Report of the national seminar on initiatives and experiences on multiple use approaches to water

Held on:
24th August 2005
SANBI Auditorium - Pretoria Botanical Gardens

By: Tessa Cousins and Stef Smits

Executive summary

The Multiple Use Systems (MUS) for water approach has grown from the recognition that both domestic and small-scale productive uses of water are important in poor peoples livelihoods. To combat poverty multiple uses of water should be taken into account by all sectors, as should the various sources of water. We should be seeking an appropriate match between uses, water sources, technologies, users and benefits.

Over the last few years various organisations in South Africa have begun taking up this challenge. To date little coordination and exchange of experiences between such initiatives has taken place. In response to this the Department of Water Affairs and Forestry and the MUS Project convened a national seminar on the topic of Multiple Use Approaches to Water with a number of national level stakeholders. The objectives of the seminar were to map out the initiatives, identify synergies and gaps, and agree on a way forward.

Participants came from a cross-section of institutions: government departments, research institutions, NGOs, and consultancies. The seminar showed that the concept of multiple uses of water, which can come from multiple sources, is widely recognised and that a variety of organisations are tackling it: in policy, research, implementation and advocacy. It was also apparent that the concept quickly takes us into a cross-sectoral arena, where many variables come into play. Thus the net to encompass what and who is involved becomes wide – and while this can open up possibilities for more integrated, holistic and creative approaches to the problems of poverty and wise water management, it also brings with it complexity.

A number of questions therefore arise at theoretical, policy and practical levels, and some key issues for further work and deliberation were identified in the workshop. These include the need for clarity of objectives and scope of MUS approaches, the potential for conflicts of interest and for unintended consequences, concerns about solutions being too complex for the current structuring of institutional mandates and operations, and that financial streams are not structured in a conducive way. In addition there are water resources management implications to be clearer about, including how to best utilise the potential that rainwater harvesting seems to offer. Additional issues were noted: sanitation; use of grey water and waste water; impacts on the environment; conflict; the progression of agricultural development; and policy and enforcement implications, although there was not enough time to unpack these.

Participants agreed that it was very useful to learn about each other's initiatives, and that it would be valuable to build on the foundation this day provided. To maintain the momentum the participants should increase information sharing: utilising the Water Information Network (WIN) website and also by being active participants in each other's initiatives. It was also agreed to establish a learning platform to take forward work and discussion on the issues identified as important. It was agreed that the platform should meet again in 9-12 months' time.

It was noted is that the key actor missing from the meeting was local government and its representatives. As this is an open group more organisations will be encouraged to join it, and active steps will be taken to include local government as a sector in future.

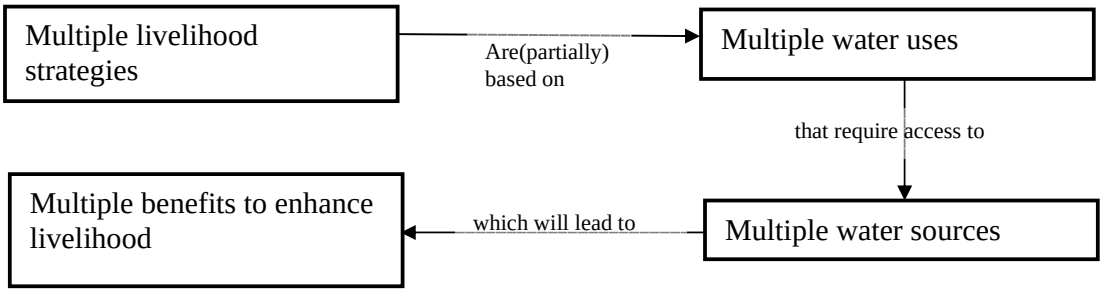
1. Introduction

1.1 Background to the workshop

The Millennium Development Goals aim to halve absolute poverty by 2015. As part of this they also aim to halve the number of people un-served by water supply systems. Yet the link between improved access to water at the household level and reduced poverty is seldom clearly seen or practically realised. Cases abound where water supply services are planned without considering people's need for water for small-scale productive uses, such as backyard gardens, livestock watering or brick making. Likewise, irrigation systems are being developed without considering people's basic domestic demands. This leads to numerous problems for water users and service providers. Demands of users are not met and the potential for poverty alleviation is not taken up fully. When peoples' needs are not met, they seek other ways of obtaining access to the water they need, for example through unauthorised connections or through higher consumption levels than originally planned for. This in turn, may put the sustainability of water services at risk, and result in conflicts between users, or between users and service providers.

This situation calls for an approach which seeks to integrate sources, uses and users of water in order to improve development and equitable use of the available supply, water use efficiency, and local peoples' livelihoods: a multiple use approach. Such an approach requires co-operative governance in planning for and delivery of water related developments, but the mechanisms to achieve this are not always clear.

The relationship between multiple livelihood strategies, multiple water uses, multiple water sources and multiple benefits is summarised in the following figure.



In South Africa, AWARD undertook some pioneering research in 1999, examining the economic uses of water at household level. This indicated that where water was available above the minimum needs people have, water can make a meaningful contribution to small scale uses of water that produce food and income. [1]In January 2003, the Department of Water Affairs and Forestry (DWAF), the International Water Management Institute (IWMI), the International Water and Sanitation Centre (IRC)

[1] See: Perez de Mendiguren JC and Mabelane," Economics of Productive Uses for Domestic Water in Rural Areas. A Case Study from Bushbuckridge, South Africa." AWARD Internal Research Report. Available at: www.nri.org/whirl/reports

and the UK Natural Resources Institute (NRI) hosted a symposium on "Small-Scale Productive Uses of Water at the Household Level". Some of the key findings of that symposium were later reflected in the Strategic Framework for Water Services (SFWS) (DWAF, 2003), the key guiding document for the water services sector. Since then, various organizations have engaged in research and implementation initiatives on multiple uses of water.

One research initiative is a global action-research project funded by the CGIAR Challenge Programme on Water and Food, called MUS (Multiple Use Systems). The MUS Project is promoting the creation of "Learning Alliances", which encourage different role-players to engage in dialogue on these multiple use systems, and to learn from each other and from experience at various levels. DWAF is developing a guideline on small-scale productive uses of water from domestic supplies, and wished to engage in a broader consultative process with sector stakeholders. Combining these initiatives, DWAF and the MUS Project decided to call a workshop to map out the various initiatives, to provide a mechanism for collective learning on the basis of experience, and to decide if future such interactions will be fruitful. The workshop was held on 24th of August 2005, at the SANBI Auditorium in the Pretoria Botanical Gardens.

