Annual Report

on SDG6 Clean Water and Sanitation

6.5 Water in the community

6.5.4 Sustainable Water Extraction Practices

Thaksin University implements a clear policy to ensure that all water extracted for on-campus and off-campus use is managed through **sustainable and environmentally responsible technologies.** The university operates own surface water catchment and distribution systems, which collect, store, and treat rainwater and natural runoff using gravity-fed reservoirs and controlled pumping systems designed to **minimize groundwater extraction**. These systems provide **clean and safe water** for students, staff, and laboratories, while also maintaining ecosystem balance in the surrounding communities. The university continuously monitors **water quality** and extraction volumes to ensure compliance with **national environmental and public-health standards.**

Water extraction and reuse are monitored continuously through **a Power BI-based Water Monitoring System.** In FY 2568 (2025), treated and reused water for landscape irrigation reached 23,931 m³, equivalent to 797 truckloads (3,000 L each), while total annual water consumption was about 473,212 L. This data-driven monitoring enables real-time management of water demand, supporting the university's **"Water Reuse Policy 2021–2025."**

Sustainable extraction is reinforced through interdisciplinary research and academic innovation. **The Innovation Materials Chemistry for Environment Center**, under the Faculty of Science and Digital Innovation, develops **eco-friendly materials** and **water-treatment technologies** that enhance water quality and reuse efficiency. Research on natural adsorbents, photocatalytic materials, and green filtration systems is applied to improve wastewater recovery and reduce dependence on fresh-water sources. These innovations are integrated into pilot projects and community water-treatment models in Phatthalung and Songkhla provinces, demonstrating how research outcomes contribute to sustainable local water management.

Community-based research extends beyond laboratory innovation. Under **the Rubber Technology Transfer Center of the Faculty of Engineering**, TSU researchers have collaborated with local fish-farming groups in Chawang District, Nakhon Si Thammarat, to develop **prototype rubber-coated fabric ponds.** This initiative funded by TSU's Social Innovation Park Program, reduces construction costs, minimizes water leakage, and promotes efficient water reuse for aquaculture and community swimming facilities. The project not only conserves groundwater but also creates local employment and supports circular-economy practices in line with SDG 6 (Clean Water and Sanitation). Through its integrated policy, scientific research, and community-oriented education, Thaksin University effectively utilizes sustainable water extraction technologies and promotes responsible water use on and off campus. These initiatives ensure long-term water security for the university and nearby communities, directly contributing to the goals of SDG 6 (Clean Water and Sanitation).

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
- 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
- https://sdg.tsu.ac.th/detail.php?id_list=375&aNum=20240621132239