

STOCKHOLM

WATER

FRONT

A FORUM FOR GLOBAL WATER ISSUES

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Where is the Water?

A Roadmap to the Post-2015 Development Agenda

A Challenge from the Young Professionals:

Dare to Share Your Failures!

A Stockholm Junior Water Prize Success Story

Reel Gardening

A LIFE WITH NATURE

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BREAKING OUT OF THE WATER BOX

Photo: Thomas Henriksson



As I travel, meet and discuss with a wide range of personalities engaged in the sustainable development of our world, I see a growing interest in water issues.

Those who raise water's vital role in a sustainable future can be heard more often, in more places. The voices come not only from scientists, national agencies, international organisations and civil society, but also from the private sector and elsewhere outside the traditional water box.

Meanwhile, the so-called water community is keeping busy. From the High-Level International Conference on Water Cooperation in Dushanbe in August, to our own World Water Week in Stockholm, to the recent Budapest Water Summit, I see highly important meetings complementing each other in building the strongest possible case for water in the future development agenda.

In this issue, we offer glimpses from the recent World Water Week for those of you who did not make it in person this year, and for those who did!

Further on, we attempt an overview of the processes – and water's place in them – leading up to a new global development agenda.

We caught up with the young South African Ms. Claire Reid who won the Stockholm Junior Water Prize in 2003. Ten years on, she has developed her winning project into a successful business.

We write about the work to achieve water sustainability in the fashion industry, and last but not least, show how a simple toolkit developed by scientists in South Africa enables schoolchildren to help monitor the water quality in the country's streams.

Enjoy the read.

Mr. Torgny Holmgren
Executive Director
Stockholm International Water Institute

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STOCKHOLM WATER FRONT

– A FORUM FOR GLOBAL WATER ISSUES

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SIWI and WEF Agree to Expand Collaboration on Water Issues

SIWI has signed an MoU with the Water Environment Federation (WEF), agreeing to collaborate on a broad spectrum of water issues of mutual interest and benefit to the field.

The agreement was signed in Chicago at the 2013 WEFTEC conference and confirms the interest of both parties in a sustained relationship that will identify and to encourage

information and knowledge-building about innovative new strategies, solutions, and challenges on water.

WEF and SIWI also hope to contribute to the identification of best practices; to the development of tools to address challenges to water sustainability; and also to the identification of innovative approaches to smarter and more sustainable approaches to water services and to water management more broadly.

Specific project areas called out in the agreement include work on identifying innovative solutions to urban water management, and energy/water issues.

► **Read more:** www.siw.org



Photo: SXC

SIWI Guest Editor

SIWI's Special Issue on Contributions to the International Water Resource Economics Consortium 10th Annual Meeting has been published in the *Water Resources and Economics Journal*. Mr. John Joyce, Senior Water Economist at SIWI, has been the guest editor of the issue together with Mr. Frank Ward of the New Mexico State University.

► **Read more:** www.sciencedirect.com



Photo: Dmitri Popov, SXC

SIWI and World Water Week Partnering with Guardian Sustainable Business

Effective collaboration with the private sector plays an important role in sustainable development. The 2013 World Water Week in Stockholm (WWW) saw the initiation of a media supporter partnership with Guardian Sustainable Business (GSB). As WWW explores the interconnected issues of water, society and economic vitality and brings together key global practitioners, GSB aggregates leading edge comment, analysis and debate focused on the role of business in tackling global environmental, social and economic issues. The Opening Plenary of World Water Week was live-streamed on Guardian Sustainable Business, increasing global access to, awareness of and participation in the most influential water event of the year. This partnership has presented multiple knowledge sharing opportunities in the pursuit of a water wise world.

► **Read more:** www.theguardian.com/sustainable-business/series/world-water-week-2013

theguardian
sustainable business

NEWS FROM COLLABORATORS

BUSINESSES COMMIT TO IMPROVING HYGIENE IN WORKPLACES

Many businesses operate and have employees, customers and contractors in regions where unsafe drinking water and poor sanitation is a reality. The social and health consequences can be dire, with a direct impact on productivity and economy.

The World Business Council for Sustainable Development has developed a pledge that can be signed by companies that want to show leadership providing access to safe water and sanitation.

By signing the pledge, a business commits to implementing access to safe water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in all premises under their control within three years. They also commit to championing such access among their peer industry group.

By mid-October, the following companies had signed the WBCSD pledge: Greif, Nestlé, Borealis AG, Roche Group, Hindustan Construction Company Ltd (HCC), EDF, Deloitte LLP, Unilever and BASF.

► **Read more:** www.wbcsd.org



Photo: Carl Dwyer, SXC

SUSTAINABLE INITIATIVE

Xylem Inc. has been named to the Dow Jones Sustainability World Index in recognition of its ongoing sustainability initiatives. The company has also joined the Ceres company network as part of its commitment to continuously improving its sustainability performance and disclosure.

► **Read more:** www.xylem.com

A WEEK FOCUSED

TEXT Ms. Victoria Engstrand-Neacsu, Communications Officer, SIWI

PHOTOS Mr. Thomas Henrikson, Mr. Mikael Ullén, Ms. Cecilia Östberg (Exray) and Netafim

The 2013 World Water Week closed on September 6 with the release of The Stockholm Statement, a call to the United Nations to put a special emphasis on water when it considers the future global development agenda. The release was preceded by an intense week packed with debates, seminars and award ceremonies.

