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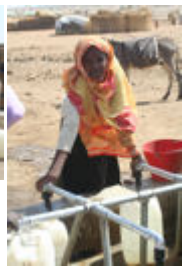
The Other Crisis in Darfur

Sustainability Management is Key to Saving Environment

In a land of political chaos and an ongoing humanitarian crisis, little is known about the environmental disaster burgeoning in Darfur.

A dead tree in the Darfur landscape.

Darfurians line up to receive water. All photos courtesy of Jane Strachan, disaster operations specialist for the U.S. Agency for International Development.



A woman at a well in Darfur.

Understandably, when President George W. Bush called the current situation in the Darfur region of Sudan a “genocide,” there wasn’t much thought given to problems such as groundwater levels. Reports from relief agencies on high human death tolls and alarming numbers of rape were, justifiably, in the spotlight.

But if peace comes back to this troubled region, the Darfurians who have fled their homes seeking refuge in displaced-persons camps or the nearby country of Chad will need to come back to a land of water, trees, and fertile land — a land that can support them as before. Read more.

Climate Change, Sustainability Focus at Policy Forum

District of Columbia Rep. Eleanor Holmes Norton (D), spoke at the Clean Water Policy Forum in May. Photo by Ron Thomas.

Water and wastewater issues and solutions often struggle to gain a foothold in the minds of those on Capitol Hill. Often, other issues dominate lawmakers’ time.

However, the 2007 Clean Water Policy Forum provided an opportunity for water quality professionals to learn about the problems facing the water industry and highlight these problems to policymakers. Read more.

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Features

The Other Crisis in Darfur
Sustainability Management is Key to Saving Environment

Click here for a complete Darfur photo gallery. Photo by Jane Strachan, USAID.

In a land of political chaos and an ongoing humanitarian crisis, little is known about the environmental disaster burgeoning in Darfur. Understandably, when President George W. Bush called the current situation in the Darfur region of Sudan a "genocide," there wasn't much thought given to problems such as groundwater levels. Reports from relief agencies on high human death tolls and alarming numbers of rape were, justifiably, in the spotlight.

But if peace comes back to this troubled region, the Darfurians who have fled their homes seeking refuge in displaced-persons camps or the nearby country of Chad will need to come back to a land of water, trees, and fertile land — a land that can support them as before. Currently, the environment of Darfur is under destruction through acts of violence and through mismanaged use.

Background on Darfur
The ongoing conflict in Darfur started as a rebel uprising against the government but got international attention when the Janjaweed — Arab militias backed by the Sudanese government — began attacking black Africans. The conflict has grown even more complicated since May 2006, according to Jane Strachan, disaster operations specialist for the U.S. Agency for International Development (USAID), when several rebel groups failed to sign the Darfur Peace Agreement, a U.S.-sponsored peace deal between the government of Sudan and one of the smaller rebel groups. The rebel groups felt that their demands were not met and they had little to gain by signing. Those factions have since splintered causing dozens of different armed factions to fight for control of pieces of three Darfur states: West, North, and South Darfur.

Since 2003, the Janjaweed has been specifically attacking certain ethnic groups in Darfur, thus being called an "ethnic cleansing" by some relief workers and media outlets. The international community estimates that at least 400,000 Darfurians have been killed, and 2.2 million have been displaced.

Brendan Bromwich, an environmental engineer for Tearfund, a London-based relief and development agency, took part in an assessment of the current environmental situation in Darfur — including its water and forestry issues — to address the urgency of this relatively unnoticed ecological situation. Bromwich and several others authored the report, "Relief in a Vulnerable Environment," which takes into account Bromwich's 15-month stay in Darfur where he saw first-hand the ongoing environmental degradation.

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Groundwater Woes
At a January meeting with relief agency representatives in Washington, D.C., Bromwich explained that the goal of the Tearfund study was to look at what effects the conflict and the displacement of millions of people have on the environment. The report, he said, was written to inform relief agencies that a “fresh look” at the environment is essential to Darfur’s current welfare and future.

“The ethnicity and political issues are the most dire issues to be resolved,” he said. “The environment is a component of conflict.”

Darfur is not an area rich in water resources. Bromwich said that the region is considered geologically poor for maintaining adequate groundwater. Located along the edge of a desert, Darfur has a very low rainfall, around 300 mm/yr, and the geology makes groundwater reservation difficult. With millions of people displaced from their homes concentrating in small areas, groundwater reserves are being exhausted. For example, five hand pumps installed at the Abu Shouk camp for internally displaced people (IDP) in North Darfur have run dry, with six more hand pumps showing low yields, according to the report.

