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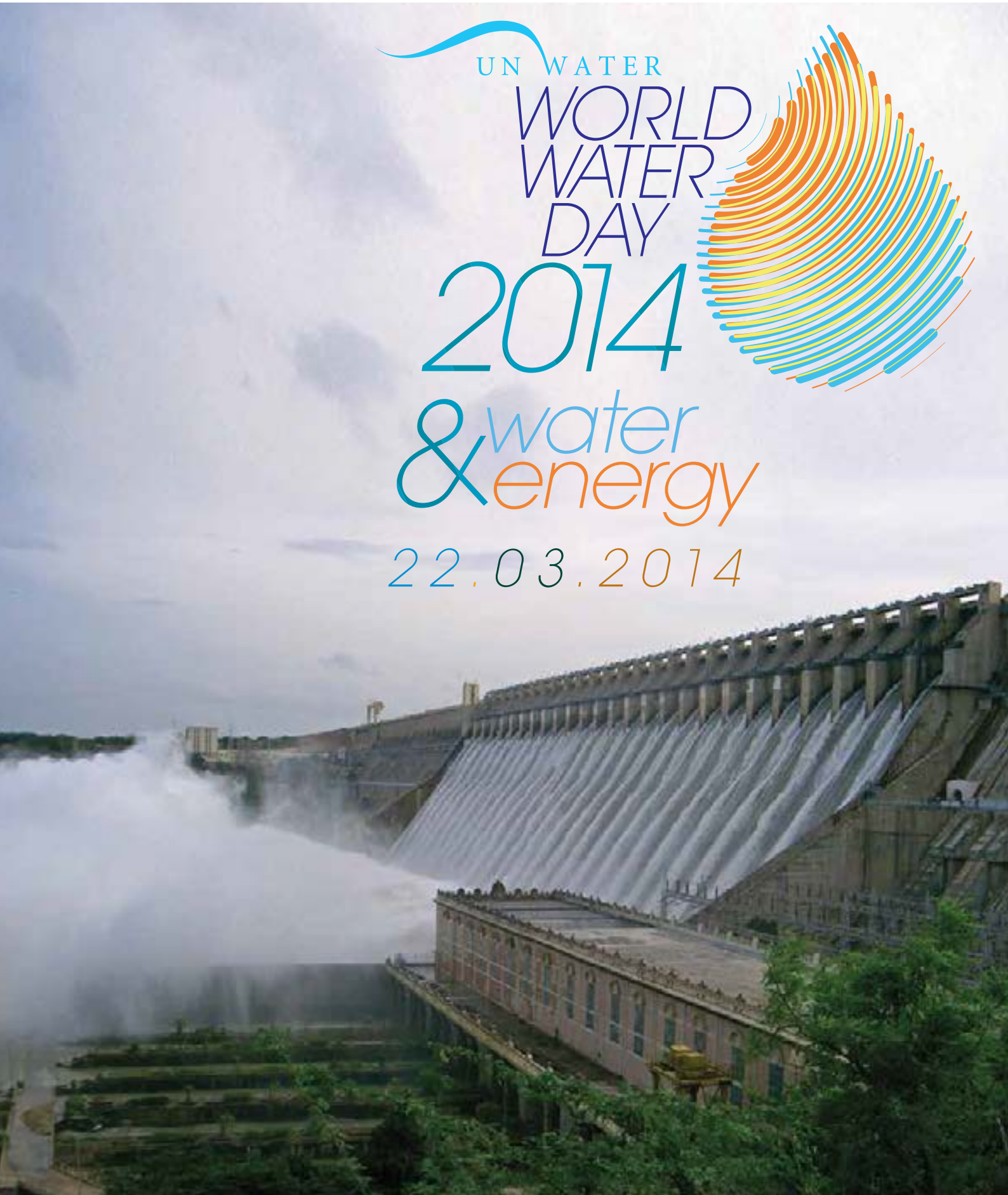
Water, Sanitation & Hygiene

In Search of Solutions to Africa's Development Challenges and Strengthening Capacities



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Water, Sanitation & Hygiene

In Search of Solutions to Africa's Development Problems and Strengthening Capacities

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Water and Energy

Water and energy are closely interlinked and interdependent. Energy generation and transmission requires utilization of water resources, particularly for hydroelectric, nuclear, and thermal energy sources. Recent interest in biofuels also creates an incremental demand on water resources; the latest World Water Development Report (2012) predicts that even a nominal increase in biofuel demand (say 5% of road transport by 2030, as predicted by International Energy Agency) could push up the water demand by as much as 20% of the water used for agriculture worldwide. Additionally, biofuel production is linked to increases in water pollution through increased used of fertilizers and agricultural chemicals. Conversely, about 8% of the global energy generation is used for pumping, treating and transporting water to various consumers. Co-production of water and energy, as is the case for geothermal energy generation, offers interesting opportunities to energy- and water-scarce countries.

One may, therefore, argue that reflecting the interlinkages between water and energy should be given adequate attention in the new and emerging agenda around the so-called Sustainable Development Goals and the post-2015 development dialogue. This could also be linked to the design of a climate resilient and robust green economy, as noted in the Section III of the Rio+20 outcome document "The Future We Want." With industries being major water and energy consumers, a green economy will be contingent to the greening of the industrial sector and resource efficient, cleaner production. A particular emphasis has to be placed on increasing the water use efficiency in energy production – essentially producing more kWh per drop of water. This would require a policy environment in which economic and social incentives are offered to promote water use efficiency and protect freshwater ecosystems.

Source: World Water Day 2014

Angola

Potable Water Supply to Be Reinforced in 2015

Trunz Water Systems

Huambo — The potable water supply system in the central Huambo Province is to be reinforced in 2015, year in which it is predicted the end of the construction works of the new Water Treatment and Distribution Station.

The information was given recently to ANGOP by the provincial director of energy and water, Jorge Andrade, who also said that currently Huambo City is being supplied by the water treatment station of Culimahâla, with the capacity to produce 1,360 cubic metres of water per hour, which he considered insufficient.

In order to increase the capacity, he said, it is underway a plan to build a new station, near the Cunhogamua river.

The Energy and Water sector in Huambo Province has 163 piped water supply systems, 398 fountains, among other water distribution facilities.

The director also informed that the water supply rate for the city is of 39.3 per cent for an estimated 2.5 million inhabitants.

Central African Republic

Drinking Water Restored to Over 183,000 People Ahead of the Rainy Season

Bangui — Just ahead of the onset of the rainy season, which increases the risk of water-borne diseases like cholera, UNICEF and its partners have restored safe and chlorinated drinking water for more than 183,000 displaced people across the Central African Republic (CAR).

"Access to safe drinking water remains out of reach to many people who have been displaced by the violence," said UNICEF CAR Representative Souleymane Diabaté. "As the first heavy rains have already begun, standing water and flooding increase the risk of a cholera outbreak.

"Children are particularly vulnerable to diseases related to bad water and inadequate sanitation conditions and reliable supply of safe drinking water is crucial to their survival and well-being."

Current situation in Central African Republic

More than a year after the beginning of a conflict, many displaced families still have little or no access to safe water and those with access have a fraction of what is needed.

Among the crucial actions UNICEF and its partners have taken in the past two months are the following:

- Over 72,000 people who fled their homes, leaving everything behind, received soap, jerry cans and information on appropriate hygiene practices, in an effort to prevent the outbreak of contagious waterborne diseases.

- In the vulnerable Muslim communities of PK5, PK12 and military airport in Bangui, which are surrounded and threatened by anti-Balaka militias, 5,000 displaced people continued to receive emergency provisions of water in the last several months.

- In Bossangoa, close to 17,000 internally displaced people now have access to over 22 litres of water per person per day after UNICEF helped to restore the facilities of the national water company that were pillaged during the conflict. UNICEF is also working to improve both quantity and quality of water for 352,000 vulnerable people.

- With help from the European Union's humanitarian arm, ECHO, UNICEF is also working with partners to increase the water production of the Bangui water treatment plant, restore the municipal water distribution system in Bouar and repair hand pumps, boreholes and wells in the interior of the country, wherever access permits.

"In the interior of the country, many water points have been destroyed or have fallen into disrepair, having had no maintenance for over a year. Whenever possible, we are repairing rather than creating new water points, which is more sustainable than distributing water by trucking," Diabate added.

In 2014, UNICEF is requesting US$62 million to meet the humanitarian needs of children in CAR, which includes US$14 million to cover water, sanitation and hygiene needs.

Gambia

D2.5 Million Water Project Commissioned

Contaminated drinking water leads to epidemics

A rural water project financed at a tune of D2.5M was recently commissioned by the Lands and Regional Government minister in the Illiassa Constituency of the North Bank Region (NBR).

Facilitated by the Rural Development Organisation-Gambia (RDO), the project was sponsored by Stiftung Sabab Lou of Germany and Lufthansa Help Alliance. It will provide clean drinking water through solar-powered boreholes to Jumangsarr, Dutabulu and Chamen communities. The scheme also dug 18 wells at the Jumangsarr horticultural garden as well as four and nine reservoirs in Dutabulu and Chamen communities respectively, meant to promote food security in the area.

Minister Momodou Kolley in his inaugural statement thanked the RDO for its support to rural development in The Gambia, saying the water project will enhance the livelihood of the beneficiaries.

The minister said the project is in line with the government's efforts to provide clean drinking water to all the communities across the country. He expressed hope that the provision of this vital amenity will improve the livelihood of the dwellers, especially women and children who usually bear the burden of fetching water from far distances.

The Lands minister further underscored the significance of the project to the health and wellbeing of the natives, noting that it now enables them to use safe drinking water for their domestic use unlike the previous sources.

Kolley said the need for the provision of clean drinking water has long been recognised, but noted that it was not until the Second Republic under the leadership of President Jammeh when it has been pursued as a matter of urgency. The chief executive officer of RDO, Jamu Ceeesay, expressed hope that the project will transform the lives of the beneficiaries and enable them increase their income generating capacity for enhanced livelihood.

"The project also aims to promote food security in the area and strengthen sustainable income generating activities for women and youth. This can lead to economic empowerment and self-reliance," he added.

The founder of RDO, Dr. Friedrich Keller, expressed his delight for the warm welcome accorded to them by the village of Jumangsarr, assuring that his charity is here to assist the women and youth in rural settlements of The Gambia. He said the organisation will work closely with the Village Development Committees and the relevant local authorities to identify possible projects for future support and funding.

The Kachang Ward councilor, Tamba Marong, also a native of the Jumangsarr, expressed their gratitude to RDO and its partners for this assistance.

"I want to seize this opportunity on behalf of the community to sincerely thank our German friends for funding this very important project. This is indeed a unique project," he concluded.

The chief of Upper Badibou district, Ebrima Ansu Tamba Jammeh; the Regional Agricultural director, Saikou Sanyang; and the alkalo of the village, Kalilo Jadama, all took turns to hail RDO for championing the development of rural Gambia.

Liberia

Monrovia Smells

Monrovia is the capital city of Liberia

What has become a bad face for Liberia to the outside world is sourly turning the country into "Hold your noise and

pass" as in every corner of Monrovia, especially Gurley Street that has adopted the name "pupu camp."

A businesswoman only identified as Mrs. Cooper, said they had cried to the government through the Monrovia City Corporation to come to their aid, but no one has come from the City Major office to listen to their concerns. She said since the human feces started running into the streets as a result burst sewage, their businesses have lost customers.

"I don't know what kind of country we are in so my brother; the drainage spoiled since last month (February) and government cars pass here every day, but yet, nobody is coming to our aid. See my shop, for whole week nobody will come and ask for something because of this stench," Mrs. Cooper lamented.

A phone seller, Johnson Sieh, also told this paper that peddlers in the streets are getting sick every day so government should intervene immediately to avert a health catastrophe in Monrovia. Johnson specifically appealed to Montserrado County Superintendent to do something so that they can continue with their businesses.

The street peddlers quoted a German national, who refused to be identified, as disclosing, "I and my boss lady went to get some items from the boutique but to get there we have to pass through this dirty pupu water you seeing it yourself."

Malawi

Development of irrigated agriculture to increase food security and economic growth in Malawi

The Government of Malawi has received a €1.8 million grant from the Africa Water Facility to help prepare a project to expand irrigated agriculture in the Lower Shire Valley. The project will help overcome the adverse effects of prolonged dry spells and frequent flooding, improve and spread agricultural production, as well as create employment opportunities through farming and irrigation ventures. The grant will be used to finance a feasibility study and preparatory activities to mobilize funding for an irrigation plan covering 21,000 hectares. Over 272,000 people are expected to benefit from this project.

South Africa

Govt Declares War On Water Leaks

Government is on a mission to end water wastage resulting from ageing infrastructure and human error, which leads to the country losing 37% of this precious natural resource per annum.

Minister of Water and Environmental Affairs, Rejoice Mabudafhasi, in partnership with the City of Tshwane, today took the War on Leaks campaign to Mamelodi, Tshwane, with the express aim of putting a stop to water leaks in households, schools, clinics and other public buildings.

The project is currently being implemented in different municipalities across the country, a move that will go a long way to help government save money on fixing damaged water infrastructure, for which it currently pays R7 billion a year.

Water leaking

Apart from the good news of saving water by eliminating unnecessary wastage, a big spin off of the project is job creation.

The project will see about 200 youths being trained in basic plumbing, which in return will create job opportunities for them. The youth will fix leaking pipes in households, schools and public buildings - helping to save millions of rands spent by the city on water leaks.

Speaking during the launch on Friday at Ikageng Community Centre, Deputy Minister Mabudafhasi said R5 million has been allocated for the project in the City of Tshwane. The amount includes R3 million from the department and R200 million donated by Rand Water.

She said that the youth who will receive skills training will attend a six-month course, offered by Rand Water at Rand Water Academy. They will also get training on health and safety, machine operation and moving vessels, amongst others.

South Sudan

140 000 people to get cholera vaccine in South Sudan

WHO is working with the South Sudan Government and partners to provide vaccines to protect nearly 140 000 people living in temporary camps in South Sudan against cholera.

The vaccines come from an emergency stockpile managed by WHO, the International Federation of the Red Cross and Red Crescent Societies (IFRC), Médecins Sans Frontières (MSF) and UNICEF. It is the first time the stockpile, created in 2013 by WHO, is being activated.

Although currently there is not a cholera outbreak, people displaced by the recent conflict and living in the camps are at risk due to poor sanitary conditions and overcrowding.

Starting today, 94 000 people will be vaccinated in the Minkaman camp, Awerial County, targeting displaced people and host communities, followed by vaccination campaigns in camps based in Juba, covering an additional 43 000 people.

Two doses of vaccine are required for an individual to be protected. The campaign begins with an initial round of vaccinations followed by - after a required 14 day interval - a second round of doses, which will complete the vaccination. For such a campaign to be effective, it is vital that a second dose is administered and this factor has led to the decision to begin with Minkaman, Awerial County, and Juba camps.

"Minkaman camp in Awerial County and Juba camp have been selected because of the relative stability of the situation and easier access in those places," says Dr Abdinasir Abubakar, from WHO's Disease Surveillance and Response team, in South Sudan. "We are also looking at other camps, and once the accessibility and security improves, we will expand the cholera vaccination campaigns into these areas. We will be reviewing the situation day by day."

Cholera outbreak in the town of Yei, South Sudan

Why vaccinate against cholera?

Cholera is an acute diarrhoeal infection caused by ingestion of contaminated food or water and affects children and adults. It can kill in a matter of hours due to rapid dehydration.

Children are at a higher risk of infection. Once infected, in addition to dehydration, children develop severe hypoglycaemia that can lead to coma and death. Similarly, 'at risk' groups (for example malnourished people, the elderly, pregnant women, people with severe chronic disease, AIDS patients) are more likely to develop severe forms of the disease.

Access to clean water and adequate sanitation remain the mainstays of preventing both endemic cholera and cholera outbreaks, together with health education to promote the adoption of appropriate hygiene practices. Cholera

vaccination is a safe and effective additional tool that can be used under the right conditions to supplement existing priority cholera control measures.

