

WABES Outputs

2023-2026

1. PUBLICATIONS

2023 (11)

Andriessen, A., Appiah-Effah, E., Browne, S., Jahjah, R., Kabika, J. Quantities and qualities of fecal sludge: experiences from field implementation with a Volaser in 7 countries during a pandemic. *Frontiers in Water* 5, 1130081

Araya J., Podgorski J., Berg M. Groundwater salinity in the Horn of Africa: Spatial prediction modeling and estimated people at risk. *Environment International*, 176.
doi.org/10.1016/j.envint.2023.107925

Lüthi, C., Narayan, A. and Fritsche, J. Overview of Existing Planning & Programming Approaches and Tools, WABES Brief, Eawag-Sandec. www.eawag.ch/en/departement/sandec/projects/sesp/wabes/

de Meyer C., Wahnfried I., Rodriguez J.M., Kipfer R., García Avelino P.A., Carpio Deza E.A., Berg M. Hotspots of geogenic arsenic and manganese contamination in groundwater of the floodplains in lowland Amazonia (South America). *Science of the Total Environment*, 860, 160407.

Shrestha, A., Bhattarai, T. N., Acharya, G., Timalsina, H., Marks, S.J., Uprety, S., & Paudel, S. R. Water, sanitation, and hygiene of Nepal: status, challenges, and opportunities. *ACS ES&T Water*, 3(6), 1429-1453. doi.org/10.1021/acsestwater.2c00303

Strande, L., Evans, B., von Sperling, M., Bartram, J., Harada, H., Nakagiri, A., Nguyen, V.-A. Urban Sanitation: New Terminology for Globally Relevant Solutions? *Environmental Science & Technology*, 57(42).

Meierhofer, R., Kunwar, B. M., Shrestha, A. Changes in water treatment, hygiene practices, household floors, and child health in times of Covid-19: a longitudinal cross-sectional survey in Surkhet District, Nepal, *International Journal of Hygiene and Environmental Health*, 249, 114138 (14 pp.),
[doi:10.1016/j.ijheh.2023.114138](https://doi.org/10.1016/j.ijheh.2023.114138)

Mertenat A., Zurbrügg C. Planning for Zero-Waste at schools – A toolkit. Eawag: Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland

Narayan A.S., Boller M. To integrate or not to integrate? Water and waste as unified basic services. *PLOS Water*. 2(9). doi.org/10.1371/journal.pwat.0000180

Narayan, A.S., and Davis, J. Safe and sustainable water in cities. *PLOS Water* 2, no. 10 (2023): e0000202. <https://doi.org/10.1371/journal.pwat.0000202>

Vinti, G., Bauza, V., Thomas Clasen, T., Tudor, T., Zurbrügg, C., Vaccari, M. Health risks of solid waste management practices in rural Ghana: A semi-quantitative approach toward a solid waste safety plan. *Environmental Research*. Volume 216, Part 3, 1.
doi.org/10.1016/j.envres.2022.114728

2024 (15)

Bouman, L.; Spuhler, D.; Bünzli, M.-A.; Melad, A.; Diop, L.; Coelho, O.; Meierhofer, R. (2024) The water flow diagram, *Frontiers in Water*, 6, 1360515 (11 pp.), doi.org/10.3389/frwa.2024.1360515

Farine, C., Narayan, A.S., Lüthi, C. “Integrated assessment of water, sanitation and solid waste service in schools in small towns in Uganda”. WABES Research Brief. 2024 dx.doi.org/10.13140/RG.2.2.21094.

Narayan, A.S., Dorea, C., Willetts, J., Friedman, L., Kalbar, P., and Chandran, K. (2024). Towards a portfolio approach to achieving universal sanitation. *Nature Water*.