As part of the assault on the people of Darfur, the Janjaweed has been destroying relief technology such as water pumps. Attacks on the lands itself — such as burning land to make it unusable — are also ongoing.

“Environmental resources are being fought over and are being destroyed as a feature of the violence,” reads the report. “Actions include the destruction of crops and water points, the restriction of cattle migration causing local overgrazing, and the destruction of trees and rangeland.”

By destroying the environment, the militiamen are destroying the very sources of life and livelihood on which the people of Darfur depend. For example, brick-making is a common source of income for Darfurians. Without appropriate access to water — needed to make bricks — the livelihoods of many suffer. As a consequence, chlorinated water from drinking water pumps in the IDP camps is being used for brick-making — possibly short-changing people on clean drinking water.

Situations like that, according to Tearfund, create the need to assess daily water requirements in the IDP camps. How much drinking water does each person need? How much of the water available is used for drinking and where is the rest going? Bromwich said that Sphere Standards — standards set for the relief community that dictate the minimum human response levels — call for a minimum of 15 L/d of water per person for drinking, washing, and other activities requiring water. Yet, he said, there’s been acknowledgement that people actually need less than 15 L/d, and that if people are using treated water to maintain their livelihoods, this is a problem. Any extra water should not be extracted from groundwater reserves.

“If the groundwater is becoming depleted, and we’re providing water over and above what is needed from a humanitarian demand, well, let’s acknowledge that and let’s do a survey and see how much people are actually using for their non-humanitarian demand. How much does their livelihood demand?” Bromwich questioned.

That’s not to say a person’s livelihood is not part of the humanitarian response, he said, but there must be accountability as to the amount of water provided to each person and why. Severe groundwater depletion means the pumps will run dry, and this poses the risk of secondary displacement.

Sustainable Resource Management
The report calls for a sustainable resource management (SRM) approach to Darfur’s worsening environmental

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situation. While the report acknowledges this is an “emergency crisis,” a long-term approach is necessary, not just short-term relief.

Sustainable resource management is a way to ensure that environmental resources are used responsibly in the present so as not to endanger their availability in the future. Assessing and monitoring demand for resources is imperative to this model. The report includes suggestions for managing demand such as assessing the actual use of a resource — is it a humanitarian, livelihood, or animal use? Another suggestion to reduce the use of water is to support alternative occupations instead of those that demand the use of water, such as brick-making.

Groundwater monitoring is also a part of SRM. “There isn’t a systematic approach to monitoring groundwater depletion and there should be,” Bromwich said. In the 1970s, remote sensing was used to assess conditions in Darfur, but it did not provide enough information. While it was helpful in understanding the geology of the land, remote sensing — which uses satellite imagery — did not reveal the quantity of groundwater.

The data from remote sensing must be matched with conventional hydrogeology, Bromwich said, to decipher how much groundwater is abstracted, and how much the water level is going down. “There need to be more hydrogeologists working in the field in Darfur,” Bromwich said.

The report explores methods of alternative building technologies and energy sources, such as biogas and solar energies, and promotes more efficient energy use.

Report Recommendations
The Tearfund report includes a series of recommendations for agencies of the United Nations and nongovernmental organizations.

For the water scarcity issues, the report recommends that the water sector adopt SRM as the “framework” to ensure water security is not affected by “inappropriate abstraction.” Additionally, groundwater levels must be monitored by the organizations that manage groundwater abstraction, and assessments of water resources should be done with urgency, particularly at high-demand areas such as the camps surrounding North Darfur’s capital, El Fasher.

A key component in this SRM framework would be to engage the universities and organizations local to Darfur to participate in its environmental management. There is a natural resources department at the University of El Fasher, a forestry department at the University of Zalengei, and the Sudanese Environmental Conservation Society — all of which could provide expertise with the added benefit of having a stake in Darfur’s future, the report notes.

Download the report to read it in its entirety, or see the Tearfund Web site at www.tearfund.org.

— Meghan H. Oliver,
WEF Highlights

Climate Change, Sustainability Focus of Policy Forum

Water and wastewater issues and solutions often struggle to gain a foothold in the minds of those on Capitol Hill. Often, other issues dominate lawmakers’ time. However, the 2007 Clean Water Policy Forum provided an opportunity

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for water quality professionals to learn about the problems facing the water industry and highlight these problems to policymakers.

The Water Policy Forum was held May 6–9 in Washington, D.C., and was hosted by the Water Environment Federation (WEF; Alexandria, Va.) and the National Association of Clean Water Agencies (NACWA; Washington, D.C.). It featured a variety of speakers focusing on the myriad issues currently engaging the water industry, including climate change, sustainable infrastructure, and water quality-based legislation.

