



Water is one of the most basic resources for all food production and it's getting increasingly scarce. So why don't food and beverage companies make more sustainable decisions on water? ► FOCUS, PAGE 10



"I hadn't realised how diverse a field water-research truly was". Krtin Nithiyandam, a Stockholm Junior Water Prize finalist recounts his experience of World Water Week. ► LAST WORD, PAGE 14.

STOCKHOLM

WATERFRONT

#4 | NOVEMBER | 2017

WORLD WATER WEEK
IN PICTURES

JUST DOING IT
*Young agriculture
entrepreneurs wait
for no one*



COVER STORY

MUSEUMS WORLDWIDE JOIN HANDS FOR WATER

EXPLORING WATER'S VALUES

In this issue, our cover story tells about a network of museums worldwide. Far from only sticking to dusty artefacts from bygone areas, these museums use their unique knowledge of organizing, displaying and interpreting to tell their visitors, in real life and online, about all the uses and values that water, humanity's most precious resource, has. A hugely commendable initiative, and a great read. More on page 4.

On page 10, we ask why water is still mostly a non-issue at the top of food companies. Water is, after all, one of the most basic resources for any food production. We asked the experts to explain.

In Just doing it, a young South African entrepreneur describes how many of her peers have stopped waiting for the big businesses and bureaucracies to act, and taken matters into their own hands, resulting in many new ideas seeing the light.

And in the Last Word, one of the finalists of this year's Stockholm Junior Water Prize competition describes his hectic Week in Stockholm together with other students from all around the world.

We also reminisce a little about this year's World Water Week. Only nine months until the next one!

WaterFront is in the middle of a transformation. In the next few months, we will work to make our stories, opinions and analyses even more accessible, and attractive, to all our readers worldwide. Watch SIWI's website, www.siw.org, for news about WaterFront.

Enjoy the read!



Torgny Holmgren
Executive Director,
SIWI



ISSN 1102 7053



FOCUS



COVER STORY



FROM THE FIELD



LAST WORD

29 water museums have joined forces to raise awareness for water challenges.

Jonathas de Andrade is one of the artists in 'Aqua' – a worldwide travelling exhibition organized by Art for the World in partnership with UN Water.

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03 BRIEFING Water news round-up
15 CALENDAR Events coming up

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Jonathas de Andrade | Cover Photo

STOCKHOLM WATERFRONT

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analyses by some of the world's most knowledgeable water writers. It is published in print and digitally by Stockholm International Water Institute, and is free of charge.

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COP23: WATER RECOGNIZED AS CRUCIAL LINK BETWEEN FOOD AND CITIES



UN Photo

Water was identified as a crucial connector between achieving food security and sustainable cities at the 23rd conference of the parties (COP), UN’s yearly climate conference.

“What we’ve seen at COP is that water can link different aspects of sustainable development while responding to climate stakes”, said Maggie White, International Policies Manager at SIWI.

“Not only is it a key resource for agriculture and human settlements, but it’s also critical that the two sectors collaborate around water.”

COP is held yearly to move the Paris Agreement on climate change forward. This year, COP was held in Bonn and focused on two global goals: Zero hunger and sustainable cities.

WORLD WATER WEEK 2017 IN PICTURES

JOY IS GREATEST WHEN SHARED – AND WORLD WATER WEEK 2017 OFFERED SO MANY JOYFUL MOMENTS, IT WOULD BE OUTRIGHT EGOISTIC OF US NOT TO SHARE SOME OF THEM.



Photo: Thomas Henrikson & Mikael Ullén

MUSEUMS RAISE THE BAR



Photo: Musée de l'Eau de Ouagadougou, Burkina Faso

OF THE WATER DEBATE

“WE SHOULD ENRICH OUR PERCEPTION TO STIMULATE A NEW PARADIGM OF WATER MANAGEMENT.”

Text | Bill Hinchberger **Photo** | Various water museums and exhibitions

THEY COME IN ALL SHAPES AND SIZES — AND FROM ALL OVER THE WORLD. SOME FOCUS ON SCIENCE, OTHERS ON NATURAL OR SOCIAL HISTORY, AND OTHERS ON ARCHEOLOGY. SOME WOULD BE CLASSIFIED AS “OPEN AIR”, ORGANIZED AROUND SPECIFIC BODIES OF WATER OR ATTRACTIONS. AT LEAST ONE IS VIRTUAL. A GLOBAL NETWORK OF MUSEUMS WANTS TO CONTRIBUTE TO A RAISED AWARENESS OF WATER CHALLENGES.

