



America's infrastructure first. Among the campaign promises President Donald Trump made was to fix "America's crumbling infrastructure." What does it really mean? We took a look. ► ANALYSIS, PAGE 10



How to make a water project bankable. Water utilities in African must focus more on their financial capital planning if they are serious about modernization, writes André Kruger. ► FOCUS, PAGE 14.

STOCKHOLM

WATERFRONT

#1 | MAY | 2017



COVER STORY
**HOUSEHOLDS KEY
 IN AFRICA'S GREEN
 REVOLUTION**



STEPHEN MCCAFFREY
**WAR, PEACE,
 AND FOOTBALL**

NEWS BRIEFS

New Zealand river gains human rights, Nordic fashion brands save billions of litres of water, and more.

GREEN WATER MANAGEMENT – A CLOSE-UP

In our last issue in 2016 we published an opinion piece which argued that increased, and more efficient, rain water harvesting is the only chance we have of achieving Sustainable Development Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) by 2030. In this issue, we take a look at efforts on the ground. Do the theories hold? What works, and what doesn't? Read more on page 5.

In the global water, environment and development communities, we have learnt about large uncertainties or cut backs from the current US administration. But what plans does president Trump have for the US national water infrastructure? We took a closer look, on page 10.

By now you know who the 2017 Stockholm Water Prize laureate is. Professor Stephen McCaffrey is one of our greatest authorities on international water law, and also helped develop the human right to water concept. But why did he decide to focus on water? And does he think there is any hope for fair sharing of freshwater in the future? Read the interview on page 12.

“Bankable” has become a buzzword in water programming. What does it really mean, and if it so important, how does one make a project bankable? We turned to the experts, on page 14.

Enjoy the read.



Torgny Holmgren

Executive Director,
Stockholm International Water
Institute



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ANALYSIS



COVER STORY



INTERVIEW



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EDITORIAL STAFF

Victoria Engstrand-Neacsu | Editor
Christina Anderson | Writer
Elin Ingblom and Marianne Engblom
| Graphic Designers

Contact: waterfront@siwi.org

2017 EDITORIAL BOARD

Anton Earle
Lotta Samuelsson
Josh Weinberg

PHOTOS

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STOCKHOLM WATERFRONT

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STOCKHOLM INTERNATIONAL WATER INSTITUTE

Box 101 87
Visiting Address: Linnégatan 87A
SE-100 55, Stockholm, Sweden
Tel: +46 8 121 360 00
Fax: +46 8 121 360 01 | www.siwi.org

NORDIC BRANDS SAVED ALMOST 7 BILLION LITRES OF WATER

H&M, IKEA, Filippa K and 20 other Nordic brands saved more than 6.7 billion litres of water, or the daily water supply¹ for 134 million people, in less than seven years. Under the guidance of the Sweden Textile Water Initiative (STWI), a programme driving global change towards sustainable textile and



leather production, the factories have reduced water consumption and pollution while also improving their profits. Since joining the programme, participating factories have seen a return on investment of more than 240 percent over three years.

“We would not have been able to accomplish these amazing results on our own. Much of our success is due to the motivation of our suppliers and the support of STWI,” said Elin Larsson, Sustainability Director for Filippa K.

STWI started as a pilot project in 2010, and has been fully operational since 2013. In 2016, the initiative expanded from 72 to 119 factories in India, China, Bangladesh, Turkey and Ethiopia. In 2017, STWI plans to expand to Hong Kong, Myanmar, Pakistan, Indonesia, Cambodia and Vietnam.

“STWI is a model for the entire manufacturing industry. By working closely with partners and their suppliers we have demonstrated that environmental sustainability is good business,” said Rami Abdel Rahman, STWI programme manager.

“We are trying to encourage improvements that save water and energy and reduce the use of chemicals in all components of the production chain. This project shows that these goals can be achieved, even with increased profitability. We hope the market can learn from these positive experiences,” said Mats Åberg, programme manager with the Swedish International Development Cooperation Agency (Sida).

¹ Based on UN’s Human Right to Water of 50 L per person per day

6.7 BILLION

Read more on www.stwi.se

Litres of water saved by some 20 Nordic brands in more than 100 textile factories in India, China, Bangladesh, Turkey and Ethiopia over a seven-year period. 6.7 billion litres equals the daily water supply of 134 million people (Source: Sweden Textile Water Initiative, STWI)

NEW ZEALAND RIVER GAINS PERSONHOOD AFTER MORE THAN A CENTURY-LONG FIGHT

After a 140-year battle, a Maori tribe in New Zealand secured legal rights for Te Awa Tupua River, which they view as an ancestor.