WEF Executive Director Bill Bertera speaks with Rep. Earl Blumenauer (D–Ore.) at the Clean Water Policy Forum in D.C. last month. Click photo for larger image. Photo by Ron Thomas.

Effectively Managed Utilities
The Water Policy Forum introduced the "Ten Attributes of Effectively Managed Water Sector Utilities," which were the work of the Effective Utility Management Steering Committee. committee was established by WEF, NACWA, the U.S. Environmental Protection Agency (EPA), the Association of Metropolitan Water Agencies (Washington, D.C.), the American Public Works Association (Kansas City, Mo.), the American Water Works Association (Denver), and the National Association of Water Companies (Washington, D.C.), who entered into a Statement of Intent to formalize a collaborative effort that would promote effective utility management.

According to the Steering Committee, the attributes are intended for use as a basis to promote improved management within the sector. The attributes are

- product quality,
- customer satisfaction,
- employee and leadership development,
- operational optimization,
- financial viability,
- operational resiliency,
- community sustainability,
- infrastructure stability,
- stakeholder understanding and support, and
- water resource adequacy.

Benjamin H. Grumbles, EPA Assistant Administrator for the Office of Water, said these attributes will serve as a basis for future utility executives and that they "chart a course locally and globally for world-class sustainable utilities."

WEF Executive Director Bill Bertera classified the document as a new commitment to service to the public and stressed the importance of the six national organizations, which represent members and the public, working toward water sector collaboration.

Sustainable Infrastructure
The Water Policy Forum highlighted the significance of sustainable infrastructure. EPA Administrator Stephen L. Johnson stressed the importance of working toward more sustainable infrastructure, indicating that providing

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sustainable, secure, and clean water is one of his top priorities as EPA administrator.

“We must continue to create sustainable infrastructure systems,” Johnson said.

To achieve his goals, Johnson emphasized the importance of utility executives using innovative approaches to finance building sustainable infrastructure. He also called on executives to remove barriers that stall sustainable infrastructure construction, create incentives to spur growth, and better use private activity bonds, which can help accelerate investment in water infrastructure, according to Johnson.

Grumbles further expanded on EPA’s growing emphasis on sustainable infrastructure. To achieve this goal, he called for infrastructure that relied on infiltration, rain gardens, green roofs, and vegetation, rather than concrete.

Likewise, WEF Past President J. Michael Read recommended that utilities use sustainable infrastructure in future construction.

Legislation
Grumbles discussed water efficiency legislation — a regulatory priority for EPA, he said — such as Executive Order 13423, which calls on all federal agencies to become more water efficient. He also discussed EPA’s plans to work with the U.S. Treasury Department, as well as the public and private sectors, to push innovative funding strategies and initiatives, such as a water trust fund aimed at funding sustainable infrastructure,and focusing on full-cost pricing for water “to recover the true value of the services being rendered.”

The Water Policy Forum also highlighted legislation being considered by for the 110th Congress. Much of the legislation focuses on climate change, including six bills and one draft proposal calling for varying strategies to address climate change.

“The 110th Congress has been the most active Congress, in terms of climate change, of the last three Congresses,” said Greg Adams.

In particular, the climate-related legislation focuses on six gases and their role in global warming. The bills call on a variety of measures to be taken to help curb climate change, including

- capping emissions by 2012,
- following provisions set forth by the Clean Air Act,
- bringing emissions back to a 1990 baseline level, and
- relying on strict California standards for transportation restriction.

WEF itself has already begun working toward solutions in the fight against climate change. The federation’s climate change resolution, which was approved on Oct. 20 by the WEF Board of Trustees, calls on WEF to serve as a leader in combating the effects of climate change on the global water environment.

The Value of Water
“Water has always defined our history,” said Congressman Earl Blumenauer (D–Ore.). “Today, we are seeing water stress everywhere.”

Blumenauer, a member of the Select Committee on Energy Independence and Climate Change, cited the numerous problems facing utilities, such as aging infrastructure and the overstressed Colorado River. He laid the onus of the country’s water problems on the U.S. Congress and the U.S. Corps of Engineers, discussing projects proposed by both entities that he classified as suspect projects that do not consider side effects, such as the New Orleans

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Industrial Canal project.

He also believes that more important projects have been neglected by political leaders, saying that only $70 million was spent in fiscal year 2005 on non-emergency water supply needs.

“Too much water resource money is diverted to other priorities in the United States,” Blumenauer said.

District of Columbia Rep. Eleanor Holmes Norton (D), who sits on the Subcommittee on Water Resources and Environment, agreed with Blumenauer, saying that the “accumulation of clean water needs in our country” is more than $13 billion. She cites the continuing problems of pollution within the Chesapeake Bay, as well as the Anacostia River, as symbols of mismanagement.