WHO will coordinate the campaign in collaboration with MSF and Medair as an implementing partner in Awerial and Juba respectively.

Sudan

Water Project Progressing in North Darfur

El Fasher — The Wadi Elkou project for water management in North Darfur was further inaugurated in El Fasher, capital of North Darfur on Wednesday morning. The event was attended by the government of North Darfur, the United Nations Environment Programme, and the European Union.

The water management and livelihood project aims to improve the livelihoods of inhabitants of North Darfur at a total cost of €6.45 million funded by the European Union.

Howard Bell, general supervisor of the United Nations Environment Programme explained that the aim is to improve the livelihoods of more than the 5,000 people affected by the war in North Darfur, directly or indirectly, besides working on sustainable management of the natural resources in the region. He added that the project will be implemented by the UN Environment Programme during the upcoming three years.

Tanzania

Scientists Embark On Green Water Recycling Technique

Tanzania scientists are exploring an affordable innovation, constructed wetlands technology, for treating and reusing waste water for agriculture.

A constructed wetland is a shallow pool 0.6 meters deep, filled with limestone or gravel of different sizes designed to cleanse water that create growing conditions for plants. Vegetations like Phragmites grasses that remove pollutants are planted on the pond.

Features of artificial wetlands mimic those of the natural swamps and ponds but do not replace their functions.

As the debris from septic tanks seeps into the limestones, contaminants are filtered. Once the water reaches the root zone of wetland plants, micro-organisms in the soil destroy disease causing organisms-pathogens. The cleansed water is then channelled either into a pond, drainage or piped back to be re-used.

'This technique addresses water scarcity and shortage of fertilisers in agriculture,' says Prof Jamidu Katima from the College of Engineering and Technology, University of Dar es Salaam.

The lead researcher of the project says that the waste water contains rich plant nutrients; phosphorous and nitrogen, that flourishes crops like rice, maize, tomato and beans. In the project, the scientists use water from the pond for irrigating farms and fish farming. The research is currently happening in Morogoro. The Municipal Authority owns and maintains the ponds.

Prof Katima's research group has dispelled doubts regarding health dangers resulting from eating fish from the constructed wetland's pond.

The research group has health experts who monitor the quality of both fish and agricultural produce to ensure they don't cause health risks to human health.

Studies on constructed wetlands started way back in 1995 as collaborative research projects between the Royal Danish School of Pharmacy, University of Copenhagen, the Engineering Academy of Denmark and the University of Dar es Salaam. The Danish government was initially the main sponsor.

The Tanzanian Commission for Science and Technology in Tanzania (COSTECH), the government organisation that co-coordinates and promotes research and technology development activities, is currently the project funder. The organisation has also the role of disseminating research results to the public

Zimbabwe

Urgent Water Supply & Sanitation Rehabilitation Project Phase 2, Stage 1 (Zim-Fund Grant - USD 19,840,000)

This project will focus on Harare's infrastructure while preparatory activities for Chitungwiza, Redcliff and Ruwa are being carried out. The three-year project will benefit 1.9 million Zimbabweans by protecting public health and rehabilitating water and sanitation infrastructure. The interventions will be complemented with hygiene promotion targeting the most vulnerable segment of the population and support the local authorities to promote water conservation. The project will go a long way in alleviating the water woes currently being experienced in Zimbabwe.

During the signing ceremony, Magala re-affirmed the Bank's commitment to continue working with the donors and the Government of Zimbabwe to address the debt situation and thereby ensure that over time more resources are mobilized for the country's economic development to help the country achieve real economic transformation.

In his thank-you address, Minister Patrick Chinamasa called upon all beneficiary institutions to ensure smooth implementation of the projects by providing all the necessary support. He also urged development partners to scale up their contributions to Zim-Fund and encouraged non-participating partners to come on board.

The AfDB Group is committed to supporting the Government of Zimbabwe in its efforts to reduce poverty and to achieve equitable economic growth in the country. The approved resources will help the Zimbabwean Government to achieve its development goals as spelled out in the Zimbabwe Agenda for Socio-Economic Transformation (Zim Asset).

The Zim-Fund, which is administered by the AfDB, receives financial support from Australia, Denmark, Germany, Norway, Sweden, Switzerland and the United Kingdom.

CEO Water Mandate Actively Shaping Post-2015 Sustainable Development Agenda

On February 18, the President of the United Nations General Assembly convened a special Post-2015 thematic dialogue at UN Headquarters in New York City on "Water, Sanitation, and Sustainable Energy." Opening the two-day event, and addressing UN Member governments from developed and developing countries from around the world, UN Secretary-General Ban Ki-moon called on the international community to work together to secure water, sanitation, and sustainable energy for all.

Ban Ki-moon

In relation to water, the UN Secretary-General stated:
"We must improve water quality and the management of water resources and wastewater. This is a matter of justice and opportunity. That is why we launched the CEO Water Mandate in 2007 to engage the international business community in water and sanitation."

Kenya makes bold moves to address climate change risks

Dead cattle in the Kenyan drought

Many in East Africa still recall the devastating drought of 2009. In Kenya alone, it left nearly 80% of cattle dead in some parts of the country. Whether linked to the effects of global warming or not, this drought is estimated to have cost the Kenyan economy about US $12 billion. Its impact was most pronounced in the arid and semi-arid areas of the country.

The story does not begin there, however: The El Niño floods in 1997-1998 destroyed and damaged infrastructure valued at $0.8 billion, of which only $0.12 billion was ever replaced. The La Niña drought in 1999-2000, on the other hand, resulted in reduced losses to the economy estimated at US $5 billion. As East Africa's biggest economy, Kenya has set itself on a path to grow its economy to double-digit rates, investing in infrastructure that will help the country accelerate its economic plans. Among the areas of focus are mitigating and adapting to the effects of climate change through improved operations, and the long-term planning of infrastructure.

El Niño floods in Rhoka Village

The Government of Kenya's recognition of the complex water situation is reflected in its Kenya Vision 2030, Medium Term Plan (2013-2017) and the Jubilee Government's Manifesto. All three aim at achieving inclusive growth and equity of opportunity between counties; irrigating one million acres of land by 2018; increasing water storages by 2.4 billion cubic metres; achieving Government's Rural Electrification Program targets; and increasing access rates for water and sanitation to 75%.

Kyeni kya Thwake sand dam and shallow well

In one example, the Ministry of Environment, Water and Natural Resources has been using its own resources to develop the Thwake Multi-purpose Water Development Program since 2005. The program will strengthen the drought resilience of the two semi-arid counties of Kitui and Makueni and make them more food-independent and water-secure. The program will also help lower poverty rates, which are already over 60% in both counties and among the highest in Kenya. Both Kitui and Makueni currently have minimal irrigation, little electrification and, for a large part of the year, rural populations must excavate by hand into riverbeds to find drinking water.

The African Development Bank (AfDB) will step in and support the remainder of the financing for Phase 1 of the Thwake Program. That phase consists of the construction of a 77-metre-high rockfill dam to store 681 million cubic metres of water, as well as the necessary structures, designs and bidding documents required for the quick start-up of future phases. Phase 1 also includes the implementation of the Resettlement Action Plan and the compensation and relocation of the 1,067 households affected by the dam's creation. The project signed at the end of January 2014 is jointly financed by the AfDB (35%) and the Government of Kenya (65%) and will be implemented over six years.

The Ministry of Environment, Water and Natural Resources has already held site visits with its sister Ministries of Energy, Agriculture and ICT, as well as the two counties, to ensure that the remaining funding is budgeted to implement the program until completion in 2023. Phase 2 of the Thwake project consists of hydropower development; Phase 3 consists of rural and urban water supply, sanitation and wastewater Infrastructure; and Phase 4 consists of agriculture development through irrigation.

The Thwake program will contribute to several of Kenya's high-level development objectives: i) 10% towards the goal

of irrigating one million acres of land, ii) 25% towards the goal of increasing water storage by 2.4 billion cubic metres, iii) potable water for 674,700 rural people in a region with the lowest per capita water storage, iv) and up to 20 MW of new hydropower capacity in support of Kenya's Least Cost Rural Electrification Program.

Source: African Development Bank

Tropical plant Moringa provides alternative to soap for handwashing

SHARE-funded research (1) has found that *Moringa oleifera*, a common plant in many tropical and subtropical countries, can be an effective handwashing product if used in the correct concentration. Laboratory tests show that the plant has antibacterial activity against different pathogen, but its potential effect as a hand washing product had not been studied before.

By testing the effect of *Moringa oleifera* leaf powder on hands artificially contaminated with E. coli and comparing this to the effect of non-medicated liquid soap, the researchers from the London School of Hygiene and Tropical Medicine and SBI Consulting Ltd in Mozambique found that four grams of *Moringa oleifera* powder had the same effect as non-medicated soap when used for hand washing.
The next step will be to try this product in real conditions and study its acceptability and convenience for potential users.

SHARE stands for Sanitation and Hygiene Applied Research for Equity, and is a five year initiative (2010-2015) funded by

Moringa oleofera leaves and powder.

the UK Department for International Development

(1) Torondel, B., Opare, D., Brandberg, B., Cobb, E. and Cairncross, S., 2014. Efficacy of Moringa oleifera leaf powder as a hand- washing product : a crossover controlled study among healthy volunteers. BMC complementary and alternative medicine, 14 (57), pp. 1-7.

Water, food and energy nexus

Water, energy and food are inextricably linked. Water is an input for producing agricultural goods in the fields and along the entire agro-food supply chain. Energy is required to produce and distribute water and food: to pump water from groundwater or surface water sources, to power tractors and irrigation machinery, and to process and transport agricultural goods.

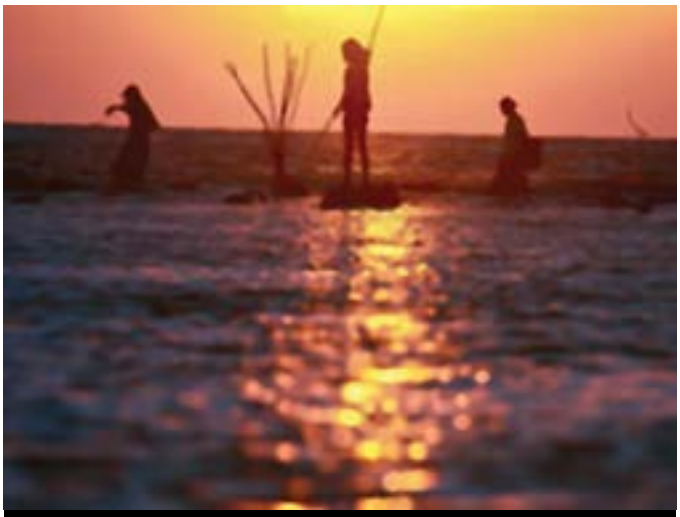
Agriculture is currently the largest user of water at the global level, accounting for 70% of total withdrawal. The food production and supply chain accounts for about 30% of total global energy consumption.

There are many synergies and trade-offs between water and energy use and food production. Using water to irrigate crops might promote food production but it can also reduce river flows and hydropower potential. Growing bioenergy crops under irrigated agriculture can increase overall water withdrawals and jeopardize food security. Converting surface irrigation into high efficiency pressurized irrigation may save water but may also result in higher energy use. Recognizing these synergies and balancing these trade-offs is central to jointly ensuring water, energy and food security.

The global community is well aware of food, energy and water challenges, but has so far addressed them in isolation, within sectoral boundaries. At the country level, fragmented sectoral responsibilities, lack of coordination, and inconsistencies between laws and regulatory frameworks may lead to misaligned incentives. If water, energy and food security are to be simultaneously achieved, decision-makers, including those responsible for only a single sector, need to consider broader influences and cross-sectoral impacts. A nexus approach to sectoral management, through enhanced dialogue, collaboration and coordination, is needed to ensure that co-benefits and trade-offs are considered and that appropriate safeguards are put in place.

Source: World Water Development Report 2014

San Francisco's World Ocean Summit 2014



©UN Photo/Martine Perret - As in all coastal communities in Timor-Leste, the ocean both feeds and sustains villagers. For generations coastal communities in Asia have relied on a wide range of fish for their livelihoods. However, fish stocks in South-East Asia are being significantly depleted due to illegal fishing and overfishing.

Ocean governance is critical: the more healthy and resilient the ocean, the more positive its contribution to the environmental, social and economic dimensions of sustainable development and vice versa. This week's World Ocean Summit is bringing together the Ocean community –global leaders, business, NGOs, think-tanks, academia and international organizations– to work on common solutions for sound governance, with the participation of Irina Bokova, Director General of UNESCO, and Wendy Watson-Wright, Executive Secretary of the Intergovernmental Oceanographic Commission of UNESCO.

The second World Ocean Summit took place in San Francisco, USA, from 24 to 26 February 2014. It was hosted by The Economist in partnership with National Geographic as a means to feature the ocean more prominently on global environmental, climate-change and sustainability agendas. The Ocean is essential to life: it provides the oxygen for every second breath we take, and 2/3 of the value of all the natural services offered by the planet. It regulates our weather, provides food for billions of people, and supports many industries such as fishing and aquaculture, shipping, oil and gas, marine and coastal tourism.

Yet, as the result of unsustainable practices, the Ocean is now one of the Earth's most threatened ecosystems. There is only one interconnected Ocean on this blue planet, which means that what we do in one part of it will ultimately affect the others. The cumulative impact of these human activities, whether land or sea-based, has already been estimated to affect almost the entire Ocean. The picture is clear: the problems are global and require global action, but will most often require local responses. Above all, we need to change the way we interact with the ocean.

To be effective, response strategies must be science-based, but the importance of the ocean is not matched by our knowledge. The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) promotes international cooperation in order to generate knowledge about the nature and resources of the ocean and coastal areas and to apply that knowledge to improve management, sustainable development, marine environment protection, and decision making processes. It has always been a pioneer in identifying threats to the Ocean, such as ocean acidification. It is leading global efforts to monitor the ocean and understand such emerging issues.

Public and private stakeholders brainstormed together in thematic working groups to identify solutions across sectors on the collective governance of the high seas, integrated ocean management within Exclusive Economic Zones or putting the ocean economy on a rational footing to conserve ecosystem services, among others.

Good governance is difficult to forge—not least in the high seas, where there is little formal jurisdiction. The World Ocean Summit is also an opportunity to meet with like-minded partners and discuss future collaboration to reach common goals. One such organization is the Global Ocean Commission (GOC), an independent international commission addressing ocean health and high seas governance that recently launched a call for a stand-alone Sustainable Development Goal for the ocean in the post-2015 agenda. Irina Bokova and Wendy Watson-Wright met with José María Figueres, co-Chair of the GOC and Former President, Republic of Costa Rica and discussed synergies on shared objectives such as the post-2015 sustainable development agenda, the definition of Marine Protected Areas for the high seas as a resilience mechanism for the ocean, and mitigating the impacts of climate change and ocean acidification.

UN-Water's Recommendations for a Global Goal on Water

UN-Water's 31 Members from the United Nations system and 36 international Partners have joint together in an expert consultation process to analyze the role of water in the Post-2015 Development Agenda based on their experience and expertise. The outcomes of the consultation is a consolidated technical advice from the UN-System to Member States to prioritize water in the post-2015 development agenda which includes a released report entitled "Securing Sustainable Water for All" which sets out their recommendations for a global goal for water in the context of the post-2015 development agenda. The general objective of "Securing Sustainable Water for All" is included in the five targets in the areas of drinking water, sanitation and hygiene, water resources, water governance, water-related disasters and wastewater pollution and water quality, which in turn have elements and indicators. The UN-Water SDG working group is still active in which the Cap-Net UNDP Chairperson, Dr. Joakim Harlin is the working group coordinator and can be contacted at joakim.harlin@undp.org .

UN Women and Water Supply and Sanitation Collaborative Council

UN Women and Water Supply and Sanitation Collaborative Council in partnership to improve access to hygiene and sanitation for women and girls

On the margins of International Women's Day commemoration across Senegal and West and Central Africa, the United Nations Entity for Gender Equality and Women's Empowerment (UN Women) and the Water Supply and Sanitation Collaborative Council (WSSCC) have formed an official partnership. The aim is to take action and to strengthen policies in health, hygiene and sanitation in order to contribute to improving economic and social living conditions for women and girls in West and Central Africa.