Ferronato, N., Mertenat, A., Zurbrügg, C., Torretta, V. (2024). Can tourism support resource circularity in small islands? On-field analysis and intervention proposals in Madagascar. *Waste Management & Research: The Journal for a Sustainable Circular Economy*. Volume 42, Issue 5, doi.org/10.1177/0734242X231187561

Hadfield, P. , Michaela Prescott, Jane Holden, Wikke Novalia, Reni Suwarso, Dwinanti Rika Marthanty, Cindy Priadi, Kartika Hajar Kirana, Cipta Endyana, Britta Denise Hardesty, Farhan Dzakwan Taufik, Christian Zurbrügg, Brendan, Tony Wong, Diego Ramirez-Lovering, Raven, R. Citarum Living Lab: Co-creating visions for sustainable river revitalization. *Plos Water*. doi.org/10.1371/journal.pwat.0000200

Kapanda, K., Sam, S., Andriessen, N. Ward, B.J., Strande, L., Tembo, J.M. Metrics for stabilization of fecal sludge, and relation to dewatering metrics. *Journal of Water, Sanitation, and Hygiene for Development*. 14(5)

Wallock, W., Narayan A.S., and Thompson, P., (2024). Exploring the Barriers to Scaling Up Sanitation Enterprises Using Q-Methodology. *ES&T Water*.

Maqbool, N., Sam, S., Jamal Khan, S., Strande, L. (2024). Relation of organic fractions in fresh and stored fecal sludge and foodwaste to biogas production. *Journal of Water, Sanitation and Hygiene for Development* 14 (3), 277-290

Narayan, A.S., Dorea, C., Willetts, J., Friedman, L., Kalbar, P., & Chandran, K. A portfolio approach to achieving universal sanitation. *Nature Water*, <https://www.nature.com/articles/s44221-024-00336-0>

Podgorski J., Kracht O., Araguas-Araguas L., Terzer-Wassmuth S., Miller J., Straub R., Kipfer R., Berg M. Groundwater vulnerability to pollution in Africa’s Sahel region. *Nature Sustainability*, 7, 558-567. <https://doi.org/10.1038/s41893-024-01319-5>

Sadiq M., Eqani S.A.M.A.S., Podgorski J., Ilyas S., Abbas S.S., Shafqat M.N., Nawaz I., Berg M. Geochemical insights of arsenic mobilization into the aquifers of Punjab, Pakistan. *Science of The Total Environment*, 935, 173452. <https://doi.org/10.1016/j.scitotenv.2024.173452>

Strande, L. Integrating Recent Scientific Advances to Enhance Non-Sewered Sanitation in Urban Areas. *Nature Water*, 2, p 405–418.

Wei Z., Appling A.P., Golden H.E., Podgorski J., Li L. Deep learning for water quality. *Nature water*, 2, 228-241.

Hadfield, P. , Michaela Prescott, Jane Holden, Wikke Novalia, Reni Suwarso, Dwinanti Rika Marthanty, Cindy Priadi, Kartika Hajar Kirana, Cipta Endyana, Britta Denise Hardesty, Farhan

Dzakwan Taufik, Christian Zurbrügg, Brendan, Tony Wong, Diego Ramirez-Lovering, Raven, R. Citarum Living Lab: Co-creating visions for sustainable river revitalization. *Plos Water*. doi.org/10.1371/journal.pwat.0000200

Young, S.L., Bose, I., Miller, J. D., Pascavis, K., Alzare, K., Barstow, C., Boller, M., Brogan, J., Collins, S., Connors, K., Durham, T., Frongillo, E.A., Gaitán-Rossi, P., García, O. P., Marks, S.J., Melgar-Quiñonez, H., Miller, S., Mundo-Rosas, V., Muñoz-Espinosa, A., Ndege, G., Otieno, I, Pérez-Escamilla, R., Rodas, S., Salles-Costa, R., Sarker, M. R., Shamah-Levy, T., Thuo, S., Webster, J., Yeye, V. The Water Insecurity Experiences (WISE) Scales: A Manual for Implementation and Analysis of People's Experiences with Water. Institute for Policy Research, Northwestern University, Evanston, Illinois. <https://doi.org/10.21985/n2-20sc-f113>.