To overcome these problems, Blumenauer suggests a multitude of solutions, including spending the few monetary resources wisely. “It’s how we spend, where we spend it,” he said, referring to funds.

Other suggestions from Blumenauer include working with the private sector; no longer allowing other industries to use water sources, such as oceans, lakes, and rivers, like a machine; public education; water forums in local communities to shed light on water problems and discuss ways to manage these problems; and the establishment of a water trust fund similar to the current highway trust funds that partially finance road construction in the United States.

He believes both local and federal government leaders must work together for change. Blumenauer said that local leaders must educate consumers, while the federal government should provide a framework to follow, as well as convince all government departments and agencies to work together to solve these problems.

Norton and Johnson concurred, with Norton calling on water professionals to bring attention to how serious the problem truly is and arguing that the nation’s priorities must shift to ensure clean water in the 21st century. Likewise, Johnson appealed for collaboration across all levels of government, arguing that local governments cannot rely just on federal financing. In addition, he said that citizens undervalue the importance of water and stressed the importance of utility executives conveying the true value of water to customers.

“The value of water and water infrastructure has diminished,” Johnson said. “We need to notify the public about the value of water.”

—Michael Bonsiewich
WEF Highlights

From the President:
WEF Delegates Travel to France for Water Tour

I was part of an 11-member U.S. delegation of public officials and water industry leaders invited by the French government to attend a comprehensive water tour in Paris and Lyon, France, last December. The tour included meetings with key national, regional, and local government officials in France and provided a forum to discuss timely policy and technical issues related to water, wastewater, and other environmental challenges confronting the United States, France, and other countries.

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In Paris, our delegation met with Minister of Environment and Sustainable Development Nelli Olin, who is responsible for developing and implementing major environmental policies and initiatives for France. Among other issues, Olin discussed a major water bill that had just been introduced in the French Parliament that addressed global warming, air pollution measures, protection of water resources, water rights, and governance as it relates to providing water and wastewater services.

Several members of the French Parliament and staff members responsible for creating water-related policy also spoke with the delegates on numerous public policy issues and legislative initiatives involving wastewater and other environmental topics.

The delegation also met with Michael Camdessus, former chairman of the International Monetary Fund and World Bank, to discuss international water and wastewater needs in developing countries, and the effectiveness of financing programs in addressing evolving environmental needs.

French Minister of Foreign Trade Christine Lagarde and staff met with the delegation to discuss the interaction between France, the United States, and other countries in addressing global environmental issues. The agency's interface with the World Bank and the Bank's international initiatives also were discussed.

The delegation also met with the chief executive officers and key executives of two of the largest water service contractors in the world: Veolia Water (Paris) and Suez (Paris). Generating more than $100 billion in revenues per year combined, the companies serve thousands of municipalities in more than 100 countries worldwide. They employ in excess of 400,000 people in the water and wastewater industry. The water tour included visits to Suez's wastewater treatment plant in Valenton, and Veolia's water treatment plant in Mery-Oise. Both plants demonstrated innovative technical design in water and wastewater treatment.

Gerard Collomb, mayor of Lyon, met with the group to discuss water and wastewater issues confronting local governments. Included was the role of the private sector in France in providing water and wastewater services through public-private partnerships; the importance of consolidated efforts by numerous agencies and businesses currently involved in addressing environmental issues; and the responsibility of local government officials to be involved in environmental planning, regulatory, and implementation initiatives.

The group later met with Michel Mercier, president of the Rhone Council, to discuss the consolidated planning of water resources and other environmental disciplines in Rhone region of France.

Finally, the delegation attended Pollutec 2006 in Lyon, one of the largest environmental trade shows in the world. The show attracts thousands of vendors from water, wastewater, and other waste management industries, and accommodates more than 35,000 participants annually. The exhibit showcased the latest in environmental equipment, systems, and services provided around the world.

The water tour was beneficial to the delegation, as well as to the French public officials and water agencies involved. Significant policy, financial, pricing, operational, and management data were shared among representatives of the two countries.

Members of the U.S. delegation included:

- Ronald Oden, mayor of Palm Springs, Calif.;
- James Kennedy, mayor of Rahway, N.J.;

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- Martin Chavez, mayor of Albuquerque, N.M., and co-chair of the Conference of Mayors Water Utility Council;
- Daniel Coody, mayor of Fayetteville, Ark., and co-chair of the Conference of Mayors Water Utility Council;
- Dena Mossar, city council member of Palo Alto, Calif., and chair of the Energy, Environmental, and Natural Resources Committee of the National League of Cities (Washington, D.C.);
- Enrique Medina, city manager of Arvin, Calif.;
- Nicholas Dungan, president of the French-American Foundation (New York);
- Peter Cook, executive director of the National Association of Water Companies (Washington, D.C.);
- William Verkest; president of the American Public Works Association (Kansas City, Mo.); and
- George Raftelis, president of Raftelis Financial Consultants (Charlotte, N.C.), and former chair of the Management Division of the American Water Works Association (Denver, Colo.).

