



Building Capacity for Water Resources Management in Southern Africa

# 3rd Progress Report Phase II: 2005-2009

July – December 2006



A strategic programme of the  
SADC Water Sector

July 2007





Building Capacity for Water Resources Management in Southern Africa

# 3<sup>rd</sup> Progress Report Phase II: 2005-2009

1 July 2006 - 31 December 2006

## Table of Contents

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1	Introduction .....	1
2	Programme targets.....	3
3	Achievements .....	5
4	Deviation from planned activities .....	43
5	Annexes .....	44

## ANNEXES

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Annex 1: WaterNet Notarial Deed Of Trust .....	45
Annex 2: WaterNet Members As Of November 2006.....	76
Annex 3: Rules Guiding Corporate Members of WaterNet.....	77
Annex 4: Members Annual Reporting Pro-Forma.....	79
Annex 5: Advertisement for Research Leader Position.....	82
Annex 6: WaterNet and Cap-Net Memorandum of Understanding.....	83
Annex 7: WaterNet EIA, Gender and HIV/AIDS Discussion Papers.....	87
Annex 8: IWRM Students Dissertation Titles 2005-2006 Intake .....	91
Annex 9: Fellowship Offer Letter .....	93
Annex 10: Tracer Hydrology Course Participants And Brochure .....	97
Annex 11: Mainstreaming Gender and HIV/AIDS in IWRM Course Participants and Brochure .....	100
Annex 12: Conflict Resolution and Negotiation Skills For IWRM Course Participants and Brochure .....	103
Annex 13: Inter-sectoral Water Governance Seminar Participants and Brochure.....	107
Annex 14: Environmental Water Requirements Course Participants and Brochure .....	112
Annex 15: Zambezi River Basin IWRM Training Programme Participants 2006-2007 .....	117

Annex 16: Refresher Seminar on Private Public Partnership in Southern Africa Participants And Brochure .....	119
Annex 17: Challenge Program PN17 Research Outputs.....	122
Annex 18: Challenge Program PN17 Capacity Building Strategy .....	131
Annex 19: SSI Research Project Outputs.....	134
Annex 20: Groundwater Capacity Building Initiative .....	137
Annex 21: Programme For The Network Managers Meeting.....	143
Annex 22: WaterNet News Volume 2 Issue 2 .....	146
Annex 23: Programme For The 7 <sup>th</sup> Symposium, Lilongwe, Malawi.....	150
Annex 24: Expenditure Statement.....	158

## Highlights

### **WaterNet Registered as Legal Entity**

WaterNet is registered as a legal entity in Botswana on 29 December 2006 through a notarial deed of trust lodged by a law firm, Molatlhegi and Associates.

### **WaterNet Membership surpasses 50 as 3 corporate entities are admitted**

Four members were admitted during the reporting period with three new entrants being corporate entities after the Rules Guiding Corporate Members of WaterNet were adopted at the 7<sup>th</sup> AGM.

### **WaterNet Extra Ordinary Steering Committee Meeting**

The WaterNet Steering Committee met on 9 October 2006 at Holiday Inn Garden Court in Johannesburg, South Africa to decide on the options for registration of WaterNet as a legal entity. The committee debated the contents of the options report and concurred with the Law firm that WaterNet should register as Trust subject to approval by the AGM.

### **7<sup>th</sup> AGM**

The WaterNet 7<sup>th</sup> AGM was held on 3 November 2006 in Lilongwe, Malawi. The AGM approved new members, and most significantly agreed that WaterNet should register as a Trust in Gaborone, Botswana. The Trust document was duly signed by the elected members of the Steering Committee who became Interim Trustees. Two additional Trustees were nominated into office. The AGM also endorsed the work plan and budget for 2007.

### **WaterNet 15<sup>th</sup> Steering Committee Meeting**

The 15<sup>th</sup> WaterNet Steering Committee meeting was held on 30 October and continued in the evening of 2 November 2006 at Capitol Hotel, Lilongwe, Malawi. The major item for discussion was WaterNet registration.

### **2<sup>nd</sup> Regional Steering Committee Meeting on Capacity Building in the Water Sector**

The 2<sup>nd</sup> Regional Steering Committee on Capacity Building in the Water Sector Meeting was conducted on 31 October 2006, in Lilongwe, Malawi. The meeting resolved that the SADC Secretariat had to revisit the terms of reference of the Committee to ensure that it was able to be an overseer of the various capacity building programmes in the region.

### **WaterNet and Cap-Net Enter into a Memorandum of Understanding**

The purpose of this MoU is to formalise membership and participation of autonomous, formal and informal networks committed to capacity building in water into a global partnership called the *Cap-Net Global Network*. This MoU represents a commitment of WaterNet and Cap-Net to collaborate in the interest of promoting the development of capacity for the sustainable management of our water resources and sharing our respective resources and experience.

### **Cap-Net Network Managers Meeting**

The Network Managers Meeting was held on 16-20 October 2006, in Delft The Netherlands. The meeting also coincided with the 1<sup>st</sup> planning meeting for the EU-ACP Water Facility funded project involving WaterNet, Cap-Net and other networks in Africa and the Caribbean. The WaterNet Manager was elected into the Cap-Net Management Board.

### **Interim Board of Trustees/Steering Committee**

With the transition of WaterNet from being governed by the Constitution to a Deed of Trust three new members were elected at the 7<sup>th</sup> AGM to form the WaterNet Interim Board of Trustees. The AGM welcomed Prof Damas Alfred Mashauri, Dr Elizabeth Mampiti Matete and Mr Dinis Juizo. The AGM also bade farewell to Dr Doug Merrey who completed his term as Steering Committee Member. The AGM noted the invaluable contribution made by Dr Merrey during his tenure.

### **Integrating Gender and HIV/AIDS**

The two discussion papers were completed during the reporting period and were tabled at the 15<sup>th</sup> WaterNet Steering Committee Meeting and the 7<sup>th</sup> AGM. The process of clearly mainstreaming Gender and HIV/AIDS within WaterNet activities has been a bit problematic due to lack of understanding and conceptualisation on how the two can be integrated within IWRM.

### **Masters Programme 2005 Intake**

Ten students from the University of Zimbabwe graduated in October 2006, whilst, nine from the University of Dar es Salaam in November 2006. The five students enrolled at the University of the Western Cape are due complete their studies and graduate in early 2007.

### **Masters Programme 2007 Intake**

By the close of the deadline date for the IWRM Masters degree programme 212 applications from 15 countries had been received by the WaterNet Secretariat. Out of the 212 applications received 59 applications representing 30% were female while 152 or 70% were male.

### **Pre-selection of IWRM Masters Students for 2007 Intake**

The pre-selection exercise for the 2007 IWRM Masters students was conducted on 11-12 October 2006 in Harare, Zimbabwe at the WaterNet Secretariat Offices. The task team consisted of the WaterNet Manager, Prof Felix Mtalo of the University of Dar es Salaam, Eng Zvikomborero Hoko, University of Zimbabwe and Mr James Chimphamba of the University of Malawi. The task was to pre-select or short-list candidates out of the 212 applications received.

### **WaterNet Fellowship Fund for University of Botswana**

WaterNet offered Fellowship Funds to the University of Botswana, Department of Geology, a member of the network, with the purpose of supporting three students to attend the Master of Science Degree Programme in Hydrogeology at the University of Botswana. The award was made during the Water Day celebrations in Gaborone on 6 July 2006 by the Chairperson of the WaterNet Steering Committee.

**WaterNet and partners present seven regional short courses and seminars**

During the reporting period WaterNet members and collaborating partners presented a record seven courses and training workshops attended by a total of 188 participants of which 50 were female (27%) from more than 20 countries.

**Symposium 2006**

The 7<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium took place at Capitol Hotel, Lilongwe, Malawi, 1-3 November 2006. The symposium was attended by 201 participants from 19 countries of which 30% were female.

# 1 INTRODUCTION

## 1.1 BASIC DATA

Country:	Southern Africa Development Community (SADC)
Project name:	WaterNet Strategy Phase II, 2005-2009: Building Capacity for Water Resources Management in Southern Africa
Sida contribution number	73000564
DGIS activity number:	11763/DMW0051164
Executing organisations	
Coordinating Institute:	UNESCO-IHE Institute for Water Education, Delft, The Netherlands
Host Institute:	University of Zimbabwe, Harare, Zimbabwe
Project period:	1 April 2005 - 31 March 2010
Progress Report No.:	3
Reporting period:	1 July 2006 – 31 December 2006

## 1.2 CONTEXT

This document is the third progress report of WaterNet Phase II (2005-2009) covering the period 1 July 2006 - 31 December 2006. The first report covered the period 1 April 2005 - 31 December 2005 and was submitted in March 2006, whilst the second report covered the period 1 January 2006 – 30 June 2006 and was submitted in January 2007.

WaterNet, a network of tertiary education and research institutions in Southern Africa, was established in year 2000. By the end of December 2006 WaterNet membership consisted of 52 institutions and five supporting members.

## 1.3 PROGRAMME OBJECTIVES

The vision of WaterNet is a future in which the SADC region has the institutional and human capacity to educate its own water managers, capable to contribute to the equitable sharing and sustainable utilisation of water resources for poverty alleviation, economic development (livelihood security) and environmental security.

The mission of WaterNet (long-term development objective) is to enhance institutional and human capacity in Southern Africa in the field of Integrated Water Resources Management (IWRM) through training, education, and research by harnessing the complementary strengths of institutions in the region. The enhanced capacity should enable the peoples of Southern Africa to manage their water resources in a more efficient, equitable and sustainable manner.

The immediate objectives of WaterNet are fivefold:

1. To forge a strong, demand driven and sustainable network of universities and research institutions in Southern Africa in the field of IWRM.
2. To deliver and strengthen the jointly owned regional Master degree programme in IWRM
3. To develop and deliver demand-driven training and education for practicing water sector professionals in Southern Africa.
4. To stimulate, regionalise and strengthen the research in the field of IWRM in Southern Africa.
5. To raise awareness and understanding of IWRM and its implementation at local, national and trans-boundary scale.

The immediate objectives are interlinked as they depend on each other and also benefit each other.

## **2 PROGRAMME TARGETS**

### **2.1 PLANNED ACTIVITIES JANUARY TO DECEMBER 2006**

The following activities were planned to be addressed during the reporting period (as amended and approved at the 6<sup>th</sup> WaterNet Annual General Meeting, in Swaziland on 3 November 2005).

Work Plan January to December 2006

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#### **OUTPUT 1 To forge a strong, demand driven and sustainable network**

- Activity 1.1 Establish WaterNet PCN 23: WaterNet to become the implementing agent for SADC's human capacity building priorities in IWRM
- Activity 1.2 Promote member ownership of Network: WaterNet will put a particular emphasis to invite members from Angola. Revise criteria and advertise for the Nodal Strengthening Fund (NDF), Staff Development Fund (SDF) and Staff Exchange Fund (SEF). Award at least 5 NDF, 3 SDF, and 28 SEF
- Activity 1.3 Fully staffed WaterNet Secretariat: The secretariat is expanded with a Programme Officer and Professional Training Officer in 2006
- Activity 1.4 Professional financial management achieved: Manage the WaterNet Funds in a professional and transparent manner. Establish an effective financial administration by mid 2006, able to receive and disburse external funds according to international auditing requirements
- Activity 1.5 WaterNet Legal Status established: Operationalise the WaterNet Trust. Ensure that the WaterNet Trust is registered in Botswana
- Activity 1.6 Financial sustainability through income generation and contributed funds: The aim is to generate contributed project funding and external income of up to at least 25 % of the overall WaterNet budget
- Activity 1.7 Monitoring, evaluation and reporting procedures in place: Ensure that the necessary review/updating of the IWRM capacity building agendas (awareness, education, training and research). Develop and implement WaterNet gender and HIV/AIDS strategies

#### **OUTPUT 2 To deliver and strengthen the jointly owned regional master degree programme in IWRM**

- Activity 2.1 Deliver the masters programme at two core host institutions
- Activity 2.2 Offer 5 Specialisations in Water Resources Management, Water and Environment, Water for People, Hydrology and Water and Society
- Activity 2.3 Fellowship Fund established: The WaterNet Fellowship Fund to offer 30 fellowships for the Master programme for 2006
- Activity 2.4 Establish Review procedure and quality control system for WaterNet Masters programme: Comprehensive review of the curriculum of the Master Degree Programme, including a proposal for general Regulations
- Activity 2.5 Establish with WARFSA the WaterNet MSc Dissertation Fund: Operationalise with WARFSA the WaterNet MSc Dissertation Fund

**OUTPUT 3 To develop and deliver demand driven training and education for practicing water sector professionals from the Southern African region.**

- Activity 3.1 Launch the WaterNet Professional Training programme: Together with SADC Directorate for Infrastructure and Services initiate the WaterNet professional and short courses training programme in IWRM
- Activity 3.2 Appoint the WaterNet Professional Training Officer to coordinate the WaterNet professional training programme
- Activity 3.3 Establish catchment partnership jointly with Global Water Partnership Southern Africa Network (GWP-SA) for demonstration and learning on translating IWRM principles to management
- Activity 3.4 Offer the English for Water Managers Course targeting professionals from Democratic Republic of Congo, Madagascar, Mozambique, and Angola

**OUTPUT 4 To stimulate, regionalise and strengthen research in the field of IWRM in the Southern Africa Region**

- Activity 4.1 Research capacity building (training and mentoring) together with WARFSA
- Activity 4.2 WaterNet a partner in integrated IWRM research: The WaterNet Secretariat will function as a hub in the region in developing and implementing integrated research initiatives, and to support and facilitate multi-disciplinary research initiatives among WaterNet member institutions (Challenge Program on Water and Food in the Limpopo Basin (PN 17), Smallholder Systems Innovation Research Project, Sustainable Sanitation Solutions for Africa)
- Activity 4.3 Seek funding for new research activities, WaterNet facilitating role
- Activity 4.4 Appoint the two WaterNet- SADC Professorial Chairs in IWRM

**OUTPUT 5 To raise awareness and understanding of IWRM and its implementation at catchments and transboundary scale**

- Activity 5.1 Develop and implement WaterNet Outreach activities: Develop and implement WaterNet communication strategy. WaterNet to consolidate the knowledge base from its post-graduate education programmes, its involvement in research advancement and the strengths of its members on IWRM
- Activity 5.2 Hold the 7<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium in Malawi
-

### **3 ACHIEVEMENTS**

The transformation of WaterNet recorded a major milestone by the end of 2006 through registration as legal entity. The network was registered in Gaborone, Botswana on 29 December 2006 through a Notarial Deed of Trust (see **Annex 1 and section 3.1.5**).

The network which has been governed by its constitution is now a legally registered institution governed by a Trust through a Board of Trustees. The transformation process is geared to continue such that WaterNet becomes a regional independent entity with in-house financial management systems and with a capacity to negotiate directly with funding agencies by the end of 2007.

The following of the planned activities were undertaken during the reporting period.

#### **3.1 FORGING A STRONG, DEMAND DRIVEN AND SUSTAINABLE NETWORK**

##### **3.1.1 Establishing WaterNet PCN 23**

During the reporting period WaterNet delivered on a number of activities through collaboration with other regional capacity building initiatives namely:

- InWent, Capacity Building International, Germany
- Regional Programme Support for Environmental Assistance to the Southern Africa Region on Integrated Water Resources Management supported by the Danish International Development Agency (Danida)
- World Conservation Union (IUCN) Regional Office for Southern Africa
- The Framework Programme for Research, Education and Training in the Water Sector (FETWater) (within the Department of Water Affairs-South Africa)
- GWP-SA
- UNESCO-IHE Institute for Water Education.
- Ramboll Natura and Stockholm International Water Institute (SIWI)
- Food and Agricultural Organisation of the United Nations
- Cap-Net, Global Capacity Building Network in IWRM
- WA-Net, West Africa Network in IWRM
- German Federal Institute for Geo-sciences and Natural Resources (BGR, Bundesanstalt für Geowissenschaften und Rohstoffe)

The increasing number of collaborating partners within the region and outside is a clear testimony that WaterNet is recognised as a legitimate, authentic and partner of choice in capacity building in IWRM within the Southern African Development Community (SADC). These activities and linkages enhance the establishment and implementation of WaterNet PCN23 and will facilitate the application for WaterNet to become a SADC Subsidiary Institution (see **section 3.1.5**).

##### **3.1.2 Promote member ownership of the network**

WaterNet membership has grown since being established in Victoria Falls, Zimbabwe in March 2000 by 18 institutions from 9 countries in Southern and Eastern Africa to a broad network with 52 members in 14 countries in November 2006 (see **Annex 2**).

At the 13<sup>th</sup> Steering Committee meeting and 6<sup>th</sup> Annual General Meeting the question of admitting Corporate Members in WaterNet was debated and the Secretariat drafted guiding rules or guiding principles for their admittance. These were considered at the 14<sup>th</sup> Steering committee and the revised rules be referred to 7<sup>th</sup> AGM.

A landmark decision was made at the AGM to adopt the guiding rules (see **Annex 3**) paving way for corporate entities to apply for membership.

A recommendation was made at the 14<sup>th</sup> Steering Committee Meeting that the Faculty of Humanities and Social Sciences, Africa University in Mutare, Zimbabwe should become a WaterNet member. The 7<sup>th</sup> AGM endorsed the application for membership.

The pending application of the Training and Instructional Design Academy of South Africa (Tidasa) based in Pretoria, was ratified by the AGM in view of the adopted rules for corporate members.

Four new applications for WaterNet membership were received during the reporting period. The candidate member institutions being:

1. African Centre for Water Research (ACWR), Cape Town
2. Centre for Applied Research (CAR), Gaborone
3. Department of Geology, School of Mines, University of Zambia, Lusaka
4. Organisation for Social Science Research in Eastern and Southern Africa (OSSREA), Harare

The applications were considered in turn based on the merits of each institution and also the newly adopted Guidelines for Corporate membership for cases where it applied.

From ACWR's application it was noted that it was an applied research organisation, established to develop an African capacity to understand the complexity of regional water management and development issues. Their main objective was to generate water management solutions that are politically, socially, economically, environmentally and culturally sustainable in Africa. Their special field of expertise is trans-boundary water management between countries, regions, communities and economic sectors.

CAR's strength included education, research and training and had previously supervised WaterNet IWRM students during dissertation work. The institution was a Non-Governmental Organisation based in Botswana, registered as profit making organisation and was formerly a unit at the University of Botswana.

The Department of Geology, School of Mines in Zambia was noted to be very active in IWRM particularly within GWP-SA. Participation of the Department was deemed to increase Zambia's participation in WaterNet activities.

OSSREA was a Social Science Research Chapter, which was hosted by the Department of Sociology at the University of Zimbabwe and has its Headquarters in Ethiopia. The strengths of the organisation included research and training. It was noted also that the Centre for Applied Social Sciences a member of WaterNet was also part of the hosting Faculty at the University of Zimbabwe.

The Steering Committee recommended to the 7<sup>th</sup> AGM that ACWR, CAR be accepted as a

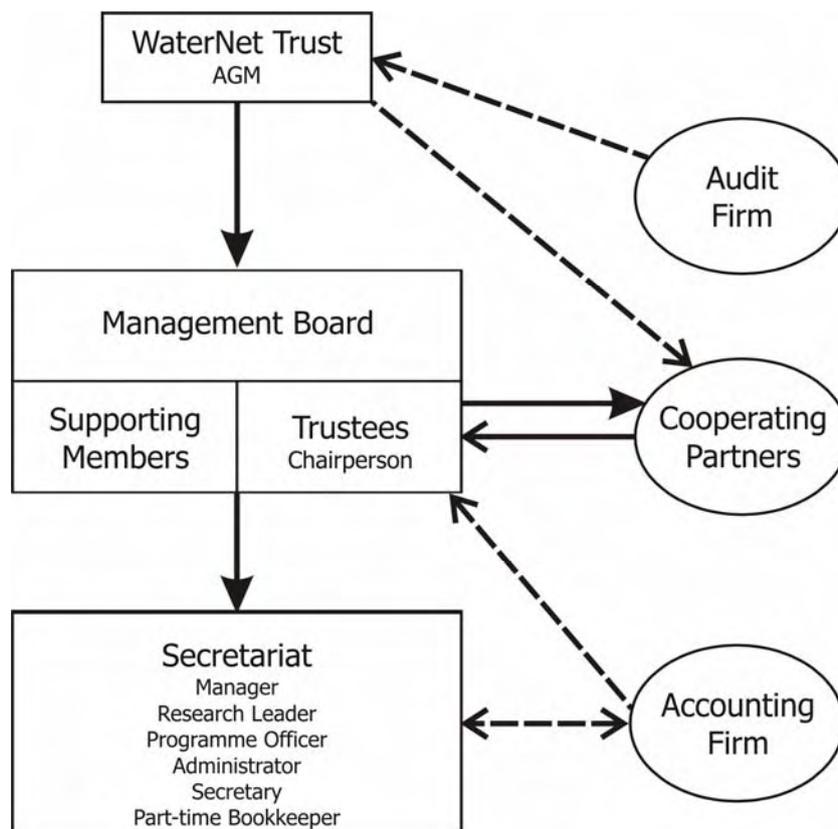
corporate member, whilst the Department of Geology, School of Mines University of Zambia be accepted as a member of WaterNet. The recommendation was endorsed by at the 7<sup>th</sup> AGM.

The Steering Committee recommended that it would have been appropriate if OSSREA had applied for membership as the mother body headquartered in Ethiopia rather than a Chapter hosted at the University of Zimbabwe.

Efforts are still being made to entice WaterNet membership from Angola and Madagascar.

The Steering Committee at its 14<sup>th</sup> Meeting resolved that WaterNet members should be requested to submit annual reports. The Secretariat was tasked to come up with a reporting pro-forma which was debated at the 15<sup>th</sup> Steering Committee and tabled at the 7<sup>th</sup> Annual General Meeting for approval and adoption. The reporting pro-forma was accepted by the AGM with minor amendments (see Annex 4)

With the registration of WaterNet as a Trust a new governance structure has been created. The governance structure has replaced the Steering Committee by a Management Board consisting of a Board of Trustees and Supporting Members, with the latter not having fiduciary responsibilities. The structure as interpreted from the Notarial Deed of Trust is shown in Figure 1. This structure is yet to be confirmed at the 8<sup>th</sup> AGM and with the Cooperating Partners.



**Figure 1:** WaterNet Management Structure (Accounting Firm and Audit Firm are included only to clarify financial management structures)

In summary the WaterNet governance and financial management is envisaged to function as follows:

1. The WaterNet Trust consists of members who are represented in the annual general meeting (AGM); which is the overall governing body of WaterNet.
2. Periodically the AGM elects the Board of Trustees in accordance with specific election procedures. The WaterNet Board of Trustees is accountable to the AGM, as specified in the Deed of Trust.
3. Supporting members are invited by the Board of Trustees to provide an advisory and consultative role as specified in the Deed of Trust. The Board of Trustees and Supporting Members together constitute the Management Board.
4. Basket funding from multiple donors provide the financial resources for WaterNet's activities. The WaterNet Trust (represented by the Board of Trustees) is accountable to the donors as specified in the grant agreements.
5. The staff of WaterNet has an employer-employee relationship with the WaterNet Trust, governed by employment contracts.
6. The Secretariat executes and coordinates WaterNet activities through the members.
7. Supporting members provide advice and support to the members in terms of governance and within activities.
8. The Board of Trustees appoints Accounting Firm to provide and backstop financial management services. The firm is accountable to the Board of Trustees.
9. The Secretariat in liaison with the Accounting Firm carries out financial management services.
10. The Trust appoints an Audit Firm accountable to the Trust and the Trust in turn to the Cooperating Partners.

The 7<sup>th</sup> Annual General Meeting (AGM) was held on 3 November 2006 in Lilongwe Malawi following the Symposium. At the meeting members endorsed two additional positions to the Steering Committee in view of the registration of WaterNet as legal entity. Mr Dinis Juizo (Eduardo Mondlane University, Mozambique), Prof Damas Mashauri (University of Dar es Salaam, Tanzania) and Dr Mampiti Matete (National University of Lesotho) were nominated into the Steering Committee. The three posts became vacant after: (i) Dr Doug Merrey's tenure came to an end and, (ii) AGM resolution to add two new members.

The names of the Interim Board of Trustees as of 29 December 2006 are indicated in page six of the trust document. In addition the representatives of Supporting Members within the Management Board during the reporting period were as follows:

- Ms Ruth Beukman (GWP-SA)
- Mr Phera Ramoeli (SADC Water Division)
- Prof Pieter van der Zaag (UNESCO-IHE)
- Mr Kees Konstapel (Dutch government)
- Ms Gunilla Wingqvist or alternatively Mr Kumbulani Murenga (Swedish government)

The Second Regional Steering Committee Meeting on Capacity Building in the Water Sector convened by SADC Secretariat was held on 31 October 2006 at Sunbird Capital Hotel, Lilongwe, Malawi. The WaterNet Manager made a presentation on the 1<sup>st</sup> Progress report of the WaterNet Project Phase II and also on the registration process.

During the reporting period WaterNet provided for support through its dedicated Funds mainly the Staff Development Fund (SDF) and Professional Training Fund (PTF) to the following members and purpose as indicated. The awards were also extended to WaterNet Master in IWRM degree programme Alumni as way of promoting a stronger Alumnus programme.

<b>Fund, Event or Activity:</b> SDF Award to participate in a training workshop on the Best Practices on Sewage and Effluent Technologies, Ridgeway Hotel in Randburg, Johannesburg, South Africa from 16–17 October 2006					
No.	Name	Sex	Country	Institution	Email
1	Richard Kimwaga	M	Tanzania	University of Dar es Salaam, Water Resources Engineering Department	rkimwaga1970@yahoo.co.uk
2	Peter Mashumba	M	Zimbabwe	National University of Science and Technology, Department of Civil and Water Engineering	pmashumba@nust.ac.zw

<b>Fund, Event or Activity:</b> SDF Award to participate in a training workshop on Community Onsite Anaerobic Sewage Treatment in Hybrid and UASB-Septic Tank Systems in Delft, The Netherlands from 24-30 July 2006					
No.	Name	Sex	Country	Institution	Email
1	Zvikomboro Hoko	M	Zimbabwe	Department of Civil Engineering, University of Zimbabwe	hoko@eng.uz.ac.zw

<b>Fund, Event or Activity:</b> SDF Award to participate in a SADC Regional Environmental Education Programme Rhodes University, Grahamstown, South Africa from 4 September to 27 October 2006					
No.	Name	Sex	Country	Institution	Email
1	Jonathan Mufandaedza	M	Zimbabwe	Department of Environmental Science and Technology, Chinhoyi University of Technology	jomufandaendza@yahoo.com

<b>Fund, Event or Activity:</b> PTF Award to participate in the Tracer Hydrology course, University of Zimbabwe Department of Civil Engineering, Harare, Zimbabwe 11-15 September 2006					
No.	Name	Sex	Country	Institution	Email
1	Tumaini Anderson Kimaro	M	Tanzania	University of Dar es Salaam	kimaro@wrep.udsm.ac.tz
2	Victor Kongo	M	South Africa	University of KwaZulu Natal	204512093@ukzn.ac.za
3	Manuel Magombeyi	M	South Africa	University of the Witwatersrand	manumagomb@yahoo.com
4	Howard Mashango	M	Botswana	University of Botswana	hmashango@yahoo.com
5	Prudence Thobekile Ngwenya	F	South Africa	Komati Water Basin Authority	prudencethobekile@yahoo.com
6	Pride Mangeya	M	Zimbabwe	Geology Department University of Zimbabwe	pride@science.uz.ac.zw

<b>Fund, Event or Activity:</b> SDF Award to participate in the Inter-sectoral Water Governance Seminar, VIP Hotel, Maputo, Mozambique 21-23 November 2006					
No	Name	Sex	Country	Institution	Email
1	Barnabas Musonda	M	Zambia	Geology Dept, University of Zambia	barneymusonda@yahoo.co.uk
2	Simone Noemdoe	F	South Africa	IWRM Programme – University of Western Cape	snoemdoe@uwc.ac.za

<b>Fund, Event or Activity:</b> SDF Award to participate in the Refresher Course on Public-Private Partnerships in the Southern Africa Water Sector, Windhoek, Namibia, 4-9 December 2006					
No	Name	Sex	Country	Institution	Email
1	Lawrence Nyashsa Nyagwambo	M	Zimbabwe	Institute for Water and Sanitation Development (IWSD)	nyagwambo@iwsd.co.zw
2	Japson Siwadi	M	Zimbabwe	University of Zimbabwe, Dpt. Of Civil Engineering	jsiwadi@eng.uz.ac.zw
3	John Makwenda	M	Malawi	Central Region Water Board	makwenda@yahoo.com

<b>Fund, Event or Activity:</b> PTF Award to participate in the training course on Environmental Water Requirements, Stellenbosch, South Africa 4-14 December 2006					
No	Name	Sex	Country	Institution	Email
1	Cosmo Ngongondo	M	Malawi	University of Malawi, Department of Geography and Environmental Sciences	cngongondo@chanco.unima.mw
2	Birga Ndombo	M	Namibia	Desert Research Foundation of Namibia	birga.ndombo@drfn.org.na
3	Clarence Mazambane	M	Namibia	Desert Research Foundation of Namibia	clarence.mazambani@drfn.org.na
4	Madalitso Tembo	M	Zambia	University of Zambia	wazatembo@yahoo.co.uk
5	Sherpard Misi	M	Zimbabwe	University of Zimbabwe, Department of Civil Engineering	misi@eng.uz.ac.zw senmisi@yahoo.co.uk

<b>Fund, Event or Activity:</b> SDF Award to participate in the International Programme IWRM for the Zambezi Riparian Countries 200-2007, 2-20 October in Stockholm, Sweden and 29 January to 9 February 2007, Lusaka, Zambia					
No	Name	Sex	Country	Institution	Email
1	Evans Kaseke	M	Zimbabwe	University of Zimbabwe, Dept of Civil Engineering	ekaseke@eng.uz.ac.zw
2	Nomathemba Neseni	F	Zimbabwe	Institute of Water and Sanitation Development	noma@iwsd.co.zw
3	Sithabile Tirivarombo	F	Zimbabwe	Department of Environmental Science and Technology, Chinhoyi University of Technology	stirivarombo2000@yahoo.co.uk
4	Felicidade Massingue Jorge	F	Mozambique	Eduardo Mondlane University, Faculty of Agronomy	felicidade.massingue@uem.mz

### 3.1.3 Fully staffed WaterNet Secretariat

Due to increased work load and demands for a competent scientific leadership in the WaterNet Challenge Program on Water and Food research Project (**refer to Section 3.4.2**), there has been a dire need to employ a full time staff member so as to ensure that the Project delivers on its objectives and goals.

The Secretariat requested the Steering Committee at its 15<sup>th</sup> Meeting to consider advertising and recruitment of a WaterNet Research Leader to provide mainly scientific leadership for the Challenge Program in lieu of the Network Professional Training Officer. The position was more critical than that of the Programme Training Officer due to the complexities involved in coordinating the Challenge Program on Water and Food research Project of WaterNet (WaterNet PN 17).

The WaterNet Secretariat had not yet placed an advertisement for the position of the Network Professional Training Officer following a decision made at the 14<sup>th</sup> steering Committee Meeting. The Secretariat argued that the coordination of short courses was less demanding than the guidance of this multi-national and multi-disciplinary research project.

The Steering Committee resolved that the Secretariat should advertise the post of Projects Leader in the Mail & Guardian Newspaper of South Africa and the position to be filled by 1 February 2007, after making amendments to advert and the terms of reference of the incumbent (**see Annex 5**). The decision of the Steering Committee was endorsed at the 7<sup>th</sup> AGM.

It was also agreed that a sub-committee consisting of Ms Beukman, Eng Nyemba and Dr Gumbo would be responsible for the short-listing of eligible candidates, and conducting interviews in the recruitment process.

During the reporting period employment contracts of Ms Martha Hondo the Administrator, and Ms Moriah Makopa the Secretary, of the WaterNet Programme were renewed by one year i.e. beginning 1 January 2007 to 31 December 2007. The contract of the Part time Bookkeeper Ms Esther Muchadakuenda was extended for six month with effect from 1 August 2006 to 31 January 2007.

