

HWTS Network: 20 years connecting WASH actors and generating evidence

Marcio Botto

March 21, 2023

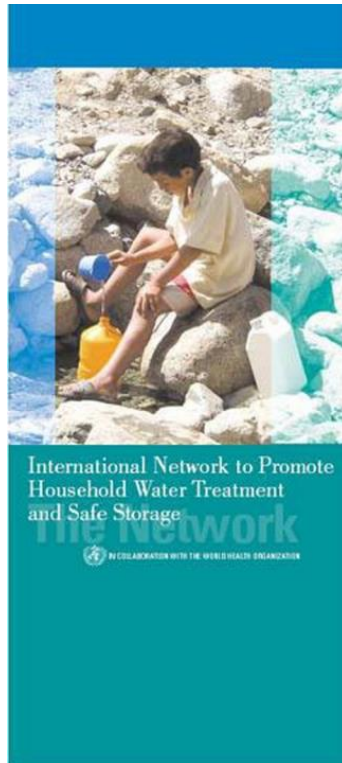


Outline



- The starting point
 - Why a HWTS network?
- Mission and objectives of the network
- Timeline
- HWTS and the SDG 6.1
- The network: benefits - Become a member
- Network activities
- Discussion forum
- The knowledge base platform

The starting point...



Collaborating Organisations, February 2003

CARE, USA
Centers for Disease Control & Prevention (CDC), USA
The Coca-Cola Company, USA
Department for International Development, UK
Department of Water and Sanitation in Developing Countries
at the Swiss Federal Institute for Environmental Science
and Technology, Switzerland
First Water, USA
International Committee of the Red Cross, Switzerland
International Council of Nurses, Switzerland
International Water Association, UK
Johns Hopkins University, USA
London School of Hygiene & Tropical Medicine, UK
Massachusetts Institute of Technology, USA
Oxfam, UK
Population Services International, USA
Procter & Gamble, USA
Suez, France
Thames Water, UK
United Nations Children's Fund (UNICEF)
The United States Agency for International Development
(USAID), USA
University of North Carolina, USA
University of Pretoria, South Africa
Water Aid, UK
World Chlorine Council, Belgium
World Health Organization (WHO)