French Embassy participants in the delegation included:

- Olivier Piton, the public affairs attaché of the French Embassy's Economic Department in Washington, D.C., and organizer of the Water Tour;
- Jérôme Fabre, the economic and industrial counselor deputy head within the Economic Department of the French Embassy in Washington, D.C.;
- Christian N'Domba, Environment Attaché with the Economic Department of the French Embassy Consulate Office in Houston; and
- Gael Gregoire, water specialist at the World Bank office in Washington, D.C.

— Mohamed F. Dahab
2006-07 WEF President

Students and Young Professionals Committee Holds Summit

Following positive feedback from last year's Young Professionals (YP) Summit at the South Carolina WEFMAX meeting, the Water Environment Federation (WEF; Alexandria, Va.) Students and Young Professionals Committee held its third annual Young YP Summit, April 19 at the WEFMAX meeting in Chicago, to bring together young, enthusiastic leaders from across the country.

At the summit, attendees had access to WEF's leaders and the chance to focus on the summit's theme of communication. The goal of the summit was to promote the sharing of ideas among different member associations and sections, promote leadership and empowerment, and raise awareness of the work of the Students and Young Professionals committees.

WEF, American Water Works Association (AWWA; Denver, Colo.), Illinois Water Environment Association (WEA), Indiana WEA, Central States WEA, Missouri WEA, and North Dakota WEA sponsored this year's event.

Sixty-nine young professionals from 27 different member associations or sections attended the event. The summit provided a forum for young professionals to learn from leaders in the industry and to develop and promote a better understanding of the needs of young professionals in our field.

The YP Summit began with an introduction and welcome from Brian Murphy, first deputy chief of staff for Chicago

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Mayor Richard Daley's office, and immediate past water commissioner of Chicago. Murphy welcomed everyone to the city, thanking them for taking an active role in the betterment of our environment.

The speakers at the event focused on improving communication. Bruce Fisher, adjunct professor and director of the Illinois Institute of Technology's Center of Research and Science (Chicago), gave the attendees a Myers Briggs (MBTI) personality test and spoke on "What Your Personality Type Says About You." Fisher explained the importance of understanding your personality type and how it relates to your communication approaches with others, whether among friends, family, or at work. He illustrated various personality types by identifying the personalities of several past and present leaders from across the world. He also provided examples of common characteristics and development areas for each personality type.

Bob Wimmer, head of the water and wastewater department at the engineering firm Johnson, Mirmiran & Thompson (Silver Spring, Md.), presented the potential pitfalls of e-mail communication. Wimmer demonstrated several cases in which e-mail communication spiraled into miscommunication and turmoil among a team trying to coordinate solely by e-mail. He left the audience with simple advice: If you have to rewrite an e-mail message, you should consider a telephone call instead.

Afternoon speakers Vincent Nazareth, principal engineer of R.V. Anderson Associates Limited (Toronto), along with YP Vanessa Chau, discussed the declining number of students entering the workforce in this industry and the retirement of much of the wastewater workforce. Nazareth encouraged YPs to become active and to remember that they have a key role in sustaining the workforce and WEF.

In addition, WEF Vice President Rebecca West and AWWA Vice President Craig Woolard provided inspirational messages. Both speakers addressed the challenges facing the industry and the need for additional young professionals to join the workforce. At the conclusion of their presentations West and Woolard answered audience questions about student and YP involvement and opportunities for leadership roles in their repsective associations.

The last portion of the afternoon included an open forum discussion for member association or section representatives to speak on their activities, successes, and challenges.

The summit ended with a social and networking reception for YPs and the YP alumni, fondly dubbed SPs, or seasoned professionals.

Peter Takaoka, WEA of Ontario president, said, "This is probably the best single-day training that I have ever attended."

"As the summit concluded, I felt that the energy and ambition in the room made for an atmosphere that was intoxicating," said Alan Will, past president of the Chesapeake WEA.

The success of this year's event could not have been possible without the dedication of people such as volunteers Dianne Crilley, Paul Olson, Leslie Samel, Charles Corley, Bob Wimmer, Eric Dodds, Mark Zachar, Rachel Lee, Heather Cheslek, and Brian Jordan.

Based on the success of the past summits, another YP Summit is planned for 2008. If you are interested in helping to plan or host the event, please contact either Dianne Crilley at dcrilley@wef.org or Leslie Samel at samells@cdm.com.