During the reporting period WaterNet Secretariat requested for advice of Mr Marco Schouten of UNESCO-IHE 23-28 October 2006 for general assistance to the Secretariat and advice to the Manager on the pending WaterNet registration the 15<sup>th</sup> Steering Committee Meeting and 7<sup>th</sup> AGM.

Mr Schouten's mission involved the following tasks

- General management support and acting as a sounding board
- Preparation joint WaterNet/UNESCO-IHE refresher course in Namibia, 4-9 December 2006.
- Developing and preparing Governance structure and Governance documentation required as to be presented at the upcoming WaterNet 15<sup>th</sup> Steering Committee Meeting and 7<sup>th</sup> AGM in Lilongwe, Malawi
- Developing ideas to submit a joint proposal for UNESCO-IHE and WaterNet for the Edulink programme

- Reviewing further the developed standard reporting pro-forma for WaterNet members' activities
- Reviewing and further developing the WaterNet Procurement Guidelines

### **3.1.4 Professional financial management achieved**

Towards the end of WaterNet Phase I, the Secretariat produced draft “Financial Management and Procedures Manual” and “Procurement Procedures Manual”. The objective of these manuals is to set out the financial policies of the WaterNet programme particularly in view of the anticipated handover from UNESCO-IHE following the registration of the WaterNet Trust in Botswana.

The two manuals have undergone a review in-line with the requirements of the cooperating partners (mainly Sida and DGIS). The manuals will ensure automatic compliance with the individual requirements of the cooperating partners. The manuals will serve as an instrument for undertaking efficient and sound procurement within the programme, whilst at the same time ensuring a strong degree of transparency, fairness and integrity in the procurement and contract management process. This process is intimately linked to **section 3.1.5**.

The detail and procedures on setting-up the independent financial management by WaterNet is the single most important post-registration activity and would entail the appointment of an Accounting Firm to provide supplementary and backstopping functions with regard to financial management. This process will involve engagement and negotiations between UNESCO-IHE, WaterNet Trust, Accounting Firm and the Cooperating partners.

### **3.1.5 WaterNet legal status established**

The Steering Committee at its 14<sup>th</sup> Meeting acknowledged that the registration of WaterNet in Botswana had many dimensions which required the endorsement and discussions at the 7<sup>th</sup> AGM.

The Steering Committee agreed that the Secretariat should pursue the issue of registration seeing that it was important and time was limited. It was recommended that Dr Baatlhodi Molatlhegi of Molatlhegi and Associates and Mr Itumeleng Segopolo of Segopolo and Company should be requested to submit their responses. Dr Baatlhodi Molatlhegi of Molatlhegi and Associates responded to the terms of reference prepared by the Secretariat and subsequently a contract was drawn for the services requested.

The Assignment was divided into four clearly defined phases. The four phases are:

1. Phase I- Scoping and analysis of options: The first phase would determine all the implications of independent registration of WaterNet in Gaborone, Botswana mainly from a legal perspective.
2. Phase II- Preparation of registration documentation: Given the objectives of WaterNet, i.e. regional capacity building network for training, education, research and outreach in the field of integrated water resources management, Phase II would entail preparation of registration documents (possibly based on the revision of either the existing constitution and/or trust). Under Phase II the consultant would also advise on

what steps WaterNet needed to take to be granted the status of an organisation executing SADC programmes and projects under the principle of subsidiarity as well as to be granted diplomatic immunities in the region.

3. Phase III - Registration of WaterNet: Recommendations and documentation from Phase I and II will be considered and commented on by the WaterNet Secretariat and the Steering Committee at its Extra-ordinary meeting scheduled for the first week of October 2006. The Law firm would revise the documentation following comments of the WaterNet Steering Committee who will consider the submission at the end of September 2006. The revised documentation will then be tabled at the WaterNet 7<sup>th</sup> AGM on 3 November 2006. The decision of the members at the AGM will be communicated to the consultant Law firm.
4. Phase IV - Post-registration support: The last Phase after registration will involve the development and/or rationalisation of operational instruments as may be required.

The consultant Law firm was guided by the following documents:

- WaterNet Constitution, April 2002
- WaterNet Deed of Trust, April 2003
- Review of WaterNet's Structure: Report by Price Water House Coopers, September 2004
- Guidelines Governing Relations between SADC and Organisations Executing SADC Programmes and Project, March 2001
- Report on the Review of Operations of SADC Institutions, March 2001

The first deliverable for the assignment (Output for Phase 1) was a report entitled - "Report on the scoping and options analysis for registration of WaterNet as a legal entity in Botswana, 2006".

In summary the scoping and options analysis report considered the three possible legal forms (options) a not for profit non-governmental organisations such as WaterNet could take in Botswana (**refer to the report for details**):

1. Company Limited by Guarantee: A Company limited by guarantee is a form of business association formed under and subject to the Companies Act of the laws of Botswana.
2. Society: A society is formed and regulated under the Societies Act (Laws of Botswana Cap 18:01). For a Society to be legally recognised it has to have a constitution and to be dully registered under Societies Act.
3. Trust: The formation of a trust is generally regulated by Common Law particularly the Roman Dutch Law.

All the three forms result in the formation of legal entities that can sue or be sued. The report highlights the advantages and disadvantages of each of these possible options in the case of WaterNet.

The Law firm's final recommendation was that WaterNet should resolve to register as a trust under the laws of Botswana. The deed of trust shall be based on the existing WaterNet founding documents and strategy documents such as the WaterNet Constitution, WaterNet

Strategy Document 2005-2009, WaterNet Deed of Trust and other reports such as the Price Waterhouse Cooper report.

In particular, the founding document of WaterNet (trust deed) shall be such that it gives effect to WaterNet's objectives and mission and retain its character as a multilateral not-for-profit membership based organisation. In addition, the SADC "Guidelines Governing Relations between SADC and Organisations Executing SADC Programmes and Projects under the Principles of Subsidiarity" should also be taken into account.

The WaterNet Steering Committee convened an Extra Ordinary meeting on 9 October 2006, at Holiday Inn Garden Court, Johannesburg South Africa to consider the report on the options for WaterNet registration as a legal entity in Botswana and the recommendations made by the Law firm, implications in terms of WaterNet current governance, the way forward and to make recommendations to the Law firm.

The Steering Committee members raised the following comments/questions grouped under ten major headings, which they wanted the Lawyer to clarify.

1. Trustees/Steering Committee members: According to the Constitution the elected Steering Committee members can be viewed as representing institutions. Is it possible that with the Deed of Trust, Trustees can have alternate representation?
2. Nationalities: Can all Trustees be of any nationality or there is need of one or more to be a Botswana national(s)? Do Trustees have to be SADC nationals only? (WaterNet membership includes Uganda and Kenya: non-SADC)
3. Recognition in another country: Since the Secretariat is currently located in Zimbabwe, in the event of registering the Trust in Botswana, will Zimbabwe or any other country recognise that Trust?
4. Relocation: Is it possible that the Deed of Trust can have a clause to allow for future relocations? The Steering Committee would want the relocation to be an operational issue and for the Secretariat not to be necessarily located in Zimbabwe or Botswana. Should there be need to relocate, there should be no need for a new Deed of Trust.
5. Limits: Is there a minimum or maximum limit for the number of Trustees?
6. Composition/Guidelines: Can elected members of the Steering Committee become the Board of Trustees, or are there guidelines for electing Trustees? Can the SC members sign the new Trust Deed? Can the complement of Trustees be inclusive of elected Trustees, Patrons, ex-officio members to be drawn from for example Water Research Fund for Southern Africa Board (WARFSA), Global Water Partnership Southern Africa, Cap-Net, World Water Council as an Advisory Board and what would be their terms of reference? What are the rules/regulations for employment and will there be any taxes to be paid? What are the fiduciary responsibilities of ex-officio members as an Advisory Board? Is there need for a motion to elect 2 extra members?
7. Functions: What are the specific functions of the Trustees?
8. Insurance: If Trustees can be sued or sue, won't there be need for insurance cover?

9. AGM: Does the AGM have to be comprised of SADC nationals only? Is it legal for WaterNet to operate outside SADC? Are there any guidelines for election of Board of Trustees?

10. Constitution/Deed of Trust: There was a need to look at the Constitution and make necessary adjustments/additions to the draft Deed of Trust.

Based on the recommendations made by the Lawyer the Steering Committee meeting resolved that WaterNet be registered as a Trust. The Steering Committee members agreed that the Secretariat should request the Lawyer to address the questions/comments raised above, focusing on registering WaterNet as a Trust, so that the draft Trust Deed could be ready in time for the 15<sup>th</sup> Steering Committee meeting scheduled for Lilongwe, in Malawi.

At the 16<sup>th</sup> WaterNet Steering Committee the WaterNet Deed of Trust Draft document submitted by the Law firm was discussed and amended. It was reported Dr Molatlhegi of Molatlhegi and Associates would attend the 7<sup>th</sup> AGM for answering any queries regarding the WaterNet Deed of Trust document.

The Steering Committee members considered the Deed of Trust Draft document and the following amendments and resolution:

- The Chairman of the Steering Committee should sign the Deed of Trust and that the Lawyer should prepare a Power of Attorney to facilitate this.
- The 1<sup>st</sup> to 3<sup>rd</sup> paragraphs should address both regional and international aspects to address the involvement of other partners.
- The financial year should coincide with the calendar year i.e. January to December.
- The elected members would be the Board of Trustees and that supporting members, including SADC Water Division would be part of the Advisory Board.
- It was agreed that the 3 other Steering Committee Members to be elected during the 7<sup>th</sup> AGM would be added on the list of the Interim Board of Trustees on page 5, clause 4, of Deed of Trust Draft document.
- The term of office for the Board of Trustees should be 4 years and not 3 years so that the years tally with the provision in the Constitution.
- The Lawyer should advise on how a Trustee or Board of Trustees could be expelled for inefficiency or other reasons.
- The Lawyer should clarify what would happen if Auditors did not approve the Accounts of the Trust.

The amended Deed of Trust document was presented at the 7<sup>th</sup> AGM on 3 November 2006. The members debated its contents and with minor amendments and also in the presence of Dr Molatlhegi, it was resolved to register WaterNet as Trust in Gaborone Botswana according to the recommendations made by the Lawyer and the Steering Committee.

The WaterNet Deed of Trust was lodged at the Botswana Deeds Office and was duly registered on 29 December 2006 under number MA810/2006.

### 3.1.6 Financial sustainability through income generation and contributed funds

The long-term viability of WaterNet will greatly depend on whether members can fund their own activities from fees and support from regional, national and local organisations. **Table 3.1** provides a summary of the funding status of WaterNet programme during the reporting period.

**Table 3.1** Summary of WaterNet funding through different projects and contributors: WaterNet Phase II (2005-2009)

<b>Contributor</b>	<b>Amount (Million Euro)</b>
DGIS <sup>a</sup>	4.8
Sida	2.6
Challenge Program on Water and Food	1.3
EU-ACP Water Facility/GWP/UNDP	0.3
<b>Total in cash</b>	<b>9.0</b>
Members contribution <sup>b</sup>	2.0
<b>Grand Total</b>	<b>11.0</b>

- a) Assuming that DGIS grants the other possible 2.4 Million Euro after September 2007 i.e. WaterNet Phase IIb.
- b) In kind and dispersed cash contributions.

WaterNet in partnership with Cap-Net, West Africa Network (WA-Net), Nile Basin Capacity Building Network and Caribbean WaterNet, were successful in a proposal submitted to the – EU-ACP Water Facility through United Nations Development Programme (UNDP) and Global Water Partnership.

The documentation for the EU-ACP Water Facility Funding was signed during the reporting period and the official start date of the Project set at 1 September 2006 and it is expected to run for a three year period.

The implementation of the Project requires close collaboration with Global Water Partnership (Global Water Partnership Southern Africa in particular). The funds precludes or have special conditions for beneficiaries from certain member states in the region *viz.* Malawi, Swaziland, South Africa and Zimbabwe.

For WaterNet activities to start a Memorandum of Understanding (MoU) with Cap-Net/UNDP have been entered into (see **Annex 6**).

### 3.1.7 Monitoring, evaluation and reporting procedures in place

According to article 6 of the Sida contract WaterNet in collaboration with UNESCO-IHE have agreed to carry out an Environmental Impact Assessment (EIA) of WaterNet activities in accordance with Sida Guidelines for the Review of EIA (2002) before 31 December 2005.

The two parties further agreed (Article 8 of the Sida contract) to develop a strategy on how the programme shall address HIV/AIDS and Gender issues.

The Environmental Impact Assessment (EIA) of the WaterNet Programme Report was completed in February 2006 and submitted to the Cooperating partners. The report was considered at the 6<sup>th</sup> WaterNet AGM held in Lilongwe, Malawi and the 14<sup>th</sup> and 15<sup>th</sup> WaterNet Steering Committee meetings held in Cape Town, South Africa, Lilongwe Malawi held in the during the year.

Some positive and negative impacts of the WaterNet programme were observed. The report raised many interesting issues which would normally be overlooked in capacity building programmes like WaterNet.

With regard to the EIA discussion document the 6<sup>th</sup> AGM strongly felt that Sida could be asking for something un-achievable especially in view of the Sida comments which were raised upon receipt of the report. It is still not clear on the definition of environment being referred to i.e. if it really does include the bio-physical environment then there is a fundamental problem of interpretation of environment and how WaterNet activities impacts on it.

It was agreed that WaterNet activities were not readily and directly amenable to EIA and Audits as prescribed by the Sida guidelines or any other because of the fact that the main areas where WaterNet has had an impact is on the social environment through capacity building. Other impacts included in the report were purely speculative.

WaterNet has to modify its means of measuring, monitoring and evaluating these impacts (both negative and positive) in such a way that they are captured in the normal reporting.

The HIV/AIDS and Gender discussion papers were compiled by the Institute of Water, Sanitation and Development (IWSD), and Southern Africa HIV/AIDS Information Dissemination Services (SafAIDS) the lead member organisations tasked to develop the two documents. The documents went through a review process done by the Centre for Applied Social Sciences (CASS) and were submitted in August 2006 to the Cooperating partners.

Sida submitted their comments on the two discussion documents on 20 October 2006. A lot of input and clarification had been made through Sida facilitated workshops and involvement of UNESCO-IHE staff. At the 6<sup>th</sup> WaterNet AGM held in Lilongwe, Malawi and the 14<sup>th</sup> and 15<sup>th</sup> WaterNet Steering Committee meetings, members felt that the papers where very ambitious and there was a need to scale down some of the proposed interventions into workable activities.

The Gender report was accepted fairly well at the meetings but the HIV/AIDS paper raised a lot of contention and debate. At the meetings there were sentiments that WaterNet should avoid promising to do too much as presented in the discussion documents.

There was emphasis that WaterNet is a member-driven entity and at the same time there is a limit to which WaterNet can influence changes within the member organisations which are typified by University Departments especially on HIV/AIDS and Gender issues (cross-cutting) which some members felt or believed were peripheral to WaterNet core business.

The need to mainstream Gender and HIV/AIDS into the core business of WaterNet was nonetheless accepted i.e. in education, training, research and outreach in IWRM.

The main challenge to WaterNet would be the integration of the above strategies into WaterNet Phase II Strategy: 2005-2009, the Long-term Strategy without significant financial and budgetary implications. Secondly, the implementation of the strategies has to ensure that there is no deviation from WaterNet core business.

WaterNet Secretariat has since solicited further views from its membership and has requested the development of a down-scaled implementation plan which is estimated would require financial resources of approximately 250 000.00 Euros. Some of the small projects are earmarked for implementation during the 2007 planning year.

The discussion papers for the EIA, Gender and HIV/AIDS within the WaterNet programme are available electronically from the WaterNet Secretariat on request. The cover pages of the papers are shown in **Annex 7**.

## **3.2 DELIVER AND STRENGTHEN THE REGIONAL MASTERS PROGRAMME**

### **3.2.1 Deliver the masters programme at two host institutions**

The programme for the 2005-2006 intake progressed well during the reporting period with all the 24 students carrying out the dissertation part. Ten students from the University of Zimbabwe graduated in October 2006, whilst, nine from the University of Dar es Salaam in November 2006. The five students enrolled at the University of the Western Cape are due complete their studies and graduate in early 2007.

The names of the students, gender, nationality and title of their dissertation are shown in **Annex 8**.

After the core courses, the students for the 2006-2007 intake embarked on their specialisation modules during the reporting period which were offered at the University of Dar Es Salaam (UDSM), University of the Western Cape (UWC), University of Zimbabwe (UZ) and University of Malawi (UNIMA) (**see section 3.2.2**).

Two students withdrew from the programme. Mr Ronald Chawatama (Zimbabwe) wrote to the University indicating that he was not fit to continue with the programme on medical grounds. Mr Alphonse Mganga (Tanzania) who was specialising in Water and Environment in Malawi did not return to Zimbabwe for the remaining modules. Efforts to contact him have been fruitless.

By the end of 2006 the profile of the WaterNet funded students enrolled at UZ and UDSM is as presented in the **Table 3.2**.

WaterNet advertised for the 2007-2008 intake for the Masters degree programme in Integrated Water Resources Management. The deadline for receipt of applications was set for 15 September 2006 with the programme scheduled to start on 12 February 2007.

**Table 3.2** List of IWRM students for the 2006-2007 intake

<b>Surname</b>	<b>First name</b>	<b>Gender</b>	<b>Nationality</b>	<b>Specialization</b>
<i>University of Zimbabwe, Department of Civil Engineering</i>				
1 Chibulu	Brenda	F	Zambia	WRM
2 Chinyama	Annatoria	F	Zimbabwe	WfP
3 Dondofema	Farai	M	Zimbabwe	WRM
4 Kamtukule	Godwin	M	Malawi	WfP
5 Kassim	Kalunde	F	Tanzania	WfP
6 Khosa	Sangwani	M	Malawi	WRM
7 Makado	Patience	F	Zimbabwe	WfP
8 Mamba	Geoffrey	M	Malawi	Hyd
9 Mufute	Ngonidzashe	M	Zimbabwe	WRM
10 Nyoni	Kosamu	M	Zimbabwe	WRM
11 Phiri	Lazarus.	M	Malawi	WfP
12 Sichone	Priscilla	F	Zambia	W&S
13 Tiroyamodimo	Tshoganetso	F	Botswana	WfP
<i>University of Dar es Salaam, Department of Water Resources Engineering</i>				
1 Mungai	Damaris	F	Kenya	W&S
2 Benedict	Joyce	F	Tanzania	Hyd
3 Masilela	Musa	M	Swaziland	W&E
4 Sibande	Hyde	M	Malawi	Hyd
5 Madungwe	Immaculate	F	Zimbabwe	W&E
6 Kibassa	Deusdedit	M	Tanzania	W&S
7 Nkiwane	Lwazi	M	Zimbabwe	Hyd
8 Mwamsamali	Oswald	M	Malawi	W&S
9 Kimani	Daniel	M	Kenya	Hyd
10 Casmiri	Damian	M	Tanzania	W&S
11 Leshoboro	Nena	M	Lesotho	W&S
12 Mushi	Innocent	M	Tanzania	W&E
13 Fidelis	Rehema	M	Tanzania	W&E
14 Temba	Theobald	M	Tanzania	Hyd
15 Sadiki	Ramadhani	M	Tanzania	W&E

Specialisation Key:

W&E Water and Environment

WfP Water for People

WRM Water Resources Management

Hyd Hydrology

The advertisement was circulated electronically via the members and through the GWP-SA, WARFSA and Cap-Net mailing list. In addition the advert appeared in the July, August, and September issue of the Water Wheel Magazine of the Water Research Commission of South Africa.

By the close of the deadline date 212 applications from 15 countries had been received by the WaterNet Secretariat. Out of the 212 applications received 59 applications representing 30% were female while 152 or 70% were male.

A pre-selection exercise was conducted by a panel consisting of the WaterNet Manager, Prof Felix Mtalo (UDSM), Eng Zvikomborero Hoko (UZ) and Mr James Chimphamba (UNIMA).

The terms of reference for the pre-selection were drawn up by the WaterNet Secretariat and broadly included merit (qualification), choice of specialisation, relevant experience, gender and geographic equity. The idea of a pre-selection process was to reduce the number to about twice the number of Fellowships being offered by WaterNet. It has also been estimated that the highest possible number of students the two core host institutions (considering the local human and institutional capacity) can enrol each year is about 25 each i.e. 50 students per intake.

The pre-selection criteria consisted of the following:

- Merit (qualification) in the form of a good, relevant and acceptable undergraduate degree or its equivalent as minimum. Generally, the applicant should have graduated in 2004 or earlier
- Relevant experience and employment history would be an added advantage. Generally, the applicant should have at least two years relevant experience
- Age limit of 40 years should generally apply
- Non WaterNet funded candidates should also be considered
- For WaterNet funded candidates the following shall apply
  - Department of Civil Engineering, University of Zimbabwe to allow for final selection of 16 candidates
  - University of Dar es Salaam, Department of Water Resources Engineering to allow for final selection of 16 candidates
  - At least 8 applicants should be female per Department
  - No more than 6 and no less than 4 applicants per each of the six specialisations
  - No more than 6 applicants combined i.e. UZ and UDSM intakes or out of 32 should be from any one country
  - Candidates from Uganda and Kenya should be enrolled at UDSM since UZ charges very high fees for non-SADC students

The pre-selection panel short-listed a total of 79 applicants and submitted a narrative report to the WaterNet Secretariat which was eventually presented at the 15<sup>th</sup> WaterNet Steering Committee Meeting.

The distribution of the applicants in terms of nationality, gender, pre-selection outcome, specialisation choice, and age is presented in **Table 3.3, 3.4 and 3.5** respectively.

The candidates listed for each specialisation ranged from 14 to 57. Some specialisations were over-subscribed while others were not. The numbers of suitable candidates for first preference in terms of specialisation also varied.

For specialisations such as Hydrology the number of suitable applicants with first choice indication was few and the pre-selection panel had to consider the second preference. The lowest number of the pre-selected candidates was for the Water for People and Water and Society while the highest was for Water Resources Management.

The panel did not short-list any candidates from outside WaterNet member countries i.e. SADC states including Kenya and Uganda applicants from non-member countries as they had indicated that they would like to receive Fellowship funding through the WaterNet Fellowship Fund.

**Table 3.3** Profile of applicants and pre-selection outcome

<b>Nationality</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>	<b>Pre-selected</b>
Angola	0	0	0	0
Botswana	3	5	8	6
DRC	0	0	0	0
Lesotho	1	0	1	1
Malawi	4	29	33	15
Mozambique	0	0	0	0
Namibia	0	10	10	4
South Africa	3	1	4	1
Swaziland	0	1	1	0
Tanzania	13	30	43	16
Zambia	5	6	11	5
Zimbabwe	24	63	87	26
<b>Sub-total SADC</b>	<b>53</b>	<b>145</b>	<b>198</b>	<b>74</b>
Cameroon	1	0	1	0
Ethiopia	0	1	1	0
Kenya	1	1	2	1
Pakistan	0	1	1	0
Rwanda	0	1	1	0
Uganda	4	4	9	4
<b>Sub-total non-SADC</b>	<b>6</b>	<b>8</b>	<b>14</b>	<b>5</b>
<b>Grand total</b>			<b>212</b>	<b>79</b>

**Table 3.4** Distribution of applicants by specialisation choice

<b>Specialisation</b>	<b>1<sup>st</sup> Choice</b>	<b>2<sup>nd</sup> Choice</b>
Hyd	14	12
W&E	57	46
W&L	33	29
W&S	21	29
WfP	35	43
WRM	47	33
Not specified	5	20
<b>Total</b>	<b>212</b>	<b>212</b>

Specialisation Key:

W&E Water and Environment

WfP Water for People

WRM Water Resources Management

Hyd Hydrology

W&L Water and Land

**Table 3.5** Distribution of applicants by age group

<b>Age group (in years)</b>	<b>Number of Applicants</b>
Less than 25 yrs	33
25 - 30	110
31-35	28
36-40	26
41-45	5
above 45	0
Not specified	10
<b>Total</b>	<b>212</b>

In a few instances applications were rejected as they did not have the required minimum qualifications for registration or were deemed over-qualified especially in cases of where the candidates had post-graduate qualification in a similar field. For some countries very few applications were received and the panel had to relax the merit and experience criteria to ensure geographic balance.

Of the female applicants, 26 making 44% of female applicants were pre-selected while 53 or 34% males were pre-selected.

The Steering Committee at its 15<sup>th</sup> Meeting noted the following:

- No applications had been received from some of the SADC countries and since the programme was regional, there was need for it to be spread throughout the countries in the region
- There was need to address the issue of participation by all countries in SADC in WaterNet activities including enrolment of candidates in the regional Master degree programme. The committee although acknowledged the difficulty in ranking candidates based on merit and at the same time try to address the issue of participation by all SADC countries. Dr Merrey said that there was need to allow for an extra budget to advertise for the programme in those countries that have few or no applications
- Gender empowerment was commendable seeing that the number of women taking up engineering courses was increasing in some countries
- It was agreed that the selection process should not compromise significantly on merit as only the best candidates were desirable.
- It was agreed that for the 2008 intake the advert for the programme should also be produced in French and Portuguese in order to attract applicants from those countries that did not have any applicants

The final selection and the candidates who had accepted the offer from the two core host institutions would only be confirmed in January 2007.

### **3.2.2 Offer five specialisations**

As per the approved 2006 Workplan, WaterNet intended to offer five specialisations hosted as follows:

- Water Resources Management, University of Zimbabwe
- Water for People, Polytechnic of Namibia
- Water and society, University of the Western Cape
- Water and Environment, University of Malawi
- Hydrology, University of Dar es Salaam

In the previous report period the WaterNet Secretariat received a letter from the Vice Chancellor of the Polytechnic of Namibia (PON) indicating that PON was not going to be able to host the Water for People specialisation in 2006 due to a critical staffing problem.

Following the recommendation made at the 14<sup>th</sup> Steering Committee Meeting the WaterNet Secretariat made urgent plans in consultation with the core-host institutions of the Masters programme to host the Water for People specialisation at the University of Dar es Salaam.

A few other non-WaterNet funded students following the Masters programme registered at UDSM also participated in the specialization as well.

The other specialisations were run at the four institutions the second half of 2006.

During the reporting period, WaterNet Secretariat organised the 2<sup>nd</sup> Meeting of the Coordinators of the Master Degree Programme in IWRM. The meeting was held in Lilongwe, Malawi on 31 October 2006. The agenda of the meeting included the following:

- Programme for the 2007-2008 intake
- Reporting format and frequency to the WaterNet Secretariat
- Terms of reference for the Coordinators
- SADC-WaterNet Professorial Chairs
- Finalising the selection of candidates for the 2007-2008 intake
- Students Fellowship Fund contracts

The Coordinators made the following resolutions and action points:

- The core host institutions, UZ and UDSM should end teaching of core modules by the end of week 26 in 2007 (Sunday 1 July 2007) and resume with students on week 39 (24 September 2007)
- The period in between would be reserved for teaching of specialisations and short break
- Two progress reports were to be submitted to the WaterNet Secretariat and the end of the months of May and September in preparation for the Steering Committee Meetings. As for the specialisations hosts, the first report will be a short status report highlighting preparations (preparedness) to host the incoming students
- The reports would also highlight deviations from the plan (and reasons) and how the changes influence achievement of the intended outcomes
- That the WaterNet Secretariat should write a letter to the host institutions formally stating that the work the Coordinators, roles and responsibilities and also to solicit support from the institutions for some specified support for them to carry out their duties.

### **3.2.3 Fellowship Fund established**

The 6<sup>th</sup> AGM approved granting of 30 fellowships from the Fellowship Fund to deserving candidates as per the Work plan of 2006. With the approval of the EU-ACP Water Facility funding for WaterNet two more Fellowships became available giving 32 Fellowships in total for the 2007 intake.

The Steering Committee at its 14<sup>th</sup> Meeting resolved that the Secretariat should develop an offer letter/contract in consultation with the host institutions of the Master degree programme so as to formalise the award of the Fellowship with individual students.

Since the establishment of the Fellowship Fund for WaterNet there has not been any formal contract or document entered into between WaterNet and the student for the financial support. This has caused some problems in the running of the Masters Programme. To date the Fellowship and MSc Dissertation Funds have been disbursed and managed through Memoranda of Agreements between WaterNet Secretariat and the host institutions.

The Secretariat in consultation with the Coordinators of the Masters Programme decided to introduce some form of document which has some semblance of obligation from both parties (student and WaterNet) and also which specifies clearly how much the student receives mostly importantly as living allowance.

The WaterNet Secretariat designed a letter of offer for the Fellowship and MSc Dissertation Fund which was to be used for the 2007 intake and also retrospectively for the 2006 intake. The content of the offer letter was discussed and the 15<sup>th</sup> Steering Committee Meeting and was recommended for adoption with minor amendments (see **Annex 9**).

The Committee also advised the Secretariat to seek legal advice on some of the contents of the offer letter. It was agreed that all the currencies on the letter should be in United States dollars and that there should be a statement to explain why figures would be different in any given year.

It was also agreed that in the advertisement for the 2008 intake WaterNet should include eligibility criteria for the Fellowship clearly and separately from the advertisement of the Masters programme.

### **3.2.4 Establish review procedure and quality control system for the Masters programme**

WaterNet has set itself to establish a regional review procedure for continuous evaluation and monitoring of the WaterNet Master programme in IWRM, establish a regional Academic Review Board during the Phase II Project.

The WaterNet Secretariat proposed at the 15<sup>th</sup> Steering Committee Meeting that the process whilst critical would be long and drawn out and may require a lot of support from UNESCO-IHE in terms of technical input. The costs involved could also require re-budgeting. The WaterNet Secretariat had some discussion with UNESCO-IHE staff and the coordinators of the Partnership for Water Education and Research (PoWER) a project meant to transform the old IHE into a truly UNESCO institute through working with partners from the south like WaterNet.

The idea is for WaterNet together with UNESCO-IHE and PoWER was to submit a separate proposal to the EU Edulink Facility to guarantee that WaterNet had sufficient funds and technical support to ensure that the curriculum, materials and delivery of the Masters Programme has a quality stamp which would provide identity, credibility, exchangeability, mobility and accessibility.

It was also noted that the review process needed to be linked to the establishment of SADC-WaterNet Professorial Chairs and the ongoing tracer survey targeted at the more than 100 graduates from Master Degree programme in IWRM. The tracer survey seeks the opinion of the graduates about the value of the programme in light of their professional career and work experience).

The Committee supported the idea of submitting a separate proposal to the EU Edulink facility and agreed that UNESCO-IHE through the Scientific Backstopping Fund would work with WaterNet Secretariat and two other WaterNet members in putting together a proposal to be submitted.

It was discussed that as the Masters Programme run by WaterNet grows a need to set up effective Quality Assurance and Knowledge Management procedures and facilities became extremely important.

A need exists to develop a Quality Assurance procedure which assures the quality of the various specialisations that are part of the Masters Programme delivered by WaterNet. Project activities that would be required for Quality Assurance include:

- Establishing a Sub-committee on Quality Assurance which will operate under the Steering Committee of WaterNet;
- Developing and agreeing upon quality standards and procedures by the Sub-committee on Quality Assurance and the WaterNet members;
- Training WaterNet members with respect to quality standards and procedures;
- Reviewing the core programme and specialisations according to those standards;
- Adjusting specialisations/modules based on reviews; and
- Reporting on improved specialisations/modules to the Sub-Committee on Quality Assurance.

Regular meetings of the Coordinators of the Masters Programme where also meant to ensure some commonality in standard setting and to reach a mutually agreed or understood method(s) of monitoring, evaluation and reporting (**see section 3.2.3**). This would also reduce over-reliance on the WaterNet Secretariat in implementing the Masters programme.

### **3.2.5 Establish with WARFSA the WaterNet MSc Dissertation Fund**

In the Phase II Project WaterNet has established the WaterNet Master Dissertation Fund for support of 30 Master dissertation research projects per year within the WaterNet Master Programme (projected to rise to 40 or 50 though funding from other sources).

Progress has been limited and at the WaterNet Extra Ordinary Steering Committee meeting held on 9 October 2006 in Johannesburg, South Africa it was agreed that a more intimate relation in terms of governance, management, formulation and implementation of strategies between WaterNet and WARFSA was required. It was indicated that a meeting of the two Management structures could be essential to establish clearly the nature and links with WARFSA. A joint meeting was scheduled for the 2007 planning year.