In partnership with the United Nations Educational, Scientific and Cultural Organization (UNESCO), 29 water museums are joining forces to lead the way to create a global network of like-minded institutions. Another 12 have expressed interest in coming on board. By all accounts they represent just the tip of the iceberg. Network proponents have already identified about 80 loosely defined water museums around the world, and they're sure they'll find more. “We should be able to identify at least two times that,” said Clive Adams, founding director of the Center for Contemporary Art and the Natural World in the United Kingdom. “There was nobody

from America or Russia. There is a lot more work that we should do to engage people.”

The largest member of the new club is the National Water Museum of China in Hangzhou, the southern terminus of the ancient Grand Canal waterway. It boasts 50,000 square meters, ten floors, and attracts more than a half million visitors per year. On the other side of the spectrum sits the Musée de l'Eau de Ouagadougou in Burkina Faso, which receives 5,000 visitors a year and focuses in large part on teaching hygiene and sanitation.

The leaders of these institutions share a vision of the need to develop a new paradigm of water management in the face of climate change and in the context of the Sustainable Development Goals, the set of 17 goals with 169 targets that the UN member states have agreed to try to meet by 2030. SDG 6 aims specifically to “ensure availability and sustainable management of water and sanitation for all.” Many believe that water management is essential to the achievement of most, if not all, of the SDGs.

“We have to try to understand the links between present civilizations and past water civilizations,” said Eriberto Eulisse, director of Centro Internazionale Civiltà dell'Acqua, an Italian non-governmental organization based in Venice, and a key proponent of the global network. “We have to look at perceptions of water and the use of water. Museums do this every day: they organize, display and interpret.” ●●●

Living Waters Museum, India

During her career as a development worker, Sara Ahmed would often meet artists who were working on water-related themes. Some of it was indigenous art, some folk art, sculpture – you name it. “I always wondered why the development world could not relate to the creative arts.”

In New Mexico, in the United States, she met the artist Basia Ireland (see main story). They talked about building a water museum, “but it was always going to be physical, and always too much money.”

Eventually she thought, “Why not just do it online?”

The Living Waters Museum is a virtual museum in development. It will be incubated at Ahmedabad University, where Ahmed, its lead curator and founder,

is an adjunct professor at the Center for Heritage Management. It will be built in large part by students.

“We want them to be inspired,” she said. “It will be everything about water – not just toilets and taps.” One early student contributor did a photo essay about the workers in the Alang shipbreaking yard and their unhealthy working conditions.

She envisions activities in the real world. “The virtual has to interact with the physical,” she said. Water heritage walks with mobile apps might offer one example. “It is not going to just be a website.”

The global network of museums has provided some respectability to the project. “When I started people thought I was off my rocker,” she said. “But when they saw I was going to Venice for the conference, they sat up.”



Photo: Musée de l'Eau de Ouagadougou, Burkina Faso

“It is a very local museum, but it shows how to handle water properly, in both traditional and contemporary ways. It is a true institute of informal education.”

●●● **Representatives** from the 29 institutions met in May in Venice for a three-day workshop titled *Towards a Global Network of Water Museums*. Among other things they agreed to return home to work with UNESCO representatives in their countries to discover other prospective members. UNESCO has launched a formal process that should lead to the network’s adoption by member states as a formal project in

June 2018. In parallel, members of the new group are planning to meet again next year in the Netherlands. By then the network should have its own website and newsletter.

Meanwhile, many institutions are contemplating bilateral efforts to pursue things such as joint exhibitions, research projects and publications. “There was a broad spectrum of organizations at the

conference,” said Graham Boxer, head of museums of the Canal River Trust, a charitable group in the United Kingdom that oversees the canals that were built for transportation during the industrial revolution. “Despite the broad range, there was a clear idea of the actions we can take to support each other in areas such as collections and interpretation.”

