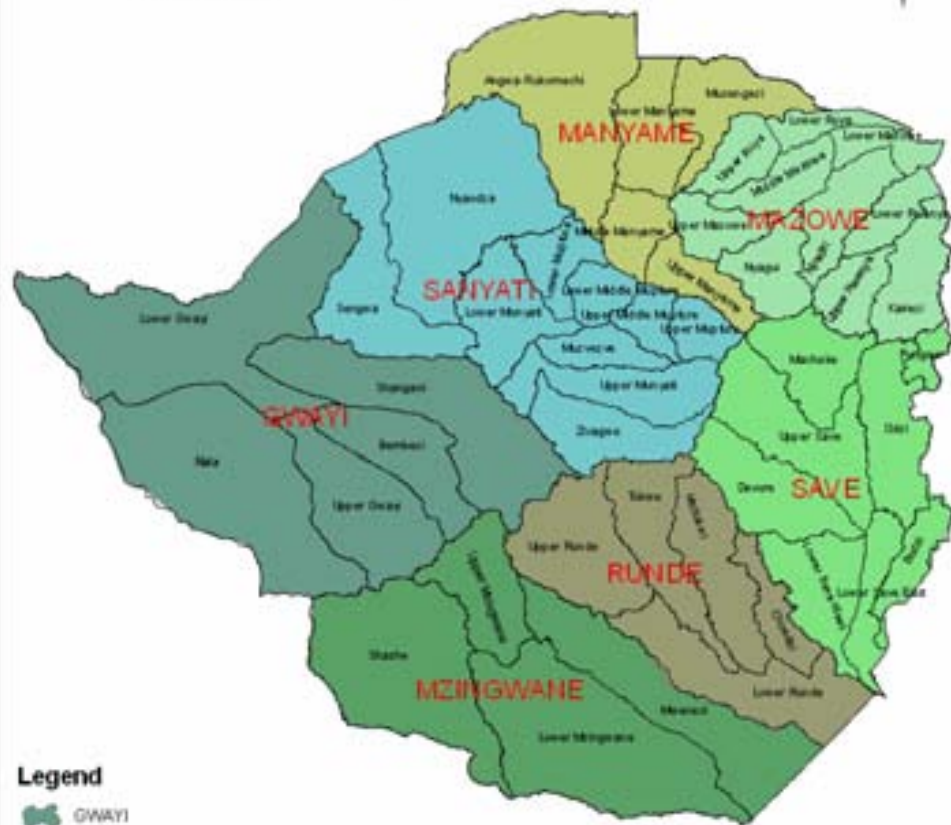


# Catchment and Subcatchment boundaries

Scale 1:4,500,000

120 60 0 120 Kilometers

# ZIMBABWE

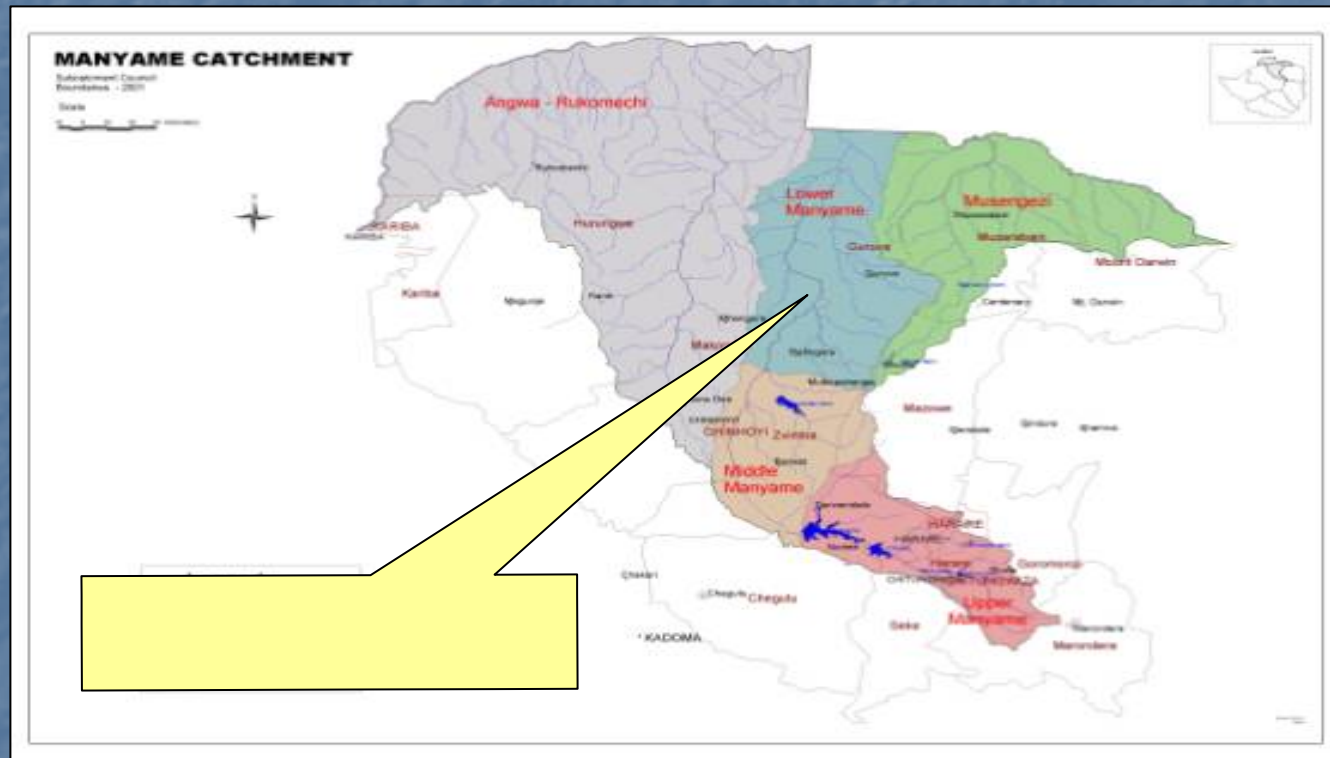


### Legend

- GWAYI
- MANYAME
- MAZOWE
- MZINGWANE
- RUNDE
- SANYATI
- SAVE
- Subcatchment Boundaries

Produced 2005 by Data & Research - ZIMWA

# Lower Manyame, Zimbabwe



- Project area (26,000 Km<sup>2</sup> > Swaziland (17,680 Km<sup>2</sup>))

# The Lower Manyame team: ordinary people who had to develop an IWRM Plan for this sub catchment



With **champions** among them

And an office of  $< 12 \text{ m}^2$

## So, where is the Lower Manyame now, more than 2 years after the project ended...

- The Lower Manyame Sub catchment council is still functioning
- Revenue is being collected and an annual budget drawn
- The council now employs 7 persons to manage its day to day activities in order to better serve its constituency.
- In short, the project kick started *a sustainable IWRM process* in the Lower Manyame

# Local level: SADC/Danida support to localised IWRM pilot experiences, getting ready for up-scaling

- Malawi - Dzimphutsi IWRM and Improved Rural Livelihoods Project
- Mozambique - Improved Livelihoods in Lower Limpopo
- Namibia - Sustainable IWRM in Omaruru Lower Swakop Basin
- Swaziland – Capacity Building of Lavumisa Irrigation Project
- Zambia – Namwala food security
  
- South Africa - Several cases on the West Coast
  - The Crocodile (West)

# In conclusion

- In Africa, IWRM is a quest for wisdom that is gradually demonstrating its worth.
- As we take stock of the lessons, gains and failures, we should exercise caution: let us not throw away neither the water nor the baby:
- We should keep the baby and recycle the water!

Join the happy African boy in the water dance: *a lotta continua, victoria certa...*



THANK YOU