### **3.3 DEVELOP AND DELIVER PROFESSIONAL TRAINING**

#### **3.3.1 Launch WaterNet professional training programme**

As part of WaterNet drive to complement academic training with professional or proficiency training (the SADC/WaterNet PCN 23) the network is expected to play a leading role in the professional training domain.

During the reporting period WaterNet in collaboration with its partners planned and delivered short courses and seminars as detailed below:

##### ***Tracer Hydrology***

This course was held from 11 – 15 September 2006, at the University of Zimbabwe in Harare. It was hosted by the Department of Civil Engineering while teaching was conducted by Prof Stefan Uhlenbrook from UNESCO IHE. The main purpose of the course was to strengthen the capacity of researchers in the region to use tracers *inter alia* for determining the age of groundwater. Thirteen participants attended the course (see **Annex 10**).

The medium term output were: (i) that the participants will apply the acquired research methods to investigate water resources especially where basins are not gauged and; (ii) that the staff from the two core host institutions of the IWRM Master Degree Programme who attended will diffuse the knowledge to students - especially at University of Dar es Salaam where the Hydrology specialisation is offered.

##### ***Training of Trainers Course on Mainstreaming HIV/AIDS and Gender (HAG) into IWRM Planning and Implementation***

The course was held from 24-27 July 2006 in Harare, Zimbabwe. Twenty two participants attended. It was a collaborative activity with GWP-SA. Facilitation was provided by the Southern Africa HIV/AIDS Information Dissemination Service (SafAIDS) and the Institute for Water and Sanitation Development (IWSD) both WaterNet members.

The course was attended by 20 participants (see **Annex 11**), most of whom were representatives of Country Water Partnerships. There were two outputs being produced from this process. The first was a Training Manual that provides the participants with post training reference material on how to conduct their own in-country trainings. The second is a Field Guide for practitioners on how they can conduct the mainstreaming processes. The guide and manual would be adapted for local conditions by the participants. During the course it was noted that there are no existing materials that provide practical guidance on HIV/AIDS mainstreaming in IWRM. WaterNet and GWP-SA have therefore taken up the challenge of being the pioneers of this subject.

##### ***Training of Trainers Course in Conflict Resolution and Negotiation Skills for Integrated Water Resources Management***

The training of trainers was held from 19-23 June 2006 in Lusaka, Zambia. It was attended by 25 participants (see **Annex 12**) most of whom were representatives of Country Water Partnerships. The material was adapted from previous courses run by WaterNet and, Cap-Net and content from the IWRM Master degree Programme.

Country Water Partnerships are expected to diffuse the knowledge learnt, through in-country training and test the conflict resolution approaches through case studies before adapting the instruments for local contexts.

### ***Regional Seminar on Inter-Sectoral Water Governance***

The Regional Seminar to share experiences and elaborate on good practices on Inter-Sectoral Water Governance was held from 21-23 November 2006 at VIP Hotel in Maputo, Mozambique.

The seminar was convened in collaboration with GWP-SA and InWent (Capacity Building International Germany). Thirty nine participants attended (see **Annex 13**). The approach comprised of facilitated sessions, presentations and discussions, group work and plenary presentations and role play. The seminar highlighted how the participants as individuals or through joint effort could influence inter-sectoral governance in the region.

A major recommendation from the workshop was that there was a need to document good cases of inter-sectoral water governance from the region to develop a toolbox for good inter-sectoral water governance.

### ***Course on Environmental Water Requirements***

The course was held from 4-14 December, 2006 in Cape Town South Africa. It was convened together with GWP-SA, IUCN (The World Conservation Union) Regional Office for Southern Africa, InWent, and The Framework Programme for Research, Education and Training in the Water Sector (FETWater) (within the Department of Water Affairs-South Africa).

The course was attended by 34 participants (see **Annex 14**). The course provided participants with an intensive introductory training on the concept, issues, approaches and methods used to determine and manage environmental flows. Because Environmental Water Requirements (EWR) is a broad and complex subject, individuals need to become specialists within a team which will carry out the EWR assessment.

Thus the outcomes of the course were that; (i) participants can now decide on which technical field they would like to specialise and receive more training in and (ii) water managers who attended now understand the inputs and methodologies of environmental water requirement assessments and thus are able to commission the undertaking of such studies in the future.

### ***Zambezi River Basin IWRM training programme***

The consortium of Ramboll Natura and Stockholm International Water Institute (SIWI) proposed the joint delivery, with WaterNet, of a programme to build capacity for supporting and consolidating the development process of IWRM in the riparian countries of the Zambezi River Basin. The National Steering Committees (NTSC's) under the ZACPRO 6.2 Project were considered to be the main target group.

The IWRM-Zambezi training programme is a direct response to a request from the riparian countries in the Zambezi River Basin.

The 2007-2008 training course under this programme was planned in two parts. The first was successfully held in Sweden from 2-20 October 2006. Thirty one

participants attended (see Annex 15). It included lectures on different aspects of IWRM; role play on stakeholder negotiations; and a field visit to showcase different IWRM aspects. The first training provided a starting point for the design of individual projects and formation of thematic groups for networking during and after the course. The second training was scheduled for 29 January to 9 February 2007 in Lusaka, Zambia.

WaterNet through negotiations was requested to have five of its members to participate and facilitate in the training to take place in Stockholm and Lusaka. Firstly, WaterNet circulated a message requesting members to nominate five interested individuals who will also act as trainers in future. Secondly WaterNet proposed that Mr Lewis Jonker (former WaterNet Manager and Programme Coordinator for the Water and society Specialisation at the university of Western Cape) be involved in the facilitation

By the close of the deadline for the announcement, WaterNet had received 9 applications listed for the IWRM training course for the Zambezi (2 Malawians, 4 Zimbabweans and 3 Mozambicans).

1. Ms Felicidade Jorge (Mozambique)
2. Ms Nomathemba Neseneni (Zimbabwe)
3. Mr Cosmo Ngongondo (Malawi)
4. Mr Thokozani Kanyerere (Malawi)
5. Ms Sithabile Tirivarombo (Zimbabwe)
6. Mr Manuel Magombeyi (Zimbabwe)
7. Mr Evans Kaseke (Zimbabwe)
8. Mr Casimiro Buraimo (Mozambique, non-WaterNet member institution)
9. Mr Paulino Foi (Mozambique, irrelevant background, non-WaterNet member institution)

In addition to the criteria listed in the course brochure, the selection consider the following:

- Geographical equity among the 8 riparian states and WaterNet member institutions
- Age and gender
- Potential to provide further training in the region, nationally and locally
- The WaterNet nominees should preferably belong to each thematic group, in order to mix with the entire group.

Eventually all respondents attended the first part of the course in Stockholm (see **Annex 15**) which ended on 20 October 2006 except for:

- Mr Manuel Magombeyi (Zimbabwe)
- Mr Paulino Foi (Mozambique, irrelevant background, Non-WaterNet member institution).

### ***Regional Refresher Course on Public Private Partnership in the Southern Africa Water Sector***

The refresher course is part of a series of seminars that aims at an exchange of professional experience thereby establishing communities of best practice in IWRM. It targets the WaterNet and UNESCO IHE alumni. This approach leads to a quality-

assured learning experience where professionals can increase competency and strengthen individual and organisational capacity, and results in the continued upgrading of alumni's knowledge and skills, developing a knowledge base in tune with current sector demands.

The course on Public Private Partnership (PPP) in the Southern Africa Water Sector was planned and conducted by UNESCO-IHE in collaboration with WaterNet and hosted by the Polytechnic of Namibia.

The course consisted of two parts:

- A preparatory part in which the participants followed a 10-weeks on-line learning course on Public-Private Partnerships in the Water Sector (2 October to 11 December 2006)
- A face-to-face part in which the participants followed a one-week course in Windhoek, 4-9 December 2006 in Windhoek, Namibia.

The one week face-to-face course consisted of:

- Lectures from Mr Marco Schouten, Mr Klaas Schwartz, both from UNESCO-IHE. A guest lecturer from the Zambian regulator National Water and Sanitation Council (NWASCO), Mr Paul Banda.
- A role play on PPP
- A video session on a movie on PPP in the water sector
- Presentations from the participants
- A fieldtrip to NamWater.

The Netherlands Fellowship Programme funded applicants were selected by UNESCO-IHE. Twenty candidates were found eligible for Nuffic funding. All twenty participated in the 10-weeks on-line course preparation. One of the 20 participants funded by Nuffic, however, was absent for the face-to-face part in Windhoek, Namibia.

The WaterNet funded application were selected and arranged for via the WaterNet Secretariat (see **Annex 16**).

The evaluation was carried out in two parts:

*By participants:* In summary the course evaluation was very favourable especially the combination of an online preparation part followed by a one week face-to-face part was welcomed.

*By Organisers:* The organisers perceived the course as an excellent example of how within a short time frame the most can be made from the experiences of the participants in combination with the expertise from the lecturers. The course was well received by the participants, with active participation and a good basis laid by the Polytechnic of Namibia. Moreover the course had a very positive spirit.

The inclusion of a stronger preparation before the face-to-face course started proved very effective since the participation of the participants became very effective, as they already gained a proper background on the essence of Public Private Partnerships.

Many of the participants indicated a demand for more management-type of trainings in the water sector. They feel that as alumni they have a sufficient technical background but require the skills and knowledge to function as managers in the water sector. Hence, the overall feeling was there should be more emphasis on economic and institutional type of training and capacity building.

It was agreed that the presentation and papers presented at the course will be compiled, edited and published in a book illustrating the state of the art in Africa.

### ***InWent Training of Trainers Course on Facilitation Skills***

The WaterNet Manager attended with other representatives from WaterNet member institutions The InWent Training of Trainers Course on Facilitation Skills on 17-22 July 2006 in Johannesburg, South Africa.

The objectives of the course were:

1. to familiarize participants with InWent as a capacity building institution and its concept of training and facilitation techniques and learning methods that focus on interactive and participatory learning and action experiences for sector specialists, programme managers, policy makers in the fields of water resources and natural resources management (land and water management).
2. provide participants with knowledge on recent trends in training and management methodology and capacity development
3. to enable participants to plan, manage and conduct InWent and other workshops/seminars/training by applying the above concepts and methods.

The course was a success and participants benefited from the communication and facilitation techniques; practical applications.

### **3.3.2 WaterNet Professional Training Officer**

Refer to section 3.13.

### **3.3.3 Catchment partnership on translating IWRM principles to management**

This activity is on-going in collaboration with GWP-SA. WaterNet will continue to focus on those catchments where there is active research e.g. Limpopo Basin for the Challenge Program on Water and Food and the Thukela and Pangani Basins for the SSI project.

### **3.3.4 English for water managers course**

Discussions between the WaterNet Secretariat and Africa University, Faculty of Humanities and Social Sciences were concluded that the institution should not focus only on servicing the *English for Water Managers* course but also to provide short (one or two day) seminars on communication skills, communication in negotiation, writing and presentation skills to all Masters students. The supplementary courses as part of the WaterNet Master degree programme were going to be conducted during the 2007 planning year.

## **3.4 REGIONALISE AND STRENGTHEN RESEARCH IN IWRM**

### **3.4.1 Research capacity building**

This is an ongoing activity conducted mainly through the WARFSA. The WARFSA is in its Phase III project.

### **3.4.2 IWRM research**

WaterNet is involved in two collaborative research programmes *viz.* the Challenge Program on Water and Food, where WaterNet is coordinating an IWRM research programme in the Limpopo Basin with 19 partner institutions and the Smallholder System Innovation Watershed Management (SSI Programme) which involves 5 partners (4 WaterNet members) who conduct research in river basins in Tanzania (Pangani) and South Africa (Thukela).

The WaterNet Challenge Program on Water and Food (CPW&F) Project Number 17 (PN17) is a trans-institutional inter-disciplinary project within the Consultative Group on International Agricultural Research (CGIAR). The WaterNet project takes on the challenge of developing a framework for new IWRM based water governance from village to basin scale in the Limpopo Basin, which integrates green and blue water management for improved rural livelihoods. The project goal is to contribute to improved rural livelihoods of poor smallholder farmers through the development of an IWRM framework for increased productive use of green and blue water flows and risk management for drought and dry-spell mitigation at all scales in the Limpopo basin.

The WaterNet Challenge Program (Project No 17; PN17) started in September 2004 and shall run for four years in the Mozambique, South African and Zimbabwean portions of the Limpopo Basin. The project involves seven university departments (all WaterNet members), two international agricultural research centres, five government agricultural or water authorities and one NGO.

The project involves research on constraints and opportunities of current practice (output 1), water resources research (outputs 2.1 and 2.8), farmer-field based action research (outputs 2.2 and 2.5), institutional research (output 3) and upscaling (output 4). Capacity building is a major component of PN17, and the approach is to integrate capacity building into the research activities from the planning stage onwards. The project includes seven PhD fellows and will have involved more than fifty masters students before its conclusion. As PN17 progresses, there is constructive feedback between the research project and WaterNet's capacity building programmes, especially the regional Master degree programme. The programme benefits as researchers from PN17 are brought into teaching, and as new research ideas from PN17 are integrated into the Master degree programme curriculum. By the integration of PN17 and the masters programme, the new ideas and philosophies of more crop per drop are passed on to the students, who, returning to their home countries and workplaces in southern Africa, can implement the new knowledge.

The highlights in 2006 included:

- The Project Scientific Workshop was held at the University of the Witwatersrand, 4 – 7 September, 2006, Johannesburg, South Africa. Some 34 participants attended, from the various project partners and stakeholders. Research results and progress were presented by the PhD fellows and scientists and synthesis activities were planned. The workshop

was also attended by representatives of the Challenge Program management, who gave positive feedback on the project.

- Five MSc students finalised their research activities under the project
- Six MSc students finalised their fieldwork and are currently doing write-up
- Eight MSc students are doing fieldwork within the project
- Eleven Challenge program papers were presented at the WaterNet/ WARFSA/ GWP-SA symposium in Malawi
- A special SSI-CP session was held at WaterNet/ WARFSA/ GWP-SA symposium in Malawi
- Six Challenge program papers were published in the Physics and Chemistry of the Earth edition of 2006 (see **Annex 17**)

Fellows have been recruited and registered for all five PhD positions set out in the PN17 project proposal. These are listed in **Table 3.6**.

**Table 3.6** PhD fellows as set out under PN17

<b>Name</b>	<b>Registering Institution</b>	<b>Host Institution</b>
David Love	UNESCO-IHE, Netherlands	WaterNet and ICRISAT
Walter Mupangwa	Free State University, South Africa	ICRISAT
Paiva Munguambe	University of Pretoria, South Africa	Eduardo Mondlane University
Manuel Magombeyi	University of the Witwatersrand, South Africa	University of the Witwatersrand
Collin Mabiza	UNESCO-IHE, Netherlands	University of Zimbabwe

In addition to the five PhDs mentioned above, two project researchers have undertaken to work on PhDs using their project research activities as shown in **Table 3.7**.

**Table 3.7** PhD fellows undertaking research through project activities

<b>Name of Fellow</b>	<b>Registering Institution</b>	<b>Host Institution</b>
Alexander Mhizha	University of the Witwatersrand, South Africa	University of Zimbabwe
Pinimidzai Sithole	University of the Western Cape, South Africa	IWMI

WaterNet has funded field visits by senior scientists to visit PhD fellows in the field and provide them with feedback on their work. Dr Washington Nyabeze, Prof Stefan Uhlenbrook and Prof Pieter van der Zaag have undertaken these visits.

Nineteen Masters dissertations have been completed and accepted: 17 at the University of Zimbabwe, 1 at Guelph University, Canada and 1 at the Delft University of Technology, the Netherlands. Of these dissertations, 15 were funded directly through Challenge Program PN17 funds or matching funds, and 4 were funded through linked Challenge Program projects. The titles of the completed dissertations can be found in **Annex 17**.

Seventeen Masters students are still continuing with their studies: 6 at the University of Zimbabwe, 1 at Eduardo Mondlane University, Mozambique, 2 at the University of the Witwatersand, South Africa, 1 at Limpopo University, South Africa, 1 at the University of the

Western Cape, South Africa, 1 at University of Pretoria, South Africa, 3 at UNESCO-IHE, Netherlands, 1 at Twente University, Netherlands and 1 at Wageningen University, Netherlands.

Fieldwork in progress includes: conservation agriculture trials (2 sites in Zimbabwe, 1 in South Africa and 2 in Mozambique), meso-catchment water resources research (2 sites in Zimbabwe and 1 in South Africa), institutional research (2 sites in Zimbabwe and 1 in South Africa) and evaluation of alluvial aquifers (3 sites in Zimbabwe).

Data collection is continuing together with farmers in a participatory approach and results are expected to be out-scaled towards the involved communities and beyond. Data is continuously being analysed and some of the results have been published in peer-reviewed journals and presented at various forums (see **Annex 17**).

Capacity building is central to PN17, as this is WaterNet's core business. A Capacity Building Strategy for PN17 has been developed, which includes methods for ensuring quality control, better communication and intellectual property rights (see **Annex 18**).

The period under review is not a field season (being the late dry season), therefore field activities have concentrated on preparation for the 2006-7 season. Baseline data collection has also been continuous during the period under review and progress has been made. The following baseline data has been collected: climate, hydrology, geology, population (incomplete) and land use (incomplete).

Project outputs achieved to date include 20 project activity reports (8 of these are draft final reports, currently being reviewed), 7 journal articles, 4 institutional working papers, 32 conference papers and 15 dissertations.

Relations with the project Managing Centre (to which WaterNet reports) have improved during the period under review, with positive feedback received after the Project Scientific Workshop, although there are still some delays in disbursement of funds. The Secretariat and the Project Executive Committee (which met after the Project Scientific Workshop) are closely monitoring partners' progress, with some turn around having been achieved by two partners whose work has fallen behind as well as in the launch of the database.

The expenditure statement for the PN17 to date is summarised in **Table 3.8**.

**Table 3.8** Expenditure statement PN17

<b>Total project budget</b>	<b>\$1,680 000.00</b>
Funds received to date	\$604,000.00
Total expenditure to date	\$570,000.00
Balance of funds received remaining	\$34,000.00
<b>Balance of project budget remaining</b>	<b>\$1,110,000.00</b>

The Smallholder System Innovations in Integrated Watershed Management (SSI), Strategies of water for food and environmental security in drought prone tropical and subtropical agro-ecosystems (Project period: 1 July 2003 – 30 June 2008) is an associated WaterNet research project and is thematically linked to WaterNet CPW&F PN17.

Partner institutions are: UNESCO-IHE, International Water Management Institute (IWMI), University of KwaZulu-Natal, School of Bioresources Engineering and Environmental Hydrology (BEEH), Sokoine University of Agriculture (SUA), Soil and Water Management Research Group (SWMRG), Stockholm University, Department of Systems Ecology (SU). Four out of the five SSI partner institutions are WaterNet members.

The SSI programme is a multi-disciplinary initiative aimed at improving the livelihood of rural communities in sub-Saharan Africa. It studies the potential of indigenous and exogenous water system innovations in smallholder farms for improved land and water productivity. These innovations can range from *in situ* practices such as deep tillage and zero tillage to infrastructural interventions such as underground storage tanks and small storage structures. The programme not only aims to achieve excellence in scientific research but also deliver results that are of practical use to development planners to improve the livelihoods of rural communities and to disseminate the research findings across sub-Saharan Africa.

The SSI research programme is a four year research programme which officially started in January 2004, with two focus basins, the Thukela in South Africa and the Pangani in Tanzania. Ten researchers form the core of the research team, working on their PhD or Post Doc research. SSI investigates aspects such as adoption and adaptation of these innovations (project 1) and the increase in production that result from them (project 2). The effects of these innovation on surrounding systems has often been neglected in previous research, but is highlighted in the programme. This includes the study of physical, ecological and social consequences downstream of sites implementing these innovations (project 3 and 4). A spatial analysis is carried out to identify appropriate sites for implementation of different innovations (project 5). The institutional arrangements and set-up for facilitating adoption and adaptation of good practices is investigated (project 6).

The highlights in 2006 included:

- The 3<sup>rd</sup> SSI Annual Scientific Meeting was held on 23-27 January 2006 in Same, Tanzania
- Three MSc students finalised their research activities in the SSI programme
- Seven MSc students did fieldwork within the SSI programme
- Five SSI papers were presented at the WaterNet/ WARFSA/ GWP-SA symposium in Malawi
- A special SSI-CP session was held at WaterNet/ WARFSA/ GWP-SA symposium in Malawi
- Two SSI papers were published in the 2006 WaterNet edition of Physics and Chemistry of the Earth
- Positions for projects 5 and 6 were filled by Jayashree Pachpute and Hans Komakech respectively

At the end of 2006 the SSI research team was finally at full strength with Mrs. Jayashree Pachpute from India taking up a PostDoc position for project 5 and Mr. Hans Komakech from Uganda taking up the PhD position for project 6. The research team now consists of 10 researchers (3 Post Doc and 7 PhD) from seven different countries (India, Kenya, the Netherlands, Sweden, Tanzania, Uganda and Zimbabwe).

Sokoine University of Agriculture (SUA) approved Mr. Kenneth Masuki's research proposal (project 1A) and Dr. Siza Tumbo finalised his 2-year Post-Doc research (project 1B). UKZN

approved Job Rotich's research proposal (project 2B), who started mid-2005, Victor Kongo (project 4B) has made good progress in mapping the hydrological processes in the Thukela catchment and is expected to finalise his PhD thesis by the end of 2007. Elin Enfors (project 3A) made substantial progress in her research and is expected to defend her licentiate thesis at Stockholm University in early 2007. Line Gordon (project 3B) has finalised data collection for her Post Doc research and is now compiling the final report. The research of the two UNESCO-IHE PhD students, Mr. Hodson Makurira and Ms. Marloes Mul (project 2A and 4A) in the Pangani basin is proceeding well and both will conduct their last field measurements in 2007.

To date nine Master students theses have been produced within the SSI programme (see **Annex 19**), these were hosted by the partner institutions and came from 5 different countries (the Netherlands, Sweden, Tanzania, Uganda and Zimbabwe). Six students have done research within the SSI programme for their practical or project work (one from Luxemburg and 5 from the Netherlands) of which one has finalised his report. Four Master students have done or are doing their field work within the SSI programme and are expected to finalise in 2007 (one from the USA and 3 from Sweden).

Fieldwork has progressed substantially; installed equipment has been automated for a higher resolution data (automatic raingauges, automated tipping buckets and pressure transducers have been installed). Measures have been put into place to secure the delicate equipment, of which several were vandalised several times in the previous year. Intensive fieldwork has led to a large data pool on on-farm water balances, ecosystem services, catchment scale hydrological processes and water allocation strategies. Data collection is continuing together with farmers in a participatory approach and results are expected to be out-scaled towards the involved communities and beyond. Data is continuously being analysed and some of the results have been published in peer-reviewed journals and presented at various forums (see **Annex 19**).

The SSI research programme is officially ending in 2008, with most researchers finalising their field activities in 2007. Because of ongoing PhD research and new ideas, the SSI management team has initiated discussions on the contents of SSI Phase II.

Find more on: [www.unesco-ihe.org/ssi](http://www.unesco-ihe.org/ssi).

### **3.4.3 Funding for new research activities**

WaterNet in collaboration with Cap-Net and WA-Net concluded negotiations with the German Federal Institute for Geo-sciences and Natural Resources (BGR, Bundesanstalt für Geowissenschaften und Rohstoffe) for consultancies related to "Training needs assessment for groundwater within IWRM" during the reporting period.

It was agreed that the consultancy fees would be paid by German Federal Ministry for Economic Cooperation and Development (BMZ) and the regional networks would meet some of the travel and subsistence travel costs if found to be necessary.

For WaterNet the consultancy is primarily meant to clearly identify the training needs required in groundwater within the SADC countries and hence input into the WaterNet Strategy. WaterNet called for interested parties/individuals to submit expressions of interest to conduct this assessment.

By the closing of the date only two submissions had been received from:

- Mr Pride Mangeya as Stregid Hydrogeologic, Department of Geology, University of Zimbabwe
- Dr Richard Owen Mineral Resources Center, Department of Geology, University of Zimbabwe

The number of responses was a bit disappointing with both responses coming from the same institution namely, University of Zimbabwe. The Southern Africa Development Community (SADC) Directorate for Infrastructure and Services, Water Division pledged their support for this initiative.

From the two submissions, WaterNet Secretariat and BGR recommended that Dr Owen be considered as first choice for the job. Dr Owen has since entered into a contact with BGR. The initiative was discussed at the 15<sup>th</sup> WaterNet Steering Committee Meeting. The Committee pledged its support for the study.

WaterNet presented the project during the 7<sup>th</sup> Symposium and began the information gathering the survey through a questionnaire. The questionnaire component of the survey was part of a programme to develop groundwater capacity in sub-Saharan Africa and is focussed on capacity building requirements (**see Annex 20**).

Once these requirements have been identified and analysed, a follow-up process with a focus on implementation of those capacity requirements is envisaged. Form and procedures of this follow-up process were not yet defined and would depend on the results of this survey.

Considering the importance of groundwater and recognising its role for the well being of millions of people in Africa, BGR is supporting the promotion of integrated and sustainable management of groundwater through the sector project “Policy Advice Groundwater – Resources and Management”. At present there are several problems dominating groundwater management like lack of knowledge and information on groundwater resources in general, lack of “methodology” of how to survey groundwater resources, lack of groundwater management plans. These problems require putting into operation corrective mechanisms.

Capacity development will be necessarily an integral component of such mechanisms. It will help to promote and adopt sustainable groundwater management practices among water professionals as part of an integrated approach to water resources management.

The final report of the assessment findings will be presented during the first half of 2007.

#### **3.4.4 WaterNet-SADC Professorial Chairs in IWRM**

The WaterNet Professorial Chairs are meant to play a key role in supporting research capacity building in the region, and will work closely with WARFSA in assisting higher learning institutions in the region to formulate and carry out research. In addition, the WaterNet Chairs will identify and create opportunities for Master degree research to address the relevant issues in the region. In a more general sense, they will work towards advancing the profile of IWRM and raising the standing of the water profession. The latter is an important

aspect of capacity building since career and job opportunities depend on a recognised demand by society.

At the 15<sup>th</sup> Steering Committee Meeting members noted that discussions regarding the Professorial Chairs had been held and the 14<sup>th</sup> SC meeting had resolved that 2 out of 5 planned for Professorial Chairs should be advertised and targeted for the 2 core host institutions for the Masters programme. UDSM had indicated that they might have problems in getting a full Professor.

The WaterNet Secretariat proposed that the Steering Committee considers the revised advertisement and it be released and circulated soon after the 7<sup>th</sup> AGM held in Lilongwe, Malawi. The Steering Committee members discussed the issue at length at it was resolved that the incumbent should be appointed on merit as a Professor. It was then agreed that the word “full Professor” be changed to read as “Professor” so as to encompass candidates who qualified for associate Professorship.

After the amendments, the advert was be distributed to members at the 7<sup>th</sup> AGM on 3 November 2006 in Lilongwe, Malawi and also advertised in the Mail & Guardian in November 2006 and in the local Newspapers in Zimbabwe and Tanzania.

The appointments for the Chairs were expected to take place in the first half of 2007.

## **3.5 RAISE AWARENESS AND UNDERSTANDING IN IWRM**

### **3.5.1 WaterNet outreach activities**

Raising awareness of IWRM has up to the present primarily been pursued through the annual WaterNet/WARFSA/GWP-SA Symposium and participation in other regional fora and meetings.

During the reporting period WaterNet participated in the following events:

#### ***SADC Water Day***

For the first time GWP-SA organised a Regional Water Day back to back with the its Country Partnership meeting. The Regional Water Day was held on 11 July 2006 in Gaborone, Botswana. The meeting served the following overall purpose:

- To give the regional stakeholders a chance to understand and appreciate ongoing initiatives in the region in terms of sustainable water resources management.

The Regional Water Day also provided an opportunity to:

- Explore integration opportunities amongst various regional partners undertaking regional initiatives.
- Increase the overall understanding of the progress of various regional initiatives in the region
- For all participants to learn of opportunities in water resources management initiatives in the SADC region
- Create a platform for regional partners to share experiences, network and encourage collaboration

A number of regional partners including WaterNet were invited by GWP-SA and participated in showcasing work in the region through:

- Mini – Water Fair: Regional partners had a chance to participate in a Mini-Water Fair by booking for a table to exhibit the work that they were doing. Partners brought poster presentations showcasing their work, books and information to disseminate to stakeholders.
- Presentations: Regional Partners also had a chance to make presentations on the work that they were doing in the region.

The day also included an open discussion by the regional partners and Sida representatives in making suggestions in the development of the Sida support strategy in the region.

WaterNet took the opportunity to present to the University of Botswana a cheque valued at 42 000 Pula as fellowship support for the MSc degree programme at the University Botswana's Geology Department (a WaterNet member). Eng Nyemba presented the cheque to the Acting Pro-Vice Chancellor Prof Nhundu.

#### ***Stockholm World Water Week 2006, 20-26 August 2006***

WaterNet participated in a special session at the International Stockholm Water Week in August 2006 entitled "Partnership for capacity development on water supply, sanitation

and hygiene in the context of IWRM in Africa” being organised by Cap-Net, Streams of Knowledge and IRC.

The workshop presented the first results of the partnership and facilitated a discussion on strategies and priorities for effective capacity development on water supply, sanitation and hygiene (WASH) within the context of the IWRM.

The workshop made the following recommendations and conclusions to support achievement of the MDGs on water supply and sanitation:

1. Greater attention should be given to the assessment of needs, and delivery of capacity building to improve the sustainability of water, sanitation and hygiene services;
2. To maximise effectiveness and impact, capacity building activities will have to be carefully targeted to reach the right people at the right levels including the decentralized local level;
3. Improved access to existing knowledge through new partnerships and better knowledge management will greatly assist capacity building in WASH;
4. Better measurement of impacts of capacity building is needed to justify investments in capacity building activities alongside the new investments being made in infrastructure.

The Best Young Researchers of the 6<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium namely: Mr William Moyce – Zimbabwe; Mr Jean-Marie Kileshye Onema – DRC; and Ms Phemo Kgomotso – Botswana also attended and made oral and poster presentations at the event.

The Research Advisor for the Challenge Program on Water and Food PN17 also attended special sessions on the global Challenge Program research projects.

### ***Network Managers Meeting, 16-20 October 2006, Delft***

The Network Managers Meeting was held in Delft, the Netherlands on 16-20 October 2006. The programme for the meeting is shown in **Annex 21**. The WaterNet Manager was elected into the Cap-Net Management Board.

The 1<sup>st</sup> planning meeting of the project management group in the Capacity Building for IWRM in Africa and the Caribbean EU Water Facility Project 255, held in Delft on 18 October 2006.

The meeting agenda included the following items:

1. Outline of the EU project
2. Structure, purpose, scope
3. Network support
4. IWRM action areas
5. Water and sanitation action areas
6. Role of partners (Networks, GWP, UNDP)
7. 1<sup>st</sup> year activities
8. Planning for implementation of activities – each network
9. Cap-Net
10. Ensuring linkage to GWP

11. Management of funds, disbursement and accounting
12. Managing the financial contribution from GWP
13. Reporting

The following key summary of actions was noted:

- All networks should ensure close collaboration with Regional Water Partnerships in design and implementation of activities.
- Careful attention needs to be given to starting activities to ensure there is a good launch of the programme.
- GWP should be clear on how candidates will be selected and the process at local/ global levels
- Cap-Net will prepare reporting templates

Two issues of the WaterNet newsletter (WaterNet News) was produced and circulated during the reporting (see **Annex 22**). The Secretariat envisages releasing at least 3 issues per year. It is hoped that this will improve communication between the Secretariat and WaterNet members.

### 3.5.2 WaterNet/ WARFSA/ GWP-SA Symposium

The 7<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium with the theme “*Mainstreaming Integrated Water Resources Management in the Development Process*” was held at Capitol Hotel, Lilongwe, Malawi, 1-3 November 2006. The Symposium was attended by 201 participants from 19 countries. Of the total attendance 59 participants were female i.e. about 30%. A summary of the number of participants by country in which they operate from is shown in **Table 3.9**.

