Annual Report

on SDG6 Clean Water and Sanitation

6.3 Water usage and care

6.3.1 Wastewater treatment process in place (university-wide)

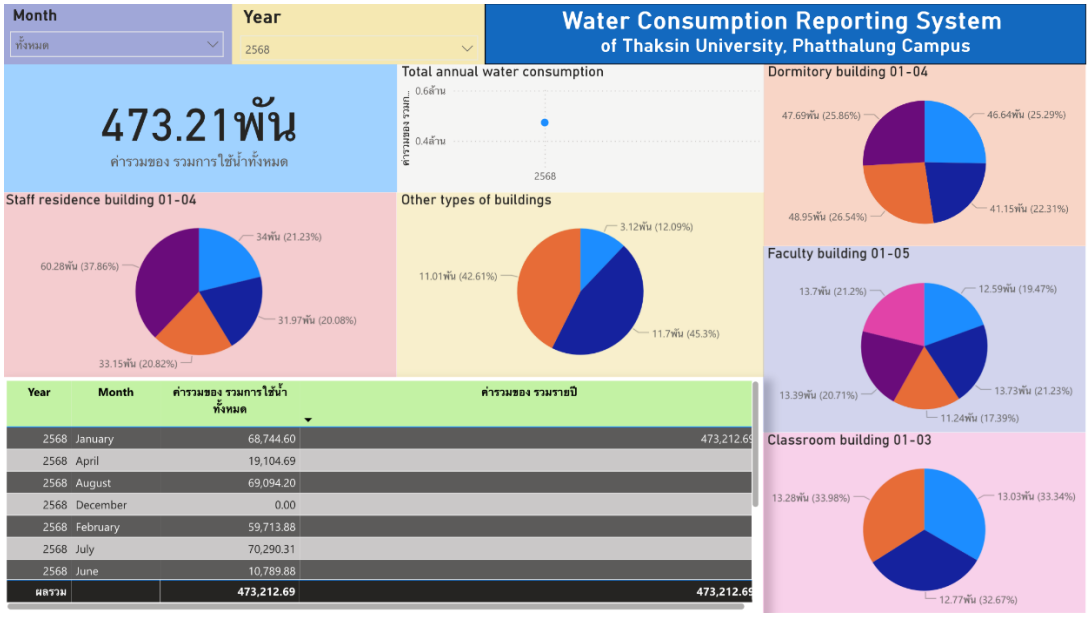
Thaksin University manages water resources through an integrated system that ensures sufficiency, safety, and sustainability across both Songkhla and Phatthalung campuses. The university draws water from three main sources:

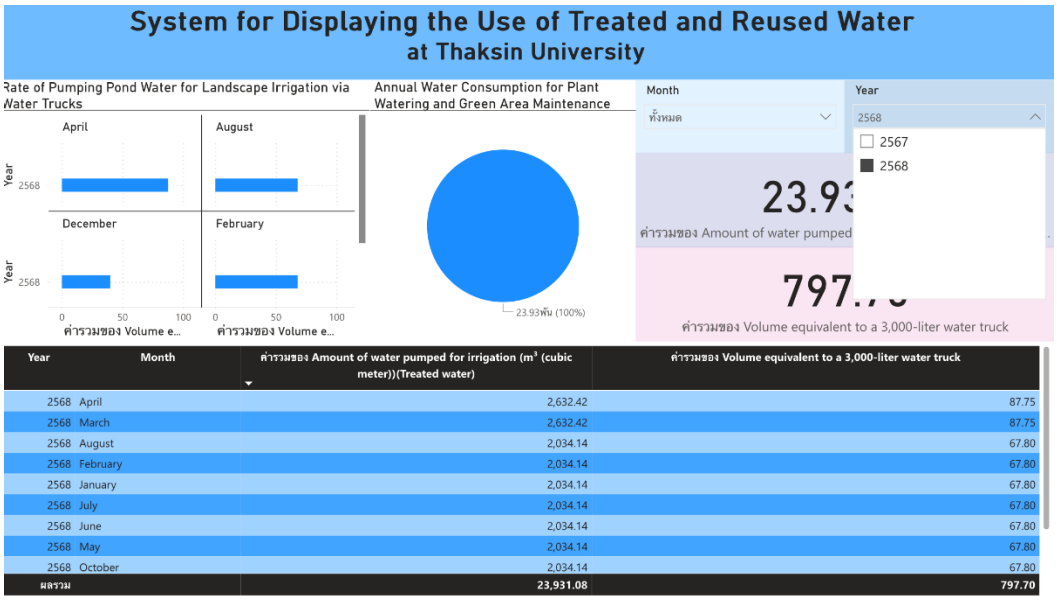
(1) treated mains water supplied by local municipalities

(2) surface water collected from on-campus catchment areas and reservoirs covering about 340,000 m^2 in Phatthalung Campus, and

(3) recycled water from on-site wastewater-treatment systems.

These sources are continuously measured and recorded through **the TSU Utilities Management Database**, with real-time Power BI dashboards displaying usage, leakage, and recovery rates for each major building cluster. The surface-water reservoir provides raw water for internal tap-water production at a capacity of 1,000–2,400 m^3 per day, while the reuse system supplies approximately 23,900 m^3 of treated water annually for irrigation, cleaning, and landscape maintenance for reducing the demand for fresh water by more than 10 percent. This comprehensive monitoring allows the university to understand the environmental impact of each water source and to improve efficiency through data-driven management.





Wastewater from laboratories, dormitories, and academic buildings is treated through a **biological filtration process** and **sedimentation ponds** before reuse. The system operates on the principles of **reduce–reuse–recycle**, minimizing **discharge to the environment** and closing the **water loop** within the campus. Regular testing of pH, BOD, COD, TSS, and coliform is conducted by the **Water Quality Testing Laboratory** under ISO/IEC 17025 procedures to ensure that all treated water meets national standards before reuse or disposal.

Hazardous chemical wastes from research activities are separately collected and safely disposed of through licensed companies to prevent contamination of natural water bodies. Research and education play a pivotal role in sustaining this model. The project **"Activated Carbon from Krajood Residue for Wastewater Treatment"** led by TSU's researchers demonstrates how local biomass can be converted into effective filters for dye-wastewater purification and water recycling in community enterprises across Phanang Tung and Ko Saba. Through the Energy and Environmental Chemistry Engineering program, students engage in projects that monitor, analyze, and optimize water use and treatment systems, ensuring future generations value every drop of water. Together, these efforts demonstrate TSU's comprehensive approach to measuring, treating, and reusing water resources responsibly in alignment with SDG 6 – Clean Water and Sanitation.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ISO/IEC17025

Supporting evidence:

- Water-supply and monitoring records (January–December 2026) — Division of Building and Environment, TSU. https://app.powerbi.com/view?r=eyJrIjoiMWFhNDI2N2QtZTUwMS00ZDNhLThmNDktNzE0ZWI0Y2FkN2M2IiwidCI6IjNkYTdmOTQ3LTY3NTAtNDYzMC04MDk2LWJiYTlmNzZlMjZhOCIsImMiOjEwfQ%3D%3D
- Catchment-area and raw-water-reservoir utilization report, Phatthalung Campus https://sdg.tsu.ac.th/detail.php?id_list=160&aNum=20231108092953
- รายงานผลการวิเคราะห์คุณภาพน้ำเสียประจำอาคารพักบุคลากรและหอพักนิสิต
- Research Paper https://doi.org/10.1016/j.fuel.2024.132041
- https://share.google/rMh5iWVq0Kb53mSzx
- https://share.google/ie5lkaEI0z3YZt1fR