2025 (16)

Boyer, R., Zimmerman, I., Marks, S., & Dorea, C. Validation of a novel, low-cost, and low-power *Escherichia coli* detection kit. *Water Quality Research Journal*, 60(4), 591-606. <https://doi.org/10.2166/wqrj.2025.020>

Caduff, L., Englert, A., Meierhofer, R. and Burkhardt, M. Comparison of two different container designs and UV-C LED configurations in their drinking water disinfection efficiency. *Frontiers in Water*, 7, doi.org/10.3389/frwa.2025.1490541

Deutsch, L., Bjørnsen, A., Fischer, A. M., Hama, A. M., Zimmermann, N. E., Zurbrügg, C., Hoffmann, S. (2025). Herding cats: integrative leadership strategies in inter- and transdisciplinary research programs. *Sustainability Science*. Volume 20, pages 95–115,

Dey, J. & George, S. Financing Safe Sanitation - A Finance Model for Household Toilet Lining in Uganda's Small Towns. Geneva Graduate Institute. www.sandec.ch/wabes

Dongo, K., Yeo, D., Gnagne, T., Mertenat, A., Lüssenhop, P., Zurbrügg, C., Körner, I. (2025). Implementing biowaste source segregation for sustainable decentralized composting schemes in Tiassalé, southern Côte d'Ivoire. *Waste Management & Research: Journal for a Sustainable Circular Economy*. Volume 43, Issue 9, doi.org/10.1177/0734242X251313919

Jonitz, V., Shrestha, A., Luginbuehl, H., Kasaju, A., Scarnato, C., Meierhofer, R. and Inauen, J. Self-efficacy and social support enable women to protect their pelvic floor health: A nonrandomized controlled trial in rural Nepal. *Journal of Health Psychology*, doi.org/10.1177/135910532412839

Farine, C., Lüthi, C., Niwagaba, C. B., Morgenroth, E., & Narayan, A. S. Interlinkages and indicators: novel assessment of water, sanitation and solid waste services in schools in two Ugandan towns. *Frontiers in Water*, 7, 1544779.

De Groot, J., and Narayan A.S., 2025 "Perspectives on Water, Sanitation and Solid Waste in Uganda towns - A Photostory". Eawag 42p.

Peter, M., Marks, S.J., Breitenmoser, L., McKeown, R. (2025) Compendium of Drinking-water Systems and Technologies from Source to Consumer. WHO: World Health Organization, Geneva, Switzerland

Sadiq M., Eqani S.A.M.A.S., Nawaz I., Bangash N., Ilyas S., Podgorski J., Berg M. Fluoride contamination of groundwater in different geological settings of Punjab Province, Pakistan: Levels, possible mechanisms and health risks. *Science of The Total Environment*, 1001, 180450.

Sakaya, R., Narayan, A. S., Katukiza, A. Y., Niwagaba, C. B. and Lüthi, C. Political Economy barriers on the integration of Water, Sanitation, and Solid Waste Management services in Ugandan towns, *International Journal of Urban Sustainable Development*. doi.org/10.1080/19463138.2025.2587382

Sakaya, R., Niwagaba, C. B., Katukiza, A. Y. and Lüthi, C. Influence of National Govt. and Development Partners on Uganda's Water, Sanitation, and Solid Waste Services Delivery: A Review. *World Water Policy*. doi.org/10.1002/wwp2.70028

Sam, S.B., Smith, S.K., Niederdorfer, R., Scheidegger, A., Ward, B.J., Tembo, J., Kabika, J., Johnson, D.R., Bürgmann, H., Morgenroth, E. and Strande, L. Microbial community composition reflects water usage and storage conditions in a city-wide study of non-sewered wastewater (fecal sludge). *PLOS Water*. doi.org/10.1371/journal.pwat.0000386

Zimmermann, K., Meierhofer, R. (2025): Water Partnerships: Pathways for sustainable safe drinking water supply. *Frontiers in Water*, Dec 2025

Alves, J. M., Fache, L., Souza, F., Bergiante, N., Gundim, F., Belderrain, C., Spuhler, D., Schwaninger, M., & Meierhofer, R. (2025). Water governance in the Tocantins-Araguaia Hydrographic Region: Assessing viability using a participatory systemic approach. *PLOS Water, under review*.

Narayan, A. S., De Ieso, D., Batte, A., Andreissen, N., Boller, M., Fache, L., Fritzsche, J., McArthur, J., Tosi Robinson, D., Velasquez, L., and Niwagaba, B. C. (2025) "Integrated Sensitisation Campaign for Water, Sanitation and Solid Waste Management - Key Messages and Guidance". Eawag Dübendorf.

2026 (9)

Ambuehl, B., Ghosh, A., Kumar, A., Singh, B.K., Kumar, M., Steiner, S., Fischer, N., Marks, S.J., Inauen, J. Tackling environmental contamination of drinking water through behavior change at the social and individual level: a cluster-randomized trial in Bihar. Submitted to *Environmental Science: Water Research and Technology*.