“We have fought to find an approximation in law so that all others can understand that from our perspective, treating the river as a living entity is the correct way to approach it, as in indivisible whole, instead of the traditional model for the last 100 years of treating it from a perspective of ownership and management,” Gerrard Albert, negotiator for the Whanganui tribe, told the Guardian.

Since March 15, the Te Awa Tupua River has the same rights as a human being, and harming Te Awa Tupua River is tantamount to harming the tribe.

The new law reflects the Whanganui tribe’s worldview and could set a precedent for other Maori tribes, said Albert.

STEPHEN MCCAFFREY AWARDED 2017 STOCKHOLM WATER PRIZE



Professor Stephen McCaffrey, USA, has been named 2017 Stockholm Water Prize Laureate for his unparalleled contribution to the evolution and

progressive realization of international water law.

Stephen McCaffrey is a Distinguished Professor of Law at the University of the Pacific, McGeorge School of Law, in Sacramento, California. His work has influenced scholars, legal practitioners and policy-makers and contributes to the sustainable and peaceful management of shared waters.

In its citation, the Stockholm Water Prize Nominating Committee recognized Professor McCaffrey’s “path-breaking leadership and legal scholarship in international water law. He has made a unique contribution in three specific areas: his seminal work on Treaty negotiation; his major scholarly works, including

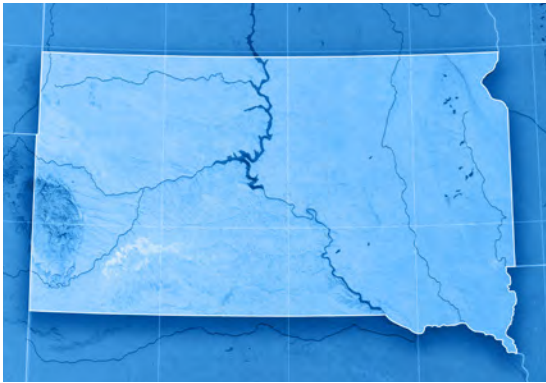
his book *The Law of International Watercourses* and; his leadership providing expert legal advice, wise counsel, training and facilitation of complex negotiations with a wide range of stakeholders.”

Professor McCaffrey has been acting as legal counsel to states in several negotiations concerning international watercourses, for example between Argentina and Uruguay, Pakistan and India, and Slovakia and Hungary.

“I believe nobody who studies, researches or practises in the field of transboundary water management, water law or diplomacy could be unaware of Professor McCaffrey’s contribution to the conceptual and practical elaboration of the many legal concepts and principles that we now take for granted,” says SIWI’s Executive Director Torgny Holmgren.

Read more in the interview with Professor McCaffrey on page 12

CRUDE OIL FLOWING THROUGH DISPUTED DAKOTA ACCESS PIPELINE



North Dakota with the Missouri river and Lake Oahe.

Less than four months after Barack Obama blocked the disputed Dakota Access Pipeline, calling for a thorough environmental assessment of a segment of the pipeline that explores alternative pipeline routes, media reported that oil was flowing through the pipeline in the last week of March.

Tribespeople, environmental activists and veterans won a temporary battle on December 4, 2016,

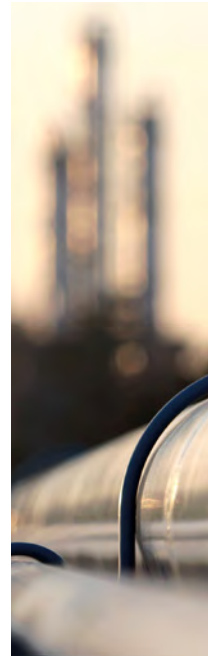
when the Army Corps of Engineers denied pipeline developer Energy Transfer Partners a permit to cross the Missouri river.

That victory was short-lived, however. US President Donald Trump signed an executive order allowing the USD 3.7 Billion Dakota Access pipeline to proceed on January 24. The pipeline transports up to 570,000 barrels of fracked crude through four states, from North Dakota to Illinois.

Standing Rock Sioux tribe members protested the controversial pipeline because of the hazard it presents to their drinking water supply. A segment of it ends half a mile from the tribe's reservation land and goes under Lake Oahe, a reservoir that provides the tribe's main drinking water supply.

On March 18, an appeals court rejected the Standing Rock Sioux and Cheyenne River Nations' request for an emergency injunction to stop the pipeline from becoming operational, Democracy Now reports.

In the middle of April, Reuters news agency, citing a filing with the US Federal Energy Regulatory Commission, reported that the controversial pipeline was set to start delivering crude oil between states on 14 May.