**Table 3.9** Summary of participants by country in which they operate from

<b>Country</b>	<b>Number of participants</b>
Angola	1
Botswana	8
DRC	1
Italy	1
Kenya	4
Lesotho	4
Madagascar	1
Malawi	38
Mauritius	3
Mozambique	5
Namibia	9
Netherlands	6
Rwanda	2
South Africa	41
Swaziland	12
Tanzania	13
Uganda	3
Zambia	7
Zimbabwe	42
<b>Total</b>	<b>201</b>

The main theme for the symposium was: “*Mainstreaming IWRM in the Development Process*”. Six sub-themes were identified around which participants presented their papers, namely: Hydrology; Water and Environment; Water and Land; Water and Society; Water for People; and Water Resources Management.

The symposium generated a lot of interest as reflected by the number of participants as well as the wide range of papers and posters presented. A record number of 201 participants from different backgrounds attended the symposium.

The symposium also received enormous support from the Malawi Government and various institutions. The symposium was officially opened by the Minister of Irrigation and Water Development, Honourable Mohammed Sidik Mia, MP in Malawi. The full programme of the symposium is shown in **Annex 23**.

The *Physics and Chemistry of the Earth Journal Volume 31, Issue 15-16 of 2006* was also distributed during the symposium.

During the symposium Prof Pieter van der Zaag of UNESCO-IHE gave a key note paper on the impact of regional water resources capacity building: citations of the published proceedings of the annual WaterNet/WARFSA/GWP-SA symposia in Southern Africa, 2000-2005.

In his paper he highlighted the following:

- During the period 2000 to 2005, six regional water symposia were organised by two capacity building initiatives related to water resources management in Southern Africa, namely WaterNet and the Water Research Fund for Southern Africa WARFSA.
- The WaterNet/WARFSA Symposia were held in six different countries in the region, each time hosted by one or more member institutions of the two programmes
- The size of the water symposia has steadily increased, in terms of numbers of participants and papers presented
- Since 2004 also the Global Water Partnership of Southern Africa co-organises the annual symposia. Since 2001 selected symposium papers have been published in the journal *Physics and Chemistry of the Earth*. The first special issue with papers taken from the 2001 symposium was published in 2002 and by end of 2006 in total five issues had been published
- The special issues containing the best articles of the Symposia significantly increased the number of published articles on water in Africa.
- The articles published in the special issues of PCE were not only significant in quantitative terms, they also had an above-average impact.
- The five special issues of PCE published in total 212 papers presented during the WaterNet/WARFSA/GWP-SA Symposia
- These articles were cited 1.32 times on average (as at November 2006). This citation index is not insignificant.
- Articles addressing “Water and society” and “Water resources management” are cited most frequently. This may indicate that papers concerning these themes have not yet well established specialist journals, whereas papers on more conventional thematic fields, such as hydrology, “water and environment”, “water and land” (irrigation, rainfed agriculture) and “water for people” (water supply and sanitation), are mostly

published in dedicated journals. This may also imply that scholars publishing on the themes of “water and society” and “water resources management” may gradually be starting to create a “home” within the PCE journal.

- Scientifically, the papers presented during the WaterNet/WARFSA/GWP-SA Symposia and that have been published in PCE are being cited by the global scientific community. This is positive evidence of the impact that the WARFSA, WaterNet and GWP-SA initiatives are having. This is, however, not evidence of the fact that an impact is being made on the ground, in terms of improving the livelihoods of people. To measure that impact a much more elaborate survey, of a completely different kind, has to be conducted.

Six nominations were received from the two core host institutions for possible students who could be funded to attend the 7<sup>th</sup> Symposium. The WaterNet Secretariat reviewed the nominations based on the following criteria:

- Completion of the IWRM Masters Programme
- Selected to make an oral presentation at the Symposium
- Submission of full paper by the deadline date
- Equity considerations in terms of gender and geographic spread

After applying the above the criteria the following students were selected for sponsorship and they attended the 7<sup>th</sup> symposium in Lilongwe, Malawi:

1. Ms Kashimbi Juma (Tanzania)
2. Ms Tendai Demberere (Zimbabwe)
3. Mr Sherman Mutengu (Zimbabwe)
4. Ms Zainab Birungi (Uganda)

The Best Young Researchers Award for 2006 was determined at 7<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium and the three winners are: Mr Agostinho Vilanculous – Mozambique; Ms Zainab Birungi – Uganda; and Ms Clarence Mazambani – Namibia. The three are expected to participate in the Stockholm World water week in 2007. Their participation will be funded by WARFSA, WaterNet and GWP-SA, respectively.

The 8<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium was planned to take place in Victoria Falls, Zimbabwe around the same time. GWP-SA was expected to play a leading role among the three collaborating partners by engaging the Country Water Partnership as the lead institution for the Local organising Committee.

## 4 DEVIATION FROM PLANNED ACTIVITIES

During the reporting period there was one major deviation from the planned activities namely, the consideration to advertise and recruit a WaterNet Research Leader to provide scientific leadership for the Challenge Program in lieu of the Network Professional Training Officer (**see section 3.1.3**). The Steering Committee at the 15<sup>th</sup> Meeting agreed that the position was more critical than that of the Programme Training Officer due to the complexities involved in coordinating the Challenge Program on Water and Food research Project of WaterNet (WaterNet PN 17). This decision was endorsed at the 7<sup>th</sup> AGM.

Harare, July 2007



Bekithemba Gumbo, PhD, MSc  
WaterNet Manager

Delft, July 2007



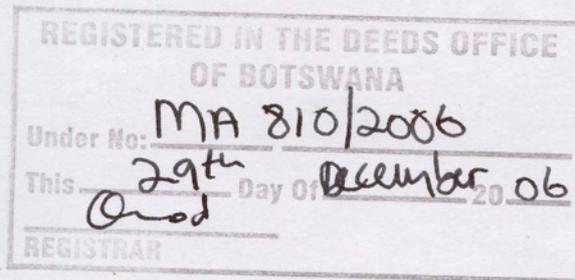
Pieter van der Zaag, PhD, MSc  
WaterNet Project Director, UNESCO-IHE

## 5 ANNEXES

Annex 1: WaterNet Notarial Deed Of Trust .....	45
Annex 2: WaterNet Members As Of November 2006 .....	76
Annex 3: Rules Guiding Corporate Members of WaterNet.....	77
Annex 4: Members Annual Reporting Pro-Forma .....	79
Annex 5: Advertisement for Research Leader Position .....	82
Annex 6: WaterNet and Cap-Net Memorandum of Understanding.....	83
Annex 7: WaterNet EIA, Gender and HIV/AIDS Discussion Papers.....	87
Annex 8: IWRM Students Dissertation Titles 2005-2006 Intake .....	91
Annex 9: Fellowship Offer Letter .....	93
Annex 10: Tracer Hydrology Course Participants And Brochure .....	97
Annex 11: Mainstreaming Gender and HIV/AIDS in IWRM Course Participants and Brochure .....	100
Annex 12: Conflict Resolution and Negotiation Skills For IWRM Course Participants and Brochure .....	103
Annex 13: Inter-sectoral Water Governance Seminar Participants and Brochure.....	107
Annex 14: Environmental Water Requirements Course Participants and Brochure .....	112
Annex 15: Zambezi River Basin IWRM Training Programme Participants 2006-2007 .....	117
Annex 16: Refresher Seminar on Private Public Partnership in Southern Africa Participants And Brochure .....	119
Annex 17: Challenge Program PN17 Research Outputs.....	122
Annex 18: Challenge Program PN17 Capacity Building Strategy .....	131
Annex 19: SSI Research Project Outputs.....	134
Annex 20: Groundwater Capacity Building Initiative .....	137
Annex 21: Programme For The Network Managers Meeting.....	143
Annex 22: WaterNet News Volume 2 Issue 2 .....	146
Annex 23: Programme For The 7 <sup>th</sup> Symposium, Lilongwe, Malawi .....	150
Annex 24: Expenditure Statement.....	158

**ANNEX 1: WATERNET NOTARIAL DEED OF TRUST**

FLOATING COPY



Asst

## NOTARIAL DEED OF TRUST

of

## WATERNET TRUST



*Molatlhegi & Associates*

Attorneys, Notaries, Conveyancers, Regulatory & International Trade Law Consultants  
Plot 684, Unit 6, First Floor, Main Mall  
GABORONE, BOTSWANA  
Tel: 393 8793; Fax 393 87

NOTARY PUBLIC

  
PROTOCOL 14/2006

MA 816/2006  
29<sup>th</sup> December 06  
Asst  
Cred

## NOTARIAL DEED OF TRUST

### WATERNET TRUST

KNOW ALL PERSONS WHOM IT MAY CONCERN

THAT on this <sup>18<sup>th</sup></sup>.....day of December in the year of Our Lord Two Thousand and Six (2006), before me:

**BAATLHODI MOLATLHEGI**

Notary Public by lawful authority duly admitted and sworn, practising in Botswana and residing at Gaborone came and personally appeared:

**WILSON RUFARO NYEMBA** in his capacity as Interim Chairperson of the Board of Trustees for **WATERNET TRUST** he being duly authorised by virtue of a

Resolution/...

WRN  
M.T.M  
EDK

Resolution of the Interim Board of Trustees of the **WATERNET TRUST** passed at Lilongwe, Malawi on 3<sup>rd</sup> day of November, 2006 which resolution now lies in my protocol.

**WHEREAS** the continent of Africa, particularly Southern and Eastern Africa (hereinafter referred to as the "Region") suffers from many devastating droughts and floods and the shortage of water management expertise leading to a loss of life and economic stagnation.

**AND WHEREAS** consultations have been held with various organisations, entities and individuals within the Southern African Development Community (SADC) and some countries in East Africa to chart the way forward in the best interests of the nations and peoples of the Region with a view to uplifting the standard of living of all the people in the SADC and in the entire Region and its Member territories.

**AND WHEREAS:** there exists within and without the Region a number of individuals and organizations desirous of enhancing regional capacity in integrated water resources management through training, education, research and outreach by harnessing the complementary strengths of the region and related activities.

**AND WHEREAS** it was resolved to form and register a Trust as a non -profit organisation with regional and international Trustees and Members designed to bring diverse ideas and experiences to the Trust and to attract funds from

voluntary/...

WRN EDK  
M.T.M B.M

voluntary contributions from Governments, non governmental organisations, international entities, individuals and others all of which will be held in trust by the Trustees with a view to the utilisation in the fulfilment of the objects of the Trust.

**AND WHEREAS** there exists a network of collaborating institutions (Hereinafter referred to as "the Institutions") in the Region which are involved in education, training, research and outreach in integrated water resources management which network is known as WaterNet and Members of such network have resolved to register the network as a Trust in such a way that the Trust to be registered would operate in accordance with and contribute to the realization of SADC programmes in terms of SADC's Subsidiarity Principle.

**AND WHEREAS** Members of the WaterNet network appreciate moral, material, technical, financial and other support it has been receiving from individuals and entities within and without the Region including but not limited to the Government of The Netherlands, the Swedish Government, UNESCO-IHE Institute for Water Education (UNESCO-IHE) and Global Water Partnership Southern Africa (GWP-SA).

**AND WHEREAS** the registration of WaterNet as a Trust in Botswana would better facilitate the realisation of the original and emerging objectives of WaterNet.

**AND WHEREAS** it is desirable to establish a Trust to promote this

endeavour/...

WRN. Edk  
M.T.M. Bm

endeavour.

AND WHEREAS it is desirable that such a Trust be created with perpetual succession and that the objectives be set forth and the powers and the duties of the Trust be defined.

AND WHEREAS it is proper that all the funds raised and assets held shall be available for the aforesaid purpose and should be vested in the Trustees and be administered by them in terms of this deed.

AND WHEREAS it is desirable to register such a Trust according to the laws of the Republic of Botswana.

AND WHEREAS the Trust is to be run by a Board of Trustees.

AND WHEREAS it is desirable that the Trust should have a personality of its own and be administered according to the laws of the Republic of Botswana,

AND WHEREAS it is desirable to record what was agreed upon.

NOW THEREFORE THESE PRESENTS WITNESSETH:

1 ESTABLISHMENT AND NAME OF TRUST

There shall be established a Trust to be known as WaterNet Trust (hereinafter referred to as "the Trust")

2. DEFINITIONS/...

WRN EDC  
M.T.M BM

## 2 DEFINITIONS

In the interpretation of this Deed, the following words and expressions shall have the following meanings:

“**The Board**” shall mean the Board of Trustees of the Trust for the time being created in terms of this Deed;

“**Deed**” shall mean this Notarial Deed of Trust;

“**Interim Board of Trustees**” shall mean the founding Members of the Trust as listed in Article 4 hereof;

“**Financial Year**” shall mean the period of twelve months from 1<sup>st</sup> January to 31<sup>st</sup> December of each year;

“**Trust**” shall mean the WaterNet Trust as established by this Deed of Trust;

“**Members**” shall mean the Members of the Trust admitted in terms of this Deed;

“**SADC**” shall mean the Southern African Development Community;

“**SADC Subsidiarity Principle**” shall mean the principle under which SADC stakeholders other than states can participate in the furtherance of SADC’s Common Agenda as defined in the SADC Treaty from time to time;

“**Supporting Members**” shall mean the major donors and facilitators of WaterNet;

“Trustees”/...

WRN      EDE  
M.T.M      BM

"Trustees" shall mean the Trustees for the time being appointed in terms of this Deed;

"Annual General Meeting" shall be composed of all Members and Supporting Members and is the overall governing body of WaterNet. Each institution that is a Member or Supporting Member of WaterNet shall nominate and send a representative to the Annual General Meeting.

### 3 HEADQUARTERS OF THE TRUST

The primary location of business operations or headquarters of the Trust shall be Gaborone, Botswana or such other place as the Board of Trustees may from time to time determine.

### 4 INTERIM BOARD OF TRUSTEES/FOUNDING MEMBERS

The Interim Board Members and or founding Members are:

Wilson Rufaro Nyemba	-	Interim Chairperson
Wapulumuka Oliver Mulwafu	-	Interim Trustee
Lucia Tuyeni-Kelao Kafidi	-	Interim Trustee
Graciana Peter	-	Interim Trustee
Dominic Mazvimavi	-	Interim Trustee
Frank Kasiime	-	Interim Trustee
Mampiti Elizabeth Matete	-	Interim Trustee
Dinis Luis Juizo	-	Interim Trustee
Damas Alfred Mashauri	-	Interim Trustee

### 5. OBJECTIVES/...

W.R.N. E.D.K.  
M.T.M. B.M.

## 5 OBJECTIVES OF THE TRUST

- 5.1 To achieve a future in which the Southern African Development Community (SADC) has the institutional and human capacity to educate and train its own water managers, capable to contribute to the equitable sharing and sustainable utilisation of water resources for poverty alleviation, economic development (livelihood security) and environmental security.
- 5.2 To build the regional institutional and human capacity in Integrated Water Resources Management (IWRM) through training, education, research and outreach by harnessing the complementary strengths of Member institutions in the region and elsewhere.
- 5.3 To coin a common language to enhance the effective communication between experts such as water professionals, agronomists, resource economists, environmentalists, lawyers, planners, community representatives, scientists, health professionals, engineers and the like with the specific objective to uplifting the standard of living of all the people and families in the SADC region and thereby increasing employment and economic benefit.
- 5.4 Generally to do all such acts, matters and things as may be considered to be incidental, necessary or conducive to the achievement of all or any of the abovementioned objects and to achieve for the Trust and its assets the maximum growth in both capital and revenue terms.

## 6. NATURE/...

WRN  
M.T.M. EDC  
Bm

## 6. NATURE OF THE TRUST

- 6.1 The Trust shall be a body corporate capable of suing and being sued in its own name and it shall have a separate and independent identity from that of its Members.
- 6.2 The Trust shall have perpetual succession despite changes in membership.
- 6.3 The Trust shall be non-partisan, but shall not discriminate against Members because of their political affiliation, sex, gender, ethnicity or religion.

## 7 BOARD OF TRUSTEES

- 7.1 There shall be a Board of Trustees which shall be charged with the duty of formulating the Trust policies, mission, vision and supervising its direction and progress.
- 7.2 The Board of Trustees shall ensure community support and participation in the activities of the Trust.
- 7.3 Upon registration of this Trust, the persons named in Article 4 hereof shall become the Interim Trustees for a maximum period of 4 years from the date of such registration or remainder of their term of office. Such persons shall in connection with the establishment of the Trust have confirmed in writing their willingness to the formation of this Trust and membership to the Board of Trustees for the aforesaid period.

7.4 The Interim/...

WRN EDR  
M.T.M BM

- 7.4 The Interim Trustees shall be responsible for the recruitment of Members and shall convene the first Annual General Meeting within one year after the registration of this Trust.
- 7.5 The Board shall have the power to continue functioning notwithstanding any vacancy provided that the total number of Trustees shall not fall below half the Members of the Board at any time.
- 7.6 Membership of the Board shall be such that the majority of the Members at any given time are from within SADC.

## 8. COMPOSITION OF THE BOARD OF TRUSTEES

- 8.1 The Board of Trustees shall consist of the following office bearers:
- (a) A minimum of five persons representing Members, as elected by the Annual General Meeting plus the representative from the host institution;
  - (b) Not more than two Trustees should originate from Member institutions in one country;
  - (c) WaterNet Manager who shall serve as the Secretary to the Board of Trustees.
- 8.2 All elected Members of the Board shall hold office for four (4) years and shall be eligible for re-election for one more consecutive term.
- 8.3 No Trustee shall be a full time or part time employee of the Trust unless the Trustee is an Ex- Officio Member.

8.4 The Board/...

W.N.J. EDC  
M.T.M. BM

- 8.4 The Board of Trustees shall meet at least twice a year and whenever necessary to discuss WaterNet business.
- 8.5 The Board of Trustees shall elect among them a Chairperson.

9. **POWERS AND RESPONSIBILITIES OF THE BOARD OF TRUSTEES**

9.1 Under the general guidance of the general membership to be provided at general meetings, the administration and management of the Trust shall be vested in the Board of Trustees, and it shall include:

9.1.1 Generally, to deal with the property and funds of the Trust for the objectives and purposes of the Trust and to that end to enter into all such contracts and to do all such other acts and things as may be necessary or expedient from time to time.

9.1.2 To enter into contracts, sign leases, acquire permits or insurance as may be necessary.

9.1.3 To open, operate and close banking accounts in the name of the Trust with commercial banks and to operate on such accounts as may be necessary for the proper conduct of the financial affairs of the Trust. All cheques, promissory notes, bills of exchange and other instruments or documents which may be required in the conduct and administration of the financial affairs of the Trust shall be signed by such persons as the Board may by resolution from time to time appoint.

9.1.4 To appoint/...

WRN EDK  
M.T.M BU

- 9.1.4 To appoint, hire, dismiss, and engage agents and professional advisors or experts and to set their conditions of service and remuneration.
- 9.1.5 To fix and pay allowances and any costs and charges to any person or body in furtherance of the objectives of the Trust.
- 9.1.6 To form standing or ad hoc committees in the interest of the Trust, and to determine the membership, duties, rights and obligations of such committees as it sees fit and to dissolve such standing or ad hoc committees in their discretion.
- 9.1.7 To delegate powers to such agents or committees of the Trust as it sees fit.
- 9.1.8 To institute, conduct, defend, compound or abandon any legal proceedings by or against the Trust or any of its agents, or otherwise concerning the affairs of the Trust and also to compound and allow time for payment or satisfaction of any debts due to the Trust and of any claims or demands by and/or against the Trust.
- 9.1.9 To delegate and grant powers of attorney in the interest of the Trust.
- 9.1.10 To fix and pay traveling allowances and other costs and charges to any person or body in furtherance of the objectives of the Trust.
- 9.1.11 To collect/...

WRN EDK  
M.J.M. BM

- 9.1.11 To collect dividends, rentals, subscriptions, interest and other income from time to time accruing to the Trust and to grant and issue valid receipts.
- 9.1.12 To manage the Trust on behalf of its Members for the stated objectives of the Trust.
- 9.1.13 To cause proper books of account to be kept of the Trust and to ensure that these are audited at least once in each financial year.
- 9.1.14 To review financial and operational activities of the Trust and to report regularly to its Members on those activities.
- 9.1.15 To apply for the necessary permits, licenses, leases as may be required for the purposes of the Trust.
- 9.1.16 To attend regular meetings of the Board and to endeavor to keep informed of such activities.
- 9.1.17 To protect the interests of the Trust to the best of their abilities and to at all times, disclose any interest whether it be pecuniary, financial, direct or indirect, which they may have in any company or person which or who may contract or otherwise deal with the Trust. Provided that such disclosure is in full and providing the Trustees approve of same, a Trustee shall not be disqualified thereafter for possession of such interest or in respect of profit therefrom, provided that where a Trustee has an interest in any matter he shall not be entitled to vote on any decision concerning such matter.
- 9.1.18 To co-ordinate/...

WRN  
M.T.M  
EDK  
Bm

9.1.18 To co-ordinate fund raising activities and acquire funds, donations assistance from whosoever for purposes of achieving the objectives of the Trust.

9.1.19 To undertake any other activities which the Board shall deem fit to undertake, subject to the provisions of this Deed.

## 10. TERMINATION OF MEMBERSHIP OF THE BOARD OF TRUSTEES

10.1 Any Trustee may resign from the Board by giving to the Chairperson and Secretary for the time being thirty (30) days written notice of his or her intention so to do.

10.2 A Trustee shall be disqualified and his or her position as Trustee automatically terminated by:

10.2.1. Death of the Trustee;

10.2.2 Declaration by a Court of competent jurisdiction that the Trustee is insolvent;

10.2.3 Declaration by a committee of competent jurisdiction or by competent person that the Member is insane or of unsound mind or judgment;

10.2.4 Being convicted of a criminal offence or misdemeanour punishable by imprisonment without the option of a fine;

10.2.5 Upon failure to attend three consecutive Board meetings without apology or without reasonable grounds for such absence;

10.2.6 A finding/...

WRW  
M.T.M  
EBK  
BM

10.2.6 A finding by at least two-thirds of the Trustees present at a duly convened meeting that there has been gross impropriety in the conduct of the Trustee, which conduct would include but not be limited to, a failure of disclosure of interest, mis-management of Trust assets, or the engagement by the Trustee in any trade or pursuit which, in the opinion of the Board, is of such a nature as to bring the name of the Trust into disrepute.

## 11. PROCEEDINGS OF THE BOARD OF TRUSTEES

- 11.1 Meetings of the Board shall be convened at the direction of the Chairperson or on a written request from at least three Members of the Board.
- 11.2 Written notice of holding of a Board Meeting shall be sent to all Trustees at least fourteen (14) days before the proposed date of the meeting.
- 11.3 If the Chairperson and Secretary agree that a matter is urgent, a Special Meeting of the Board may be called on three days written notice. Only matters of which notice has been given may be dealt with at a Special Meeting of the Board.
- 11.4 The Chairperson shall preside at every meeting of the Board or in his or her absence; the Members present shall choose one of their number to preside at the meeting.
- 11.5 The Board shall invite persons representing Supporting Members and a representative of SADC Secretariat to provide an advisory and consultative role only and shall not have voting powers.

11.6 The Board/...

WRN  
M.T.M  
EDC  
BH

- 11.6 The Board shall, invite the supporting Members to its meetings provided that such Members shall have an advisory and consultative role only and shall have no voting rights.
- 11.7 All motions except those specified elsewhere in this Deed proposed for a decision by the Board at a meeting at which quorum constituted shall be determined by a simple majority of votes of the Members thereof present and entitled to vote.
- 11.8 Each Member present including the Chairperson shall have one vote and in the event of a tie the Chairperson or person presiding shall have in addition to an original vote a casting vote.
- 11.9 Board meetings shall be held at a place to be specified in the written notice convening the meeting.

**12. COLLECTIVE ACTION WITHOUT MEETING**

Any action that may be taken by the Board of Trustees in terms of this Deed may be taken without a formal meeting if at least 50% (fifty percent) of the voting Trustees individually or collectively consent in writing to such an action, providing that all Trustees have been informed in writing of the proposed action. Such written consent shall have the same force and effect as if it had been agreed on at a properly convened meeting of the Board of Trustees.

**13 COMMITTEES AND SUBCOMMITTEES**

- 13.1 The Board may establish such standing and ad hoc committees and or subcommittees, as it considers necessary for or desirable for the discharge of its functions and the achievement of the objectives/...

WJRN EDC  
M.T.M JBM

objectives of Trust.

- 13.2 A committee / subcommittee shall consist of such persons, whether Members of the Board or not, as the Board may appoint thereto, and the Board may appoint one of its Members to be the Chairperson thereof.
- 13.3 The Member of a committee/subcommittee shall hold office for such times as the Board may direct.
- 13.4 The Board shall determine the functions of the committee/subcommittee and may delegate to such committee/subcommittee, either absolutely or conditionally, the power to discharge any function of the Board on its behalf.
- 13.5 The Board may delegate control of such of their finances and other resources that they in their discretion shall deem suitable for use by any committees/subcommittees that they may appoint in pursuit of the Trust.
- 13.6 Without limiting the generality of the foregoing, the General Meeting of the Trust may form such committees and subcommittees as it may deem necessary and in the interest of the Trust.

#### 14. EXECUTIVE MANAGEMENT

- 14.1 There shall be an Executive Management of the Trust answerable to the Board of Trustees and responsible for the daily management of the Trust.

14.1 The Executive/...

WRN ESK  
M.T.M B.M

14.2 The Executive Management shall be headed by the Manager appointed by the Board Trustees and shall be composed of such other officers as the Board may determine.

14.3 Subject to such policies and directions as may be set by the Board, the Executive Management shall inter alia:

14.3.1 Plan, organise, manage and control the full range of activities of WaterNet Trust to facilitate the achievement of the Trust objectives;

14.3.2 accurately account for all financial transactions and report accurately on the state of the Trust's financial status;

14.3.2 Provide effective administrative support and ensure a systematic flow of communication and information within the organisation and externally.

## 15. PATRON

15.1 The Trust may have an honorary patron (s), who shall be appointed by the Board. The patron shall not be required to attend the Board's ordinary meetings but may do so either at his or her own discretion or by special invitation of the Board of Trustees.

## 16. MEMBERSHIP OF THE TRUST

16.1 Members of WaterNet are institutions based in the Region that are involved in training, and/or education, and/or research in fields

directly/...

WRN EDK  
M.T.M BM

directly related to Integrated Water Resources Management desirous of promoting the objectives of the Trust.

16.2 Every applicant for admission as a Member shall make an application in writing signed by the applicant, or in the case of a non-governmental organisation or other body, by some duly authorized person. Such application shall be in such form as may from time to time be prescribed by the Board, and the signature thereof on behalf of the applicant shall be deemed to be an agreement by him, if elected, to be bound by the provisions of the Deed of Trust, and by any regulations made from time to time by Trustees.

16.3 Prospective Members shall submit written applications for membership to the Secretariat. Upon approval by the Annual General Meeting of WaterNet, an applicant shall be a Member of WaterNet.

16.4 Each Member shall be entitled to one vote at a General Meeting, provided they are in good financial standing with the Trust.

## 17. TERMINATION OF MEMBERSHIP OF THE TRUST

17.1 Membership of the Trust shall be terminated by or on:

17.1.1 Resignation of the Member provided that a Member so resigning should pay any debts and arrears of any kind, which may be owed to the Trust. The resigning Member shall thereafter not be

eligible/...

WRI EDC  
M.T.M BM

eligible to any benefits or conveniences, which may be extended by the Trust to its Members. The Member concerned shall give one month's notice to be delivered to the Secretary of the Board of Trustees, provided that if such Member is a Trustee then he or she shall give three months notice;

17.1.2 Expulsion from membership by a resolution of the Annual General Meeting taken on at least by two thirds majority of Members present and voting.

## 18. SHAREHOLDING

- 18.1 If it becomes necessary to appoint a nominee to hold shares, stock or debentures on behalf of the Trust, that nominee shall be appointed by the Board of Trustees from amongst its Members.
- 18.2 The nominee shall sign a share transfer form, leaving blank the space for signature of the transferee.
- 18.3 The nominee shall sign a declaration, which declares that he or she is not the bona fide owner of the shares, that they are registered in his or her name for convenience only, and that he shall authorise the Secretary of the company to pay all dividends on the said shares to the Trust.
- 18.4 The share certificate, share transfer form and declaration of Trust, shall be kept in a safe place, either at the Trust's Head Office, or with the company Secretary of the relevant company.

19 QUORUM/...

WRN  
M.T.M  
EDK  
Bm

## 19. QUORUM

- 19.1 All meetings of the Board of Trustees shall be held only upon the attendance of half of all eligible Members.
- 19.2 The quorum for the General Meeting shall be half of the total membership entitled to vote at such meetings.
- 19.3 Should the requisite number of Members to comprise a quorum not be present or available within 45 minutes of the hour fixed for the start of the meeting, the meeting in question shall stand adjourned until a date to be agreed at that meeting. At the adjourned meeting the Members present, regardless of number shall constitute a quorum.
- 19.4 Should any Annual General Meeting stand adjourned, by virtue of this article or otherwise, the adjourned meeting shall be held not more than 21 days after the date of the original Annual General Meeting. Notice of the time, date and place of such adjourned meeting shall be dispatched to all Members not more than seven days after the date of the original Annual General Meeting.

## 20. FINANCIAL MANAGEMENT

- 20.1 The Trustees shall cause proper books of accounts to be kept in accordance with accepted accounting procedures.
- 20.2 All cheques issued by the Trust shall be signed by such officers and Trustees as the Board of Trustees may by resolution appoint.

20.3 The books/...

WRN EDC  
M.T.M Bm

- 20.3 The books of account shall be kept at such place or places as the Trustees may deem fit.
- 20.4 Audited accounts shall be presented to the Members at the Annual General Meeting.
- 20.5 The income and assets of the Trust, wheresoever derived, shall be applied solely towards the promotion of the objects of the Trust, provided that nothing herein shall prevent the payment in good faith of reasonable and proper remuneration to any officer or servant of the Trust in return for services rendered to the Trust, nor prevent the payment of reasonable expenses incurred by any officer, Member or Trustee incurred on behalf of the Trust or of sitting allowances for Trustees as may be determined by Members at a duly convened Annual General Meeting.
- 20.6 Membership of the Trust does not and shall not give any Member any right, title, interest, claim or demand on or to any of the monies, property, or assets of the Trust.
- 20.7 No Trustee shall be in any way liable for any loss or damage that may be suffered by the Trust as the result of any investments of any of the funds or other assets of the Trust, or through any act or omission by him or by any other Trustee in the execution of the functions, powers and duties of the Board or of a Trustee acting in good faith under this Deed or in relation thereto, unless the same happens through his or her own fraud or dishonesty.
- 20.8 The Board of Trustees may promulgate such financial, administrative and / procurement regulations as it deems fit.

20 ANNUAL/...

WRN  
M.F.M  
EAC  
B.M

## 20. ANNUAL GENERAL MEETING

21.1 The Annual General Meeting of the Trust shall be held once every year at such time (within a period of not more than twelve months after the end of the financial year) and place as may be determined by the Board.

21.2 Notice of the date, time and place of the Annual General Meeting shall be dispatched by the Secretary to all Members at least twenty one days before the date of such a meeting.

21.3 The business of the Annual General Meeting shall be:

21.3.1 To read and confirm the minutes of the previous Annual General Meeting, and of any special general meeting, held during the year;

21.3.2 To receive statement of the financial position of the Trust, including audited financial statements and an audited balance sheet;

21.3.3 Approve strategic policy of WaterNet and its general programme of activities;

21.3.4 Approve membership of prospective Members and Supporting Members;

21.3.5 Elect the Members of the Board of Trustees;

21.3.6 Decide on the dissolution and liquidation of WaterNet;

21.3.7 Adopt/...

WRN EDC  
M.T.M. BM

21.3.7 Adopt any revisions to this Trust;

21.3.8 Deal with all matters placed on its agenda by the Board of Trustees;

21.3.9 Approve or reject the Annual Report submitted to it by the Trustees;

21.3.10 Approve or reject the Annual Plan and the Annual Budget submitted to it by the Trustees.

21.4 The rules for the conduct of the Annual General Meeting shall be as follows:

21.4.1 The Annual General Meeting shall be chaired by the Chairperson of the Board or another Trustee nominated by him;

21.4.2 At an Annual General Meeting a majority vote of those present and entitled to vote shall be by secret ballot or such other method as the Members may by consensus agree to.

## 22. SPECIAL GENERAL MEETINGS

22.1 A Special General Meeting may be called by the Board of Trustees whenever it may deem fit, but must call one within 30 days of the receipt of a request in writing signed by not less than 10% of Members of the Trust entitled to vote.