The objectives of the meeting were:

- To map out current research, policy, and implementation initiatives on multiple uses of water, and identify learning emerging from such initiatives: successes, gaps and obstacles
- To identify synergies between these initiatives, and gaps in research.
- To agree on ideas for future initiatives, and for future interaction and/or coordination in research and implementation

The detailed agenda of the workshop can be found in Annex 1.

1.2 About this report

This report serves, in the first instance, as workshop proceedings. In addition, we have included some analysis of the points that emerged. While this is not the result of a full joint analysis by the group, we have responded to the suggestion of the participants to make the report a document that can become a point of reference for moving forward.

2. Proceedings

2.1 Opening, welcome and introductions

The meeting was officially opened by Abri Vermeulen of DWAF, Water Services: Policy and Strategy, who referred to the background of the initiatives on multiple uses of water. He specifically also referred to the context of government's commitment to alleviate poverty, and that sustainable livelihoods are a key part of the approach. This implies that water services delivery is not enough: livelihoods and sustainability need to be part and parcel of the delivery package.

Tessa Cousins welcomed participants on behalf of the MUS project. She explained the background, objectives and agenda of the meeting.

Participants then introduced themselves, and explained their interest in being present. *A full list of participants can be found in Annex 2*. The key organizations missing were local government and its representatives SALGA and DPLG. SALGA sent its apologies.

2.2 Mapping

A number of participants made presentations on the initiatives they are working on in detail. The main points of the presentations, including the type of initiative, its focus, the location where it is carried out and linkages with other stakeholders were captured on flip charts on the wall. *See annex 3 for the summary, and Annex 4 for the more detailed presentations.* In addition, points to note and outstanding questions were captured. Those provided the basis for the discussions, the outcome of which are captured below.

Presentations:

- The global MUS (Multiple Use Systems) research project, and, locally, the work done by AWARD in Bushbuckridge on a community-based planning approach for multiple uses, called SWELL (Securing Water to Enhance Local Livelihoods), and research done on the management and financing of multiple use services in the Olifants basin

- The development of policy and guidelines on small-scale productive uses from domestic supplies; from Water Services: Policy and Strategy, Department of Water Affairs and Forestry.

- Multiple use approaches to water; from Water Use and Irrigation Development, Department of Agriculture

- The various research projects that are currently being carried out or which are in the process of being commissioned by the Water Research Commission (WRC) in the fields of water for food production and water for domestic uses, related to multiple uses of water

- Various research, implementation and policy advocacy activities undertaken by the Mvula Trust

- A research project on water resources management in rainwater harvesting, for the WRC, by Jean Boroto

- The CGIAR Challenge Programme on Water for Food by the Agricultural Research Council (ARC)

- Implementation activities around food security by World Vision

- The development of a WRC research strategy on water and society by Victor Munnik for the Mvula Trust (a *verbal presentation*)

Looking at the list of current initiatives, one can appreciate the wide recognition of the multiple uses approach from a number of perspectives. Different actors (Government, NGOs and research organisations) from different sectors (water services, agriculture and water resources) are engaging in initiatives on the topic. These obviously come from different perspectives. Some focus on poverty and livelihoods aspects, others focus on sustainability of services, and others on the water resource base. Together they cover most of the areas related to multiple uses of water.

We also see that most of the initiatives are still in the phase of research and development. There is as yet little experience with implementation and policy aspects. Having said that, the various research programmes explicitly seek to make linkages with the stakeholders concerned, many focusing especially on local government and communities. Also, the research programmes try to be as applied as possible and make the linkages with implementation. Participants noted that it is encouraging to see that the research agenda is informed by a good understanding of actual needs, and that policy and implementation programmes want to be informed by research findings.

There may well be other initiatives that we are not aware of, especially perhaps at local level. It is important that these should also be captured for wider sharing and learning.

2.3 Discussion

After each presentation issues were raised and noted. In the second part of the meeting there was some opportunity to pull out themes emerging and discuss these. A number of “hot topics” emerged, but it was not the objective of this meeting to go into detail and there was no simply time for this. However, through the day the points of agreement and of contestation, and key areas needing attention, became clearer.

3. The discussion digested

3.1 Objectives and scope

First of all, there was agreement in principle about the need to consider multiple uses of water. However, there was a range of opinions and questions on the objectives of these multiple uses. Should the focus be on poverty alleviation or on wealth creation? Should the focus be on household subsistence level or rather aim towards commercial development? Are multiple uses mainly about agriculture or are the non-agricultural uses of water of equal importance? And finally, does a multiple uses approach imply necessarily considering multiple sources of water or not? There was no general agreement on these points.

These points were linked to a more general tension on the scope of the multiple use approach: what is “in” and what is “out”. Clearer definitions are being called for. While more clarity is needed, especially for policies, which deal with finances and mandates, there is also a need to stay open to their application and adaptation to a variety of situations, and to allow for creative solutions

At the moment we do not have a complete picture of the variety of practices on multiple uses of water. Compiling more information on the various practices may be helpful in coming up with practical definitions and objectives. We need to develop a useful classification or typology for multiple uses.

Along with these concerns on the scope and objective of the multiple use concepts, a number of practical concerns arose during the discussions.

3.2. Mandates

Firstly, there was recognition that the issue of the mandates, roles and responsibilities of different government departments arises as a problem. Multiple uses of water, by definition, straddle the mandates of various departments. Concern was raised that this may to lead to increasing grey areas of responsibility, and a “Good Guys vs. Bad Guys” situation. Furthermore if there is weak planning, this results in negative impacts on the environment and on food security. There was some disagreement among participants about where mandates should lie, and how much clarity is needed. Again there seems to be a potential tension between clarity on the one hand and closing down options on the other.

There was wide recognition of the theoretical role of local government as the key institution to achieving integration. However, it was also noted that achieving integration is complex in reality – not only due to mandates but also because of the different ways departments demarcate and organise their work, because of how funding streams work, because integrated thinking and action is more demanding, and because many Municipalities are still developing their capacity.

3.3. Capacity and financing streams

Many Municipalities currently lack critical capacity and resources to take up the multiple use approach. Clear policy could help to address some of these limitations. A call was made for policy development to focus on disabling factors and overcoming these, rather than trying to define and construct enabling factors. The key disabling factors at this moment are local government capacity and the lack of clarity on financing streams and mechanisms. The example was given where a plan for a multiple use system has been developed with municipality, but the problem of it needing to be financed from different sources and departments, given that different mandates cover different elements of the approach, is proving to be a major hurdle to its implementation.

