

The scientists solving our water problems

o better time for water investment

The Ministry of Environment, Water and Climate and the Zimbabwe National Water Authority (Zinwa) which are helping with the co-ordinating the conference will use this opportunity to showcase the various water infrastructure development projects currently underway and hope to convince potential partners into mutually beneficial investment deals that would pave the way for accelerated completion of these projects in line with the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-Asset).

The projects to be showcased include Kunzwi Dam, Gwayi-Tshangani Dam, Muda Dam, Nyatana Dam, Chivhu Water Supply and Bindura Dam. These projects have been moving at a very worrying pace due to lack of funding as well as the non-participation of private players in water infrastructure construction.

The conference shall be characterised by presentations from high profile speakers drawn from the Ministries of Environment, Water and Climate; Finance; Economic Planning and Investment Promotion; and Local Government, and institutions such as the State Procurement

Bank of Southern Africa and the Africa Development Bank will also be in attendance and investors will have the chance to share notes with them.

The Water Infrastructure Investment Conference will come in very handy for the water sector especially at a time when Government has indicated that Public Private Partnerships are the way to go and has guaranteed a win-win situation for potential investors.

Attracting the necessary investment in water will no doubt help create various opportunities not only for the Government and Zinwa but for the general population as well. Thousands of jobs will be created in the process of constructing major water infrastructure such as dams and pipelines and this will certainly benefit the local communities.

Various construction projects such as Tokwe-Mukorsi, Gwayi-Tshangani Dam and Mtshabezi Pipeline have proved beyond doubt the employment such projects can create. It, therefore, becomes imperative for potential investors to attend the conference and join hands with other

TAKE an African scientist and an African engineer and ask them to find a solution to water-borne problems that impact on 78 million people, and cause 443 million 'lost school days a year' due to disease. Chances are that they will come up with a solution to provide Africans with safe, healthy drinking water.

For Dr Lloyd Muzangwa, a Zimbabwean scientist, and his friend George Kahabuka, a Tanzanian engineer, knowledge is something that has to be shared with others.

"Life does not measure you on the basis of your credentials, but on the results you deliver," they explain. This philosophy formed the basis of their entry into the recent Standard Bank Water 4 Africa challenge.

Dr Muzangwa's and Mr Kahabuka's submission was announced as the winner of the Mid-stage (tested solutions, ready for first deployment) category of the competition, which saw them walking away with a prize of US\$5 000 for development of their MAJI 1200 water purification system.

The category was one of three that saw inventors from around the globe competing for the honours for their innovative work in developing water solutions that could be implemented across the African continent.

Winners in other categories were: Late stage (deployed solutions, ready for scale) — a single prize of US\$10 000 awarded to the inventor of the SpajJan

of rural Zimbabwe. Bringing together the natural energy of the African sun and trends in modern water purification practice, the MAJI 1200 promises to bring first-world science and engineering knowledge about potable water to African water treatment, explains the 28-year-old Dr Muzangwa.

He adds that he spent his childhood in rural Zimbabwe, but now spends his time as a researcher in the areas of chemistry, physics, astro-chemistry and astro-biology.

"The MAJI 1200 system uses innovative ultraviolet (UV) light technology and solar energy to purify water, using technology that is becoming acceptable to public and regulatory agencies for use as an alternative disinfectant."

"When municipalities install UV systems, the water supply is protected from chlorine-resistant micro-organisms, UV disinfection can also be used as a virus-barrier against Adenovirus — a major cause of respiratory problems and diarrhoea — in a multi-barrier strategy to provide confidence in water supply.

"While chemical disinfectants destroy or damage a microbe's cellular structure, UV light inactivates microbes by damaging their DNA, thereby preventing the microbe's ability to replicate (or infect the host). UV light does not impart tastes or odours to water as chlorine does, and does not form harmful disinfection by-products, or increase bacterial regrowth in distribution systems."

With the present cost running at approximately US\$2 000 per unit, funding to scale up production and conduct further research would be a bonus. To this end, active lobbying for donors, sponsors, NGOs, and governments is underway.

At present, funds can be donated by visiting www.gofundme.com/ohytrac.

In the meantime, the MAJI 1200 inventors aren't resting on their laurels. They are developing other systems that use generators and electricity as well as smaller purification systems.

"The MAJI 1200 is undoubtedly a most exciting project from Africa to emerge from the Water 4 Africa challenge. It is already attracting interest in Zimbabwe and Tanzania and has the potential to open access to healthy water for millions of Africans," says Jayshree Naidoo, Innovation Thought Leader at Standard Bank.

"It is exactly the type of innovative contribution we were seeking when we sponsored Water 4 Africa, and sought global input in major areas of water conservation. These ranged from ensuring the sustainability of groundwater resources, sanitation, and purification of water including solar, through to filtration of water, as well as innovative solutions to promote wise water use.

"Harnessing the internet ensured that inventors and social entrepreneurs from across the globe could take part in helping solve a significant African problem."



WATER MATTERS
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