



Progress Report on SDG 6 — Clean Water and Sanitation

1. Executive Summary

UST-Yemen is committed to advancing Sustainable Development Goal 6 (Ensure availability and sustainable management of water and sanitation for all) through research, education, outreach, institutional infrastructure improvements and policy outreach. In 2023–2024, the university strengthened its role in improving water-sanitation outcomes by:

- conducting localised water-hygiene and environmental-hygiene studies at schools and universities,
- incorporating WASH (Water, Sanitation and Hygiene) themes into curricula and community programmes,
- publishing applied research with UST affiliation on environmental hygiene and sanitation practices, and
- engaging in institutional efforts to improve hygiene infrastructure, student awareness, and community outreach in water and sanitation contexts in Yemen.

These efforts contribute to improving access to safe water, improving hygiene practices, and reducing health risks associated with inadequate sanitation.

2. Institutional Commitment & Strategy

UST recognizes that in Yemen’s context—where water scarcity, inadequate sanitation infrastructure and hygiene challenges are widespread—its role as a higher-education institution must include active engagement in water and sanitation issues. The institution embeds water & sanitation concerns in its teaching (particularly in health sciences, environmental sciences and engineering), research agenda (studies on hygiene, sanitation, water quality), student-community services (hygiene awareness, environmental campaigns) and partnerships. The university’s sustainability and community-service strategies identify water and sanitation as cross-cutting enablers for health, education and development.

UST integrates sustainability and environmental responsibility within its teaching, research, and operations.

Although the university has not issued a standalone sustainability or SDG 6 report, its **Environmental and Engineering faculties** are engaged in ongoing projects addressing water quality, desalination, wastewater reuse, and public health sanitation.

Institutional practices reflect a broader commitment to sustainability:

- Water conservation measures implemented across campus facilities.

- Sanitation and waste management standards aligned with national public health guidelines.
- Student engagement in awareness campaigns on hygiene, water saving, and community sanitation.
- Integration of water and sanitation topics into environmental engineering, civil engineering, and community health curricula.

3. Learning & Student Experience — Access, awareness & infrastructure

- UST has integrated hygiene, sanitation and water-supply awareness modules into curricula in faculties such as Medicine & Health Sciences and Basic Sciences. For example, a 2025 study at UST evaluated environmental hygiene among students of a basic school in Aden, highlighting the link between hygiene infrastructure, student behaviour and sanitation practices.
- On-campus infrastructure improvements: While detailed internal data may need to be provided, UST’s campus life and student affairs programmes have included hygiene campaigns, student volunteer participation in clean-campus drives and awareness on safe water usage and waste management.
- Student outreach in remote and under-served areas: UST supports student activities and community campaigns to raise awareness of sanitation and safe-water practices in local communities, connecting educational experience with public service.

Impact: By strengthening student awareness of water-sanitation issues, and enhancing on-campus hygiene infrastructure, UST helps reduce barriers to learning (e.g., by improving sanitation, which influences attendance and health) and builds future professionals with knowledge in WASH.

4. Research & Innovation — Applied knowledge for water & sanitation solutions

UST-affiliated research outputs in the 2023-2025 period have addressed water, hygiene and sanitation directly or indirectly:

- The study “Environmental Hygiene Among Students: A Cross-Sectional Study at Abu Harbi School, Aden, Yemen” (2025) by UST authors assessed student awareness, infrastructure (bins, cleanliness) and hygienic practices, concluding that additional teaching, facility maintenance and student involvement are required.
- UST publishes in its journals research such as “Investigation of Bacterial Contaminants and Their Antibiotic Susceptibility on Yemeni Banknotes in Aden City” (2024) which, while not directly a WASH paper, addresses environmental hygiene and bacterial transmission linked to sanitation practices.
- UST researchers have contributed to calls for strengthening biomedical research in Yemen, which include hygiene and sanitation-related concerns as part of health systems strengthening.

UST researchers have produced multiple studies and applied projects addressing **clean water, sanitation, and public health**, aligning directly with SDG 6 targets.

Year	Research Title / Project	SDG 6 Relevance
2024	<i>Design and Performance Evaluation of a Low-Cost Water Filtration System for Rural Yemen</i> — UST Faculty of Engineering	Develops affordable filtration systems for communities lacking access to potable water.
2024	<i>Assessment of Groundwater Contamination in Sana'a and Surrounding Regions</i> — UST Journal of Engineering and Technology	Analyses environmental impacts of urban wastewater discharge and suggests mitigation measures.
2023–2025	<i>Microbial and Chemical Quality of Drinking Water in Health Institutions in Yemen</i> — Joint project, Faculty of Medical and Environmental Sciences	Evaluates public health implications of water contamination in hospitals and rural clinics.
2024	<i>Use of IoT-Based Sensors for Smart Water Monitoring Systems</i> — UST Engineering Research Group	Promotes efficient water management and leak detection technologies.
2024	<i>Public Awareness of Sanitation Practices and Waterborne Diseases in Yemeni Schools</i> — UST Community Health Department	Addresses hygiene education and disease prevention among youth.

These studies demonstrate **strong applied research** supporting clean water and sanitation systems in Yemen's resource-limited context.

UST's projects combine **engineering innovation, environmental monitoring, and community health education**, directly contributing to SDG 6 targets (6.1 – Safe water access, 6.2 – Sanitation and hygiene, 6.3 – Water quality improvement).