SWEDEN'S ROYAL FAMILY PARTNERS WITH SIWI TO RAISE AWARENESS ON WATER AND CLIMATE

Beginning in 1991, with the patronage of the Stockholm Water Prize by His Majesty King Carl XVI Gustaf of Sweden, SIWI has worked closely with members of the Swedish Royal Family to promote innovation, efficiency and equity in water. The Royal Family's participation and commitment to achieving a water-wise and climate-stable world grew with Crown Princess Victoria's role as a UN Special Ambassador for the Sustainable Development Goals and an increased interest in water issues by His Majesty the King.

King features water and climate in 2016 Christmas message

In his annual televised holiday message to the Swedish people, the King underscored the importance of clean water to all aspects of and the risks of taking the resource for granted. He also reiterated the water challenges that Swedes face at home, such as shortages in Öland.

H.R.H. Prince Carl Philip awards Stockholm Junior Water Prize

H.R.H. Prince Carl Philip awarded the Stockholm Junior Water Prize. Three students from Thailand – Sureporn Triphetprapa, Thidarat Phianchat and Kanjana Komkla were recognized for their innovative water retention device that mimics the Bromeliad plant.

H.R.H. Crown Princess Victoria addresses World Water Week

Crown Princess Victoria provided the opening address at a high-level meeting during 2016 World Water Week. The event highlighted possible strategies for delivering on the 2030 Agenda and strengthening climate resilience through wise water management. She implored leaders to focus on building strategies through water that work towards achieving a climate resilient, more equitable and sustainable future.

His Majesty King Carl XVI Gustaf of Sweden awards 2016 Stockholm Water Prize to Joan Rose

As the patron of Stockholm Water Prize, His Majesty King Carl XVI Gustav is charged with presenting the Laureate with this prestigious award at the official ceremony at Stockholm City Hall during World Water Week. In 2016, the Prize was awarded to Professor Joan B. Rose for her tireless contributions to global public health.

King of Sweden celebrates 70th birthday with roundtable on land and water ownership

In October 2016, Sweden's leading environmental science, policy and advocacy organizations held a roundtable on ownership of land, water and biodiversity for the King of Sweden to celebrate his 70th birthday. SIWI, The Stockholm Environment Institute, World Wide Fund for Nature and Stockholm Resilience Centre hosted a roundtable titled 'Who Owns the Planet?' on the rights to nature and ownership of common pool resources.

SUCCESSFUL GREEN REVOLUTION IN AFRICA MUST START AT HOUSEHOLD LEVEL

Text | Görrel Espelund • **Photo** | ARC (Agricultural Research Council) & Istockphoto

WATER EXPERTS AND RESEARCHERS IN SOUTH AFRICA SEEM TO AGREE THAT RAINWATER HARVESTING IS A KEY CONTRIBUTOR TO ENHANCED FOOD SECURITY, BUT ONLY IF COMBINED WITH OTHER INTERVENTIONS.

“In the gardens women are in control because the household is their responsibility. So it is easy for them to tend to their cultivation. No fancy technique or equipment is needed; you don’t even need

any education, just a willing attitude,” says Cobus Botha at the Agricultural Research Council (ARC) in South Africa. He has more than 15 years of experience from practical research on how to turn

rainwater into a game-changer for small-scale farmers, especially at homestead level.

ARC has mainly been working with in-field rainwater harvesting in southern Africa. Combined with roof-water harvesting, as a supplementary irrigation, the results have been very successful, according to Botha.

In-field rainwater harvesting for household gardening consists of ●●●





●●● a two-metre sloped runoff strip leading into a one-metre wide basin area. The runoff water accumulates in the basin and mulch at the bottom of the basin suppresses evaporation and helps keep the soil moist. Crops are planted on both sides of the basin. If supplementary irrigation is needed, water is added only to the basin, not the whole field.

“Crop yield increases between 20 and 60 per cent compared to the yield from conventional practices that farmers are using. If the farmers also plant a variety of crops, it gives them access to a much more nutritional diet,” says Botha.

From their backyard gardens, people can slowly scale up to community gardens and, eventually, to crop land – at least in theory.

Several studies in South Africa showed substantial challenges when up-scaling the gardening techniques to proper fields.

“Some of the farmers had to travel quite some distance to their fields, thereby losing the proximity to their cultivation. In some cases, the croplands had been fallow for years due to crop failure when using conventional farming techniques. So, the land was hard to

work and people weren’t that interested. Also, they didn’t get the support needed from the extension officers in the area,” says Botha.

