WATERNET news

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Welcome Note

As we begin the new year, it is vital for us to take time to reflect on progress made towards goals and targets set for the past year. WaterNet wishes to thank all partners, members and stakeholders who have contributed to the success of the network in 2014. We hope that we continue to put our collective efforts towards carrying the network forward this year.

In this issue:

The 15th WaterNet/WARFSA/GWP-SA symposium was successfully held at the Sogecoa Golden Peacock hotel in Lilongwe, Malawi between the 29th and the 31st of October 2014. The Symposium is a platform for water professionals to share advances in research and education related to Integrated Water Resources Management by the family of water professionals concerned with the sustainable use of freshwater resources. The symposium has become the key annual event in water research in Eastern and Southern Africa. To date, 14 Symposia have been organized attracting on average 400 water professionals.

The 15th Symposium held under the theme "IWRM for harnessing socio-economic development in Eastern and Southern Africa" consisted of scientific presentations highlighting the latest research achievements as well as more general conceptual papers and special sessions.

The event was officially opened by the Malawi Minister of Agriculture Irrigation and Water Development , Hon Dr Allan Chiyembekeza (MP).

Hon Dr Allan Chiembekeza (MP)

WaterNet Board Elects New Chairperson

The Waternet Board holds meetings every year during the Waternet/WARFSA/GWP-SA Symposium. Last year was no exception, the board met on the 27th and 28th of October 2014 at the Sogecoa Golden Peacock, in Lilogwe, Malawi. Eng Wilson R. Nyemba the Waternet Chairman from 2005 to 2014, decided to step down and the board members appointed Dr Lapologang Magole as the new Waternet Chairperson. Waternet welcomes Dr Lapologang Magole on board as the Chairperson and also wishes her all the best on this new appointment.

BRIEF PROFILE

Dr Lapologang Magole is a Senior Research Scholar at the University of Botswana's Okavango Research Institute in Maun, Botswana. She received her PhD in Development Studies (Environmental Policy Analysis) at the University of East Anglia, in the United Kingdom in 2003. Her research work focuses on natural resources governance. Through her research and development work, she has interacted with resource users at grassroots level, donor agencies, policy makers and implementers and has come to appreciate multiple interests and aims with regard to natural resources management and use. Her publications are in the areas of; institutions for management of resources held and used communally, in particular, land and water as well as issues affecting development and natural resources access by minority communities. Her most recent publications and research work has been on Integrated Water Resources Management (IWRM) with particular focus on Transboundary Water Resources Management (TWRM).

Dr. Magole has vast experience in stakeholder interaction facilitation (mediation, negotiation, conflict resolution and empowerment), project management and strategic planning. She is also an experienced trainer in participatory planning and learning methods for natural resources management, environmental impact assessment (EIA) and strategic environmental analysis (SEA). Her geographical scope of work has widened from Botswana to the whole of the Southern African Development Community (SADC) through networking and collaborative work.

She serves in several professional boards and has been a WaterNet Management Trustee since 2011.

REMARKS FROM DR LAPOLOGANG MAGOLE

First of all, I would like to thank the WaterNet family for placing so much faith and trust in me by bestowing upon me such a big responsibility of being the Chairperson of the Board of Trustees and hence, the Network. My greatest appreciation goes to the founding members, past and present Trustees and in particular, the immediate past Chairperson, Engineer Wilson, R. Nyemba, who paved a path that I can follow. I pledge dedication and commitment to the Network and promise to build on the great work of the past Chair and his dedicated team of Trustees while seeking new horizons for taking the Network forward.

WaterNet is an important institution for capacity development in integrated water resources management for the Region. It is also a formidable force made up of academics, water practitioners, experts, policy makers and most important for the future, students and alumni. The network has grown from strength to strength due to the commitment of these variant actors. I am fortunate and pleased to ride on this strength.

My vision and indeed that of the entire Board of Trustees cannot be different from that of Phase III: 'Achieving sustainability by increasing impact'. This has to continue through the set programmes and increasing membership participation. WaterNet does focus on academic work for regional water management capacity building, but, it is not an academic project. Regional water management issues are real and need practical solutions. Impact is therefore, central to the sustainability of the Network. By registering as a SADC water capacity building subsidiary institution, WaterNet has declared to the peoples of the region that; 'you can count on us to address water challenges of the region'. I believe there has been impact and the Network has lived up to that statement. While that is clear, what needs to be equally emphasised is that; 'it is a partnership'. The Region needs to own and resource the Network. During my tenure, I hope to lead the Board and the entire Network to work on a sustainability strategy that takes WaterNet to new heights! I wish to make it clear that strong sustainability is home grown. Beyond impact, is visibility that draws people and resources to an organization. I, therefore, urge the membership to look forward to the sustainability project over which I wish us to join forces.

I thank you all! May God richly bless you in this new year.

Dr Lapologang Magole

Reflections from Eng Nyemba Waternet Chairman (2005-2014)

Eng Wilson R. Nyemba

Eng. Wilson R. Nyemba has been at the helm of WaterNet since November 2005 when the network was still managed by a Steering Committee, through the transition to a Management Board in Phase IIb and now Phase III, until he voluntarily stepped down in November 2014 to concentrate on another project that he is leading. Looking back at the 9 years that Eng. Nyemba has been at the helm of the network, a number of achievements were attained which are worth noting in this write-up.

Through his leadership, WaterNet was transformed from a loose network managed by a Steering Committee into a Management Board consisting of elected Trustees and Supporting members. This was partly at the instigation of the cooperating partners who felt it was more appropriate that the network's operations, finances and day to day activities be managed by the membership in Southern Africa. Prior to the transformation, all financial management as well as the issuing of employee contracts was done by UNESCO-IHE. Discussions with cooperating partners in this regard took place in 2006 and by the end of the same year, a Notarial Deed of Trust had been drafted by the then Steering Committee through the help of a lawyer in Botswana. This culminated in the lodging and registration of the WaterNet Trust on the 29th of December, 2006 in Botswana.

Through Eng. Nyemba's leadership, the WaterNet Management Board managed to successfully operationalise modalities related to the general management of the Trust as well as its financial management. He was heavily involved in the development of financial and management systems of the Trust in collaboration with partners from DGIS, UNESCO-IHE and Sida. The transferring of financial management from UNESCO-IHE to the WaterNet Trust was completed in 2008. As a result, WaterNet Phase II (2005-2009) was split into two, i.e. Phase IIa and Phase IIb. As such, the transformed WaterNet Management Board took control and management of the Trust's operations in 2008 with assistance from UNESCO-IHE and financial management from KPMG in Botswana.

The other achievement of the Board during this period was the ability to manage the Trust with the Secretariat domiciled in Zimbabwe during the period of the economic recession, 2008 being the worst year. It was a chaotic period in terms of financial management, but the Trust managed to pull through.

Eng. Nyemba led the process of the development of the WaterNet Phase III Strategy which resulted in the awarding of the current grant of €5.4 million for the period 2012 – 2016 by DGIS.

During his tenure and in 2008, WaterNet introduced the positions of Professorial Chairs at co-host and specialisation institutions. Though these positions are no longer in place, this was a big achievement as Professorial Chairs provided academic leadership to academic staff and students on the regional Masters degree in Integrated Water Resources Management.

Two more specialisation institutions, namely GIS and Earth Observations at the University of Kwazulu Natal and Water and Land at the University of Botswana were established during Phase IIb.

During the same period, Eng. Nyemba led the WaterNet Board to formulate an application to SADC for subsidiarity status, resulting in WaterNet being accepted as a subsidiary institution of SADC by the SADC Heads of States in 2012. As a result of this acceptance, WaterNet now implements all programmes related to capacity building for the SADC Water Sector.