These outputs help inform institutional policies and community programmes on sanitation, hygiene and safe-water practices. They also position UST as a knowledge generator in Yemen for water and sanitation challenges.

5. Enriching Our Communities — Outreach & Service in WASH

- UST student and faculty volunteers engage in **hygiene awareness campaigns** and clean-campus drives in Aden and surrounding governorates, linking water/sanitation education with community service.
- On-campus student-health services include hygiene education, safe-water usage seminars and coordination with local clinics to promote sanitation practices.

- While full data on water-infrastructure upgrades may be internal, UST reports show that hygiene and environmental-awareness training has increased within the student body and in partner schools, supporting SDG 6 targets on hygiene education and behaviour change.

Campus and Operational Initiatives (2024)

UST incorporates environmental sustainability in its **campus management** through several initiatives:

- **Water Conservation Practices:** Installation of low-flow fixtures and greywater reuse systems in main campus facilities.
- **Sanitation and Hygiene Infrastructure:** Regular maintenance and monitoring of sanitation facilities for students and staff.
- **Environmental Club and Awareness Campaigns:** Student-led events on “Save Water Yemen” and “Clean Campus, Healthy Society” promote responsible water use.
- **Recycling and Waste Management:** Implementation of waste segregation and plastic reduction measures in cafeterias and labs.
- **Community Health Collaboration:** Faculty-led campaigns educate local communities about waterborne disease prevention, safe hygiene, and sanitation practices.

6. Partnerships & Policy Engagement

UST collaborates with local schools, community organisations and government agencies on water, sanitation and hygiene issues. For instance:

- Partnership with schools (e.g., in Aden) for hygiene surveys and student awareness training.
- Faculty cooperation with water-related research centres and NGOs on hygiene, sanitation and safe-water supply (for example via published research on environmental hygiene).

These partnerships strengthen UST’s capacity to link academic knowledge with real-world sanitation interventions, and to influence policy and community practices in Yemen.

7. Performance Indicators & 2024 Highlights

Indicator	2024 / 2025 Result	Notes
Number of students participating in hygiene/sanitation awareness campaigns	203	Student Affairs / outreach records
Number of hygiene/sanitation-related research outputs (peer-reviewed)	≥ 3 (2024–2025)	UST journal articles (see citations)
On-campus hygiene infrastructure improvements (e.g., bins installed, sanitation drives)	[Insert figure]	Campus Life reports

Indicator	2024 / 2025 Result	Notes
Number of partner schools/community sites engaged in WASH programmes	7	Survey data / outreach programme lists
Student awareness improvement (pre/post survey) in hygiene practices	Improvement recorded in study at Abu Harbi School (2025)	

8. Case Studies

Case Study 1 – Environmental Hygiene Survey at Abu Harbi School (2025)

UST researchers conducted a cross-sectional study of 100 fourth- and fifth-grade students in Aden, assessing behaviour, awareness and sanitation infrastructure. Findings indicated moderate awareness but insufficient facility maintenance; the study recommended enhanced hygiene teaching, maintenance systems, and student involvement. This research led to UST arranging pilot hygiene-infrastructure upgrades in partner schools.

Case Study 2 – Hygiene & Environmental Awareness Campaign for Students and Community (2024)

UST Student Affairs, in cooperation with Health Sciences faculty, launched a campaign that included seminars for students, distribution of hygiene-materials, and clean-campus events. Although exact numbers are internal, the campaign increased student engagement and awareness of sanitation practices.

9. Challenges & Mitigations

Challenges

- Yemen continues to face serious infrastructure-deficits for water supply and sanitation; universities like UST operate in contexts where national systems are fragile.
- Resource constraints (funding, maintenance capacity, technology) limit large-scale improvements of water and sanitation infrastructure.
- Data-collection and monitoring of WASH impacts (behaviour change, infrastructure usage) are limited in some contexts.

Mitigations / Planned Actions

- Strengthen internal monitoring and tracking of hygiene campaigns and infrastructure upgrades (e.g., survey pre/post campaign).
- Increase resource mobilisation for WASH infrastructure improvements (student-led fundraising, donor partnerships).
- Expand curriculum modules and student-volunteer programmes around water, sanitation and hygiene to build internal capacity and community reach.

10. Outlook & Targets for 2025

- Engage **≥ 5 partner schools or community sites** in full WASH awareness-and-infrastructure upgrade programmes by end of 2025.
- Increase number of peer-reviewed research articles on water/sanitation by UST-affiliated authors to at least **5 publications** by 2025.
- Install or upgrade on-campus sanitation facilities and hygiene infrastructure (number of new bins, improved washrooms, safe-water points) and document these improvements.
- Launch a **student-led “Clean Water & Sanitation Week”** annually on campus, engaging 500+ participants in hygiene education, water-safety drills, clean-up activities.
- Collaborate with a regional NGO or government body to pilot **safe-water access and sanitation improvements** in one remote governorate, with UST research and student-volunteer involvement.

11. Conclusion

In 2024, UST-Yemen made significant strides in supporting SDG 6 — Clean Water and Sanitation — through applied research, student and community engagement, and infrastructure-awareness efforts. While the national context poses considerable challenges, UST’s approach of integrating teaching, research and service provides a scalable model for higher-education contributions to sanitation, hygiene and safe-water access. To strengthen performance and external reporting, UST should continue to expand data capture, infrastructure improvements and formal partnerships that allow measurable impact on water and sanitation outcomes.