WRC CEO, Dhesigen Naidoo

Fluid Thoughts

Investing in the Girl Child – our hope for the future

One of the highlights of the Water and Youth Summit 2015, held in Boksburg earlier this year, was the Schools Water Science competition.

Two shy but confident girls, Kasungasunge Esnath and Thameng Lebogang, from Ennis Thabong School, emerged as the Gold Medal winners. They did excellent scientific work using the Water Research Commission/Ground Truth mini-SASS science kit for evaluating river health and analysed the quality status of their local river, the Swartspruit.

They then went even further and invited the Mayor, as well as the North West Province portfolio committee on water matters, to their school to a discuss the results and the implications for the area's ecological as well as human health. This has resulted in the beginnings of a community-driven effort to clean up the river and improve the status of water in the area.

This story in itself, where a poorly resourced school has supported its learners to win a national science competition, is quite remarkable. It is an accolade to the brave leadership of these very young girl scientists and a tribute to the youth. What makes this even more significant is that these young people come from the Bojanala District in Madibeng, not far from Bloemhof.

Who can forget those spine chilling images of Nomvula Mokoyane in one of her first public engagements as Minister of Water and Sanitation, consoling the mothers who had lost their babies due to exposure to contaminated water. Out of these ashes, from a place that has become in recent times a poster child of the ultimate price to be paid for poor water quality, we now have such promise in the form of these young learners, who together with their teachers have expressed a youth leadership that can only bode well for tomorrow's water security in South Africa. This supreme expression of goodness borne out of adversity is particularly encouraging in that this effort is being led by the girl-child.

The dimensions of discrimination globally dictates that, over and above the racial and gender divides, urban folk are largely better off than their rural counterparts. In addition, the marginalisation of the youth has become increasingly stark world-wide. In effect, the Black, rural girl-child stands at the pinnacle of the most dismal scenarios in the context of the global economic contraction. This also means, on a more positive note, that even the most meagre of interventions to improve the lot of the girl-child can result in a significant upward shift for whole communities and societies.

The World Bank has popularised the concept of the Girl Effect Dividend. Various studies around the world, including South Africa, indicate that the relatively simple measure of investing in girls to the extent that they are able to complete the next level of education, compared to what they are currently able to, would lead to a lifetime earning of today's girl cohort of the equivalent of 68% of annual GDP.

It is estimated that women's incomes increase by 10-20% for each additional year of schooling. Mark Parker, CEO of Nike, endorses this investment adding that…"with targeted investments linked to market demand, adolescent girls will reverse the cycles of poverty with a huge impact on the global economy. The World Bank report *Girls education: designing for success"* talks to the incredible knock-on effects. The analysis indicates that each additional year of education also reduces child mortality by 18/1 000 live births among other markers.

At a broader level, Africa is the continent with the youngest demographic in the world. More than 60% of people in Africa can be classified as youth according to the latest figures from the UN. Of the billion people that were in Africa in 2010, 411 million were 14 years of age or younger.

A further 200 m were between 15 and 24. The African Development Bank says that only 25% of men and, more alarmingly, 10% of women will be working in the formal economy by the time they are 30. The general texture of the dialogue around these statistics is one of burden with talk of higher investments in measures to reduce the African population.

This is quite interesting when considering that the dominant lament in Western Europe, Japan and even China is the economic risk associated with aging populations and very low birth rates. The important question is whether or not we are missing the opportunity of this young African population.

The Black, rural girl-child stands at the pinnacle of the most dismal scenarios in the context of the global economic contraction.

With the right innovative strategy and purposeful and rapid implementation, Africa is poised to realise the largest Demographic Dividend in human history. This is particularly significant in the wake of the declaration of African leaders at the August 2015 SADC Summit that is investing the region's future prosperity through a programme for the rapid industrialisation of Southern Africa. Core to this plan has to be the rapid and sustained development of the youth of the region through education, skills development, training and entrepreneurship development. And the quickest route to success is to ensure a special focus on the girl-child.

It is imperative that we expand our efforts as individual citizens and corporates, to use all our spheres of influence to maximise our investments in improving the lot of women and girls in our country and our region.

It is the shortest route to realising the Demographic Dividend in a sustainable manner. It will also have the important knock-on effect of empowering the youth in general to become full participants in and direct beneficiaries of the economy.

Winners of the mini-SASS Ecoschool challenge, Kasungasunge Esnath and Thameng Lebogang from Ennis Thabong Primary School.