While it is commendable that the Management Board led by Eng. Nyemba during Phase IIb and the beginning of Phase III recorded a number of successes as articulated above, they also faced a number of challenges: WaterNet initially encountered some challenges in terms of financial management when this responsibility was transferred from UNESCO-IHE to the Trust. When the Trust took over from UNESCO-IHE, KPMG Botswana was appointed as the fund managers with help from a Finance Officer based at the Secretariat. This arrangement was not so robust, with limited financial control from the Board. However this situation was quickly rectified at the beginning of Phase III wherein WaterNet has now employed a Chartered Accountant and most of the financial management are now in-house, while the Finance Committee of the Board are now more involved in monitoring and control of the budgets and finances.

Another challenge faced by Eng. Nyemba and his board was getting access to SADC governments and having them to commit financial support for sustaining the network especially the MSc in IWRM programme and short professional courses. SADC governments have the capacity to commit financial resources to the sustenance of the network and capacity building for the water sector, but their response has been too slow. WaterNet has trained a number of Water Managers for the SADC region through its foreign funded programme and it is high time that SADC governments take over ownership of the network.

As a parting advice to the incoming Chair of the Board, Dr Lapologang Magole, Eng. Nyemba believes that the Board should focus on sustaining the network through support from SADC governments and their associated Ministries of Water and Local Authorities. Capacity has been built over the years with support mainly from DGIS and Sida and focus should now be on the sustainability of the network beyond the support from foreign donors. There is need for the Board to vigorously engage SADC governments so that they commit some financial resources for the network. If DGIS does not fund WaterNet beyond 2016, this might result in the collapse of the network if there are no financial commitments from SADC governments.

Reflections from Eng Nyemba Waternet Chairman (2005-2014)

Eng. Nyemba paid homage to the Board members he led during his tenure. He highlighted that he had a great team of professionals and does not have any doubts in them carrying over the mandate and objectives of the network and its sustenance. He went on to wish the incoming Chairperson of the Board, Dr Lapologang Magole and the entire board all the best. He reiterated that having been part of the WaterNet family for almost ten years, he will be available for any role including being an advisor if called upon to do so by the network.

Finally, Eng. Nyemba paid tribute to the unwavering support, particularly from DGIS, Sida and other cooperating partners. The financial support provided by these partners has gone a long way in growing WaterNet from a mere grouping of 18 institutions to 75, a number which continues to grow. He singled out and thanked the Government of the Netherlands, through DGIS, who have consistently funded the network since its inception in 1999. He also thanked the Swedish International Development Association for funding the network during Phase II. All these cooperating partners have honoured their obligations with WaterNet as per the agreements signed with them.

The Network would like to take this opportunity to thank Eng. Nyemba for his unwavering support over the past 9 years and to wish him all the best in his future endeavours!

Eng. Nyemba chairing the last Waternet Board Meeting held on the 27th and 28th of October in Lilongwe, Malawi

15th Symposium Presentations

The 15th Symposium promoted interaction among policymakers, academic, practitioners from water and related sectors, and cooperating partners; identifying regional issues gaps and priorities that require further research and support. Presentations were made under the following sub-themes:

- Hydrology
- Water and Land
- Water Resource Management
- Water Supply and Sanitation
- Water and Society
- Water and Environment
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Highlights from the presentations under the different sub-themes are as follows:

Hydrology

In Eastern and Southern Africa, there is limited reliable data available for application of conventional prediction tools so as to manage water resources in a sustainable way. As such, 'Hydrology' as a study is important in the integration major rivers cross national and sub-national boundaries. Under this sub-theme, presentations focused on studies and models that enhance not only our understanding of water cycles' response to natural and man made changes at different scales, but also how these changes can be managed in a sustainable way.

A total of twelve papers were presented over a two day period. The main highlights from this sub-theme were as follows:

- Models, tools, and techniques for assessment of rainfall (including risk assessment especially drought) and surface and groundwater, representing important frontiers of knowledge which, however, should be tested
- Reliability and utility of models depend on data availability, precision, accuracy and flexibility
- Translation of models to real life situations remains a challenge because of complexities in both the biophysical and socio-economic realms
- Effective discourse and communication of pertinent policy issues in hydrology is critical and
- Trends to be obscured by inadequate decoding of technical terminology, concepts and theories, and
- Necessary to demystify technical presentations using simple language to enhance comprehension and appreciation of key issues by non-technical audiences.

Water and Land

Agriculture is a major land use and livelihood strategy in Eastern and Southern Africa. It is also the greatest user of water. Owing to the growing population, persistent droughts, erratic rainfall and extreme weather events, food production and exploitation of forest products and biodiversity have been on the increase, thus risking the resilience and stability of the interaction between surface and ground water resources including wetland ecosystems. This sub-theme puts together papers that illustrate the impact of water management practices and policies on water, crop, livestock and land productivity, livelihoods security, wetland ecology and downstream water requirements.

Major highlights from the 12 papers presented were as follows:

- Focus was on determination of moisture available for crops in rain fed fields , wetlands and floodplains
- Use of wetlands and floodplains is driven not just by moisture availability but by soil fertility
- Determination of soil moisture must be related to the economic aspects such as crop yields
- The IWRM approach must be complemented with water infrastructure such as irrigation infrastructure
- Environmental concerns regarding use of fragile ecosystems should receive equal attention as cultivation aspects

Water Resource Management

Progress in developing and implementing IWRM and water Efficiency plans have so far been varied across countries in Eastern and Southern Africa. Papers under this sub-theme included innovations and experiences in water resource planning and management and river basin management at different institutional and spatial scales and in view of global changes. Highlights from presentations in this sub-theme are as follows:

- There is need for refining various indices e.g. (livelihood vulnerability indices and water quality indices) taking into account data limitations and sound statistical analysis if they are to contribute to effective decision making and improved livelihoods.
- Operationalization of IWRM as a basis for trans boundary water management is difficult because of multi-level governance systems, particular histories, national interests, and different institutional and policy realities
- Access to water by people is affected by the water policy environment, tools for assessing water resources at local level such as small dams, and should be informed by an understanding of local level institutions

15th Symposium Opening Ceremony

The official opening ceremony of the 15th Symposium took place on the 29th of October 2014 and was graced, among other people, by the presence of the Local Organizing Committee Chairperson: *Prof. Cosmo Ngongondo*, Chairperson of the WaterNet Board: *Eng Wilson R. Nyemba*, GWPSA representative, *Ms Ruth Beukman*, The representative of the Vice-Chancellor of the University of Malawi, *Prof. Victor Kasulo*, SADC Representative, Senior Programme Officer in the Water Division, *Mr. Phera Ramoeli* ,Minister of Agriculture Irrigation and Water Development, *Hon, Dr. Allan Chiyembekeza (MP)* , Chairman of Lilongwe University of Agriculture and Natural Resources and Programme Manager, Greenbelt Initiative *Prof. Zach Kasomekera*.

In his introductions, *Prof. Cosmo Ngongondo* introduced the above mentioned guests of honor and thanked them for acknowledging the invitation. He then welcomed everyone to the 15th Waternet/ WARFSA/GWP-SA Symposium. All the nations represented at the symposium where recognized and welcomed. In his conclusions he gave a brief journey of the preparation of the 15th Waternet/ WARFSA/GWP-SA Symposium and thanked all the sponsors.