The programme was launched during a ceremony in Louga, in northern Senegal. It will directly affect women, who are the main users and managers of water and sanitation in sub-Saharan Africa. The programme will be regional in scope. More specifically, it will cover Senegal, Niger and Cameroon, as well as Benin, Liberia, Niger, Sierra Leone and Togo through ECOWAS, the Economic Community Of West African States.

Equity and inclusion are key areas WSSCC's work and an essential part of the UN Women mandate. They are among the main priorities of WSSCC, which has menstrual hygiene management as one its flagship programmes.

"Women must be involved in the decision-making processes. They must be equipped and informed, and must have areas for managing their personal hygiene. In this regard, sanitation is an entry point for their empowerment. It will allow them to pursue their education and, later, to be more productive in working areas that are clean and have proper facilities," said Archana Patkar, WSSCC Programme Manager for Networking & Knowledge Management.

Lack of equity and inclusion are among the most serious obstacles to achieving the goals set by governments for water, sanitation and hygiene. In terms of service access and use, significant inequalities remain between rural and urban areas, marginalized and excluded groups, and the most vulnerable people.

Women represent one of the most marginalized groups. Lack of sanitation has harmful consequences for their health, education and environment. For women, in addition to a lack of privacy and dignity, there are also serious effects on their reproductive and maternal health. These are due to poor management of menstrual hygiene, faecal-oral contamination, and diseases caused by various factors including a lack of infrastructure and lack of appropriate information and facilities.

In delivering UN Women's Executive Director message at the occasion of International Women's Day, Dr Josephine Odera, UN Women Regional Director for West and Central Africa stressed on the importance of sanitation and hygiene as part of women's access to health "this partnership comes just at the right moment. This year, the theme for International Women's Day reminds us that equality for women is progress for all. That is valuable for all sectors. The water, hygiene and sanitation sector is a key sector. Outcomes can be achieved through programmes like this, with gender-specific budgets and greater awareness-raising."

World Bank Approves Emergency Help to Improve Health and Food Security in Madagascar

The World Bank's Board of Executive Directors has approved emergency financing to Madagascar to help the country provide food security for 13 million people who are coping with a continuing locust infestation and drought.

"Due to the convergence of several factors (political crisis, drought, locust infestation, extreme poverty), food security has increasingly become a growing daily challenge for the poorest people in Madagascar. Many are having only a meal a day, others cannot eat everyday" said Haleh Bridi, World Bank Country Director for Madagascar. "We strongly felt that the World Bank's mandate called for an emergency action in this sector".

The first of two emergency support projects approved by the Bank will help to restore and maintain the livelihoods of the 9 million Malagasy who earn their living from agriculture and are being affected by locusts and other natural disasters. The IDA credit of $65 million will target areas that are affected by both locust infestation and drought under the Emergency Food Security and Social Protection project.

The project will help the poorest of these families become more resilient through safety nets that complement more traditional agricultural and rural development activities.

"The interventions have the potential to benefit several million smallholder farmers and poor urban consumers while reducing dependence on food imports to manageable levels, said Ziva Razafintsalama Task Team Leader of the project. "The project would also create short-term employment through cash-for-work and other cash transfer modalities that provide a temporary social safety net for the most vulnerable groups."

The World Bank's Board has also approved emergency funding for Madagascar that will expand the country's efforts to bring essential nutrition services to an additional 687,000 pregnant or lactating women and children under the age of five. The new credit of US$10 million will expand nutrition services to reach a total of 2.6 million people, under the existing Emergency Support to Critical Education, Health and Nutrition Services project.

"Of Madagascar's 22 million people, 80 percent live in absolute poverty on less than US$1.25 per day and many suffer from malnutrition and hunger," said Jumana Qamruddin, Task Team Leader for the project, "This funding is absolutely critical to help prevent a potential humanitarian crisis caused by deteriorating food security."

The project will now be able to support an additional 837 community nutrition sites in the country's most food-insecure regions—Vakinankaratra, Itasy, Haute Matsiatra and Amoron'i Mania—as well as Betioky and Ampanihy districts in Atsimo Andrefana where Madagascar's ongoing locust infestation originated.

Kariba Gets U.S.$230 Million

Kariba Dam

The Zambezi River Authority (ZRA) has secured US$230 million for the rehabilitation of Kariba Dam, a development expected to address the dam's structural and stability problems, the Financial Gazette's Companies & Markets(C&M) can reveal. Energy and Power Development Minister, Dzikamai Mavhaire, said funding for Kariba Dam's rehabilitation would be provided by ZRA and co-operating partners which are the World Bank, African Development Bank (AfDB) and the European Union (EU).

He said that US$80 million would be used for reshaping and stabilisation of the Kariba Dam plunge pool, with the balance of US$150 million being used to rehabilitate the Spillway Upstream Hydro -mechanical facility. "We (Zimbabwe and Zambia) have agreed to rehabilitate Kariba Dam because there have been concerns over its stability," said Mavhaire in an interview on the sidelines of an Inter-governmental Committee of Officials (ICO) meeting of the ZRA held last week at Protea hotel in Livingstone, Zambia.

In Transition

Eng. Philippe Lempérière passes away suddenly at 58

The late Eng. Philippe Lempérière

Philippe Lempérière, a Senior Irrigation Specialist at the East Africa and Nile Basin Office of the International Water Management Institute (IWMI) based in Addis Ababa, Ethiopia, passed away suddenly and totally unexpectedly on the night of February 4, 2014.

Philippe was born in France in October, 1957, where he was educated. His tertiary training was in agricultural and rural engineering at the National Agricultural and Rural Engineering Institute, Angers, France (1981). In 1989, Philippe followed this up with in-service training on agricultural water resources development and management with the French Ministry of Foreign Affairs and Centre of Tropical Agronomic Studies, Montpellier, France.

From this background, Philippe began to explore the opportunities and challenges offered by working in Africa. Over the subsequent 25 years, he had built-up an incredible range of experiences and a sterling reputation in water resources management and irrigation planning, working in Somalia, Sudan, West Africa, East Timor, Ethiopia and Kenya in farmers' organizations, consultancy firms and at IWMI. He was a consultant to, and conducted projects for, several African governments (Burkina Faso, Ivory Coast and Mali), the Eastern Nile Technical Regional Office, the European Commission, the US government's Millennium Challenge Corporation and the United Nations.

On the personal side, Philippe was a real enthusiast for life, often masked by his humble nature. Some of his enduring aspects and qualities were his dry sense of humor, his incredibly caring nature and his love for his family. Philippe is survived by his wife, Khalda, and son, Basile.

The funeral took place on February 12, 2014, in Maubeuge, France.

Uganda's Vice President commends NBI efforts in addressing energy challenges

He called on Nile Basin countries to take into consideration the larger river basin context and ensure optimization of the development opportunities as well as efficient location and operation of the hydropower infrastructures, while preparing their power development plans.

H.E. Ssekandi was speaking as guest of honor during the 8th Regional Nile Day celebrations held at the Sheraton

The Vice President of the Republic of Uganda, H.E. Edward Ssekandi has underscored the importance of joint implementation and exploitation of hydropower options on shared water resources in addressing the everlasting regional energy demands and challenges.

Kampala Hotel in Uganda on 21st February 2014. The theme for the celebrations was 'Water and Energy, National Challenges, Trans-boundary Solution'.

"I am happy to note that under the ongoing cooperation on the Nile, major regional water infrastructural developments are being planned throughout the basin such as major multipurpose reservoirs for hydropower production and irrigation', he said.

The Chairperson of the Nile Council of Ministers who is also South Sudan's Minister of Electricity, Water and Irrigation, Hon. Jemma Nunu Kumba said with the realization of the various hydropower development and power pooling investment projects prepared by the Nile Basin Initiative (NBI), the hitherto meager power accessibility figures in the region are poised to rise to acceptable levels.

The Executive Director of the NBI Secretariat, Eng. Teferra Beyene was happy to note that NBI has built a level of inter-riparian trust, confidence and a sense of shared mutuality that hardly existed before.

President Rajapaksa launches new water information system during visit to IWMI

His Excellency Mahinda Rajapaksa, President of the Democratic Socialist Republic of Sri Lanka, has officially launched a new, hitech information system that promises to enhance water management in the South Asian country.

The Sri Lanka Water Resources Information System, developed by

the International Water Management Institute (IWMI), provides facts, figures and maps on trends in water availability, use and quality for the country, where water continues to be a critical issue.

The tool is available free online and is the first of its kind for helping scientists and policymakers in Sri Lanka to accurately monitor the dynamics of the country's water resources. It also provides a secure platform for cooperation among all the agencies involved in water management to share their data.

President Rajapaksa officially launched the system during a special visit to IWMI's headquarters in the country's capital Colombo.

Andrew Selee is now Vice President

Executive Vice President and Senior Advisor to the Mexico Institute

Andrew Selee was named Executive Vice President of the Wilson Center in January 2014. Prior to this position, Selee was the Wilson Center's Vice President for Programs. He was the founding Director the Center's Mexico Institute from 2003-12. He is an adjunct professor of Government at Johns Hopkins University and of International Affairs at George Washington University and has been a visiting professor at El Colegio de Mexico.

Selee is co-director of the Regional Migration Study Group, convened by the Migration Policy Institute and the Wilson Center, and was a member of Council on Foreign Relations' Task Force on Immigration. He is a long-time volunteer of the YMCA and was a member of the YMCA of the USA's National Board and International Committee.

He is a Ph.D. in Policy Studies from the University of Maryland; an M.A. in Latin American Studies from the University of California, San Diego and a B.A. in Latin American Studies (Phi Beta Kappa) from Washington University in St. Louis.

Davis & Shirtliff Opens Grundfos Sub-Factory

A recent important initiative taken by Davis & Shirtliff (D&S) was implementation of the Grundfos Sub-Factory concept for SP submersible pumps. Following strictly laid down guidelines; the factory is equipped with special assembly equipment to ensure tolerances and quality as well as a test rig for quick and accurate testing of all assembled pumps.

The factory is also designed for pump maintenance and repair and will ensure extended lives for all Grundfos pumps and is the best equipped facility in the region.

Pictorial: From Left, David Githendu (Grundfos Regional Manager), D&S CEO Alec Davis & D&S General Manager David Bolo pictured and the newly opened Grundfos Sub factory.

It was opened by Grundfos Regional Manager David Githendu who re-iterated Grundfos's support for D&S as their leading regional distributor.

AfDB President on visit to Congo: "The AfDB believes strongly in regional projects"

It was in Congo that Donald Kaberuka, President of the African Development Bank (AfDB) Group, began his official visit to Central Africa, on February 24, 2014. Scheduled for four days, the visit concluded in Libreville, Gabon, on February 27.

During his audience with the President of the Republic of Congo, Denis Sassou Nguesso, in Brazzaville, Kaberuka was able to judge for himself the country's recent economic performance. This included, in particular, the level of investment which is among the highest on the continent.

In addition to meeting the Head of State, the AfDB President was keen to meet members of the Government who are at the heart of Congo's economic recovery. These were the Ministers responsible for the following: Industrial Development and Promotion of the Private Sector, Transport, Mines, Forestry Economy, Energy, SMEs, Social Affairs, Special Economic Areas, Technical Instruction, and Planning and Integration. It was an opportunity for systematic consideration of the various projects in the AfDB portfolio for the country, along with sectoral views and an explanation of the Bank's strategy in Congo.

The Road to the 2014 SWA High Level Meeting

11 April 2014

The third SWA High Level Meeting (HLM)

Convened by UNICEF, on behalf of the SWA Partnership, it will be hosted bythe World Bank. There is a great deal of opportunity, as well as work to be done, in the lead-up in order to generate political attention and press for greater action and accountability in the delivery of commitments.

The 2012 High Level Meeting was unprecedented in attracting over 50 ministers and high-level participants. It demonstrated the increase in political prioritization of WASH that SWA has been able to achieve. The annual Progress Update of the 2012 SWA HLM commitments, released in August this year, shows that significant gains have already been achieved, such as increased budgets, strengthened national planning and country-level dialogue among ministers, technical stakeholders, civil society, donors and development banks.

AfricaSan 4: Fourth Africa Conference on Sanitation and Hygiene

May 2014

Dakar, Senegal

Organised by: African Ministers' Council on Water (AMCOW)

AfricaSan is an AMCOW initiative to help agencies and governments shape strategies for action to realize the eThekwini Commitments on sanitation in Africa. It provides a forum for sanitation technical experts to exchange lessons about approaches and technologies that work best in their local circumstances.

AfricaSan 3, held in 2011 in Rwanda, drew nearly 900 people from 67 countries, including 23 African Ministers and deputy Ministers in charge of Sanitation, Water, Local Government, Health, or Infrastructure.

5th Africa Water Week

Date: 26-31 May 2014

Location: Dakar, Senegal

Organizers: AMCOW,AUC &The Govt. of Senegal

The theme of the 5th Africa Water Week (aww-5) is "Placing Water at the Heart of the Post-2015 Development Agenda" and it focuses on the Africa Water Vision 2025 of "An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio economic development, regional cooperation and environment" and the need to further advocate for a distinct water goal in the post 2015 development framework.

Sub Themes

aww-5 has four sub themes which essentially drive the consideration of water as a goal in the post-2015 development agenda viz:

- Water, Sanitation and Hygiene
- Water Resources Management for Sustainable Development
- Wastewater Management and Water Quality
- Water and Disaster Risk Management

aww-5 will utilize technical sessions and Sector / Stakehold-er Forum in pursuit of achieving set objectives and actions.
Deadline for submission is already 22 March
For more information, visit www.africawaterweek.com

Water Convention 2014

(an event of Singapore International Water Week)

1st to 5th June 2014

Singapore

Website: http://www.siww.com.sg/water-convention

Contact person: Charmaine Tan

Water Convention 2014 will examine world water trends along 5 themes: Delivering Water from Source to Tap, Effective and Efficient Wastewater Management, Water for Liveability and Resilience, Water Quality and Health & Water for Industries.

Organized by: Singapore International Water Week Pte Ltd
Deadline for abstracts/proposals: 31st July 2013

World Water Week in Stockholm

31 August - 5 September 2014

Stockholm, Sweden

The World Water Week in Stockholm is the annual meeting place for the planet's most urgent water-related issues. Organized by the Stockholm International Water Institute (SIWI), it brings together 2,500 experts, practitioners, decision-makers and business innovators from around the globe to exchange ideas, foster new thinking and develop solutions. In 2014, the World Water Week will be held under the theme "Energy and Water".

Thirsty Energy: Securing Energy in a Water-Constrained World

The Energy-Water Challenge

Significant amounts of water are needed in almost all energy generation processes, from generating hydropower, to cooling and other purposes in thermal power plants, to extract¬ing and processing fuels. Conversely, the water sector needs energy to extract, treat and transport water. Both energy and water are used in the production of crops, including those used to generate energy through biofu¬els. Population growth and rapidly-expand¬ing economies place additional demands on water and energy, while several regions around the world are already experiencing significant water and energy shortages.

Today, more than 780 million people lack access to potable water, and over 1.3 billion people lack access to electricity. At the same time, estimates show that by 2035, global energy consumption will increase by 35%, while water consumption by the energy sec¬tor will increase by 85%. Climate change will further challenge water and energy manage¬ment by causing more water variability and intensified weather events, such as severe floods and droughts.

These interdependencies complicate possible solutions and make a compelling case to expeditiously improve integrated water and energy planning in order to avoid unwanted future scenarios.

Will water constrain our energy future?

While a global water crisis could take place in the future, the energy challenge is present. Water constraints have already adversely impacted the energy sector in many parts of the world. In the U.S., several power plants have been affected by low water flows or high water temperatures. In India, a thermal power plant recently had to shut down due to a severe water shortage. France has been forced to reduce or halt energy production in nuclear power plants due to high water temperatures threatening cooling processes during heatwaves. Recurring and prolonged droughts are threatening hydropower capac¬ity in many countries, such as Sri Lanka, China and Brazil.