A core group led by Eulisse and his organization, the Venice-based UNESCO Regional Bureau for Science and Culture in Europe, and UNESCO’s International Hydrological Program (IHP) started working on the network and the Venice event a couple of years ago, said the Italian NGO leader. But people had been kicking the idea around for a long time, according to Alexander Otte, associate



Photo: Humberto Montero, Yaku Museo de Agua, Flickr, ND 2.0

The Yaku Museum and Water Park, Ecuador

The Yaku Museum and Water Park in Quito, Ecuador, was the first museum in town to offer interactive exhibitions, making it especially popular with children and their families. It borrowed the ideas for making clouds and visualizing currents from institutions from around the world. But it was also built on the site of an old water treatment plant, a section of which visitors can view upon arrival, rooting it in local history. Some older visitors tell stories of relatives who worked in the plant, which remained operational into the 1930s.

Its first temporary exhibition featured art on water themes by contemporary Ecuadorian artists. “We only see water in one way, as a molecule, as lakes and oceans,” said Paulina Jauregui Iturraide, general coordinator. “We don’t see it in a holistic way. Our purpose is to get to the gut feelings, with elements of science, culture and nature. We use all the scopes.”

An outdoor space is occupied by native species of plants, some of which have virtually disappeared in other parts of town. With the plants in place, employees and visitors noticed the appearance of a native reptile that itself had become scarce in urban Quito. “We realized that when we talk about water, we cannot separate it from the environment,” Jauregui said. “It has to be about water and the environment.”

The museum also works with the neighboring communities to preserve the memory of water management. A group of elderly local women care for, and help feed themselves from, a museum vegetable garden. “We want people to think it is their museum” said Jauregui.

Visitors “learn how to preserve water, not to pollute or waste it,” observed Eriberto Eulisse, director of Centro Internazionale Civiltà dell’Acqua, an Italian non-governmental organization based in Venice. “And to learn what was of value to their ancestors.”

programme specialist at IHP-UNESCO. “IHP already mapped a certain number of museums in its work of the last half decade,” he added. The IHP also helped identify leading water scholars and experts who can work as advisors to museums and the network.

At the Venice confab, each institution was given an opportunity to make a presentation about its activities. Participants had a few consensus choices about what impressed them most. The Yazd Water Museum in Iran features, among other things, a gravity-fed water extraction system called qanat, part of a historic hydraulic structure, some of which remains in use, noted Otte. As Eulisse explained it, the difference in temperature between the surface and

the underground canals “allows you to collect humidity and produce water” in the arid region.

On the Mura River in Slovenia, the last remaining floating mill for the production of traditional flour attracts visitors. Eulisse said there were 92 such mills a century ago. The Ouagadougou museum left an impression for its work on hygiene, conservation and education. “It is a very local museum, but it shows how to handle water properly, in both traditional and contemporary ways,” said Otte. “It is a true institute of informal education.” As Boxer put it, “absolutely fascinating.”

The Canal and River Trust is a non-profit group that emerged when the

UK government spun off oversight of the canals following the 2010 financial crisis. As head of museums, Boxer runs two institutions: the National Waterways Museum at Ellesmere Port and the Gloucester Waterways Museum. The former boasts “the only comprehensive collection of life on the canals,” he said, including a collection of boats that plied the waterways for two hundred years. Tools, steam and diesel engines, artworks, oral histories and photographs also help narrate the economic and social history of industrial revolution along the canals.

The various institutions “tell different histories,” Eulisse noted. “You can discover different water worlds created locally by different cultures – and which are in severe danger of disappearing.” ●●●



Nigol Bezjian – *Me, Water, Life*, 2017 – is one of 32 artists participating in AQUA, a worldwide traveling exhibition on water issues. AQUA premiered in Geneva, Switzerland, on World Water Day, 22 March 2017. In November AQUA will travel to South America where it will be exhibited at SESC Belenzinho in São Paulo.

●●● **A ceremony to** symbolically launch the network in Venice's historic Saint Mark's Square was led by members of the Water Tribunal of Valencia, Spain. The eight members of this long-standing, traditional and democratically-elected body meet every Thursday at noon in front of the Apostles gate at the city's cathedral. For hundreds of years, the tribunal's job has been to resolve disputes over the use of the irrigation canals that surround the city. Its jurisdiction covers 11,691 landholders and 3,471 hectares in 23 municipalities.

“At the next Venice Biennale, we want to have different artists reflect on water, water scarcity, and climate change.”