22.2 Notice/...

WRN      EDK  
M.T.M      BM

- 22.2 Notice of the time, date and place of such a special meeting shall be dispatched to all Members at least 7 days before the meeting.
- 22.3 A special general meeting shall be competent only to deal with the particular business of which due notice has been given.
- 22.4 The rules for the conduct of special general meetings shall be the same as in article 21.

23. ADJOURNMENT

- 23.1 When the Chairperson, Trustees or Members adjourn a General Meeting due to shortage of time, lack of a quorum or other extenuating circumstances, the adjourned meeting shall be held not more than twenty-one days after the date of the original General Meeting.
- 23.2 Notice of the time, date and place of the next meeting shall be announced in the same meeting and notice of the time, date, and place of such an adjourned meeting shall be dispatched to all Members not more than seven days after the date of the original meeting.

24. CONFLICT RESOLUTION

- 24.1 The following procedures shall be adopted for resolving official conflicts amongst office bearers of the Trust, between office bearers and ordinary Members and between the Trust as a legal entity and other legal persons.

24.2 Conflicts/...

WRN EDE  
M.T.M BM

24.2 Conflicts between office bearers shall be resolved by a Disciplinary Committee which shall be appointed by the Board of Trustees from time to time.

24.3 Conflicts involving the Trust and other legal parties shall be resolved first by the Disciplinary Committee, followed by the Board if the conflicts remain unresolved.

## 25. REFERRAL TO THE GENERAL MEMBERSHIP

25.1 In the event of the Board failing to solve or settle any problem or matter, then such a problem or matter shall be referred to the Annual or Special General Meeting of the Trust. The Majority decision shall prevail and shall be considered as the solution to the problem, provided that the decision does not contravene the Laws of Botswana.

## 26. AMENDMENT OF THE DEED OF TRUST

26.1 The provisions of the Deed may be amended, or added to, in a manner not inconsistent with any of the other provisions of this Deed by a two-thirds majority vote at a duly convened General Meeting of the Trust.

26.2 No such amendment shall be of any force or effect until duly submitted to and registered with the Registrar of Deeds of Botswana.

27 DISSOLUTION/...

WRN      EDK  
M.T.M      Bm

## 27. DISSOLUTION OF THE TRUST

27.1 In the event that Members of the Trust decide to dissolve the Trust, and provided that they are satisfied that it is just and equitable that the activities of the Trust shall cease, any funds or assets left after the liquidation of liabilities, shall be paid, made over and distributed among such organizations, agencies or bodies as the Trustees may in their discretion deem suitable, provided that the objectives of these organizations shall be to enhance in some manner the general welfare and development of the Region.

27.2 Before any decision to dissolve the Trust can be made notice of the motion must duly be made as an agenda item, and the motion must be approved by a two-thirds majority of a duly convened General Meeting.

## 28. BOTSWANA LAW TO APPLY

28.1 This Deed of Trust, and everything herein mentioned shall be construed and have effect in all respects based on the Laws of Botswana and provisions of this Deed shall operate in accordance with such laws, and the Courts of Botswana shall have exclusive jurisdiction to determine all questions and matters relative to this Deed or arising out of it.

## 29. EFFECTIVE DATE

The Trust shall come into being upon execution of this Deed.

AND THE/...

EDK  
WRN M.T.M  
Bm

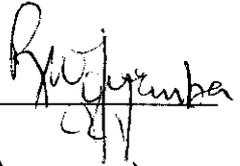
AND THE APPEARER acting under and by virtue of the aforesaid Resolution granted to him or her by his or her principals did q.q. declare on behalf of the Trustees to accept appointment in terms of the Deed, and to be bound by the terms and conditions thereof.

THUS DONE AND EXECUTED AT GABORONE on this 29<sup>th</sup> day of December 200...  
in the year of Our Lord (Two Thousand and Six) 2006., in the presence of  
the undersigned witnesses, and of me the said Notary.

M.T.M  
BM  
EDK  
WRN

**AS WITNESSES**


  
(Appearer)

in my presence



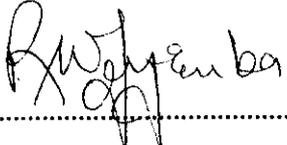
**NOTARY**

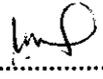
EXTRACTS FROM THE MINUTES OF THE MEETING OF THE INTERIM BOARD OF  
TRUSTEES FOR WATERNET TRUST HELD AT LILONGWE, MALAWI ON THE 3<sup>RD</sup> DAY  
OF NOVEMBER 2006.

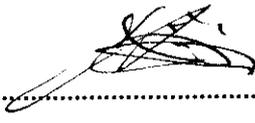
RESOLVED THAT:

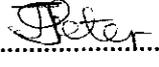
- 1 WaterNet be registered as a Trust in terms of and in accordance with the laws of Botswana.
  
- 2 **WILSON RUFARO NYEMBA**, in his capacity as the Interim Chairperson of WaterNet Trust be and is hereby authorized to appear before, **BAATLHODI MOLATLHEGI**, Notary Public duly admitted and practising in Botswana for purposes of effecting registration of WaterNet as a Trust and to authorize the said **BAATLHODI MOLATLHEGI** to do all that is necessary and lawful to effect the registration of WaterNet as a Trust in accordance with the laws of Botswana.
  
- 3 Further that **WILSON RUFARO NYEMBA**, in his capacity aforesaid, be and is hereby authorized to sign all documents and or do all such things as may be necessary and / or incidental to the proper registration of WaterNet as a Trust in terms of and in accordance with the laws of Botswana.

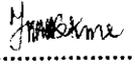
CERTIFIED AS A TRUE EXTRACT OF THE MINUTES OF THE AFORESAID MEETING OF  
THE INTERIM BOARD OF TRUSTEES OF WANTERNET TRUST.

  
.....  
WILSON RUFARO NYEMBA - Interim Chairperson

  
.....  
WAPULUMUKA OLIVER MULWAFU - Interim Trustee

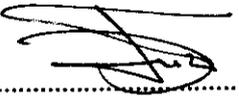
  
.....  
LUCIA TUYENI-KELAO KAFIDI - Interim Trustee

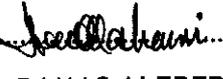
  
.....  
GRACIANA PETER - Interim Trustee

  
.....  
FRANK KASIIME - Interim Trustee

  
.....  
DOMINIC MAZVIMAVI - Interim Trustee

  
.....  
MAMPITI ELIZABETH MATETE - Interim Trustee

  
.....  
DINIS LUIS JUIZO - Interim Trustee

  
.....  
DAMAS ALFRED MASHAURI - Interim Trustee

## ANNEX 2: WATERNET MEMBERS AS OF NOVEMBER 2006

1. Dept. of Geology, University of Botswana, Gaborone
2. Centre for Applied Research, Gaborone
3. Harry Oppenheimer Okavango Research Centre, University of Botswana, Maun
4. National Centre for Research in Natural Sciences, Bukavu, Kivu
5. Faculty of Engineering, University of Lubumbashi, Lubumbashi
6. Dept. of Biomechanical and Environmental Engineering, Jomo Kenyatta University of Agriculture and Technology, Nairobi
7. Institute for Meteorological Training and Research, Nairobi
8. Dept. of Meteorology, University of Nairobi, Nairobi
9. Dept. of Agricultural Economics and Extension, National University of Lesotho, Roma
10. Dept. of Civil Engineering, Chancellor College, University of Malawi, Zomba
11. Dept. of History, Chancellor College, University of Malawi, Zomba
12. Dept. of Geography and Earth Sciences, Chancellor College, University of Malawi, Zomba
13. Geography Department, Mzuzu University, Mzuzu
14. Faculdade de Agronomia, Universidade Eduardo Mondlane, Maputo
15. Depto. de Engenharia Civil, Universidade Eduardo Mondlane, Maputo
16. University of Mauritius, Reduit
17. Desert Research Foundation of Namibia, Windhoek
18. School of Engineering, Polytechnic of Namibia, Windhoek
19. School of Natural Resources and Tourism, Polytechnic of Namibia, Windhoek
20. Faculty of Agriculture and Natural Resources, University of Namibia, Windhoek
21. Centre for Conflict Resolution, University of Cape Town, Cape Town
22. Dept. of Earth Sciences, University of the Western Cape, Cape Town
23. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town
24. Centre for Southern Africa Studies, University of the Western Cape, Cape Town
25. International Water Management Institute, Africa Regional Office, Pretoria
26. Freshwater Research Unit, University of Cape Town, Cape Town
27. African Centre for Water Research, Cape Town
28. School of Law, University of the Witwatersrand, Johannesburg
29. School of Civil and Environmental Engineering, University of the Witwatersrand, Johannesburg
30. School of Bioresources Engineering and Environmental Hydrology, University of Natal, Pietermaritzburg
31. Dept. of Soil, Crop and Climate Sciences, Faculty of Natural and Agricultural Sciences, University of the Free State, Bloemfontein
32. Dept. of Hydrology, University of Zululand, Kwadlangezwa
33. Training and Instructional Design Academy of South Africa, Pretoria
34. Dept. Geography, Environmental Science and Planning, University of Swaziland, Kwaluseni
35. Dept. of Water Resources Engineering, University of Dar es Salaam, Dar es Salaam
36. Institute of Resource Assessment, University of Dar es Salaam, Dar es Salaam
37. Dept. of Geography, Faculty of Arts and Social Sciences, University of Dar es Salaam, Dar es Salaam
38. Faculty of Agriculture, Sokoine University of Agriculture, Morogoro
39. Institute of Environmental and Natural Resources, Makerere University, Kampala
40. Dept. of Civil and Environmental Engineering, University of Zambia, Lusaka
41. Dept. of Geology, School of Mines, University of Zambia, Lusaka
42. Faculty of Agriculture and Natural Resources, Africa University, Mutare
43. Institute for Water and Sanitation Development, Harare
44. Dept. of Civil and Water Engineering, National University of Science & Technology, Bulawayo
45. Centre for Applied Social Sciences, University of Zimbabwe, Harare
46. Dept. of Civil Engineering, University of Zimbabwe, Harare
47. Dept of Geography and Environmental Science, University of Zimbabwe, Harare
48. Dept. of Geology, University of Zimbabwe, Harare
49. Department of Environmental Science and Technology, Chinhoyi University of Technology, Chinhoyi
50. Dept. of Soil Science and Agricultural Engineering, University of Zimbabwe, Harare
51. Southern Africa HIV/AIDS Information Dissemination Services, Harare
52. Faculty of Humanities and Social Sciences, Africa University, Mutare

### Supporting Members:

1. SADC Water Division, Directorate for Infrastructure and Services, Gaborone
2. Global Water Partnership-Southern Africa
3. Netherlands government
4. Swedish government
5. UNESCO-IHE Institute for Water Education, Delft

## **ANNEX 3: RULES GUIDING CORPORATE MEMBERS OF WATERNET**

### **Definitions**

These rules apply to Corporate Members as distinct from Members.

Members are those contemplated by WaterNet's founding membership, i.e. university departments and non profit-making training institutions.

Corporate Members include private training providers or training departments of private companies whose activities in the field of education, training and capacity building form all or part of a business enterprise.

### **Aims**

These rules are intended to ensure that the vision of WaterNet is implemented fairly across the range of possible memberships, without precluding, unfairly prejudicing, or providing any advantage to any class of member. It is expected that the primary aim of any organisation or institution, in applying to join WaterNet, is to fulfil the vision and mission of WaterNet and to avail themselves reciprocally of the networking, rather than market-related opportunities, afforded by WaterNet.

Competition and rivalry between members of any class is discouraged and is out of keeping with the aims, vision and mission of WaterNet.

Corporate membership is invited from private companies involved in education, training and research who are able to demonstrate their contribution and experience in capacity building in integrated water resource management in the Southern African region.

### **Application**

On application to join WaterNet, Corporate Members should demonstrate, through their portfolio of courses and current work, their commitment to WaterNet's vision of equitable and sustainable utilisation of water for social, environmental justice, economic integration and economic benefit for present and future generations in Southern Africa.

Their contribution to the field of integrated water resource management in terms of their ability to build capacity and provide education and training should be described in the context of both the topics covered, and the regions in which the services have been offered.

In submitting their position paper, prospective Corporate Members should demonstrate their capacities and strengths in their field, and be able to indicate specifically how these will be used to actualise WaterNet's vision.

The standard application form remains largely appropriate for the application of new Corporate Members with minor amendments.

### **Access to funding**

Corporate Members are, by definition, distinguished from Members by their market-related approach to education, training, and associated activities. As such, Corporate Members and the staff employed by them and/or who represent them are precluded from certain areas of support and funding (WaterNet Funds) to which Members have access.

However employees of Corporate Members may compete on an equal basis with other applicants for WaterNet Fellowships.

### **WaterNet governance**

As members of WaterNet, Corporate Members may involve themselves to the same extent as Members in the management and administrative structures of the network including attendance of the Annual General Meeting.

### **Steering Committee**

Employees and representatives of Corporate Members may make themselves available for nomination to the Steering Committee of WaterNet. In such an event the normal conditions apply as for “Elected Steering Committee Members” drawn from the Member institutions.

### **Professional services**

Corporate Members and Members may offer their professional services in their stated core competency areas to the Management and Secretariat structures of WaterNet on an equal footing and/or in partnership with other Members.

WaterNet will solicit interest, award the responsibility for tasks (such as training facilitation, programme organisation, learning material design and development, etc.) approve rates, and assign funds for professional services at its discretion and in consultation with the Steering Committee where appropriate.

**ANNEX 4: MEMBERS ANNUAL REPORTING PRO-FORMA**



Building Capacity for Water Resources Management in Southern Africa

## Member Report on participation in WaterNet Activities

**Period under Review**

1 September to 31 August

**Year**

*This pro forma has been prepared to allow members to report on WaterNet activities that they and their staff have been involved in, on an annual basis. It covers all areas of WaterNet core activities and members are requested to fill in those sections where they have participated. This report is meant to measure the effectiveness of the network, to help highlight the successes and to identify gaps in forming a strong member-driven organisation.*

**Name of Member Institution:**

*Postal Address*

*Physical Address*

*Representative*

*Alternative Contact*

Name

Name

Email

Email

Tel.

Tel.

Fax

Fax

### 1. Regional Masters Programme in IWRM

*Please tick the appropriate box:*

Was your institution involved in the Masters programme?

Yes No

**(if no, proceed to question 2)**

i. Did your institution participate in planning and/or hosting of the Masters programme?

Yes No

If yes, please give details:

ii. Did your institution deliver (teach) any of the programme modules?

Yes No

If yes, please give details:

iii. Did your institution develop or review any programme modules?

Yes No

If yes, please give details:

iv. Was your institution involved in quality control of the programme or its modules?

Yes No

If yes, please give details:

v. Was your institution in any other way involved in the Masters programme?

Yes No

If yes, please give details:

<b>2. Professional Training (WaterNet professional training courses)</b>		<i>Please tick the appropriate box:</i>	
Was your institution involved in any of WaterNet's professional training courses? <b>(if no, proceed to question 3)</b>	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
i. Did any staff of your institution participate in a WaterNet professional training course as a participant/facilitator?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
ii. Was your institution involved in any of the WaterNet language courses?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
iii. Did your institution participate in planning and/or hosting of a WaterNet professional training course?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
iv. Did your institution deliver (facilitate) any WaterNet professional training course?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
v. Did your institution develop WaterNet professional training course materials	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
vi. Was your institution in any other way involved in WaterNet professional training course?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
<b>3. Research (WaterNet collaborative research programmes)</b>		<i>Please tick the appropriate box:</i>	
i. Did your institution place Masters students or interns in either the Challenge Program on Water and Food or the Smallholder Systems Innovation Research Project?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
ii. Did your institution participate in any other way in research activities under the Challenge Program on Water and Food?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
iii. Did your institution participate in any other way in research activities under the Smallholder Systems Innovation Research Project?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			
iv. Did your institution develop any research proposals under WaterNet?	Yes	No	<input type="checkbox"/> <input type="checkbox"/>
If yes, please give details:			

**4. Outreach** *Please tick the appropriate box:*

Did your institution participate in any of the WaterNet outreach activities? Yes No  
**(if no, proceed to question 5)**

If yes, please give details:

Did your institution participate in the annual WaterNet/WARFSA/GWP-SA Symposium? Yes No  
**(if no, proceed to question 5)**

**i. Who represented your institution at the Symposium or WaterNet AGM?**

Name	Poster or Paper	Chair or Rappoteur	Was the paper eventually published?

**5. WaterNet Funds**

Did your institution apply for any of the following funds?

Fund	Amount (US\$)	Used for?
Nodal Strengthening Fund		
Symposium Fund		
Publication Fund		
Curriculum Development		
Staff Exchange Fund		
Catchment Partnership Fund		
Fellowship and MSc dissertation Fund		
Staff Development Fund		

**6. General Comments**

Please use this space for comments and/or suggestions related to WaterNet i.e. how did your involvement add value to WaterNet and how did you benefit from WaterNet.

**Sign:**  **Date:**

## ANNEX 5: ADVERTISEMENT FOR RESEARCH LEADER POSITION

### Vacancy WaterNet Research Leader

WaterNet is a regional network for capacity building in integrated water resources management (IWRM) in Southern Africa, with a membership of 48 university departments and research institutions in fourteen countries.

WaterNet facilitates a number of projects to build capacity of professionals to conduct water related research and to train and educate practicing water sector professionals in southern Africa. On one of its research projects entitled “The Challenge of Integrated Water Resource Management for Improved Rural Livelihoods: Managing Risk, Mitigating Drought and Improving Water Productivity in the Water Scarce Limpopo Basin” also referred to as CP-PN17 has now taken off in all of the four countries involved, namely, Botswana, Mozambique, South Africa and Zimbabwe and requires strategic leadership support. In addition, there are a number of initiatives that require a senior person to work with the WaterNet Manager. WaterNet wishes to recruit a Research Leader, reporting to the WaterNet Manager, with two key result areas: providing leadership to the CP-PN17 project and working with the WaterNet Manager. The job description includes:

#### *Within the Key Result Area of Project Leadership:*

- Maintain effective communication with the global Challenge Program on Water and Food (CPW&F) Management Team, in order to ensure smooth transactions and coordination and to solve any issues that may arise.
- Provide a link with the CPW&F scientific management.
- Provide overall supervision, guidance to the CP-PN17 Research Coordinator, support and mentoring to increase the effectiveness of project administration and coordination.
- Provide leadership on social, institutional and policy research.
- Advise the WaterNet Manager on any strategic management or substantive issues where a policy decision is required.
- Carry out similar duties under certain new initiatives or projects that may be developed.

#### *Within the Key Result Area of Working with the WaterNet Manager:*

- Provide technical and management assistance to the WaterNet Manager.
- Develop and maintain a system to ensure institutional memory of all WaterNet activities.
- Assist the WaterNet Manager on project proposal development and submission.

The suitable candidate shall have a good background in the water sector, hold at least a Masters Degree and proven track record of research in a water-related field and have experience in project leadership, research and training (professional or academic). Experience in social and institutional sciences, and skills to lead multi-disciplinary and multi-institutional research projects offer a distinct advantage. Applicants should be Southern African Development Community (SADC) nationals.

The position will be open as of January 2007, and will be based in Harare, Zimbabwe. A competitive and negotiable international package is offered.

Appointment will be for two years full-time, renewable subject to satisfactory performance. Suitable candidates are invited to submit an application letter, including motivation, curriculum vitae and the names and contact details of three referees by **8 December 2006**, to:

WaterNet Secretariat, PO Box MP 600, Mount Pleasant, Harare, Zimbabwe. Please also submit the letter and c.v. in electronic form by e-mail to: [waternet@eng.uz.ac.zw](mailto:waternet@eng.uz.ac.zw). For further inquiries, please contact the WaterNet Manager, Dr. Bekithemba Gumbo, phone +263 4 336725, e-mail [bgumbo@eng.uz.ac.zw](mailto:bgumbo@eng.uz.ac.zw).



A strategic programme of the  
SADC Water Sector

## **ANNEX 6: WATERNET AND CAP-NET MEMORANDUM OF UNDERSTANDING**

# Memorandum of Understanding



## Cap-Net Global Capacity Building Network

### A. Purpose of the Memorandum of Understanding

The purpose of this MoU is to formalise membership and participation of autonomous, formal and informal networks committed to capacity building in water into a global partnership called the *Cap-Net Global Network*. This MoU represents a commitment of the signatories to collaborate in the interest of promoting the development of capacity for the sustainable management of our water resources and sharing our respective resources and experience.

### B. Parties to the MoU

1. *Cap-Net* programme of UNDP  
Cap-Net is a programme of the United Nations Development Programme (UNDP) for Capacity Building on Sustainable Management and Development of Water Resources (represented by the *Cap-Net Secretariat*). Cap-Net is also an associated programme of the Global Water Partnership.
2. Southern Africa network for capacity building in IWRM, WaterNet  
The WaterNet network has a membership consisting of primarily capacity builders drawn from the SADC region and is represented by the network Manager, Dr Bekithemba Gumbo.

### C. General conditions of the MoU

The *Cap-Net Global Network* is characterised as primarily consisting of networks and partners committed to the delivery of capacity building services in the focus area of water.

Both parties commit to:

- Work together in a global network to develop and share knowledge, experience, and resources to scale up the delivery of capacity building on water resources and water services.
- Operate with full transparency and accountability to members with, for example, regular work planning and budgeting, progress and approved financial reporting.

# Memorandum of Understanding

- Work together in a spirit of mutual respect, acknowledging the autonomy of partners and acting always to represent the partnership and its members in a positive and professional manner.
- On a yearly basis produce and share work plans and budgets on the basis of which annual cooperative activities will be agreed.

## **D. Specific conditions**

The Cap-Net programme undertakes to:

- Assist the member network in accessing financial, technical and human resources to improve effectiveness of the network in capacity building.
- Promote and increase visibility and recognition of the member network as a respected entry point for capacity building in their geographic focus as well as a source of expertise at the global level.
- Facilitate the participation of the network in the management and direction setting for the Cap-Net Global Network.
- Permit use by the member network of the Cap-Net name and logo while a member of the global network.

The WaterNet network undertakes to:

- Facilitate the delivery of capacity building services for the sustainable management and development of water resources.
- Share expertise and resources across the Global Network for the achievement of common goals.
- Take up agreed responsibilities within the Global Network which may be decentralised to the member network.
- Keep the Global Network apprised of developments and changes in network management.
- Adoption and implementation of Cap-Net programme goals and principles.
- Provide responsible and timely contributions and reports on cooperative activities.

## **E. Duration of the MoU**

The MoU is valid for a period of three years but should be renewed in the intervening period in the event of significant changes in management of either partner.

# Memorandum of Understanding

## F. Termination/ renewal of the MoU

The MoU may be terminated or require renewal in the event of:

- Expiry.
- One month notice of withdrawal from the agreement by either party.
- Either party failing to comply with the conditions.

Termination does not affect the accountability of any partner or host institution for completion of financial agreements which are not completed.

## G. Signatures:

Representative of Cap-Net programme      Representative of the WaterNet network

Director, Dr Paul Taylor

Manager, Dr Bekithemba Gumbo

October 2006, Delft, Netherlands

Date, Harare, Zimbabwe

---

*If the network member is not a legal entity and expects to be receiving financial support through the Cap-Net programme this will be facilitated by an additional signature below:*

As the host institution for the WaterNet network we agree to receive funds and apply them on behalf of the network activities

Representative of Financial Host Institution

Signature

UNESCO-IHE Institute for Water Education

Prof Pieter van der Zaag, WaterNet Project  
Director

Date

Delft, Netherlands

## **ANNEX 7: WATERNET EIA, GENDER AND HIV/AIDS DISCUSSION PAPERS**



# Impact Assessment of the WaterNet Programme

Draft Document for Discussion

February 2006



Building Capacity for Water Resources Management in Southern Africa



A strategic programme  
of the SADC Water Sector



# Mainstreaming Gender In The Waternet Programme

Draft Strategy Paper for Discussion  
August 2006



Building Capacity for Water Resources  
Management in Southern Africa



A strategic programme of the  
SADC Water Sector



# Mainstreaming HIV/AIDS into WaterNet



Draft Strategy Paper  
for Discussion August 2006



Building Capacity for Water Resources  
Management in Southern Africa



A strategic programme of the  
SADC Water Sector

## ANNEX 8: IWRM STUDENTS DISSERTATION TITLES 2005-2006 INTAKE

Name	Sex	Nationality	Dissertation Title
DLAMINI Nokuthula	F	Swaziland	Assessing the applicability of rainwater harvesting in Swaziland
GOVERE Simbarashe	M	Zimbabwe	Coping with water scarcity in Eastern Africa. The potential role of intra-regional virtual water trade
KASHIMBI Juma	F	Tanzania	Study of socio-economic and land use changes in the catchment of lake Jipe
MUTHAMA Musyoka	M	Tanzania	Integrating safe water and safe sanitation for improving livelihoods of the urban poor
PASCAL Emmanuel	M	Tanzania	Study of nitrogen transformation in Lake Victoria
PHIRI Oliver	M	Malawi	Evaluations of constraints to sustainable hand pump use in rural water supply. The case of Dedza Groundwater Development project area in Malawi
RWARIBIJE Twine Teddy	F	Uganda	Assessment of fish catch ( <i>Oreochromis</i> spp) in the Mindu reservoir for the formulation of remedial measures
SIKAONA Abel	M	Tanzania	Conflict management in the Lower Moshi Irrigation Scheme (LMIS). A case study of lower Moshi Irrigation Project and the surrounding villages.
SHAMBOKO Beauty	F	Zambia	Assessment of the socio-economic impacts of the change in ecology and the Kafue Flats
BIRUNGI Zainab	F	Uganda	Active bio-monitoring of heavy metal contamination using fish as bio-indicator species
CHIUNDA Cressida	F	Zimbabwe	Productive water use patterns to sustain rural livelihoods
DEMBERERE Tendai	F	Zimbabwe	Sustainability of rural water supply and sanitation projects in Zimbabwe. A case of Mt Darwin District
KATSI Luckson	M	Zimbabwe	An assessment of factors that hinders or promote existing 'Multiple' water use systems and their impact on the sustainability of rural water supply systems in Zimbabwe
MUTENGU Sherman	M	Zimbabwe	An assessment of urban wastewater reuse for agricultural crop production. A case of Bulawayo
NDOKOSHO Johnson	M	Namibia	An assessment of management approaches in public drinking water utilities
NGWENYA Prudence	F	South Africa	Effect of soil degradation from grazing pastures on rangeland hydrology
NJIGUA Joyce	F	Kenya	An incorporation of environmental water requirements into the allocation of water resources in Ewaso Ng'iro catchment in Kenya
NKAMBULE	M	Swaziland	Evaluation of removal efficiencies of wastewater

<b>Name</b>	<b>Sex</b>	<b>Nationality</b>	<b>Dissertation Title</b>
Nhlanhla			constituents in an industrial distillery effluent from the Simunye Distillery
VILANCULOS Agostinho	M	Mozambique	GIS for water resource assessment and modelling
KUMWENDA Moses	M	Malawi	Prepaid water metering: Social experiences and lessons learned from Klipheuwel Pilot Project, South Africa
MFULA Tumisang	F	Botswana	Stakeholder accountability in water demand management in South-East Botswana
GUEZE Humberto	M	Mozambique	Stakeholder participation in the establishment of the Berg Catchment Management Agency, South Africa
ZONDE Memory	F	Zimbabwe	Empowered women in water management
SAPALO Ntumba	F	Zambia	Investments priorities in water supply and sanitation: the case of Stellenbosch Municipality

## **ANNEX 9: FELLOWSHIP OFFER LETTER**



Building Capacity for Water Resources Management in Southern Africa

[Date]

[Address of candidate]

Dear [Candidate name]

### **Offer of Fellowship for the WaterNet Regional Masters Programme in Integrated Water Resources Management**

On behalf of WaterNet and our collaborating host institutions, WaterNet is pleased to offer you a fellowship for the WaterNet Regional Masters Programme in Integrated Water Resources Management. You shall be enrolled at the [Name of core host institution], with the [Name] specialisation.

Your fellowship is conditional on official registration with the [Name of core host institution].

The fellowship award includes the following:

- Tuition fees and associated costs charged by the host institution(s)
- A return flight from your place of recruitment to the core host institution and airport transfer to the core host institution
- A return flight from the core host institution to specialisation host institution and airport transfers, where applicable
- Visas and immigration charges
- Medical insurance
- A stipend, payable monthly and on a pro-rata basis, designed to cover your costs such as accommodation, subsistence, local transport and personal stationery. The monthly stipend is set at:
  - USD [Amount] (Amount in words) in [Country where core host institution is located]
  - USD [Amount] (Amount in words) in [Country where specialisation host institution is located]
- A settling-in allowance, equivalent to one month's stipend, payable on your arrival at the core host institution
- A textbook allowance of USD [Amount], payable soon after your arrival at the core host institution

The offer also includes payment of some research costs for your dissertation project, from the MSc Dissertation Fund.

Your place of recruitment will be [Town and country as per indicated address/domicilium].

Support from the fellowship is not available for repeating or supplementing failed courses or modules.

As a WaterNet fellow, it is expected that you will fulfil the following responsibilities:

- Abide by the rules and regulations of the host institutions
- Full-time attendance of classes, excursions and examinations in the WaterNet Regional Masters Programme in Integrated Water Resources Management at the host institutions
- Fulfilling requirements of registration, discipline and conduct as lawfully required by the host institutions
- Complying with any reasonable request of the course coordinators at the host institutions

Should your studies under this fellowship be terminated by yourself or a third party for reasons deemed by WaterNet to be unsatisfactory, WaterNet reserves the right to recover the fellowship funds disbursed.

If you wish to accept this offer, please complete and return the top copy of this letter, along with the attached eligibility statement and a passport-sized photograph, to the WaterNet Secretariat.

Should you have any questions, please feel free to contact the WaterNet secretariat on +263-4-336727/333248 or [waternet@eng.uz.ac.zw](mailto:waternet@eng.uz.ac.zw).

Wishing you every success and fruitful studies,

Yours sincerely

[Name]  
Manager  
**WaterNet**

I accept/do not accept\* the offer of a Fellowship for the WaterNet Regional Masters Programme in Integrated Water Resources Management as specified above.

.....  
Signature

.....  
Date

---

\* delete inapplicable

## Eligibility Statement

I, ....., state that I am a citizen of ....., .....  
years of age and hold a good first degree, specifically the degree of .....  
awarded by ..... on .....

I am proficient in speaking and writing the English language, as evidenced by having received my university education in English / having passed the WaterNet professional course in English for Water Managers / having passed a TOEFL or other recognised language course\*

I am available for the entire period of the programme, including the dissertation project, and am physically and mentally able to take part in the entire programme.

I confirm that the above is true to the best of my knowledge

.....  
Signature

.....  
Date

---

\* delete inapplicable

## ANNEX 10: TRACER HYDROLOGY COURSE PARTICIPANTS AND BROCHURE

No	Name	Sex	Country	Institution	Email
1	Tumaini Anderson Kimaro	M	Tanzania	University of Dar es Salaam	kimaro@wrep.udsm.ac.tz
2	Victor Kongo	M	South Africa	University of KwaZule Natal	204512093@ukzn.ac.za
3	Manuel Magombeyi	M	South Africa	University of Witwatersrand	manumagomb@yahoo.com
4	Howard Mashango	M	Botswana	University of Botswana	
5	Prudence Thobekile Ngwenya	F	South Africa	Komati Water Basin Authority	prudencethobekile@yahoo.com
6	David Love	M	Zimbabwe	WaterNet	davidlove@science.uz.ac.zw
7	Pride Mangeya	M	Zimbabwe	Geology Department University of Zimbabwe	pride@science.uz.ac.zw
8	Alexander Mhizha	M	Zimbabwe	Department of Civil Engineering University of Zimbabwe	mhizha@eng.uz.ac.zw
9	Hodson Makurira	M	Zimbabwe	Department of Civil Engineering University of Zimbabwe	makurira@eng.uz.ac.zw
10	Japson Siwadi	M	Zimbabwe	Department of Civil Engineering University of Zimbabwe	jsiwadi@eng.uz.ac.zw
11	Marloes Mul	F	Netherlands / Zimbabwe	UNESCO-IHE/ University of Zimbabwe	mul@eng.uz.ac.zw
12	Farai Dondofema	M	Zimbabwe	WaterNet IWRM Master Student-UZ	greensolutions@operamail.com
13	Ngonidzashe Mufute	M	Zimbabwe	WaterNet IWRM Master Student-UZ	mufutengoni@yahoo.com

# Short Course Tracer Hydrology

11- 15 September 2006

Department of Civil Engineering University of Zimbabwe, Harare



University of Zimbabwe



Building Capacity for Water Resources Management in Southern Africa

UNESCO-IHE  
Institute for Water Education



## BACKGROUND

The use of tracers has been more and more widely used in hydrological studies. Tracers range from natural to artificial tracers, hydro-chemical to environmental isotopes. The occurrence of tracers in water bodies and stretches can give information on occurrences, trajectories and retention time of the water source. Depending on the type of tracer used, different aspects of the water source can be highlighted. This short course will highlight the basics behind tracer hydrology, introducing natural and artificial tracers, setting up a tracer experiment and will show one or two examples of the application of the use of tracers for hydrograph separation and age dating of groundwater.