Despite these concerns, current energy plan¬ning and production is often made without taking into account existing and future water constraints. Planners and decision-makers in both sectors often remain ill-informed about the drivers of these challenges, how to ad¬dress them, and the merits of different tech¬nical, political, management, and governance options. The absence of integrated planning between these two sectors is socio-economi¬cally unsustainable.

What is Thirsty Energy?

To support countries' efforts to address chal¬lenges in energy and water management proactively, the World Bank has embarked on a global initiative: thirsty energy. Thirsty Energy aims to help governments prepare for an uncertain future, and break disciplinary silos that prevent cross-sectoral planning. With the energy sector as an entry point, thirsty energy quantifies tradeoffs and identi¬fies synergies between water and energy resource management.

Thirsty energy demonstrates the importance of combined energy and water management approaches through demand-based work in several countries, thus providing examples of how evidence-based operational tools in resource management can enhance sustain¬able development. This created knowledge will be shared more broadly with other coun¬tries facing similar challenges.

Thirsty Energy tailors approaches depending on the available resources, modeling experi¬ence, and

institutional and political realities of a country. In order to ensure client owner¬ship and successful integrated planning, thirsty energy focuses on building the capac¬ity of relevant stakeholders and leveraging existing efforts and knowledge. The energy-water challenge is too large for any organiza-tion to tackle alone. Due to the pivotal role of the private sector in the energy and water sectors, a Private Sector Reference Group (PSRG) has been established to share experience, to provide technical and policy advice, and to scale-up outreach efforts.

What is Thirsty Energy doing?

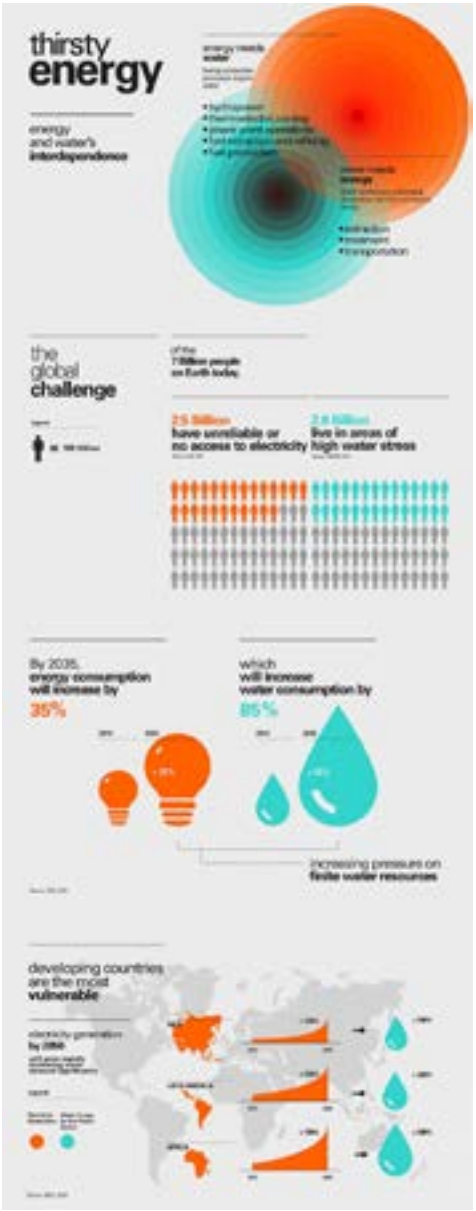
Increasing awareness regarding the water require¬ments of energy projects among political decision mak¬ers, the private sector and other stakeholders in order to reduce energy projects' vulnerability to water constraints.

Enhancing stakeholder capacity to plan and manage energy and water resources comprehen¬sively, by improving the tools and technical solutions avail¬able to assess the economic, environmental and social impli¬cations of water constraints in energy and power expansion plans.

Fostering interdisciplinary collaboration between the energy and water sectors and promoting knowledge exchange to help develop an integrated manage¬ment framework and ensure its practical application.

Developing innovative technical tools and approaches and policy-oriented material and guidance to help countries develop and manage their energy and water resources in a sustainable way.

Thirsty Energy, the first publication of the Energy-Water initiative, introduces the energy-water nexus, examines the water requirements of power generation and outlines some potential technical and institutional solutions for improving the management of the nexus.



Source: World Bank

BGU Researchers reveal that Organic Agriculture can pollute groundwater

Organic vegetable cultivation

New Study Indicates that Liquid Fertilizing Techniques through Drip Irrigation Result in Comparatively Lower Groundwater Pollution Rates

Researchers from Ben-Gurion University of the Negev (BGU), using specialized monitoring technology, have determined that intensive organic agriculture can cause significant pollution from nitrate leaching into groundwater.

Public demand has led to the rapid development of organic farming in recent years to provide healthy food products that are free of chemical additives and to reduce industrial and groundwater pollution worldwide.

But, according to the paper published in the Hydrology and Earth System Sciencesjournal, intensive organic matter using composted manure prior to planting resulted in significantly higher groundwater pollution rates compared with liquid fertilization techniques through drip irrigation.

The study used Vadose Zone Monitoring System technology developed at BGU and commercialized by Sensoil Innovations Ltd. to compare the water quality across the entire unsaturated zone under organic and conventional greenhouses in Israel.

The system is designed to monitor liquid, gas and soil hydraulic properties and allows real time continuous tracking of water in deep sections of the vadose zone, from land surface to groundwater. It is currently being used in more than 25 commercial and research sites in the United States, Israel, Spain, Namibia, and South Africa.

While groundwater pollution is usually attributed to a large array of chemicals, high nitrate concentration in aquifer water is the main cause for drinking-water well shutdowns.

The down leaching of nitrates under intensive organic farming is due to nutrient release from the compost to the soil during the early stages of the growing season. In this stage, nutrient uptake capacity of the young plants is very low and down leaching of nitrates to the deeper parts of the vadose zone and groundwater is unavoidable.

The study, funded by the Israel Water Authority, was conducted in commercial greenhouses on the Southern part of the coastal aquifer in Israel.

The BGU researchers included Dr. Ofer Dahan and Dr. Naftali Lazarovitch of the Jacob Blaustein Institutes for Desert Research and Efrat E. Russak of the Department of Geological and Environmental Sciences. Dr. Daniel Kurtzman, of The Volcani Institute of Water Research, also participated.

SOURCE: *American Associates, Ben-Gurion University of the Negev*

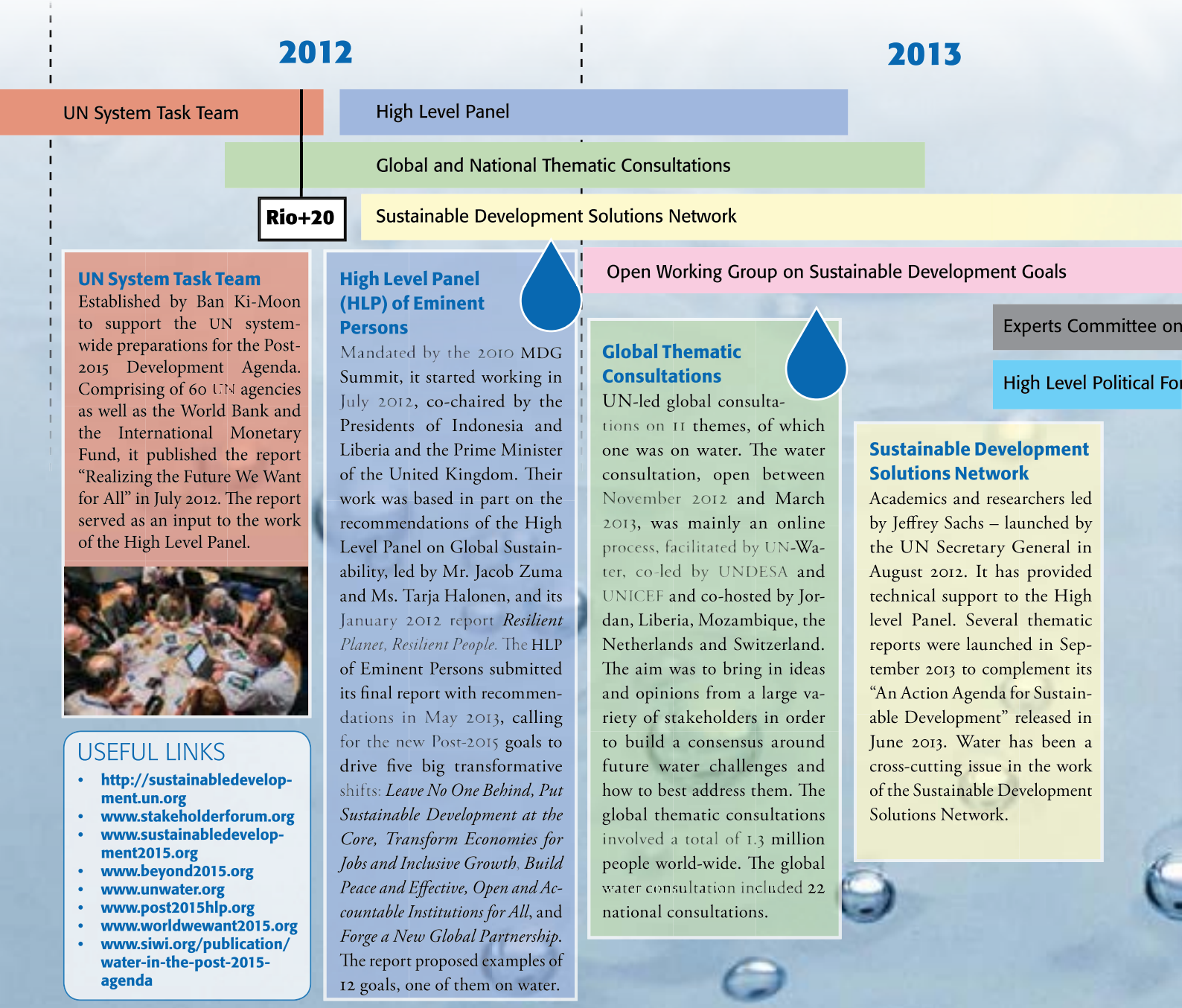
TICKING TOWARDS

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.



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.

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 measureable targets, there is a consensus that any new goals and targets must also have a larger qualitative element.

2014 **2015**

Financing Sustainable Development

rum

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.

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.

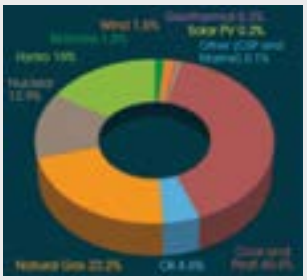
Private Sector

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.

Source: *Stockholm International Water Institute (SIWI)*

Facts and figures

The Facts and Figures in this section are drawn from the upcoming edition of the World Water Development Report on Water and Energy that will be published in March 2014 and launched on the occasion of World Water Day celebrations in Tokyo, Japan.



Hydroelectricity

Hydroelectricity is currently the largest renewable source for power generation in the world. Hydropower's share in total electricity generation is expected to remain around 16% through 2035.

Hydropower and water use

Most of the water used for hydropower generation is returned to the river though some is consumed (reservoir evaporation) and there are important impacts on timing and quality of streamflows.

Industrial water use

Roughly 75% of all industrial water withdrawals are used for energy production.

Financing water

For developing countries alone $103 billion per year are required to finance water, sanitation and wastewater treatment through 2015.

Energy for water

Energy is required for two components of water provision: pumping and treatment (before and after use).

UN WATER WORLD WATER DAY 2014

Waterborne transportation

Waterborne transit is one of the most energy efficient. Inland towing barges are more than 3 times more energy efficient than road trucks and 40% more efficient than rail.

Biogas produced from sewage

In Stockholm, public buses, waste collection trucks and taxis run on biogas produced from sewage treatment plants.

Access to water and sanitation

In 2011, 768 million people did not use an improved source of drinking-water and 2.5 billion people did not use improved sanitation.

Access to electricity

More than 1.3 billion people still lack access to electricity, and roughly 2.6 billion use solid fuels (mainly biomass) for cooking.

Wind power

Wind power is the most sustainable source of renewable energy, mainly because of its low greenhouse gas emissions and water consumption.

At UN, Countries Call for a Dedicated Water Goal in the Post-2015 Development Agenda

The President of the General Assembly's thematic debate on water, sanitation and sustainable energy concluded mid-February this year with countries underscoring the need for a dedicated water goal to secure sustainable water for all.

Hundreds of delegates and civil society representatives took part in this gathering, which was one of three thematic debates that will be hosted in the coming months by UN General Assembly President John Ashe to set the stage for the post-2015 development agenda with the potential to guide the course of humankind away from poverty for decades to come.

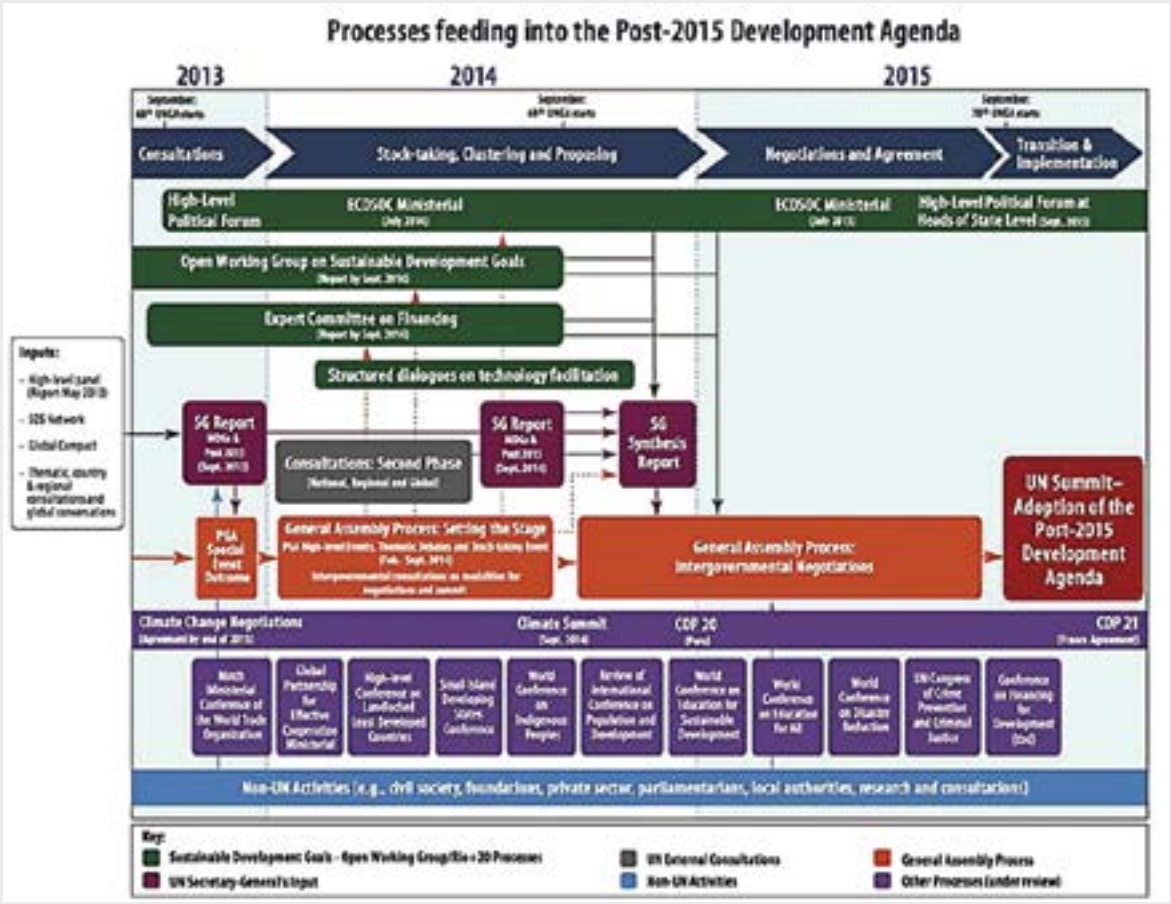
In his opening remarks, Mr. Ashe highlighted that there is already an agreement that water and sanitation are essential to the achievement of many development goals. "They are inextricably linked to climate change, agriculture, food security, health, gender and education, among others," he said, emphasizing that "the water, sanitation and sustainable energy crises are the pre-eminent development challenges of our world".