Moving forward, one of the most ambitious projects is in Venice itself, where Civiltà dell'Acqua has the backing of the municipality to set up a permanent museum. With its famous canals, Venice will always be associated with water, but Eulisse and others want to tell a fuller

story. “Venice had no fresh water supply for centuries,” he said. “Now you just turn on the tap. It seems like an unlimited resource. We should enrich our perception to stimulate a new paradigm of water management.”

Eulisse and Adams have visited buildings that could serve as a permanent home to the Venice Water Museum near the home of the Venice Biennale, one of the world's premiere international art shows, in the Arsenale Nord district. An intermediate step could be an exhibition

of water art as part of or in parallel with the next Venice Biennale in 2019, Eulisse said. “At the next Venice Biennale, we want to have different artists reflect on water, water scarcity, and climate change,” Eulisse said.

Adams will probably take the lead in identifying the artists. He started his career as a curator in the 1970s working with landscape artists such as Richard Long, who were incorporating environmental concerns in their work. Especially given growing concerns about climate change, a growing number of contemporary artists are turning to water as a subject matter or even as a material. A US native, Basia Ireland's work “focuses on international water issues, especially rivers, waterborne diseases, and water scarcity.” One of her projects brought together communities along the Rio Grande River that separates her country from Mexico. Britain's Jason deCaires Taylor creates underwater sculptures that address the human condition. Among the works of the British live artist, sculptor and film-maker Amy Sharrocks is the Museum of Water, a collection of donated water samples and their accompanying stories.

Adams has been trying to bridge the gap between water experts, including those who run water museums, with some of these artists. “When Eriberto told me about the conference, I said that many artists engage with water,” he recalled. “I said why not enliven the conference with some crazy artists?” While the Venice edition couldn't bring that off, Adams hopes that artists will be invited to future conferences.

Mainstream art institutions have been slow to pick up on water art, Adams said. “I have found that few public galleries have a particular interest in art and ecology, notable exceptions being one in Sittard in the Netherlands and the Pori Art Museum in Finland,” he said. “An exhibition ‘Water.War,’ accompanied by an excellent publication, was recently organized by Gluon in Brussels. Recently launched in Geneva, ‘Aqua’ is a worldwide travelling exhibition organized by Art for the World in partnership with UN Water.”

New technologies won't be enough to solve the crisis of water management, said Eulisse. “A water museum can help take ideas from the past to help build a new more sustainable future.”

“Museums are only valuable,” noted Boxer, “if they are relevant to the present and the future. We need to find ways to tell the full story.” ●

FILLING DATA GAPS KEY IN MEETING SANITATION TARGETS

Text | Tom Slaymaker and Rick Johnston

THE LATEST UPDATE ON SDG PROGRESS SHOWS LARGE DATA GAPS IN MONITORING OF SANITATION SERVICES. THE DEVELOPMENT COMMUNITY MUST CHANGE THE WAY IT WORKS IN ORDER TO SUPPORT COUNTRIES IN MEASURING AND ACHIEVING THEIR SDG TARGETS.



JMP 2017

The 2030 Sustainable Development Goals (SDGs) are much more ambitious than the Millennium Development Goals, not least targets 6.1 and 6.2 for Water, Sanitation and Hygiene (WASH). The recently published Joint Monitoring Programme (JMP) 2017 update establishes global baselines for the new targets and indicators which reflect a shift in focus beyond simply extending access to infrastructure to progressively improving service levels.

The report estimates that 71 per cent of the global population in 2015 used safely managed drinking water services, i.e. an improved drinking water source that is located on premises, available when needed and free from faecal and priority chemical contamination. The challenges associated with meeting these new criteria differ depending on context.

Globally, drinking water quality is the limiting factor, with only 73 per cent of the population using improved supplies that have been tested and meet standards. However, in many rural areas, more people have access to water free from contamination than water that is accessible on premises; in urban areas availability of water when needed is the biggest constraint. While large data gaps remain – estimates could only be made for 96 countries – it is clear that faecal contamination of drinking water presents a significant public health risk, and that many people are yet not able to access sufficient quantities of water in the home. Indeed many countries will need to accelerate progress just to achieve universal access to basic drinking water services by 2030.