Our ability to enable the next generation to write a much more encouraging story about the girl-child in Africa - depends on what we do today!

Letter

In reference to the Fluid Thoughts column by the WRC CEO titled 'The Cuban engineer conundrum' (*The Water Wheel* July/August 2015) I would like to comment as follows. I must say for a research commission CEO he is treading on rather difficult ground here, and is also adeptly mixing engineering with politics.

The situation as described by Mr Naidoo is really not so simplistic as he makes it out to be. I am a civil engineer (water) with more than 30 years' experience working in Tanzania on a project on capacity building in a small water utility! On the same project with me, but in another town is another highly qualified civil engineer from South Africa doing the same.

If I fly back to South Africa from time to time I meet qualified South Africans who cannot get work in South Africa – the latest one a fitter and turner, the other a farmer developing farms in Tanzania for sisal plantations – people who surely are sorely needed back home. There are MANY such cases.

I came across an article by Stephen Mulholland, which appeared in the *Business Times* in 2013, which indicated what has happened in municipalities in South Africa. I have done projects in Mpumalanga in municipalities in 2013 where EVERYTHING is falling apart. Two large water purification plants in one town being run by one UNTRAINED person? The water from the plants not being neutralised because they do not have lime so they send the acidic water into the system which will corrode everything. It is criminal what is being done. There are no technical capabilities left any more. Why? The previous dispensation were hounded out by what Mr Mulholland said.

In my previous career and already senior I was boxed in by appointments above me (twice) of unqualified people being paid a fat salary who barely lasted six months before hopping to another job – the one was a Zimbabwean citizen. The only things they did with aplomb and alacrity was buy new office furniture all in leather and a new Jeep and Mercedes.

I can go on but think the above will suffice. I do not think it an article that has a place in *the Water Wheel* – the CEO of the SAICE, who is much better placed to comment has already done so and in the mouthpiece of the civil engineers as acknowledged by Mr Naidoo?

Johannes Buckle, Tanzania

Conference unpacks issues around water, energy, food

WWF South Africa's annual Living Planet Conference has explored the ways in which three of the most pressing crises currently facing South Africa – energy, water and food – might be addressed and, in the case of the latter two, averted.

Attended by various sector stakeholders, the conference – held in Johannesburg earlier this year – facilitated three panel discussions, one per issue. From the outset, however, speakers and delegates acknowledged that these are not discrete, siloed fields. Instead, they are so heavily inter-related that any attempt at separating them is not only artificial but, more importantly, indicative of a detrimental blindspot.

The proceedings were opened by Deon Nel, conservation director at WWF International, who contextualised these issues on a continental and regional level. He discussed discrepancies and opportunities, indicating that while South Africa has maxed out its water resources, only 7% of the continent's hydropower potential has been tapped.

"The choices that Africa makes in the next five to ten years [in terms of energy, water and food] will lock us into a development pathway far into the future," said Nel. "It is a very critical time in Africa's development."

In the panel discussion on water, speakers unpacked the fundamentals that need to be changed in rethinking water security for South Africa. Conversations explored the mismanagement of wastewater and effluent, and the role currently being played by local municipalities and governmental entities.

Shanaaz Majiet, of the Department of Cooperative Governance and Traditional Affairs, emphasised the need for collaboration between different departments and the introduction of ingenuity. "We need to make innovation our mantra in government," she said, "all of government."

Throughout discussions, the points of intersection between energy, water and food were continually addressed: the ways in which water can contribute to solving the energy crisis, for example, as well as the ways in which the maintenance of food security has inevitable repercussions on energy and water resources.

In his wrap-up, head of WWF-SA's Living Plant Unit, Saliem Fakir, commented: "We don't want to think about the environment in isolation of the economy. We want to think about what is needed by society across all walks of life."

The conference also saw the award of the WWF-SAs annual Living Planet Award, this year won by Andrew Zaloumis, CEO of iSimangaliso Wetland Park. Zaloumis's work has resulted in the economic turnaround of the park, with meaningful empowerment and benefits to local communities, and the introduction of more sustainable conservation practices.

DWS working towards integrated water and sanitation policy

The Department of Water and Sanitation (DWS) has convened with other water sector stakeholders and government departments around the National Sanitation Policy Review.