Another challenge is the lack of soil maps in Africa. To be truly successful comprehensive soil maps are needed in each country, each province and each village. This would enable re-planning of whole areas to make sure that the best soil is used for crop production and that the poorer land is used as grassland.

Then there is the question of secure land tenure.

In South Africa, as in most African countries, small-scale farmers do not own their land; it is owned communally and controlled by the local leaders, the chiefs.

And because people don’t have secure land right, many are afraid to invest.

Gerhard Backeberg, Executive Manager: Water Utilisation in Agriculture at the South African Water Research Commission, explains:

“People in a village know which plot belongs to whom even if there are no real boundaries. But do they have the security to plant and harvest what they’ve planted? Added to that is the risk of conflict



The definition of rainwater harvesting is collecting, channelling and storing water using macro catchments, micro catchments and rooftop harvesting.

Read more: Waterfront August 2015.

Rainwater harvesting and water preservation around Africa

It is not a lack of ideas that hinders a green revolution in sub-Saharan Africa. We have collected a few examples; mind-mobilization workshops in South Africa, using roads for rainwater harvesting in Ethiopia, and low-input organic farming in Zambia.



etween crop cultivators and livestock herders. So, although people can be shown different rainwater harvesting methods can be technically and tactically feasible, it's not necessarily socially acceptable and economically attractive to up-scale it from the household levels."

In addition, after the research phase has ended, the projects must be followed up on an official level, otherwise they risk losing traction.

"This support must come from local and regional government; they must set aside money for an extension officer on the ground who needs to stay involved with the homestead farmers," says Backeberg.

As an example he cites a successful research project that Cobus Botha was heading in the Free State. At its peak, 1000 households used in-field rainwater harvesting in their gardens, but when the researchers withdrew, no one took on the task of driving the project and it all but collapsed.

"If government recognizes the importance of every household producing some food in their backyard, that would be a huge contribution to food security"

Some farmers are still using the technique, but with no guidance from local extension officers.

Botha agrees with Backeberg that strong political support – from national to local level – is needed for the promotion of food production at household level.

"If government recognizes the importance of every household producing some food in their backyard, that would be a huge contribution to food security. One way forward would be to train and educate extension officers, and to set up demonstration plots. That's the only way to show the difference between technologies; it's also where you can teach people hands on," Botha says.

But, he points out, there is no universal solution that would fit all countries. In-field rainwater harvesting has worked

well in South Africa, Zimbabwe and Botswana. But other methods have proved just as successful in other parts of the continent.

"There are examples in Kenya and Uganda where large schemes of rainwater harvesting work, and where the water is stored in big dams and ponds.

But one has to evaluate every landscape on its own merits. In the villages where we've been working, people didn't like the idea of ponds because they thought they were a danger to their children and a breeding area for mosquitos."

Barbara van Koppen, Principal Researcher: Poverty Gender and Water, at IWMI (International Water Management Institute) South Africa, argues that improving water access at household level can be vital to food security, but it must be looked at from a multi-purpose perspective.

"When you ask people what they need, most people say improved water delivery to homesteads, rather than a large irrigation scheme. But the ●●●

Tshepo Khumbane, South Africa

Founding member of the Water for food Movement

- In her home garden, Tshepo Khumbane has developed a range of low-cost rainwater harvesting techniques anchored in indigenous knowledge.
- Khumbane hosts mind-mobilization workshops to empower rural communities to grow crops and vegetables within their homesteads using methods such as soil-moisture retention and organic fertilization; tank digging for harvesting rainwater and runoff; grey water reuse; food processing and weather charting.
- Much emphasis is on "mobilizing of minds" – people to realise they have the power to change their own situation.



COVER STORY

●●● homestead is often overlooked by policy makers because agriculturalists think it's too small-scale and the experts in the domestic sector think of water only as drinking water," says Van Koppen.

Instead of getting stuck in this administrative divide, it's time to start thinking about the multiple use of water often practiced in rural areas, Van Koppen points out.

"This sector is an important field to tap into. People living in rural communities capture water in different ways. Rooftop harvesting is one technique, run-off another. It's all about local adaptation. People don't have one source of water only, they know how to combine the different sources and the water is used for multiple purposes," she says.

With this in mind, IWMI has, in recent years, moved towards a more community-driven water development



"The volumes of water you need to grow food is so much more than the rainfall in a semi-dry area. That is why soil improvement is so important."

approach, where existing local practices are taken into consideration.

"If we build on existing investments done by the farmers in an area, it becomes more sustainable. At the bottom line it's quite simple: we must plan and develop according to people's needs."

Her words are echoed by Richard Holden, Business Analyst at Trans-Caledon Tunnel Authority in Pretoria. In rural areas people use water in a far more holistic way compared to people in urban areas, he points out.