Data coverage was lower for the new indicator of safely managed sanitation services, i.e. an improved sanitation facility that is not shared with other households, from which excreta are safely disposed of in situ or treated off-site. Many countries already have data on treatment of wastewater from sewers, with 73 per cent of wastes receiving at least secondary treatment. But globally, in rich and poor countries

alike, many people use septic tanks and latrines and information on management of wastes from these on-site systems is scarce and difficult to obtain.

The report finds that just 39 per cent of the population in 2015 used safely managed sanitation services – based on estimates for 84 countries – and big questions remain about safe management of excreta emptied from on-site systems. Just 70 countries had comparable data available on the population with basic handwashing facilities with soap and water at home. Also, many countries are not on track to achieve universal basic sanitation services by 2030, and some countries will struggle even to eliminate open defecation by that date.

“Globally, drinking water quality is the limiting factor, with only 73 per cent of the population using improved supplies that have been tested and meet standards.”

The new SDG targets significantly raise the bar for WASH services around the world. While large data gaps exist, the report shows that in many countries drinking water is distant, insufficient or contaminated, and that large amounts of excreta are released into the environment without treatment. The challenge for individual countries will be to set ambitious but achievable national targets which respond to the 2030 Agenda. WHO and UNICEF, and the broader development community, will need to change the way we work in order to support countries in the new challenges of measuring and achieving their SDG targets. ●

ABOUT THE AUTHORS

Tom Slaymaker (UNICEF) and Rick Johnston (WHO) co-lead the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene.

Download the report here: http://www.who.int/water_sanitation_health/publications/jmp-2017/en/

WATER STILL A NON-ISSUE AT

Text | Johannes Ernstberger Photo | Istock, CDP – Douglas Fry, Axfood – Stefan Nilsson

WATER IS ONE OF THE MOST BASIC RESOURCES FOR ANY FOOD PRODUCTION. SO WHY DON'T FOOD AND BEVERAGE COMPANIES MAKE MORE SUSTAINABLE DECISIONS ON WATER?



You don't need much to produce food. Lettuce has been grown in space, in the Arctic, in deserts, and of course in your backyard. Nutrients, sunshine, carbon dioxide and water are the four key ingredients. And just as in your backyard, if you're lacking any of these, you will struggle to get your greens to flourish.

So, when the World Economic Forum in 2017 renewed its warning that the water supply crisis is a major risk for global economic development, you would think that this would carve some worry lines on the foreheads of food and beverage companies' CEOs. But does it?

A recently published report by CDP points in the other direction. Of the 216 food and beverage companies that voluntarily disclosed their water management only 17 pursue best practices in water stewardship.

This is despite the sector having the highest exposure to water risk with around half of the disclosing companies having experienced actual detrimental impacts of water during 2016.

So, what is the hold-up?

While the connection between food and water seems obvious, there still is a lack of awareness, Cate



Lamb, Head of CDP's water programme explained.

"It is possibly the hardest, but also the most critical step when it comes to getting started on properly dealing with water risks. The awareness of water risks might be present at the level of water managers, but it needs to be communicated to the strategic

levels and boards. While there are some companies that perform very well on this, basically all of the companies that disclose their water management for the first time struggle with it."

Lack of board oversight over water issues was found to be severely limited in the recent report "Feeding ourselves thirsty" which was published by Ceres, a non-profit working with sustainability in the private sector, in September 2017. None of the boards of the 42 international food companies Ceres evaluated held specific briefings about water-related issues, and just over half of them had oversight over general sustainability issues.

The reason for that can largely be attributed to the low price of water.

"Water remains a cheap commodity. The real value of water and risks associated with it are not adequately reflected in its price. Water saving investments often-times don't make convincing business cases, because the payback time is so low. That's also why water doesn't factor into financial planning. From a CFO's point of view, it's perceived as a non-issue", Lamb stated.

The positive message is that there is a growing awareness. In 2017, more companies than ever disclosed their water management to CDP.

Åsa Domeij, Head of Sustainability at Axfood, one of Sweden's largest food wholesalers, explained that, for them, water risks became impossible to ignore

"Basically all of the companies that disclose their water management for the first time struggle with it."

Cate Lamb, Head of CDP's water programme

TOP OF FOOD COMPANIES

with the increasing evidence of climate change: “We don’t have to ask anymore whether climate change will happen. We are certain it will. So, we’re now focusing on how we can cope with it and how we can adjust water management in our supply chains accordingly.”