Delegates attending the meeting agreed on the notion that both water and sanitation policies should be consolidated and linked to create one user-friendly policy framework as the issues surrounding both services are intertwined. Such a link, which is already under construction, will further ensure that the inter-connectedness between the two is more understandable to both communities and individuals.

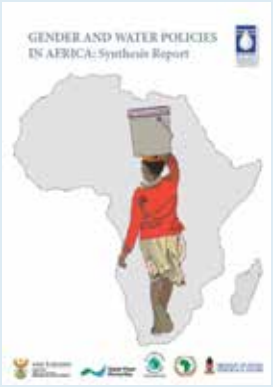
The main purpose of the gathering was to locate the gaps that exist in the current policy in order to augment and strengthen it.

Free basic sanitation, the provision of sanitation services for backyard dwellers and bulk sanitation infrastructure, as well as the establishment and functions of regional sanitation utilities are some of the vital issues that formed part of the caucus around the draft policy.

South Africa's current sanitation policies are transformational and thus focused on addressing sanitation backlogs in the country, with the concepts of reduction, recycling and recovery in the sanitation not entire addressed, the DWS said in a statement.

The new policy will seek to highlight and emphasise the role of sanitation provision in water conservation through the use of appropriate technologies which are environmentally sustainable.

Women still left out of water decision-making in many African countries



Countries across the African continent are endeavouring to make gender a key aspect of water governance and policy implementation with uneven results.

This is one of the conclusions of a new publication, *Gender and water policies in Africa: Synthesis report*, which was launched during World Water Week in Stockholm by the Water Research Commission. The publication was compiled with partners the Department of Water and Sanitation, the Global Water Partnership, African Ministers' Council on Water, and the University of Pretoria.

According to the publication, the incorporation of gender mainstreaming as a cross-cutting policy and implementation process within a cross-sectoral water management area is complex. Commendable progress has been made in gender mainstreaming in the water sector in West, Southern and East Africa, but more needs to be done in this regard in North and Central Africa.

"Harmonisation of the gender machinery with mainstreaming processes across the associated water sectors and through levels of governance scales is key to ensuring the success of gender mainstreaming in the water sector. Political and economic stability are further important prerequisite factors that provide the supportive structural environment for the initiation of and progress in gender mainstreaming in the water sector."

Finally the publication calls for political commitment to find the necessary resources for gender mainstreaming and to work collaboratively with international and regional partners who support gender mainstreaming to ensure that this process is institutionalised across the continent.

SA hot water springs may reveal genetic secrets

Most people visit the Western Cape's hot water springs for health and relaxation, but a recent trip had a more serious scientific purpose: to grow international understanding of complex microbial systems.

Representatives of local and overseas universities visited hot springs and thermal artesian boreholes in areas such as Montagu, Citrusdal and Calitzdorp earlier this year. They were on a metagenomics sampling tour, to study genetic material recovered directly from environmental samples.

"Metagenomics is the genomic (full set of chromosomes) analysis of microorganisms by direct extraction and cloning of DNA from an assemblage of microbes," explained Umvoto Africa technical director, Dr Chris Hartnady, one of the participants. "What strange and novel life-forms may inhabit deep groundwater systems and flow paths in the Table Mountain Group, we still hope to discover."

The overall project goal is to characterise the microbial, geochemical and isotopic properties of thermal spring sources and artesian wells in South Africa. Said Dr Hartnady: "These will be compared with the extensive South African sub-surface dataset derived from the deep mines, to construct a regional picture of the deep continental biosphere."

The trip was sponsored by a grant from the Deep Carbon Observatory in the USA, to the project's main investigator, Prof Memory Tekere of UNISA.

Other participants included Prof Tom Kieft (New Mexico Tech), Prof Esta van Heerden (University of the Free State), Dr Maggie Lau and Rachel Harris (Princeton), Dr Ramganesh Selvarajan (UNISA), Prof Steve Richardson (University of Cape Town) and Umvoto trainee geologist, Michael Hartnady.

The investigators have already collected microbiological, water and gas samples from several sites in the Limpopo and Western Cape provinces.

Now the first step will be describing the composition of the microbial community, then secondly, analysing the geochemical and isotopic compositions of spring source water and groundwater. This will place them in a regional hydrogeological framework.

Thirdly, the hot-spring microbial community composition will be compared with what is already been found from South African deep mines. Finally, the researchers will construct a continental-scale picture of carbon cycling by deep subsurface communities.