



Global Water Alliance 16th Annual Conference Summary Report for Conference Proceedings

On October 19th, 2023, the Global Water Alliance, hosted its 16th Annual Conference, "Advancing WaSH Goals in a Changing World Through Innovation and Resilience", which addressed the urgent need for new technologies and new data analytics in water management throughout the world in order to adapt to the future realities of more extreme weather patterns and events, sea-level rising, glacier melting and drought. This event was a look toward the World Water Forum in Bali in 2024, which will have the theme of "Water for Shared Prosperity".

Melissa Stevens opened up the conference with a call to order and a land acknowledgement that we were gathered in Lenapehokink, traditional homeland of the Lenape people. This was followed by welcoming remarks by Christy Schneider, Senior Manager of Exhibitions, Projects and Programming at the Science History Institute, who challenged the audience to think about who is at a gathering, who is not at the table and who we would like to invoke as we gather and encouraged thought of the connections and innovations that help propel us toward human health and thriving. Christiaan Morssink, President of Global Water Alliance, continued the opening remarks and discussed the history of science and innovation in Philadelphia and around the world and emphasized that we as a collective have taken water for granted for millennia and have only recently started to do work on water management at the global scale. We now face the challenge of translating sustainability and adding an extra element to this in terms of resilience, which is especially important now as climate change is going to hit hardest in the field of water management. Christiaan emphasized that the conference was a precursor to the World Water Forum in Bali in May of 2024 and the importance of having diverse voices at our conference, especially voices of youth.

Next, Dhruva Das Gupta from the Society for Creative Opportunities and Participatory Ecosystems (SCOPE) zoomed in to discuss the importance of wetlands and the East Kolkata Wetlands in particular, which serve as ecological hubs, act as a carbon sink, buffer floods and provide water storage. She opened the discussion by outlining upcoming risks wetlands will have to face, including the shifting of the hydrological cycle due to climate change and that these ecosystems are seen as 'real estate in waiting'. She shared the economic benefits the East Kolkata Wetlands have been found to have for the surrounding community and emphasized the need to increase the amount and availability of data not only in India, but in other parts of Asia and Africa and the value of community sampling and monitoring as means to implement successful management practices.

The first panel started off with Moderator Faith Sternlieb, PhD from the Center for Geospatial Solutions at the Lincoln Institute of Land Policy discussing issues around water data fragmentation and the need for data-driven, real time, and accurate decision-making around water. She spoke about Geoconnex, a universal addressing system for our national hydrology landscape, enabling water data discoverability that helps water data producers describe data sets with common vocabulary. Next, Kim Nelson from True Elements discussed the fact that the climate crisis is a water crisis and the need for reliable water data and analytics is urgent, but there are two data worlds- too much data in some parts of the world and too little in others. Kim discussed challenges to gaining water insights and water intelligence as a solution to water resilience. After that, Jaime Andrés Cárdenas Sánchez from Wake Forest University discussed increased nutrients in waterways and how they can affect how treatment plants can provide drinkable water to communities. He discussed how sustainability is a wicked problem and emphasized that we need to shift our thinking from an anthropocentric approach to a biocentric approach. Lastly, he shared his study that created different pore sizes of meltblown nonwoven fabrics to filter water and found significant removals of water contaminants such as total coliforms, nitrate, and orthophosphate. Scott Ensign from Stroud Water Research Center finished off the panel by telling the audience about the Delaware River Watershed Initiative Collaborative effort to restore, protect, study and monitor the Delaware River watershed. A portion of that is EnviroDIY, a project that involves community-based monitoring of their own streams and rivers and helps people answer their own questions about problems in their backyard. This was followed by a SHI Museum tour of the exhibit “BOLD: From test tube to textile”.

Moderator Vince Uhl, from Uhl & Associates, Inc., opened the next panel by highlighting the importance of groundwater and aquifer recharge. He gave the audience a brief overview of aquifers, the saturated versus the unsaturated zone and groundwater recharge in these aquifers. He also emphasized that the state of New Jersey gets half its drinking water from groundwater and that there are several areas in the United States that have high risk of groundwater depletion. Ashish Daw, Senior Hydrogeologist, UHL & Associates, Inc. further outlined groundwater and aquifer recharge by giving several case studies and examples on how to increase aquifer recharge. These strategies were accompanied by photos and examples of practices in play including the Sri Lanka Cascade Tank System and the comparison of natural recharge versus focused recharge in the Burkina Faso Reservoirs. Following Daw was Casey Clapsaddle from Princeton Hydro, LLC. Clapsaddle provided the audience with examples of how a stream or river can be reconnected with its floodplain and showed a video of a project that restored a straightened channel and rebuilt seven miles of a floodplain. The last panelist to present was Faith Sternlieb of the Lincoln Institute of Land Policy, who spoke about a case study of an ephemeral and transboundary waterway in the high-risk area of Southern Arizona called the Santa Cruz River. They partnered with the Sonoran Institute and were able to create a transboundary water agreement between municipalities in Mexico, Southwest Arizona, and also involved Native American tribes. By using highly treated wastewater to contribute to its flow, the Santa Cruz River is now more stable and is even home to the endangered Gila topminnow.