3.4 Water resources

Another point of debate was water resources. On the one hand, before embarking on wider promotion of a multiple use approach, we need to have a careful look at water resources and their allocation, along with the clarity of definition and purpose called for above. On the other, another view was that although South Africa is a water scarce country, local water scarcity is often socially induced and is not a physical scarcity. At the scale of livelihoods, whether water resources are available or need to be re-allocated, is often a local issue, which can be dealt with at local level. DWAF is currently looking into simple mechanisms for the allocation of water resources to small-scale productive uses. An example would be widening the scope of what is allowable use under Schedule 1, or the introduction of General Authorisations for small-scale use. In terms of multiple sources we need not only consider getting more water out of the same pipe; we can also consider making better use of alternative water sources such as rainwater and grey water.

Rainwater harvesting in itself was a point of fierce discussion, not so much the concept, but the practical and operational issues. There is lack of clarity and agreement on where mandates of government departments and financing mechanisms should lie. In addition, there seems to be potential for unexpected negative impacts of rainwater harvesting in communities. In one example households with large underground tanks are using them as reservoirs for storing water from the piped water supply, to the detriment of other users of the system. This is making local government negative about rainwater harvesting as an option to be promoted. It was pointed out that such uses can be planned for, instead of becoming unintended consequences. The tension lay between the push to "go for it" as an important household resource, and to take a more careful approach to its development at village level.

3.5 Upscaling

This led also to a broader discussion on upscaling. On the one hand, people feel the need to move ahead fast in order to reduce poverty and provide water services. On the other hand, we do not yet know enough about technologies and financing nor the impacts of multiple uses of water. So, care should also be taken. However, there is a growing momentum to work with. In addition, there are also many questions on how to scale up. Again local government level was raised as a critical place to work.

3.6 Information sharing

A final issue raised was around information sharing. In order to avoid duplication of effort and create better synergies, we need to find effective ways of sharing information both amongst those involved in development and implementation and with local government. There was a general feeling that participants can be a real resource to each others' work, and that invitations to do so would be welcomed.

3.7 Other issues

Finally, a number of issues was raised, but not further taken up in the discussions. These were:

- **Sanitation, grey water and wastewater**; the discussion on multiple uses of water turns around livelihood aspects of water only. Sanitation and wastewater management also have livelihood implications and these need to be considered and further capitalised upon.
- **Impact on environment**; when promoting multiple uses of water, impacts on the environment must be considered. These can be unexpected. For example, promotion of extra water points for cattle may lead to overgrazing and erosion.
- **Conflict**; multiple uses of water may lead to further conflicts between users about the resources and the service. Conflict should be part of the analysis.
- **Progression of agricultural development**; the argument was made that a step-wise approach to agricultural development should be taken, starting from backyard plots and moving on to larger farmers. This can be linked to water source and use.
- **Access to and control over information**; this point did not refer so much to information on experiences but more to data, such as in GIS databases. Often, big databases are being developed and it is very difficult to get practical access to this data, especially at local level. But there is also the political dimension: who manages all information?
- **Enforceability of policy**; developing policies for multiple uses of water does not make sense if these cannot be enforced where necessary. Note that there is both regulatory policy and implementation policy to consider.
- **Experiences from elsewhere in Africa**; many experiences have been gained elsewhere in Africa with multiple uses of water, and specifically with rainwater harvesting. We should make best use of these.

4. Future focus

4. 1 Focus for future work

Participants identified areas where more work needs to be done in future to take the issue of multiple uses of water forward. These straddle what each needs to do in their own mandate, as well as where we need to improve as a cross-sector initiative.

First of all, there is need to take stock of current policies and practices. That should be a basis for further work. Related to this is the need for a common language, with definitions of what we commonly understand as “multiple uses”.

Secondly, participants identified the need to institutionalise the multiple use approach through engagement with a policy dialogue, and by working on improved co-operative governance. Along with this must go the realistic assessment of whether the staff and systems are in place to achieve implementation, and to work realistically within any such constraints. Brilliant policy without realistic capacity is not helpful.

Finally, we need to improve the knowledge development and information sharing on multiple uses, by analysing lessons, reflection, making available work already done, and building upon what has been done.

4.2. Future interaction

A call was made for establishing a platform for ongoing collective reflection and learning on multiple uses. This need not be institutionalised but should remain open and content-focused. The MUS project committed itself to convene the next such meeting. It was agreed the next session be organised in about 9 months time. It was emphasised that this first meeting was focussed on mapping the issues and that future meetings should build on the base this has established and be more in a learning mode and go deeper into the content issues.

In addition, people were encouraged to engage with each other's initiatives. A number of specific opportunities were identified:

- Engagement with the process of policy and guideline development, led by DWAF. DWAF wants to follow a process of broad stakeholder consultation and this forum can act as a reference group in that process.
- As appeared during the initiatives mapping exercise, there are various projects on rainwater harvesting. Participants in those projects are encouraged to engage in each other's meetings.
- General authorisation project. This project looks into the issue of water allocation for small-scale productive uses. Participants were invited to attend these meetings.
- Research on water and society, led by Victor Munnik for the Mvula Trust. Focus group discussions are planned to take place and Victor would like this forum to take part in these discussions.

The list of contacts for this meeting would be sent out immediately to enable mutual communication.

A specific call was made to start co-ordination and interaction early in the process of any initiative, being brought in late can be frustrating.

Especially for work at provincial and local level, people should use existing fora wherever possible rather than establishing new ones. The Masibambane sector collaboration fora are a good place to table this issue. Masibambane could even be willing to pilot the multiple use approach and put funds to it. But, we need to be sure about the outputs we would like to see from such pilot.

Based on the discussions above, a call was made for developing a framework document for further debate. That would allow taking the discussion further in terms of content.

As indicated above, the key organisations which could not attend this meeting are local government as a department (DPLG) and its representatives SALGA. Yet these are key in order to take the multiple use approach forward. We should approach these organisations individually.

A number of direct information sharing opportunities were mentioned:

- the website of the Water Information Network (WIN): www.win-sa.org.za. WIN has already posted information on this meeting on its website, and is happy to play and active role in enabling information sharing through its website.
- the website of the WRC with its research results: www.wrc.org.za
- the website of the MUS project: www.musproject.net

Annex 1: Programme of the meeting

9.15 – 10.00	Introductions and setting the scene
10.00 – 12.30	Mapping out initiatives and experience by: - MUS Project: IWMI, IRC, and AWARD - Department of Water Affairs and Forestry - National Department of Agriculture - Water Research Commission
12:30 – 1:30	Lunch
1.30 – 3:00 3.00 – 4.30	- Agricultural Research Council - Rain Water Harvesting project - Water and Society project - The Mvula Trust - World Vision Identify and discuss “hot topics” Identify gaps and future focus areas Agree on future collective interaction.

