



# Theme: 1-3 & 7

- Municipality ~~and~~ data should be available  
 - CMA should be appraised to share data collection and management in cooperation with departments, municipalities, mining, Forestry, Revenue.

③ Why has the Government done to check on the mineral springs water resources which are there in our communities which have been flowing since time immemorial? How many such springs are we having? We know few such in our villages but our municipalities do nothing about this. Let us learn to use what God has provided and protect such resources and appreciate what we have.

- 6) How is it possible that mining is allowed in sensitive areas, IRB areas etc. How will this policy assist to not allow this?
- 7) Include in Catchment Management Strategies
- 8) Local participative Management Institutions, i.e. WUAs. All stakeholders involved in collaboration with CMA's. Integrate into regional/land level.

④ Use the effective irrigation boards and or Water Users Association in various parts of the country as example to manage groundwater use at same way.

⑤ Publish a document with accurate information on the effect of mining activities on groundwater sources.

\* Improve on the understanding of aquifer system at local scale, which will be informed by national policies & regulation

\* Capacity Building: what you can't see, you can not believe. There is a need to educate, share skills, explore & continuous monitoring, however, this will require funds that may not be available.

\* Drilled need to be regulated to ensure that all necessary data is collected during drilling (borehole logging).

\* These plantations are regulated in terms of distance away from river, they can be drilled.

- How is the department planning to close the gap on knowledge sharing in regard to groundwater prioritisation since it is lacking

From: local municipality

# Theme: 1-3 & 7

however, GW is not considered. During rainy season it might not be a problem but during drought these plant deplete groundwater.

White River Irrigation Boards.

Borehole use very difficult to monitor. Currently, 100s of hectares of macadamias are being planted, boreholes drilled, and then water application made.

\* licence should be issued before planting and drilling.

M. Kolesky: UCMA

1. Can aquifers be delineated to such an extent that they can be managed at that level?
2. Groundwater verification. When it is used for irrigation and municipal use, it should be verified under current V&V efforts.
3. Too many users over-abstract their boreholes. Everyone should be obliged to PTO

PARAMITAL

Current status on groundwater usage and availability.

Can groundwater sustainability be current water demand.

• Bring info to provincial and local level.

• Capacitating local Municipality with it be in terms of finance, skill.

• How long will it take to update the available information

• Standardize fee per province.

1. DEVELOP A DATABASE FOR GROUNDWATER IN RURAL MUNICIPALITIES

2. HIGH DEGREE OF PARTICIPATIVE MANAGEMENT.

Mining Sector P. Schenau peters@downriver.co.za

A suggestion/proposal to manage groundwater and surface water in an integrated manner. Perhaps through CMA's / WUA's.

Why not also including to upload groundwater information on a national database. There is a significant amount of information collected by including on a daily basis. Quality, quantity, make this information can significantly enhance current databases.

# Theme: 1-3 & 7

3. could  
to have hole tested for  
safe yield and adhere  
to the outcome.

4. CMA's should be ob-  
liged to have ground-  
water division to assist  
with IWRM in the WMA.

Health department  
mp. Province: Limpopo

- Areas without water (rural areas) react to Pit/UP's. This has a negative effect on the communities around. Lack when boundaries are drill the water quality is poor and can not be use for human consumption.
- The control of water tanks to be closely monitored as one do not always know where the water is collected from. These situations of water related water related

Sector: Mining (Coal)

- In terms of stakeholder engagements, suggest the Department gets advice from various industry meet would form part of the 2013 planning. Change of mines Representative, from participants, etc. This ensures that there is representation in the working committee.
- For areas who are polluting, Department needs to focus more on compensation & using those changes to either put in a fund, or assist in pollution treatment.
- A big issue is to monitor unregulated groundwater use, e.g. Mines in Agriculture.
- What happens to all the water charges imposed on users? Cost that be used to fund might partially the RIG portfolio?
- Biggest/most important aspect is National Day in They responsible all the time.