Mr. Ashe was joined by UN Secretary General Ban Ki-moon, who underscored that "access to safe drinking water, sanitation and hygiene must feature prominently in the post-2015 development post-2015 agenda". "We must improve water quality and the management of water resources and wastewater" Mr. Ban also said, adding that "this is a matter of justice and opportunity."

During a round table discussion on the water and sanitation challenge, many speakers referred to UN-Water's proposal on "securing sustainable water for all" as a viable framework for advancing the water agenda after 2015. The framework proposed by UN-Water suggests five measurable and interconnected targets, namely: achieving universal access to safe drinking water, sanitation and hygiene; improving the sustainable use and development of water resources; strengthening water governance; improving water quality and wastewater management; and reducing risks of water-related disasters.

"The inter-related nature of the water cycle requires integrated approaches at all levels, including at the river basin level, and participatory decision-making", said Federico de Ramos Armas, Vice Minister for the Environment of Spain in his summary of the round table discussion on water. "To secure sustainable water for all, the future development agenda must address the broader water agenda in a holistic manner", he said, continuing that "a dedicated goal on water, with possible targets on drinking water, sanitation and hygiene; water resources management; reuse and treatment of waste water and wastewater pollution and water quality was widely supported". Mr. de Ramos Armas also noted that "water-related disasters, including floods and droughts" were frequently mentioned during the debate.

Intergovernmental negotiations on the post-2015 agenda are expected to start in September 2014.



Here are 9 powerful reasons to drink water

1. Weight loss. Water is one of the best tools for weight loss, first of all because it often replaces high-calorie drinks like soda and juice and alcohol with a drink that doesn't have any calories. But it's also a great appetite suppressant, and often when we think we're hungry, we're actually just thirsty. Water has no fat, no calories, no curbs, no sugar. Drink plenty to help your weight-loss regimen.
2. Heart healthy. Drinking a good amount of water could lower your risks of a heart attack. A six-year study published in the May 1, 2002 American Journal of Epidemiology found that those who drink more than 5 glasses of water a day were 41% less likely to die from a heart attack during the study period than those who drank less than two glasses.
3. Energy. Being dehydrated can sap your energy and make you feel tired -- even mild dehydration of as little as 1 or 2 percent of your body weight. If you're thirsty, you're already dehydrated -- and this can lead to fatigue, muscle weakness, dizziness and other symptoms.
4. Headache cure. Another symptom of dehydration is headaches. In fact, often when we have headaches it's simply a matter of not drinking enough water. There are lots of other causes of headaches of course, but dehydration is a common one.
5. Healthy skin. Drinking water can clear up your skin and people often report a healthy glow after drinking water. It won't happen overnight, of course, but just a week of drinking a healthy amount of water can have good effects on your skin.
6. Digestive problems. Our digestive systems need a good amount of water to digest food properly. Often water can help cure stomach acid problems, and water along with fiber can cure constipation (often a result of dehydration).
7. Cleansing. Water is used by the body to help flush out toxins and waste products from the body.
8. Cancer risk. Related to the digestive system item above, drinking a healthy amount of water has also been found to reduce the risk of colon cancer by 45%. Drinking lots of water can also reduce the risk of bladder cancer by 50% and potentially reduce the risk of breast cancer.
9. Better exercise. Being dehydrated can severely hamper your athletic activities, slowing you down and making it harder to lift weights. Exercise requires additional water, so be sure to hydrate before, during and after exercise.

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The Importance of Energy Efficiency and Renewable Energies for Water Service Providers

By Alec Kimathi, *SWAP-bfz*

Water Service Providers (WSPs) were formed as publicly-owned but privately-run entities on commercial-based principles to ensure growth and sustainability. WSPs across Kenya operate under a regulated water tariff that is calculated to recover Operation & Maintenance (O&M) costs such as personnel, chemicals and electricity **(the largest)**. With water and sanitation coverage currently at 60% & 45% respectively, the demand for these services to reach 100% coverage by 2015 (as part of MDGs and towards Vision 2030} will require huge financial investments. Currently, there is limited concessionary and grant finance available from international donors for water and sanitation services' expansion. The Kenyan Government and development partners' financing is now loan-based at low interest rates, but only meets about **55% of the demand. Commercial financing can meet the gap of 45%**.

In order to inform WSP's optional financial mechanisms that can close the financial gap, WASPA, Water CAP & SWAP-bfz held a workshop in November 2011 that sought to help WSPs identify the best financial and latest technological alternatives for their respective needs. As mentioned above, the highest O&M costs for WSPs is electricity, on which they spend at least 35% of their total revenue. This affects both their financial sustainability and the quality of services to their customers. Further, banks consider WSP's who spend 30% – 40% of their revenues on O & M to be inefficient and a credit risk, making it difficult for them to access commercial finance.

For commercial banks, cash must first pay debts and then the surplus be re-invested. Second, the WSP must arrive at a tariff that balances social sensitivities with financial management and O&M. Third, the level of default is less if the finances are ring-fenced. Fourth, WSP's must ensure the loans are adequately serviced, infrastructure upgraded and maintenance made possible. Lastly, the banks are not interested in fixed assets.

Energy Audits

Energy audits give recommendations to meet those demands and improve performances of WSPs.

Aside from the obvious beneficial aspects, like saving revenues, Energy Audits are enforced by law. Under Legal Notice No. 102 dated 28th September 2012, all industrial, commercial and institutional users of energy consuming a minimum of 180,001 kWh per year are required to comply with the Energy {Energy Management}

The immediate former German Ambassador Margit Hellwig-Boette and the immediate former Director of Water Services, Ministry of Water & Irrigation, Eng. Peter Mangiti Launching the Energy Audit Report on 13th July 2012

Regulations Act 2012, i.e. to undergo an energy audit every three years and implement at least 50% of the recommended energy efficiency {EE} and renewable energy {RE} measures. Most of WSPs that are members of the Water Service Providers Association (WASPA) fit the above-mentioned designation.

To support WSPs in finding ways of decreasing their energy consumption, Energy Audits for 29 WSPs were conducted in 2012.This was sponsored by the German Partnership Project **SWAP-bfz** and conducted by the **Kenya Association of Manufacturers' (KAM's)** Centre for Energy Efficiency & Conservation. KAM, in conjunction with the Ministry Of Energy, established the Centre for Energy Efficiency and Conservation (CEEC) in 2006 with support from DANIDA.The Centre runs

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energy efficiency and conservation programs designed to help companies identify energy wastage, determine saving potential and give recommendations on measures to be implemented.
The main aim is to reduce cost and enhance competitiveness and profitability, while promoting a clean and healthy environment.

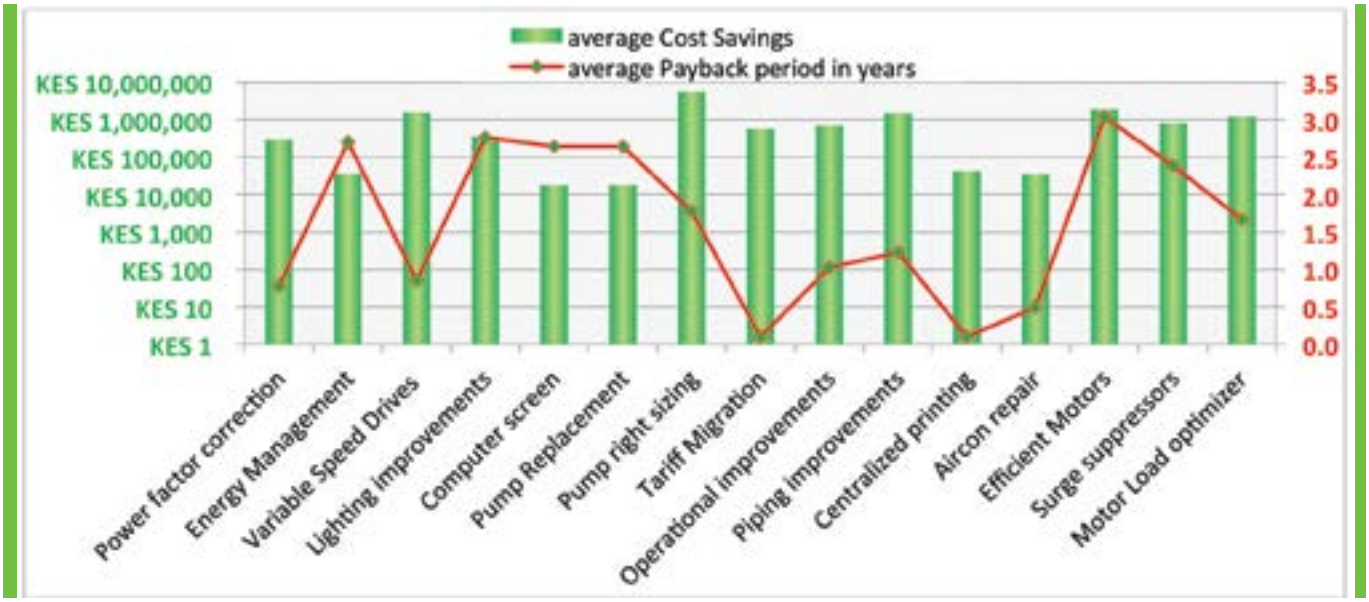
What are Energy Audits?

An energy audit is an inspection, survey and analysis of energy (electricity & fuels) flows in a process or system. The Energy Audit aims to reduce the amount of energy input into the system without negatively affecting the output(s).

According to KAM's CEEC, Energy Audits are designed to help companies identify Energy Wastage, determine saving potential (ca. 15%-30%) as well as recommend energy efficiency & renewable energy measures.

Energy Efficiency & Renewable Energy Implementation in water utilities ensures reduced energy costs; reduced operating costs; reduced Climate Impact / Carbon footprint {ISO 14001 Compliance} and sustainability of Water Infrastructure. It also ensures that water is saved.

The WSPs took up the challenge and started implementing the recommendations of the reports. Some of the Energy Efficiency solutions required investment; yet even the ones requiring little or no investment had potential for significant, immediate cost reduction. An example of an EE intervention requiring little or no investment was tariff migration.



Energy Efficient (EE) Measures

1. **Tariff Migration**

   If a WSP consumes less than 15,000 units it falls in the Small Commercial electricity tariff, while if it consumes more than 15,000 units if falls in the Commercial Industrial tariff. WSPs operating on the wrong tariff began to save costs by simply writing to Kenya Power and Lighting Company (KPLC) and migrating to the right tariff. **Through tariff migration, WSP's are able to save between KES 235,000 and 1,200,000 per year.**

2. **Power Factor Correction (PFC) – Capacitors**

   PFC allows power distribution to operate at its maximum efficiency. If below 0.90%, the WSP is penalized 1.5% of the total electricity bill per month by KPLC as this low power factor affects its power distribution. Through quick installation of capacitors, **WSP's are immediately able to save between KES 240,000 and 600,000 per year.**

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3. **Lighting**

Lighting retrofit addresses the problem of conventional uses of HP sodium lamps, incandescent bulbs, mercury vapor lamps and compact fluorescent lamps that may call for cheap initial investment but have high long-term maintenance costs. For instance, they have a lifespan of only 1200 to 20000 hours, consume between 55 to over 300 kWh per year, contain mercury, etc. As an alternative, LED (Light Emitting Diode) lights pose no threat to the environment, have a lifespan of 50,000 hours, and consume 2.19kWh per year.

Figure shows engineers undertake power measurements at a borehole pumps control room

Through LED lighting retrofit, **WSP's are immediately able to save between KES 250,000 and 975,000 per year.**

4. **Efficient Motors and Pumps**

According to a 2011 International Energy Agency study, the first global analysis of energy consumption in electric motors, it is feasible as well as cost-effective to save about 20% to 30% of total motor power consumption. Industry accounts for about 40% of the world's electricity consumption, and about two-thirds of that electricity is used to power electric motors. Electric motors consume about 45% of all electricity produced, which means that about every other water treatment and sewerage plant is just powering electric motors. {Source: Energy Efficiency Policy Opportunities for Electric Motor-driven Systems, Working Paper, 2011}. Through installation of pumps with efficient motors **WSP's are immediately able to save between KES 64,000 and 900,000 per year in O & M costs.**

There are additional EE measures that were recommended by the energy auditors that the 29 WSP's were to begin implementing in the 2013/2014 financial year. Although these measures require a significant amount of financial investment, the advantage is the short to medium-term payback periods and significant reduction in electricity costs. These EE measures include **variable speed drives, operational improvements, electricity monitoring systems, piping, pressure switch installation, soft starter installations, overhead tank installations, centralized printing, motor load optimization, pump repair and servicing, computer screen replacement and introduction of the SCADA system.**

Renewable Energy

A number of WSPs have potential for Renewable Energy to supplement if not replace their dependence on electricity from the grid. These range from **mini-hydro, solar pumping, solar powered lighting, biogas** and **wind.**

Financing

The difficult part for the WPSs is to receive financing to implement the recommendations. That is why SWAP-bfz has engaged partner institutions interested in assisting WSP's implement some of these measures. These are:

1. RTAP-KAM

The **Regional Technical Assistance Program (RTAP)-KAM** that is supported by the French **Development Agency (AFD)**, have a financing and technical scheme for implementation of energy efficiency and renewable energy. The scheme is rated at US$ 150,000 to 6.5 million @ 6%, payable in 10-12 years with a 2 year grace period. The loans will be offered through partner local banks, i.e Co-operative Bank and Stanbic Bank. Some WSPs have begun negotiations with RTAP-KAM on possible financing for their energy audit recommended EE & RE measures.

2. SUWASA

The **Sustainable Water & Sanitation for Africa project (SUWASA)**, supported by **USAID**, has a financing scheme with local financing institutions

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Kenya Commercial Bank, Housing Finance and Family Bank. The financing scheme is a commercial loan for any or all EE measures a WSP is willing to implement. SUWASA is also keen to assist WSP's develop bankable RE projects such as mini-hydro, wind, biogas and solar. With support from SWAP-bfz, SUWASA have already met with 15 WSPs since May 2013. Out of the 15, a number have been selected based on financial analysis by SUWASA for immediate implementation. For SUWASA, the investments are short-term with immediate impact and a short payback period, making for very attractive investment for commercial banks.

Current WSPs working on their EE & RE measures with SUWASA are Limuru WSP (solar powered solar pumps); Thika WSP (soft starters; efficient motors & LED lighting retrofit); Embu (extending connections to a rural un-served area known as Kiritiri); Meru WSP (expansion of the water intake and extensions to un-served areas); Nakuru WSP (solar powered electric pumps for boreholes), and others. Thika WSP has an ongoing feasibility study in preparation for implementation of a 130kW potential mini-hydro power plant.

Through commercial financing, WSPs will implement simple EE measures with quick returns and unique RE measures, from solar powered solar pumps to mini-hydro projects, to generating their own biogas plants to run their own wastewater treatment plants. WSPs can also extend connections to rural un-served areas, rehabilitate their existing network and expand their water intake.

WASPA Support

The Water Service Providers' Association (WASPA) strives to support their members in improving and providing better services to their customers. For instance, together with its partner SWAP-bfz, WASPA was aware of the high electricity costs and introduced energy audits to their members.

WASPA will continue its efforts to make Energy Audits available for their members and has negotiated an attractive, affordable price lower than the market rate for each energy audit for the year 2014. This is because water and sanitation utilities are not really mainstream profit making entities. This price will be reviewed again in 2015. WASPA will also assist members in finding financial support for implementation of energy efficiency and renewable energy measures. WASPA is in constant touch with the financiers cited in this article but is also searching for new financiers.