2013 saw the introduction of a Young Professionals Day. Ms. Olimar Maisonet-Gusmán and Mr. Luca Di Mario write about the need for intergenerational cooperation. The Stockholm Water Prize Laureate, Dr. Peter Morgan, reflects upon how his scientific work has benefited from looking to nature, and

Mr. Igal Aisenberg, CEO of Netafim, the Stockholm Industry Water Award winner, argues for placing greater priority on irrigation issues on the global development agenda.

"The Week brought together an unprecedented number of professionals, and every single one of them contributes to the work toward a water wise world. The high level of discussions on theory, policy and concrete solutions reinforces the position of the World Water Week as the main global meeting place on water and development", said Ms. Karin Lexén, SIWI Director of World Water Week and Prizes.

The Young Professionals:

OPINION The Present Must Dialogue with the Future

TEXT Mr. Luca Di Mario, Centre for Sustainable Development, University of Cambridge and Ms. Olimar Maisonet-Guzman, American University, Washington, D.C.

"There is no sustainable world if the present does not dialogue with the future". With these words, we concluded our presentation at the Opening Ceremony of the 2013 World Water Week. To promote this dialogue, we propose two crucial ideas: improvement of inter-generational cooperation and sharing of failures.

Cooperation is not a new concept in water management; it was set out in the Dublin Principles in 1992. However, today, many have recognised that cooperation is more

challenging than what was envisioned back then. To achieve sustainable water policies, it is necessary to promote cooperation between economic and social actors that are dependent on water resources.

Cross-influence

During this year's World Water Week, themed "Water Cooperation: Building Partnerships", we put cooperation across generations at centre stage. Inter-generational cooperation is crucial for two reasons. First, it includes the 'future' in today's decision-making, thus promoting equity and the values of sustainable development

itself. Second, it improves dialogue and decision-making processes given that young professionals bring new perspectives, new skills, and renewed energy to the table. Most importantly, inter-generational cooperation allows for 'cross-fertilisation' between seniors' experience and juniors' skills and ideas.

At World Water Week, young professionals and youth are included as crucial stakeholders, made evident by the space, including the Stockholm Junior Water Prize and the Young Professionals' Day, dedicated to this group. The Young Professionals' Day included an inter-generational panel with senior water experts Ms. Sunita Narain and Dr. Roberto Lenton, and young professionals such as Ms. Sarah Brikke and Ms. Preshanthie Naicker. The panel discussed key issues on sustainability and the nexus approach. We hope to see this youth concept expanded at next year's World

► continued on page 6



Young and senior professionals came together to debate and share their thoughts on the challenges that the water community faces and the role that cross-generational cooperation and capacity building for the future play in finding solutions.

ON COOPERATION

The 2013 Stockholm Water Prize:

The Elegance of Simplicity

Dr. Peter Morgan is the zoologist and marine biologist who left his native England in 1972 to do research in what was then Rhodesia. Just over four decades on, this genius inventor of rural sanitation solutions was awarded the Stockholm Water Prize.

When the young biologist Dr. Morgan arrived in today's Zimbabwe he was put to study snails. Snails carry the bilharzia parasite between humans and other mammals, and infected snails often live in contaminated water. Because of the lack of sanitation, bilharzia was frequent in rural Zimbabwe in the 1970's. Peter Morgan's mentor at the Blair Research Laboratory of the Ministry of Health suggested that he try to break the life cycle of bilharzia by improving sanitation in rural areas.

There began Dr. Morgan's life in what he calls "bucket science". One of his first inventions was a toilet with a self-tipping pan, called the "Watergate". Then came the famous and now widely used Blair VIP (Ventilated Improved Pit) Latrine.

