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# IAP Water Programme: the Experience, Challenges and Opportunities



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# The Objectives of the Water Programme

- Develop local capacity building in water management
- Network water researchers and managers to enhance water management capacity in the developing world
- Address policy and decision makers on how to cope with the challenge of assuring global access to safe-drinking water
- Increase public awareness on emerging water crisis
- Call to the table major regional and international water programmes to discuss complementary work and to avoid duplication of efforts and funds



# IAP Water Initiatives in Africa since Initiation

## Period between 2006-2008

- The IAP Water Programme for Africa was initiated in 2006
- Initially the Academy of Science of South Africa (ASSAf) was the lead Academy in the implementation of the IAP Water Programme in Africa
- The first Regional IAP Water Programme Workshop assembled experts from 7 African countries (took place during August 2006)
- The IAP Regional Water Workshop on “Hydrology and Hydropower Collaboration in Africa”, bringing together participants from 10 African countries (took place during June 2008)





**IAP**  
WATER PROGRAMME  
Regional Workshop for Africa

**PROCEEDINGS REPORT**



# Regional Workshop for Africa (1)

- The South African Water Research Commission (WRC) jointly organized the workshop with the Academy of Science of South Africa (ASSAf) and the IAP Water Programme
- The objectives of the workshop were
  - to share knowledge regarding water research taking place in Africa
  - to identify
    - Water Resources Management Issues
    - Water Research topics
    - Modalities for effective R&D cooperation
- Participating academies included Senegal, Cameron, Uganda, Kenya, Tanzania, Zambia and South Africa and the IAP lead academy –the Brazilian Academy of Sciences



# Regional Workshop for Africa (2)

- Knowledge sharing took place through oral presentations
- The presentations addressed the African continent and issues regarding water resource management and water research concerning participating countries
- The presentations were followed by group discussions i.e. Knowledge Café sessions
- The groups identified research issues, modalities for research cooperation and capacity building for water resource management



# Regional Workshop for Africa (3)

## Key research issues identified

- The need for compatible monitoring systems (quality and quantity) and data management
- Innovative technologies for water supply, sanitation and storage
- Surface and groundwater interactions
- Climate change
- Environmental impact (anthropogenic activities) – quality, degradation and pollution
- Water use efficiency



# Regional Workshop for Africa (4)

## Modalities for cooperation

- Creation of centres of excellence
- African research network
  - Researcher data base
  - Research sharing and dissemination ( conference, newsletter etc,)
- Linkages between science and policy
- Mobility of researcher
- Stronger role of the Academies
- Creation of frameworks and funding mechanisms