## PURPOSE

This course will deal with the use of tracers in hydrology. As tracer hydrology is still a fairly uncharted territory in Southern Africa, it is intended to strengthen the capacity of researchers in the region for using tracers. Tracers can be used for determining the age of groundwater and hydrograph separation only to mention a few. The information gained by using tracers can be used further in water resources management.

## COURSE CONTENTS

1. Introduction
  - Basics, definitions, possibilities and approaches
2. Artificial tracers
  - Salt tracers
  - Fluorescence dyes
  - Drifting particles (spores, phages, bacteria etc.)
  - Types of tracers, properties, analysis, case studies
  - Planning and execution of tracer experiments
3. Natural tracers
  - Environmental isotopes (stable and radioactive isotopes)
  - Hydrochemical tracers
  - Pollution tracers
  - Abundance of tracers, properties, analysis, and case studies
  - Methods
  - Mixing, in particular hydrograph separation
  - Age dating of groundwater



*Short Course*  
**Tracer Hydrology**

*11- 15 September 2006*

Department of Civil Engineering University of Zimbabwe, Harare

#### ORGANISATIONAL ARRANGEMENTS

The short course will be coordinated by WaterNet. Organisation is the responsibility of the Department of Civil Engineering at the University of Zimbabwe. The short course is taught by Prof. Stefan Uhlenbrook from UNESCO-IHE, Institute for Water Education, The Netherlands. Prof. Uhlenbrook is a well known hydrologist, with a special interest in field hydrology and tracer studies. Training material will be provided during the workshop.

#### WHO SHOULD APPLY?

Participants should be graduate students (MSc and PhD level) or other interested researchers and professionals. Participants should have an educational background in hydrology or relevant working experience.

#### HOW TO APPLY

Prospective participants should submit a short curriculum vitae (maximum two pages) and brief motivation letter to WaterNet by 31 August 2006.

#### SPONSORSHIP

WaterNet will cover costs of meals and accommodation and provide per diems to cover incidental expenses during the workshop. Limited funding to cover costs of air travel to and from Harare is available for a limited number of WaterNet members. Other participants (non WaterNet members and members who are not awarded full support) will cover their own cost of travel to and from Harare.

#### CONTACT INFORMATION

Course Coordinators: Mr. Japson Siwadi & Ms. Marloes Mul  
Department of Civil Engineering, University of Zimbabwe  
[jsiwadi@eng.uz.ac.zw](mailto:jsiwadi@eng.uz.ac.zw) and [mul@eng.uz.ac.zw](mailto:mul@eng.uz.ac.zw)

Course Leader: Professor Stefan Uhlenbrook  
UNESCO-IHE, Institute for Water Education  
[s.uhlenbrook@unesco-ihe.org](mailto:s.uhlenbrook@unesco-ihe.org)

For [Applications](#): Mr. David Love, WaterNet  
[davidlove@science.uz.ac.zw](mailto:davidlove@science.uz.ac.zw)  
Tel. +263-4-333248/336725  
Fax. +263-4-33674

## ANNEX 11: MAINSTREAMING GENDER AND HIV/AIDS IN IWRM COURSE PARTICIPANTS AND BROCHURE

<b>No</b>	<b>Name</b>	<b>Sex</b>	<b>Country</b>	<b>Institution</b>	<b>Email</b>
1	Samuel Kainja	M	Malawi	Malawi Water Partnership	skainja@malawi.net
2	Jean Mtethiwa	F	Malawi	Natural Resources College	jmtethiwa@nrc.mw jkamwamba@yahoo.co.uk
3	Modesta Kanjaye	F	Malawi	Ministry of Irrigation and Water Development	mbkanjaye@malawi.net
4	Munthali Ulemu	F	Malawi	Coordination Unit for the Rehabilitation of Environment (CURE)	cure@sdp.org.mw
5	Mthimkhulu Sindy	F	Swaziland	Swaziland Water Partnership	S_mthimkhulu@yahoo.com
6	Nkhuwa Daniel	M	Zambia	University of Zambia School of mines	dcwnkhuwa@yahoo.com
7	Kirstin Iman Conti	F	USA	Stanford University	kirco@stanford.edu
8	Mbawo Esther	F	Zambia	Zulu Bonow Ltd (Project for Water and Sanitation)	Esthermbawo@yahoo.co.uk bbzl@zamnet.zm
9	Chimwang'a Maseka	M	Zambia	Zambian Water Partnership University of Zambia	cmaseka@gmail.com
10	Keletso Mokobi	F	Botswana	Women's Affairs Department	kelenene@hotmail.com
11	Feziwe Matsebula	F	Swaziland	Yonge Nawe Environmental Action Group	fezimts@yahoo.com yonawe@realnet.co.sz
12	Thipe Mavimbela	M	Swaziland	Lesibovu Co-operative Society	
13	Estrella DeJesus Herculano	F	Mozambique	Ministry of Women and Social Action RUA Detchamba	Herculano705@yahoo.com
14	Lerotholi Sekonyana	F	Lesotho	Dept. of Water Affairs	lerotholi@dwa.gov.ls, Lerotholism@yahoo.co.uk
15	Hazel Mphande	F	Zambia	Zambian Water Partnership	hmpfhande@yahoo.com
16	Munashe Mvura	M	Zimbabwe	Upper Manyame SubCatchment Council	munashemvura@yahoo.com
17	Celeste C. Sauls	F	South Africa	Unisa Isibuko Sempele Consultant Services	lettiemio@absamail.co.za
18	Elaine E. Sauls	F	USA	Unisa Isibuko Sempele Consultant Services	Elaine-sauls@yahoo.com
19	Nicholas Tandi	M	Zimbabwe	WaterNet	ntandi@eng.uz.ac.zw
20	Joyce Siacinji Musiwa	F	Zambia	Cooperative College	joycemusiwa@yahoo.com
21	Helen Mavetera	F	Namibia	Ministry of Agriculture, Water and Forestry	maveterah@mawrd.gov.na
22	Lovemore Mujuru	M	Zimbabwe	Institute of Water and Sanitation Development	mujuru@iwsd.co.zw

# Mainstreaming HIV, AIDS and Gender (HAG)

## in Integrated Water Resources Management planning and implementation

Rainbow Towers, Harare, Zimbabwe 3-6 July 2006



**WATERnet**



Building Capacity for Water Resources  
Management in Southern Africa

*in collaboration with*



**SAAIDS**

Southern Africa  
HIV/AIDS Information  
Dissemination Service

### BACKGROUND

During the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, governments agreed on a series of targets as part of the Draft Implementation Plan for achieving the Millennium Development Goals (MDGs). Water was seen as an underlying element of reaching the MDGs and this resulted in the establishment of the target, "for countries to establish Integrated Water Resources Management and Water Efficiency Plans (IWRM & WE Plans)." Since then, Global Water Partnership Southern Africa (GWP-SA) and WaterNet have been facilitating capacity building for Southern African countries to achieve water related MDGs and WSSD targets supporting sustainable water resources management. It is increasingly known however, that the Millennium Development Goals cannot be achieved unless HIV/AIDS and Gender (HAG) is addressed. All the sectors that are required to collaborate in IWRM planning have been adversely affected by multi-facets of HIV/AIDS. Programmes that have been implemented in these sectors have also impacted on Gender and HIV/AIDS negatively and positively.

### PURPOSE

The overall objective of the course is to develop and strengthen the competencies of water managers to mainstream Gender and HIV/AIDS issues into the IWRM planning and implementation processes.

### OUTCOMES

The course will produce a draft Training of Trainers guide which participants can use for subsequent trainings in their countries. A Field Guide will also be developed to guide implementation of the mainstreaming process.



Course Announcement

# Mainstreaming HIV, AIDS and Gender (HAG)

## in Integrated Water Resources Management Planning and Implementation

Rainbow Towers, Harare, Zimbabwe 3-6 July 2006

At the end of the workshop the participants:

-  Will have a practical and theoretical knowledge of the linkages between HIV/AIDS and Gender and IWRM and be able to articulate the implications of their programmes on HIV/AIDS and Gender and vice versa.
-  Will provide a network of practitioners that can continue exchanging experiences and strengthening skills in HIV/AIDS and Gender mainstreaming.
-  Will have experienced a number of tools for facilitating HIV/AIDS and Gender workshops for Water and related sectors, including tools for brainstorming, tools for structuring discussions in large groups, tools for developing strategies, tools for planning, tools for improving communication and games.

### WHO SHOULD APPLY?

Participants would be water managers or experienced trainers with an interest in HIV/AIDS and Gender mainstreaming in water management and the possibility through position or connection to take the training forward at the country level. *Prospective participants should submit a short curriculum vitae (maximum two pages) and brief motivation letter to IWSD ([admin@iwsd.co.zw](mailto:admin@iwsd.co.zw)) by 19 June 2006.*

### SPONSORSHIP

PAWD supported countries (Malawi, Mozambique, Swaziland and Zambia) are expected to nominate up to 3 participants to be sponsored by capacity building funds in the custody of GWP. In addition, GWP-SA and WaterNet will also support a limited number of participants from other non-PAWD countries. Interested participants with own funding should contact the course coordinators below for details on registration and course fees.

### CONTACT INFORMATION

For application and more information contact:  
Institute of Water and sanitation Development  
Box MP 422, Mount Pleasant  
Harare  
Tel 263- 4- 735017/26/35 or 250522  
Fax 263-4-738120  
e-mail: [admin@iwsd.co.zw](mailto:admin@iwsd.co.zw)



## ANNEX 12: CONFLICT RESOLUTION AND NEGOTIATION SKILLS FOR IWRM COURSE PARTICIPANTS AND BROCHURE

No	Name	Sex	Country	Institution	Email
1	Prof Larry Swatuk	M	Botswana	Harry Oppenheimer Okavango Research Station	lswatuk@orc.ub.bw
2	Sipho Nkambule	M	Swaziland	Ubombo Sugar Estates	snkambule@illovo.co.za
3	Daisy Nheta	F	Namibia	Integrated Rural Development and Nature Conservation	nhetez@yahoo.com
4	Nicholas Tandi	M	Zimbabwe	WaterNet	ntandi@eng.uz.ac.zw
5	Shadrack Luyanga	M	Namibia	Ministry of Agriculture and Forestry	luyangas@mward.gov.na
6	Bogadi Mathangwane	F	Botswana	Department of Water Affairs	bmathangwane@gov.bw
7	Antony Mporokoso	M	Zambia	Ministry of Energy and Water Development	antonymporokoso@yahoo.co.uk
8	Andy Mondoka	M	Zambia	Ministry of Energy and Water Development	andymondoka@hotmail.com
9	Tendai Gandanzara	M	South Africa	GWP-SA	t.gandanzara@cgaia.org
10	Daniel Nkhuwa	M	Zambia	University of Zambia School of Mines	dlnkhuwa@yahoo.com
11	Bongani Masuku	M	Swaziland	Swaziland Water Partnership	magongob@gov.sz
12	Chilufya Mumba	F	Zambia	P & G Production	Chilumumba2010@yahoo.co.uk
13	Lawrence Mpekasambo	M	Malawi	Chancellor College, University of Malawi	Ulemu1960@yahoo.com
14	Elton Laisi	M	Malawi	Centre for Development Research and Information in Southern Africa	elaisi@cedrisa.org
15	Hastings Chibuye	M	Zambia	Water Board	chibuyeh@yahoo.co.uk
16	Joaquim Manjate	M	Mozambique	Mozambique Water Partnership	joaquim@yahoo.com.br
17	Sindy Mthimkhulu	F	Swaziland	Swaziland Water Partnership	s-mthimkhulu@yahoo.com
18	Sebastiano Famba	M	Mozambique	Edwardo Mondlane University	aifamba@uem.mz
19	George Kabeleka	M	Zambia	Farmer	
20	Frederico Pereira	M	Mozambique	Mozambique Water Partnership	Frederico_per@yahoo.com.br
21	Thami Mpala	M	Zimbabwe	Scientific and Industrial Research and Development Centre	Thamsanqa2002@yahoo.co.uk
22	Chozi Lungu	M	Zambia	University of Zambia	metalmins@yahoo.com

<b>No</b>	<b>Name</b>	<b>Sex</b>	<b>Country</b>	<b>Institution</b>	<b>Email</b>
23	Chimwanga Maseka	M	Zambia	Zambia Water Partnership	cmaseka@gmail.com
24	Joel Kabika	M	Zambia	University of Zambia School of Engineering	kabika2000@yahoo.co.uk
25	James Tembo	M	Zambia	University of Zambia School of Engineering	wazatembo@yahoo.co.uk



# Course Announcement

# Conflict Resolution and Negotiation Skills for IWRM

19-23 June 2006, Lusaka, Zambia

## A Training of Trainers Course



### BACKGROUND

Following the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, Global Water Partnership Southern Africa (GWP-SA) has been supporting the development of IWRM plans in Malawi, Mozambique, Swaziland and Zambia through respective Country Water Partnerships (CWP). This support is under the umbrella of the Partnership for Africa's Water Development (PAWD) project whose aim is the achievement of water related Millennium Development Goals (MDGs) and WSSD targets. Conflict resolution and negotiation skills for IWRM planning and implementation processes were identified as one of the issues that should be considered for the regional capacity building programme. WaterNet in conjunction with Cap-Net has been promoting the development of capacity building programmes to support the water sector reforms associated with the implementation of integrated water resources management. The present course introduces conflict resolution and negotiation skills for IWRM and will be jointly conducted by GWP-SA and WaterNet.

### WHY CONFLICT RESOLUTION AND NEGOTIATION SKILLS?

Negotiation skills for Integrated Water Resources Management are increasingly important owing to an increasing water resource scarcity-be it real or perceived. Conflicts have been documented between up-stream and downstream users, or states sharing a trans-boundary water body. Skills are required in negotiation and conflict resolution, particularly for the water manager, who should play a mediating role between alternative, potentially conflicting uses and assure that mediation and negotiation are incorporated in water management practices.

### PURPOSE

The training of trainers programme is intended to strengthen and facilitate the ability of capacity building institutions and networks to deliver appropriate conflict resolution and negotiation skills training and education of good quality to support the implementation of IWRM.





# Course Announcement

## Conflict Resolution and Negotiation Skills for IWRM

*19-23 June 2006, Lusaka, Zambia*  
A Training of Trainers Course

### COURSE CONTENTS

The contents of the course have been adapted from Cap-Net, Water-Net and GWP-SA materials, including training materials used in Ethiopia (focusing on the Nile, May 2006), Bangladesh (focusing on the Indus and Brahmaputra, August 2005), modules from the WaterNet Master Programme in IWRM, and other conflict resolution modules run by WaterNet in 2003. The course will focus on Southern African context.

The training of trainers' course focuses on negotiation and conflict resolution in the framework of IWRM. Attention will be given to: Introductions to IWRM; Conflict analysis and management; and negotiation instruments and water agreements. The implications for water management will be addressed. The sessions in the course will be highly interactive based on different experiences and specific cases.

### ORGANISATIONAL ARRANGEMENTS

Practical organisation is the responsibility of Zambia Water Partnership. Facilitators include resource persons from WaterNet and other partners in Zambia and within the Southern African Region.

### LOCATION, DURATION AND TIMING

The duration of the course will be five working days, including a one-day field trip. It will be held from 19th to 23rd June 2006 in Lusaka, Zambia.

### WHO SHOULD APPLY?

Participants would be experienced trainers with an interest in negotiation skills and conflict resolution in water management and the possibility through position or connection to take the training forward at the country level.

### SPONSORSHIP

PAWD supported countries (Malawi, Mozambique, Swaziland and Zambia) are expected to nominate up to 3 participants to be sponsored by capacity building funds in the custody of GWP. In addition, GWPSA and WaterNet will also support a limited number of participants from other non-PAWD countries. Interested participants with own funding should contact the course coordinators below for details on registration and course fees.

### CONTACT DETAILS FOR APPLICATION AND MORE INFORMATION

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## ANNEX 13: INTER-SECTORAL WATER GOVERNANCE SEMINAR PARTICIPANTS AND BROCHURE

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# Inter-sectoral Water Governance

Towards Integrated Water Resources

Management in the SADC region

21-23 Nov 2006, Maputo



Environment, Natural Resources and Food



# Intersectoral Water Governance – Towards Integrated Water Resources Management in the SADC Region

Regional seminar to share experiences and  
elaborate on good practices

## Workshop Report

21-23 November 2006  
VIP Hotel Maputo, Mozambique



Internationale Weiterbildung  
und Entwicklung gGmbH

Capacity Building  
International, Germany



# Inwent – Capacity Building International, Germany

InWent stands for the development of human resources and organisations within the framework of international cooperation. InWent's services cater to skilled and managerial staff as well to decision makers from business, politics, administration and civil societies worldwide. InWent cooperates equally with partners from developing, transition and industrialized countries. Each year some 55,000 persons participate in our measures.

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Capacity Building International, Germany

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The InWent Division “**Natural Resources and Biodiversity**” is part of Department 5: “Environment, Natural Resources and Food”. Based at the International Training Centre Zschortau-Leipzig, we focus on resources policy, regional development, ecosystems management, and biodiversity, including: international conventions, transboundary natural resources and river basin management, dialogue on water for food and the environment, and transboundary protected area systems management and ecotourism development.



Quality is a continuing commitment to us. Our Quality Management is based on DIN EN ISO 9001:2000.  
Department 5: Environment, Natural Resources and Food

**TRANSNET** “Transboundary management of natural resources in the SADC region” is a dialogue and training programme to assist institutions in the SADC region to build capacity to manage land and water resources sustainably, to enhance rural development and to foster regional cooperation in the management of shared water courses and ecosystems. The programme is designed and implemented by InWent in partnership with national institutions and regional organisations in Southern Africa, e.g. to assist River Basin Organisations (e.g. ORASECOM, Ruvuma JWC) and the SADC Water Division to implement the “Regional Strategic Action Plan on Integrated Water Resources Development and Management”.



## Contact:

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NRM-Net Website: [www.gc21.de/nrm-net](http://www.gc21.de/nrm-net)

## TRANSNET Coordinator SADC-Region:



African Centre for Water Research, a member of Waternet (SADC)  
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## InWent in cooperation with



Building Capacity for Water Resources Management in Southern Africa. A Strategic Programme of the SADC Water Division

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On behalf of:



Capacity Building International, Germany



## ANNEX 14: ENVIRONMENTAL WATER REQUIREMENTS COURSE PARTICIPANTS AND BROCHURE

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# TRAINING COURSE ON ENVIRONMENTAL FLOWS

04 - 14 December 2006, Stellenbosch University Cape Town , South Africa



In collaboration with

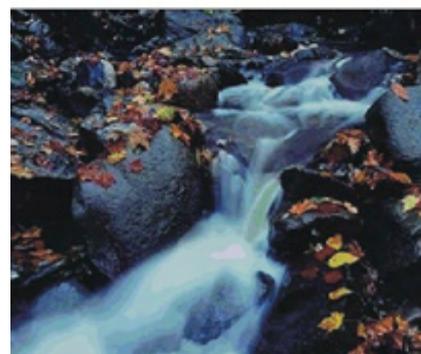


## Background

During the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, governments agreed on a series of targets as part of the Draft Implementation Plan for achieving the Millennium Development Goals (MDGs). Water was seen as an underlying element of reaching the MDGs and this resulted in the establishment of the target, "for countries to establish Integrated Water Resources Management and Water Efficiency Plans (IWRM & WE Plans)." One of the major challenges in achieving these targets is to strike the right balance between allocating water for direct human use (agriculture, power generation, domestic purposes and industry) and indirect human use (maintenance of ecosystem goods and services). It is therefore imperative that water managers understand how to determine and incorporate environmental flows in integrated water resources management and water efficiency planning in order to sustain the functions, goods and services provided by freshwater ecosystems.

## Environmental Flows

Environmental Flows also known as Environmental Water Allocation, a concept that was originally developed in the 1970's has grown in importance with increasing use of freshwater resources. A comprehensive definition of an Environmental Flow (EF) is given as: "The quality, quantity, and distribution of water required to maintain the components, functions and processes of aquatic ecosystems on which people depend. The process of assessing an EF will require a societal judgment about the state in which an ecosystem should be maintained. The quality, quantity, and distribution of water required for any aquatic ecosystem will depend on the environmental objectives set for that system."



## Purpose

The course intends to provide participants with intensive introductory training on the concept, issues, approaches and methods used to determine and manage environmental flows within the framework of Integrated Water Resources Management (IWRM). The course will combine classroom presentations and fieldwork to relevant sites to complement the theoretical presentations.

## Course Content

### (i) Classroom Presentations

Principles of environmental water requirements,  
Legal frameworks for environmental water requirements,  
Methodologies for the assessment of environmental water requirements in terms of quantity, quality and flow regime for:

- Rivers and lakes,
- Estuaries;
- Groundwater.

In-depth thematic sessions on a choice of one of the following topics:

- Hydrology,
- Hydraulics;
- Aquatic Biology.

Outline of future training needs and activities.

### (ii) Technical Field-work:

A one-day visit to the Berg River Dam construction site to conduct practical exercises on riverine health (using as an indicator Aquatic Biodiversity according to the South African Scoring System SASS), hydraulic measurements, survey and data analysis and fish sampling.

A one-day visit to the Berg River Estuary where cross sections will be analysed looking at sedimentation transects and vegetation patterns.

## About the Facilitators

### Lead Facilitator

Dana Grobler (Blue Science) is an Environmental Scientist with over 16 years experience in water management and capacity building. His fields of expertise include: Water Quality Monitoring and Assessment, Aquatic Ecosystem (Biomonitoring) Monitoring and Assessment, Environmental Management, Catchment Management and Water Act Implementation. Mr Grobler is the Network co-ordinator of the Resource Directed Measures (RDM) network which forms part of the FETWater initiative.

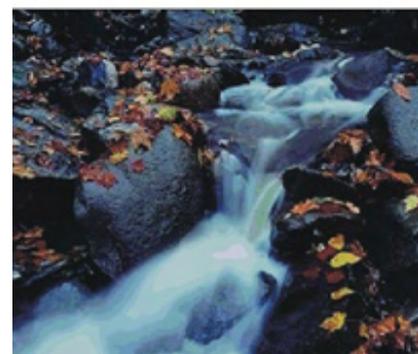
### Resource Persons

Dr Evan Dollar (CSIR, Stellenbosch) Geomorphologist

Prof Charlie Boucher (retired professor at Stellenbosch University) - Botanist

Mr Julian Conrad (GEOSS) - Geo-hydrologist

Dr Hilary Masundire (University of Botswana) Ecosystem Management



## Course Convenors

**Global Water Partnership - Southern Africa (GWP-SA)** is part of the global GWP family. The Course is convened within the framework of the regional capacity building programme for the Partnership for Africa's Water Development (PAWD) project aimed at developing national IWRM plans in Malawi, Mozambique, Zambia and Swaziland.

**WaterNet** is a capacity building network of 52 university departments and research and training institutions specialising in water in the southern and east African region. It is a strategic programme of the SADC Water sector. WaterNet carries out education, training and research in IWRM-of which environmental flows is an important component.

**IUCN Regional Office for Southern Africa** is a part of the global IUCN family which is conservation network that brings together states, government agencies, non-governmental organizations and scientists. One of the aims of its environmental flows programme is to impart knowledge on equitable allocation of water in a river basin context with particular emphasis on community livelihoods and river health.

**FETWater**-The Framework programme for Research, Education and Training in the Water sector (FETWater) is a venture based on an agreement between the South African Department of Water Affairs and Forestry (DWAF) and the Flemish government. The programme is aimed at the creation of networks to fulfil capacity and training needs and is funded by the Flemish Government, DWAF and UNESCO.

## Course Coordinator

The **African Centre for Water Research (ACWR)** is an independent research and capacity building organisation based in Cape Town, South Africa. The ACWR works in partnership with a range of regional and international organisations to promote the integrated management and sustainable development of the southern African region's water resources. Refer to [www.acwr.co.za](http://www.acwr.co.za) for more detailed information.

## Target group

Water resources planners, managers, researchers, trainers and dam operators, senior catchment management agency staff may apply. It is preferable to already be in possession of at least a relevant Bachelor's degree or a relevant Diploma with extensive working experience in water, natural resources or related fields. **To apply kindly provide a motivating letter and short resume by 23 November 2006.**

## Support

The organisers will cover the cost of air travel, training, board and lodging and provide a *per diem* to cover incidental costs for a limited number of participants from the Southern Africa region.

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## **ANNEX 17: CHALLENGE PROGRAM PN17 RESEARCH OUTPUTS**

# Challenge Program on Water and Food

**PROJECT OUTPUTS  
to 31 August 2006  
(Phase 2)**

## 1 PROJECT PROFILE (this information will appear once only as a header sheet to your reports when they are electronic)

<b>PROJECT NO.: 17</b>	<b>PROJECT TITLE: The Challenge of Integrated Water Resource Management for Improved Rural Livelihoods: Managing Risk, Mitigating Drought and Improving Water Productivity in the Water Scarce Limpopo Basin</b>
<b>LEAD CPWF THEME: 2</b>	<b>LEAD CPWF BENCHMARK BASIN(S): Limpopo</b>
<b>SECONDARY CPWF THEME(S): 1,4</b>	<b>SECONDARY RIVER BASIN(S): none</b>
<b>MANAGING CENTER:</b> CIAT	<b>PROJECT DURATION: 4 years</b>

Note: this table includes written materials that have been accepted for publication but not yet published.

<b>Type/title*</b> <b>PUBLICATIONS</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?†</b>
<i>Journal Articles:</i> These are international peer-reviewed journals.					
A01. An on-farm evaluation of the effects of low cost drip irrigation on water and crop productivity, compared to conventional surface irrigation system	2.2	September 2005	<i>Physics and Chemistry of the Earth</i> , <b>30</b> , 783-791 <a href="https://doi.org/10.1016/j.pce.2005.08.021">doi:10.1016/j.pce.2005.08.021</a>	N Maisiri, J Rockström, A Senzanje, S Twomlow	Yes
A02. Impact and sustainability of low-head drip irrigation kits, in the semi-arid Gwanda and Beitbridge Districts, Mzingwane Catchment, Limpopo Basin, Zimbabwe	1.6	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 885-892 <a href="https://doi.org/10.1016/j.pce.2006.08.020">doi:10.1016/j.pce.2006.08.020</a>	R Moyo, D Love, S Twomlow, W Mupangwa, M Mul	Yes
A03. Alluvial aquifers in the Mzingwane Catchment: their distribution, properties, current usage and potential expansion	1.3	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 988-994 <a href="https://doi.org/10.1016/j.pce.2006.08.013">doi:10.1016/j.pce.2006.08.013</a>	W Moyce, P Mangeya, RJ Owen, D Love	No
A04. Implementing the millennium development food security goals – Challenges of the southern African context	1.6	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 731-737 <a href="https://doi.org/10.1016/j.pce.2006.08.002">doi:10.1016/j.pce.2006.08.002</a>	D Love, S Twomlow, W Mupangwa, P van der Zaag, B Gumbo	Yes
A05. Soil-water conservation and rainwater harvesting strategies in the semi-arid Mzingwane Catchment, Limpopo Basin, Zimbabwe	1.6	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 83-900 <a href="https://doi.org/10.1016/j.pce.2006.08.042">doi:10.1016/j.pce.2006.08.042</a>	W Mupangwa, D Love, S Twomlow	Yes
A06. Involvement of stakeholders in the water quality monitoring and surveillance system: the case of Mzingwane Catchment, Zimbabwe	3	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 707-712 <a href="https://doi.org/10.1016/j.pce.2006.08.037">doi:10.1016/j.pce.2006.08.037</a>	L Nare, D Love, Z Hoko	Yes
A07. Effects of dams on river flows of Insiza River, Zimbabwe.	1.3	November 2006	<i>Physics and Chemistry of the Earth</i> , <b>31</b> , 870-875 <a href="https://doi.org/10.1016/j.pce.2006.08.022">doi:10.1016/j.pce.2006.08.022</a>	JM Kileshye Onema, D Mazvimavi, D Love, M Mul	No
<i>Working Papers:</i>					

\* The code given (e.g. "P2") refers to the designation of a document as an official output of the project, and is also included in the document's file name.

† This refers to the research summary template. Where templates have not been completed, partners are required to do so.

