



Community concerns about the use of groundwater in S. Africa

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SOUTH AFRICA HAS in the past 8 years of post apartheid democratisation made great strides in its race to meet the enormous back logs with respect to in adequate access to potable water supply and sanitation. This has led to International recognition, and acclaim (It has taken the government of South Africa, 7 seven years to half the number of people without access to clean water, from 14 Million to 7 Million persons).

Whilst groundwater has been pivotal for the increased rural water coverage, it has also proven to be a hard sell to the receiving communities, based on the experiences of many of these communities in the past, and maybe these days.

This difficulty in selling groundwater as a water source of choice arose here in South Africa, from the practices in the past, wherein Rural Communities were poorly serviced as part of the prevailing political dictate. This poor service was illustrated in the mismatch between the excellent construction standards of the boreholes and other ancillary installations compared to the very poorly defined operation and maintenance regimen associated with the same schemes. The poor operations and maintenance was thus manifested by the frequent occurrence of burnt pumps and motors, pumps decommissioned by officials, who had to take them far away for servicing, etc. Unfortunately, even where these problems had nothing to do directly with the borehole or groundwater itself, they seem to negatively cloud groundwater from boreholes since the community had no use of the water sources during the periods of decommission.

Interventions by Government to arrest poor perception of groundwater

At the Department of Water Affairs and Forestry (DWA), we commenced an awareness programme within our Directorate of Geohydrology in 1996, which was tagged an *extension programme*. It was immediately tasked with, amongst others:

- Identify who was doing what and using what resources in educating about groundwater nationally. This was to avoid repetition and /or competition.
- Thoroughly understand who our target audience were, and attempt to evaluate what their needs (in terms of groundwater education) and concerns were.
- Collect information about curriculum experts and other natural resource scientists existing in various areas of the country. These persons were to be enlisted as partners when as the programme grew.

- Create or link up to a network of partners, who have the same community based water education goals.
- Forge a connection to village water committees, through the regional directorates of community water supply and sanitation of the department of water affairs and forestry.
- Provide on going basis resource materials, as and when demanded by the occasion.
- Prepare resource materials, which fit the audience and goals.

New Water Act

The need to introduce the above component to the core activity of the then Directorate: Geohydrology, was anchored in the reality that Groundwater, had fallen into a neglected state, and was neither managed, nor regulated, due to its *private water* status stipulations in the old Water Act, # 54 of 1956. At the particular time of 1996, attention was already focussed on the introduction of a new Water Act (now the new Water Act, # 96, of 1998) in which all, water was to become a public entity, managed by Government in public trusteeship of the country.

Current dispensation

In the present democratic dispensation, the government, through its water services programmes, has made impressive strides in bringing safe drinking water (about 25 litres per capital, at about 200 meters distance) to about 9 Million persons. Most of these persons have been served through the use of Groundwater. The challenge to using groundwater, especially, on a small scale (such as water points, centred on Handpumps), is the firmly held view / perceptions, that water supply from groundwater / boreholes / handpumps / submersible pumps, is a second class technology. This has roots in the past treatment of African communities, in which their water supply was often unreliable, when compared to those available to other communities from the other races. Every community looks forward to being served by a reliable means, and as such regarded schemes based on treatment plant, pipelines and taps as first class, whilst theirs which were often rudimentary non reticulated schemes as second class. Whilst the view point / perception is understandable, based on the real experiences of the Communities, it has been a big challenge to sell the view that water from a borehole is as good as that from any surface water source.

Challenges

One of the challenges for the Directorate: Geohydrology was, how to convince communities which had experienced first hand, bad experiences in the provision of water services based on groundwater, to accept that groundwater could in many cases actually, be a pristine and reliable source for domestic use.

Furthermore there were the occasional hot spots of naturally degraded groundwater (from geology, soil cover etc) as well as cases where groundwater quality had been impacted by human settlements, agricultural practices and suspected wrongful siting of toilets.

Operational and Management concerns of the water schemes related to: -

- Extended down times as a result of maintenance to pumps/ ancillary parts of the scheme, without factoring in the impact on the loss of supply to the community
- The odd occasions where the emerging Institutional framework, has resulted in the non-maintenance/ ownership of the schemes.
- Associated with the odd rudimentary institutional framework, is a lack of suitable technical capacity for the management of inherited schemes.

