Annual Report
on SDG6 Clean Water and Sanitation

Thaksin University continues strong commitment to **efficient water management** and **sanitation** under the Sustainable Development Goals (SDG 6). In 2026, the university further improved **water-supply and monitoring systems** to ensure safe, sufficient, and sustainable water for all members of the campus community.

6.2 Water consumption per person

6.2.1 Measurement of total campus water usage (mains/desalinated/surface/groundwater)

Thaksin University systematically measures and manages total water consumption through a **digital Water Supply** and **Monitoring System** covering both Songkhla and Phatthalung campuses. Water is sourced from three main systems:

- Treated mains water supplied by local municipal utilities
- Surface water from on-campus catchment reservoirs (about 340,000 m2 in Phatthalung Campus, producing 1,000–2,400 m^3 per day)
- Treated wastewater that is reused for landscape irrigation, road cleaning, and building maintenance

All inflows and outflows are measured by digital meters installed in each major building cluster and integrated into **the TSU Utilities Management Database. The Division of Building and Environment and the Green University Committee** jointly verify the data each year to ensure accuracy and sustainability in accordance with the Green University Policy (2023–2030). In 2025 the campus recorded a total water consumption of about 473,000 litres, with staff residences accounting for 38 %, classroom buildings 33 %, and student dormitories 26 %. Meanwhile, treated water reused for landscape and green-area maintenance amounted to 23,931 m^3 per year, equivalent to about 798 truckloads of 3,000 litres each, as displayed on the Power BI dashboard for TSU's Water Reuse Monitoring System. These digital records demonstrate

the university's effective integration of data analytics and resource optimization toward **circular-water management.**

To ensure environmental compliance, TSU continuously monitors and tests all treated and reused water to meet national standards before discharge. **The Division of Building and Environment** regularly analyzes key parameters including pH, COD, BOD, TSS, and coliform, while laboratory wastewater is separately collected and disposed of by certified companies. The Faculty of Science and Digital Innovation operates an ISO/IEC 17025-ready Water Quality Testing Laboratory to verify treatment efficiency. Recent actions under **the Energy and Environmental Chemistry Engineering Program** have emphasized **the educational integration of sustainable water management.** Students are encouraged to understand **wastewater pollution** and the importance of **conserving and using water efficiently for maximum benefit.** Through laboratory courses and community service projects, the program promotes awareness of water-saving behaviors, responsible consumption, and the transfer of these practices to local communities. This academic engagement reinforces the university's broader mission to cultivate

environmental responsibility and contribute practical knowledge toward sustainable water use.

Complementing these operations, TSU's research innovation directly addresses wastewater treatment challenges. A recent study published in Diamond & Related Materials (Elsevier, 2025) developed magnetic composites derived from local agricultural residues. The material achieved over 90 % dye removal under visible light and maintained performance through five reuse cycles. This green technology, initiated at **TSU's Center for Environmental Materials Chemistry Innovation**, has been applied to **community reed-weaving enterprises in Phatthalung** as a prototype for **low-cost eco-friendly wastewater treatment**, enhancing both local livelihoods and environmental quality. Through the integration of digital monitoring, scientific analysis, and community-driven innovation, Thaksin University demonstrates the commitment to efficient, responsible, and sustainable water management in alignment with SDG 6 (Clean Water and Sanitation).

Public evidence:

- Water-supply and monitoring records (January–December 2026) — Division of Building and Environment, TSU.
  https://app.powerbi.com/view?r=eyJrIjoiMWFhNDI2N2QtZTUwMS00ZDNhLThmNDktNzE0ZWI0Y2FkN2M2IiwidCI6IjNkYTdmOTQ3LTY3NTAtNDYzMC04MDk2LWJiYTlmNzZlMjZhOCIsImMiOjEwfQ%3D%3D
- "Green University Policy" - Section 4: Water Management
  https://sdg.tsu.ac.th/detail.php?id_list=163&aNum=20231108221217
- Catchment-area and raw-water-reservoir utilization report, Phatthalung Campus
  https://sdg.tsu.ac.th/detail.php?id_list=160&aNum=20231108092953
- TSU SDGs Highlights News
  TSU Sustainable Development Goals (SDGS)
- "Safe and Clean Tap Water for All in TSU Phatthalung Campus"
  https://sdg.tsu.ac.th/detail.php?id_list=1371&aNum=20251014153024
- "TSU Adds Over 200 Free Water Stations to Reduce Plastic Waste"
  https://sdg.tsu.ac.th/detail.php?id_list=353&aNum=20240618160104
- "Youth Water Management Initiatives in Collaboration with ONWR"
  https://sdg.tsu.ac.th/detail.php?id_list=138&aNum=20231106082312
- Research Paper
  https://doi.org/10.1016/j.diamond.2025.112618