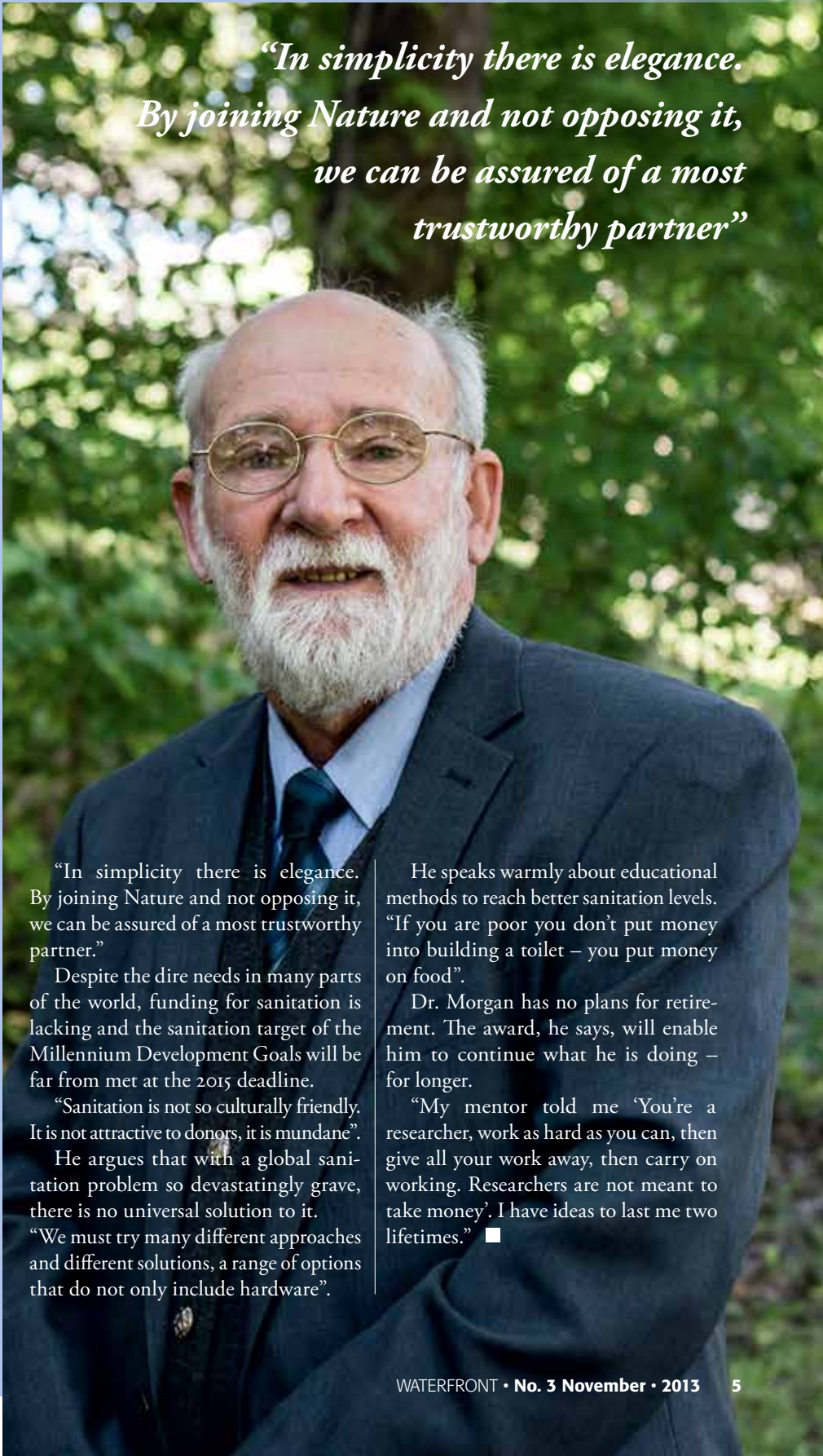
"We built about 50,000 of them before independence," says Dr. Morgan of the Blair VIP, which in its simplest form has no moving parts, and uses natural principles. It has been adapted as the national standard of Zimbabwe, and is now used by millions of people worldwide.

"Using natural principles and the simplest of concepts lays at the heart of my own philosophy of design. Indeed we do our best work when we also hold Nature in our hands and use her supremely elegant principles in our work."

Nature, and his biology background, has always influenced Dr. Morgan.

"Particularly when it comes to ecological sanitation. In getting rid of waste matter, biology is very important."

Dr. Peter Morgan developed the concepts "Arborloo", a toilet which becomes a tree, and the "Fossa alterna" where soil added to excreta accelerates the composting process, making the use of alternating pits possible.



"In simplicity there is elegance. By joining Nature and not opposing it, we can be assured of a most trustworthy partner"

"In simplicity there is elegance. By joining Nature and not opposing it, we can be assured of a most trustworthy partner."

Despite the dire needs in many parts of the world, funding for sanitation is lacking and the sanitation target of the Millennium Development Goals will be far from met at the 2015 deadline.

"Sanitation is not so culturally friendly. It is not attractive to donors, it is mundane."

He argues that with a global sanitation problem so devastatingly grave, there is no universal solution to it.

"We must try many different approaches and different solutions, a range of options that do not only include hardware".

He speaks warmly about educational methods to reach better sanitation levels. "If you are poor you don't put money into building a toilet – you put money on food".

Dr. Morgan has no plans for retirement. The award, he says, will enable him to continue what he is doing – for longer.

"My mentor told me 'You're a researcher, work as hard as you can, then give all your work away, then carry on working. Researchers are not meant to take money'. I have ideas to last me two lifetimes." ■

► continued from page 4

Water Week, and through the creation of new mentoring programmes that promote dialogue between young and senior professionals at local level.

Learning from failure

Another proposal that we presented at the Opening Ceremony was the “Fail Fair.” In the international and academic communities we excel in sharing best practices or successes. However, we are less prone to share failures (e.g.: not including the local community in the planning stages of a programme, or forgetting to build public bathrooms at a new school.) This is an absolute pity because there is a lot to learn from failures, particularly when problems are complex. Therefore, we need to bring a positive ‘rupture’ to the current paradigm and bring the discussion about failures to the table.

How do we boost failure sharing? We believe that we could start with a “Fail Fair” model which will help to provide a safe space where organisations, professionals and academics can share mistakes and setbacks related to the implementation of projects. Dedicated “learning from failure” sessions and prizes could be a game changer in international conferences. As young professionals we would like to pilot a Fail Fair at the next World Water Week.

The future we want

We strongly believe that it is important to create a momentum to guarantee that youth and young professionals are recognised as core stakeholders and future leaders. Initiatives such as the ones organised by SIWI including dedicating a Keynote Space to Youth/Young Professionals, could be an important best practice for international processes. However, we still need to work on bringing in more ‘neglected stakeholders’ (e.g. young professionals from the south who do not have the opportunity to participate in international conferences). At local level, we need to find mechanisms that would guarantee that seniors and young professionals spend more time together on the ground (e.g. structured mentorship programmes). This has the potential to facilitate attitude change and inter-generational cooperation.