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— Leslie Samel
Project manager in Charlotte, N.C. office of CDM (Cambridge, Mass.), WEF Delegate-at-Large, and chair of the WEF Students and Young Professionals Committee

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News & Events
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News & Events

WEF Offers New International Program to Members

The Water Environment Federation (WEF; Alexandria, Va.) has a new program designed to make it easier for WEF members to exhibit at major water quality shows around the world. As part of the Federation's continued effort to increase member benefits as well as its global presence, the WEF International Pavilion offers pre- and on-site management and marketing services as well as a lower risk approach to purchasing booth space in international forums.

"The Water Environment Federation is excited and pleased to provide our members with this unique opportunity to develop an increased presence in the international water market," said WEF Executive Director Bill Bertera. "WEF is first and foremost a membership organization, and this program is just the latest example of how we continue to seek new and innovative ways to better serve our members and provide added value for their commitment."

Under the program, WEF will purchase exhibit space with all of the major international water quality shows and construct a 250 m^2 (2,500-ft^2) pavilion with booth space set below the minimum required by the international shows. Members will have the opportunity to either purchase exhibit space or send product brochures for distribution at a WEF-managed display. In addition, WEF will also provide a fully-built booth (3 m by 3 m minimum) in a prime location, translation and catering services, meeting rooms, lounge areas and pre-show marketing to increase booth traffic.

"From a business standpoint, we see enormous membership value to the international pavilion concept," said Jack Benson, WEF's chief commercial officer. "In addition to this being a low financial risk, WEF members will be able to exhibit under the WEF banner in a larger, more visible area as well as benefit from WEF's onsite management and pre-show promotions through our international publication, *World Water and Environmental Engineering*."

The WEF International Pavilion is currently scheduled for the following shows next year: International Trade Fair for Environmental Protection, May 5–9, 2008 in Munich; and Water Supply & Drainage and Water Treatment Exhibition, April 25–27, 2008 in Shanghai.

For more information about the program, contact Laila Sukkariyyah at lsukkariyyah@wef.org, or Jack Benson at jbenson@wef.org.

WEF Students and Young Professionals Reach Out to Turkmenistan Students

Last October, for the first time, students from Turkmenistan tested the quality of water from two main water sites of Ashgabat, the capital city of Turkmenistan, to celebrate World Water Monitoring Day (WWMD). Adopted by WEF in July 2006, WWMD is an international outreach program that builds public awareness and involvement in protecting water resources around the world.

As a follow-up to the testing, the International Research and Exchanges Board (IREX; Washington, D.C.) sponsored an online forum space — Dayanch Hojagyeldiyev, online projects assistant for IREX, coordinated the forum — where all interested could pose questions, get answers, and share their ideas on sustainable use of ecological resources.

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WEF learned about this initiative and invited members of the Students and Young Professionals Committee (SYPC) to join. Six SYPC members agreed to help make a difference by responding to questions on the forum and challenging the students with questions of their own, and thus established the WEF WWMD Turkmenistan Team.

"Their questions range from personal concerns about the color and smell of their household water to noise and air pollution in their cities," explained Hannah Wilner, engineer-in-training for CH2M Hill (Englewood, Colo.). "There is also participation from older students, including college students as well as professors. Many of their questions and answers tend to include a more global focus, such as how the U.N. and other governments are helping to solve ecological issues affecting everyone. One of the reoccurring themes through the forum is the question of what they can do to improve their environments, deforestation, irrigation issues, as well as recognition of the scarcity and preciousness of water to Turkmenistan."

Heather Cheslek of Greeley and Hansen (Chicago) said the students are curious about a number of topics.

"They seem to be interested in quite a few things such as conservation, treatment, basic water science, and programs in the U.S. pertaining to the celebration of water," Cheslek said. "More than one forum participant mentioned their country's Drop of Water–Grain of Gold National Holiday that occurs in April."

The online forum helps spread awareness of ecological issues affecting people everywhere while getting students excited about learning. For example, the forum helped to connect interested Turkmenistan officials, mentors, and students with the Stockholm International Water Institute to learn more about participating in the International Stockholm Junior Water Prize.

WEF WWMD team members include Eric Leveque of Carollo Engineers (Phoenix); Wilner; Cheslek; Dilli Neupane of Metcalf and Eddy (Wakefield, Mass.); Surabhi Sharma of Greeley and Hansen; and Jeremy Guest of Virginia Polytechnic Institute and State University (Blacksburg).

To visit the forum, click here. Read more about WWMD here.

Calling All Treatment Works!

Operations Forum, a special section of *WE&T* magazine, is looking for a few good treatment facilities. The *Forum's* Profile section provides an up-close look at water and wastewater treatment plants, collection systems, and outstanding operations and maintenance personnel.