\* Linkage between surface and ground water monitoring

Why do we get sufficient groundwater  
in one place and not in another?

MAOBI ELIAS ~~Asper~~ NENKALA DISTRICT

1. The rights (rights to be known before any money can be spent of any ~~water~~ ground water).
2. Accurate and Precise by laws developed for underground ~~water~~ abstraction.

# Theme: 1-3 & 7

Real and sustained stakeholder engagement can take place through stakeholder consultation meetings and forum meetings. <sup>to be able to contribute</sup>

- I do my sector owning, implementation <sup>of the strategy</sup> achieving the strategy objectives through continuous development from the initial phase of strategy development, implementation as well as sharing the strategy vision w/ the sec dept (MS). Many will be able to achieve the strategy objectives when our roles & responsibilities are clearly defined.
- Finances could be directed <sup>through</sup> Provincially towards increasing groundwater priorities.
- Capacity building within the CMAs

Sector: Local Municipality

- When there are villages using VIP toilets, sanitation standards should be compulsory with every household drilled within the area.

MINING

- National database should consider (local) aquifer level
- \* Align the strategy with RDM of water data

# Theme: 4, 5, 6 & 8

AWARD COMMENT

- Municipalities are working in silos, DWS has to work in a concerted effort to address systemic issues related to groundwater understanding in silos as supra and groundwater information
- updated Government sector Contaminated Contamination policy for groundwater needs to be present
- High level water managers from stand law & border to pollution risks and contamination patterns
- A strong monitoring, compliance and enforcement should be put in place.

Monitoring of groundwater quality seems to be a challenge and I think managing what we don't measure or monitor is a bit difficult of a challenge.

MINING

- Engage various mining houses including BMR to complete DWS climate information (data sets)
- Exercise Council
- Forum under different regions or CMA's

DWS  
G/W Planning & dev. 4/21

It can be worthwhile to know the success rate of boreholes to be utilized. If you drill 5 and only one is successful, it will give you an idea of availability of water (depth of water). Both quantity & quality is very low.

Mining

- Regulatory oversight on schedule 1 users needs to be enhanced. Schedule 1 users can't proceed without drilling and regulation can perhaps focus on the drilling contractors. If a regulatory process can create a system where no water is drilled without being regulated, it means all boreholes will be reported which will give the department to ~~map~~ regulate it. For this to happen, the data base is critical and the department must create a public database to register and capture data.

AWARD COMMENT:

Municipalities must be educated on why groundwater schemes have failed in the past. They should know their base, but solid planning for effective maintenance is critical and that groundwater can be relied on in well-sited and designed schemes, instead of random drilling of boreholes within villages.

Lindsay Southern - Ar - analysis, monitoring, need to sign a contract with Municipality - Rules & regulations to use of ground water, legally bound to use effectively, need to report any extreme changes to their borehole. Need to make water available public in Extreme Need Case. - Municipality needs to appear MONITOR'S

# Theme: 4, 5, 6 & 8

Groundwater can have very good quality and can also have very poor quality for domestic usage. Looking at usage of mix of surface and groundwater, I think ~~is~~ strategy looking at using groundwater with different qualities for different purposes.

Sector: Local Municipality

The DWS should provide training/course on groundwater protection and management, to delegates from municipalities and private companies.

Groundwater data generated by the sector, how can we incorporate it into the DWS Geo data base.

There are instruments available that can do live time monitoring placed strategically can be pre-ventive instead of reactive. Cut down on Man power needed. Lots of parameter can be monitored at once. depth, pH, EC, nitrate, Sulphate etc. 082 834 6307

Groundwater Consultants 8/8/6

Groundwater is complex and there are many studies to understand the constraints of each site. However people and the Government is not willing to pay for these studies. It is not seen as important.

Groundwater source evaluation -> Testing of boreholes should be seen as a necessity. This is the starting point of the management. After being evaluated the source should be monitored.