Batte A, Niwagaba C.B., Velásquez L., Suter F. Co-creation and training to improve WASH and SWM capacities in Kakooge and Wobulenzi, Uganda. Submitted to: *Journal of Water, Sanitation & Hygiene for Development*.

Boyer, R., Marks, S.J., Dorea, C.C. Resource-limited microbial water quality monitoring: A study on "field hacks." Submitted to *ES&T Water*.

Lalu, N.A.S., Daniel, D., Sutomo, A.H., Marks, S.J. Impact of Water Safety Plans on drinking water quality and public health: A review of global evidence. Submitted to *Groundwater for Sustainable Development*.

Li K.Y., Podgorski J., Liang C.P., Chen J.S., Chang J.Y., Berg M. Groundwater arsenic in Taiwan: From Mid-20th-Century crisis to predictive models for risk mitigation strategies. *Environment International*, 110049. <https://doi.org/10.1016/j.envint.2026.110049>

Kanyesigye, C., Ferrero, G., Marks, S. J., Niwagaba, C. B., Kulabako, R. N., & Kansiime, F. Evaluation of Water Safety Plan outcomes and impacts in Bushenyi-Ishaka Municipality, Uganda. *Utilities Policy*, 98, 102106. doi.org/10.1016/j.jup.2025.102106

Kunwar, B.M., Boller, M., Bhatta, M., MacArthur, J., Marks, S. Chlorination technologies for Rural Piped Water in Nepal: Practical Implementation Guide. Helvetas Nepal and Sandec-Eawag.

Sakaya, R. Towards an Integrated Planning Framework for Water Supply and Waste Management Services in Ugandan Small Towns. PhD Thesis, 168pp., Makerere University, Uganda.

Podgorski J., Berg M. Manganese: a hidden threat to global water quality and health. Submitted to *Nature Water*.

2. MSC THESES (ETHZ/EPFL/IHE/Makerere)

Water

1. Fache, Loïc (2023): Baseline assessment of in-line chlorination using electrolysis in rural Ethiopia. Master Thesis, Section Sciences et Ingénierie de l'Environnement, EPFL
2. Wettlaufer, Anna (2023) : Association of water quality management and hygiene practices with child health in Ethiopia. Master Thesis, Department of Health Sciences and Technology, ETHZ
3. Hänni, Jasmin (2024) Assessment of in-line chlorination and its effect on child health in rural Ethiopia. Section Sciences et Ingénierie de l'environnement, EPFL.
4. Ashaba Ahebwa, Olivia (2025) Assessing WASH insecurities in healthcare facilities in Ugandan small towns. Msc CEDAT, Makerere University, Uganda
5. Danneck Jennifer (2025): Precipitation, Yields and Irrigation Water Demand in Dry Season Paddy Rice Cultivation. Department of Environmental Sciences - Physical Geography and Environmental Change, University of Basel
6. Hernandez Vazques Said, Alan (2025): Modelling of waste clogging-induced flooding in two Ugandan small towns. School of Engineering and Design. Chair for Hydrology and River Basin Management. TU München.
7. Bhatta, Madan (2023): Determinants of user satisfaction on management of community-based private connection drinking water schemes in Surkhet, Nepal. Mid-West University, Nepal.
8. Boyer, Rachel (2024): Quantifying waterborne microbial risks in low-resource settings: A synthesis of barriers and opportunities. University of Victoria, Canada.
9. Uslu, Ufuk (2026): Financial assessment of chlorination arrangements in rural Nepal. MSc in Finance, HEC Lausanne, Switzerland.

Sanitation

1. Madueño Delgado, Gonzalo (2023) Sustainable and Innovative Sanitation Solutions in Peripheral Neighbourhoods in Lima. Urban Management Programme, TU Berlin
2. Bahame, Methusela (2024) Stakeholder Engagement for Citywide Inclusive Sanitation in African Cities: A case study of Dar es Salaam, Tanzania. MSc IHE, Delft, NL
3. Mondo Lyonga, Paschal (2025) Assessing Equity and Sustainability of Sanitation Services. MSc IHE, Delft, NL.