For many companies, this is where they run into the second obstacle.

“When it comes to supply-chain management, we see a trend that companies are not doing enough. There is still a large number of companies that do not engage in any form with their suppliers around water risks”, Lamb warned.

The food and beverage industry does have a tougher stand here than other sectors. It is not uncommon for companies to work with thousands of farmers spread across continents.



“For us, one of the largest challenges is that we are so far away from the other end of the supply chain. We try to focus on optimizing water use on a farm-level, because that’s where we see a lot of potential. But due to the number of suppliers and actors in between it’s difficult to reach all the way there”, Domeij explained.

How to properly account for and map water risks in supply chains can seem complicated. There is a multitude of tools and standards – in their report, Ceres lists the 29 most common ones – and they all work on different scales and levels of detail.

“We see a need for more comprehensive tools”, Karin Glaumann, who evaluates water risk tools at SIWI, says. “Companies can be overwhelmed with the number of mapping tools, standards, and certifications there are. It’s not clear to them what the differences are and which one they should choose.”

Worst of all, it can frustrate companies and be perceived as just too much of a hassle.

“Some companies invest a huge amount of work and time into trying to understand and apply water risk tools, and in the end, these are oftentimes wasted resources because either the wrong tool was used or it was used incorrectly”, Lamb added.

This lack of basic information on the water risks a company is exposed to limits their boards ability to act, and to act wisely.

Water is just starting to take its seat at the table of companies’ decision-making bodies. But awareness at strategic level is only the first step. What needs to follow, according to Ceres and Lamb, is an increased effort to map and address water risks along supply chains. The toolbox for this is still in the making. ●





JUST DOING IT

YOUNG AFRICAN AGRICULTURE ENTREPRENEURS WAIT FOR NO ONE

Text | Palesa Mathabo Motaung **Photo** | istockphoto; Agribusiness TV

AFRICA! THE FINAL FRONTIER, WITH ITS ABUNDANT NATURAL RESOURCES, DIVERSE CULTURES AND HISTORY OF BEATING THE ODDS. BUT REALLY, AFRICA'S WEALTH LIES IN THE BOLD SPIRIT OF ITS YOUTH.

In 2015, **South Africa** was shaken by the #FeesMustFall movement. Student protests took place throughout the country with youth calling for free and quality education. A large part of the activism took place on social media with the hashtag gaining almost 200 000 tweets in one day according to Bruce Mutsvairo's book "Digital Activism in the Social Media Era".

In that year, proposed fee increases were dropped across all universities and debate sparked over the state of education in South Africa. An example of the resolve and proactive spirit often shown by African youth.

African youth have a lot to deal with. According to a UN report, 815 million people (11 per cent) of the world's population faced

hunger in 2016. 243 million of those were in Africa. Alarmingly, the UN's Food and Agriculture Organization (FAO) has found that the average age of African farmers is 60 years. However, this can be viewed as an opportunity since agriculture is the only sector that has the capacity to absorb a sizeable chunk of the ten million African youths joining the workforce annually according to The New Partnership for Africa's Development (NEPAD).

Just like the youth of the #FeesMustFall movement, youngsters across the continent are taking matters into their own hands by using technology to increase productivity in the agricultural sector while attracting more youth. A book by Calestous Juma titled "The New Harvest: Agricultural Innovation in Africa" suggests that three major opportunities can transform African agriculture and spur a new era of economic growth and prosperity. These are: advances in science and technology; creation of regional markets, and emergence of a new crop of entrepreneurial leaders dedicated to the continent's economic development.



Left Stockphoto Above Screenshot from AgribusinessTV's webpage – <http://agribusinesstv.info/en/>. AgribusinessTV is a web-based video channel that places the spotlight on successful young innovators in African agriculture. The channel is a viral sensation with over 60 000 fans and millions of views.

Agriculture is the only sector that has the capacity to absorb a sizeable chunk of the ten million African youths joining the workforce annually.

Pontso Moletsane is a young South African tackling issues of low productivity in agriculture. He recently took time to talk to WaterFront about his work and passion for sustainable resource management. Moletsane credits his interest in agriculture to his love of food and his desire to reduce the exploitation of natural resources by society, especially water and energy.