Annex 2: list of participants

Name	Organisation/interest	E-mail
1. Tessa Cousins	AWARD	tessa@mail.ngo.za
2. Theo Maluleke	AWARD	theo@award.org.za
3. Derick du Toit	AWARD	derick@award.org.za
4. Abri Vermeulen	DWAF: WS Policy and Strategy	vermeulena@dwaf.gov.za
5. Nino Manus	DWAF WS: Policy and Strategy	manusa@dwaf.gov.za
6. Chabedi Tsatsti	DWAF: Water Use Efficiency	qgc@dwaf.gov.za
7. Tshikovhi Lufhuno	DWAF WS: Policy and Strategy	tshikovhil@dwaf.gov.za
8. Flip Nothling	DWAF – Water Abstraction and In-stream Use	qbc@dwaf.gov.za
9. At van Coller	National Dept of Agriculture: Water Use and Irrigation Development	smwuid@nda.agric.za
10. Bea Drost	Department of Housing: Human Settlement Policy and Integration	bea@housing.gov.za
11. Gerhard Backeberg	WRC: Director water utilization in agriculture	backeberg@wrc.org.za
12. Jay Bhagwan	WRC: Water use and wastewater management; Chairperson to Minister's advisory council	jayb@wrc.org.za
13. Ndala Duma	Water Information Network	ndalad@wrc.org.za
14. Massoud Shaker	ARC / Limpopo Basin Coordinator for CP	shakerm@arc.agric.za
15. Barbara van Koppen	IWMI	b.vankoppen@cgiar.org
16. Frits Penning de Vries	International Water Management Institute (IWMI)	f.penningdevries@cgiar.org
17. Yogesh Bhatt	IWMI	y.bhatt@cgiar.org
18. Sylvie Morardet	IWMI	s.morardet@cgiar.org
19. Marie Lefebvre	Student at IWMI	m.lefebvre@cgiar.org
20. Dominique Rollin	IWMI	d.rollin@cgiar.org
21.Philip Davids	The Mvula Trust	Philip@mvula.co.za
22.Victor Munnik	Independent researcher for The Mvula Trust	victormunnik@iafrica.com
23. Jean Boroto	Source Strategic Focus (consultant)	jboroto@wol.co.za
24.Stephen McFarlane	World Vision	Stephen_mcfarlane@wvi.org
25. Jonathan Denison	Umhlaba Consulting Group	jdenison@umhlabacg.co.za
26. Nicky Naidoo	Nemai Consulting	nickyn@nemai.co.za
27. Stef Smits	IRC International Water and Sanitation Centre	smits@irc.nl
28. Aileen Anderson	Ninham Shand consultants	Aileen.anderson@shands.co.za
29. Marna de Lange	Water for Food Movement /Socio-Technical Interfacing (consultant)	marna@global.co.za
30. Louise Colvin	Masibambane	Louise.colvin@absamail.co.za

Apologies:
William Moraka: SALGA
Sipho Mlambo: Bushbuckridge Local Municipality,
Mortimer Mannya: Limpopo Provincial Department of Agriculture

Annex 3: summary mapping of initiatives

What	Type	Focus	Where	Linkages
Challenge Programme Multiple Use Systems Project (CP-MUS)	**Action Research** Scaling up Learning alliances Science and field testing	Land, water, livelihoods, poverty 3 levels (national, intermediate and local)	Global project in 8 countries in 5 basins. Limpopo basin in South Africa and Zimbabwe	5 main global partners Funded by CGAIR Challenge Programme and French Government In SA: AWARD and IWMI-SA, World Vision SA, local government
MUS – managerial conceptualisation	**Research**	Economic, financial and social Management Decision Support	Olifants basin, Sekororo	French govt funds, and links to French researchers SWELL Zimbabwe
SWELL	**Action research** to pilot and **implement** a Community-based planning, implementation and monitoring process	Integrated water and livelihoods planning approach, bringing together communities, local government and different departments. Focus on water to support livelihoods of the poor	Bohlabela District Municipality, Bushbuckridge Local Municipality, Villages of Ward 16	Municipal plans (IDP) Sector plans Mvula Trust Zimbabwe MUS partners
DWAF Policy on small-scale productive uses from domestic supplies	Production of **policy and guidelines** for Municipalities: - policy issues - best practice guidelines - current initiatives and guidance for new schemes	Small-scale productive uses of water from domestic systems Based on case studies	National policy, based on 6 case studies	DWAF Water Resources, WRC, NGOs, Dpt of Agriculture, Dept of Land Affairs. DPLG?
Dept of Agriculture: Water Use and Irrigation Development Multiple use approaches to water	**Planning** **Programme implementation**	Water-based agricultural development, support to a stepped approach to agricultural production	From national to local	Local government
Water Research Commission	Various **research** projects, informing **policy**	Water for food production Water use in domestic, mining and industry: focus on sustainable	National Various sites, including KZN, Free State, EC	Various research institutes, universities and NGOs ARC

What	Type	Focus	Where	Linkages
		livelihoods		DWAF DoA
Water resources management in Rainwater Harvesting (Jean Boroto for WRC)	**Research** Field-based case reports **Policy**	Understanding of RWH implications for water resource management Develop Decision-support system Draft policy document on RWH	Selected sites in SA	Field partners NGOs Research organisations (Wits) Consultants
Developing WRC research strategy on water and society (Viktor Munnik for the Mvula Trust)	**Research strategy**	Decision-making and participation Socially induced scarcity of water Participation Provision of water services Needs of vulnerable people Water paying and pricing Water for livelihoods	National Focus groups	Just starting…
The Mvula Trust	**Research** **Implementation** **Policy advocacy**	Rainwater harvesting Livelihoods initiatives Sanitation	Various sites throughout SA (KZN, EC, Limpopo, Mpumalanga). Focus on rural areas	Community projects Local authorities Other NGOs, Parliamentary Portfolio Committee
ARC Challenge Programme on Water for Food	**Research** programme; several themes Support to research	Grow more food with less water: - water for food challenge - water for livelihood challenge - water for nature challenge	Global 9 Benchmark basins, including Limpopo	CGIAR – globally Hosts coordination unit for Limpopo basin Linkages with institutions from water and agricultural sector Links to other countries in Limpopo Basin
World Vision	Implementation programmes on water and food security	Community based Food security Health Water and sanitation Economic development	15 locations, including Sekororo (Olifants basin)	With communities IWMI

Annex 4. More information on initiatives

The Power Point presentations can be accessed from WIN website.