Solid Waste Management

1. Anggita Sekar Hayu (MSc.) (2024). Role of communication and communication pathway to waste segregation behavior in Tuy Hoa city. Phenikaa University, Hanoi, Vietnam.
2. Deasy Amalia Sari (Msc.)(2024) Role of women in waste segregation practice in Tuy Hoa city, Phu Yen, Vietnam. Phenikaa University, Vietnam.

3. Trinh Thi Tuyet Dung (PhD) (2025). Management of Household Plastic Waste Through a Circular Economy Approach in Tuy Hoa City, Phu Yen Province. Phenikaa University, Hanoi, Vietnam.
4. Miguel Vitali (MSc.) (2025). Bridging the Policy-Practice Gap in Open Waste Burning: Governance, Stakeholders, and Informal Norms in Uganda's Small Towns. ETH-Zürich.
5. Asphat Katongole (MSc.) (2025). The extent and impact of open waste burning in Uganda's small town of Kakooge. Makerere University, Uganda.

Integration

1. Charlotte Farine (2023) Integrated Baseline Assessment of WASH in Schools. ETH Zürich D-BAUG.
2. Joshua Obara (2023) Political Economy of an Integrated Approach to Water, Sanitation, and Solid Waste Nexus in Urban Uganda. TU München.
3. Fritzsche, Julian (2024) Integrating Water, Sanitation, and Solid Waste: Assessing Synergies and Interlinkages in Wobulenzi, Uganda. MSc Thesis ETH Zürich D-BAUG.
4. Justine de Groot (2025) Exploring Water, Sanitation, and Solid Waste Management Interlinkages: A Photovoice Study on Community Experiences and Gender Disparities in Ugandan Towns. ETH Zürich D-USYS.
5. Rafik Tewfik (2026) Evaluating Climate Resilience of Water and Waste services in Ugandan Small Towns. MSc EPFL - ENAC

3. PhDs

1. **Ronald Sakaya**, Makerere University, College of Engineering, Uganda. Topic: An integrated planning and implementation approach to water and waste services in small towns in Uganda. Defended: 22. Jan. 2026. sakayaronald@gmail.com
2. **Bashiru Yachori**, KNUST Kumasi, Ghana. Topic: Evaluating Local Governance and Institutional Frameworks for Integrated Water and Waste Service Delivery in Small Towns in Ghana. Planned defense: 2027. yachoribashiru@gmail.com
3. **Esther Okyere**, University of Ghana, Topic: The use of isotopes to assess groundwater vulnerability to contamination and climate change in the Veve catchment of Upper East Region of Ghana. Planned defense: 2027. ohemaa_saah@yahoo.com

4. CONFERENCES & WEBINARS

2023

- **UN Expert Group Meeting on SDG 11, Bilbao, (Mar)**
 - Chair — “Interlinkages between SDG 6 on water & sanitation and SDG 11 on Sustainable Cities”, Abishek Narayan
- **UN 2023 Water Conference, New York, USA (Mar)**
 - Expert panel, “Groundwater: An Invisible Cross-Sectoral Fundament for Implementation of the Water Action Agenda”, Joel Podgorski
 - Expert panel, “Global Water Analysis Laboratories (GloWAL) Network”, Joel Podgorski