"They know how precious it is and they often use multiple sources of water to ensure their quality of life," he says.

"Most people coming from the outside make decisions for communities without understanding what the community systems are. If we want a sustainable solution, we need to look at what the communities have done for themselves, and build on that."

Rainwater harvesting is common throughout South Africa's semi-dry provinces and, in Holden's experience, most people use the water for potable purposes in their household. The wastewater could then be used in the garden.

"Some people talk about rainwater harvesting as if it was something new, when in fact it is one of the most ancient forms of collecting water. I've visited villages where every single household had some form of rainwater harvesting. But the volume of water coming off a normal-sized roof is not enough to give you food security," Holden says.

After having worked for decades in the water sector – from the smallest sanitary scheme to the largest dams – Holden is convinced that soil improvement such as mulching, which retains the moisture in the soil for longer, is the most efficient way to help enhance food security, especially in comparison with rooftop rainwater harvesting.

"There are, of course, examples showing that farmers can get a high degree of food security with the help of rainwater harvesting. But if they can't store enough water, which is very difficult at household-level, they still depend on normal rainfalls. And the volumes of water you need to grow food is so much more than the rainfall in a semi-dry area. That is why soil improvement is so important," says Holden. ●

Meta Meta, Ethiopia

- MetaMeta together with Mekelle University and Bureau of Agriculture and Rural Development in Ethiopia, have been researching how roads can be used for rainwater harvesting.
- The project has mainly been conducted in Ethiopia. The aim is to channel rainwater into aquifers and ponds and store it for later use.
- Theory has been put into practice in the region of Tigray and has shown that it's possible to integrate rainwater harvesting with road development on a landscape scale. The project is now expanding to Kenya and Uganda.





Grassroot Trust, Zambia



- An NGO mobilizing land owners and policy-makers at local levels to promote a more holistic approach to the production of food, fibre and energy.
- Low-input organic farming is focusing on rehabilitating the soil which will enhance nutrient flow and reduce evaporation, moisture loss and run-offs, making rains far more effective. Traditional methods such as inter-cropping are used to build organic cover and improve the soil.
- Farmers and researchers are invited to Grassroot Trust's demonstrationfarm to learn hands-on about holistic approach to agriculture.

Foto: Grassroot Trust



AMERICA'S INFRASTRUCTURE

Text | Randall Hackley Photo | Istockphoto

AMONG THE CAMPAIGN PROMISES PRESIDENT DONALD TRUMP MADE WAS TO FIX "AMERICA'S CRUMBLING INFRASTRUCTURE," VOWING TO PRIORITIZE INVESTMENTS IN TRANSPORTATION, PIPELINES, PORTS, CLEAN WATER, TELECOMMUNICATIONS, ENERGY AND A MODERNIZED ELECTRICITY GRID.



Trump called for USD 1 trillion in spending over ten years to fuel an "infrastructure first" policy that would create thousands of jobs and accelerate growth. But the Republican leader's plans haven't been welcomed by all: Democratic senators came up with a rival infrastructure plan that includes repairing rail lines and tunnels between New York and New Jersey damaged by 2012 flooding during Hurricane Sandy.

"Make clean water a high priority," Trump's infrastructure plan said. "Develop a long-term water infrastructure plan with city, state and federal leaders to upgrade aging water systems" and help states and local governments "upgrade critical drinking water and wastewater infrastructure."

Now that he's in office, expectations are that construction and water technology companies will see increased federal dollars headed their way along with private investment. According to the American Water Works Association, replacing U.S. water pipes alone - some made of wood and more than 120 years old - would cost at least USD 1 trillion over the next 25 years.

A list of 50 proposed priority infrastructure projects (<https://www.documentcloud.org/documents/3409546-Emergency-NatSec50Projects-121416-1-Reduced.html>) assembled by Trump advisers included works using USD 137 billion in tax credits equivalent to 24,000 jobs over a decade to upgrade U.S. highways, bridges, ports and waterways, some damaged by extreme storms and rising seas from climate change.

The projects under consideration include inland waterway locks, dams and canal dredging from New Orleans to the Mississippi, Illinois and Ohio Rivers. They also include an underground water storage, hydro and solar project by New Mexico's Elephant Butte reservoir; Project Clean Lake and seven new water tunnels in Cleveland; harbour deepening in Savannah, Georgia; and repairing several hydroelectric plants, some of which have 50-year-old turbines.