The Forum currently is seeking new plants to highlight, so here's your chance to brag about the features, approaches, and people that make your facility exceptional.

For more information or to request a questionnaire, contact Steve Spicer, *Operations Forum* editor, at (703) 684-2463 or sspicer@wef.org.

Authors Sought for Update to Process Design Manual for Sludge Treatment and Disposal

The Water Environment Federation (WEF; Alexandria, Va.); the Water Environment Research Foundation (WERF; Alexandria, Va.); and the U.S. Environmental Protection Agency (EPA) are looking for individuals willing to serve as authors in a combined WEF, WERF, and EPA effort to update EPA 625/1-79-011, EPA's *Technology Transfer*

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Process Design Manual for Sludge Treatment and Disposal Manual. The original manual was published by EPA in 1979 and is greatly in need of revision. It is expected that at least two drafts will be produced by authors and reviewed before the production of a final draft. The revision process is expected to take 2 to 3 years. The tentative outline for the updated version of the manual follows:

Chapter 1 - Purpose and Scope
Chapter 2 - General Considerations
Chapter 3 - Public Involvement
Chapter 4 - Design Approach
Chapter 5 - Wastewater Solids Production and Characterization
Chapter 6 - Thickening
Chapter 7 - Controlling Pathogens, Controlling Vector Attractiveness, Reducing Volatile Solids, and Reducing Odors
Chapter 8 - Processes for Enhancing Sludge Destruction During Processing
Chapter 9 - Conditioning for Improved Thickening and Dewatering
Chapter 10 - Dewatering
Chapter 11 - Thermal Processing and Sludge Reduction
Chapter 12 - Transportation
Chapter 13 - Storage
Chapter 14 - Management of Odors
Chapter 15 - Side Streams from Solids Treatment Processes
Chapter 16 - Instrumentation
Chapter 17 - Utilization
Chapter 18 - Disposal to Land

Authors will be responsible for preparing detailed chapter or section outlines according to the proposed audience, purpose, and scope of the manual. Authors also will be responsible for preparing chapters or sections for the publication and addressing or incorporating all technical review comments received. Authors must follow the publication development process and meet all deadlines.

If you are interested in participating as an author; working closely with other volunteers, a Task Force chair, and the project administrator; and dedicating your expertise and time to ensure a high-quality manual is developed according to the publication development schedule, please contact the project administrator Jon C. Dyer with a brief resume. You may e-mail him at jondyer-etc@carolina.rr.com or call (704) 708-5599. Please indicate which chapter you are interested in, and ask any questions you have regarding the publication development procedures or role of author.

Three NBP Agencies Celebrate EMS Certification

The National Biosolids Partnership (NBP; Alexandria, Va.), a not-for-profit alliance between the National Association of Clean Water Agencies (NACWA; Washington D.C.), the Water Environment Federation (WEF; Alexandria, Va.), and U.S. Environmental Protection Agency (EPA), recently certified three agencies under its environmental management system (EMS) certification.

Columbus Water Works (Ga.). In November, the Columbus Water Works became the 14th wastewater agency in the United States to have its biosolids EMS certified by NBP. NBP, WEF, NACWA, and EPA representatives attended the EMS celebration held at the facility in February. A presentation also was made during the Columbus City Council meeting in February. Columbus Water Works said the biggest benefits resulting from its EMS certification

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have been improvements in public participation, recordkeeping, training, land application operation, internal communication, contractor performance, and long-term sustainability.

Read more about the Columbus Water Works EMS story.

City of Raleigh (N.C.) Public Utilities Department. Last December, the City of Raleigh Public Utilities Department (PUD) became the 15th wastewater agency in the United States to have its biosolids environmental management system (EMS) certified by NBP. NBP, WEF, NACWA, and EPA representatives attended the EMS celebration at the Neuse River Wastewater Treatment Plant (NRWWTP) in March.

During the Raleigh City Council meeting that same day, Mayor Charles Meeker (D) was presented with the NBP EMS certification plaque. The NBP EMS program has helped enable the City of Raleigh Public Utilities Department to maintain an AAA bond rating. Compared to an AA rating, this results in a financial benefit of approximately $2 million dollars a year for the current capital improvements budget.

Read the City of Raleigh's EMS story.

City of Grand Rapids, (Mich.). The City of Grand Rapids (Mich.), held a celebration at its facility on April 4 for becoming the 16th wastewater agency in the nation to have its environmental management system for biosolids program certified by the National Biosolids Partnership.