Prof. Cosmo Ngongondo

Eng. Wilson R. Nyemba

Chairperson of WaterNet: *Eng Wilson R. Nyemba* welcomed the guests of honor and all participants to the 15th Waternet/WARFSA/ GWP-SA Symposium. He thanked the Swedish and Dutch governments for their financial support. He introduced the representatives of the Dutch and Swedish governments. He also appealed to the Minister of Agriculture Irrigation and Water Development, to come together with other minister of water in the SADC region and see how they can sustain WaterNet without always looking for external support and aid.

Ms. Ruth Beukman

Prof. Victor Kasulo

The representative of the Vice-Chancellor of the University of Malawi, *Prof. Victor Kasulo* commended the participants for taking time to attend the symposium as occasions like the Symposium were rare and precious. He highlighted that freshwater is an essential component of life which is now becoming limited due to reduced rainfall, pollution, population growth and urbanization. As a result, there is need for an effective integrated response from a multidisciplinary perspective. Gatherings such as the 15th Symposium becomes vital in sharing knowledge and coming up with responses that can be adopted. He implored the participants to bring out vital water related issues to the fore as well as responses that can be taken with regards to integrated water resources management and shaping the future research agenda. Prof. Kasulo thanked WaterNet, WAFSA and GWP-SA for taking a lead in the area of IWRM in the Eastern and Southern African regions. In his concluding remarks he said University of Malawi has created postgraduate water degree programme aimed at enhancing water management capacity.

Mr. Phera Ramoeli

In his remarks the SADC Representative, Senior Programme Officer in the Water Division, *Mr. Phera Ramoeli* said Waternet is one of the most important and strategic programmes in Southern Africa as it fulfills the need for capacity building for the water sector. The symposium offers a platform for the exchange of ideas between academics, policy makers and practitioners. Ideas coming out of the symposium will feed into the RSAP IV. Mr Ramoeli stressed that SADC was currently focusing on regional integration and infrastructure development including in the water sector. Research done should influence policy and support our needs and not just for academic purposes

The Minister of Agriculture Irrigation and Water Development, *Hon, Dr. Allan Chiyembekeza (MP)*, welcomed all the participants to Malawi and invited them to see Malawi's beautiful resource especially Lake Malawi. He thanked the organizers for choosing Malawi to host the symposium. He highlighted that water is the cornerstone of our lives and the symposium provides an appropriate platform for knowledge sharing about water resources. He reiterated that the Government of Malawi was committed to supporting research and capacity building in integrated water resources management. He concluded by saying that he sincerely hoped that the 15th Symposium was the best platform for enhancing the implementation of IWRM.

15th Symposium Presentations

Water Supply and Sanitation
Lack of a sustainable approach to the provision of water and sanitation has resulted in decreased coverage in the population with access to safe water and adequate sanitation, thus necessitating the need for appropriate and sustainable water and sanitation systems. This sub-theme contains papers addressing sustainable water supply and sanitation development, water utility management and linkages to public health livelihoods and climate change. The highlights from the presentation under this sub-theme were as follows:

- Low cost pump technologies are critical for increasing access to water by rural communities but should be assessed for sustainability in relation to operation and maintenance and availability of spare parts
- Making clean water availability for small non-municipal water systems is dependent on among other things (alternative filtration that does not incorporate use of chemicals for treatment of raw water, but should be assessed for sustainability in terms of cost-effectiveness, safety, reliability)

Water and Society
When water available is limited in quantity, quality or distribution; this can be a source of cooperation nor contestation among users. Water access and benefit sharing are a source of power. Any governance system should therefore tackle the issue of resource access and benefit sharing. The SADC protocol on shared water resources is a major step in the recognition of this principle and its integration into regional development. This sub-theme addressed human development and socio-political aspects of water and its management. The highlights from the presentations are as follows:

- The role of donors in implementing IWRM in SADC has been significant but it is analytically unhelpful to think of national governments as passive recipients of IWRM but in terms of negotiations
- Understanding the political economy of IWRM is critical to determine who benefits and loses in the implementation of IWRM
- It is important to think carefully how IWRM may contribute to socio-economic development
  - other approaches other than IWRM can contribute to socio-economic development
  - IWRM must be studied from bottom up

Water and Environment
The natural environment is now well acknowledged as a legitimate and important user of water. It is increasingly realised that greater investment is needed to protect aquatic ecosystems from the negative impact of human development . The challenge remains to strike the right balance between allocating power for direct human use and indirect use in the view of global challenges like climate change. Downstream uses depend on sufficient releases and of acceptable quality from upstream. These interactions frequently cross national boundaries.

Papers from this sub-theme illustrated recent advances and best practises in environmental impact assessments, determining environmental water requirements, the inclusion of the of the environment in water resources development and river basin management, wise water use for sustenance of ecosystems and people‘s livelihoods as well as studies of water quality in the IWRM framework. Highlights from the presentations are as follows:

- Water quality of water bodies is under threat due to urbanisation, agriculture, oil spills and metal pollutants, a consequence of increasing population and unsustainable socio-economic practices
- Wastewater treatment systems that reduce greenhouse gas emissions, are being tested but it is important to support these with actual measurements on the ground
- Newer methods of wastewater treatment such as nanotechnology hold much promise but need to be assessed in terms of cost effectiveness and environmental effectiveness

15th Symposium - Best Young Scientists Awards

During the Symposium, presentations for all young scientists below the age of 35 years were assessed by a team of adjudicators under each sub-theme. On the last day of the symposium, during the closing dinner, awards were given to the best young scientists under each sub-theme as well as the overall best and runner-up young scientists. The list for the awardees is shown in the table below:

Sub-theme	Name	Title of paper
Water and Land	Patrtick. M. Bahal'okwibale Mulengera	Characterizing the contribution of inappropriate land use practices to accelerated erosion in data-poor Murhundu catchment, DRC
Hydrology	Sibonakaliso. C. Mpala	The Hydrology of Sand Rivers and the use of Remote Sensing to Assess Water Extraction Potential in Zimbabwe
Water Resources Management	Innocent Rangeti	A River Health Water Quality Index for Unmgeni Basin (South Africa)
Water and Society	Rennie Munyayi	Understanding the Population Dynamics of Prosopis And Other Woody Species in Gibeon and the Community Perceptions Of Benefits and Management Options
Water and Environment	Jully. S. Senteu	Optimization of Nitrogen Transformation and Removal Processes in Hybrid Tropical Constructed Wetland
Water Supply and Sanitation	Machawe M Motsa	Application of forward osmosis in seawater desalination: Influence of draw solution and feed composition
Best Poster	Samkelisiwe Hlophe	The effects of replacing fishmeal with kikuyu grass and moringa leaves on growth, protein digestibility, histological and haematological parameters in *Clarias gariepinus*
Runner up	Rennie Munyayi	
Overall winner	Jully. S. Senteu	

Jully Senteu
Water and Environment
Overall Winner

"I am a qualified engineer with a passion for wastewater remediation. I have over three years of experience in process simulation and water research. I am a recent graduate of the Limnology and Wetland Management joint Masters Program offered by BOKU (Austria), Egerton University (Kenya) and UNESCO-IHE (Netherlands). Having grown up in the Maasai community where we had to trek for hours on end to fetch water that was often contaminated and unsafe for human consumption, I am passionate about finding lasting solutions to the water issues in Africa today.

Presenting my MSc research work at the WaterNet/WAFSA/GWP-SA Symposium gave me the unique opportunity of interacting with like-minded people and increasing my knowledge in as far as IWRM matters are concerned. Being nominated as the Best Young Water Scientist 2014 strengthened my conviction to keep pursuing solutions for the water issues facing our world today. I strongly believe that solving the current water crisis is key to tackling every other challenge in the world today."