This takes place after the American Society of Civil Engineers gave U.S. infrastructure a D+ in March, the

same as its last report in 2013, or just above failing on an A to F scale. Water and engineering categories such as dams, drinking water, inland waterways and roads had D grades. Transit a D-. Wastewater, hazardous waste and energy D+, bridges and ports C+.

ASCE's 2017 Infrastructure Report Card link is at www.infrastructurereportcard.org

U.S. Congress in December passed the Water Infrastructure Improvement Act, which authorized almost USD 10 billion in federal investments. Publicly traded infrastructure companies have since risen in value on New York markets anticipating increased business. Already, USD 170 million of authorized spending has been earmarked for Flint, Michigan, which has suffered from a lead-poisoning water crisis.

Alarming scientists and environmentalists, candidate Trump also vowed to pull the U.S. out of the 2015 Paris climate accord, a UN agreement signed by more than 190 nations to curb greenhouse-gas emissions linked to global warming. It's not clear early in Trump's term though when or if the president will make good on that campaign promise.

So far Trump has signed legislation to repeal an Obama-era regulation requiring coal-mining companies to clean streams of mine waste. "In eliminating this rule I am continuing to keep my promise to the American people to get rid of wasteful regulations," Trump said at a 16 February White House ceremony.

Another measure facing possible rescinding by Trump may be the 2015 Waters of the U.S. rule that defined waterways subject to pollution regulations. Critics - including more than ten U.S. states - went to court over the measure, saying it over-expanded the EPA's Clean Water Act jurisdiction to include prairie land and dry creek beds, not just navigable waters.

Environmentalists are deeply concerned about the reversals in mining, water and climate sectors.

"For the last several years, whenever Congress would concoct some way to roll back a rule protecting clean air or clean water or undermine the fight against climate change, we always felt confident as we had an adult in charge at the White House," Michael Brune, executive director of the environmental group Sierra Club, told The New York Times.

"Now, what used to be a wish list of the oil and coal and gas industry has become the to-do list for Congress and the White House."

Still, the Trump infrastructure plans may face chal-

TURE FIRST

“For the last several years, whenever Congress would concoct some way to roll back a rule protecting clean air or clean water or undermine the fight against climate change, we always felt confident as we had an adult in charge at the White House. Now, what used to be a wish list of the oil and coal and gas industry has become the to-do list for Congress and the White House.”

Michael Brune, executive director of the environmental group Sierra Club, in New York Times.

- Trump in January became the first to use the word ‘infrastructure’ in a presidential inaugural address, reflecting a new focus for American leaders on maintenance, repairs and upgrades

The root cause of how lead got into Flint’s water was corrosion, according to a study by Environmental Science and Technology (<http://www.smithsonianmag.com/science-nature/chemical-study-ground-zero-house-flint-water-crisis-180962030/>)

- The U.S. has an estimated 21.5 million household septic systems, 3 million in low-lying Florida where saltwater intrusion occurs with only 17,000 having advanced pollution-removal technology
- The Great Lakes shared by the U.S. and Canada has one-fifth of the world’s fresh water supply and provides drinking water for 40 million people.

allenges over funding, taxes and a competing Democrat plan that Senator Chuck Schumer of New York proposed, a USD 1 trillion option featuring transport, rail and water-related repairs. Of the U.S.’s 1.5 million miles of water-related pipes, the EPA estimates there are 240,000 water main breaks a year, or about 27 every hour.

Highlights from the Senate infrastructure “blueprint” include USD 110 billion for water and sewage works to raise underinvestment attributed to a “hesitancy” to raise user rates. It also includes USD 65 billion for ports, waterways and airports, USD 25 billion of that to help build more climate-resilient communities,

and USD 10 billion for dredging, lock maintenance and other port and inland water needs.

(Link: <http://www.infrastructurereportcard.org/asce-news/democrats-infrastructure-blueprint-further-legislative-conversation/>)

Not everyone favors big infrastructure projects. “Trump et al are focusing on pouring concrete when they should be thinking of reforms of water management (e.g., re-allocating Colorado River water in percent rather than acre feet) as it’s much cheaper and much more effective to fix systems than build huge structures to make up for poor performance,” David Zetland, a water economist at Leiden University College in the Netherlands and author of “Living With Water Scarcity,” told WaterFront by e-mail.