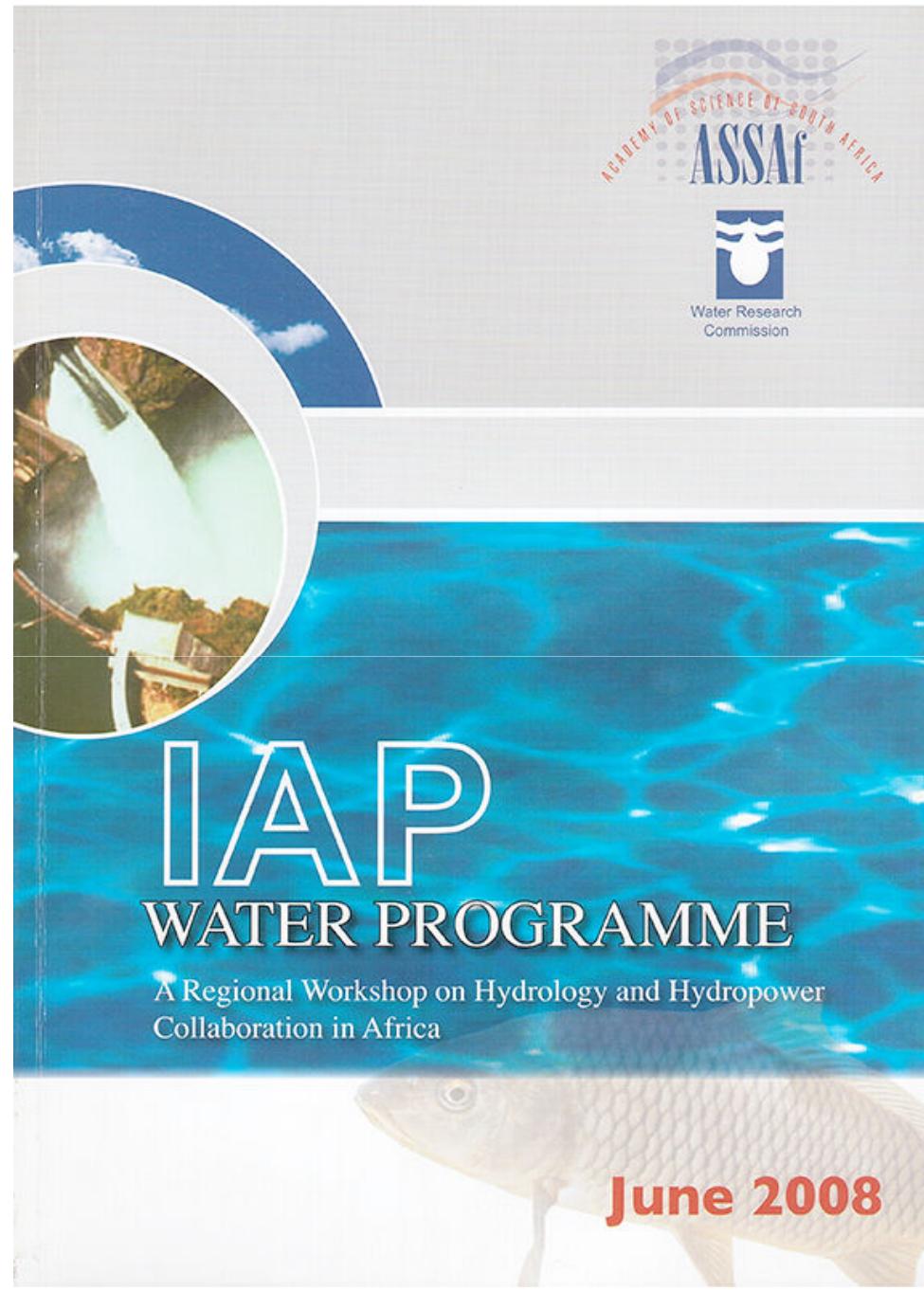


# Regional Workshop for Africa (5)

## Capacity Building

- Capacity building for both water research and water resource management is required
- Capacity building should address decision makers, managers, operators, the public and should provide for both human skill development and the establishment of appropriate facilities
- Short courses
- MSc and PhD





# A Regional Workshop on Hydrology and Hydropower Collaboration in Africa (1)

- The workshop was jointly organised and supported by ASSAf, the WRC and IAP water Programme
- Specialists from ten African countries attended the workshop
- Keynote addresses and case study presentations were followed by a two days technical tour



# A Regional Workshop on Hydrology and Hydropower Collaboration in Africa (2)

- The three sessions focused on
  - Hydropower, a South African perspective
  - Environmental impacts and mitigation in hydropower schemes
  - Hydropower case studies





# Water Programme Launch Report

NASAC Water Programme Launch, 2–3 August 2010, Hilton Hotel, Nairobi, Kenya



An Initiative financed by the IAP, the Global Network of Science Academies

# IAP Water Initiatives in Africa since initiation

## Period between 2008 to 2011

- For the water programme initiatives to be distributed evenly across African countries, the representatives of the African Academies resolved to put the programme under the auspices of Network of African Science Academies (NASAC)
- This took place in 2009 and was officially launched in 2010
- The NASAC Water Programme developed an approved plan of action which included, developing a database of water experts, and conducting a survey on the status of water in Africa
- The work plan also included the need for a compilation of country and regional water status reports





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# The State of the Water Sector in southern Africa



# The State of the Water Study (1)

- The study is composed of two phases:
  - Phase one is a desktop study aiming at
    - investigating the status of the water sectors
    - identifying key challenges
    - developing a database of water experts in the region
    - providing input to the second phase of the project
  - Phase two consists of a workshop of water experts and policymakers in the region with the goal of producing a policymakers' booklet on the state of water in southern Africa, providing recommendations for future planning and policymaking