Hlophe Sam'kelisiwe Nosipho
Best Poster

I have just completed my doctoral studies at the University of Limpopo in South Africa. I have been working on the utilisation of locally available plant resources by commonly cultured fish species in South Africa. In 2010, I presented this work at the 11th WaterNet/WAFSA/GWP-SA symposium and I won a prize for the best young scientist in the poster category. Alas, I now have again won the prize for the best young scientist in the poster category at the recent 15th WaterNet/WAFSA/GWP-SA symposium held in Malawi! I am thrilled and fulfilled that my work is of high quality.

My passion for fish nutrition started in 2009 when I registered for an honours degree in aquaculture (believe it or not, I was working as a banker prior to this). I graduated *cum laude* for the honours degree in 2010. Soon after this, Prof NAG Moyo invited me to do an MSc degree in Aquaculture by research. Again I graduated *cum laude* for the MSc degree in 2012. On submission, I had published three scientific papers in international journals based on my MSc dissertation. Prof NAG Moyo who was my supervisor for the MSc again encouraged me to register for my doctorate. The last three years have been some of the most exciting years in my life as I realised that I can do high quality scientific work and publish in high impact factor journals. On submission of my PhD thesis, I had published five papers in highly regarded international journals.

Prof Moyo has again invited me to become a Post-Doctoral fellow. I am looking forward to working in research and publishing more papers. What have I leant from all this? Endurance, perseverance and hard work pays off in the end! Thank you WaterNet for this award!

15th Symposium Best Young Scientists Awards

Patrick-Moise Bahal'okwibale Mulengera,
Water Land

Short Bio

Patrick-Moise Bahal'okwibale Mulengera, 29 years old, is a citizen of the Democratic Republic of Congo. He holds a Master of Science degree in Integrated Water Resources Management (IWRM), which was undertaken under WaterNet funded programme at the University of Zimbabwe. He works as a visiting lecturer in Bukavu (DRC) and a multidisciplinary consultant in water resources management, climate change adaptation, GIS and remote sensing applications.

Experience of receiving the Best Young Water Scientist Award

I was sitting with other WaterNet alumni, during the Closing Gala Dinner of the 31 October 2014. The MC then announced that WaterNet was about to give awards to outstanding young researchers. I then grabbed my camera, as I was hoping to take pictures of the awardees. To my surprise, the first to be called for the award was my own "long" name!... "What?" – I can't find words to describe what I felt, but let me share the experience that I believe contributed to this achievement.

The idea of this research popped in my mind back in 2012. Having graduated from the WaterNet-funded MSc in IWRM programme at the University of Zimbabwe, I was also feeling happy as one of the 40 Emerging Academic Professionals selected around the World for their best solutions proposed to the 6th World Water Forum. My contribution was about using information and communication technology for improved decision making in water resources management.

As I was recounting the happiness of my selection to my relatives, my mother reminded me in the following terms: "It's great you are contributing solutions to the world, but look at this - when it rains in the city of Bukavu [DRC], that's exactly the time we experience water shortage, the tap is dry. It's even more frequent in the rainy season than the dry season. How can you explain the contrast? What can you do about it?"

I felt humbled by these questions, as I had no idea what was the cause of such a contrast was. So I went to find out from a Chief Technician in charge of water treatment and distribution at Regideso (the water supply company). He explained to me that local communities are busy cultivating along slopes and river banks. Therefore, when it rains, water turbidity due to soil erosion is beyond manageable levels that they always have to stop the treatment plant. This explained why there is water shortage while it rains. When I asked him what could be done to improve the situation, he said: "evacuate everyone from the catchment". I was shocked, as this does not conform to the IWRM approach. I thus had my first visit in the catchment and noticed how poor land management was practiced by communities. In order to inform where intervention is needed and which portion of the catchment was undergoing such poor management, only research could help. So I decided to apply my skills to find out, and that was the inception… and here I am honored today.

The lesson is that I believe "there is always room for improvement". The education we have benefited needs to translate or inform solutions and decision-making in our communities wherever we go. I thus dedicate the award to my mother, Nicole Mirindi, for inspiring this research. I take this opportunity to thank the colleagues who accepted to contribute as co-authors of the paper. I also thank all my mentors and teachers. I cannot number what I have learnt through them, sometimes through hardship. Please all see your success through this award. To WaterNet and its partners, recognizing outstanding research is nothing less than generating the need for better research and demonstrating how great is capacity building in the water sector. The future looks great, "there is always room for improvement!" God bless

Innocent Rangati
Water Resource Management

Innocent Rangeti is a highly motivated emerging Researcher who recently (September 2014) graduated with a Masters Degree of Technology (Environmental Health) at the Durban University of Technology. He also holds a Bachelor of Science (Honors) Environmental Science and Health from the National University of Science and Technology (Zimbabwe).

His recent focus of research was to determine key water quality parameters that influence treatment cost in uMngeni Basin, South Africa. The study led to the development of a; (1) River Health Water Quality Index, (2) Treatability Water Quality Index and (3) models for the prediction of chlorine, polymer and lime during potable water treatment. He has written four Journal Articles that are in various stages of publication and has presented at various conferences.

His paper titled "A River Health Water Quality Index for uMngeni Basin, (South Africai)" presented at the 15th WaterNet/WARFSA/GWP-SA Symposium won the outstanding award in the Water Resource Management Sub Theme.

Mashawe M Motsa
Water, Supply and Sanitation

Machawe M Motsa was born in the tiny Kingdom of Swaziland, in the Manzini region, in 1986. He received a Bachelor of Science (BSc) degree majoring in Chemistry and Biological Sciences from the University of Swaziland (UNISWA) in 2008 after enrolling for 4 years. He then went on to pursue a Masters (MSc) degree in Chemistry at the University of Johannesburg, South Africa, which he successfully obtained in 2011. His MSc project entailed developing polymer blends (composite materials) from readily available adsorbents such as zeolites to treat water contaminated with heavy metals and chlorinated organic pollutants. Throughout this research study, his interest in water treatment technologies grew from strength to strength. In 2012 he enrolled for a Joint Doctoral programme between the University of Johannesburg, South Africa and Gent University, Belgium. His current research study focuses on the performance evaluation of an energy efficient forward osmosis process in wastewater treatment and seawater desalination.

At the 15th WaterNet/WARFSA/GWP-SA Symposium held at Sogecoa Golden Peacock Hotel, Lilongwe, Malawi, 29th – 31st October, 2014, Mr Motsa was awarded the Best Young Water Scientist of 2014 in the Water supply and Sanitation sector for a paper titled: "Application of forward osmosis in seawater desalination: Influence of draw solution and feed composition".

Mr Motsa was pleased beyond measure and felt very honored that his research work was recognized as a promising technology which upon thorough development can help curb the current stress faced by natural water resources. He was very much encouraged by this award and is already working towards his next paper to be presented in the next WaterNet Symposium in Mauritius in 2015.

15th Symposium Best Young Scientists

Sibonakaliso Conscience Mpala
Hydrology

Winning the Award
Winning the Award for best Young Scientist in the hydrology sub-theme is a defining moment in my studies. It is a reward for the hard work and sleepless nights we had to put in to produce a presentable paper in a short space of time. During the symposium, there were a number of brilliant presentations and though I knew my presentation was good I was not confident of getting the award because I ran out of time during presentation. That, as you may be aware, is the worst thing that can happen to any presenter. However, I recovered quickly and managed to present my conclusion and acknowledgements in record time. I am greatly encouraged and motivated by this award, and will use it as testament to the fruits of hard work and perseverance.

Bio
Sibonakaliso Mpala is an international PhD student with the University of the West of Scotland in Paisley, Scotland. A Zimbabwean by birth he is currently pursuing his studies on a part time basis whilst working as a WASH Engineer for World Vision International in the Republic of South Sudan. Mr Mpala holds a Bachelor of Engineering honours degree in Civil and Water Engineering which he obtained after a 5 year programme with the National University of Science and technology in Zimbabwe.