“But I’m guessing that Trump will not favour those better solutions because he wants to cut ribbons in front of big things rather than take time to allow communities to work on many small things.” ●





“I’M BASICALLY AN OPTIMIST”

STEPHEN MCCAFFREY ON WAR, PEACE, HUMAN RIGHTS, AND NATURE’S MAGIC:

Text | Christina Anderson • Photo | McGeorge School of Law, University of the Pacific

FOR DECADES STEPHEN MCCAFFREY, THIS YEAR’S STOCKHOLM WATER PRIZE LAUREATE, HAS WORKED FOR THE PEACEFUL SHARING OF WATER. IN THIS INTERVIEW WITH WATERFRONT, PROFESSOR MCCAFFREY TELLS ABOUT EVERYTHING FROM THE ORIGINS OF HIS ENVIRONMENTAL INTEREST TO WHY HE IS HOPEFUL WE CAN SHARE THIS VITAL RESOURCE. .

This year’s Stockholm Water Prize is awarded to Stephen McCaffrey, law professor at the McGeorge School of Law in Sacramento, California, for his contribution to the sustainable and peaceful management of shared waters.

In its announcement on March 22, the nominating committee cited McCaffrey’s seminal work on treaty negotiation, *The Law of International Watercourses*, and his facilitation of complex negotiations concerning international watercourses and inter-state disputes.

McCaffrey was UN Special Rapporteur for the International Law Commission

1985–1991. According to the nominating committee, his diplomacy during those years resulted in the 1997 adoption of the UN Convention on the Law of Non-navigational Use of International Watercourses, which embody principles that are the basis for adjudicating international water disputes today and planning for long-term management for countries that share international waters.

In his early writings, Professor McCaffrey also articulated the human right to water, later recognized by the UN General Assembly in 2010.

What inspired you to focus on water?

Life has a way of sweeping you into places – like a river – where you have opportunities. As far back as the Boy Scouts we did a lot of backpacking in the Sierra Nevada. I had these opportunities to be exposed to nature a lot growing up, and I think that probably played a role in my interest in the environment. The thing that captures one’s attention as a human is flowing water or even a lake, or the ocean. There’s something magical about it.

What motivates you?

The belief that growing competition for a finite quantity of freshwater must take place within a legal framework, just as a football game must be played according to rules. A generally accepted regulatory framework provides stability, increases efficiency, and helps to avoid disputes, and is thus in the interest of all states.



The UN Watercourses Convention, a product of the work of the International Law Commission, entered into force in 2014. What difference, if any, has this made and will this make?

There are really three parts to the answer to this question: **The first** is that all states that have become parties to the Convention are bound by it. **The second** is that the Convention's entry into force seems to have increased respect for it as a normative instrument in the field. To the extent that the convention is a writing down of rules that were unwritten, then you could say entering into force isn't such a big deal. But there is a tendency to respect treaties that have entered into force more than those that haven't. So, entry into force promotes international law in this way. And **the third** is that insofar as the Convention constitutes a codification of norms of customary international law, binding on all states, its entry into force was not necessary to this, nor did it affect the status of the Convention as a codification.

Will countries cooperate over increased pressure on water resources?

I am basically an optimist, and that attitude carries over into my work on international watercourses. I am not alone in this, however, as studies have shown that freshwater is generally a catalyst for cooperation rather than conflict. The increasing pressure on freshwater resources makes it even more important that there is a generally accepted normative framework governing the relations of countries sharing those resources.

Can you give an example where pressure over a shared water source could have led to a conflict but didn't?

Pakistan and India. Why has the 1960 Indus Water Treaty continued to function successfully, even though they've had several wars? The Permanent Indus Commission has continued to meet

"I had these opportunities to be exposed to nature a lot growing up, and I think that probably played a role in my interest in the environment."

despite conflicts and the treaty generally has continued to function, and it has provided a conduit for continued communication. The Permanent Indus Commission is one engineer from each country (from their respective water ministries) and they meet regularly. That is an example of how water binds countries together in good ways.

Why is water a catalyst for cooperation compared to other natural resources?

Countries realize that if you are involved in a conflict over water, the outcome is uncertain, it's expensive and you may not prevail. Most wars that have been fought over water ostensibly really weren't just a conflict over water. Water can be an excuse, but it's typically not what sparks hostilities. Aaron Wolf has studied this quite carefully. That's his conclusion, that water is much more likely to promote cooperation than to create conflict. Water is vital. You don't want to risk losing access to it.

What difference do you feel your work has made locally, nationally and internationally?

It might be said to have had impacts on all three levels: locally and nationally, my work on the human right to water has perhaps helped to raise consciousness concerning the vital and essential nature of water to humans and the responsibility of governments to ensure that all have access to clean water. Internationally, the UN Watercourses Convention has provided states, courts and tribunals with a normative framework, setting out the general rights and obligations of countries that share freshwater resources.

That water ought to be a human right seems so self-evident. What kinds of opposition do you see over recognizing water as a human right?