- Expert panel, “Innovative approaches for Water Impact”, Abishek Narayan
- Expert panel, “Financing WASH in a post-COVID World”, Abishek Narayan
- Side event “Know your water with Swiss Water Partnership and SDC”, Dorothee Spuhler
- **Patterns in One Health, Medical University of Vienna, Austria (Jun)**
 - Invited presentation, “Estimating geogenic groundwater quality hazard and health risk using spatial prediction modeling”, Joel Podgorski
- **Training Course on Groundwater Vulnerability Mapping, IAEA, Vienna, Austria (Aug)**
 - Course provided for participants from member-states primarily from the Global South, Joel Podgorski
- **IRC All Systems Connect, the Hague, the Netherlands (May)**
 - Side Event, “The Integration Debate”, Marisa Boller, Abishek Narayan, George Wainaina and Ugandan colleagues
 - Session, “Small but not for forgotten: Introducing the Guidelines for Small Supplies”, Sara Marks, Jennifer DeFrance, Katrina Charles.
- **All systems connect Hague, Netherlands (May)**
 - George Wainaina, participation in the debate “To integrate or not to integrate” and collection of practice insights.
 - Abishek Narayan & Christoph Lüthi. Organizing the debate
- **Stockholm World Water Week, Stockholm, Sweden (Aug)**
 - Presentation and organization ““Where does WASH fit in Urban Planning?” Abishek Narayan
 - Presentation, “Low-cost chlorination – A means to provide safe drinking water and reduce disease incidents,” Marisa Boller
- **Eawag InfoTag: Water Research for the SDGs, Dübendorf, Switzerland (Sept)**
 - Presentation, “Water and Sanitation for All,” Sara Marks
- **UN Habitat WASH Unit, UN HQ Nairobi**
 - Invited Seminar, “State of the Art on Citywide Inclusive Sanitation and WASH Research”, Abishek Narayan
- **UN Sanitation and Hygiene Fund, UN Geneva**
 - Invited Seminar, “Research Advances on Innovations in Service Delivery” Abishek Narayan
- **Vietnam Conference on Earth and Environmental Sciences, ICISE, Quy Nhon, Hanoi, (Nov)**
 - Vu Phuong Thao, Nguyen Thi Hanh Tien, Ngo Thi Thuy Huong, Le Thanh Thao Mertenat, Adeline; Tosi Robinson, Dorian (2023). Household Solid Waste Generation, Characterization and Management Recommendation in Tuy Hoa City, Vietnam.
- **IWA water and development congress Kigali (Sept)**
 - Partner meetings and synthesizing insights from the conference
- **IWA Water and Development Congress, Kigali, Rwanda (Nov)**
 - Presentation, “Integrated Baseline Assessment of Water, Sanitation and Solid Waste Services in Ugandan Small Towns,” Marisa Boller.

2024

- **Uganda Water and Environment Week, Kampala, Uganda (Mar)**
 - WABES co-creation workshop, Ronald Sakaya, Abishek Narayan, Marisa Boller, Laura Velásquez, Fabian Suter.
- **UNC Water and Health Conference, Chapel Hill, USA (May)**
 - Side event, “Measuring experiences with WASH in schools and healthcare facilities: interdisciplinary perspectives and multi-country findings,” Marisa Boller.
 - Side event: From Source to Safe: Building Blocks of Water Quality for SDG 6.1 and Beyond,” Sara Marks.
- **Global Water Analysis Laboratory (GloWAL) Network First Coordination Meeting, IAEA, Vienna, Austria**
 - Invited presentation, “Upscaling isotope data with machine learning: a practical example with groundwater tritium measurements from Africa's Sahel”, Joel Podgorski
- **ISWA 2024, Cape Town, South Africa**
 - Adeline Mertenat (oral presentation). Drivers and barriers for waste segregation in Côte d'Ivoire
 - Laura Nelly Velasquez (oral presentation). Enhancing waste segregation behaviour in Vietnam
 - Adeline Mertenat (oral presentation). The role of youth in SWM industry
 - Laura Nelly Velasquez (oral presentation) Addressing interlinkages in WASH + waste services
 - Dorian Tosi Robinson (oral presentation) A solid waste management costs assessment tool.
- **RHODES 2024 (Jun)** Nguyen Thi Hanh Tien Mertenat, Adeline.
 - Using Risks-, Attitudes-, Norms-, Abilities-, and Self- regulation (RANAS) approach to identify behavioural drivers of recyclables separation. 11th International Conference on Sustainable Solid Waste Management, Greece, Rhodos, 19.06.2024
- **10th World Water Forum (WWF), Bali, Indonesia (May)**
 - Invited presentation, “AI and groundwater monitoring: case study”, Joel Podgorski
 - Invited presentation, “AI applications in groundwater quality”, Joel Podgorski
- **Training Course on Groundwater Vulnerability Mapping, IAEA, Vienna, Austria (Aug)**
 - Course provided for participants from Middle East member states, Joel Podgorski
- **Stockholm World Water Week (Aug)**
 - George Wainaina, Linda Strande & Nienke Andriessen (session coordination, contribution and organizing), “Is failure a key step to mainstreaming technology innovation?”
 - Contribution to other multiple sessions in the conference
- **RésEAU Webinar Series, Heavy Metals in Drinking Water: A Proposal for their Removal**
 - Presentation, “Introduction to Heavy Metals in Drinking Water as a Public Health Problem,” Sara Marks

