

Capacity Building in Water Sciences for Improved Assessment and Management of Water Resources

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Project Network Team

University	Contact Person	Other Team Members
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Western Cape	Yongxin Xu Department of Earth Sciences	
Botswana	Berhanu Alemaw	L. Molwalefhe, H. Sommer and TR Chaoka Department of Geology

Project Objectives

- **Innovative research** – to enhance basic research in water resources (surface and groundwater) under present and a changing environment (e.g. land use and climate change), through pilot studies and regional estimation;
- **Capacity and institutional building** – to strengthen the competence and exchange of knowledge amongst the institutions involved, and subsequently contribute to the development of MSc and PhD programs in the southern Africa member countries.



Five Key Research Areas

- **Area 1: Water quality and link to origin of water resource**
 - To generate knowledge on temporal and spatial aspects of national and regional water quality.
 - To develop low cost methods for water and wastewater treatment.
 - To improve water quality monitoring systems
 - Lead Institution: **Malawi** (Botswana & Oslo)



Five Key Research Areas

- **Area 2: Groundwater**
 - Understand data availability
 - Estimate groundwater availability using different models.
 - LEAD institution: Botswana (Oslo & Malawi)



Five Key Research Areas

- **Area 3: Water resources and hydrological extremes**
 - Determine existing data and earlier work
 - Identify emerging tasks within flood and drought research
 - To determine the effect of hydrological extremes (flood/drought) on water availability.
 - LEAD institution: **Western Cape** (Oslo, SA, Malawi & Botswana)



Five Key Research Areas

- **Area 4: Water resources under present and changing climate**
 - To explore the existing methods/models for assessing regional water resources under stationary and changing climate conditions
 - LEAD Institution: **Malawi** (Botswana & Oslo)



Five Key Research Areas

- **Area 5: Water resources and local knowledge systems**
 - To establish the potential of indigenous knowledge systems for sustainable water resources management.
 - LEAD institution: **Malawi** (Botswana & Oslo)



Network Structure

- The network is structured according to the identified **key areas of research**.
 - research cooperation on a specific topic includes a subset of researchers/institutions based on the competence and interest of those involved.
- Regular **workshops and study courses** have been planned.
 - ensures a good regional involvement and communication of results,



Inception Workshop 31 May to 5 June 2007

- To develop a detailed work plan for the first 5-year period.
- Held in **Malawi**, and all project participants attended.



Objectives of workshop

- To review comments by the Project Review process
- To develop a work plan for the first 5-year period (2007-2011)
- To identify the research areas for PhD/MSc students and Researchers
- To finalize project management issues (budget allocation, financial disbursement and reporting systems)



Workshop Outcomes

- Budget and management issues resolved
- Key and clear project ideas for PhD and MSc studies identified
- Number and composition of male and female participants resolved
 - 4 PhD (3 males and 1 females)
 - 6 MSc (3 females and 3males)
 - Two MSc students from UiO to participate in field work in Malawi in 2008 (1 chemistry and 1 geochemistry).



	Home Country	Study Inst.	Student Name	Theme	N+S	N+S	N+S	N+S	N+S
					2007	2008	2009	2010	2011
PhD 1	Malawi	UiO	M Monjerezi	1	4+0	6+6	6+6	0+8	
PhD 2	Malawi	UiO	C Ngongondo	4	4+3	6+6	6+6	0+5	
PhD 3	Malawi	USC	T Kanyerere	5		0+12	0+12	0+12	
PhD 4	Botswana	UB	Female	2		3+9	0+12	3+9	
MSc 1	Botswana	UB		4					
MSc 2	South Africa	UWC		2					
MSc 3	Malawi	UM		1					
MSc 4	Malawi	UB		4					
MSc 5	Botswana	UB		3					
MSc 6	Botswana	UM		2					

Workshop Outcomes

- For each key area possible study sites have been identified
- Three regional study courses and workshops described, and venue and responsibilities agreed upon.
 - A fourth course (ground water and contaminant transport modeling) has been proposed and additional funding will be sought



Workshop Outcomes

- The four courses identified are
 - Water quality
 - Hydrological modeling (rainfall-runoff and groundwater models)
 - Hydrological Extremes
 - *Ground water and contaminant transport modeling) :- additional funding will be sought



Project management

- A project steering committee constituted (6 members).
- A project webpage housed at CC will be developed
- The ratio for sharing of administration and project management funds between Southern Africa partners agreed
- The distribution of funds for PhD and MSc studies agreed upon.
- Preparation of proposal for additional support to the regional study courses - application to NUFU supporting activities (deadline 15 September 2007)
- Work towards 40% female participation



Experiences and Challenges

- Networking good
 - Full attendance for inception workshop
 - Email communication good
 - Everyone is kept in the loop
- Funding
 - Delays in funding
 - Not adequate for
 - some proposed research activities
 - PhD/MSc programmes
 - MSc programme – University of Botswana
 - PhD programme – Western Cape



Challenges

- Expected funds for PhD and MSc studies
 - MSc study fellowship in the South is NOK75, 000 for each year per student.
 - PhD fellowship in the South is NOK250, 000 each.
 - Supplementation is thus needed.
 - PhD fellowship in Oslo is about NOK 350,000.





**Thank you for
your support !**