This is just the beginning. The ideas presented in this article are just a small part of the ideas for action that we have as young professionals. We have a clear idea of the future we want. We want to see universal access to adequate sanitation, water, food and health, healthy ecosystems and inclusivity in decision making, as well as inter- and intra-generational cooperation. ■

The 2013 Stockholm Junior Water Prize:

“The White Continent has been a Big Inspiration to Us”



2013 WORLD WATER WEEK IN

- 7,440 people followed plenaries and seminars livestreamed at www.worldwaterweek.org
- 2,600 World Water Week delegates this year
- 260 convenors from the science, academia, the civil society and private sector
- 120 is the number of countries this year's delegates came from
- 100 seminars, workshops and events were spread throughout the six-day conference

The students Ms. Naomi Estay and Ms. Omayra Toro from Chile received the 2013 Stockholm Junior Water Prize for their work on how living organisms can help clean oil spills in extremely low temperatures.



The Chilean team travelled to Antarctica and managed to identify a whole dozen of bacterial strains with the potential to clean up oil spills, by metabolising it, in extremely low temperatures.

A Diploma of Excellence was awarded to Mr. Yairi Vigder and Mr. Noam Arye Nassi from Israel, for a project that proposes a cheap and easy way to use remote sensing system for farmers in developing countries.



The 2013 Stockholm Industry Water Award:

Drip will be Key in Meeting Future Demands

How to grow more with less is a knowledge that will be critical in decades to come. This year's Stockholm Industry Water Award winner has perfected the concept with its drip irrigation technique, but argues that irrigation still does not attract the attention necessary to raise it on the public agenda.

With a growing world population, there will be a 60 per cent increase in demand for food, feed and fibre in the next decades until 2050, according to FAO projections. It is a known fact that we must reduce the amount of food we waste, but equally important is learning to farm more effectively, learning to grow more with less. Netafim has developed this into a hugely successful business idea and is now present in 110 countries.

Netafim's CEO Mr. Igal Aisenberg tells the Stockholm Water Front that "We, as a global community, need to increase yields, but it will not come out of more land. Drip irrigation optimises the use of both land and water".

Today, drip irrigation is used on more than ten million hectares. It translates into between five and ten percent of the world's irrigated agricultural land. This number, says Mr. Aisenberg, can be quadrupled in the next 10-15 years.

However, since the initial investment in drip irrigation is quite high, people and companies willing to start drip need financial support, says Mr. Igal Aisenberg, arguing that irrigation must climb much further up on the water agenda:

"Agriculture accounts for 70 per cent of global freshwater withdrawals. Who or what uses that water? It is irrigation – and therefore it needs to be on top of the public agenda."



Mr. Igal Aisenberg, CEO and President, Netafim and Mr. Peter Forssman, Chair of SIWI.

He explains that there is a common misconception of the benefits of drip:

"People think it is only for arid regions. But dry areas are only one of the extremes. Wet areas are another. Tropical rains wash away nutrients needed by agricultural plants, pushing the nutrients down too deep in the ground. Agricultural plants can only reach nutrients as deep as one meter underground. In these situations, the drip is used with fertiliser, to replace the washed-away nutrients.

While irrigation issues still want for more attention in policy circles, the increased interest in the drip technique from smallholder farmers is evident. "Now there is a pull for our knowledge, compared to ten years ago when we had to push our knowledge to the users." ■

► Learn more at www.netafim.com



TICKING TOWARDS

TEXT Ms. Victoria Engstrand-Neacsu, Communications Officer, SIWI

PHOTOS Image 100 Ltd and Mr. Mikael Ullén

While UN Secretary-General Ban Ki-Moon urges the global community to gather forces for a last push to reach the Millennium Development Goals (MDGs) by the 2015 deadline, the parallel processes of creating a new sustainable development agenda are gaining momentum.

The MDGs process was criticised for being non-inclusive and the goals fast-tracked. In contrast, the work to formulate new development goals has become one of the largest consultative process ever launched by the world body. Well over one million people have so far been involved in contributing to discussions. The work, along several avenues, was launched in earnest as an outcome of the Rio+20 Conference in 2012, and is intended to converge into one main stream

again as final reports are submitted to the General Assembly in September 2014. The work in the coming year will be led by the Open Working Group and the Experts committee on financing sustainable development. Both groups will prepare reports that will form the basis for member state negotiations on a Post-2015 development agenda.

Water issues have been present in all of these processes, although the weight given to water differs between groups. According to key people working inside the processes, there is an emerging consensus on the need for a dedicated water goal. Here, we attempt to give an overview of the main processes leading up to a sustainable development agenda while identifying water's place in them.

2012

2013

UN System Task Team

High Level Panel

Global and National Thematic Consultations

Rio+20

Sustainable Development Solutions Network

UN System Task Team

Established by Ban Ki-Moon to support the UN system-wide preparations for the Post-2015 Development Agenda. Comprising of 60 UN agencies as well as the World Bank and the International Monetary Fund, it published the report "Realizing the Future We Want for All" in July 2012. The report served as an input to the work of the High Level Panel.