Yellow Beast (Pty) Ltd, a technology solutions company with a special focus on sustainable use of water in agriculture was created in 2014. The technology builds from Moletsane's initial creation the "Nocturnal Hydro Minimiser" for which he received the 2005 Stockholm Junior Water Prize. YellowBeast's devices apply machine learning to automate the irrigation process by sensing and interpreting the most favourable, in-situ conditions in the soil-crop system, using known information on the crop and soil properties. This administers the precise amount of water for the best possible plant health, ensures less wastage and requires little effort from the user.

In Burkina Faso, rising entrepreneurs Inoussa Maïga and Nawsheen Hosenally, creators and owners of AgribusinessTV, are bringing agriculture to the youth. AgribusinessTV is a web-based video channel that places the spotlight on successful young innovators in African agriculture. The channel is a viral sensation with over 60 000 fans and millions of views. AgribusinessTV uses social and traditional media platforms to encourage participation by African youth in agriculture and diminish the stigma associated with the sector.

Safi Organics Ltd are tackling the issue of expensive and inefficient inputs in the farming sector by buying farm waste and converting it into low-cost fertiliser in six hours. The

Kenyan company was started by Samuel Rigu who remembers growing up watching farmers struggle with expensive fertiliser. His product is 20 per cent cheaper than other fertilisers and is known to decrease acidity; reduce irrigation needs; improve yields by up to 30 per cent and absorb atmospheric CO₂. Rigu believes in empowering farmers and improving rural livelihoods. His entire process adheres to the reduce-reuse-recycle mantra.

A 2014 publication by UN-FAO on youth and agriculture highlights the fact that older farmers are less likely to adopt the new technologies needed to increase agricultural productivity and feed Africa's growing population. The youth, especially rural youth need to engage in agriculture and support the ageing farming population. The report provides real life examples of how youth in Africa and around the world have been encouraged to participate in the sector through tailor-made educational programmes, facilitating youth access to credit, encouraging entrepreneurship and improving infrastructure. ●

ABOUT THE AUTHOR

Palesa Mathabo Motaung is a South African MSc Soil Science student. She is currently working on building her start-up, Desert-Green, an impact driven rural agricultural acceleration project aimed at commercialising small-scale farms in South Africa by repurposing underutilised land and encouraging the youth of small-scale households to participate in the family business. Palesa is also an intern at SIWI's Africa Regional Centre in Pretoria, South Africa.

“I hadn’t realized how diverse a field water-research truly was”

Text | Krtin Nithyanandam

Despite having participated in numerous science fairs, the Stockholm Junior Water Prize (SJWP) remains one of my most memorable experiences. With one clear goal in mind – to identify student innovation within water research – the SJWP enhances a common interest present within each of the finalists and provides an opportunity for students to showcase their water research to an active and interested global community.

My passion for water-research stems from my desire to be able to advance global health. I believe that democratizing access to basic humanitarian resources, such as water, will allow humanity to combat disease, famine and malnutrition. I see sustainable, and accessible, water-purification as a means of accomplishing this goal and it was this realization that inspired my entry to the SJWP – which was a cellulose-based bioplastic capable of cheaply removing several water pollutants.

It wasn’t unreasonable to anticipate an aura of pure academia from an event revolving around Science, Technology, Engineering, and Mathematics (STEM) research. However, with finalists from over 30 countries, our conversations ranged from pop culture to cultural etiquette. When I first met my South African roommate and his teachers, I was quickly introduced to their traditional greetings, and Noah from Israel confirmed my belief that the quintessentially British band Oasis were globally adored! Our visit to Old Town together also gave us the opportunity to discover the rich history of Sweden, ranging from the formation of the iconic ABBA to the awarding of Nobel Prizes.

The SJWP international jury was comprised of experts from all areas of water research, from civil engineering to science communication. Their intuitiveness and ability to constructively scrutinize our research from professional perspectives was particularly outstanding; the international jury rapidly picked up on the intricate details mentioned in our oral presentations and ascertained their applications. For example, Professor Yoshihisa Shimizu explored the potential use of my water-purifying bioplastic to clear the radioactive water pollutants around the Fukushima coast in his native Japan, and Ms. Fabienne Bertrand was particularly interested how my research was socially sustainable so it could be effectively implemented in countries like Haiti, where she is predominantly based. Although a competition with a singular focus on water, the SJWP encourages projects spanning several disciplines, from bio-engineering to social policy; I hadn’t realised how diverse a field water-research truly was.