The US says it doesn't believe there is a human right to water yet. Other countries like Britain, Canada, Australia have said the same thing. When the resolution on the human right to water was adopted by the UN General Assembly, while there were no negative votes, there

were a number of abstentions. These are the countries that should be able to afford making sure that each member of the population has access to clean water. What these countries say is that A) the General Assembly doesn't have law-making authority, B) The fact that the GA says so doesn't make it so, and C) There does not exist a treaty.

To be recognized as a norm of customary international law there needs to be widespread practice by states, because they think the practice is legally required. The US says there is no evidence that this process has occurred. But the evidence is growing because the number of countries that support the human right to water is growing.

How will the human right to water manifest?

I think this is going to happen incrementally like with all economic, social and cultural rights. I think it's more likely that we will see it in provisions in treaties and regional treaties, such as the Senegal Water Charter. That refers to the human right to water. I think it is important that everybody work on implementing it.

The former UN special rapporteur on the right to safe drinking water, Catarina de Albuquerque, visited California and found that there were 250,000 people, mostly agricultural workers, living in the Central Valley whose human right to water was not being implemented, which was embarrassing. Within a year of Catarina's report, Governor Brown did sign the second human right to water bill. It's weaker than one that had failed earlier, but it's definitely there. ●

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How to make a water project bankable

STRENGTHEN THE FINANCIAL CAPITAL PLANNING

Text | André Kruger

WATER UTILITIES ON THE AFRICAN CONTINENT NEED TO INCREASINGLY FOCUS ON THEIR FINANCIAL CAPITAL PLANNING IF THEY ARE SERIOUS ABOUT THE MODERNIZATION OF THE WATER UTILITY INDUSTRY, WRITES ANDRÉ KRUGER IN THIS FOCUS.

According to the recently launched PPP Certification Program, an innovation of the International Finance Institutions supported by the World Bank Group, bankability means: “The ability of a project to be accepted by lenders as an investment under a project finance scheme, or the ability of the project to raise a significant amount of funding by means of long-term loans under project finance, due to the creditworthiness of the project in terms of sufficiency and reliability of future cash-flows.”

A key aspect that needs to be addressed in improving water service delivery specifically on the African continent, concerns the increased capacitation of the Directors of Finance of the water utilities. Attention in the water sector is currently mainly focussed on engineering issues, the quality of water followed by the goal to supply water to the poor. Additional focus is required on empowering the Finance Directors such that they can play an increasing role within their management teams and to focus on the modernization, at least of the financial management, of the water utility industry.

Water utilities need to actively support their long term technical planning with financial capital planning. Integrated financial capital planning premised on asset management strategies and -plans need to consider making use of alternative procurement and service delivery options that may involve contracting with the private sector over the medium to the long term.

The mere fact that utility management teams consider making use of PPP procurement alternatives will allow them to increasingly develop better feasibility- and subsequent improved bankability studies. Considering PPP options typically involve life cycle cost and income considerations whilst local PPP policies and regulations can guide utilities towards ensuring that projects are affordable, that significant risks be transferred to the private sector and that value for money be attained.

A life cycle approach will inadvertently focus the mind on water as a commodity and the required targeted cost reflective tariff setting as compared to the current reality. The Finance

Directors need to be capacitated to structure transactions such that the feasibility – and bankability stages will also deal with the:

- Consideration of the use of blended finance alternatives i.e. government funding, grant funding, bond market instruments supported by wealth funds, pension funds and insurance companies, commercial bank and IFI funding. This whilst ensuring:
 - Optimal value for money and
 - Optimal provision for services to the poor
- Major commercial and or industrial water users and specifically their needs, their credit strength and the potential to structure the delivery of water and the payment by these users such that it can enhance the bankability of a public utility project
- Billing, collection and tariff gap challenges considering best practises from across various sectors i.e. the mobile phone sector

The traditional governance and finance models being used by public sector water utilities, especially in Africa, have led to insufficient numbers of bankable projects being prepared for funding by both the private financial institutions and the IFI communities.

“The traditional governance and finance models being used by public sector water utilities, especially in Africa, have led to insufficient numbers of bankable projects being prepared for funding.”

ABOUT THE AUTHOR



André Kruger is a CP³P Trainer & Head, Africa Investment and Integration Desk (AVID), Nepad Business Foundation (NBF). NBF, together with WaterAid and WSUP, have embarked upon setting up the Pan Africa Water Finance Forum that has as its main aim the empowerment of the Finance Directors responsible for water across 100 African Cities.

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policy brief, developed by members of the AGWA policy group, recommendations on how water can inform the implementation of the Paris Agreement, illustrated through its role in the Nationally Determined Contributions (NDCs) are presented.

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