High Level Panel (HLP) of Eminent Persons

Mandated by the 2010 MDG Summit, it started working in July 2012, co-chaired by the Presidents of Indonesia and Liberia and the Prime Minister of the United Kingdom. Their work was based in part on the recommendations of the High Level Panel on Global Sustainability, led by Mr. Jacob Zuma and Ms. Tarja Halonen, and its January 2012 report *Resilient Planet, Resilient People*. The HLP of Eminent Persons submitted its final report with recommendations in May 2013, calling for the new Post-2015 goals to drive five big transformative shifts: *Leave No One Behind, Put Sustainable Development at the Core, Transform Economies for Jobs and Inclusive Growth, Build Peace and Effective, Open and Accountable Institutions for All, and Forge a New Global Partnership*. The report proposed examples of 12 goals, one of them on water.

Open Working Group on Sustainable Development Goals

Experts Committee on

High Level Political For

Global Thematic Consultations

UN-led global consultations on 11 themes, of which one was on water. The water consultation, open between November 2012 and March 2013, was mainly an online process, facilitated by UN-Water, co-led by UNDESA and UNICEF and co-hosted by Jordan, Liberia, Mozambique, the Netherlands and Switzerland. The aim was to bring in ideas and opinions from a large variety of stakeholders in order to build a consensus around future water challenges and how to best address them. The global thematic consultations involved a total of 1.3 million people world-wide. The global water consultation included 22 national consultations.

Sustainable Development Solutions Network

Academics and researchers led by Jeffrey Sachs – launched by the UN Secretary General in August 2012. It has provided technical support to the High level Panel. Several thematic reports were launched in September 2013 to complement its "An Action Agenda for Sustainable Development" released in June 2013. Water has been a cross-cutting issue in the work of the Sustainable Development Solutions Network.

USEFUL LINKS

- <http://sustainabledevelopment.un.org>
- www.stakeholderforum.org
- www.sustainabledevelopment2015.org
- www.beyond2015.org
- www.unwater.org
- www.post2015hlp.org
- www.worldwewant2015.org
- www.siwi.org/publication/water-in-the-post-2015-agenda

2015

“Well over one million people have so far been involved in contributing to discussions on the Post-2015 development agenda”

A SUSTAINABLE DEVELOPMENT GOAL ON WATER

The Stockholm International Water Institute wants to see a dedicated goal on water in the Post-2015 development agenda. In the Stockholm Statement released during the 2013 World Water Week, SIWI says that by 2030, the following should have been achieved; **A doubling of global water productivity, A realisation of the human right to safe drinking water and sanitation, and Increased resilience to water related disasters.** While the MDGs were focused on quantitative and measurable targets, there is a consensus that any new goals and targets must also have a larger qualitative element.

2014

2015

Civil Society

Large parts of the global civil society have formed alliances and networks to feed valuable work into other processes, most importantly the UN-led Thematic Consultations, during 2013. Some of the platforms for civil society engagement are Beyond 2015, Civicus, Global call to Action Against Poverty (GCAP) and International Forum of National NGO Platforms (IFP). Many civil society actors have worked through Stakeholder Forum.

Private Sector

As the Post-2015 development agenda planning process moves from public discussions to inter-governmental decisions, a large part of the private sector is still trying to find its natural place in the process. Global Compact, the UN's policy initiative for reaching out to businesses, has 8,000 corporate signatories and held a conference prior to the UN General Assembly in September. As part of the Global Compact, the CEO Water Mandate is specifically designed to assist businesses in the development and implementation of water sustainability policies and practises. Additionally, World Economic Forum (WEF) works with the Post-2015 Development Agenda among CEOs, Heads of Governments and change leaders.

Open Working Group on Sustainable Development Goals (SDGs)

A result of the Rio+20 Conference in June 2012, it was established in January 2013 and tasked with preparing a proposal for SDGs. From an initial 30 members, it now has over 70. It is chaired by Hungary and Kenya. Out of a total eight meetings each focusing on certain themes, four have been held. The third meeting, in May 2013, included discussions on water. Read the water and sanitation issues brief on sustainabledevelopment.un.org. This key group will produce a final report for the UN General Assembly by September 2014.

Experts Committee on Financing Sustainable Development

Also a result of Rio+20. It has 30 members, and is chaired by Nigeria and Finland. Holds closed meetings. This group, which started working in September 2013, will focus on three clusters; 1) Assessing financing needs, mapping of current flows and emerging trends, 2) Mobilisation of resources and their effective use, and 3) Institutional arrangements, policy coherence and governance issues. The committee will work with synergies of existing instruments and a view toward proposing effective solutions on how to finance sustainable development in the context of the Post-2015 framework.

High Level Political Forum

The High Level Political Forum (HLPF) is an outcome of the Rio+20 Conference and is meant to be a long-term, universal, intergovernmental high-level political forum on sustainable development. The aim of the HLPF is to provide a new opportunity to ensure that all dimensions of sustainable development – economic, social and environmental – are brought together in a coherent way. The HLPF held its inaugural meeting on September 24, 2013. Starting in 2016, the Forum will conduct regular reviews on the implementation of sustainable development commitments and objectives.

TEN YEARS AFTER RECEIVING THE STOCKHOLM JUNIOR WATER PRIZE:

A REEL SUCCESS

TEXT Ms. Victoria Engstrand-Neacsu, Communications Officer, SIWI

PHOTOS Reel Gardening

In 2003, the young South African Claire Reid received the Stockholm Junior Water Prize for the “Water Wise Reel Gardening” system that helped small scale farmers to be more efficient in their use of water in growing crops. Ten years on, she has developed Reel Gardening into a successful, nation-wide business and goes on to win awards for her work. The Water Front caught up with Ms. Reid for an online interview.