Type/title* PUBLICATIONS	Activity Number	Date	Publisher	Authors	Template completed? †
These are institutional grey literature; quality control lies with the publishing institution					
WP01. An overview of the Mzingwane Catchment, Zimbabwe	1.2	February 2005	WaterNet Working Paper 1	D Love, AE Taigbenu, L Jonker	No
WP02. Short report on five masters projects from the Mzingwane Catchment, Zimbabwe	5.4	February 2005	WaterNet Working Paper 2	D Love, L Jonker	No
WP03. Spreading the word on fertilizer	2.2	February 2006	ICRISAT GTAE Report 24	S Twomlow, D Rohrbach, J Rusike, W Mupangwa, J Dimes, B Ncube	Yes
WP04. Short Report on Masters research in the Mzingwane Catchment, Zimbabwe, 2004/5 – 2005/6	5.4	September 2006	WaterNet Working Paper 3	D Love	No
WP05. Short Report on Masters research cofunded by RELMA-in-ICRAF in the Mzingwane Catchment, Zimbabwe, 2004/5	5.4	November 2006	WaterNet Working Paper 4	D Love	No
WP06. Short Report on Doctoral research within WaterNet Challenge Program Project PN17	5.5	November 2006	WaterNet Working Paper 5	D Love, W Nyabeze	No
Type/title PAPERS	Activity Number	Date	Publisher	Authors	Template completed?
<i>Papers for national seminar/conference / workshop</i> These are reviewed by the conference organisers.					
NP1. The Impact Of Land Cover And Land Use On Hydrological Response In The Olifants Catchment	2.1	August 2005	Special Colloquium, Water Research Showcase, Univ. of Johannesburg, Pretoria & The Witwatersrand	M Ncube, AE Taigbenu	No
NP2. Resources Management In Agriculture: Convergence Of Needs And Opportunities	1.6	September 2005	12 <sup>th</sup> SANCHIAS symposium	AE Taigbenu, M Ncube, RJ Boroto	No
<i>Papers for international seminar/ conference /workshop</i> These are reviewed by the conference organisers. In the case of the WaterNet/WARFSA/GWP-SA Annual Symposia, this includes WaterNet					
P01. The Challenge of Integrated Water Resource Management for Improved Rural Livelihoods in the Limpopo Basin – an introduction to WaterNet's first network research program	Synthesis	November 2004	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Namibia</a>	D Love, L Jonker, J Rockström, P van der Zaag, S Twomlow	Yes
P02. An integrated evaluation of a small reservoir and its contribution to improved rural livelihoods: Sibasa Dam, Limpopo Basin, Zimbabwe	1.3 3.1	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	L Basima Busane, T Sawunyama, G Chinoda, D Twikirize, A Senzanje, D Love, Z Hoko, E Manzungu, P Mangeya, N Matura, A Mhizha, P Sithole	Yes
P03. Influence of human activities on the hydrology of the Insiza River, Limpopo Basin, Zimbabwe - implications for catchment planning	2.1	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	JM Kileshye Onema, J Rockström, D Mazvimavi, D Love, M Mul, A van Rooyen, S Twomlow	Yes
P04. Implementing the millennium development food security goals - challenges of the southern African context	1.6 2.2	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	D Love, S Twomlow, W Mupangwa, P van der Zaag, B Gumbo	Yes
P05. Analysis of hydrological change for IWRM planning: case study of the Mzingwane River, Limpopo Basin, Zimbabwe	1.3	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	D Love, S Uhlenbrook, W Nyabeze, RJS Owen, S Twomlow, H Savenije, L Woltering, P van der Zaag	Yes
P06. Alluvial aquifers in the Mzingwane Catchment: their distribution, properties, current usage and potential expansion and risk	1.3	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	W Moyce, P Mangeya, RJ Owen, D Love	Yes
P07. A model for reservoir yield under climate change scenarios for the water-stressed City of Bulawayo, Zimbabwe	1.3 2.1	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	B Moyo, E Madamombe, D Love	Yes
P08. Impact and sustainability of drip	2.2	November	<a href="#">WaterNet/WARFSA/GWP-</a>	R Moyo, D Love,	Yes

Type/title PAPERS	Activity Number	Date	Publisher	Authors	Template completed?
irrigation kits in the semi-arid Lower Mzingwane Subcatchment, Limpopo Basin, Zimbabwe		2005	<a href="#">SA Annual Symposium, Swaziland</a>	S Twomlow, W Mupangwa, M Mul	
P09. Cultivating livelihoods: an assessment of water allocation and management practices in small-scale irrigation schemes -case studies in Mzingwane Catchment	1.6 3.1	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	M Munamati, A Mhizha, P Sithole	Yes
P10. Soil-water conservation and other rainwater harvesting strategies in the semi-arid Mzingwane Catchments, Limpopo Basin, Zimbabwe	1.6 2.2	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	W Mupangwa, D Love, S Twomlow	Yes
P11. Involvement of stakeholders in the water quality monitoring and surveillance system: the case of Mzingwane Catchment	3.1	November 2005	<a href="#">WaterNet/WARFSA/GWP-SA Annual Symposium, Swaziland</a>	L Nare, D Love, Z Hoko	Yes
P12. Managing risk, mitigating drought and improving water productivity in the water scarce Limpopo Basin: highlights of some integrated water resources management solutions	Synthesis	December 2005	CGIAR Challenge Program on Water and Food International Workshop on "Enhancing human and ecological well-being in Africa through sustainable increases in water productivity", Uganda	D Love, B Gumbo, W Nyabeze	Yes
P13. Managing risk, mitigating drought and improving water productivity in the water scarce Limpopo Basin: highlights of some integrated water resources management approaches	Synthesis	February 2006	<a href="#">SADC Land and Water Management Applied Research Programme Scientific Symposium "Land and Water Management for Sustainable Agriculture", Malawi</a>	D Love, B Gumbo, W Nyabeze	Yes
P14. An evaluation of climate and runoff variability and associated livelihood risks in the Mzingwane Catchment, Limpopo Basin, Zimbabwe	1.3 2.1	May 2006	Water Institute of Southern Africa Biennial Conference and Exhibition, Durban, South Africa	D Love, S Uhlenbrook, E Madamombe, S Twomlow, P van der Zaag	Yes
P15. Conservation farming by basins breaths new life into smallholder farmers in Zimbabwe	2.2	February 2006	<a href="#">SADC Land and Water Management Applied Research Programme Scientific Symposium "Land and Water Management for Sustainable Agriculture", Malawi</a>	S Twomlow, D Rohrbach, L Hove, W Mupangwa, N Mashingaidze, M Moyoy, C Chiroro	Yes
P16. Alluvial aquifers as potential safe water storage in semi arid areas: case study of Lower Mzingwane Catchment, Limpopo Basin, Zimbabwe	1.3	August 2006	<a href="#">Stockholm Water Week, Sweden</a>	W Moyce, P Mangeya, RJ Owen, D Love	No
P17. Livelihood challenges posed by water quality in the Mzingwane and Thuli River Catchments, Zimbabwe	1.3	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	D Love, W Moyce, S Ravengai	No
P18. An on farm comparison of conservation agriculture practices and conventional farmer practices on soil hydrology and maize yield	2.2	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	C Dhliwayo, H Makurira, W Mupangwa, D Love, S Twomlow	No
P19. Effects of grazing management on rangeland soil hydrology, Insiza, Zimbabwe	2.2	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	PT Ngwenya, D Love, A Mhizha, S Twomlow	No
P20. Effects of dams on river flows of Insiza River, Limpopo Basin Zimbabwe	1.3	August 2006	<a href="#">Stockholm Water Week, Sweden</a>	JM Kileshe Onema, D Mazvimavi, D Love, M Mul	No
P21. Olifants river basin: the process of basin closure	2.8	August 2006	<a href="#">Stockholm Water Week, Sweden</a>	W Nyabeze, B Gumbo, D Love	No
P22. Effect of mulching and minimum tillage on maize (Zea mays L.) yield and water content of clayey and sandy soils	2.2	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	W Mupangwa, S Twomlow, L Hove, S Walker	Yes

<b>Type/title PAPERS</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
P23. Rainwater harvesting to enhance water productivity of rainfed agriculture in the semi-arid Zimbabwe	1.6	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	J Mwenge Kahinda, J Rockström, AE Taigbenu, J Dimes	No
P24. The impact of land cover and land use on the hydrologic response of the Olifants	2.1 2.8	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	M Ncube, AE Taigbenu	No
P25. Integrating hydrological and socio-economic aspects for sustainable catchment management: needs and opportunities	2.8	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	M Magombeyi, AE Taigbenu, D Rollin	No
P26. The use of the river basin game as a tool for the implementation of the Waternet CP project in South Africa	2.5	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	M Magombeyi, D Rollin, B Lankford	No
P27. Towards improving flood forecasting and early warning systems through integrated technology in the Limpopo Basin	2.1 2.8	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	A Vilanculos, A Mhizha, E Kaseke	No
P28. Community-based water resource management institutions: perspectives from the Mzingwane catchment, Zimbabwe	3.1	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	C Mabiza, P van der Zaag, E Manzungu, R Ahlers	No
P29. Mitigating risk, building social capital and crafting livelihoods strategies in Gwanda (Mzingwane, Zimbabwe): a synopsis on water, gender and institutions	3.1	November 2006	WaterNet/WARFSA/GWP-SA Annual Symposium, Malawi	P Sithole	No

<b>Type/title DISSERTATIONS AND THESES</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
<i>MSc Dissertations (funded through PN17):</i> Quality control by awarding institution					
D01. A hydrological assessment of land use changes and human's effects on water resources in semi-arid Zimbabwe: the case of the Insiza sub-catchment.	2.1	September 2004	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Kileshye Onema, J.-M.	Yes
D02. An on-farm evaluation of the effects of low cost drip irrigation on water and crop productivity, compared to conventional surface irrigation system	2.2	September 2004	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Maisiri, N.	Yes
D03. Water productivity and yield gap analysis of water harvesting systems in the semi-arid Mzingwane catchment, Zimbabwe	1.6 2.2	September 2004	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Mwenge Kahinda, J.-M.	No
D04. Access to water for Improved Rural Livelihoods: An investigation of the perspectives, experiences and strategies of orphans and other vulnerable children: a case study of Insiza District Mzingwane Catchment	1.5	June 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Murata, R.	Yes
D05. Impact And Adaptation Of Climate Variability On Water Supply Reservoir yields For The City Of Bulawayo. (Mzingwane Catchment)	1.3 2.1	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Moyo, B.	No
D06. Impact and sustainability of low cost drip kits, in the semi-arid lower Mzingwane subcatchment, Limpopo Basin, Zimbabwe	2.2	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Moyo, R.	Yes
D07. Cultivating livelihoods: an assessment of water allocation and management practices in small-scale irrigation schemes -case studies in Mzingwane Catchment	1.6 3.1	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Munamati, M.	Yes
D08. A survey of current on-farm agricultural water management	2.2	August 2005	University of Zimbabwe, Department of Civil	Ntsheme, O.	Yes

<b>Type/title DISSERTATIONS AND THESES</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
practices in Olifants Catchment – a diagnostic of quaternary catchment B72A			Engineering, M.Sc. Water Resources Engineering and Management		
D09. Estimating the influence of on-farm Conservation Practices on the Water Balance, Case of the Mzinyathini Catchment in Zimbabwe	2.2	September 2005	Delft University of Technology, Faculty of Civil Engineering, M.Sc.	Woltering, L.	Yes
D10. Involvement of stakeholders in the water quality monitoring and surveillance system: the case of Mzingwane Catchment	3	February 2006	University of Zimbabwe, Department of Civil Engineering, MSc dissertation	Nare, L.	No
D11. The nexus between formal organizations and informal networks from a gender perspective: a case study from South Africa	3	February 2006	University of Guelph Faculty of Graduate Studies, MSc dissertation	Panesar, J.	No
D12. On farm evaluation of the influence of different conservation agriculture practices on infiltration in rainfed agriculture, compared to conventional farming	2.1 2.2	June 2006	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Dhliwayo, C.	Yes
D13. Assessment of the soil water management practices for increased seasonal rain water productivity to mitigate against climatic risks	2.2	June 2006	University of Zimbabwe, Department of Civil Engineering, M.Sc. Water Resources Engineering and Management	Moyo, L.	Yes
D14. Effect of soil degradation from grazing pressure on rangeland soil hydrology	2.1	June 2006	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Ngwenya, P.T.	No
D15. Towards improving flood forecasting and early warning systems through integrated technology in the Limpopo basin	1.3 2.8	June 2006	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Vilanculos, A.	No
<b>Type/title DISSERTATIONS AND THESES</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
<i>MSc Dissertations (funded through linked CPW&amp;F projects):</i> Quality control by awarding institution					
LD01. An assessment of plankton diversity as a water quality indicator in small man-made reservoirs in the Mzingwane Catchment, Limpopo Basin, Zimbabwe.	1.3	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Busane Basima, L.	No
LD02. Analytic Description of Indigenous water resources management practice and its impact on rural livelihoods in the Limpopo Basin in Botswana.	3.1	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Mpho, T.	No
LD03. Estimation of small reservoir storage capacities in Limpopo Basin using geographical information systems (GIS) and remotely sensed surface areas: a case of Mzingwane Catchment.	1.3	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Saunyama, T.	Yes
LD04. An assessment of traditional water management practices and their implications for improved water governance in the Limpopo Basin: a case of the Sibasa Dam in Mzingwane Catchment, Zimbabwe.	3.1	August 2005	University of Zimbabwe, Department of Civil Engineering, M.Sc. Integrated Water Resources Management	Twikirize, D.	Yes
<i>BSc Dissertations (funded through PN17):</i> Quality control by awarding institution					
B01. Determinação do volume de água complementar a irrigação para agricultura de sequeiro na região de Chókwè. (Irrigation needs for supplementary irrigation in Chókwè)	1.6	August 2005	Eduardo Mondlane University, Department of Rural Engineering, Licentiate Thesis	Mudaca, J.D.	No
B02. Estratégias de gestão de água em situações de suficiência e	1.6 2.2	August 2005	Eduardo Mondlane University, Department of	Ibraimo, N.A.	No

<b>Type/title DISSERTATIONS AND THESES</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
insuficiência de água para a produção de tomate e repolho no regadio de Chókwè (Water management strategies for vegetable production in Chókwè, when water is a limiting factor)			Rural Engineering, Licentiate Thesis		
B03. Análise do Efeito da Capacidade de Armazenamento de Água dos Solos no Rendimento do milho em Sequeiro na Região de Chókwè. (Effect of soil water storage capacity on maize yield in Chókwè)	1.6	October 2005	Eduardo Mondlane University, Department of Rural Engineering, Licentiate Thesis	Almeida, E.	No
<b>Type/title PROJECT ACTIVITY REPORTS Final Activity Reports in bold.</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
AR01. Report on the project inception Workshop, Bilene, Moçambique, 14 – 18 March 2004.	6.2	September 2004	WaterNet	Love, D.	No
AR02. Field visit to Mzingwane Catchment, 12-16 December 2004.	6.1	December 2004	WaterNet	Love, D.	Not applicable
AR03. Report on the Mzingwane Pilot Stakeholder and Inception Workshop, 6-7 October 2004.	6.2	December 2004	ICRISAT	ICRISAT	Not applicable
AR04. Report on the First Stakeholders Workshop for the Challenge Program Water and Food in Sekororo area (B72A), Olifants basin, South Africa, 21-22 October 2004.	6.2	December 2004	IWMI	Rollin, D.	Not applicable
AR05. Bacia do Limpopo (Projectos CP 17 e CP 1) Relatório do 1º Encontro em Moçambique.	6.2	September 2005	Eduardo Mondlane University	Eduardo Mondlane University	No
AR06. Minutes of the Project Executive Committee Meeting, 09.10.2005	6.1	September 2005	WaterNet	WaterNet	Not applicable
AR07. Record of the Zimbabwe Research Progress and Integration Meeting, 20.02.2006	6.1	February 2006	WaterNet	WaterNet	Not applicable
AR08. Record of the South Africa Research Progress and Integration Meeting, 05.12.2005	6.1	December 2005	IWMI	IWMI	Not applicable
AR09. Study of drip irrigation, Sekororo, South Africa	2.2	January 2006	IWMI	L. Benohoud & M. Jolivet	No
AR10. Agrarian System in Sekororo, Limpopo Province	1.6	August 2005	IWMI	D. Ramay & M. Beullier	No
AR11. Geology of the Limpopo River Basin	1.2	August 2006	UZ MRC	N Matura, W Moyce, G Chinoda	No
AR12. Water chemistry field visits	1.3	April 2006	UZ MRC	D Love, W Moyce, S Ravengai	Not applicable
AR13. Alluvial aquifers in the Mzingwane Catchment A preliminary report	1.3	August 2006	UNESCO-IHE PhD	D Love	No
AR14. Field Photographic Report: Small dams in the Mzingwane Catchment	1.3	May 2006	UNESCO-IHE PhD	D Love	No
AR15. Preliminary report on hydrological gauging stations in the Mzingwane Catchment	1.3	July 2006	UNESCO-IHE PhD	D Love	No
AR16. Schematisation of the Thuli Basin	2.8	July 2006	UNESCO-IHE PhD	D Love	No
AR17. Schematisation of the Mwenezi Basin	2.8	August 2006	UNESCO-IHE PhD	D Love	No
AR18. Report on the Mzingwane Catchment Scientific Workshop	6.2	August 2006	ICRISAT	ICRISAT	Yes
AR19. Soils of the Limpopo Basin	1.2	August 2006	UZ SSAE	C Bangira, A Manyevere	Yes
AR20. Report on the Olifants Catchment Scientific Workshop	6.2	August 2006	IWMI	IWMI	No

<b>Type/title</b> <b>PROJECT ACTIVITY REPORTS</b> <b>Final Activity Reports in bold.</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
AR21. Metadata & Database Development: Roles and Responsibilities of Scientists	1.6.4	August 2006	ICRISAT	A van Rooyen, X Ncube	Not applicable
<b>Type/title</b>	<b>Activity Number</b>	<b>Date</b>	<b>Publisher</b>	<b>Authors</b>	<b>Template completed?</b>
<b>TRAINING MATERIALS</b>					
<i>Course materials:</i>					
TM01. Integrated Groundwater and Surface Water Modelling A hands-on introduction to MIKE SHE	5.3	December 2004	Project partners	Jacobsen, T.	Not applicable
<i>Other:</i>					
<b>SURVEY MATERIALS</b>					
<i>Survey proforma:</i>					
SV01. CPWF Limpopo Basin Baseline Survey.	1.2 1.5	July 2005	Project partners		Not applicable
<i>Analysis proforma:</i>					
<b>PROJECT INFORMATION MATERIALS</b>					
<i>Project Progress Reports:</i>					
PR01. 3 monthly report	Synthesis	December 2004	WaterNet	WaterNet	Not applicable
PR02. 6 monthly report	Synthesis	March 2005	WaterNet	WaterNet	Not applicable
PR03. 3 monthly report	Synthesis	June 2005	WaterNet	WaterNet	Not applicable
PR04. Annual report	Synthesis	September 2005	WaterNet	WaterNet	Not applicable
PR05. 3 monthly report	Synthesis	December 2005	WaterNet	WaterNet	Not applicable
PR06. 6 monthly report	Synthesis	March 2006	WaterNet	WaterNet	Not applicable
PR07. 3 monthly report	Synthesis	June 2006	WaterNet	WaterNet	Not applicable
<i>Brochures:</i>					
BR01. The challenge of integrated water resource management for improved rural livelihoods in the Limpopo Basin – WaterNet's first network research program	All	September 2004	WaterNet	Love, D. & Jonker, L.	Not applicable
<i>Newsletters:</i>					
NL1. WaterNet newsletter (ongoing contribution)	All	Several times per year	WaterNet		Not applicable
NL2. Africa Water Update – IWMI newsletter (ongoing contribution)	All	Several times per year	IWMI		Not applicable
<i>Powerpoint Presentations are included in the activity reports of workshops</i>					

## **ANNEX 18: CHALLENGE PROGRAM PN17 CAPACITY BUILDING STRATEGY**

### **Mainstreaming Capacity Building in Food and Water Research in the Limpopo Basin: Across Scales and Across Disciplines The WaterNet Challenge Program Project PN17 Capacity Building Strategy**

#### ***Background:***

In the global food challenge, often the problem is not physical scarcity of water, but rather the lack of integrated land-water management approaches and weak institutional arrangements. An integrated approach to green and blue water management from farmer's field to river basin scale is required to promote and upscale rural livelihood improvements. This cannot be achieved though the introduction of innovations alone, but requires the building of appropriate capacity in land and water management at all the scales at which interventions are implemented, or management decisions taken.

Too often capacity-building is seen as an add-on to research: a follow-up activity in which the main researchers are uninvolved or uninterested. As an alternative, the approach in our project is to integrate capacity building into the research activities from the planning stage onwards.

The involvement of scientists in the supervision of research and capacity building projects at different scales, from farmer's field to river basin, should result in the development of a core capacity with an appreciation of the challenges and linkages at the different scales within the basin. This will be critical for upscaling activities.

Students and researchers in the project all attend colloquia, integration meetings and scientific workshops at catchment and basin level that are arranged by the project. Many also share the knowledge and learn from others through participation in the WaterNet/WARFSA/GWP-SA annual symposia, Stockholm Water Week, SSI scientific workshops and through networking with other activities organisations by WaterNet members.

As PN17 progresses, there is constructive feedback between the research project and WaterNet's capacity building programmes, especially the regional masters programme. The programme benefits as researchers from PN17 are brought into teaching, and as new research ideas from PN17 are integrated into the masters curriculum. The masters programme thus provides students who are well-equipped to begin their research projects, some of which are on water and food. Beyond this, WaterNet aims at training a new generation of water managers. By the integration of PN17 and the masters programme, the new ideas and philosophies of more crop per drop are passed on to the students, who, returning to their home countries and workplaces in southern Africa, can implement the new knowledge.

#### ***PhD Students:***

1. Key research in PN17 is undertaken by six PhD fellows, registered at WaterNet member institutions and supervised by scientists from the registering institution and other universities and CG centres within PN17.

2. Quality control (through the project quality control and knowledge management plans) is conducted from conceptualisation of a research idea to implementation, publication of papers and synthesis of research findings. This involves the fellow's supervisors and the Challenge Program Research Advisor.
3. Methodologies, research tools and results are shared through the integration meeting, scientific workshops and stakeholder meetings.
4. PhD fellows are also required to present papers at symposia and encouraged to publish in journals.
5. Each PhD fellow is linked to masters students who undertake their dissertation projects within PN17.

### ***MSc Students:***

1. MSc students contribute to research at all levels, and all partners should try to involve MSc students in their research activities.
2. Many of these students come from the WaterNet regional masters programme in Integrated Water Resources Management at the Universities of Dar-es-Salaam and Zimbabwe, supported by four other regional universities. Others come from programmes at other WaterNet member institutions.
3. MSc students' research must be directly linked to PhD projects and partners' research.
4. Students are very often shared between registering universities and other partners. This includes sharing of research costs, supervision and staff time. Because of this, both the registering university and the project partner have expectations which must be respected:
  - Quality and relevance of the research to the student's MSc degree programme.
  - Quality and relevance of the research to the partner's research activities.
  - All scientists involved, from both the registering university and the project partner, wish to see value added of the time that they put into the students' work.
5. To ensure that the expectations of both the registering university and the project partner are met, communication is essential:
  - The MSc research project should be planned well in advance by both parties.
  - Changes in the student's proposal and research design, whether proposed or finalised, must be discussed by both parties.
  - Supervisors from both institutions must share the advice and comments they give the student with each other – it must not be assumed that the student will communicate one supervisor's comment to another supervisor.
  - The final decision on an MSc research project is with the registering university.
6. Quality control (through the project quality control and knowledge management plans) is conducted from conceptualisation of a research idea to implementation, publication of papers and synthesis of research findings. This involves the fellow's supervisors and the Challenge Program Research Advisor.

### ***Beyond the Universities:***

The project also involves capacity building at community, extension officer and water manager level:

1. Participatory on-farm pilot studies involving farmers and extension officers provides indirect training.
2. Participatory development of institutional and water resources models involving water managers also provides indirect training.

3. Direct training and extension shall also be provided in key areas. Budget lines have been allocated to the following partners:
- Mozambique: Instituto de Investigação Agrária de Moçambique
  - South Africa: IWMI
  - Zimbabwe: ICRISAT, World Vision, UZ Mineral Resources Centre.

The topics for direct training events must be identified over the course of the 2006 Project Scientific Workshop, bearing in mind the activity mandate in the project proposal:

“Training of farmers, extension officers and local water managers. Develop training manuals, conduct farmer field schools (FFS), field workshops with extension workers and local water managers. The proposed action research will require intensive interaction with, and training of male and female farmers, agricultural extension workers and local water managers. Training materials will be developed, and practical training conducted (farmer field schools and training of trainers on sustainable blue and green water use).

Training on concepts and methodologies of crop water productivity assessment and improvement will be carried out among extension officers. The Farmer Field Schools will be facilitated by World Vision as well as ICRISAT. ICRISAT will be using FFSs in the CP PN 1 (CN 274) research and the objective is to use the same schools for both projects. This means that the present proposal will be involved in several parallel Farmer Field School initiatives, both within and outside the 3 suggested pilot catchments. Links will also be established with the Farmer Field Schools in Zimbabwe run by FAO and AREX on livestock and soil nutrient and water management.”

## ANNEX 19: SSI RESEARCH PROJECT OUTPUTS

The SSI Program produces a variety of knowledge products, ranging from research papers, journal articles, conference papers, abstracts, poster presentations, popular articles, book chapters, synthesis reports, working papers, posters, leaflets, fact sheets, field manuals, etc. This Annex gives an overview of the outputs that have been generated by the SSI in 2006. Most of these documents together with previous outputs can be downloaded from the SSI Website [www.unesco-ihe.org/ssi](http://www.unesco-ihe.org/ssi).

### Journal Papers

- J. Rockstrom, C. Folke, L. Gordon, N. Hatibu, G. Jewitt, F. Penning de Vries, F. Rwehumbiza, H. Sally, H. Savenije and R. Schulze, 2004. A watershed approach to upgrade rainfed agriculture in water scarce regions through water systems innovations: an integrated research initiative on water for food and rural livelihoods in balance with ecosystem functions. *Physics and Chemistry of the Earth*, 29 (2004) 1109-1118.
- Claudious Chikozho, 2005. Policy and institutional dimensions of small-holder farmer innovations in the Thukela river basin of South Africa and the Pangani river basin of Tanzania: A comparative perspective. *Physics and Chemistry of the Earth*, 30 (2005), Pages 913-924.
- Mutiro, J., H Makurira, A. Senzanje and M. L. Mul, 2006. Water productivity analysis for smallholder rainfed systems: a case study of Makanya catchment, Tanzania. *Physics and Chemistry of the Earth, Parts A/B/C, Volume 31, Issues 15-16, 2006, Pages 901-909.*
- Kongo, V.M. and G.P.W. Jewitt, 2006. Preliminary investigation of catchment hydrology in response to agricultural water use innovations: A case study of the Potshini catchment-South Africa. *Physics and Chemistry of the Earth, Parts A/B/C, Volume 31, Issues 15-16, 2006, Pages 976-987.*
- Enfors, E.I. and Gordon, L.J., 2007. Analyzing resilience in dryland agro-ecosystems: a case study of the Makanya catchment in Tanzania over the past 50 years. Paper submitted to *Land Degradation and Development*. Accepted
- Mul, M.L., R.K. Mutiibwa, S. Uhlenbrook, H.H.G. Savenije, 2007. Hydrograph separation using hydrochemical tracers in the Makanya catchment, Tanzania. Paper submitted to *Physics and Chemistry of the Earth 2007*. Accepted

### Conference proceedings

- Victor M Kongo and G P W Jewitt, 2005. Preliminary investigations of catchment hydrology in response to agriculture water use innovations: a case study of the Posthini catchment, South Africa. In proceedings of the 11<sup>th</sup> conference of the South African Council of the Institute of Applied Hydrological Scientists, Midrand South Africa.
- Yogesh Bhatt, 2005. Implementing a framework for action to assess research impact: Case studies on impact assessment from two global research projects of the International Water Management Institute. In proceedings of the CGIAR Impact Assessment Workshop, CIMMYT, Mexico.
- Mul, M.L., H.H.G. Savenije, S. Uhlenbrook & M.P. Voogt, 2006. Hydrological assessment of Makanya catchment in South Pare Mountains, semiarid northern Tanzania. *Climate Variability and Change—Hydrological Impacts* (Proceedings of the Fifth FRIEND World Conference held at Havana, Cuba, November 2006), IAHS Publ. 308, 2006.
- Mul, M.L., S. Uhlenbrook, R.K. Mutiibwa, J.W. Foppen, H.H.G. Savenije, 2007. Surface water / groundwater flow system analysis in the semi-arid South-Pare Mountains, Tanzania. UNESCO Technical paper.

### IWMI- SSI Working Paper series

- Bhatt, Y., Bossio, D., Enfors, E., Gordon, L., Kongo, V., Kosgei, J.R., Makurira, H., Masuki, K., Mul, M., Tumbo, S.D., 2006. Smallholder system innovations in integrated watershed management (SSI): Strategies of water for food and environmental security in drought-prone tropical and subtropical agro-ecosystems. Colombo, Sri Lanka: International Water Management Institute 59p. (IWMI Working Paper 109; SSI Working paper 1).
- Victor Kongo, Graham Jewitt, Simon Lorentz. Establishment of a catchment monitoring network through a participatory approach. IWMI-SSI Working Paper No. 2, International Water Management Institute, Colombo, Sri Lanka (in preparation).
- Femke Gordijn, Yogesh Bhatt, Jim Woodhill and Hilmy Sally. Learning Across Scales: Case study on learning and knowledge sharing to up-scale smallholder systems innovations in integrated watershed management in Sub-Saharan Africa. IWMI-SSI Working Paper No. 3, International Water Management Institute, Colombo, Sri Lanka (in preparation).

### Licentiate thesis

- Enfors, E.I. 2007. Traps and Transformation: Water System Innovations in Dryland Environments. Licentiate in Philosophy Thesis 2007:1, in Natural Resources Management. Department of Systems Ecology, Stockholm University

### MSc Thesis

- Anna Engdahl, 2005. Intensification and diversity in semi-arid agro-ecosystem: a case study of Bangalala village, Tanzania. MSc thesis, Stockholm University, Sweden. Supervisor: Line Gordon. Sponsor: Sida
- Femke Gordijn, 2005. Learning across scales: a case study on learning and knowledge sharing to up-scale small holder systems innovations in integrated watershed management in sub-Saharan Africa. MSc Thesis, Wageningen University, The Netherlands. Supervisor: Bert Bruins, Jim Woodhill, Yogesh Bhatt and Hilmy Sally. Sponsor:
- Johanna Hendriksson, 2005. Mapping small-holder farmers use of ecosystem goods in Potsheni, Thukela Drainage basin, South Africa. Focus on times of Crop failure. MSc thesis, Stockholm University, Sweden. Supervisor: Line Gordon. Sponsor: Sida
- Thomas Gerenstein, 2005. Potential for adaptive management in a smallholder semi arid landscape -revealing large differences over a small geographic area. MSc thesis, Stockholm University, Sweden. Supervisor: Line Gordon. Sponsor: Sida
- Justin Mutiro, 2005. Water Productivity Analysis for Smallholder rainfed systems. A case study of Makanya catchment, Tanzania. MSc. Thesis. Department of Civil Engineering, University of Zimbabwe, Zimbabwe. Supervisor: H. Makurira and Co-Supervisors: A.Senzanje and M. Mul. Sponsor: DGIS.
- Vyagusa, N. F., 2005. Water allocation Practices for Smallholder Farmers in South Pare Mountains, Tanzania; a case study of manoo micro-dam (ndiva). MSc. Thesis. Department of Civil Engineering Faculty of Engineering, University of Zimbabwe, Zimbabwe. Supervisors: Marloes L. Mul and Makurira, H. Sponsor: WaterNet
- Mshana, G.M., 2005. Institutional set-up for smallholder farmers in IWRM, a case-study of ndiva ya Manoo in Makanya catchment, Tanzania. MSc. Thesis. Department of Civil Engineering Faculty of Engineering, University of Zimbabwe, Zimbabwe. Supervisors: Makurira, H. and Marloes L. Mul. Sponsor: WaterNet
- Ågerstrand, M. Ecological risk assessment of pesticide use among small-scale farmers in a semi-arid tropical agro-ecosystem. Degree Thesis in Ecotoxicology, Department of

- Systems Ecology, Stockholm University, May 2006. Supervisor: E. Enfors. Sponsor: Sida
- Mutiibwa, R.K., 2006. Groundwater flow systems in the Makanya catchment, Tanzania. MSc. Thesis. UNESCO-IHE Institute for Water Education Supervisors: M.L. Mul, J.W. Foppen and S. Uhlenbrook. Sponsor: WaterMill
- M.P. Voogt, 2005. Hydrological history of the Makanya River, changes in stream profile examined. Practical work report Delft University of Technology. Supervisors; M.L. Mul, W.M.J. Luxemburg. Sponsor: Lamminga Fonds

**ANNEX 20: GROUNDWATER CAPACITY BUILDING INITIATIVE**

## Groundwater Capacity Building Initiative: Data Gathering through Questionnaire

### Groundwater Professionals from SADC countries

Help identifying capacity needs for groundwater management in your country and in your own institution.

Please **complete the questionnaire** and participate in this capacity building initiative.

**Follow up process** is envisaged on the basis of questionnaire responses.



Contact: Dr Richard Owen. [richardo@zol.co.zw](mailto:richardo@zol.co.zw)  
or at the Symposium through the WaterNet desk



**Assessment of the integration of groundwater management in the IWRM framework  
and identification of requirements for capacity development**

**Questionnaire**

**Respondents Details:** Name:  
Qualification:  
Address:  
Email:

**Job Description:**  
Employer:  
Telephone  
Fax:

GW key components	Questions	Answers
<b>1. Institutional Management</b>	a- Which institutions / authorities are tasked by government with the management of groundwater?	
	b- Do these institutions have an IWRM policy?	
	c- Are these institutions only at National level or do they also operate effectively at catchment level?	
	d- Are there other organizations such as NGO's, donor organizations, etc. that are also involved in groundwater development in any way? If yes please list	
	e- What are the key concerns of the organizations involved with groundwater?	
	f- What are the perceived capacity building requirements for these organizations?	