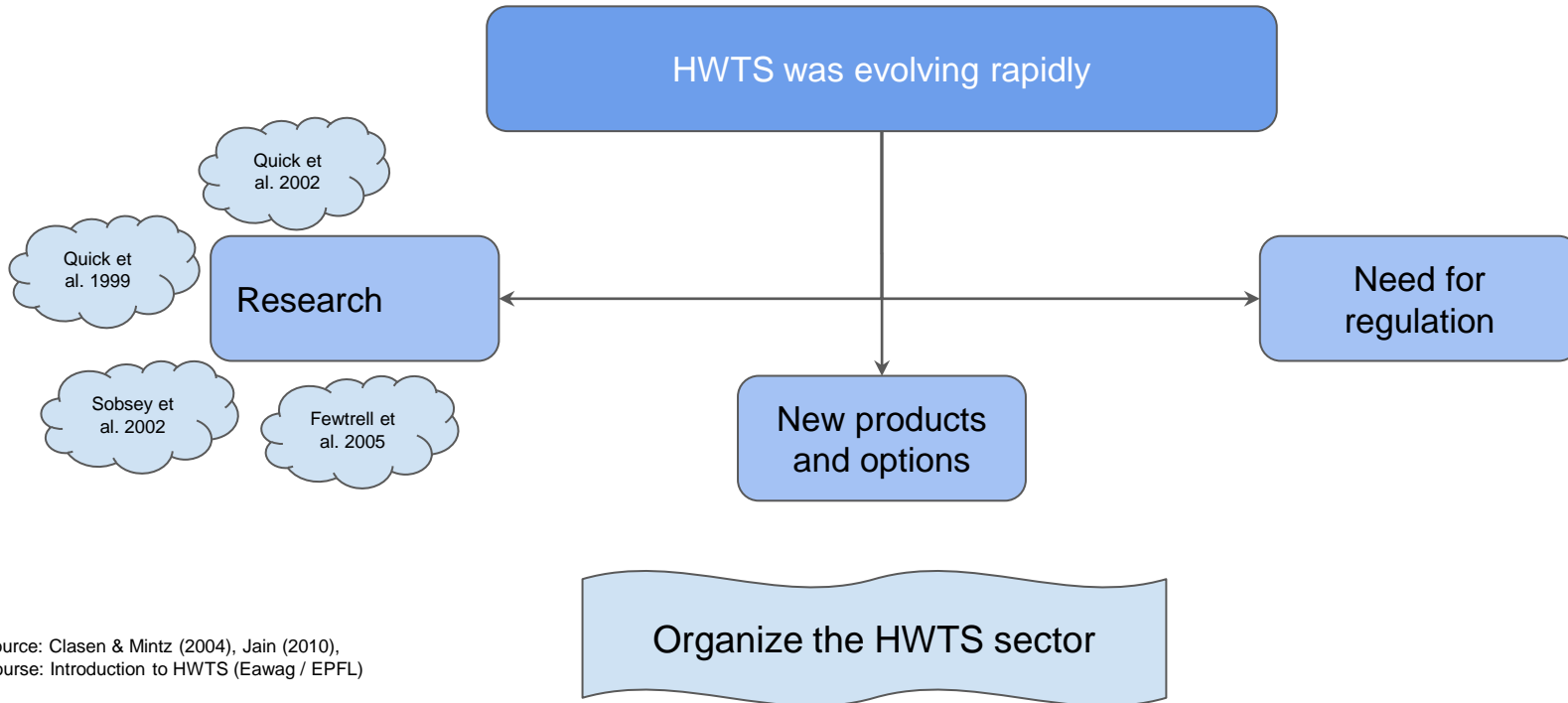
Membership in the Network is open to all interested stakeholders that agree with the Network mission and guiding principles and who are willing to commit themselves to working toward achieving the objectives of the Network.

The Network Secretariat will be hosted by WHO.

- Around 30 organizations from the public, private, academic and non-profit sectors.
- Provide a space to share information, discuss and promote group and individual actions.
- Why?
- What was the rationale?

The starting point...

Evidences



Mission and objectives



To contribute to a **significant reduction in waterborne disease, especially among vulnerable populations**, by promoting household water treatment and safe storage as a key component of water, sanitation, and hygiene programmes.