Mining: Zambesi Exploration Drilling Cherts Mateniscane

DWS should ensure that groundwater information is updated on a regular basis.

Municipality

Protection of widely distributed groundwater resources is a challenge. The presence of mining activities of poor Santhia in rural areas affects the quality.

Strong control measures & enforcement needs to be done.

## Theme: 4, 5, 6 & 8

It is extremely difficult to find groundwater maps. Hand copies and digital copies. As well as surface water maps.

Our country has the technology and equipment, however it is not seen as 'high' importance. Funding is needed to improve SA's groundwater statistics and data bases.

Groundwater funding is being spent on rehabilitation, besides protection should be improved to prevent vandalism.

Moores Du Toit  
Mpumalanga Agriculture

Water availability is determined by rainfall. Development in any area should be limited by available water. Government should develop water retention infrastructure to optimally utilize rainfall. In that way pressure on groundwater will be minimised.

Quantitative estimates, 2. Sh. lowly  
Nedergaard 01/11/15  
- is again, situation not safe - a warning option  
- Kind by cost.  
- Compulsory to register all bores  
- Suitable for as well as water table  
- To facilitate to users and testing  
- is safe to make spec to a 'real' data base  
- Policing? Do we have the capacity?

Department of Water and Sanitation  
Community (01/11/15)  
- importance of groundwater at local level  
- Groundwater awareness campaigns  
- Skills & Knowledge - Groundwater importance  
- Management of Groundwater  
This is Sustainability and effective Groundwater management.

Name: André Bess  
Sector: Environmental Consulting mainly mining and construction.

Groundwater Information Management  
Development of a information database  
- Groundwater for the private sector & government  
- Sector to upload monitoring results with regards to the Water Use Licences.

TWK-ACRIS (Pty) Ltd (Bore)

Municipalities should be the driver to close the gap as they are local government. Act as a strategic place.  
- They are closer to people on the lower level.  
- They must share knowledge and co-ordinate.

## Theme: 4, 5, 6 & 8

If there are no significant variations between locations of aquifers and catchment areas, CMA's should manage groundwater.

Groundwater quality and quantity data base from the mining sector, Agriculture and municipalities need to be given priority in the national groundwater strategy as it is important to have these information. A

Accessibility of the information from these sectors need to be stressed somehow as it is not easy to get it.

It is important to build awareness within the municipalities and other sector departments.

The issue of groundwater information is important. Cooperation from municipal officials.

For DWS

(CMA)

- Authorization and use regulation  
- For industry needs regulation, self and legislated. Stakeholder should be promoted.  
- Protection - Developing functions to CMA's.  
- Clarify functions, roles and responsibilities to local authorities.

Mining sector

Sub-sector: Exploration drilling.

① Quantification of water resource is important.

② Public participation in water resources is critical as they are affected by storage of water in their communities.

SANParks -

DWAs - National has to train not only academics but also technicians deploy graduates to municipalities ->

need to integrate with the Resource Classification process - not include water they are already incorporating GW into the process ->

Health Dept

1. Conduct more awareness on 'ground water lesser' at community level.  
-> Community based workers.
2. Hire water scope persons who will monitor at local levels, not all people.
3. Monitoring & evaluate of users & licences constantly done.
4. Complaint referrals & feedback channels.

# Theme: 4, 5, 6 & 8

How can one change the mindset of people to know that Ground Water is clean & healthy for use?

→ How is awareness going to be raised in rural areas especially to people who are illiterate (underclass)?

## Intervent

Regulation is needed to find industries that are more densely located and impose on them a higher or do comprehensive monitoring throughout to determine the actual sources of pollution that are affecting the aquifer and have the responsible industry take action to remediate its problem. Otherwise there is just blame shifting from one to the other and no real result can come from it.