Decreasing energy consumption, and therefore the costs for the WSPs, will be even more important in the future. The country's energy regulator, the Energy Regulatory

The retired Water Services Providers Association Chairman Eng. Njoroge speaking during the launch of the Energy Audit Report on 13th July 2012

Commission (ERC), recently approved a new electricity tariffs that took effect in December 2013 and will run up to June 2016 when another tariff review takes place. The price of electricity for large consumers will therefore be going up by at least 8%, though ERC indicates that they anticipate this increase to be short-term and to be reversed once cheaper energy generation projects (such as the geothermal plants) are commissioned.

It is worth noting that the tariff for electricity in 2016 will be higher than the old tariff (before December 2013). This means WSP's will pay more than they were doing before. Therefore, WSPs' investment in energy audits as well as implementation of energy efficiency and renewable energy measures cannot be overemphasized. It needs to be done.

About the author

Alec Kimathi is a Biochemist with a profound interest in water and sanitation. Alec has worked in water production and quality control at Kabete Water Works. He had a stint in UNCHR branch office for Somalia and was Special Rapporteur in the design of Kenya's National Climate Change Response Strategy launched in 2010. He now assists in the SWAP-bfz partnership project that develops associations in the water sector.

AfDB affirms its support for Power Africa, with a commitment of more than US $600 million

The African Development Bank (AfDB) is proud to be an anchor partner of Power Africa, a five-year United States of America Presidential initiative aimed at supporting economic growth and development by doubling access to power in Sub-Saharan Africa. In fact, the Bank's work with the US Government on African development issues spans four decades. The AfDB's contributions to Power Africa run broad and deep, including contributions to the initiative's focus countries in the form of investments, support for policy reforms, advisory services and guarantees.

Last year alone, this support included the conversion of the Sustainable Energy Fund for Africa (SEFA) into a multi-donor trust fund; providing US $64.5 million for the Africa Renewable Energy Fund (AREF); issuing a loan of EUR 115 million for the 300 MW Turkana Wind Power Project in Kenya, along with a partial risk guarantee (PRG) of EUR 20 million; issuing a PRG Program of US $184 million along with a concessional loan of US $3 million to support Nigeria's power sector privatization program; providing EUR 145 million for the Côte d'Ivoire–Liberia–Sierra Leone–Guinea Electricity Interconnection; and making US $58 million available for Tanzania's Governance and Economic Competitiveness Programme.

AfDB's work associated with the Power Africa focus countries in 2013

Between January and December 2013, the Bank approved several landmark operations associated with Power Africa countries for a total of approximately US $670 million. With SEFA – a bilateral trust fund established with funding from the Government of Denmark – the Bank led its coversion into a multi-donor trust fund with a wider remit. As part of the conversion, the United States Agency for International Development (USAID) will become the second anchor donor and make a contribution under the Power Africa Initiative. The conversion also opens the door for other donors interested in promoting private-sector led investments in small and medium-sized sustainable energy projects. Additionally, the Bank's Board endorsed a new financing window to support related enabling environment activities.

In April 2013, the Côte d'Ivoire–Liberia–Sierra Leone–Guinea Electricity Interconnection received EUR 145 million of AfDB financing for the construction of about 1,400-kilometres of high-voltage transmission lines to connect the national networks of the four countries. The project is critical for reconstruction efforts currently

underway in post-conflict Liberia and Sierra Leone and in the forest region of Guinea. Connecting these countries with Côte d'Ivoire would allow mutually beneficial power exchange and the reliable electricity supply necessary for economic growth and peace. The project will directly benefit 24 million people.

The Bank provided a loan of EUR 115 million for the 300 MW Turkana Wind Power Project in Kenya and a partial risk guarantee of EUR 20 million to mitigate the risk of a delay in constructing the 428-kilometre publicly owned transmission line and associated substations needed to connect the project to the national grid. The AfDB played a lead role in developing this independent power producer project, having worked with the project developer since 2009. The Bank was also the Mandated Lead Arranger for the transaction. The project is the largest wind power project in Africa and is expected to increase Kenya's installed capacity by approximately 17% and contribute to the development of the project area.

The Africa Renewable Energy Fund (AREF) private equity fund benefitted from US $64.5 million from the Bank in November. The funding will be invested in small to medium-sized renewable energy projects in Sub-Saharan Africa (excluding South Africa). The Bank led the Fund's development, including the structuring of the Fund and the selection of the Fund manager. AfDB and SEFA are co-sponsors and anchor investors providing US $25 million in equity each; SEFA will provide an additional US $10 million for AREF's Project Support Facility to prepare and structure bankable projects. AREF will be headquartered in Nairobi and its priority countries include Kenya, Tanzania and Ghana. The Global Environment Facility (GEF) will invest US $4.5 million in equity in AREF from an AfDB-managed public-private partnership platform program.

Just before the end of the year, the AfDB also succeeded in establishing a Partial Risk Guarantee (PRG) Program

of US $184 million along with a concessional loan of US $3 million for capacity building to support Nigeria's power sector privatization program.. The PRG mitigates the risk of the Nigeria Bulk Electricity Trading (NBET) – a state-owned entity that purchases electricity from independent power producers (IPPs) – of not fulfilling its contractual obligations under its power purchase agreements with eligible IPPs. Hence, the PRGs could potentially support the provision of 1,380 MW of power by 2016. Additional guarantees are envisaged for 2014.

Also in December, the Bank approved US $58 million to Tanzania's Governance and Economic Competitiveness Programme. The program will target private sector development through energy sector reforms and help lay the foundation for an energy sector-focused budget support operation planned for 2014. The African Legal Support Facility (ALSF) hosted by the AfDB is currently also assisting the Government of Tanzania in developing a PPP toolkit and regulations for energy projects. The ALSF is also finalizing support to the Government of Ethiopia regarding the negotiations of the Corbetti Geothermal Project.

Looking ahead: Deepening engagement with Power Africa focus countries

To further its impact, the Bank is planning to deepen its engagement in Power Africa in 2014. In the near future, it will finalize an Energy Development and Access Project that aims to improve the Ghanaian population's access to reliable and quality electricity services. It will do so by a) supporting the reinforcement of Ghana's Electricity Company, b) extending the distribution system in peri-urban or rural areas, and c) deploying off-grid solar photovoltaic systems. Later in 2014, the Bank expects to work on a variety of projects ranging from energy access in Liberia to geothermal development in Kenya.

In addition, under the aegis of the Climate Investment Funds, the Bank has led work on the Scaling-up Renewable Energy Program (SREP) Investment Plan for Tanzania and prepared jointly with the World Bank the Scaling-up Renewable Energy Program (SREP) Investment Plan for Liberia. This will lead to projects in both countries.

Lastly, at a Sustainable Energy for All (SE4ALL) Stakeholders Meeting in Tunis convened by the SE4ALL Africa Hub, some of the Power Africa countries (Ghana, Kenya, Tanzania and Liberia) were prioritized for the development of SE4ALL Action Agendas and Investment Prospectuses in 2014.

While the financing gap in the energy sector appears daunting in the focus countries, the Power Africa initiative offers a promising way forward to contribute to their transformation and have substantial impact on the population. The AfDB – working together with its development partners –is committed to promoting the energy access agenda, including through private sector development, using all instruments at its disposal.

First compilation of world's small hydropower data launched

A new web-based knowledge sharing portal on small hydropower that features best practices from different regions of the world has been launched by the United Nations Industrial Development Organization (UNIDO) and the International Centre on Small Hydro Power (ICSHP). It contains 20 regional overviews and 149 country-level reports.

"UNIDO and ICSHP are proud to facilitate this collective effort based on the contribution of more than 60 different authors and organizations from all over the world," said Diego Masera, head of UNIDO's Renewable and Rural Energy Unit.

"Small hydropower is one of the most suitable energy solutions for fostering inclusive and sustainable industrial development. Yet, much of the world's small hydropower potential remains untouched. So the first step to remedying the situation is through dissemination of reliable data to initiate new small hydropower project."

International Center on Small Hydro Power (ICSHP) is a public and non-profit institution

LIU Heng, the Director General of the ICSHP, added: "This knowledge sharing platform is a crucial policy and investment guide for renewable energy provision through small hydropower. Our goal when publishing it was to identify the world's small hydropower development status and its potential in different countries and regions by engaging with stakeholders to share information."

The Shitty State of Human Sanitation

For *Chekhovs Kalashnikov's* very first interview on Change Makers we will be talking with environmental activist Chris Canaday from California about the broken and dangerous state of human and water sanitation systems and the solution to this problem that is damaging our environment and health.

Environmental activist Chris Canaday

I think that, before we talk about this revolutionary sanitation system, it is important to touch on why the current system is broken. Can you elaborate on how the contemporary western toilet came into being and the devastating effect that it has had on the environment and our health?

People in Europe used to live in total filth in their cities, throwing their excrement out the window. Porcelain flush toilets had been worked on for some time, but only in 1861, after her husband had died of fecally transmitted typhoid, Queen Victoria ordered flush toilets to be refined and installed in much of Britain.

It is also reported that she was so obese that she had trouble squatting and someone decided that it was not dignified for the queen to squat. They gave her a new porcelain throne and then, via mass psychology, all the Western World has wanted the same thing as the queen of England, even if it is not good for them or their environment.

The modern flush toilet has contributed greatly to the cleanliness of cities, but has not really solved the problem, just moved it farther away. Water always gets recycled and there are always more people living downstream. Developed countries spend millions and probably billions of dollars trying to clean up their wastewater, but never really succeed.

"The modern flush toilet is largely based on the concept of "out of sight, out of mind". It is also a prime example of selfishness: cleaning up the environment close to the user, while contaminating everyone's general environment"

It is interesting to note that at the same time that Water Closets were being developed, Earth Closets were, too. There was even one reportedly used in Buckingham Palace for a while. Over time, Water Closets won out as the standard for Modern Western Society, likely due to their ease of use and maintenance, as long as piped water comes to the house and sewage goes away.

Another key way in which the current, water-based sanitation system is "broken" is that it is based on the illogical, unsustainable and linear concept that natural resources should be used once and then thrown away. Flush toilets not only throw away huge amounts of water, but also all the nutrients found in the excrement.

With a simple push of a lever, we effectively deplete our agricultural soils and contribute to the eutrophication of rivers, lakes and oceans and in them the formation of hypoxic dead zones.

If these nutrients were instead given back properly to the soil (and if the population were stable), we could forget about the non-renewable, unsustainable chemical fertilizers that are currently the basis of Modern Western Society's food production. Those who learn to recycle these nutrients in an orderly way now will have every advantage in the future when these chemicals run out, and when there are possibly 9 billion people on Planet Earth, all wanting to eat.

Water is so essential and vital that we simply cannot live without it. Nonetheless, modern homes in developed countries dump between 25 and 40% of their water down the toilet, and the number engineers use in Ecuador is closer to 75%, given the high incidence of unmaintained toilets through which water flows constantly. We need to promote a culture of respect for water, as a source of life, which should never be treated as a garbage dump.

If these are not enough reasons to consider the current water-based toilet to be broken, obsolete and illogical,

please consider the following unreliable, unhygienic and not-so-easy aspects of flush toilets:

- They often need to be scrubbed after each use, if they are going to be presentable.
- They frequently need to be flushed more than once for everything to go away.
- They occasionally get plugged and need to be cleared with a plunger, with sewage splashing or overflowing out.
- They make so much noise that everyone in the building can hear when they get flushed.
- The great turbulence of flushing creates a plume of microscopic, fecally contaminated water droplets that then land on everything in the bathroom, including the toothbrushes.

So the reason Colon Cancer is skyrocketing in the Western World today is because we aren't completely clearing our bowels, thanks to a custom-made invention for a morbidly obese queen?

Yes, and not just colon cancer, but also constipation and hemorrhoids. The natural position human beings have used when defecating, over millions of years, since before we were people, has always been squatting. In this position, the outlet is straight and the body can eliminate its waste more easily, efficiently and completely. When sitting, the outlet is not straight, certain muscles contradict each other, one needs to push more, and not all of the feces come out, so there is more constipation, hemorrhoids, and the colon never gets a rest from being in contact with festering feces, causing a greater incidence of colon cancer).

Squatting has the added advantage that it is more hygienic, especially with respect to women, since the user's private parts do not touch anything. (Most women apparently never actually sit on a public toilet, but actually sort of hover above, which is much more uncomfortable than squatting all the way down.) Also, the squatting position is more accessible and intuitive for little children, since the floor is the same height for everyone, while a toilet bowl made for adults is much too big, uncomfortable and unsafe for them. Furthermore, in Urine-diverting Dry Toilets (UDDTs), the squatting position allows for a more certain separation of the urine and the feces, plus it is easier and cheaper to build.

This is an excerpt of an interview which originally appeared in the CHEKHOVS KALASHNIKOV. Reproduced with permission.

Please visit:
www.chekhovskalashnikov.com/water-sanitation/

A Free Minimalist Urine-diverting Dry Toilet (UDDT) for the Unhoused, Poor or Disaster-stricken

Shifting from wasteful, expensive, contaminating, water-based toilets to decentralized, environmentally friendly, dry toilets should be more a matter of paradigm shift than capital investment. This is especially true for those who have little money, are potentially living on the street, or are in the upheaval of an emergency.

By Chris Canaday

The key things that a UDDT needs to do are: (1) jail up the potentially dangerous feces that may transmit many terrible diseases (including diarrhea, cholera, typhoid, and intestinal worm eggs) long enough for these to die and (2) set the urine free on the soil, where it is excellent fertilizer for the plants and transmits no disease. This separation also greatly reduces the potential for stench and keeps the volume of dangerous material small and manageable.

The following minimalist toilet is entirely functional and is made with just a few readily available materials that can be

rescued from the garbage:

- Two 4-liter plastic bottles, like those used to sell bleach.
- 50 centimeters of tape.
- 2 meters of string.
- Four sticks, 25 centimeters long (or a box the right size).
- Some normal, woven, polypropylene sacks, like those used to sell 100 pounds of flour, rice, or whatever. Biodegradable, jute bags (like coffee sacks) can also be used and even have an advantage (see #7, below).
- A small sheet of plastic.

Instructions

(1) Make a portable, ecological urinal from the two bottles, cutting one diagonally (as shown) and joining them together mouth-to-mouth with tape and then firmly with string. This is a very useful item, even if one has a more up-scale outhouse, as it can be used for peeing next to bed in the middle of the night, without having to go out into the dark among snakes, insects, rapists or other creatures. It can also be used during the day wherever there is enough privacy.

While standing with urine in it, this urinal emits very little smell, since the mouths of the bottles are small and the top bottle blocks the movement of air across these mouths. Each day, it gets rinsed with water to avoid smell developing with the fermentation of the urine.

This costless urinal is very practical for collecting urine, diluting it with at least three times as much graywater, and pouring this excellent fertilizer on the soil among one's crop plants … or among the ornamental plants in the city park to help them flower more beautifully. One could also dump the urine into a sewer drain, but that would waste the nutrients, increase public spending on wastewater treatment, and contribute to the formation of anoxic dead zones in rivers and oceans.

(2) Push the four sticks into the ground, to a height of about 12 centimeters. If one prefers (or especially if the floor is cement and you cannot poke sticks into the ground), a cardboard, wooden or plastic box the right size could be used instead of the sticks.

(3) Roll down the edge of the sack and place it over the sticks. Put in a cup of dry soil where the first deposit will fall. If you like, a layer of dry leaves can be placed in the bottom of the sack first.

(4) Put your heels against the sack, squat down, hold the urinal inclined in front of you, and release your load of nutrients. The feces will fall neatly into the sack, while the urine flows neatly into the urinal. Then, stand up the urinal until the next convenient opportunity to spread it on the soil. Place the paper, leaves, corn cobs or whatever was used for wiping together with the feces. (Arrange for privacy however you like, maybe with palm fronds stuck in the ground.)

(5) Put a cup of dry soil on top of the feces to cover them, control the smell, keep flies from laying their eggs, and inoculate them with beneficial decomposer soil microbes. Keep a stick in the sack to accommodate the feces and paper, facilitate them being covered adequately by the soil, and fill the space in an orderly way (always grabbing the non-sh*tty end of the stick). One of the best soils for this consists of the decomposed feces from a previous cycle, as seen here, with some sawdust mixed in if it is too compact.