What was the original inspiration for Reel Gardening?

It all started when my parents told me that I would make my allowance money by growing vegetables and selling them to my folks. I was overwhelmed by the excessive surplus of seed and fertiliser I had to waste my precious money on to plant the small space that I had available. Once I was sitting in the middle of the patch with a tape measure between my knees trying to get the seeds into the ground at the right distance from each other, I realised that I needed help.

I asked my nanny, Meggie, if she could help me by holding the packet of seeds and passing them to me whilst explaining how to plant them. But Meggie turned to me and said that she could not understand the instructions on the seed packets. She explained that even if she could understand, she could never bring herself to pour her precious water, which she walked miles to fetch, onto a bare patch of earth in the hope that it touched a seed.

As Meggie was sharing her past experiences with me in that small urban space, I realised that this garden was a great leveler. Meggie and I come from vastly different backgrounds, yet we were both struggling with the same deceptively simple task.

I decided there and then that there had to be a simple, cost-effective and convenient

solution to the problem – and that solution is now called *Reel Gardening*.

How long did it take you to develop the project that was awarded with the Stockholm Junior Water Prize?

I was encouraged by my teachers to enter what was then a newspaper- and flour-based invention into the *Eskom Expo for Young Scientists*, where I won first prize. I worked a total of seven months on *Reel Gardening* as a product before entering the Stockholm Junior Water Prize.

Did receiving the Stockholm Junior Water Prize help you in any way?

Yes! It gave me the confidence that this seemingly simple craft-like high school project had international merit. I was motivated to develop it further in the hope of eventually taking it to market.

You have developed the project into a national business in South Africa. What were the greatest challenges along the way?

So, now that there was a product that enabled everyone to get growing, there needed to be a simple straight-forward solution to setting that garden out correctly,



in order to optimise space and nutrition whilst taking the guess work out of varieties and sowing times.

This modular small subsistence farming solution is *Garden in a Box*. Garden in a Box pre-packs a room² garden according to location and the month of sowing. All one has to do is plant the garden out according to the colour coded diagram, which takes into account all the technical aspects of planting such as crop rotation and companion planting.

FACTS

- **The Reel Gardening system** is a pre-fertilised seed strip that encases seeds in bio-degradable paper. The paper encasement shows what has been planted, and also protects the seeds from birds.
- **By reducing water leakage into the soil,** and keeping the seeds moist, the *Reel Gardening* system saves 80 per cent water during the germination phase.
- **The Stockholm Junior Water Prize** Nominating Committee, in its official motivation, honoured Claire Reid “for an innovative, practical, easily applicable technique for planting and successfully germinating seeds in water-scarce areas to improve rural and peri-urban livelihoods.”

We have implemented this Garden in a Box concept in over 150 schools and communities nationwide in the last three years.

How do you hope to further develop *Reel Gardening*?

I have just developed a school work/activity book that links the school garden to the curriculum over a 12-week programme and enables experiential learning.

The children then have to take their pre-packed household garden home and plant as part of their homework – which then enables them to teach their parents the importance of having fresh produce in your diet.

I want to see this rolled out into schools nationally and then have the hope that schools in Europe could partner with a school in South Africa. Both classes, one in Europe and one in South Africa, would

be doing the same 12-week programme and planting the same garden and then the kids can also learn from each other.

What would be your advice to other young people aspiring to be finalists for the Stockholm Junior Water Prize?

If you have passion and your innovation has relevance you can make a big impact! ■



- **Claire Reid has won several awards** for her work, including the **First Prize** at the *Eskom Expo for Young Scientists*, and the inaugural **SAB Foundation Innovation Award 2011**.
- **In 2008, five years after winning** the *Stockholm Junior Water Prize*, she secured a business start-up loan, and in 2009 the first prototype was ready.
- **The seed strips are labelled** in seven languages, including English and Xhosa. They are colour coded and illustrated with simple diagrams for those who cannot read. There are vegetable, herb and flower combinations as well as packs, such as salad and soup garden mixes.
- **Ten years after the award**, Reel Gardening (www.reelgardening.co.za) has a staff of nine, and stock 17 shops across South Africa. There is also an online store on www.reelgardening-shop.com
- **Reel Gardening opened the doors** of its first business premise in Illovo, Johannesburg, in February 2010. *Reel Gardening* now operates from its own premise in Blairgowrie, Johannesburg, where trial gardens are conducted and anyone is welcome to pop by.

A SWEDISH MODEL ON THE RISE: WATER SUSTAINABILITY IN FASHION

TEXT & PHOTO Mr. Rami Abdelrahman, Programme Officer, Knowledge Services, SIWI

Addressing the water footprint of the textile industry is trending. For the past decade, the global fashion industry slowly but decisively increased the pace of its engagement to understand and address its water risks. The success of such engagement will however depend entirely on the industry's ability to create demand for and financial value in the sustainable use of water along supply chains.

The textile industry accounts for USD 400 billion in global exports annually and 8 per cent of world trade in manufactured goods. To maintain its water usage at year 2000 levels, the industry must become 40 per cent more water efficient by 2030. Little has been done, almost halfway towards this deadline. In many production countries in Asia, the textile industry is the fourth largest industrial water user. Furthermore, the World Bank estimates that 20 per cent of industrial freshwater pollution is caused by the textile industry, positioning it in many production countries as the single largest industrial water polluter.