## Robert Davel

### Information Technology - April

1. Make use of satellite pictures to pick up pollution of crops and so on. Verify this information with databases.
2. Verify the use of water by farmers, industries etc with data base on low-lands.
3. Publish a document with accurate information on the effect of pumping as well as mining activities on the sustainability of ground water resources. This requires a water resources help desk/consultancy.
4. The information of the usage of groundwater can only be of some value (great value) if the information is accurate and complete.

Capacity building within the communities is very essential - people must understand the problems we are facing as a country or globally.

Involve youths in the awareness & capacity building.

Democrat Ndlovu  
LMA-MWC  
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## White River Irrigation Boards (WRIB)

1. What information does the WRIB have regarding the recharging of aquifers?
2. Impact on existing groundwater users (often domestic) of new groundwater use. How will this be handled?
3. Schedule 1 use - garden water used in extreme drought conditions. Should be controlled.

- Skill to be transferred from National to local.
- Information management should be improved and shared with public & information disseminated.

# Theme: 4, 5, 6 & 8

- \* Willingness to share information especially the private ones. How will the Dept ensure that users share this info. Some farmers have unregistered boreholes how do we ensure these are accounted for. Data info managed, protection policies.
- \* Care of depression and its impact to our neighboring users, as it impacts on availability.

CHALLENGE: RIB HAS GEOPHYSICAL GT UNIT SHIBANDES IN 2003

Question: shouldn't underground water be protected, instead of using it for irrigation.

PARASITIAL

N.R. MUKHAWANE [BLM]

e-mail: mukhawanganr@gmail.com

The ground water should be managed in a manner of protecting it in terms of pollution like: pit latrine, animal kraal and graves in the villages. The municipality and graves in the villages must form committees of water and workshop the villagers in terms of water protocol. The huge gap between government and villagers, lack of interaction. Politicians and officers in authority undermines officials with knowledge.

M. Kolocky : IUCMA

1. Groundwater Data is scattered all over the place. Certain consultants are not prepared to make this available. The data is priceless. Why not pay them for it?
2. Other than Schedule 1 use, everyone should be submitting ground-water consumption on monthly or annual basis. Maybe water levels, too?

## MAADI EGAS NEANGALA DISTRICT

1. Pressure to be exerted to specialists like Geohydrological Engineers to have much developed instruments & methods for siting prior to drilling in order to ascertain the water availability, quality and standard.

# Theme: 4, 5, 6 & 8

Ronde Puts  
Agriculture - irrigated.

- 1) Institutions  
Use what is already there, Regional  
to ground level.
- CMAs
  - WMA's
  - Municipalities  
etc.
- Integrated Management.

- By planning ~~pro~~
- Good planning scenarios

# Theme: 9, 10 & 11

## Local Authorities

Education can play a major role in  
Groundwater Management. Professional &  
Technical staff could be educated on  
groundwater management as they will  
utilize the knowledge acquired from the  
training on the way through the field  
Water table is a quality culture to  
avoid pollution of water.

The names of plantations should  
be selected into because the industry  
uses lot of water.

We need to regulate the  
establishment with a more serious  
approach than what is happening.

What is the government going to ~~implement~~  
implement the Lowveld Food Strategy of  
2020-2030/ decision

## Local Government Sector

Government needs to involve more  
attention to surface water.

Bring out the job market  
opportunities from different sectors.

① In the future it's possible,  
but currently we are grappling  
with space, more services needs  
to be met.

② As the local government sector  
we need to make certain risks →  
risk aware on the importance  
of protecting our ~~environment~~  
minerals.

Mining P. Schoeman peters@damsonier.co.za

In terms of groundwater management on a local  
level: mines/industries often do not have a clear  
picture of the cumulative impacts of various  
users on a groundwater resource. As a result  
industries often manage their impact on a  
resource on an individualistic basis. It will  
be very beneficial if groundwater management  
framework on a local level gives a platform  
for sharing/assessing cumulative impacts.