However, it is worth noting that the disapproval for groundwater as a source of supply for community water supplies can be exacerbated by other factors. For example, the Kutama Sinthumule water scheme in the Limpopo Province of South Africa, is one of the Presidential Lead Projects commissioned in 1995, and worth Multi- Million Rands. Although situated in an area of enhanced Nitrate values, suspected to be of Agricultural origin, the water scheme consists of over 15 boreholes with a varying Nitrate water content, which are mixed (blended) in order to achieve acceptable Nitrate at the point of supply. Some school of thought is that this scheme is over-engineered, resulting in operating and maintenance costs claimed to be above the means of the community. Despite several sessions by Project Sociologists, complimented by sessions from the DWAF Geohydrology staff, the system was eventually vandalised by Community youths, and supported by the community at large.

Despite the current favourable legal framework, groundwater continues to be perceived as a resource of last resort, or at best a temporary source until a permanent non-groundwater source is constructed for the beneficiary community.

The situation is further compounded by the fact the many new Municipalities which are now in existence in underdeveloped areas of the country, served by groundwater schemes, are confronted by gargantuan challenges of putting in place the necessary human capital to manage their functions.

Many groundwater schemes not only fail as a result of extraneous factors such as failing pumps, extended down time of-pump repairs, etc, the poor image of groundwater

is also linked to the lack of a functional and effective institutional framework in operation, for the management and maintenance of the schemes once completed. Compounding this factor is the ignorance around service levels, and rights of the recipient communities to decent service. In simple terms, many citizens lack knowledge around their rights, or they are unable to enforce such rights.

One discernible fact regarding community perceptions of groundwater as suitable source of water supply has to do with absence of Groundwater professional backup and support in the operating routine of groundwater schemes particularly in rural areas. This often manifests itself in the operators overriding the recommended yields, in order to meet increasing demands, until the systems packs up. At this stage, the community simply loses faith in the source of their supply.

The above has been heightened by the development in the Water Services sector in South Africa, over the past few years, wherein Local Governments has been given increasing responsibility for operating and maintaining local schemes. The concern here has of taking over Finally, the paper will conclude by examine the opportunities that have been put into place in present day South Africa around the role s and responsibilities of Municipalities.

Hopefully, with a sustained campaign on many fronts such as capacity building, enlightenment around-d citizens rights, etc, groundwater may emerge not as an interim resource, until a surface water scheme is put in place, but as a sustainable source of meeting a communities needs.

Progress/milestones

After 7 years of putting in a place a programme to address community concerns around the use of groundwater as a source for their water supply, there is need to take stock, and record what milestones were achieved.

- One milestone that was achieved by the Department was the identification of Children as a target for some of the programmes that the Department rolled out. In this regard, the set of 3 groundwater posters has been a spectacular success. A teacher's guide to accompany the set of 3 posters is only now about to roll out. The whole programme of school water education (Water Education Programmes) is now firmly housed in a separate Directorate, (Efficient Water Use), to which Geohydrologists have become partners.
- A couple of teacher guides were development, which will be further refined in the near future, by units which hopefully assume ownership for these and disseminate them.
- The participation by DWAF Geohydrologists, in the annual South African water week has enabled the subject of groundwater, as an acceptable water source to be addressed to a captive audience.
- A needs assessment was executed and will be disseminated in the future to the relevant structure responsible for Water education programmes.

- An opportunity which was taken advantage of during the past 7 years, was the introduction on all Water Services capital programmes of a component dealing with capacity building for the community benefiting from the scheme. Although the results have been mixed, it continues to provide a vehicle for addressing community concerns up-front, especially when this is done at the inception phase of the project, and is customized for particular community.
- A pilot program for schools and teachers within the North West and Northern Cape Provinces of the country was completed for about 60 schools, and about 100 teachers, with the assistance of DANIDA in 1997 and 1998.

Finally, one of the bigger challenge as the water sector undergoes restructuring (Local government assuming bigger responsibilities in water services provisioning, and

DWAF, restructured to play a Regulatory and support function), is the maintenance of the momentum already built up. The successes associated with the management of the negative perception about groundwater by communities, has largely dependent on the respective strength of the DWAF Regional offices. These need to be strengthened, and the role renegotiated. This is especially true as a number of Geohydrologists have tended to see the need for the Development of approaches, methodologies and other tools for community for awareness as not being technical and thus deserving of their attention.

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