- **Palmas Tocantins Workshop** on Enhancing the resilience of urban water management through
 - participation and governance in Palmas. Full-day workshop with national and local stakeholder to discuss water management & governance challenges, R. Meierhofer, L. Fache, J. Alves
- **Water Justice Hub Workshop: Enabling Secure Access to Good Quality Water in Rural and Remote Communities**, Australia National University, Canberra, Australia
 - Presentation, “Reflections on a decade of research in Nepal,” Sara Marks
- **UNICEF Webinar Series: Groundwater Water Quality**
 - Presentation, “Research on Water Quality & Treatment at Sandec,” Sara Marks
- **American Chemical Society Fall 2024 Meeting**
 - Plenary lecture, “Spatial prediction and analysis of groundwater quality using machine learning”, Joel Podgorski and Michael Berg
- **RWSN Webinar: Mission: Possible? Chlorinated water for all – progress and prospects**
 - Presentation, “Sandec’s Research on Drinking Water Chlorination,” Loïc Fache, Marisa Boller, Mathieu Metois
- **UN Habitat & IWA webinar, Online**
 - Keynote speaker “Urban Sanitation Challenges – Case studies from Africa and Asia”, Abishek Narayan
- **COP29 in Baku, Azerbaijan (Nov)**
 - Water Pavilion for GCF Annex/CRSC
 - Urban Pavilion for UN Habitat
- **Vietnam Conference on Earth and Environmental Sciences, ICISE, Quy Nhon, Hanoi, (Nov)**
 - Self-organized Household Commitment to Waste Classification: Lesson learnt from Tuy Hoa City, Vietnam.
- **IWA World Water Congress, Toronto, (Dec)**
 - Keynote speaker “Citywide Inclusive Sanitation State of the Art”, Abishek Narayan
 - Expert Panel “Political Economy in the WASH sector and role of regulations”, Abishek Narayan
 - Gravity Driven Membrane Filtration (GDMF) – Application to small, remote and marginalized communities, Workshop organisation & presentation, Regula Meierhofer

2025

- **WASH Canada, Webinar, (Jan)**
 - Invited Lecture “Beyond Good Intentions: Doing Equitable and Impactful WASH Research”
- **Kathmandu Knowledge Sharing Workshop on Water quality (Jan)**
 - Full-day Workshop with national stakeholders on WABES and REACH research insights, S. Marks, M. Boller, M. Bhatta, B.M. Kunwar
- **Aquaya Webinar Series: Water Quality Testing Fellowship Seminar (Mar)**
 - “Strengthening Rural Water Quality Monitoring and Management in Nepal,” Sara Marks
- **GWOPA Congress Bonn, 2025 (Mar)**

- Expert Panel “Tackling the Global Sanitation Crisis Empowering Utilities for Non - Sewered Sanitation Services”, Abishek Narayan
- **Uganda Water Week, Kampala (Mar)**
 - Workshop Sessions on WABES and Science Policy, C. Lüthi/Ch. Niwagaba/A. Narayan
 - GIS analysis for city-wide prediction of fecal sludge characteristics. J. Podgorski, N: Andriessen, L. Strande, M. Berg
- **3rd Intergovernmental Authority on Development (IGAD) Water Dialogue Forum, Addis Ababa, Ethiopia (May)**
 - Keynote address: “Predicting and evaluating large scale groundwater quality with machine learning”, Joel Podgorski
- **World Groundwater Quality Congress, Bordeaux, (Jun)**
 - Michael Berg, “Predicting geogenic manganese contamination of groundwater”
- **UN Habitat & WSUP Webinar (Jun)**
 - Keynote presentation “Launch of Masterclass Webinar Series” Abishek Narayan
 - Invited Presentation “Integrated Planning for CWIS” Abishek Narayan
- **Stockholm Water Week (August)**
 - Workshop on Dynamic Capabilities in the WASH Sector, (George Wainaina- session organizer)
- **Kathmandu Workshop on A Participatory Tool to Assess the Water Climate Resilience in**
 - Panchkhal and Bidur Municipality Nepal: Extending the Water Flow Diagram (WFD) with a Resilience Framework. Full day workshop with national authorities and experts to review the tool. R. Meierhofer, L. Fache, M. Poudel, S. Sharma, R.D. Shah.
- **WHO Meeting of Parties, Budapest (Oct)**
 - Sandec Interventions in High Level and General Segments - Sara Marks, Abishek Narayan, Marisa Boller
 - Presentation “Water Compendium among the Eawag WASH compendiums for development and humanitarian uses” Marisa Boller, Abishek Narayan
- **Workshop on Pan-African Water Resource Monitoring and Data Sharing with Nuclear Science and Technology, Rabat, Morocco (Oct)**
 - Expert panel, “Connecting the Dots: Perspectives Across the Lifecycle of Water Data”, Joel Podgorski
- **Initiative Afrique Conference, (Oct)**
 - Bern, Switzerland: Poster presentation “Co-creating education to strengthen Somalia’s WASH Future” (Fabian Suter)
- **ISWA 2025, Buenos Aires, Argentina (Oct)**
 - Laura Nelly Velasquez (oral presentation). Measuring what matters – A service ladder for inclusive solid waste management
 - Dalia Carbonel (poster presentation) Evaluating an integrated behaviour change and waste audit approach to enhance waste segregation at a university campus in Lima, Peru.
 - Kartik Kapoor (poster presentation) Combining structural behaviour change intervention with door-to-door waste collection to achieve segregation