In response to this development, international fashion brands have been organising themselves into national and global clusters to develop environmental codes for sustainable production. But implementation has barely been scaled-up beyond initiating pilot projects in production countries.

The reasons for the slow pace of implementation include narrow expertise segmentation among Corporate Social Responsibility (CSR) auditors. The wide majority of in-house and external auditors have been niching themselves within the broad realms of CSR. The CSR community within the textile industry has been working actively in niches such as labour issues, workers' safety, quality assurance and chemical testing, and to a lesser extent, with carbon footprint. Water has not been seen beyond being a proxy to address some of chemical-use issues. Therefore, CSR auditors with a water expertise are few and far between.

The other issue includes the lack of business models that create value in addressing water risks. Too few fashion brands worldwide realise the value of working actively to address water risks, let alone, seeing the lost opportunity in not doing so. Only medium and large-sized conglomerates whose CSR policy-making has graduated beyond philanthropy to realise CSR as a risk-management mechanism have had the capacity to develop a deeper understanding of the lost opportunity of not addressing water risks.

But even for the most progressive corporates, such risks are exacerbated externally by weak compliance due to arbitrary enforcement of national laws in production countries and corruption in the public sector. Internally, businesses are hindered by a lack of stability in the production chain due to ever-changing fashion trends and an inevi-

tably irreversible movement towards cheaper production that has become a business by-law.

Understanding fashion's water challenges

In 2010, 35 major Swedish textile and leather brands and the Stockholm International Water Institute (SIWI) launched the Swedish Textile Water Initiative (STWI). The idea behind the initiative was to create a trustworthy platform for knowledge exchange that would lead to better understanding of the industry's water challenges and to finding the right mechanisms to address them. The initiative's initial two-year phase received financial support from the Swedish government channeled through SIWI's Swedish Water House. Through long internal consultations among member companies and SIWI, and external consultations with other Swedish experts on industrial water use, the first phase resulted in the creation of joint guidelines for sustainable water and waste water management in supply chains.

The STWI group embarked on a new phase in the beginning of 2013, became financially independent and forged ahead to identify the potential for the implementation of these guidelines. By the end of this phase in June 2014, each member company should have self-assessed at least one key direct supplier, and through periodical lectures, raised the competences of its members to enable them to identify factory-based water issues and development potential.

In parallel, SIWI joined hands with three STWI brands, Swedish fashion retailers *Indiska*, *KappAhl* and *Lindex*, to launch a project to assess and address water-related challenges at 35 suppliers in India during 2013, and 34 during 2014. The project, Sustainable Water Resource (SWAR) Man-

"It is worthwhile to invest a significant amount of money, effort and time to establish a foundation of trust"

agement for the Textile Industry in Delhi and Jaipur, is a flagship Public-Private Partnership (PPP) within the sector. It has received half of its funding from the Swedish International Development Cooperation Agency (Sida), whereas the remaining half was provided by the Swedish brands and their Indian suppliers and sub-suppliers.

Both STWI and SWAR have so far been successful in achieving their measurable, result-oriented goals. However, given the uniqueness of these projects, some key prerequisites had to be secured through an intensive learning-by-doing process.

Investing in trust

Merely offering free courses and consultations is not enough. A clear road-map for change, based on a value-creating business model proved to be imperative to secure management buy-in into SWAR.

SWAR project partners made sure to pick a consultancy team that offered a holistic approach in addressing water, waste-water, energy and chemical issues in production flows at each production unit. Another

major success factor was the consultancy team's clear ability to achieve the SWAR value creation vision: to demonstrate potential operational cost-savings as an output of efficient water management practices, which would eventually lead to increased profit margins in an industry with very tight margins.

The other prerequisite for successful implementation learned from both STWI and SWAR is that it is worthwhile to invest a significant amount of money, effort and time to establish a foundation of trust: trust between competitors who now opt to work together for the greater good, and trust between the not-for-profit and profit-based sectors despite their different mod operandi. Once the trust was there, the flow and the quality of knowledge exchange amongst partners improved tremendously.

Following that, an investment to create sufficiently sophisticated metering, monitoring and database management systems should be top priority, in order to facilitate performance monitoring against accredited baselines and towards clear results.

Once high-quality data is made available, quality analysis should follow. This is where economic tools fit in, for example, measuring the Total Economic Value (TEV) of water per kilogram of production of a certain fashion line.

With a credible database in place, reflections on national policy can be made: once data is produced from a sufficiently representative number of participating units in a particular jurisdiction, SIWI water policy researchers can develop a better understanding of the industry's actual impact on water quality and quantity in these jurisdictions, and then reflect on the potential for policy improvement, enforcement and compliance. Such an exercise can only result in better synchronisation between business approaches and policy compliance, to make the use of water in the textile industry become sustainable. ■

For more information:
www.stwi.se and www.siwi.org/project/6814



WATER QUALITY MONITORING IN SOUTH AFRICA:

NO ROCKET SCIENCE – 'NUNUS' TELL THEIR S

TEXT Dr. Mark Graham, Ground Truth, Dr. Jim Taylor, Environmental Education, WESSA, Ms. Anelile Gibixego and Mr. Simon Bruton, Ground Truth