Last December, the City of Grand Rapids had its successful EMS program audit verification by NSF International Strategic Registrations (Ann Arbor, Mich.). Honored guests and NBP representatives included Roy Schmidt, city commissioner for Grand Rapids; Eric Delong, deputy city manager of Grand Rapids; John Colletti, EPA Region 5 biosolids coordinator; Ken Kirk, NACWA executive director; Fred Cowles, Michigan Water Environment Association president; Peter Machno, EMS director at NBP; and David Timm, district supervisor for the Michigan Department of Environmental Quality. The EMS certification has increased confidence in its program by the public and employees; increased demand for biosolids products; increased communication, both internally and externally; and improved documentation and recordkeeping, including capturing the knowledge of employees.

To learn more about the City of Grand Rapids EMS program, see www.ci.grand-rapids.mi.us/epsd/biosolids, or read the Grand Rapids EMS success story.

For more information, see the NBP Web site.

WEF Residuals & Biosolids Specialty Conference Draws More Than 800 Attendees

Attendees at the 2007 Residuals and Biosolids specialty conference were inspired to reach new heights with a motivational talk by Mount Everest climber Eric Alexander. Alexander spoke at the Water Environment Federation (WEF; Alexandria, Va.) event, held April 15–18 in Denver. The conference drew more than 800 attendees and included three workshops, 24 technical sessions, facility tours, committee meetings, and exhibits.

Alexander spoke at the opening session where he shared tales of his experiences climbing Mount Everest, including one ascent in which he led a blind skier to the summit. Alexander, a skier, climber, and mountaineer who directs Adventures Beyond Limits (Vail, Colo.) — an organization that educates and encourages youths with disabilities in the outdoors — told how he guided his blind friend Erik Weihenmayer to the lofty 29,035-ft (8850-m) summit of Mount

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Everest. In 2002, the pair traveled to Russia and climbed 18,500-ft (5639-m) Mount Elbrus. They also found success on Mount Kosciusko in Australia. These three peaks are the highest points on their respective continents.

Other prominent opening session speakers included John Stulp, Colorado's Commissioner of Agriculture, who spoke of innovations within agriculture. The opening session concluded with a photo essay depicting the changes in Colorado over the past century. Photographer John Fiedler replicated photos taken by a prominent photographer a century ago, comparing the photos dramatizes the changes that have taken place in Colorado.

The National Biosolids Partnership (Alexandria, Va.) also held a recognition breakfast for agencies participating in its environmental management system program. The breakfast featured remarks by National Association of Clean Water Agencies (Washington, D.C.) Executive Director Ken Kirk. The WEF Residuals and Biosolids Committee and the following subcommittees also met: Outreach and Education, Specialty Conference, Bioenergy Technology, and Agricultural and Industrial.

The next WEF Residuals and Biosolids specialty conference will be held in Philadelphia, March 30 to April 2, 2008. June 25 is the deadline for abstract submittals. To view the 2008 Call for Abstracts information, click here.

WERF Seeks Proposals for Research Efforts Addressing Graywater Reuse for Landscape Irrigation

The Water Environment Research Foundation (WERF; Alexandria, Va.) is now accepting proposals for a research project addressing graywater reuse for landscape irrigation. WERF has made nearly $375,000 available in funds for researchers to investigate the fate and occurrence of graywater chemical constituents and pathogens and their effect on soil and groundwater quality. Proposals are due no later than July 31.

Through this research, WERF will provide valuable information for the purpose of educating and guiding decision makers, water agencies, regulators, product manufacturers, and consumers. The study will provide quantitative, scientifically sound data useful in assessing the safety of household graywater reuse for landscape irrigation. Ultimately, this study should provide a factual basis for assessing consumer product usage and disposal recommendations in graywater reuse systems.

WERF and the Soap and Detergent Association (SDA; Washington, D.C.) initiated this two-phase research project, titled "Long-term Study on Landscape Irrigation Using Household Graywater," in 2004. Phase 1, which provided a literature review and draft experimental plan, has been completed; a PDF of the final report is available online. Phase 2, which is the subject of the current request for proposals, focuses on experimental studies.

Graywater is defined in this project as wastewater that originates from residential clothes washers, bathtubs, showers, and sinks. Toilets, kitchen sinks and dishwashers are not included due to the high organic content leading to oxygen depletion and increased microbial activity of the graywater.

"A 1998 survey sponsored by SDA estimated that approximately 7% of U.S. households use untreated or minimally treated household graywater for landscape irrigation. However, there is scant peer-reviewed research that addresses the long-term impacts of household graywater on soils, turf, plants or groundwater quality. This research effort will help fill this knowledge gap," said Jeff Moeller, senior program director at WERF.

Researchers interested in submitting a proposal are encouraged to visit the WERF Web site for more information and a complete RFP.

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