Strengthen
evidence base

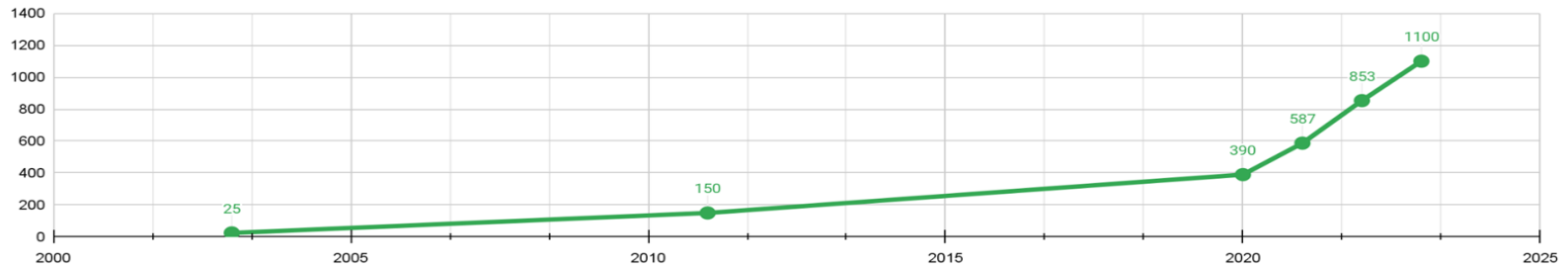
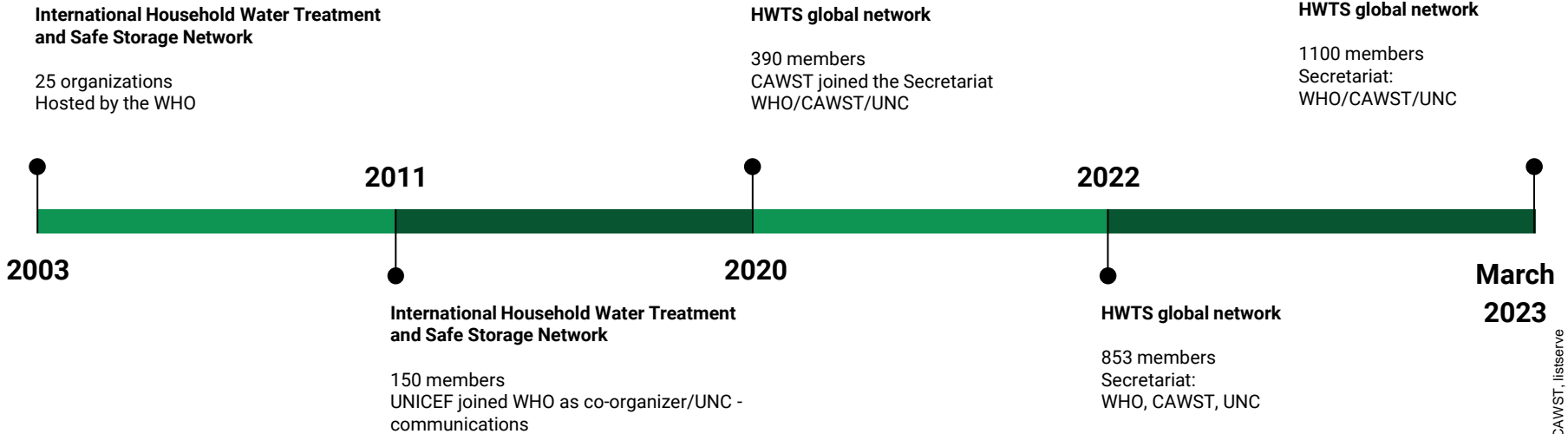


Source: <https://imvalencia.wordpress.com/>

Evaluate and
disseminate
best practices

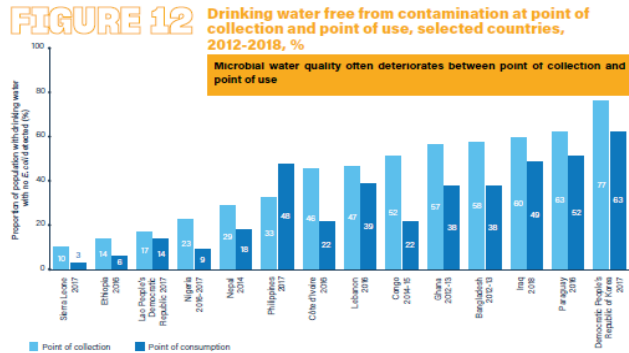
support the
development of
national policies
and frameworks

Timeline



Why HWTS must be part of the path to achieving SDG 6.1

Piped water systems share similar quality and reliability concerns that are often associated with non-networked options.



Source: Progress on household drinking water, sanitation and hygiene 2000-2017. Special focus on inequalities. New York: United Nations Children's Fund and the World Health Organization; 2018.

Free from contamination:

- 46% of the population at PoC
- 22% of the population at PoU

Household water treatment has a comparable health impact to piped water systems. Wolf et al. 2022, Wolf et al. 2018,

- Microbial contamination is widespread in low-middle income;
- Poor reliability (pressure loss and intermittency) of piped systems, technical barriers.
- A study in Yogyakarta, Indonesia: 77% of the water samples from the piped supply were contaminated with E.coli
- Study in Asia-Pacific: piped supply provided less sufficient water than self-supply, being considered less reliable in 9 out of the 10 countries studied.