Mr Mpala's enrolment for his PhD was driven by the work that he did with Dabane Trust, a Zimbabwean based NGO that deals with water supply for disadvantaged rural communities. Dabane Trust specialises in the installation of low cost sand river water extraction technologies. With the support of Dr Stephen Hussey from Dabane Trust in 2011, Sibonakaliso enrolled as a part-time postgraduate student at UWS; his project aims at developing and implementing remote sensing techniques that can be used to identify alluvial river aquifers with potential for a year long sustainable water supply. This will help in cutting down survey costs for NGOs investigating water resources as most of the survey work can be done in the office with ground verification being done only for sites that have shown signs of potential. He also hopes to develop guidelines for the sustainable abstraction of water from alluvial aquifers based on measured water level and alluvial depth, which are simple parameters that can be determined at a community level.

Assessing the water extraction potential of sand rivers to meet the water demand needs of communities in the arid region of south-western Zimbabwe involves relatively expensive ground measurements financed by NGOs. Sibonakaliso has been collecting water level measurements in this region and compared them with satellite measurements, notably from Advanced Synthetic Aperture Radar (ASAR), with the objective of developing a methodology making use of remote sensing to assess the water extraction potential of sand rivers. Such a methodology would considerably reduce survey costs by guiding exploratory activities to sites showing sites of water extraction potential.

Sibonakaliso works under the supervision of Dr Alexandre Gagnon in the School of Science and Sport and Dr Martin Mansell, who prior to his retirement from UWS was in the School of Engineering, and also benefits from external supervisory support from Dr Stephen Hussey from the Dabane Water Workshops in Bulawayo, Zimbabwe, and Professor Zhenhong Li at Newcastle University. Sibonakaliso's PhD is funded by the Dabane Trust and the Margaret Hayman Trust. Sibonakaliso is also a member of the Graduate School of the Scottish Alliance for Geoscience, Environment and Society (SAGES), a pooling initiative of universities across Scotland co-funded by the Scottish Funding Council (SFC).

Symposium Gallery

Participants registration process

Poster presentations

Opening Cocktail

Visit to the Kamuzu Dam

Closing dinner

Meet the new Steering Committee of the WaterNet Alumni Association (WAA)

The WaterNet Alumni Association is an association of graduates of the Master of Science degree courses in Integrated Water Resources Management. (IWRM). The Association whose membership currently stands at over 200 alumni was on the 27th of October 2009 to WaterNet membership as a Supporting Member by Annual General Meeting.

In last year's Annual Meeting held during the 15th Symposium, elections were held for the new Steering Committee (SC). Find below the new SC of the WaterNet Alumni Association:

Ms. Joanna J Fatch
Chairperson

Joanna is committed to working towards making the WAA more vibrant and interactive by improving and promoting participation in all its activities and decision making. This term, the Association will be working towards helping WaterNet demonstrate the impact of the Masters Programme in the region, the continent and beyond. Joanna is a research student at the University of the Western Cape where she also assists in the delivery of the Water and Society specialization of the WaterNet MSc Programme. She also works with the Global Water Partnership –Southern Africa and WaterAid advocating for more effective youth involvement in the water sector in SADC. She graduated from the University of Zimbabwe in 2009 and comes from Nsanje, Malawi.

Mr Mulengera Patrick-Moise Bahal'okwibale
Vice-Chairperson

Patrick graduated in 2011 from the WaterNet-funded M.Sc in IWRM at the University of Zimbabwe. Since then, he participates in capacity building and knowledge generation activities as a visiting lecturer and consultant. His areas of interest include water resources management, climate change adaptation, GIS and remote sensing applications. He is a citizen of the Democratic Republic of Congo (DRC).

By joining his efforts to the WAA Steering Committee, he also hopes to share his passion for innovation and continuous improvement.

Ms Tshepo Setlhogile
Secretary

Tshepo is a Motswana lady working for the Centre for Applied Research in Gaborone, Botswana as an environmental management consultant and researcher. She specifically specializes in IWRM, natural resources management, environmental economics, governance and institutional analysis as well as socio-economic assessments.

Her interests include sustainable water resources management, environmental economics, waste management, youth initiatives in sustainable development and health & wellness.

She served in the 2012-14 WAA SC as the vice secretary. As the Secretary, she hopes to foster communication and diligence between the leadership and the membership and take the Association to greater heights.

Ms Reneilwe Thobosi
Vice-Secretary

Reneilwe graduated in 2009 from the IWRM programme at the University of Dar-es-Salaam. She brings in further support to secretarial activities of the alumni association. She is based in Botswana.

Ms Grace Mzumara
Treasurer

Grace graduated in 2011 from the University of Dar-es-Salaam (UDSM). She is based in Lilongwe (Malawi), working for DAI as the Monitoring and Evaluation Coordinator for feed the future integrating nutrition in value chains activity. She supports the alumni association as the Treasurer.

Regional WaterNet Masters Program in IWRM

The Regional Masters Degree Program in IWRM remains central to WaterNet activities. Results for the 2015/16 intake are out and successful applicants have already been notified. Twenty eight applicants were recommended for admission into the MSc program within the Department of Civil Engineering at the University of Zimbabwe (UZ) and the College of Engineering and Technology University of the Dar-es-Salaam (UDSM) for 2015/16 academic year. The 28 candidates were considered from the 56 shortlisted candidates; with 14 candidates following core courses of the programme at the UZ and specialisation modules at the indicated institutions (table 2). The other 14 will be admitted into the programme at UDSM. The 28 will be sponsored through the WaterNet Fellowship Fund.

The table below lists the successful applicants for 2015/16 MSc in IWRM intake

	Surname	First name	Sex	Offered Specialisation	Nationality	Core Institution
1	Mupedziswa	Felistas	F	GISEO	Zimbabwe	UZ
2	Matshakeni	Zine	F	W&E	South Africa	UZ
3	Mosimanegape	Kagiso	M	W&E	Botswana	UZ
4	Kabantu	Martin	M	WRM	DRC	UZ
5	Masimba	Oliver	M	HYD	Zimbabwe	UZ
6	Lipinge	Komelia N	F	W&S	Namibia	UZ
7	Sibeya	Chaze	F	W&S	Namibia	UZ
8	Muchanga	Esperanca	F	W&L	Mozambique	UZ
9	Mkhonta	Sithembiso	M	WRM	Swaziland	UZ
10	Mbaruku	Stephano D	M	W&E	Tanzania	UZ
11	Nyirenda	Fred T	M	W&L	Malawi	UZ
12	Masheka	Goodson	M	WSS	Zambia	UZ
13	Maramba	Bester	F	WSS	Zimbabwe	UZ
14	Sacolo	Sanele	M	W&L	Swaziland	UDSM
15	Tshegofatso	Mosale	F	GISEO	Botswana	UDSM
16	Khumano	Nomcebo	F	GISEO	South Africa	UDSM
17	Shao	Magdalena	F	GISEO	Tanzania	UDSM
18	Paul	Clarance	F	HYD	Tanzania	UDSM
19	Beya-Tshimpampa	Jules	M	HYD	DRC	UDSM
20	Nkeletseng	Matsumunyane	F	HYD	Lesotho	UDSM
21	Karimi	Alice	F	W&S	Kenya	UDSM
22	Kalonge	Beatrice	F	WRM	Zambia	UDSM
23	Moqekela	Cecilia M	F	W&E	Lesotho	UDSM
24	Cuamba	Eduardo M	M	W&L	Mozambique	UDSM
25	Mbula	Mercy	F	W&S	Zambia	UDSM
26	Tembo	Judith	F	WSS	Malawi	UDSM
27	Kangume	Charity	F	WRM	Uganda	UDSM

Key for acronyms

GISEO : Geographical Information Systems and Earth Observations (University of Kwazulu Natal)
HYD: Hydrology (University of Dar-es-Saam)
W&L: Water and Land (University of Bostwana)
W&S: Water and Society (University of Western Cape)
WSS: Water Supply and Sanitation (Polytechnic of Namibia)
WRM: Water Resource Management (University of Zimbabwe)

Professional Short Training Courses

Gender, Water and Development Conference

The Water Research Commission of South Africa in partnership with the Department of Water Affairs of South Africa, AMCOW, SADC and the Women Partnership hosted the 'Gender, Water Development Conference', which took place from the 3rd to the 7th of November 2014 at the International Convention Centre (ICC) in East London, South Africa.