CP-MUS PROJECT

Barbara Van Koppen, IWMI

"Models for Iimplementing Multiple-Use Water Systems for Enhanced Land and Water Productivity, Rural Livelihoods and Gender Equity"
The project is primarily supported by the CGIAR Challenge Program Water and Food.

Aims and location

This action-research project is led by the International Water Management Institute, and aims to enhance multiple-use water services approaches worldwide. The project has over fifty national and local partners in eight countries in the Mekong, Indus-Ganges, Nile, Limpopo and Andean basins. The project facilitates the implementation of local multiple-use water systems and forms Learning Alliance from local to national levels for the up-scaling of multiple-use water services approaches. In South Africa the local partner is AWARD

Opportunities of m.u.s. approaches this project sees

1.Meeting broader water needs of women and men (health, freedom from drudgery, income from crops, livestock, fish, businesses)
2..Improving scheme sustainability by avoiding 'illegal' uses, damage, and deviation from planned allocations
3.Investing low incremental costs for high additional benefits
4.Improving ability to pay for 'domestic' schemes
5. Allowing for massive up-scaling

Generic Methodology

- New partnerships: domestic and productive water sectors; researchers and implementers
- Action Research – Learning by Doing
- Through 'Learning Alliances' at local, intermediate, national and international level
- Around a research framework of 12 principles for a m.u.s. approach

Strategy

- Action research to develop tools and methodologies
- Using a principle-based approach
- Learning about Multiple Use water Services (MUS) **through** learning alliances
- Learning **about** learning alliances for scaling up MUS

Project framework

Focus at 3 levels:
•*National* – an enabling framework of policy, legislation, and resource allocation
•*Intermediate* – coordination and long term support mechanisms
•*Local* – implementation and management

- Principles for implementation and scaling up at each level
- Principles provide a checklist helping to identify questions to ask, and actions to take, in each phase of action research
- Leading to action results, and learning about the process

Contact: IWMI: Barbara van Koppen b.vankoppen@cgiar.org
Website of the MUS project: www.musproject.net

South African initiatives within the global CP-MUS Project:

1. Securing Water to Enhance Local Livelihoods (SWELL)

Theo Maluleke, Association for Water and Rural Development (AWARD).

SWELL takes a m.u.s. approach into a **Community Based Planning process** that enable villagers, in partnership with relevant stakeholders, to design plans for improving their village water system, based on a critical analysis and understanding of their water related problems, needs and opportunities in their specific livelihood context. It seeks to match multiple water uses with multiple water sources, working collectively across sectors and closely with the Local and District Municipalities. It is being piloted in Ward 16 of the Bushbuckridge Local Municipality by AWARD

Background:

- First piloted in 1 village in 2003
- Adaptation of methodology into ward level planning approach
- Tested in 7 villages of ward 16 of Bushbuckridge in 2004/2005
- Plans have been developed and integrated into IDP and sector plans
- Multi-stakeholder platform established to monitor progress of plans

Methodology

SWELL is informed by a number of key principles, and has drawn on the Sustainable Livelihoods Framework and the RIDA (Resources, Infrastructure, Demand and Access) approaches. The methodology is aimed at understanding issues of multiple uses of water and planning improvements of water services at three levels:

- The household; to understand the livelihood contexts of different households
- The village; as this is the level where water services are normally organised,
- The broader institutional context

Findings at village and household level

- There is great variability between the villages
- On average half the interviewed households have water-related income-generating activities
- Staple food production is mostly rain-fed, or bought
- Water security is currently one of the limiting factor for backyard gardens and other productive uses, but not the only limitation; also time, fencing, skills, access to credit,
- Water security is closely related to technology at household level and village water service performance
- There is little awareness of alternatives such as rainwater harvesting
- For most uses people rely on piped water; dams are used only for cattle
- Little communication between different stakeholders
- No payment for water, but high payment to private water vendors when services are broken down

Lessons

- Many of the water-related problems are linked, requiring an integrated approach
- Addressing domestic water supply without considering multiple uses leads to unsustainable services
- A learning approach is needed to get stakeholders to plan water services in an integrated way
- Such process requires structured facilitation and a clear methodology

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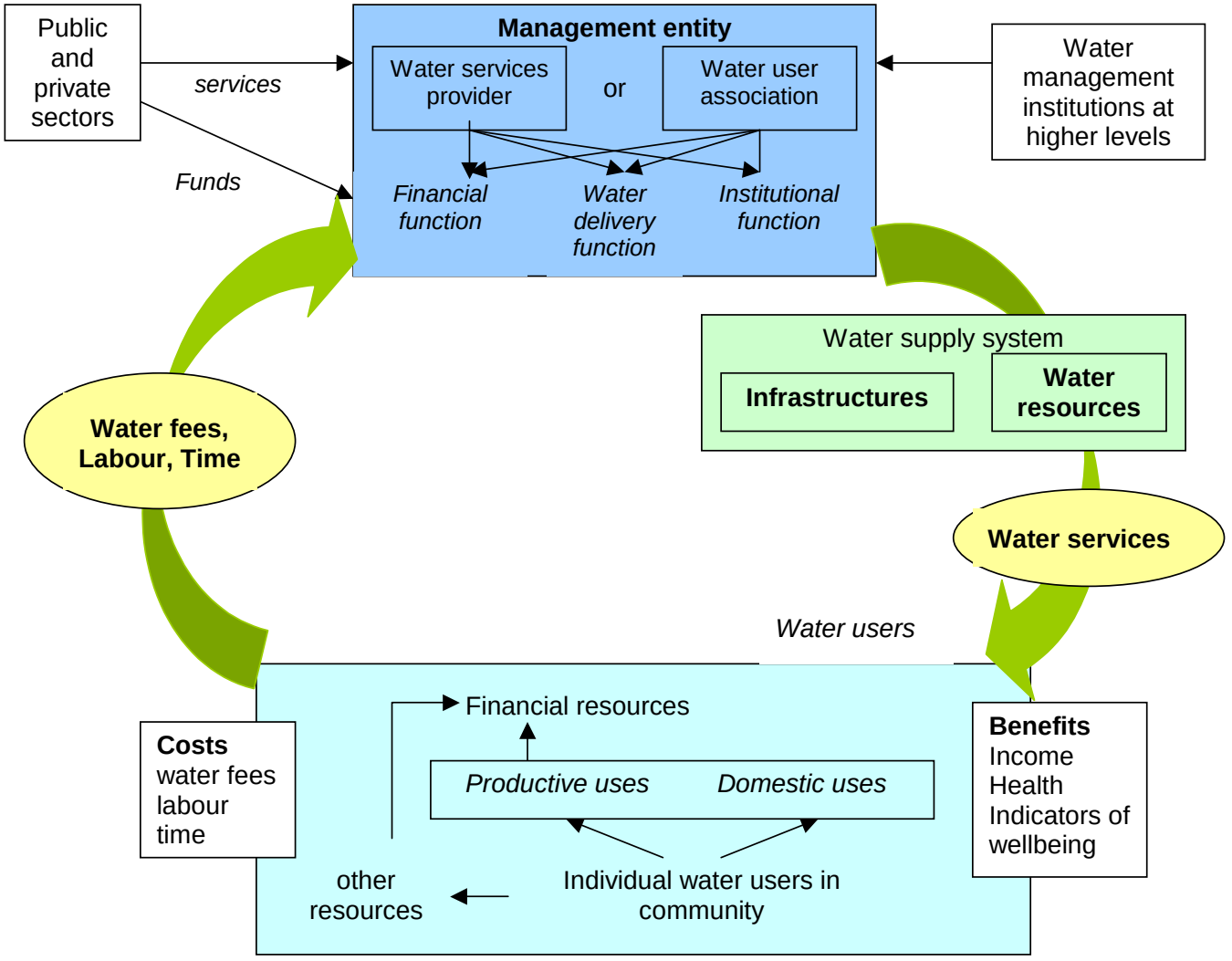
AWARD website: www.award.org.za