PHOTOS AND ILLUSTRATIONS www.groundtruth.co.za and allfreedownload.com

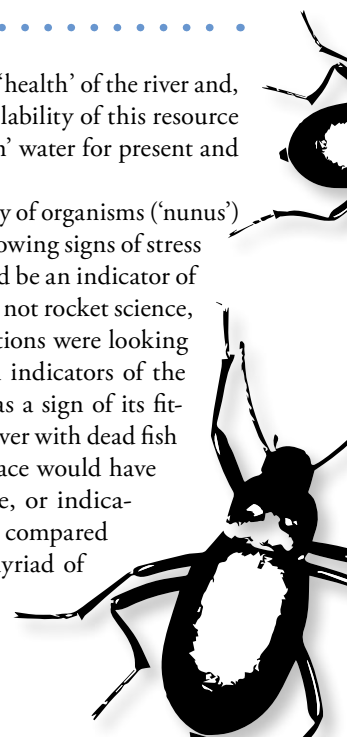
At a time when an increasing amount of the world's freshwater resources is under strain, determining the quality of water in streams is essential but time consuming work. Scientists in South Africa have developed the miniSASS water quality assessment tool, with which school children and 'citizen scientists' can help monitor most of the country's nearly 168,000 kilometres of rivers. In monitoring the streams, the environment and life science parts of the participating schools' curriculum are also being supported – a true win-win collaboration.

More and more of our water resources are fast becoming polluted and are disappearing due to the demands placed on them by the modern world. This clearly limits the opportunity for kids to simply 'mess about in rivers'. These missed opportunities further distance us as a society from the source of life's most vital natural resource: water!

Work started by aquatic ecologists in the 1980s looked at taking the naturally occurring insect fauna or 'nunus' present in South Africa's rivers and using them as indicators of the health or condition of these systems – in much the same way as canaries were used by miners to see if the air in a mine was safe or would kill them. Only now, the

concern is with the 'health' of the river and, ultimately, the availability of this resource as a source of 'clean' water for present and future generations.

If the community of organisms ('nunus') in the river were showing signs of stress or strain, this would be an indicator of pollution. This was not rocket science, the earliest civilisations were looking for and using such indicators of the 'health' of a river as a sign of its fitness for use. So, a river with dead fish floating on its surface would have been less attractive, or indicative of 'dirty water' compared with one with a myriad of





“With the possibility of ‘citizen scientists’ starting to monitor their rivers comes a huge window of opportunity to transform how we look at and manage our water resources in the future”



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fish and other organisms living in it. And all of this is indigenous or local knowledge, in the absence of expensive and sophisticated laboratories. More recently, there have been mass deaths of crocodiles within the Kruger Park – another rather extreme indication of an unhealthy river system.

A tool for schools

What was found over the years was that South Africa had reasonably easily recognisable river fauna and that some elements were more sensitive to pollution than others. This spectrum of approximately 90+ aquatic invertebrate families could then be sampled in a standardised manner and used on a regular basis as an indicator of the health of the

river system. Thus was born the Stream Assessment Scoring System (SASS) to measure river health. This has been through various refinements and iterations over the years, so that we now have the scientifically robust SASS version 5 method (Dickens and Graham) widely used by many aquatic ecologists across South Africa and, indeed, throughout Africa. This method has been developed in accordance with ISO 17025 standards, and the South African Department of Water Affairs has a system of accreditation to ensure data emerging from this technique is credible.

The downside of the SASS5 technique is that it is still fairly onerous in terms of learning all the identifying characteristics and distinctions between the 90+ families that make up the technique. To address this issue, and to develop a tool more suited to the layman, school groups and the environmental education community, the SASS5 technique has been simplified and reduced in complexity to produce the mini-Stream Assessment Scoring System (or miniSASS) tool. This has recently been updated with the support of the Water Research Commission, the Wildlife and Environment Society of South Africa and GroundTruth Consulting.

The complexity of the 90+ families of aquatic invertebrates has been reduced to 13 groups of organisms, and sampling can be undertaken by anyone or groups with an interest in their local water resource. A simple pond net (or old wire coat hanger, shaped into a square and covered with a stocking or sewn mosquito netting), white tray or ice-cream tub, a printed A5 data sheet and identification guide completes the ‘kit’ and this is all one needs to get started!

One of the key strengths of the miniSASS technique is that the results it produces are very similar to the full SASS technique. This allows the miniSASS tool to act as a ‘red flag’ indicator of the condition of rivers, identifying hot spots, where further, more detailed follow-up or investigation of

the condition or water quality of a river is required. With the possibility of any interested groups of ‘citizen scientists’ starting to monitor their rivers comes a huge window of opportunity to transform how we look at and manage our water resources in the future.

Meeting curriculum needs

A recent investigation looking at the positioning of all schools within South Africa shows that, not surprisingly, most major rivers in the country have a host of schools in close proximity. If all the schools in the country were to simply monitor a river within a four kilometre radius of themselves, more than half of the approximately 168,000 kilometres of river in South Africa could be covered by this monitoring network.

Added to this, the school curriculum has to cover various aspects of environmental or life science studies (including human effects on the environment, pollution, etc.) at various stages and with varying levels of sophistication. The miniSASS tool provides an ideal opportunity of integrating this teaching requirement (meeting the needs of the curriculum) with schools adopting a river within close proximity and becoming ‘monitoring cells’ – telling the story of how healthy their ‘stretch’ of river is. The collective network of monitoring cells has the added advantage of building a national picture of the health of our rivers, empowering local communities to identify pollution sources, and educating the next generation of consumers and polluters about the effects of their various actions on water resources. ■

FURTHER RESOURCES

www.groundtruth.co.za
www.minisass.org
www.wessa.org.za



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