We were fortunate enough to attend some of the World Water Week seminars, during which we heard world leaders and



water advocates describe their unparalleled work in democratizing water access and ensuring water security for future generations. A particularly insightful presentation was that by Professor Stephen McCaffrey: he highlighted how water was a powerful resource that had implications from political diplomacy to advancing global public health. Professor McCaffrey described his inspirational role in consolidating the Cooperative Framework Agreement between the Nile riparian states, thus opening numerous possibilities for sustainable socio-economic development – all thanks to the fair partitioning of vital water resources in the Nile Basin.

The week in Stockholm certainly motivated me to further pursue my water research in the endeavour of addressing public health. However, the week also introduced me to new perspectives on how water acts as a socio-political resource of international proportions. The SJWP was special in that it cultivated an atmosphere of collaboration instead of competition, and has gifted me with lifelong friends from a diverse, international community, with whom I hope I will someday be able to collaborate with to solve some of the world’s greatest water challenges. ●

ABOUT THE AUTHOR

Krtin Nithyanandam is a 17-year-old student from London (UK) who is currently studying mathematics, biology, chemistry and physics at A-Level. Outside of the classroom, he loves playing squash and engaging with global health policy by exploring bio-engineering and water-related research



10-13 DECEMBER, 2017
**8th International
 Young Water Professionals
 Conference**
Cape Town, South Africa

Through the offering of technical paper sessions, topical workshops, soft skill learning sessions, networking opportunities and a career fair, the IYWPC will be the “Must Attend” event for young water professionals (YWPs), especially for those wishing to develop their career and progress further into the water sector. With the conference theme Building Leaders & Making Impact, the conference will offer a technical programme, networking events, technical tours, and preconference webinars.
<http://iwaywpcconference.org/conference/>

21-22 JANUARY 2018
**International Symposium
 on Potable Water Reuse**
Austin, Texas

Covering the latest innovations in treatment and monitoring technology, the International Symposium on Potable Reuse

will attract water industry professionals from around the world, creating an environment that will integrate, shape, and advance the global discourse on direct and indirect potable reuse.

<https://www.awwa.org/conferences-education/conferences/potable-reuse.aspx>

22-24 FEBRUARY 2018
**AWA/IWA Young Water
 Professionals Conference**
Melbourne, Australia

Building on the conference theme in 2016 of Connect. Collaborate. Create, 2018’s theme is Connect. Collaborate. Accelerate. Collaboration between industry, research and government will continue to be explored as well as the value of connections. Acceleration will cover not only how ideas can be accelerated into action for a sustainable water future, but how young water professionals can accelerate their professional development.

<https://www.awa.asn.au>

22 MARCH 2018
**Economist Sustainability
 Summit**
London, UK

As global political shifts have given way to a new world order, the role of citizens, businesses and policymakers in the pursuit of progress on the green agenda has also evolved. The decision

of the US president, Donald Trump, to withdraw from the Paris Agreement, and the subsequent defiance from certain state legislatures and multinational companies demonstrates the expanding role of individuals and corporates in driving progress in a globalised world. At the same time, Brexit is narrowing the bandwidth of European legislators, threatening to delay critical progress on policy. But with the effects of climate change increasingly apparent across the world, can we really afford to wait? The Economist Events’ third Sustainability Summit will convene business leaders, policymakers, scientists, researchers, advocates and investors to gauge the scale of the task, and work out how best to lead and encourage co-operation on the path to progress.

<https://events.economist.com/>

15-17 APRIL 2018
Global Water Summit 2018
Paris, France

Business meetings are at the heart of this industry-renowned event. Every year, over 600 top executives – including water business leaders, industrial water users, utility managers, leading water technology providers and major investors – come together to determine water’s key role in sustainable economic growth and to meet with potential partners, suppliers and clients.

<http://www.watermeetsmoney.com/>

Moving into the new year, we are awaiting exciting changes for WaterFront. We also want to extend our deep gratitude to Victoria Engstrand-Neacsu, who lead WaterFront for the last 4 years, and who is moving on to new challenges. See you in 2018 and Season’s greetings!

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