More than 430 participants from 360 countries attended and these ranged from grassroots representatives of partnerships; citizens, including local women and men; civil society representatives, including members of men's networks; politicians, policy makers; government officials' from local to national level; small enterprises; the corporate sector; consultancy firms and academia.

The struggle for to access water in Africa is both a human rights issue and development challenge, impacting on health, agricultural and economic productivity, the education opportunities of women and children and social stability and wellbeing. The guiding framework for the conference was AMCOW's Policy and Strategy for Mainstreaming Gender in Africa's Water Sector in which seven objectives were identified; policy, resource, project implementation, strategic research, capacity building, cooperation and monitoring and evaluation. These objectives were deemed important in achieving the overall objective of gender equality in the water sector. The event also formed part of the South Africa's 20years celebration of freedom from apartheid.

WaterNet in collaboration with CapNet coordinated a 1 day training on Gender and Water entitled 'Why Gender Matters in IWRM' on the 3rd of November 2014; as a pre-conference event. The training introduced the newly revised "Why Gender Matters IN IWRM", a tutorial for water managers, which is now available on the CapNet website http://www.cap-net.org/resources/tutorials/ .

A group of more than 30 participants attended the training. One of the participants shares her experience in attending the training, highlighting what she learnt: >>> page 11

Gender and Water Training Workshop

Emelder Tagutanazvo
Water Resources Management Institutions Consultant

Why Gender Matters in IWRM"

Integrated Water Resource Management (IWRM) promotes the coordinated development and management of water, land and related resources to maximize social and economic related benefits without compromising the environment (GWP, 2010). A highly interactive process in elaborating strategies for Mainstreaming Gender in IWRM was done and key domains discussed during one day training on "Why Gender Matters in IWRM". The training course focused on four facets of IWRM through a gender lens: Environmental Sustainability, Economic Efficiency, Social Equity and Water Governance. Using a wide range of tools for assessing different gender related attributes, the trainees managed to work on case study scenarios showing how gender can be handled in different contexts of water management. The key gender issues that the group zeroed on were inclusive of the need to promote transparent systems of resource allocation as well as supporting water users at the grassroots level for self-empowerment. Consultation with water users to identify gender sensitive water management practices was another mechanism viewed as vital in promoting equity and empowerment in various water management environments. The training brought in-depth awareness of the gender related pressure points in water management. These include:

- Socially defined parameters such as tasks, responsibilities, rights, taboos
- Perceptions; interactions with age, ethnicity and socio-economic class
- Asymmetric power relations in access to means of production; culturally and socially determined
- Empowerment which is defined by the individuals themselves

Considering the fact that the proportion and role of women in water management varies from place to place their numerical representation seem not to match the level at which they are recognized on decision making platforms as well as towards resource control. Whilst women constitute 70% of agriculture labour, they neither own 70% of the land nor have access to 70% of agriculture water (Ferguson and Moosa, 2011). Such gender gaps exist in settings where there is competition for water while limited affordability and under representation of women at all level of decision making narrows their degree of empowerment. Empowerment as a key driver to gender related development was discussed during the training under the following focal points:

◊ **Physical empowerment:** Having full control over one's body, sexuality and fertility including empowerment to be able to resist violence.

◊ **Economic Empowerment:** Equal access to and control over means of production and economic independence even at household decision making level

◊ **Political Empowerment:** Having political voice and self-determination and being able to participate in decision making.

◊ **Sociocultural Empowerment:** Right to independent identity by having sense of worth and self-respect including having rights to one's opinion and suggestions.

The training course equipped various water management practitioners on how to use the gender approach. Trainees fell into different categories hence would require different approaches to gender.

- **Policy makers**

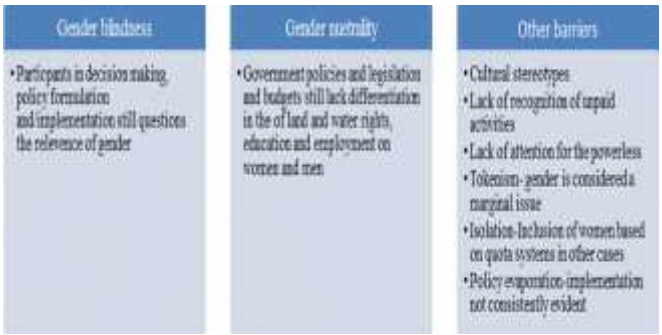
Practices such as making analyses of current and proposed relevant laws and policies were given as gender approaches for the policy makers. Such analyses when conducted with the help of gender and poverty audits and data collection on gender disaggregated information would provide basis on which policies are refined.

- **Water managers**

Participation by all stakeholders was one of the outstanding approaches advocated for during the training. The focus was on mobilizing the participants at the grassroots level and promoting an enabling environment for both men and women to take part in water management. Another approach would involve capacity building and alliances harnessing. Consequently such practices would ensure accountability. An in-depth analysis of institutional arrangements that are ideal in promoting the gender approach was done. Aspects such as structuring gender sensitive technology, budgeting, financing and information dissemination.

Challenges

The various case studies presented revealed various challenges faced by water managers in practicing the gender approach. The main obstacles are inclusive of gender blindness, gender neutrality and a wide array of other barriers indicated below.



Despite the potential and realized benefits of using the gender approach the above listed obstacles still compromised the full and beneficial implementation of the approach. Amidst problems such as lack of sanitation, pollution, technical failure and climate change and the challenges, the situation amplifies the gender differences such that equity is still far from being realized in the water management sector.

Cap-Net Annual Managers Meeting

Cap-Net is an international network for capacity building in sustainable water management. As a strategy, it promotes 21 autonomous international capacity building networks at regional and national levels. In addition, there are three thematic networks in place linking hundreds of capacity building networks across the developing world. The three thematic networks are institutions and networks committed to capacity building in the water sector. Networks have proven to be effective at promoting the understanding of integrated water resources management and play a key role in supporting the development of IWRM and the achievement of the MDG's. Cap-Net pursues their goals by working with regional and country networks from Central and Latin America, the Caribbean, West, East and Southern Africa and Asia: South East Asia, and Middle East.

Annually, Cap-Net holds the Cap-Net Managers and Partners Meeting and last year the 12th meeting was hosted and organised by WaterNet, one of the affiliated Cap-Net partner networks. The theme for this year was "Sustainable Networks, Financing, Activities and Managing Risks". The objective was to discuss on matters pertaining to 'sustainable financing' for capacity development in sustainable water management; exchanging experiences and lessons learnt in 2014; and exploring ways to incorporate the Sustainable Development Goals and post 2015 agenda into upcoming work plans.