- Are all the work done  
on equipped in the regions  
in terms of quality and  
quantity of work done.
- Need to continue engaging  
with stakeholders on  
groundwater developments  
regarding the strategy
- More awareness campaigns  
to be conducted.
- Have the strategy being  
costed considering what  
to be done by all stakeholders
- Who will ensure compliance  
with the implementation of  
the strategy
- Who will manage the groundwater  
trust? Are there systems or  
strategies in place

Here is the next meeting  
in terms of groundwater

# Theme : 9, 10 & 11

## PARASTATAL KUGUBO

- Transparency is key and cooperation is good faith.
- Target heads of institutions of farmers - irrigation boards
- The final document can be workshoped and each institution to implement in their operations, however, ensure continued support is available from the Dept.

## Comment (Water Sector Award)

- The issue of equity (power imbalance) between different departments needs to be addressed as it then goes affect private sectors as well.
- Awareness should done in public for the public with regards to the issue of Groundwater policies and Regulation and also water act
  - Monitoring strategy should also be included in the (Strategy Plan)
- Mwambi Ntengwe

## Groundwater Consultants:

- adhere to the standards DWS & SANRAL
- Implement the standards
- CAPA to implement local practices and management plans DWS oversees.
- Water use licenses to be reviewed + funding!

## Groundwater Consultants 10/10/16

- If the updating of groundwater databases can be implemented Consultants can supply information
- Consultants can assist in training of students. For this to work communication will be key
- The government should ensure that our current water sources are being protected. You often see broken municipal water pipes, and they take needs to

## Municipality

To Roll out the strategy to Municipalities, use stakeholders such as Cogta, Salga, District in order to involve also the political wing which is the decision maker for municipality.

# Propose also groundwater forums to be formed

- IWRM at local level should include groundwater management. CMAA are in a better position to play this role with other local water management institutions such as irrigation boards and water users associations.
- Again water stewardship should play a central role in involving all role players

## Mpumalanga Agriculture - Agri-Net

- Continuation of groundwater by mining activities is a great concern. Regulations that are practical to prevent damage of ground water resources have to be put in place.
- Our organization can assist with communication to commercial farmers in rolling out the strategy.

# Theme : 9, 10 & 11

- Ensure that our policy and work instructions are linked to the national strategy.

## Local Forum

- Role out the strategy but establish ~~from~~ District forum that will be lead by DWS national.
- In a similar workshop or make use of the existing forums to engage all relevant stakeholders
- Be the lead in sector and put for effort and emphasis

## Mining Sector

Sub-sector: Exploratory Drilling

- Educating of the public is important on the activities and how they can participate of the management of groundwater resources.
- Include the public community in the strategy.
- Mining companies to use non-potable drinking elements in their process.

Six the problem (OSS topic)  
It doesn't help we manage and protect sources, but the means being used to get the water to the people is faulty.

- Cabinet management strategies should include groundwater management and authorization.
- Transboundary in function sharing with regard to groundwater management.

## Mpumalanga Agriculture

### Rainwater retention

1. Organic material in soil
2. Crops, plants and trees
3. Earth dams
4. Soil conservation structures

## TWK AGRI [Timber]

- MONITORING OF SPECIES THAT ARE USING MORE OF GROUND WATER.
- WORK TOWARDS REDUCING THOSE SPECIES



# Theme: 12

## Groundwater Consultants

- Start educating the young people on the proper weather channel or aids.
- When drilling at school - Show the kids, explain what's happening and how to keep water resources clean.
- All contractors & consultants should insure that they work according to existing standards (DPR, SANS, etc.)

## Report Draft

- 1) They reported the engineers reported help to inform all farmers, researchers as well as emerging to understand the importance of managing groundwater in some way as surface water.
- 2) Try to make sure that users of groundwater do not have wrong perceptions on the sustainability of groundwater.
- 3) Better communication between government departments in giving permission for prospecting and mining licenses.