Estimating the impact on health of poor reliability of drinking water interventions in developing countries

Paul R. Hunter^{a,*}, Denis Zmirou-Navier^b, Philippe Hartemann^b

^a School of Medicine, Health Policy and Practice, University of East Anglia, Norwich UK
^b Faculty of Medicine, Department Environment and Public Health, Nancy University, Nancy, France

Piloting water quality testing coupled with a national socioeconomic survey in Yogyakarta province, Indonesia, towards tracking of Sustainable Development Goal 6

Aidan A. Cronin^{a,*}, Mitsunori Odagiri^b, Bheta Arsyad^b, Mariet Tetty Nuryetty^b, Gantjang Amannullah^b, Hari Santoso^c, Kristin Darundiyah^b, Nur 'Aisyah Nasution^d

Household self-supply:

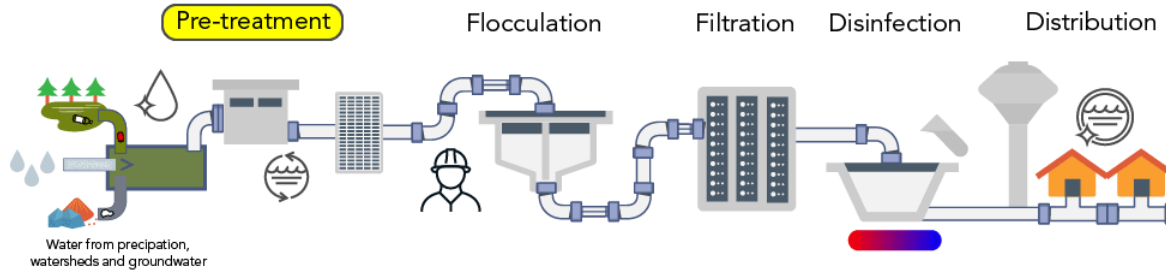
An immense but overlooked contributor to SDG6 in Asia and the Pacific

Tim Foster, Diana Gonzalez, Brooke Yamakoshi, and Peter Harvey

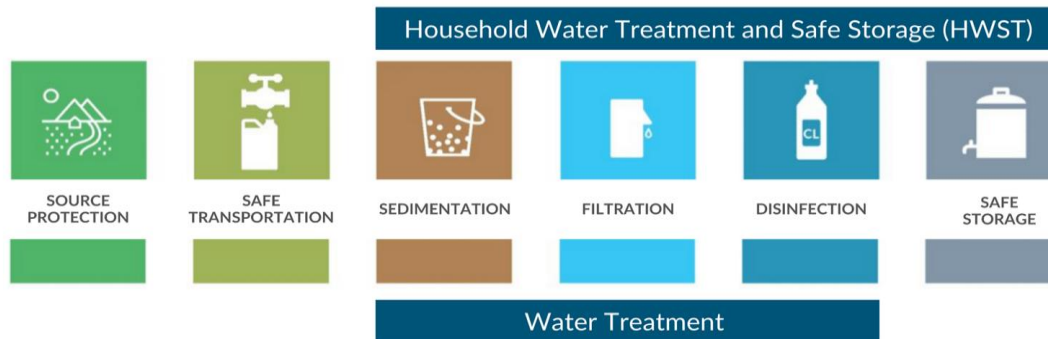
Global assessment of exposure to faecal contamination through drinking water based on a systematic review

Robert Bain¹, Ryan Cronk¹, Rifat Hossain², Sophie Bonjour², Kyle Onda¹, Jim Wright³, Hong Yang², Tom Slaymaker⁴, Paul Hunter², Annette Prüss-Ustün² and Jamie Bartram¹

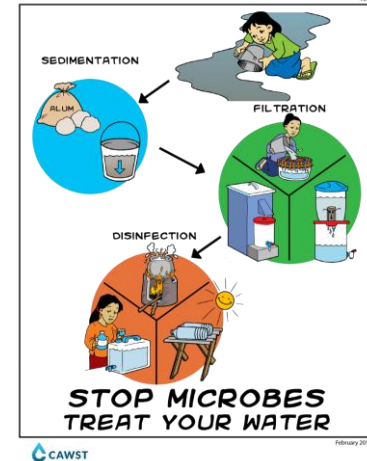
The concept of Multi-barrier Approach



Network supply system



Non-network supply system



Implementation: 3Cs



Selecting Household Water Treatment Options on the Basis of World Health Organization Performance Testing Protocols

Aaron Bivins,[†] Nikki Beetsch,^{‡,§} Batsirai Majuru,[‡] Maggie Montgomery,[‡] Trent Sumner,[†] and Joe Brown^{*,†}



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SHOULD I CHOOSE THE HIGHEST PERFORMANCE HWTS PRODUCT?