- **Unitafrica - Innovating Higher Education Brescia (Oct)**
 - Presentation “Massive Open Online Courses (MOOCs) and science communication: bridging global online learning and classroom education” (Fabian Suter)
- **Ugandan Water Resources Institute Webinar (Nov)**
 - Invited Presentation “Transdisciplinary Research on Integration of water and waste services, case of WABES in Uganda”, Abishek Narayan
- **IWA, Bangkok (Dec)**
 - High level panel on Water Efficient Sanitation Solutions (WESS) Forum Policy, Regulation, and Financing Pathways for Scale, A. Narayan
 - Emerging Leaders Forum: Bridging the Science-Policy-Practice interface to build water resilience, A. Narayan

5. Appendix

Internships

- Ladislava Shirokov (Feb. – Aug. 2025). Optimization of the recipes for modified cellulose and chitosan and assess the effect of varying input materials on conditioner performance
- Anna Sif Mogensen (Apr. – Aug. 2025). Assess the environmental impact of the production process and assess the financial feasibility of producing bio-based conditioners locally
- Ufuk Uslu (May – Aug. 2025). Financial assessment of chlorination arrangements in rural Nepal.
- Rachel Boyer (Sept. – Dec. 2024). Evaluation of technical and social aspects of chlorination in rural Nepal.
- Fatima Sebti (Feb – May 2024). Translating WABES Data from Wobulenzi as a Case Study for Sandec Teaching.

Bachelor Thesis

- Ibrahim Kamara (Aug. 2025). Potential application of local available chitosan production from shrimp shells and fish scales for fecal sludge dewatering
- Abdulai Koroma (Aug. 2025). Evaluating supernatant quality and treatment performance at the Kingtom faecal sludge treatment plant (FSTP) (analyzing performance of Anaerobic Baffled Reactor).

Miscellaneous

- Meeting with C40, Mayor of Freetown, GOAL, Community of Practice meeting in Freetown, contact with Bettina Etter about City2City Cooperation of Zurich – Freetown.
- Exchange with Helvetas WASH team on WABES water research interim progress (Dec. 2024), Zurich headquarters office.
- EPP visit to Sandec by Eng. Bal Mukunda Kunwar (Helvetas Nepal) to plan WABES collaboration
- Exchange with UN Habitat, Mr Pireh Hezekiah to collaborate on integrated planning in urbanising centres at UN HQ Nairobi (March 2023 and July 2025) and at Eawag Dubendorf (Nov. 2025) leading to several joint webinars and conference sessions such as Stockholm Water Week, Africa Water Week, and COP29 Baku. WABES research findings have also been shared with UN Habitat Program Officers globally.
- Exchanges with IRC WASH global teams and country offices on integrated planning of water and waste services to synergise efforts on this front in country and global projects.
- ETH4D joint funding (CHF 120,000) to support integrated interventions in the small towns of Uganda – Kakooge and Wobulenzi.