(6) When not in use, cover the whole thing tightly with a sheet of plastic to keep rain, flies and curious eyes out.

(7) When full (to a height of nearly the 12 cm), or when the users are moving on, tie the sack shut with a tag that says something like, "Open this package of rich organic soil only after XX/X/20XX (a year or two from now) when it is safe to use in agriculture" and hide it somewhere protected against the rain and sun, like under a bridge. Another option would be to bury the sack, preferably in dry, well aerated soil (potentially under that same bridge).

The feces should dry and decompose for at least 6 months in the Tropics or a year in Temperate Countries (longer if buried in the soil), so that the pathogens die and it is no longer dangerous.

If the users are there long enough, or come back, they can use this new soil themselves in agriculture, or recycle it as an excellent cover material for new feces in the UDDT once again. More worrisome people might want to only put it in the bottoms of holes for planting trees, which is also a great use.

The advantage of using biodegradable, jute sacks is that one can just throw the recently filled sack in the bottom of a hole, plant a tree on top of it, and forget about it (until you wonder why the tree is growing so fast and with such luscious fruits).

Please visit:
http://inodoroseco.blogspot.com/2013/10/a-free-minimalist-uddt-part-1.html

UN partners WSSCC and OHCHR gather diverse stakeholders to foreground sanitation, rights and dignity for women

Ahead of International Women's Day on Saturday 8 March, joint hosts the Water Supply and Sanitation Collaborative Council (WSSCC) and the Office for the High Commissioner for Human Rights (OHCHR) organized a one-day event on Inspiring Change to Promote Women's Rights and Dignity.

"This meeting focused on the fundamental rights of women, to examine current policy and practice as well as challenges to women's empowerment across their life cycle, looking at vulnerable groups through the lens of water, sanitation and hygiene," said WSSCC Executive Director Chris Williams as he welcomed some 70 participants from health, sanitation and rights groups across the world.

Grass-roots activists shared inspirational experiences on reducing female circumcision in Senegal, raising awareness of lesbian and transgender issues in Nepal and working for the dignity of sex workers in India at a special meeting at the United Nations headquarters in Geneva on Friday, 7 March 2014.

Promoting Hygiene Practices to Boost Shared Prosperity in LAC Countries Integrating Behavior Change and Hygiene in Public Policy: Four Key Dimensions

During the past decade countries in the Latin American and Caribbean (LAC) region have lifted more than 50 million people out of poverty, yet half of the rural population in the region still lacks access to sanitation and approximately 20% to drinking water.

In January 2012, policy makers, scholars and practitioners from 9 LAC countries came together in Santo Domingo, Dominican Republic to explore the opportunities and challenges of integrating in a more systematic and sustainable way the promotion of hygiene and sanitation behavioral change into water and sanitation investments.

During the conference, it became evident that a common understanding is currently emerging from most countries in the sense that infrastructure by itself will not solve the global problems of inadequate access to improved sanitation and potable water, unless people adopt new behaviors.

There is a need to spread learning on best practices to implement cost effective water, sanitation and hygiene models, which bring about change at home and in the community at scale. In this regard, sound public policy and local capacities are among the gaps that need to be filled before countries are able to sustainably reach most of the currently excluded population.

Four key dimensions were identified to be prioritized areas of work for policy makers and practitioners in the LAC region to focus on and obtain desired results:

1. Behavior change: triggering and sustaining

2. A systemic approach: multi-sectoral and integrated

3. The private sector becomes a strong ally

4. Public policy and the enabling environment for sustainable change

Integrating Behavior Change and Hygiene in Public Policy: Four Key Dimensions from the Water and Sanitation Program (WSP), highlights key issues that arose in presentations and group discussions during the conference, which could lead to substantial improvements in the provision of a multi-sector approach to hindering sustainable water and sanitation services for all in Latin America.

Tapping the Markets: Opportunities for Domestic Investments in Water and Sanitation for the Poor

Published: 2014-01-14

Author(s): Sy, Jemima; Warner, Robert; Jamieson, Jane.

Developing country governments and the international development community are looking for ways to accelerate access to improved water and sanitation services beyond the Millennium Development Goal (MDG) targets. Countries do not have the capacity to meet the need for improved water supplies and sanitation services from public resources alone. These challenges present an opportunity for domestic enterprises in these growing markets. In fact, millions of poor and non-poor households rely on the private sector to meet their needs. The range of private sector services provided goes far beyond final service delivery. The domestic private sector is increasingly being viewed as a central part of the solution. Governments are increasingly interested in engaging with the private sector to increase access of the poor to services. Effective scale-up of access through the domestic private sector requires an understanding of the market potential, the state of entrepreneurs' operations, and factors that shape their business environment and investment decisions. This document examines private sector provision of piped water services and on-site sanitation services in rural areas and small towns, with case studies from several countries. The preferences and circumstances of poor households and the performance of enterprises that provide services directly to them are examined, as are commercial and investment climate factors that may affect enterprises' actual or perceived costs and risks.

Citation

"Sy, Jemima; Warner, Robert; Jamieson, Jane. 2014. Tapping the Markets : Opportunities for Domestic Investments in Water and Sanitation for the Poor. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/16538 License: CC BY 3.0 IGO."

The Future of Water in African Cities: Why Waste Water?

Published: 2013

Journal 1 of 1

Author(s) Jacobsen, Michael Webster, Michael Vairavamoorthy, Kalanithy

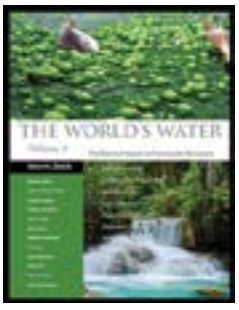
The overall goal of this book is to change the way

urban policy makers think about urban water management, planning, and project design in Africa. African cities are growing quickly, and their current water management systems cannot keep up with growing demand. It will take a concerted effort on the part of decision makers across sectors and institutions to find a way to provide sustainable water services to African city dwellers. This book argues that these complex challenges require innovative solutions and a management system that can work across institutional, sectorial, and geographic boundaries. A survey conducted for this analysis shows that African city leaders and utility operators are looking for ways to include a broader range of issues, such as water resources management, flood and drought preparation, rainwater harvesting, and solid waste management, than previously addressed in their water management plans. This book argues that integrated urban water management (IUWM) will help policy makers in African cities consider a wider range of solutions, understand water's interaction with other sectors, and secure resilience under a range of future conditions.

Citation

"Jacobsen, Michael; Webster, Michael; Vairavamoorthy, Kalanithy. 2013. The Future of Water in African Cities : Why Waste Water?. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/11964 License: CC BY 3.0 IGO."

The World's Water Vol. 8 Keeps Water Challenges and Solutions Center Stage



The Pacific Institute's newly released eighth edition of The World's Water series shows how water touches everything. It addresses a myriad of pressing issues including water conflict, the water footprint, water governance, and more - and their effects on the economy and climate.

In addition to full chapters, the book includes important Water Briefs, a complete table of contents and index that span all eight volumes of the series, and updated data tables regarding improved water and sanitation by country, renewable freshwater supply, water quality satisfaction, progress on Millennium Development Goals, and more.

Additional topics covered include:

- The business case for investing in sustainable water management;
- The emerging market for sustainable water jobs;
- Hydraulic fracturing and water resources;
- Cholera outbreaks directly caused by lack of access to safe water;
- "Zombie water projects," or expensive infrastructure proposals that are killed off and brought back to life despite social, political, environmental, or economic flaws.

The World Water Development Report (WWDR)

The WWDR is an annual and thematic report that focuses on different strategic water issues each year and aims to provide decision-makers with the tools to implement sustainable use of our water resources. It also includes regional aspects, hotspots, examples and stories, making the report relevant to a broad range of readers, at different levels and in different geographical areas.

The development of the WWDR, coordinated by the World Water Assessment Programme (WWAP), is a joint effort of the UN agencies and entities which make up UN-Water, working in partnership with governments, international organizations, non-governmental organizations and other stakeholders.

The WWDR was originally a triennial report and the first four editions were launched in conjunction with the World Water Forum in 2003, 2006, 2009 and 2012. The triennial version provided an overall picture of the state, uses and management of the world's freshwater resources. In 2012, the decision was taken to revise the scope of the report and improve its format in order to better meet the needs of its readers with an annual, more concise publication that is increasingly facts-based and has a more specific thematic focus.

The fourth and latest edition (WWDR4), Managing Water under Uncertainty and Risks, was published in March 2012 and is available below along with earlier editions.

The first edition of the annual report (WWDR5) will address the theme "Water and Energy" and will be launched on the occasion of World Water Day on 22 March 2014, whose theme will be harmonized with that of the report from 2014 on. In 2015 the World Water Development Report (WWDR6) will address "Water and Sustainable Development".

Can Tap Water Curb Drunk Driving?

Free tap water may be a weapon in the fight against drunk driving.

A bill introduced to the Connecticut state legislature would ensure bar patrons can order free tap water, according to CBS New York. Democratic State Rep. Chris Wright, who introduced the legislation, says drunk driving might be mitigated if tap water were free.

"I think anything we can do to promote safe driving and have as few people on the roads who have been drinking as we can, I think that it's a minor thing," Wright said in the news report. "As a way to promote designated driving, if somebody's willing to do that, I think the least that we can do is let them have a glass of water."

In the U.K., many bars are already required to serve free tap water. According to the Consumer Council for Water, a group that represents water and sewer ratepayers, pubs and restaurants have to serve free tap water if they also serve alcohol. The aim is to "ensure that customers have access to free tap water so that they can space out their drinks and not get too intoxicated too quickly," the group said.

Here is a version of the legislation that mandated free tap water in the U.K. Back in 2008, before the law was passed, nine out of 10 restaurants did not provide free tap water, according to research cited by The Guardian.

At the other end of the spectrum, a cafe that recently opened its doors in New York City specializes in serving—and charging—for tap water.

"Not just any tap water, insist the owners of Molecule. They say the water streams through a $25,000 filtering machine that uses ultraviolet rays, ozone treatments and reverse osmosis in a seven-stage processing treatment to create what they call pure H20," the Wall Street Journal reported.
In San Francisco, restaurants are not required to offer free tap water, but SF Weekly says there are economic reasons they are unlikely to refuse such a request.

Can restaurants "legally charge you $1, $3, or even $5 for a glass of tap water? Absolutely. However, it probably wouldn't make much business sense, and that's what keeps them from doing it in the first place," the report said.

Sugar on trial: What you really need to know

It has been called toxic, addictive and deadly, the driving force behind obesity, heart disease and diabetes. Is sugar really so bad?

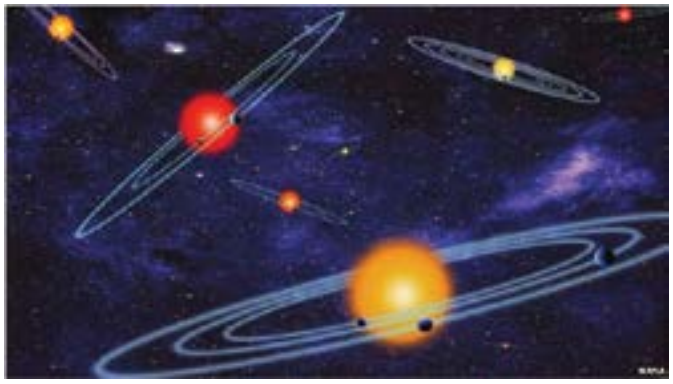
Imagine you are sitting at a table with a bag of sugar, a teaspoon and a glass of water. You open the bag and add a spoonful of sugar to the water. Then another, and another, and another, until you have added 20 teaspoons. Would you drink the water?

Even the most sweet-toothed kid would find it unpalatably sickly. And yet that is the amount of sugar you are likely to eat today, and every day – usually without realizing it.

Sugar was once a luxury ingredient reserved for special occasions. But in recent years it has become a large and growing part of our diets. If you eat processed food of any kind, it probably contains added sugar.

Source: New Scientist

Kepler telescope bags huge haul of planets



Artist's impression: It is now clear that multi-planet systems are common

The science team sifting data from Nasa's Kepler space telescope says it has identified 715 new planets beyond our Solar System.

This is a huge new haul.
In the nearly two decades since the first so-called exoplanet was first discovered, researchers had claimed the detection of just over 1,000 new worlds.

Kepler's latest bounty orbit only 305 stars, meaning many are in multi-planet systems.

The vast majority, 95%, are smaller than our Neptune, which is four times the size of the Earth.

Four of the new planets are less than 2.5 times the size of Earth, and they orbit their host suns in the "habitable zone" - the region around a star where water can keep a liquid state.

Whether that is the case on these planets cannot be known for sure - Kepler's target are hundreds of light-years in the distance. This is too far away for very detailed investigation.

Kepler was launched in 2009 on a $600m (£395m) mission to assess the likely population of Earth-sized planets in our Milky Way Galaxy.

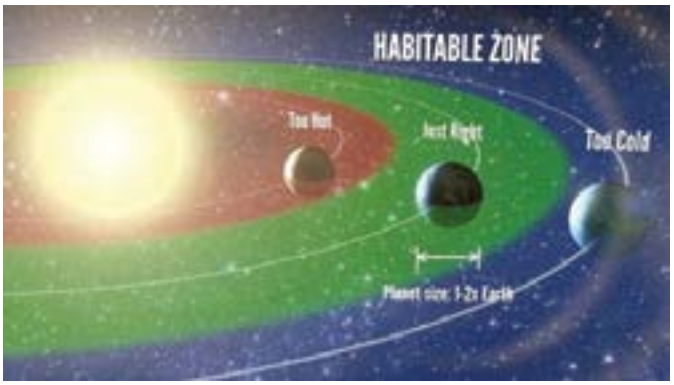
Faulty pointing mechanisms eventually blunted its abilities last year, but not before it had identified thousands of possible, or candidate, worlds in a small patch of sky in the Constellation Lyra.

It did this by detecting the periodic variations in the brightness of stars caused by orbiting exoplanets passing in front of them.

Douglas Hudgins from Nasa's astrophysics division summed up the significance of the latest news: "This is the largest windfall of planets that's ever been announced at one time. Second, these results establish that planetary systems with multiple planets around one star, like our own Solar System, are in fact common.

"Third, we know that small planets - planets ranging from the size of Neptune down to the size of the Earth - make up the majority of planets in our galaxy."

One analysis of Kepler data published in November suggested that perhaps one in five stars like our Sun hosts an Earth-sized world located in the habitable zone.



The habitable zone is the region around a star where water can keep a liquid state.

Source: BBC News

Jupiter's icy moon Europa 'spouts water'

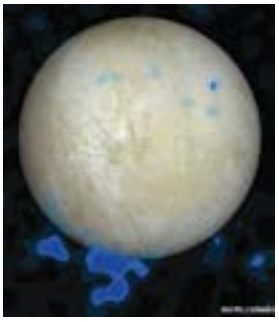
Water may be spouting from Jupiter's icy moon Europa - considered one of the best places to find alien life in the Solar System.

Water spouts taller than Mt Everest appear to burst out of Europa when it is farthest from Jupiter

Images by the Hubble Space Telescope show surpluses of hydrogen and oxygen in the moon's southern hemisphere, say astronomers writing in Science journal.

If confirmed as water plumes, it raises hopes that Europa's underground ocean can be accessed from its surface.

Future missions could probe these seas for signs of life. Astrobiologists have said that, in theory, organisms could survive in the oceans of Europa, but feared the moon's thick icy crust may be an impenetrable barrier to life. Tidal forces. In this new study, US physicists looked at images taken by Hubble in November and December of last year, as well as older images from 1999.



Signatures of water (blue) detected by Hubble are overlayed on an image of Europa

In two distinct southern regions, they saw evidence of water being broken apart into hydrogen and oxygen - revealed by ultraviolet light signatures.

"They are consistent with two 200km-high (125-mile-high) plumes of water vapour," said lead author Lorenz Roth, of Southwest Research Institute, San Antonio, Texas.

These giant geysers appear to be transient - they arise for just seven hours at a time.

They peak when Europa is at its farthest from Jupiter (the apocentre of its orbit) and vanish when it comes closest (the pericentre).

