

Keynote address: Groundwater opening ceremony.

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Ladies and gentlemen, honoured guests, groundwater is a **hidden treasure**, often under our very feet, but little recognised and acknowledged for the strategic role it plays. I have called it the hidden treasure – though we may not be able to see it, yet it provides life giving water to people and ecosystems across the globe. It is, truly, blue gold, a resource that must be used wisely to ensure sustainable livelihoods for millions of people.

Integrated water resources management is the term on everyone's lips at the moment, the holy grail which we are all seeking. Yet we must be careful that we do not fall into the trap of considering our job done if we talk about rivers and fish. The achievement of integrated water resources management requires the inclusion of groundwater, but if we do not address it *consciously* we may still find huge underground reserves lying forgotten.

Groundwater has 3 important advantages that often make it the best resource for local use in developing countries, where community management, cost effectiveness and robust technologies are important in ensuring sustainable water supplies.:

- firstly, it is locally available. Aquifers are wide spread – the question is usually how much, and how deep, rather than “where?”
- secondly, groundwater provides security of storage – 90% of the water available in our catchments is stored in aquifers;
- thirdly, groundwater quality is usually well protected by overlying layers of soil and rock.

At the World Summit in Johannesburg last year, we identified several key challenges for the global community. As we move from vision to action, we need to understand the critical role that

groundwater can play in meeting these challenges. We need to make sure that this role is recognised and implemented so that we can meet the challenges that lie ahead with all the resources at our disposal.

Basic human needs

1.4 billion people throughout the world do not have access to safe and affordable drinking water. One of the biggest challenges facing the water sector is to meet the Millenium Development Goal of halving the number of people without access to safe drinking water by 2015, and ultimately, to eradicate this backlog all together. Closely tied to this is the World Summit target to halve, by 2015, the proportion of people without access to basic sanitation. These are massive, but feasible challenges.

In South Africa we have developed a policy and a programme to provide everyone with 25 litres per person per day, free of charge. In many areas, groundwater provides the safest and most affordable supply of water. In the 9 years since our first democratic elections, we have provided safe drinking water to 8 million people. Since we implemented free basic water in 2001, we have reached over three-quarters of the people who have access to water infrastructure. We have put in place a major programme to provide basic sanitation to all our people by 2010.

Having adequate sanitation in place can assist the protection of aquifers from pollution. Good sanitation and borehole design can allow safe groundwater use even where on-site sanitation is practiced. And the sustainable use of groundwater will be critical in many instances if we are to achieve our goal.

Securing food supplies

A second key aspect is the halving of the number of people living in poverty. The provision of water for basic domestic needs is essential, but access to greater amounts of water can assist in the eradication of poverty through small businesses or through growing of food.

In an increasingly unpredictable climate, groundwater offers a relatively stable foundation for development, ensuring food security and minimising the ravages of drought on the rural poor. In SADC we are investigating how groundwater can be used in drought management and drought preparedness – a particular challenge in drought prone countries such as ours. In the words of Hamlet *'If it be not now, yet it will come: the readiness is all'*. And groundwater supplies will be an essential part of our integrated preparation for inevitable drought .

Aquifers with their naturally large storage capacity, are better buffered from annual variations in rainfall than surface supplies, providing more reliable source of water. This will become increasingly important as global climate change increases the unpredictability and variability of rainfall.

None the less, we must be aware of the fact that groundwater is not an infinite resource. Over pumping of groundwater can, and does take place – sometimes with irreversible impacts. Even if the impacts are not irreversible, lowering of the water level can make water inaccessible to the very poor who cannot afford deep boreholes. It is therefore incumbent on us to understand and manage the sustainable use of groundwater, in a way that does not disadvantage the poorest of the poor. We will need to understand more clearly the interface between groundwater and surface water, and optimal ways of managing conjunctive use. We will also need to understand the potential for recharge, including artificial recharge.

In South Africa we have managed water re-use and artificial recharge to an aquifer near Cape Town to achieve sustainable bulk supply from groundwater over the last 25 years. We have assisted our neighbours, Namibia, in applying this understanding to their own complex Windhoek aquifer. The savings gained by storing water underground are immense in an arid area such as Windhoek, where significant losses to evaporation occur from surface dam storage.

Localised management

One of the most important elements of groundwater use is that it can be managed at the local level. Managing a pump, a village well, a borehole, does not require the financial or human resources required for large dams or major transfer schemes. This contributes to greater sustainability of local schemes and can act as catalyst for building community esteem and empowering women.

Sharing resources

While many groundwater resources are easily used at the local level, we should not ignore the fact that many aquifers cross political boundaries. While there is much talk at international fora on sharing river basins, there is less talk about how to manage shared aquifers. In Southern Africa, for example, the Karoo aquifer is shared between South Africa, Botswana, Mozambique and Zimbabwe. In order to manage this aquifer sustainably, and in keeping with our commitment to share water equitably with our neighbours, we will have to improve our understanding of how groundwater flows over long distances, something that we are currently doing in the Limpopo basin.

Although we have basin commissions and committees for our shared rivers, we do not have the same focus or concern around this shared aquifer. This may be because most water managers and decision makers see only the surface layer of a catchment, the sloped basin, bounded by a

range of hills or mountains. We all need to start visualizing our catchments in 3 dimensions. We need to understand how the layers of rocks that extend beneath the surface of the earth, control the storage and flow of groundwater.

Ladies and gentlemen, the fact that groundwater is so difficult to see does not mean that we should allow it to remain low on our agenda. Already the issue has come out into the open – since the single meeting in a small side room in the Hague, to this 2 day theme here in Kyoto. Just as I made the challenge yesterday, that mainstreaming gender into water is not the work of women, but the work of each and every one of us, so too the issue of **mainstreaming** groundwater into integrated water resources management is not the work of a few passionate aficionado's but the work of each and every one of us. Every water manager, from the local level to the international, should always have in mind: *what about groundwater?* How does groundwater fit into this picture?

Actions

We need to educate more of our politicians and planners to see the catchment in a new way – in 3 dimensions. We need to see the full depth of the catchment in order to understand its foundations – the aquifers in which most of our water lies. *Man builds dams, but nature created aquifers.*

We need to invest more in understanding our aquifers so that we are better equipped to use groundwater sustainably.

And we need to enable users at a local level to manage groundwater in a way which will sustain their development.

When we have achieved conscious inclusion of groundwater we will know that we have achieved integrated water resources management, not integrated surface water management.

Finally, I wish you every success during these two days, and I ask that you consider with serious and dedicated intent: how best can we put this hidden treasure to work to the benefit of poor women and men around the world. How best can we put this hidden treasure to work in achieving the targets for sustainable development to which we committed ourselves in Johannesburg. How best can we use this hidden treasure to make the world a better place.

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