A Managerial Conception of MUS

Socio-economic research components For MUS

Sylvie Moradet – IWMI

Partners

•South African and Zimbabwean NGOs: AWARD, World Vision, Mvuramanzi Trust
•University of Pretoria
•French research institutions: Cirad, Cemagref, Engref
•IWMI, IRC

1. Literature review on social and economic aspects of m.u.s.
2. Analysis of the institutional and policy context related to m.u.s in South Africa
3. Participatory diagnosis of existing water systems
4. Economic modeling of demand and supply for water services and costs-benefits assessment (leading organizations: Cirad-University of Pretoria and Cemagref)
5. Building and testing decision support tools for water services at community and district levels (Leading organization: IWMI)

The conceptual model depicted above informs the research

The first research project to done under this aspect is:

Inventory and analysis of financing mechanisms for Domestic Water Services in the rural areas of the Olifants river Basin, South Africa.

A six-month internship study : Marie Lefebvre

Objectives

Institutional context of domestic water services in South Africa
Existing literature about domestic water pricing and costs in rural South Africa
Existing financing mechanisms at local level

First results and problems encountered

✓The institutional framework:

"Theoretical" institutional organization is very clear but the situation on the ground is evolving slowly and is not yet stabilized

-Responsibilities sharing between WSAs, Local municipalities and DWAF is not clear yet

-Heavy presence of consulting firms: to balance a lack of capacity in the new-built municipalities?

✓Water services financing

-WSAs seldom keep a separate accounting system for water services→ loss of information about amount and use of subsidies, inconsistencies between WSDPs data and WSAs data

✓Who manage domestic water services networks?

- networks are currently being transferred from DWAF to WSAs, and contracts are discussed to share the management with Water Boards (Sekhukhune DM) and water services providers.
- progress of transfer varies a lot among WSAs

✓Domestic water pricing

- important diversity of situations encountered probably due to diversity of the progress of transfer and of local contexts

✓Information on networks

- Most of the networks were formerly managed by DWAF. When it is not the case, technical and financial information are not available
- Use of DWAF functional assessment data (2003) to describe the networks currently in use in the studied area
- First findings: huge heterogeneity of networks, and no clear effects of technical characteristics on costs
- Uncertainty on methods used to assess costs and on origin of data

And the Multiple-Uses Systems?

- Consciousness of WSAs representatives of the use of domestic water for other purposes (gardening, small businesses)
- Special bylaws will be implemented
- Currently, MUS is not a priority (priority= reach basic supplies and regulation needs.

Conclusion

✓The domestic water sector is subject to important ongoing transformations

✓The lack of information, especially financial may be one of the main difficulties for water services planning and management

✓The present study needs to be complemented by an analysis of water demand at household and community levels and by an analysis of irrigation water supply and demand.

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Small Scale Productive Water Uses

Antonino Manus
Department of Water Affairs: Water Services: Policy and Strategy

Background

Several Regions raised a concern about the lack of policy on the provision of water for stock watering. It is important that DWAF policy must clarify the extent as to how much water can be allowed from the drinking water schemes for stock watering.
Enquiries from NGOs, involved in the field, about DWAF's policy for the provision of water for small scale productive uses;
Input into the work done by Water Resources on the allocation of water for small scale productive uses and,
The Strategic Framework for Water Services clearly indicates that water must be provided to reduce poverty, improve human health and promote economic development.

Approach to the Study

- Literature Review
- Engagement of Stakeholders in the Field
- Case Study Analysis
- Preparation of Guideline Document

Status Quo Report

- Completed 3 out of 6 case study reviews;
- Completion of Policy Review;
- Co-ordination internally with Water Resources Management and,
- Engaged with Dept of Agriculture, WRC, Dept of Land Affairs and relevant NGOs in the field such as AWARD and CDE.

Issues to be decided

In order to address the provision of water for small scale productive uses the following issues need to be discussed:§Definition of Small Scale Productive Uses

- Criteria for the Extension of Schemes into the Rural Communities
- Standards and Technology for Water Supply
- Operation and Maintenance of the Scheme
- Institutional Roles and Responsibilities
- Monitoring, Evaluating and Regulating the System
- Ensuring the Sustainability of the Scheme

A guideline will be produced which aims to address the following:

- Address policy issues around the provision of water for small scale productive use
- Provide best practices guideline on the provision of water for small scale productive use
- Address current initiatives and provide guidance for the provision of water for new schemes

Way Forward

- Finalising Policy Issues
- Case Study Analysis
- Draft copy of Document due September 2005
- Circulation of Document for Comment
- Coordination with DWAF: Water resources and Department of Agriculture, WRC, AWARD, etc.