<https://www.cawst.org/blog/do-i-choose-the-highest-performance-hwts-product>

Selecting a product:

The choice should be made based on the likelihood of achieving high rates of correct, consistent, and continued use



Evaluation of consistent use, barriers to use, and microbiological effectiveness of three prototype household water treatment technologies in Haiti, Kenya, and Nicaragua

Anna L. Murray^{a,*}, Julie A. Napotnik^b, Justine S. Rayner^a, Antonia Mendoza^c, Brittany Mitro^a, Joshua Norville^d, Sitnah H. Faith^e, Alie Eleveld^e, Kristen L. Jellison^b, Daniele S. Lantagne^a

Biosand Filters; electrochlorinator; ceramic filter + bromine

Performance

Consistent use

- **Biosand Filters - used consistently (79% confirmed use after 14 months) / 30% of water samples - no E.coli.**
- **Electrochlorinator - less consistently (13% confirmed use) / 82% of water samples - no E.coli**

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HOUSEHOLD WATER TREATMENT AND SAFE STORAGE NETWORK

<https://www.hwts.info/network>

Community of practitioners, academics and policy makers working on water quality initiatives.

Membership is free!

Member's benefits

- Discussion forum
- Events and the Network meeting
- Newsletter
- Submit and promote your publications, resources, events, call for proposals within the HWTS sector.
- Learn space and resources library ...

Products and services

- Regional Learning Exchange to support the scaling up of HWTS and the development of national policies and frameworks.
- Webinars, technical sessions and annual meeting
- Technical resources on HWTS: White Paper on HWTS and markets, a toolkit for monitoring and evaluating HWTS programs, Sanitary Inspection forms for HWTS.
- Interactive knowledge base featuring project map, product and technology catalogue, specific country level content related to policies and research.
- Regular communications on the latest HWTS-related research through the Network's newsletter



Sanitary Inspection Form (Draft, 19 December 2022) DRINKING WATER

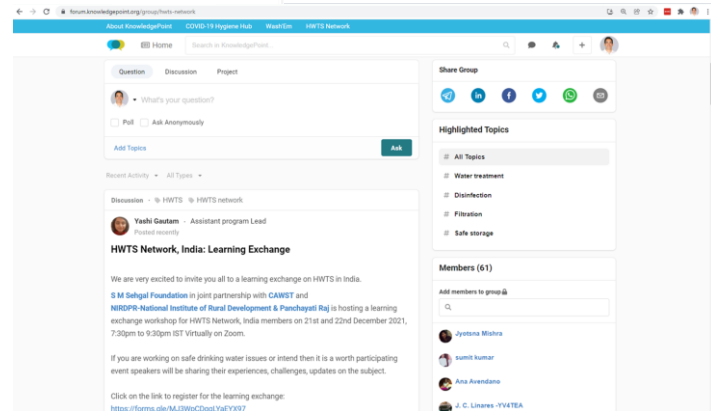
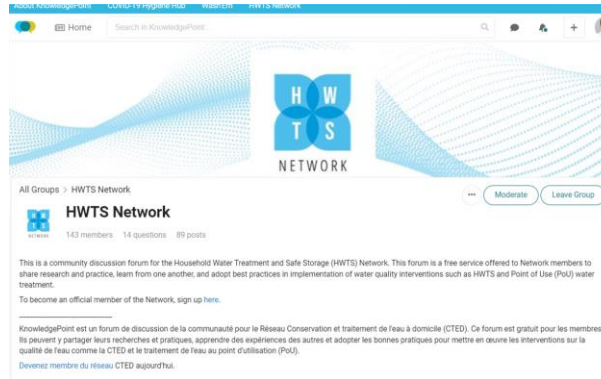
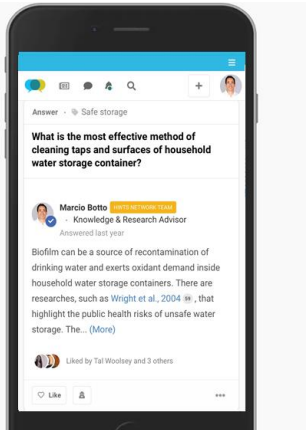
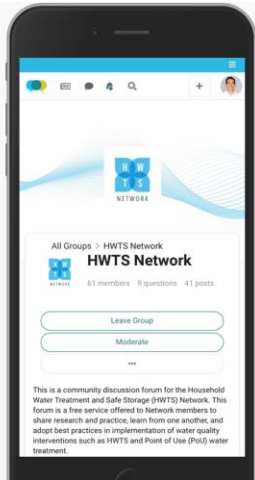
Definitions and technical guidance, please see the Management Advice Sheet later in this document.