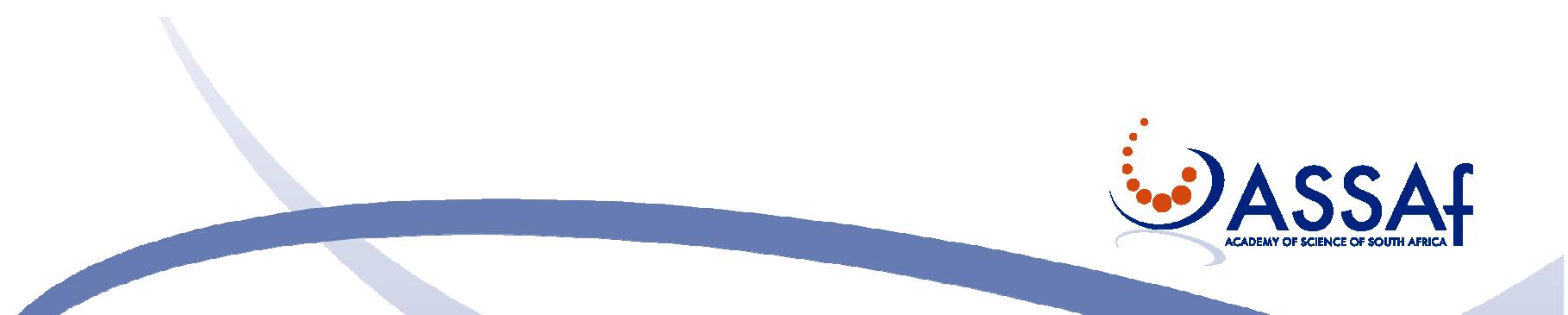
# The State of the Water Study (2)

- The report is compiled on the basis of a desktop study, and input from a number of regional specialists
- It provides an overview of the water sector across the six countries
- It highlights some of the key challenges common to most of the countries
- A snapshot of the water sector in each of the six countries is given



# Country Studies

- Overview
- Water resources
- Water services
- Key opportunities
- Key challenges



# The Desk Study

- The Desk Study was produced by the Academy of Science of South Africa (ASSAf)
- The Study was funded by the Global Network of Academies previously known as the InterAcademy Panel (IAP)
- The study is focusing primarily on South Africa, Zimbabwe, Zambia, Mauritius, Mozambique and Namibia
- These countries have been selected because of the current existence or initiation of a Science Academy
- The study was conducted by Barbara Schreiner (Pegasys Strategy and Development)



# The Policy Makers' Booklet

## *Science, Water and Sanitation: Supporting Equitable and Sustainable Development in southern Africa*

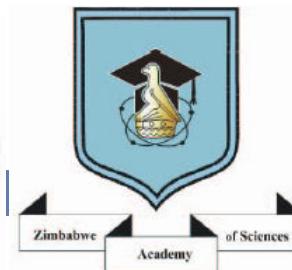
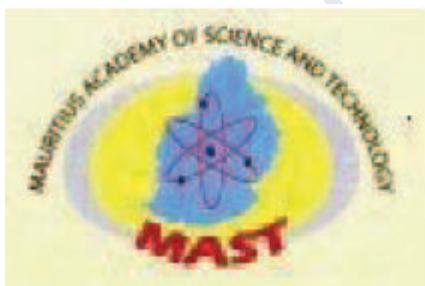
The Policy-makers' booklet was produced by Academy of Science of South Africa (ASSAf)

The booklet was funded by the Global Network of Academies (previously known as IAP), in collaboration with the Network of African Science Academies (NASAC)



# The Policy Makers' Booklet

- The Water Research Commission of South Africa supported the study
- The science academies of Zimbabwe, Zambia, Mauritius, Mozambique and scientists from Namibia participated
- A similar study was carried out in west Africa and will be carried out in east and north Africa



# The Aim of the Booklet

- The intent of the booklet is to provide policy-makers
  - in the water sector
  - related sectors that are major water users and
  - those with a mandate to protect the natural environmentwith a useful, accessible, knowledge-based guide, and key recommendations on water quantity, quality and accessibility in the southern African region
- Science plays a critical role in informing and supporting management and policy decisions in the water sector



# Science Academies and Development

- Science academies are independent bodies
- They comprise of top scholars from many disciplines
- Academies of science play a vital role in
  - harnessing scientific knowledge of high quality
  - translating scientific knowledge into a language accessible to policy-makers and managers
  - Initiating and maintaining policy-science dialogues
- Academies are vastly under utilised particularly in Africa



# The Challenges Facing the Region (1)

- Access to sufficient water of an appropriate quality is crucial for life, economic growth and social development
- Water underpins the well-being and prosperity of any country and community
- The challenges that lie ahead for water resource professionals scientists and mangers require both new knowledge and the application of available knowledge



# The Challenges Facing the Region(2)

- In order to improve the management of water resources and their effective utilisation and allowing for the sustainability of the region economic development we need
  - Better understanding of processes and technologies as well as human behaviour
  - Improved capabilities to capture, store, use and re-use water
  - Appropriate treatment technologies for both water and wastewater