Some of the outcomes from this meeting include: input in shaping the Cap-Net UNDP agenda and upcoming Strategic Plan, 2014-2017; new opportunities for collaboration; in line with the theme of the meeting, five working groups were established to address the challenges in finance related matters, sustainable partnerships and risk management.

In addition, there was an online election process that took place (due to low attendance of network managers and coordinators), to establish the representative board members of Cap-Net. Dr Jean-Marie Kileshye Onema, the WaterNet Manager was elected with the highest number of votes, followed by Dato' Ir. Lim Chow Hock and Ms Lilian Arrieta from REDICA as the alternate representatives respectively.

Dr Jean-Marie Kileshye Onema

Water Negotiations, Conflict and International Water Law

Water Negotiations, Conflict Management and International Water Law

The Water Negotiations, Conflict Management and International Water Law course for the Southern Africa Development Community (SADC) region was held between 11-14 November 2014, for Module 1 and 17 – 20 November 2014, for Module 2 at the Birchwood Hotel, Johannesburg, South Africa. Module 1 was attended by 17 participants while Module 2 was attended by 18 participants. The participants were drawn from water ministries and river basin organisations of 10 SADC countries. The training was coordinated by WaterNet on behalf of the SADC Water Division. Funding for the course was provided by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

The overall objective of the training course was to equip decision-makers and water managers in the SADC region with appropriate water negotiation and conflict management knowledge and skills and deepen their understanding on the Protocol on Shared Watercourses within the international water law framework. Module I on Water Negotiations and Conflict Management was facilitated by Prof. Jon Martin Trondalen of the Compass Negotiation, Geneva. Module II on Advanced Negotiation, Conflict Management and International Water Law was facilitated by Prof. Jon Martin Trondalen and Dr Owen McIntyre of the Faculty of Law, University of Cork, Ireland.

Module 1 targeted officials from the water ministries and river basin organisations without prior training in water negotiations and conflict management. Module II targeted those who were previously trained under Module I between 2011 and 2013.

The content of the training was based on the existing training course on Water Negotiation, Conflict Management and International Water Law developed by Prof. Dr. Jon Trondalen, and Dr. Owen McIntyre. The training drew from multiple disciplines across the social sciences and law to present a diverse and topical programme based on experiential learning, making use of a range of instructional tools including presentations, role plays, case studies, video filming and debates. Participants were provided with ample opportunity to actively engage with key concepts in a participatory and meaningful way. The content material was designed to introduce participants to the challenges, dilemmas and opportunities involved in conflict resolution work across a range of contexts and to introduce them to approaches which seek to find long-term solutions to conflicts based on the principles of inclusivity, relationship-building and non-violence.

Module 1 participants

Dr Kenneth Msibi, the Water Policy Strategy Expert from the SADC Water Division officially opened both Modules I and II trainings. He welcomed all the participants to the course. He expressed his gratitude at having high level and international trainers for the course like Prof Trondalen. He highlighted that all the participants would be transformed after the courses and this transformation was for the better with regards to the management of the region's water resources. He reminded the participants that it was vital for the region to participate in all sectors including the management of water resources.

Mr. Martin Neuman of GIZ Transboundary Water Resources Management Programme in the SADC region said that the course fits well with their objectives of building human capacity in the region. Martin highlighted that such courses used to be done by GIZ in collaboration with the SADC Water Division but they are now being coordinated by WaterNet which is an institution dedicated to human capacity building for the water sector in the SADC region. He emphasised that other donors with the same objective of building capacity for the water sector in the region were welcome to organise such courses.

Module I focused on providing the participants with the necessary conceptual background of terms used in negotiations and conflict management. These concepts include international conflicts, international water resources conflicts, negotiation and conflict resolution and diplomacy. The participants then went through approaches and ways of improving personal negotiation skills which are improved through ensuring that one is able to analyse his/her surroundings, understanding of how your behaviour impacts on others and the ability to adjust your behaviour due to changing condition.

Module I participants further learnt that preparation for negotiation is an absolute 'must'. One of the most important steps is putting in place a negotiating team with the appropriate strengths and qualities as well as an effective team leader. It is vital for all members of the negotiation team to have specific roles and there is need for all to attend preparatory meetings where roles and tactics are rehearsed. >>>

Water Negotiations, Conflict and International Water Law

Module II was divided into two parts, i.e. Advanced Negotiation and Conflict Management and International Water Law. Under Advanced Negotiation and Conflict Management, the focus was on application of fundamental negotiation tools which include:

- Positions (*Stands* Or Objectives)
- Interests (Underlying Objectives)
- Options (Alternatives…)
- Commonly Accepted Standards

Understand Your Counterpart's Way Of Thinking'

Participants discussed how to improve their negotiation skills by building their strengths. It was stressed to the participants that behavioural research has shown that building ones' already acquired character/behavioural strengths is an effective way of improving one's negotiation skills.

Several participatory exercises such as assessment of the films "Rivers of Fire" and the "Syrian Bride" (both in Module I; latter regarding the 'role of ICRC-delegate as a Third Party') and "The Negotiator" and "Scenario Building" (from YouTube) (both Module II) as well as role-plays were conducted including filming a "stressful post negotiation" situation which was subsequently shown to the participants and discussed. All these sessions received especially positive feedback from the participants.

The International Water Law component focussed on:

- Introduction to Sources of International (Water Resources) Law;
- Historical Development of International Water Resources Law;
- Factors Relating to Determination of Equitable and Reasonable Utilisation, including Articulations of ERU and Relevant Factors from the SADC Region;
- Environmental Protection of International Watercourses, including examples from the SADC Region;
- Procedural Rules of International Water Resources Law;
- Integration of Substantive and Procedural Rule
- Institutional Arrangements for Transboundary Water Cooperation;
- Illustrations of Institutional Arrangements from the SADC Region; and
- Group Exercise re Equitable and Reasonable Utilisation.

Module 2 participants

At the end of each Module, participants were awarded with certificates. Module I participants were awarded their certificates by Prof Jon Martin Trondalen while Module II participants were awarded their certificates by Dr Jean-Marie Kileshye Onema, the WaterNet Manager and Prof, Trondalen. The participants were urged to apply the skills that they learnt in their work situations.

Ms A.I. Fontine Mponda receiving her certificate from Prof J.M. Trondalen

Dr David Manyama receiving his certificate from Dr J.M. Kileshye-Onema and Prof J.M. Trondalen

Improving Water Diplomacy for Eastern and Southern Africa

The short training course on Improving Water Diplomacy in Eastern and Southern Africa was held in Nairobi Kenya from 24 – 28 November 2014. The course was attended by 18 participants from 9 SADC countries and one East African country, Kenya. The training was coordinated jointly by WaterNet and WaterCap. The main objective of the training was to equip water managers from Eastern and Southern Africa with appropriate diplomatic knowledge and skills that can enhance and stimulate cooperation on water resources, use, allocation and general management in both Eastern and Southern Africa. The course targeted water managers from government ministries responsible for water as well as civil society organisations whose main business is water related.

The training was based on participatory approaches to allow iterative sessions between the participants and facilitators. The facilitators played important roles of providing expert knowledge and practical approach throughout the course. The training brought participants to appreciate the need for water diplomacy in dealing with water conflicts around trans-boundary river basins. The Eastern and Southern African regions are characterized by a large number of international river basins namely, Nile, Zambezi, Limpopo. Congo, Okavango and Lake Victoria. Participants were able to relate to the importance of cooperation among the riparian states in sharing benefits linked to integrated trans-boundary water resource management.