## Groundwater Consultants

Work with students at School's  
Communication between departments  
Share information standards  
between departments  
University / public sector  
Geology and department  
DPR and District  
- include public

## Work Done (Green)

For these, the Department can start at a level of District or less than that in order to attract young students to its career field with district department.

My Sector can play an important role in terms of getting out the awareness campaigns in terms of GWS is common. Coordination of stakeholders for consultation purpose. Also coordination of non-stakeholders for training / empowerment in this regard.  
Sector: Education

- One user conservation miss:
1. Employ well equipped personnel.
  2. Stop the practice of outsourcing using consultants.
  3. Get management support.

- Willingness to share already available information. For management we need to ensure data availability. Importance is to get things from irrigators as they are the major user.
- Ensure that personnel willing to share information are not penalised.
- Meetings, workshops.
- It is difficult to enter the government system as a sector. The Dept. of Water Affairs is trapped. It is a public sector constraint/challenge. Also in public sector.

Sector: Local Government

# Theme: 12

- Implement grey water systems at schools, clinics, etc. Re-use water - teach people how to use water wisely.

Mining: Exploration Drilling  
The DWS should work with different Depts. Such as basic education to introduce the topic of groundwater at lower grades.

Mining Sector -  
Sub-sector: Drilling  
1) How about including the drillers association in skill development?

- There should be monitoring of usage of all guidelines developed by DWS.
- Information should be at a level where an ordinary South African can understand.
- Strengthen awareness campaigns.

They are always hiring PSP to run their project and staff end-up out of touch.  
Yes! They can be hired for projects with clear instruction to teach skill gaps. personnel. Also training can be arranged to get a number of personnel to go to private sector for specific training.

PARAVITAL

The institution incorporated Ground Water in their Conservation / Environmental Studies  
Has a Committee going to be Capentat about Groundwater management and usage. Are they aware of the connections with their area. Will they be given ownership of the Groundwater?

Increase the revival of IKS in water resources management & conservation. Indigenous knowledge and consultation with the elderly is key to improving the situation on groundwater.  
December  
FMG-MPWC  
082 700 7137

# Theme: 12

Linkage with the  
NARS (2) ? chapter.  
Sector action  
plans and with  
time frames. responsibilities

## Municipality

Strengthening Relationship  
with international partnership  
eg Scotland can be  
a challenge in terms  
of groundwater. But  
It's easy with surface/  
river water due to the  
INCO agreements. Ground  
water is usually confined  
within your space &  
not shared with international  
countries. Capacity Building  
& skills development & transfer is key also

Worumbona Agriculture.  
Have water retention.  
- Private Sector - reg runoff  
- Government - Dem Instruction

Dept of Health  
Groundwater standards must be  
update since the level of pollution  
is increasing  
How to go about a contaminated  
Groundwater sources especially  
that are used by community  
Groundwater protection must be  
educated people lower levels in  
schools

Utilization: Operation rules need  
to be developed for all applications.  
to manage gov better.

Mpumalanga Water Caucus  
(MWC) Social  
Learning  
Team

INSTITUTIONS:  
How are things done with these  
UNIVERSITIES? Which UNIVERSITIES?  
THEIR CONTACTS PLEASE.  
mdiamcesse@gmail.com  
WE ARE THERE AND READY TO BE  
CAPACITATED - PLEASE USE OF US  
WHILE WE ARE STILL HERE.  
WE NEED SKILLS AND  
CAPACITY - NGIS IS A REAL  
CHALLENGE TO ALL OF US -  
MORE ESPECIALLY TO OUR  
COMMUNITIES. TEACH THEM  
HOW TO FISH AND SHOW THEM  
WHERE THE RIVER IS FOR FISHING.

1 Groundwater is misunderstood  
and inappropriately used/managed  
in domestic use rural areas  
as well as in mining industry  
and agriculture  
The Dept must ensure that they  
have sufficient capacity to  
enforce NAL conditions  
and impose restrictions where  
necessary.