Dr. Clive Lipchin, Director of the Center for Transboundary Water Management at the Arava Institute for Environmental Studies, started the next panel with a discussion on the current state of the WASH sector globally, describing how nearly 70% of produced wastewater is untreated or treated to insufficient standards as well as inequities in drinking water and sanitation in off-grid areas in the West Bank and for Bedouin populations in Israel. He introduced the Laguna system, a compact, sludge-free, simple-to-maintain, and solar-operated waste treatment system that provides comprehensive treatment of wastewater for agricultural reuse. He shared that we cannot neglect the opportunities in wastewater management as part of a circular economy, especially in parts of the world where infrastructure networks and treatment facilities are not accessible.

Keynote speaker Marc Yaggi, CEO of Waterkeeper Alliance, brought the audience back to the fundamentals of why water is important and how we need to make personal connections to water so we can be stronger advocates and how we have to understand the threats to our waterways. He also emphasized the importance of tapping into our personal connections with water in order to become better advocates for it. He focused on three specific threats to water including the U.S. Supreme Court decision *Sackett v. EPA*, PFAS pollution in waterways and climate change. Marc highlighted stories of change happening at the local level in places like San Antonio, Texas, Pennsylvania and Hann Bay in Senegal. All of these groups still need help through science, data and innovation such as faster and cheaper field testing tools and new data platforms. Overall, he spoke about how we are at an inflection point in history right now with the climate and water crisis and it requires all of us to be engaged to be change agents and create a world where clean water is a given and a reality for everyone, and this change starts at the local level.

Next was the Voices of Youth Panel in which college and high school students shared their experiences addressing water, sanitation, and hygiene challenges around the world. Moderator Angelita Fasnacht emphasized that attracting a new generation of workers in the water industry is critical and that the conference was convened on “Imagine a Day Without Water”. Julia Stengel from Temple University’s Public Health Beyond Borders Club shared her experience working in Enriquillo, Dominican Republic to expand access to clean water, develop handwashing education programs, test water quality, and explore other public health issues of interest in the community. Lastly, students and the director of Imhotep Institute Charter High School STEM Ambassador Program shared their experience addressing water quality and access challenges in places like Jackson, Mississippi and Ghana, where they printed 3D water filters to address water contaminant crises and left 3D printers there to make sure the project was sustainable and communities could work on solutions on their own. Their programs focus on bringing STEM innovation to address water issues in these communities that have been fueled by generational social injustices.

Jesse Smith PhD, Director of Curatorial Affairs at the Science History Institute took participants on a tour of the Delaware River, guided by the discovery of photographs, advertising materials, posters, and informational films from the mid 1950’s located in a storage closet in the Delaware River Basin Commission. He emphasized the importance of materials such as these, as they can provide a unique insight into the planning and management perspectives of local

stakeholders, governments, and residents. This was followed by a tour of the SHI exhibit “Playing dirty: From oil spills to clean water in five rolls of the dice— collecting environmental board games”.

Followed by this were one virtual and three in-person breakout sessions. Amisha Shahra, Independent Consultant at The Water Center at Penn and The World Bank led a session on “Breaking Barriers: Gender and Equity Perspectives on Sanitation and Hygiene Innovations”. This session focused on the fact that women and girls bear the brunt of the water and sanitation crisis and face additional health risks because they are vulnerable to harassment, violence, and injury when they have to go outside the home to haul water or just to use the toilet. Amisha emphasized that further efforts are needed to ensure gender inclusive WASH. Christiaan Morssink, GWA President, led a discussion called “It ain’t all about technology and data” – Social, cultural, and economic considerations in achieving SDG #6”, which highlighted the importance of connecting high quality data with culturally rooted decisions and the cost of focusing on one data point at the expense of other data points. Yinusa Saheed Olanrewaju, Curriculum Development Consultant at Global Water Alliance led the session “Water sector innovation and resilience in developing countries”, which focused on water insecurity in developing countries and the need to transition from a linear water sector economy to a circular one. Yinusa discussed a case study in Chennai, India in which the Water in Circular Economy and Resilience (WICER) Framework was implemented to implement desalination and design wastewater treatment plants to reuse water and boost the economy. Finally, Godlove Fonjweng, PhD, Executive Director of International Programs, Prairie View A&M University discussed ways to leverage the international missions of institutions of higher education to advance WASH goals and empower students to do WASH projects abroad.

The last session involved an invitational address called “Bringing the message to Bali” by Loïc Fauchon, President of the World Water Council. Loïc spoke about how the state of the Earth, and especially water, is fragile and we are consuming more water than is naturally available. He offered some solutions such as calling on underground reserves, increasing our ability to desalinate water and implementing more widespread reuse of wastewater. He emphasized that a new economy of water resources lies ahead, making better use of digital developments and artificial intelligence. Loïc shared that the next World Water Forum will be held in Bali in May 2024 and invited attendees to take part in its preparation, bring their expertise and share their solutions. The closing remarks were led by Debbie Heuckeroth, PE, ENV SP, President-Elect, Global Water Alliance, who shared that GWA will be attending the World Water Forum in Bali in May of 2024 and bringing a UPenn Masters of Environmental Studies class, called for the audience to consider their own role in advancing WaSH equity and resiliency, urged them to use their voice on World Toilet Day (Nov 19th) and of course to join the Global Water Alliance. The conference was followed by a networking reception at SHI.

For the full conference agenda, images and more information, please visit us [HERE](#). The Conference Proceedings Report captures key points made during the full-day event.

For more information on the Global Water Alliance please visit our [website](#). Don’t forget to follow us on [Twitter](#), [Facebook](#), [Instagram](#), and [LinkedIn](#)!