# Water and Sustainable Economic Development

- A number water-related issues could impact sustainable economic development in the region
- There is a significant climatic variability in the area (uneven distribution of rainfall both time, spatial)
- Most river basins are trans-boundary in nature
- Water resources infrastructure is underdeveloped
- Water supply and sanitation services require further improvement
- Groundwater potential and its sustainable abstraction need further attention



# Key Messages

- The region need to
  - Ensure access to reliable data
  - Develop human and institutional capacity
  - Improve infrastructure provision and maintenance
  - Address investment and financing
  - Adapt and mitigate implications of climate change
  - Manage water quality
  - Close the sanitation gap
  - Manage safe wastewater (waste to wealth)



# Key Messages (2)

- The region needs to
  - Develop and ensure good governance of water research
  - Appropriate education and training
  - Establish research institutions
  - Improve the monitoring and data collecting by appropriate entities and infrastructure
  - Establish funding agencies and funding streams (e.g. the Water Research Commission of South Africa)



# Progress against Original Objectives

- Develop local capacity building in water management
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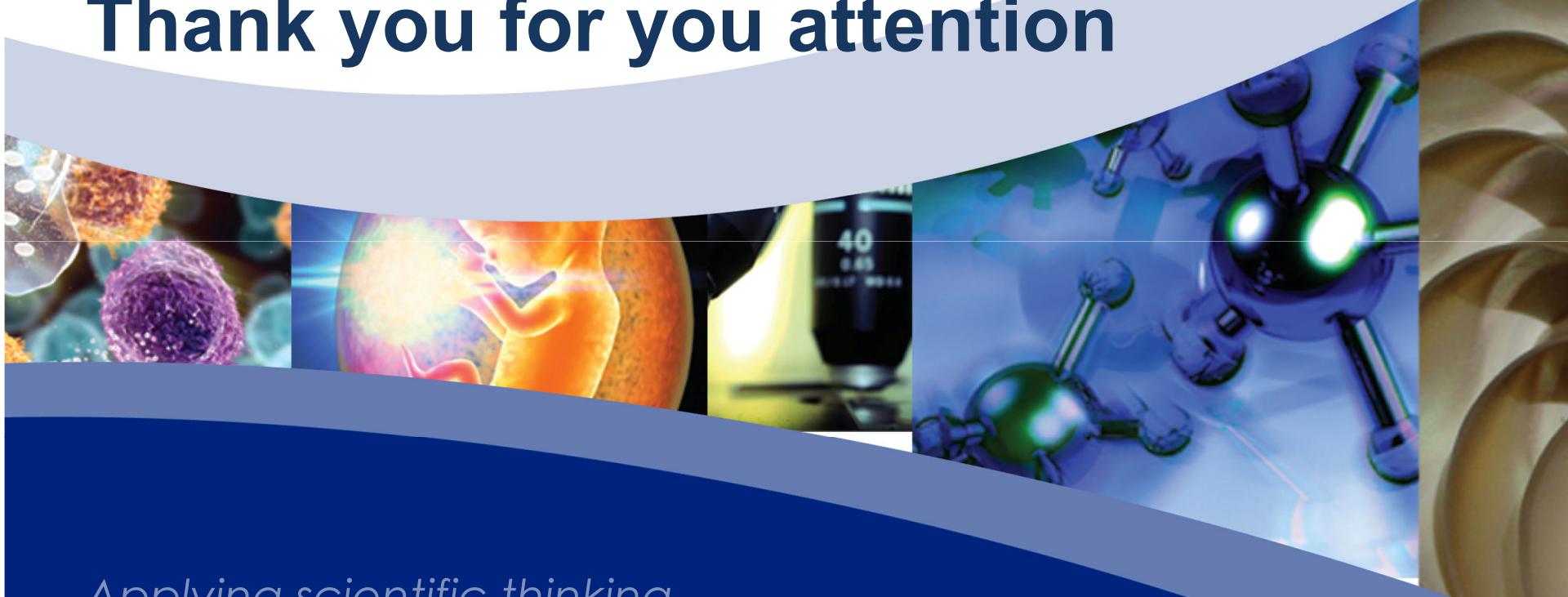


# Conclusions

- The combination of science, engineering, management and people presents the best option for achieving sustainable water management especially in the face of climate change
- Meeting the current and future challenges science and technology must respond to the need of the people in river basins
- There is a need for strong partnership between the scientific community, decision-makers, water managers and the people living in basins in the region



# Thank you for your attention



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