The course focussed on the following topics:

- Context of water diplomacy- Linking water diplomacy and IWRM
- Key principles of international Water Law
- Water ethics and culture- Characterization of water as a flexible resource
- Water Conflict situational analysis
- Science and Diplomacy- integrate knowledge and actions
- "Water for Peace" and "Peace for Water"
- Water Diplomacy in practice (case of NBI, LVBC and LVBC)
- Collaborative Adaptive Management
- Necessity of Water Diplomacy in Eastern and Southern Africa
- Tools for Water Diplomacy (Sharing benefits: Development of skills and Opportunities for cooperation)
- Water Diplomacy beyond Water
- Gender and Water Diplomacy
- Peace Building: Challenges and opportunities
- Value creating approaches towards Water negotiations

The topics provided insight on understanding water diplomacy and identifying water's potential for conflict and the importance of recognizing water's cooperation potential and the benefits that are drawn from collaborative trans-boundary water management between state actors. The course was facilitated by Eng. Wangai Ndirangu, Callist Tindimugaya, Krasposy Kujinga, Esther Wambui, Morris Njagi and Eric Akivanga.

The participants shared their case studies from local and international levels. These include the protection of the Orange-Senqu River Water sources, Botswana Integrated Water Resources Management and Water Efficiency Plan, Water Sector Reforms in Kenya and the Role of Community Participation, Contested waters-Indus Treaty and situational analysis- MENA countries. The case studies played an important role in revealing the importance of water diplomacy especially on shared/ trans-boundary water resources. Water remains the strategic natural resource of the twenty-first century due to its role in development; the increasing pressure on water resources due to population increase, urbanization and poor land use, water will be a source of conflict if no proper management measures are put in place.

Among the tools and materials used were group discussions (exercises) and pre-prepared module-based training e-materials such as power point presentations. The group exercises helped participants learn the techniques and strategies presented in the Water Diplomacy Framework. At the end of the course participants were presented with certificates by Eng. Wangai Ndirangu, the WaterCap Manager.

Featured Article

Improving Water Diplomacy for Lesotho

By Phatoli Matete

Lets be honest. Watching the news channels will make you sick of this world. All you see are images of conflicts, violence, poverty and disregard for human. When will there ever be end to the suffering for the impecunious, when will there be an end to heinous crime against women and children? Is there any hope? Looking at the news you will think that there is none.

Water issues can be simple, complicated or complex. As we bear witness to a series of important international crises, it is easy to forget about the structural foreign policy challenges that threaten to become the crises of the future. Among these, climate change and its profound impacts on the water cycle stand out: water is fundamental to human life and scarce in many regions. Changes in the regional and seasonal distribution of rainfall will have significant social, economic, and ultimately political consequences as they change access to and competition over water.

On the 25th to 28th November 2014, WaterNet with WaterCap held an important course on Water Diplomacy in Nairobi, Kenya. In the context of this initiative, I define water diplomacy to broadly include all measures that can be undertaken to prevent or peacefully resolve conflicts related to water availability, allocation or use between and within states. Among these measures are early warning of potential conflict, conflict prevention through better water governance and water management. I have been working in the water sector for the last decade and have never have this understanding that water conflicts having some opportunities in them. In other words, “shared waters are not necessarily flashpoints of conflicts. Instead, they can be ‘islands of cooperation’ in otherwise conflictive relationships”.

Been born and bred in Lesotho and having got the opportunity of attending this water diplomacy course has made me realise that developments in Lesotho have been limited by its lack of natural resources and investment capital. Water is its only abundant resource, which is precisely what regions of neighboring South Africa have been lacking.

A project to transfer water from the Senqu River to South Africa had been investigated in the 1950s, and again in the 1960s. The project was never implemented due to disagreement over appropriate payment for the water. In 1978, the governments of Lesotho and South Africa appointed a joint technical team to investigate the possibility of a water transfer project. A treaty between the two states was necessary to negotiate for this international project.

Negotiations proceeded through 1986 and the "Treaty on the Lesotho Highlands Water Project between the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa " was signed into law on October 24, 1986. The Lesotho Highlands Water Project provides lessons in the importance of an integrated approach to negotiating the allocation of a "basket" of resources. South Africa receives cost-effective water for its continued growth, while Lesotho needs to strengthen the diplomatic track of transboundary cooperation on water by investing more in training and capacity-building, expanding efforts to build confidence in shared basins, Orange-Senqu River basin and improving water-related crisis response and conflicts resolution mechanisms.

Last year, South Africa with its diplomats helped Lesotho find solutions to its political instability. In 1998, when Lesotho was in a very bad shape, South Africa came in to help Lesotho protect the waters in the Lesotho Highlands Water Projects.

Congratulations are in order...

We would like to congratulate Prof. Illunga Masengo and Ms. Joanna Fatch for making it into the WaterNet Board. Ms Joanna Fatch is the new Alumni Association Chairperson of the Steering Commitment. By virtue of holding that position she now sits on the WaterNet Board. Prof Illunga Masengo was voted into the Board during the WaterNet's 15th General Meeting held in Lilongwe Malawi on the 30th of October 2014. We would like to wish these new Board Members all the best during their tenure.

Prof. Ilunga Masengo

Prof. Illunga Masengo is an Associate Professor of the Civil and Chemical Engineering Department at the University of South Africa (UNISA). He is also the founder and leader of the UNISA Water Research Flagship. His research interests covers artificial intelligence, entropy, statistical techniques and modelling in Hydrology and Water Resources. He is a member of: Computing, Communication and Control Technologies (CCCT), University of Texas at Austin; South African Institution of Civil Engineering (SAICE), SAICE-Environmental Division and and responsible for the training and education portfolio in the division; Institution of Professional Engineering Technologists (IPET). He is a steering committee member of the IBSA (India, Brazil and South Africa) academic forum, under Department of International Relations and Co-operation. Member of the Academic group -Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), under Department of International Relations and Co-operation, South Africa. He is the Water integrity ambassador, IWRM & Ecosystem in the SADC region, initiated through WaterNet, CapNet, Global Partnership Southern Africa. He has been chairperson of IASED 2012 (Water management, Botswana-Gaborone), IASTED 2013

Ms. Joanna Fatch

Joanna is a social scientist with an interest and experience in water and development - water resources governance, water supply and sanitation and community development. She has been involved in various fora in varying capacities; at the continental level, she represented southern Africa in the development and finalisation of the Africa Ministers Council on Water (AMCOW) Policy and Strategy on Mainstreaming youth in the Water and Sanitation Sector and is an Africa region representative to the End Water Poverty Steering Committee. At the SADC level, she works for the Global Water Partnership – Southern Africa and WaterAid in advocating for effective youth involvement in water sector in the region as the Regional Youth Focal Person. Joanna is currently the WaterNet Alumni Association Chairperson and has previously served the Association as its immediate past Vice Chairperson. Joanna Fatch is a PhD research fellow at the University of the Western Cape, Institute for Water Studies where her research focuses of boundaries of benefit sharing in the Lake Malawi/Niassa/Nyasa sub-basin of the Zambezi. Joanna hails from Nsanje,

Dr. Hodson Makurira has been appointed the Dean of the Faculty of Engineering, University of Zimbabwe with effect from 1 January 2015. Dr Makurira joined the Civil Engineering Department, Faculty of Engineering of the University of Zimbabwe as part-time lecturer in 1998 until 2003 when he became a permanent staff member. He was appointed Post Graduate Programmes Coordinator of the MSc in Integrated Water Resources Management programme with effect from 1 August, 2009 to 31 December, 2011. Dr Makurira was appointed Chairperson of the Department of Civil Engineering in 2012, a position he held until his recent appointment. He was the Editor of the Journal of Physics and Chemistry of the Earth between 2010 and 2014. WaterNet would like to wish him all the best in this new appointment