This means that tidal acceleration could be driving water spouting - by opening cracks in the surface ice, the researchers propose.

They say the vapour jets may be like those seen on Saturn's moon Enceladus - with high-pressure emissions escaping from very narrow cracks.

The results were reported at the American Geophysical Union (AGU) Fall Meeting in San Francisco, California.

Source: BBC News

Build your
Career

Employment opportunities

International Education & Training Advisor at CAWST

CAWST is looking for an International Education & Training Advisor to complement its WASH Education Program Development team and provide WASH training and consulting support services across the globe.

Full details and application instruction is found here:

www.cawst.org/en/get-involved/employment...and-training-advisor

The position

The International Education and Training Advisor is responsible for building the capacity of CAWST staff, partner organization staff and client trainers in effective facilitation skills. Another key aspect of the position is to support partners and clients in CAWST's education program development process, to customize and develop their own education and training materials. This position will also help to develop and improve CAWST's suite of education and training materials on water, sanitation and hygiene (WASH). This is a demanding role that requires a creative, motivated, and enthusiastic individual who wants to contribute to building the capacity of WASH educators globally.

International travel will be approximately 3-4 trips per year, up to 50% of the time. The position is based in Calgary, Alberta, Canada (the base of the Rocky Mountains!)

Officer, Strategic Planning and Implementation at U N Foundation

The Officer, Strategic Planning and Implementation will work with and in support of the Vice President, Strategic Planning and Implementation to assist with business and strategic planning for the UN Foundation, conduct various internal consulting projects, and generally assist colleagues across the Foundation with their analytical needs.

Working Relationships

The Officer, Strategic Planning and Implementation will report to the Vice President, Strategic Planning and Implementation and will work closely with multiple teams in the foundation, including campaigns, initiatives, alliances, programs, partnerships, advocacy and public affairs in order to define strategies and measurable goals, and ensure that senior leadership has sufficient data and knows how to use the data for decision making and performance improvement.

Date Posted: 3/6/14 Location: Washington, DC

This Job appears in UN Wire

A Financial and Systems Advisor

(1 position, P4 level) will support the GSF Programme Manager in preparing annual department budgets, and liaise with UNOPS, Geneva Cluster Finance and Portfolio Management, to ensure compliance and application of financial regulations. The incumbent will also contribute to the coordination of WSSCC audit activities. To learn more see the link: https://gprs.unops.org/pages/viewvacancy/VADetails.aspx?id=4848

Program Manager

Global Communities - Silver Spring, MD

Global Communities is an international development non-profit organization. Our mission is to create long-lasting, positive and community-led change that improves the lives and livelihoods of vulnerable people across the globe.

Global Communities is seeking a Program Manager to join its program operations team within the International Operations department at our headquarters office in Silver Spring, Maryland. The successful candidate will be experienced in developing and managing donor-funded international development programs, preferrably across a range of regions and sectors.

Position Type: Full-Time/Regular

https://globalcommunities.silkroad.com/epostings/index.cfm?fuseaction=app.dspjob&jobid=303994&company_id=15631&version=1&jobBoardId=1112

Water, Sanitation and Behavior Change 2014

Basic access to water and sanitation is fundamental to human survival, growth and prosperity. It has been declared a human right by the United Nations. Between 1990 and 2010 more than two billion people have gained access to improved water sources and almost 1.9 billion to improved sanitation. This is good news. However, with nearly one billion people today who lack safe water and with 2.5 billion who still lack access to improved sanitation, improvements need to happen faster and on a much larger scale. This is essential to reaching the World Bank Group's two corporate goals, to end extreme poverty by 2030 and boost shared prosperity for the poorest 40 percent of the population.

Conventional approaches such as financial support to construct toilets or water pipes have proven insufficient to translate to sustained usage at scale. One of the most significant innovations in water and sanitation in recent years is the focus on behavior change interventions as a key ingredient necessary for sustainable access to billions of people.

This year, the World Bank/Water and Sanitation Program cartoon calendar depicts water and sanitation challenges through a behavior change lens to help demystify some of the nuances that must be understood in order to succeed.

We thank the talented artists from around the world who helped us craft these critical messages with creativity and passion, while staying true to the calendar's tradition of raising awareness through humor.

Wishing you a fruitful and impactful 2014.

THE WORLD BANK

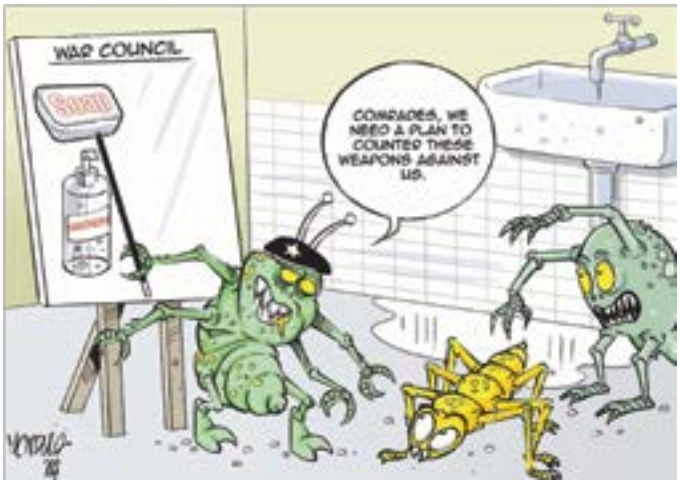
wsp water and sanitation program

The Water and Sanitation Program (www.wsp.org) is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services.

March

In addition to cultural taboos restricting the activities of menstruating girls and women, girls often miss school due to the lack of proper sanitation facilities. In some areas, girls are likely to miss three to four days in a month, which is 20% of total school attendance.

April



The simple act of washing hands with soap can cut the risk of diarrhea by 48%.

May

In the developing world, roughly 90% of sewage is discharged untreated into rivers, lakes and coastal areas, with a widespread negative impact on health.

June

It is estimated that two out of every three people will live in water-stressed areas by the year 2025.

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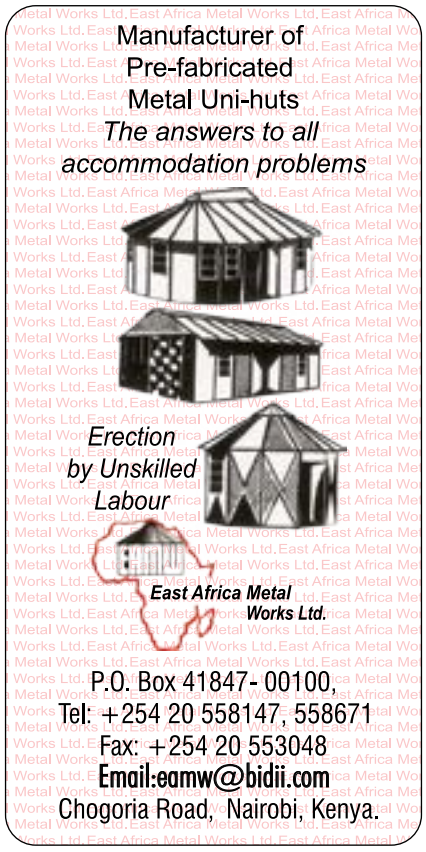
DOWN PIPES

(In Kenya)



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Email: fkibathi@nalco.com
Website: www.nalco.com/za

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FILTRATION SAND

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Contact: Mr E M Mwai

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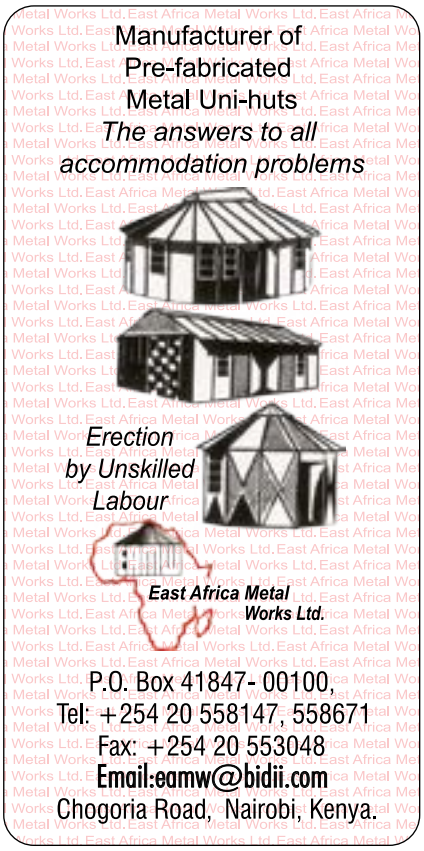

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Contact: Maina Rwambo

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Website: www.nil1949.com
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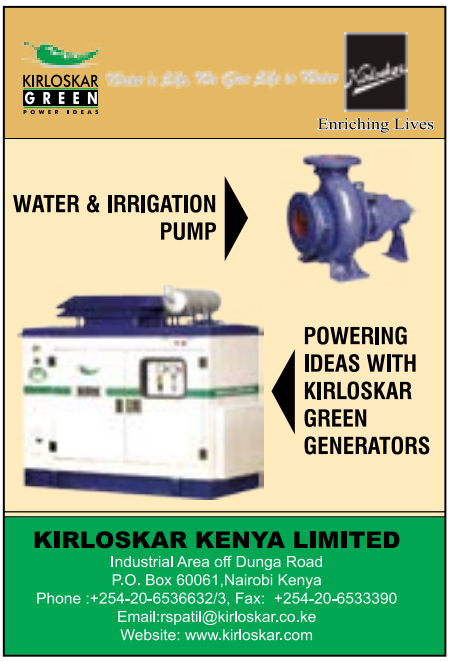

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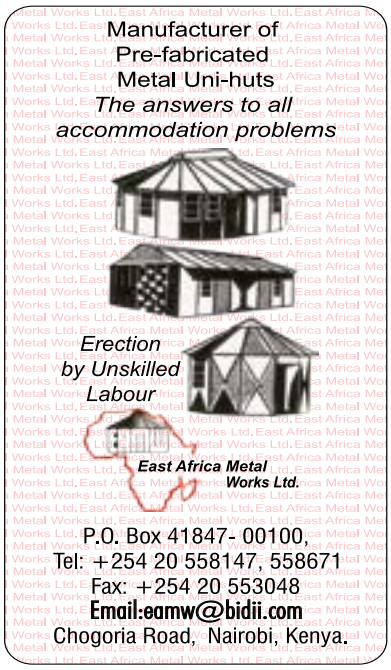

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Contact: Mr. A. Parikh

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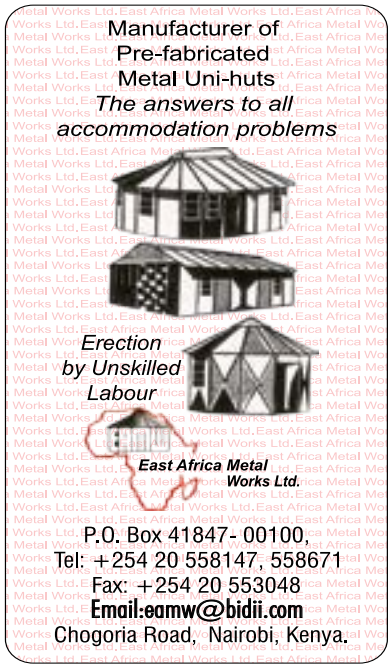

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Contact: Mr. S.D. Shah

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Email: business@kridha.com
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Contact: H. Patel

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Contact: Mr Amin / Mr Njenga

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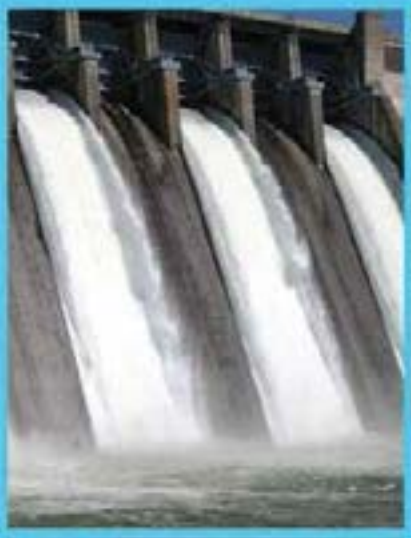
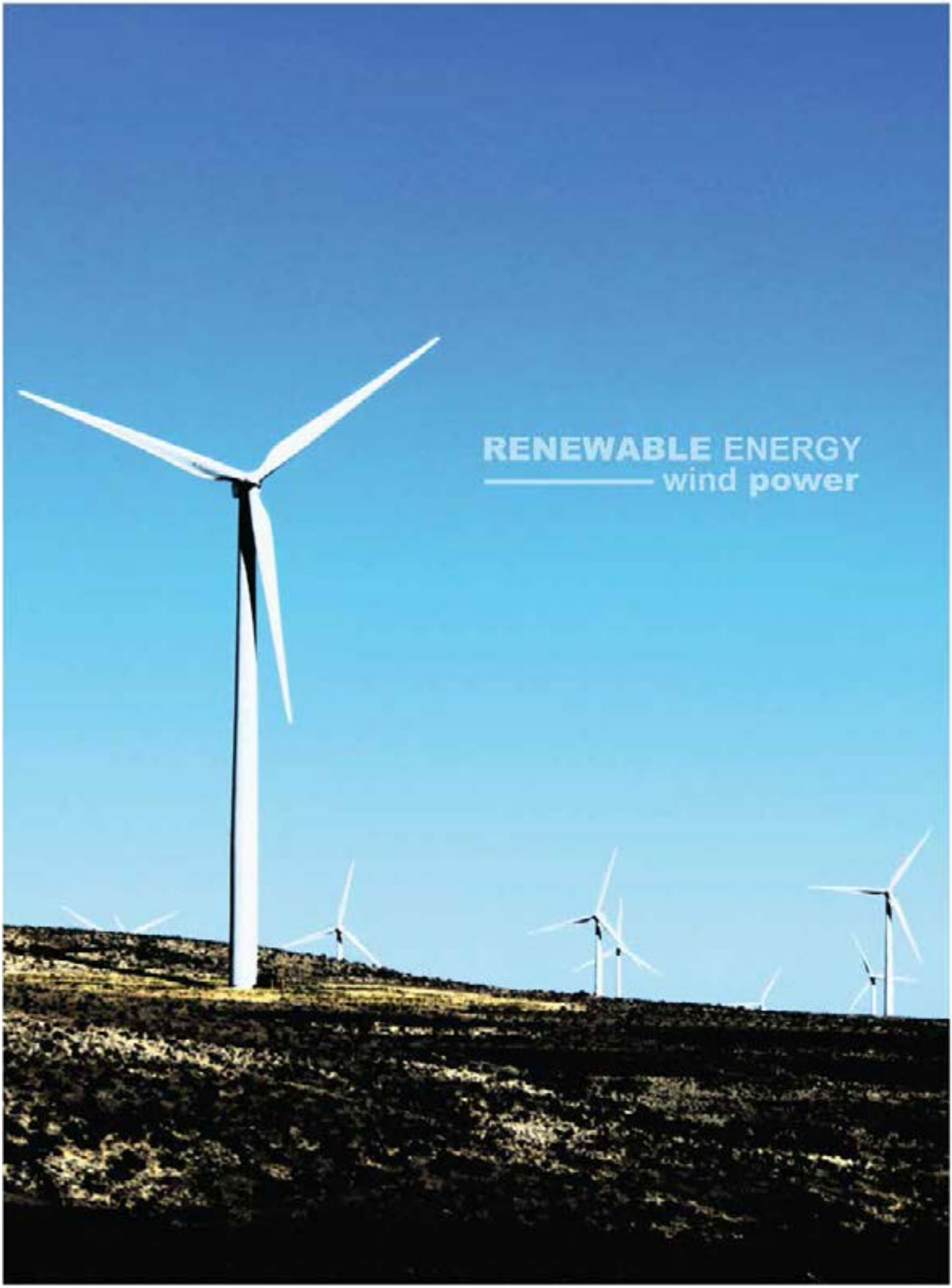
WATER ENERGY IN ACTION

GEOTHERMAL ENERGY

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