Many inspection questions will have 'Yes' and 'No' options to record the results.

October 2021
hws.info/network

Inspected water	Yes	No	Water quality is consistent (check)
Does the unfiltered water look cloudy or contain small particles?	<input type="checkbox"/>	<input type="checkbox"/>	
Particles will be removed during filtration but too many particles will cause the filter to block.			
Filter condition			
Are there any hazards around the filter which could compromise the unfiltered or filtered water (e.g. animals, children, laundry facilities)?	<input type="checkbox"/>	<input type="checkbox"/>	
These risks could reduce the quality of unfiltered water and may increase the risk of contamination of the filtered water.			
Is the filter placed where it could be affected by the weather (e.g. in direct sunlight or underneath from heavy rain)?	<input type="checkbox"/>	<input type="checkbox"/>	
Being in direct sunlight may heat the filter and promote the growth of bacteria. Heavy rain may damage the filter and cause water storage contamination.			
Has the filter been moved since it was installed or is the filter positioned in an unstable location?	<input type="checkbox"/>	<input type="checkbox"/>	
Moving or unstable filters can dislodge the fibrous sand and bacteria. The filter should be moved when water is being drawn, the sign that the filter has been moved is that the surface of the sand is uneven or bumpy.			
Filter condition (continued)			
Is the filter container cracked, leaking or damaged?	<input type="checkbox"/>	<input type="checkbox"/>	
Cracks or leaks in the filter container can cause water to be lost, dried out or contaminated. A watertight water seal helps to prevent leaks and reduce the risk of contamination.			
Leads the filter water to pass through the filter (can lead to filter not being used).			
Are any parts of the filter, including the lid or filter, missing, damaged, dirty or loose?	<input type="checkbox"/>	<input type="checkbox"/>	
Missing broken or dirty components can lead to contamination of the unfiltered water or degradation of the filtered water. A broken lid can let germs into the container, reducing the removal of pathogens.			
Is there a tap or hose attached to the outlet? (check)	<input type="checkbox"/>	<input type="checkbox"/>	
Taps can increase the depth of the standing water which stops oxygen getting to the bio-layer. A hose can cause the bio-layer to dry out.			
Is the filter outlet tube dirty, broken or blocked with sand?	<input type="checkbox"/>	<input type="checkbox"/>	
Filter outlets are one of the highest risk points for recontamination of filtered water.			

Knowledge point - Discussion Forum



forum.knowledgepoint.org/groups

HWTS Knowledge base



- Products and technologies - 70
- Monitoring and Evaluation
- Country focus (policies, framework)
- Implementation approaches
- Project updates

Products & Technologies [+ Add a Product](#)

Projects [+ Add a Project](#)

Country Focus

Featured Countries

Argentina Bolivia Brazil Chile Colombia Dominican Republic Ecuador Ethiopia Ghana Haiti Myanmar Peru

hwts.info



2023 Network Annual Meeting

- October (TBD)
- HWTS-related research and innovation.
- HWTS policy and implementation
- Multiple languages: English, Spanish and French



Thank you

<https://www.hwts.info/network/become-a-member>



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