Multiple Use Approaches to Water

AT van Coller Pr. Eng.
Senior Manager: Water Use and Irrigation Development
Department of Agriculture

Big Picture

- Balancing act
- Internal (on-site)
- Cost of practices
- Capacity to implement
- Energy requirements
- Benefits derived from practices
- External (off-site)
- Infrastructure requirements
- Advisory support services
- Research and development
- Market and business development
- Access to financial support
- Access to knowledge and information

mpacts of multiple use

- Balancing act
- Impact on environment
- Impact of food insecurity
- Impact on downstream users
- Spatial distribution between availability and abstraction
- Sector mandates
    - Increased grey areas
    - Good guys vs Bad guys
- Project implementation
- Planning not inclusive
- Partial plans for own benefit

Stepped approach for agricultural production

- Learn basic agricultural production practices (Food plot- household)
- Improve soil profile for increase soil moisture retention
- Harvest grey water
- Collect water from roof
- Collect runoff water from own yard
- Community garden development
- Small farmer production for local market
- Commercial production

Infrastructure choices

- Cost of installation
- Cost of operation and maintenance
- Economic benefits derived
- Socio economic benefits
- Environmental impacts
- Funding requirements
- Sustainability

Water Research Commission: Key Strategic Area Of Water Utilisation In Agriculture

Dr Gerhard Backeberg

Research projects which address issues of relevance to the concept of multi-use systems are mainly undertaken under two research thrusts and programmes:

Thrust 1: Water Utilisation for Food and Fibre Production
Programme 2: Fitness-for-use of Water of Crop Production, Livestock Watering and Aquaculture
Project: Application of risk assessment modelling in groundwater for humans and livestock in rural communal systems (Project Leader: Prof N Casey, University of Pretoria)

Project: A scoping study to evaluate the fitness for use of grey water in urban and peri-urban agriculture (Project leader: Mr K O'Murphy, CSIR, Environmentek) *Note:This scoping study will be followed up by a project to develop guidelines for use of grey water in agriculture, for which research proposals are currently solicited through the WRC website.*

Thrust 3: Water Utilisation for Poverty Reduction and Wealth Creation In Agriculture
Programme 1: Sustainable water-based agricultural activities in rural communities
Research work in this programme can be catagorised under five themes. Three relevant themes are the following:

1. Development of training material

Project: Implementing and testing WRC Guidelines for developing sustainable small scale farmer irrigation in poor rural communities (Project Leader: Mrs M de Lange, IWMI and Mr M Botha, ARC-Institute for Agricultural Engineering)

Project: Participatory development of training material for agricultural use in homestead farming systems for improved livelihoods (Project Leader: Mr C Stimie, Rural Integrated Engineering (Pty) Ltd

2. Water harvesting and conservation

Project: On-farm application of in-field water harvesting and conservation techniques on small plots in the central region of South Africa (Project Leader: Mr JJ Botha, ARC-Institute for Soil Climate and Water)

Project: Sustainable techniques and practices for water harvesting and conservation and their effective application in resource-poor agricultural production in KwaZulu Natal Province (Project Leader: Mr R Dladla, Zakhe Training Institute) and in Eastern Cape Province (Project Leader: Prof GCG Frazer and Dr N Monde, University of Fort Hare)

Project: Socio-economic study on water conservation techniques in semi-arid areas (Project Leader: Dr G Kundhlande, University of the Free State)
Note: A new research project on social acceptability, economic viability and institutional arrangements for sustainable water harvesting and conservation is due to start in April 2006

3. Water use of indigenous crops

Project: Nutritional value and water use of indigenous crops for improved livelihoods (Project Leader: Prof A Oelofse, University of Pretoria)

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Dr Gerhard Backeberg: e-mail – gerhardb@wrc.org.za

Water Research Commission: Key Strategic Area Of Water Use and Wastewater Management

Jay Bhagwan

Water for food production
- Risk assessment of groundwater for humans and livestock
- Scoping study of fitness of use of grey water in (peri)-urban areas
- Food safety related to water quality
- Sustainable water-based activities in rural communities (esp training material and capacity building)
- Rain water harvesting and conservation
- Water use of indigenous crops

Water use in domestic, mining and industry: focus on sustainable livelihoods
- Grey water in non-sewered areas
- Sludge use
- Reuse of wastewater
- Stormwater use

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Water Research Commission Website: http://www.wrc.org.za

Agricultural Research Council: Presentation to MUS forum
Challenge Program on Water and Food

Dr Massoud Shaker

Themes

Theme 1:Crop Water Productivity improvement
Theme 2: Multiple use of Upper Catchments
Theme 3: Aquatic Ecosystem and fisheries
Theme 4:Integrated Basin Water Management Systems
Theme 5:The Global and National Food and Water Systems

EXPECTED OUTPUTS AND ACTIONS

•Creating "Limpopo CP Coordinating Unit" comprising of Representative/s from host countries of Botswana, Mozambique, South Africa and Zimbabwe with set mandate and responsibilities.
•Creating Sub Structure to "Limpopo CP Coordinating Unit" in individual host countries, participated by Agricultural as well as Water sectors at Public and private levels, in support of the "Unit"
Process of creating External and Internal Linkages for the " Limpopo CP Coordinating Unit".
•Review process of "identified and to be identified, need based, research topics", and preparation of concept research proposal /notes with regard to those topics for consideration
• Structuring "Research Teams" capable of undertaking full research planning , implementation, training and mentorship cycle in participation and collaboration with National Research bodies in South Africa and other participating countries where applicable.
.••Linkages with Nationally and Internationally based Research and Developmental funding bodies and agencies with a clear strategic direction to support the adopted research agenda
•• Upgrading and activation of Limpopo basin data base and its work station
•• Promoting Benchmark Basin developmental concept through propagation of a well prepared and established Web Site, regular news letter in English and Portuguese and a well documented Basin Profile

Some particulars of CPWF Small grant call for proposal
••Total of 10 to15 Projects

•Each between US$25000 to US$75000
•NGO's or NARES organizations in one or more CPWF BB
•At least one partner should have worked 5 years in the in the area
•Submission on the internet, Format available in the CPWF web site as from 3 Aug. 2005
•Dead line 15th Oct. final selection 24th Nov., duration 18 months, starting date, December 2005.

WARFSA

Call for research proposals

••To contribute to the sustainable development and management of water resources in the SADC region in order to ensure the availability of water required for social and economic development
•SADC nations and residents, there are 5 priority list of topics
•Max allocation per project is US$ 30000, US$5000 to US$ 50000
•Project review takes about 4 to 5 month with no deadline for submission of proposals
•The fund is managed by the Institute of Water and Sanitation Development (IWSD) in Harare with initial funding from the Swedish International Development Agency (Sida)
•Proposal should not exceed 10 pages min. font of 11, A4 single spacing
•Applicants should contact the Institute of Water and Sanitation Development for application forms and application procedures
•Info on the funds at IWSD web sit www.iwsd.co.zw/resfund.htm.