<b>2. Legal Status</b>	a- Which institutions are empowered by law to manage groundwater?	
	b- Is groundwater use and development covered by specific laws? If yes, specify nature of laws	
	c- Are these laws effectively enforced?	
	d- At what level are users / developers required to seek permits from the relevant authorities? Are such procedures enforced? Are permits accessible and readily available?	
	f- What are the capacity building needs in terms of legal capacity?	
	<b>3. Resource Assessment</b>	a - Groundwater database: Is there a groundwater database, and what is its format? Which organization hosts the database?
b- How accessible is this information at national and catchment level?		
c- What are the capacity building requirements for these activities? Are there cooperation agreements with donor organizations targeted at groundwater database development?		
d- Are the following data available?		
Groundwater maps (piezometric, aquifer dimensions, well yield, water quality etc...)		
Geological maps		
Hydrogeological & Hydrological reports		
Analysis of the major groundwater systems		
Climatic data, rainfall and ET maps		
Groundwater chemistry data		
Groundwater recharge rates		
Groundwater level vs time data		
River runoff data.		
g- Are there any other sources of groundwater data, not captured by the national database system?		
<b>4. Resource use</b>	a- Who are the principal users of groundwater?	
	b- What are the main capacity constraints in providing groundwater for these groups?	

	c- At what level is groundwater normally provided — hand pump; motorized pump; distribution network etc?	
	d- Irrigation use- is there significant groundwater use for irrigation?	
	e- Large scale urban use — is there large scale urban use of groundwater?	
	f- How often do groundwater resources dry up? How do people deal with drying up of groundwater sources?	
	g- Does the use of groundwater vary significantly in different regions of your country?	
<b>5. Maintenance</b>	a- Institutional responsibilities. Who has institutional responsibility for maintenance of public groundwater installations?	
	b- Effectiveness of maintenance: what % of public boreholes are on average not working at any point in time?	
	c- What are the key problems and constraints associated with the maintenance of groundwater supplies?	
	d- VLOM — is there a village level operation and maintenance policy / practice?	
<b>6. Integrated Water Resources Management</b>	a- Surface water / groundwater interactions. To what extent does the national water policy take into account the interaction between surface and groundwater'?	
	b- In a national context, what is the comparative importance of groundwater vs surface water?	
	b- Gender issues — are women significantly involved in the selection of borehole sites in public water programs? Are women significantly empowered in the maintenance cycle for rural water supplies? Are there specific gender policies in place?	
	c- Demand management aspects- Is there any form of demand management on groundwater use?	
	d- Monitoring. What are the capacity constraints for groundwater monitoring?	

<b>7. Groundwater development</b>	a- Groundwater location — In terms of borehole siting and aquifer resource assessment, is there sufficient capacity in hydrogeology and geophysics?	
	b- Are there major under-developed or undeveloped groundwater resources?	
	c- Is there a viable drilling sector? What are the training needs for this sector?	
	d- Pumps and pump installation and maintenance Is there a viable borehole pump sector? What are the capacity building requirements for this sector?	
<b>8. Groundwater protection and environment</b>	a- Groundwater quality / threats. What are the main threats to groundwater quality? How severe is the potential threat?	
	b- Is the groundwater resource being over-exploited?	
	c- Is there sufficient capacity to identify / monitor such problems?	
	b- Groundwater protection — is there legislation to protect groundwater from pollution / overuse?	
<b>9. Groundwater Education and Training</b>	a- Institutions providing such education — which national institutions provide any form of groundwater training?	
	b- Level and nature of training available nationally. Identify the different type and levels of training courses available. Academic and technical. What are the capacity constraints?	
	c- Are there any regional training institutions in the country? Are there regional courses that are available in the country?	
<b>10. Economic Aspects.</b>	a- Do users pay for groundwater?	
	b- How is groundwater use measured?	
	c- Is there sufficient capacity to ensure that groundwater development is carried out in a cost effective sustainable manner?	
	d- Indicate the additional capacity needs in this sector.	

## ANNEX 21: PROGRAMME FOR THE NETWORK MANAGERS MEETING



### Network Managers' Meeting Delft, 16 – 20 October 2006

Sunday, October 15<sup>th</sup> – **Arrival** network managers and partners

18:00 – 20:00	Welcome drinks at the Nunnery	
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Monday, October 16<sup>th</sup> – **A new phase, a new direction?**

Time	Subject	Facilitation
09:00 – 09:15	Welcome Logistics	Paul Adje
09:15 – 10:00	Introduction Review of the Agenda What I want from this week (cards).	Kees
10:00 – 10:45	Cap-Net's 2 <sup>nd</sup> phase: Introduction and discussion	Paul
10:45 – 11:15	<i>Coffee break</i>	
11:15 – 12:30	Developments in the networks: achievements and challenges in: - delivery - network management - knowledge management Open space discussion	Kees Lilliana Cyrille Sherif
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:00	Draft strategy for the Cap-Net programme.	Paul
14:00 – 14:15	Cap-Net and the UNDP water programme	Joakim
14:15 – 15:00	Discussion, what does it mean for us, comments and additions – back to the open space discussion	Kees
15:00 – 15:30	<i>Tea break</i>	
15:30 – 17:15	<b>Work planning, reporting and contracting</b>	Kees
Evening	Dinner	

Tuesday, October 17<sup>th</sup> – **Addressing IWRM and WASH capacity challenges**

Time	Subject	Facilitation
09:00 – 09:15	Recap of the previous day	Volunteers
09:15 – 10:00	IWRM capacity building – where are we? Discussion	Themba
10:00 – 10:45	WASH capacity building – where are we? Discussion	Rory
10:45 – 11:15	<i>Coffee break</i>	
11:15 – 12:30	Working groups on a) WASH and b) IWRM – How to do it better through the network. Identify cooperation, action and commitments.	
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:45	Working groups – continued but now reversed	
14:45 – 15:15	<i>Tea break</i>	
15:15 – 16:30	Presentation to plenary, discussion	<b>Chair: Mazlin</b>

16:30 – 17:15	Revisit and rewrite work plans - individual	
Evening	Side meeting EU Water Facility	

Wednesday, October 18<sup>th</sup> – **Regional meetings, Field visit**

Time	Subject	Facilitation
09:00 – 09:15	Recap of the previous day	Volunteers
09:15 – 11:00	Meetings of regional groups.	
11:00 – 12:00	Meeting of networks in EUWF	
12:00 – 13:00	<i>Lunch break</i>	
13:00 – 17:15	Field Trip Water board – Rivierlanden River trip by boat	Adje
Evening		

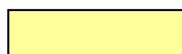
Thursday, October 19<sup>th</sup> – **Market' day**

Time	Subject	Facilitation	
09:00 – 09:15	Recap of the previous day	Volunteers	
09:15 – 09:45	Collaborative programme WASH capacity building – Streams, IRC, IHE, SIWI, SEI, networks	Rory	<b>Chair:</b> Muna
09:45 – 10:15	Partnership educational programme – PoWER, networks	Jetze	
10:15 – 10:45	<i>Coffee break</i>		
10:45 – 11:15	Gender mainstreaming – GWA, networks	Joke	<b>Chair:</b> Jasveen
11:15 – 11:45	Collaborative research programme – IFS, networks	IFS	
11:45 – 12:30	Market place – for these and other ideas to build partnerships for action.		
12:30 – 13:30	<i>Lunch served in market place</i>		
	<b>Networks' work plans and strategies</b>		
13:30 – 15:00	Monitoring progress and evaluating impact – indicators and methodologies Network assessments Presentation and discussion	Roula	<b>Chair:</b> Jacob
15:00 – 15:30	<i>Tea break</i>		
15:30 – 17:15	Network sustainability Presentation and discussion	Damián	<b>Chair:</b> Mowjood
	Exchange of rewritten work plans with reviewers		
Evening			

Friday, October 20<sup>th</sup> – **Networks' work plans and strategies - continued**

Time	Subject	Facilitation
09:00 – 09:15	Recap of the previous day	Volunteers
09:15 – 10:15	Peer review feedback session, in teams	
10:15 – 10:45	Reflection in plenary discussion: strong and weak points in work plans	Kees
10:45 – 11:15	<i>Coffee break</i>	

11:15 – 12:30	Work plan presentations by regional groups (see 18/10): collaboration and action Cap-Net work plan 2006 – 2007	Chair: Joakim
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	Continued presentation and discussion	Chair: Joakim
14:30 – 15:15	Summing up: - network assessments (Roula, Mariana) - Management Board representatives (Adje) - recommendations (Kees)	Paul
	Close	
17:00 – 19:00	Drinks at IHE	



Session related to work planning

**ANNEX 22: WATERNET NEWS VOLUME 2 ISSUE 2**

## 7<sup>th</sup> Symposium Wrap

The 7<sup>th</sup> WaterNet/WARFSA GWP-SA symposium was successfully held from 1-3 November 2006 in Lilongwe Malawi. The Malawian Minister of Irrigation and Water Development Honourable Mahommed Sidik Mia graced the event and in his official opening speech, noted how Integrated Water Resources Management (IWRM) is central to human development.

At the Opening event, the key note address was delivered by Prof. Zachary Kasomekera and the Vote of Thanks by Prof Zimani Kadzamira, Vice Chancellor at the University of Malawi. They both highlighted the importance not only of developing human capacity for IWRM but ensuring that such capacity is made use of and motivated to stay within the region.



Hon. Minister Mahommed Sidik Mia (second from left) at the opening ceremony.

Prof Pieter van der Zaag from UNESCO IHE Institute for Water Education provided an overview of the current and past symposia and showed their impact in the past five years. His presentation highlighted how the symposia have contributed to putting IWRM on the research and development agenda in the region. This year's

symposium had 6 sub themes based on the specializations in the WaterNet IWRM Master degree programme *viz.*: Hydrology; Water Resources Management; Water and Environment; Water for People; Water and Society; and Water and Land.



Dr Barbara Ngwenya (Chair) and Simone Noemdoo (Rapporteur) at the Water and Society session

The following special sessions were also convened:

- Sharing Water Benefits
- Multiple Uses of Water at Household level (MUS)
- Prediction in Ungauged Basins (PUBS)
- Challenge Program and Smallholder Innovation Systems Joint Session (CP/SSI)
- SADC Regional Water Sector Program-Program Support Facility

Attendance was an at an all time high of over 250 participants while the total number of oral and poster presentations accepted was 239.

Congratulations to Emilio Magaia, Zainab Birungi and Clarence Mazambani for winning the Best Young Scientist Award.

At the closing dinner the plan for next year's symposium was elaborated. It will be held in Victoria Falls in Zimbabwe from 31 October to 2 November 2007.

## Masters Programme Update

The first ever meeting of the Coordinators of the Master Degree Programme in IWRM was held in Cape Town from 30-31 May 2006. A second meeting was held back to back with the 7<sup>th</sup> symposium.

The coordinators' meetings have improved communication between the coordinators as well as coordination

of the student selections process and timetabling by the core and specialisations hosts.

Intake for the 2007-8 programme is complete. The highlight of next years programme is the introduction of the 6<sup>th</sup> specialisation on Water and Land. The programme is scheduled to start on 5 February 2007.



Building Capacity for Water Resources Management in Southern Africa

This issue:

7 <sup>th</sup> Symposium Wrap	1
Masters Programme Update	1

Professional Courses	2
New members join the Network and Steering Committee	2
Research	2
Engaging Alumni	3
Announcements	3

## Professional Courses

There is increasing participation of members as participants, organizers or facilitators in the professional courses. The following courses have been successfully undertaken this year:

- Mainstreaming HIV/AIDS and Gender in collaboration with GWP-SA
- Conflict Resolution in Collaboration with GWP-SA
- Tracer Hydrology in collaboration with University of Zimbabwe and UNESCO-IHE
- Environmental Water Requirements in partnership with GWP-SA, IUCN, FETWATER and InWENT
- Public Private Partnerships in the Southern Africa Water Sector. A refresher course for UNESCO-IHE and WaterNet alumni from Sub Saharan Africa.
- Seminar on Intersectoral Water Governance with

GWP-SA and InWent.



*Participants at the Intersectoral Water Governance seminar took a trip to Aqua Mocambique Water Purification Plant in Maputo*

## New members join the Network and Steering Committee

The 7th Annual General Meeting (AGM) was held on 3 November 2006 in Lilongwe Malawi after the symposium. At the meeting members endorsed some additions to the Steering Committee and WaterNet family.

Mr Dinis Juizo (Eduardo Mondlane University, Mozambique), Prof Damas Mahsauri (University of Dar es Salaam, Tanzania) and Dr Mampiti Matete (National University of Lesotho) were nominated into the Steering Committee.

The three posts became vacant after: (i) Dr Doug Merrey's tenure came to an end and, (ii) a new resolution to add two new members was passed.

We thank Doug for a job well done when he was a member of the Steering Committee.

We also welcome the following additions to the Network:

- University of Zambia School of Mines, Geology Department (Lusaka)
- African Centre for Water Research (Cape Town)
- Centre for Applied Research (Gaborone)
- Africa University, Faculty of Humanities and Social Sciences (Mutare)

We are pleased that the Network is growing both in terms of total membership (from 49 to 52) and regional representation.

## Research

Eleven Masters students working under the Challenge Program on Water and Food completed their dissertation write-up and 15 are currently doing their fieldwork.

This includes students from eight different countries, working in four of the riparian countries of the Limpopo River Basin and registered with nine different universities.

All five PhD candidates are now registered and have started their fieldwork. Summaries of completed theses are available from the WaterNet Secretariat.



*PhD, Researcher Collin Mabiza, interviewing water users, Manama, Zimbabwe*

## Engaging Alumni

WaterNet initiated a tracer survey targeted at the more than 100 graduates enrolled since 2002 from the Master Degree programme in IWRM. The tracer survey seeks the opinion of the graduates about the value of the programme in light of their professional career and work experience. It also intends to form the basis of setting up an alumni programme. All alumni are encouraged to participate in this exciting initiative. Contact the WaterNet Secretariat for more details.



## Comments, questions announcements ?

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### About WaterNet

WaterNet is a regional network on capacity building in Integrated Water Resources Management (IWRM). Currently it has a membership of 52 institutions in southern and east Africa.

### Vision

A future in which the Southern African Development Community (SADC) has the institutional and human capacity to educate and train its own water managers, capable to contribute to the equitable sharing and sustainable utilisation of water resources for poverty alleviation, economic development (livelihood security) and environmental security.

### Mission

To build the regional institutional and human capacity in Integrated Water Resources Management (IWRM) through training, education, research and outreach by harnessing the complementary strengths of member institutions in the region and elsewhere.



A strategic programme of the  
SADC Water Sector

## Announcements

- Training Course on: Crop Water Requirements and Irrigation Scheduling in the context of IWRM . WaterNet and FAO in Collaboration with University of Zimbabwe and National University of Lesotho, 15-20 January 2007, Maseru, Lesotho. For more details contact Dr Mampiti Matete on: [me.matete@nul.ls](mailto:me.matete@nul.ls)
- Groundwater professionals in the SADC region are encouraged to participate in a "Capacity building needs assessment for groundwater within IWRM". This is a joint initiative between, WaterNet in collaboration with Cap-Net and WA-Net and the German Federal Institute for Geosciences and Natural Resources (BGR). Results of the assessment will input into the WaterNet Strategy. For more details contact Dr Richard Owen on: [richardo@zol.co.zw](mailto:richardo@zol.co.zw)
- Authors are kindly reminded that the deadline for submission of papers for the **Journal of Physics and Chemistry of the Earth** is 12 January 2007 and the address for sending these remains [symposium07@eng.uz.ac.zw](mailto:symposium07@eng.uz.ac.zw)
- Workshop on Participating in FP7- the European Union's Seventh Framework Programme for Research and Technological Development: from 31 January -2 February 2007 at Water Research Commission, Pretoria, South Africa. For more information about the workshop please contact Dr Kevin Pietersen at [kevinp@wrc.org.za](mailto:kevinp@wrc.org.za) . To book a place at the workshop please contact Mrs Zagry Scholtz at [zagrys@wrc.org.za](mailto:zagrys@wrc.org.za)
- Congratulations to David and Faith Love on the arrival of Kathleen Taboka born on 28 November 2006



**ANNEX 23: PROGRAMME FOR THE 7<sup>TH</sup> SYMPOSIUM, LILONGWE,  
MALAWI**

# 7th WaterNet/WARFSA/GWP-SA SYMPOSIUM Lilongwe, Malawi 1 - 3 November 2006



## Mainstreaming Integrated Water Resources Management in the Development Process



# Programme



## DAY 1: 1 NOVEMBER 2006 (Wednesday)

TIME	OFFICIAL OPENING		
0800-0845	REGISTRATION		
	CHAIR: Mrs Stella Gama		
0845-0915	Welcome Remarks: Dr Wapu Mulwafu, Chair, LOC		
0915-0930	Symposium Overview: Prof van der Zaag		
	Introduction of Guest: Mr Grain Malunga, Principal Secretary, Ministry of Irrigation and Water Development		
0930-1015	Official Opening: Honourable Mahommed Sidik Mia, Minister of Irrigation and Water Development, MP		
1015-1020	Vote of thanks: Prof Zimani D. Kadzamira, Vice Chancellor, University of Malawi		
1020-1100	Keynote Address: Prof Zachary Kasomekera		
1100-1130	TEA		
	<b>WATER AND ENVIRONMENT</b>  CHAIR: Dr. Frank Kansiime RAPPOTEUR: Mr Elton Laisi	<b>WATER RESOURCES MANAGEMENT</b>  CHAIR: Ms Ruth Beukman RAPPOTEUR: Mr Andy Mondoka	<b>REGIONAL WATER SECTOR PROGRAM, PROGRAM SUPPORT FACILITY OPEN SESSION</b>  CHAIR: Mr Ole Houmøller
1130-1145	<b>Pascal E:</b> Study of nitrogen transformation in Lake Victoria	<b>Jonker L:</b> Integrated Water Resources Management: The theory-praxis-nexus	<b>"IWRM - Making a difference to peoples' lives"</b>  <b>Rapporteur:</b> Mr Hastings. Chikoko, PSF  1. <b>Nomzi Koyana:</b> Empowerment and capacity development of marginalised groups  2. <b>Roger Short:</b> Engaging beneficiaries and local government in project formulation  3. <b>Barbara van Koppen:</b> MUS project approach
1145-1200	<b>Mhlanga L:</b> Environmental factors associated with a blooming and non-blooming period in a hyper-eutrophic reservoir (Lake Chivero, Zimbabwe): management implications	<b>Funke N:</b> IWRM in developing countries: Lessons from the Mhlatuze catchment in South Africa	
1200-1215	<b>Kansiime F:</b> Wetland vegetation and nutrient retention in Nakivubo and Kirinya wetlands in Uganda	<b>Arntzen J:</b> Mainstreaming wastewater through water accounting; the example of Botswana	
1215-1230	<b>Munodawafa A:</b> Assessing nutrient losses under different tillage systems and their implications on water quality	<b>Claasen M:</b> Sharing benefits from water resources: a comparison of economic analysis, regulatory instruments and multi-criteria decision support to achieve equity, efficiency and sustainability	
1230-1245	<b>Saka J.K:</b> Physicochemical characteristics of surface and groundwater in the Lake Chilwa basin, Malawi	<b>Mehari A:</b> Integrating formal and traditional water management in the Mkoji sub-catchment, Tanzania: is it working?	

1245-1330		LUNCH	
1330-1345	<b>Mwendera E:</b> An assessment of the impacts of hot spring usage on water quality in Swaziland	<b>Kimani D:</b> Isn't IWRM the answer to conflict resolution? A case study of water conflicts at Ewaso Kedong river catchment, Kenya	<b>Rapporteur:</b> Roger Short, DWAF  <b>1: WWF (Zambia)</b> Case – Kafue flats project  <b>2: SWADE (Swaziland)</b> Case – Lavumisa project  <b>3: Malawi (MIWD)</b> Case – Dzimphutsi project
1345-1400	<b>Birungi Z:</b> Active biomonitoring of trace heavy metals using fish ( <i>oreochromis niloticus</i> ) as bioindicator species. The case of Nakivubo wetland along Lake Victoria.	<b>Katiyo L:</b> Pertinent issues when adopting tools for water allocation decision support in a Zimbabwean catchment	
1400-1415	<b>Mashumba P:</b> Modelling of stream pollution: - a case study of matsheumhlope stream in Bulawayo	<b>Chidhakwa Z:</b> Promoting community management of rural water supply: experiences from the communal areas of Zimbabwe	
1415-1430	<b>Nyamadzawo G:</b> Short term Impacts of sulphate mine dump rehabilitation on below ground water and surface waters of Yellow Jacket River, Mazowe, Zimbabwe	<b>Dhlamini E:</b> Fractional water allocation and reservoir capacity sharing (Water Banking): The case of the Komati Basin	
1430-1445	<b>Kgathi D:</b> Re-use of wastewater at the Selibe-Phikwe copper-nickel mine, Botswana.	<b>Mazambani C:</b> Stakeholder participation in groundwater resource management in Namibia	
1445-1500	<b>Misihairabgwi B:</b> Heavy metal adsorptive properties of agriculturally derived activated carbons applied to aqueous solutions	<b>Discussion</b>	
1500-1530		TEA	
1530-1545	<b>Banda D:</b> Causes of turbidity in the Luangwa River	<b>Kileshye-Onema J:</b> The implementation of the Nile basin initiatives, challenges from the equatorial region.	<b>Rapporteur:</b> Michael Singh, Durban Metro  <b>1: Nik Wullschleger</b> Western Cape Case  <b>2: Jan Reddy</b> KZN Case  <b>3: Bonga Mjwaga</b> Community participation
1545-1600	<b>Manwa H:</b> 'Do not kill the goose that lays the golden egg': The case of water-based tourism	<b>Swatuk L:</b> The challenges of supplying water to rural communities in the lower Okavango basin, Ngamiland, Botswana: An evaluation of government policy and performance.	
1600-1615	<b>Chimbari M.J:</b> Transmission of Schiotomiasis ( Bilharzia) along the shoreline of Lake Kariba	<b>Chirinda N:</b> The contribution of palustrine wetlands on rural livelihoods in semi-arid Masvingo district of Zimbabwe	
1615-1630	<b>Nhapi I:</b> Soil erosion and environmental degradation in Rwanda: "business as usual" is no longer an option	<b>Discussion</b>	
1630-1715	<b>POSTER SESSION</b>		
1800-	<b>OPENING COCKTAIL/POSTER SESSION</b>		

**DAY 2: 2 November 2006 (Thursday)**

TIME	WATER AND ENVIRONMENT (continued) <b>CHAIR:</b> Dr. Frank Kansiiime <b>RAPPOTEUR:</b> Mr. Elton Laisi	WATER RESOURCES MANAGEMENT (continued) <b>CHAIR:</b> Ms Ruth Beukman <b>RAPPOTEUR:</b> Mr Andy Mondoka	REGIONAL WATER SECTOR PROGRAM, PROGRAM SUPPORT FACILITY CLOSED SESSION <b>Facilitation:</b> Roger Short
0800-0815	<b>Madamombe E:</b> A rapid estimation of environmental flow requirements: Zimbabwe case study	<b>Amakali M:</b> Enabling IWRM implementation in Namibia	<b>Round table discussion: Identifying, Formulating and Implementing IWRM Projects</b>
0815-0830	<b>Kashaigili J:</b> Estimation of environmental flows in the great Ruaha river catchment, Tanzania: Use of the desktop reserve model	<b>Magole I:</b> Can Integrated Water Resources Management be achieved in the Okavango delta: A case of the Okavango Delta Management Plan (ODMP)	
0830-0845	<b>WATER AND LAND</b> <b>CHAIR:</b> Dr Washington Nyabeze <b>RAPPOTEUR:</b> Dr Aiden Senzanje	<b>Malunga G: (Invited address)</b> Integrated Water Resources Management (IWRM): A tool for poverty alleviation and economic development in Malawi	Sharing of experience between practical project implementers around how best to identify, formulate and implement IWRM projects
0845-0900	<b>Dr Doug Merrey: (Invited address)</b> Micro-Agricultural Water Management Technologies for Food Security in Southern Africa: Part of the Solution or a Red Herring?	<b>Simalabwi A:</b> Strategic approach to Mainstreaming IWRM in national development plans: Lessons from Malawi and Zambia IWRM planning.	Identification with communities Mobilising projects
0900-0915	<b>Cooper P:</b> Coping better with current climatic variability in the rainfed farming systems of sub-Saharan Africa	<b>Mabiza C:</b> Linkages between the water resources and institutional sustainability: experiences from district the Mzingwane catchment	Budget support
0915-0930	<b>Kashimbi K:</b> Impacts of climate variations and changes of lake characteristics on economic activities within the catchment of Lake Jipe in Tanzania/Kenya	<b>Ndlela Z:</b> The Water Act of 2003 and its Implications to Small-Scale Sugarcane farmers in Swaziland	Sequencing / flow of funds
0930-0945	<b>Matiko M:</b> Land use and land cover changes and its impacts on hydrology in the river Kihansi catchment area	<b>Discussion</b>	
0945-1000	<b>Mugabe F:</b> Strategies for adapting to climatic variability and extremes: A case study from semi-arid Southern Zimbabwe		

1000-1030	TEA	
	<b>WATER AND LAND (CONTINUED)</b> CHAIR: Dr Washington Nyabeze RAPPOTEUR: Dr Aiden Senzanje	<b>WATER FOR PEOPLE</b> CHAIR: Prof Damas Mashauri RAPPOTEUR: Eng. Vzikomborero Hoko
1030-1045	<b>Mwenge Kahinda JM:</b> Rainwater harvesting to enhance water productivity of rainfed agriculture in the semi-arid Zimbabwe	<b>Demberere T:</b> An evaluation of the sustainability of a water supply and sanitation project in Mt Darwin district: Zimbabwe.
1045-1100	<b>Makurira H:</b> Water balance analysis for smallholder rainfed agricultural systems: A case study of Makanya catchment, Tanzania	<b>Hoko Z:</b> An assessment of the water quality of boreholes in Bindura district, Zimbabwe.
1100-1115	<b>Tumbo S and Mbilinyi B.P:</b> Decision support system for identification of potential sites for rainwater harvesting: part I- determination of suitability levels for different factors: part II- development and testing	<b>Msonda W:</b> A study of fluoride groundwater occurrence in Nathenje, Lilongwe, Malawi
1115-1130	<b>Moyo L:</b> An assessment of soil and water management techniques towards rainwater productivity in semi-arid Southern Zimbabwe	<b>Masona C:</b> Small reservoir pollution mapping and water quality monitoring in Mzingwane catchment (Zimbabwe) for domestic, livestock and irrigation use
1130-1145	<b>Juizo D:</b> Groundwater dependent wetland ecosystems: the threshold for agricultural water use in the Chibuto wetland system	<b>Mkandawire T:</b> Biological, chemical, and physical drinking water quality from shallow wells in Malawi; case study of Blantyre, Chiradzulu, and Mulanje districts.
1145-1200	<b>Masiyandima M:</b> Impacts of agricultural use of the Mohlapitsi wetland of on the hydrology of the wetland and the Mohlapitsi river	<b>Zinyowera S:</b> The effect of UV lamps, solar radiation and sand filtration on drinking water contaminated with intestinal protozoan parasites.
1200-1215	<b>Chiputwa B:</b> Diversity of wetland based livelihoods in Limpopo river basin	<b>Mayo A:</b> Modelling fecal coliform mortality in water hyacinths ponds
1215-1230	<b>Ngwenya D:</b> Effects of grazing management on rangeland soil hydrology Insiza, Zimbabwe	<b>Ndokosho J:</b> An assessment of management approaches in a public water utility
1230-1245	<b>Senzanje A:</b> System performance and water productivity of deficit irrigation sugar cane under centre pivot at Mwenezana estates, South East lowveld, Zimbabwe	<b>Chirundu D:</b> Managerial factors impacting on drinking water delivery in Shurugwi town, March 2005.
1245-1300	<b>Magombeyi M:</b> The use of the river basin game as a tool for the implementation of the WaterNet CP project in South Africa	<b>Kadigi R:</b> Drawing on collective arrangements and social networks: A coping strategy for the poor households in the great Ruaha catchment, Tanzania



**Day 3: 3 November 2006 (Friday)**

TIME	<b>HYDROLOGY</b> <b>CHAIR:</b> Dr. Dominique Mazvimavi <b>RAPPOTEUR:</b> Dr Brian Rawlins	<b>WATER AND SOCIETY</b> <b>CHAIR:</b> Dr. B Ngwenya <b>RAPPORTEUR:</b> Ms Simone Noemdoe
0800-0815	<b>Alemaw B.F:</b> Spatial and Temporal Variability of the Limpopo River Basin Water Budget	<b>Ngongondo C.S:</b> Community water points as a solution to access to potable water in Urban areas: A problem and strength analysis of some squatter areas in the City of Blantyre, Malawi.
0815-0830	<b>Mul M:</b> Spatial rainfall variability and runoff response during an extreme event in a small catchment in the South pare mountains, Tanzania.	<b>Dungumaro E:</b> Towards community involvement in domestic water provision: challenges and opportunities
0830-0845	<b>Vilanculos A:</b> Towards improving flood forecasting and early warning systems through integrated technology in the Limpopo basin	<b>Madulu N.F:</b> Linking hydropower power development and socio-economic and environmental risks of local communities in Tanzania
0845-0900	<b>Winsemius H:</b> Assessment of scaling errors of grace terrestrial storage through comparison with a hydrological model of Southern Africa	<b>Matete M:</b> Benefits and costs sharing in transboundary water projects in the presence of strong trade links: the case of the Lesotho highlands water project (LHWP)
0900-0915	<b>Kongo V:</b> Surface and sub-surface water interaction in the Potshini catchment-S.Africa	<b>Dzwaitiro B:</b> An assessment of the gender sensitivity and health risk potential of ecological sanitation (ECOSAN) in Zimbabwe. A case study of Marondera district, Zimbabwe.
0915-0930	<b>Nyagwambo L:</b> Groundwater resources assessment in a crystalline basement aquifer - towards a first order monthly recharge estimate from physical and rainfall properties.	<b>Kamtukule G:</b> Mainstreaming Gender and HIV/AIDS in Integrated Water Resources Management
0930-0945	<b>Mosterta A:</b> The water supply model for central Namibia	<b>Masamba W:</b> Water quality and utilisation of an outlet of the Okavango delta, Botswana: Thamalakane-boteti rivers
0945-1115	<b>PUBS Special Session</b> <b>Keynote Speaker and Chair:</b> Prof. S. Uhlenbrook <b>Rappoteur:</b> Ms Marloes Mul  1. <b>Dr. Mazvimavi&amp;Dr Nyabeze:</b> Ongoing activities, Okavango, Zambezi, Congo 2. <b>Dr. R. Owen:</b> Groundwater Capacity Building Initiative for Africa (GW-CB Africa) 3. <b>Discussion</b>	<b>Discussion</b>
<b>1115 -1130</b>	<b>TEA/POSTER SESSION</b>	
1130-1200	<b>POSTER SESSION</b>	
	<b>PLENARY &amp; OFFICIAL CLOSURE</b>	
	<b>CHAIR:</b> Mrs. Stella Gama	
1200-1230	<b>LOC from 8<sup>th</sup> WaterNet/WARFSA/GWP-SA Symposium</b>	
1230-1245	<b>Closing Remarks:</b> Dr. Wapu Mulwafu, Chair, LOC	
1245-1300	<b>OFFICIAL CLOSING:</b> Prof. Zimani D. Kadzamira, Vice Chancellor, University of Malawi	
1300-1400	<b>LUNCH</b>	
1400 -1700	<b>WATERNET AGM</b>	
<b>1930</b>	<b>SYMPOSIUM DINNER</b>	

## ANNEX 24: EXPENDITURE STATEMENT

	<b>Total Budget Phase IIa &amp; IIb Euro</b>	<b>Expenditure 1/04/-31/12/05 Euro</b>	<b>Expenditure 1/01/-30/06/06 Euro</b>	<b>Expenditure 1/07/-31/12/06 Euro</b>
Management Fund	1,934,000.00	127,596.61	154,202.94	166,785.52
International Backstopping	441,000.00	69,278.69	69,532.32	56,160.60
Nodal Strengthening Fund	150,000.00	12,500.94	33,421.05	0.00
Symposium Fund	352,500.00	96,370.92	42,419.48	56,138.60
Publication Fund	75,000.00	0.00	0.00	0.00
Fellowship Fund	1,542,250.00	197,793.97	180,570.96	56,633.12
MSc Dissertation Fund	762,500.00	0.00	0.00	0.00
Curriculum Development Fund	66,000.00	0.00	0.00	0.00
Staff Exchange Fund	406,000.00	18,891.22	22,239.73	18,715.31
Professorial Chair Fund	672,000.00	0.00	0.00	0.00
Catchment Partnership Fund	35,000.00	0.00	0.00	0.00
Professional Training Fund	578,000.00	0.00	0.00	0.00
Language Course Fund	100,000.00	0.00	0.00	0.00
Staff Development Fund	137,750.00	18,637.00	13,466.33	17,035.60
Challenge Program	0.00	0.00	-177.55	0.00
Contingencies (2%)	148,000.00	0.00	1,431.00	1,500.00
<b>Total</b>	<b>7,400,000.00</b>	541,206.60	517,106.26	372,968.75

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