Some of Mvula Trust's experiences in multiple use approaches

Phillip Davids

RWH Information Resources Booklet - 1999

Collaboration between Mvula & Disaster Mitigation for Sustainable Livelihoods Project (UCT) - Author John Gould
Key areas of RWH:

- Types & components of RWH
- Systems design, implementation & operation
- List of information sources & resources on RWH

Xolo Rain Water Harvesting

Mvula appointed (with EU funding) Operation Hunger as Implementing Agent
Xolo village in Ulundi Local Municipality within Zululand District Municipality
The project was implemented between 1997 &1999. It was planned to provide RWH tanks for 200 households. Our records indicate that only 75 may have been built.
Mainly 4.5 cubic meters ferro cement tanks were built. Catchment systems were not well developed and households had to improvise. Also leakages of the tanks were experienced and considerable effort went into repairing these.
It would appear from the record that R2,408 per tank was budgeted for, of which R1542 was subsidised (EU funding), and the household had to contribute R866 (a mixture of cash & labour equity)
Mvula has not been in contact with the project community since about 1999 – thus the project status is unknown

NDA funded projects in EC & KZN

NDA integrated development - health & livelihoods
Two projects were implemented between 2003 & 2005
Mawusheni (Alfred Nzo DM) involved upgrading of water supply system, institutional sanitation at schools & livelihoods including communal garden
Community water supply also provides water for the communal garden
WSA pays for O&M and has given unofficial approval
Ngedlengedle involved upgrading of community water supply & separate water supply for communal gardens

Water, Health & Livelihoods (WHELL)

Collaboration between Care-SA, AWARD, Tsogang & Mvula
Five year programme funded by Ausaid (2nd year)
Purpose: Improving Civil Society Organisations and government capacity to deliver quality decentralised rural services that mainstream effective responses to HIV/AIDS and address gender inequities to enhance livelihoods.
Two of Mvula pilot sites will be in

- Justicia - Mpumalanga
- Tshiungani – Limpopo

They will focus on following learning areas:

- Community participation in WSP arrangements
- Free basic water provision
- Productive use of water/ LED/ livelihoods/Rain Water Harvesting
- Institutional (school) and household sanitation
- Appropriate Technology – standpipes, reservoirs, filters, etc gender sensitive approaches
- Multiple use water systems, multiple source systems RWH, HLS

- The mainstreaming of gender as a cross cutting issue in the models to be developed

RWH for Household Food Security

Proposal presently being negotiated with DWAF Directorate Water Resource Finance & Finance on their Policy on Financial Assistance to Resource Poor Farmers, September 2004

Mvual aims to facilitate utilisation of initial public funding as a lever to ensure sustainable development best:

- stakeholder involvement in every step;
- ensuring community participation;
- developing socio-economically viable, practical, manageable and sustainable schemes;
- promoting, with other role-players, availability of support services (i.e., capacity building, training, effective monitoring systems, etc.)

Max. of R5 000 to establish. a tank. Only 1 tank + pump per household;
In 3 sites where Mvula has ongoing relationships.
Manumela Village, Bohlabela DM (Limpopo)
Ngweneni, Capricorn DM (Mpumalanga)
Bityi –Mateko, OR Tambo DM.

Implementation in phases which includes

- Consultations with stakeholders in all phases
- Village scoping to identify the poorest households
- Frequent community information meetings
- Households surveys and applications including water uses plan

50 hh applications per site already submitted to DWAF.

Other RWH Initiatives

In Klipfontein near Garies in Northern Cape, household RWH was implemented by Operation Hunger from 1992-1994. They installed square tanks.

Presentation Portfolio Committee Water Affairs and Forestry - Water for Domestic and Productive Use

Mvula did a presentation to the Portfolio Committee on multiple uses for to support livelihoods and food security; the current rather narrow interpretation of water services, and the need for more integrated approaches. The presentation included rainwater harvesting.

Mvula made a set of recommendations:

- Dialogue between WS and WR within DWAF
- Dialogue and synergy between DWAF and DoA on RWH roll out
- Dialogue between DWAF, DoA, SALGA and DPLG on application of MIG funding for MUS
- Need to develop implementation models
- Awareness creation for WSAs, and linkages with IDP processes and local LED initiatives
- RWH not simply a tank, but mentoring and support to household food security strategies

Water Resources Management in Rain Water Harvesting:

An Integrated Systems Approach

Jean Boroto

Objectives of the research:

1. Investigate and report on findings from research and results of previous and current rainwater harvesting practices for the purposes of advising an integrated systems in RWH
2. Develop an understanding of RWH implications in the light of increasing acceptance/adoption of harvesting practices
3. Implement minimal field-based research to address knowledge gaps concerning catchment-scale interactions and effects associated with RWH practices.
4. Develop methodologies to quantify socio-economic, hydrological, ecological and environmental impacts and refine these methods for packaging as standalone applications or for incorporation into existing water resources management and water systems analysis models
5. Build a Decision Support System which incorporates insight from RWH practices and data, information, understanding and methodologies developed in (2) and (3), as well as abilities to scenario building based on a GIS of South Africa. The DSS is expected to guide and facilitate sustainable implementation of RWH.
6. Develop a draft policy document to guide small to large scale RWH practices within the provisions of Integrated Water Resources Management as expressed in the NWA, and to ensure that practices comply with other related policies and Acts (e.g. Environmental Conservation Act).

Methodology

- Research work is underway with a full time PhD student at School of Engineering and Environmental Engineering at Wits
- The focus is on the South Africa context in a comparative approach with practices elsewhere in relation to the opportunities especially for productive use of water through RWH and in identifying barriers
- Experience of the ARC, AWARD and IWMI with communities is expected to be used to provide a first level of data that can be tested in the DSS to be developed
- The development of the DSS will be based on the WR2005 as well as information available from the Community Water Supply and Sanitation GIS database (DWAF)
- Scaling-up to receive specific attention and will be part of the topic of the PhD dissertation with an investigation on the impact of RWH on overall hydrological processes
- Two staggered Master's research also: the first with focus on hydrological processes and the second in socio economic benefits with a focus on policy and legislative requirements.
- A detailed analysis of the policy and legislative requirements with necessary linkages with other legislation related to the environmental and agriculture as well as water services will be undertaken in order to formulate appropriate recommendations
- RWH in the context of IWRM within South Africa will be constitute the summary of this research outlining the lessons learnt, the opportunities identified, the gaps as well as providing guidelines for further work to be done

The team

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- AWARD – T Cousins, T Maluleke
- Wits University: Prof Taibgenu, JM Mwenge Kahinda, T Sejamoholo
- ARC – ISWC: JJ Botha

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