

SDG REPORT

WALAILAK UNIVERSITY 2022 – 2023



CLEAN WATER
AND SANITATION

6

- ◆ Sustainable Water Management at Walailak University
- ◆ Sustainable Wastewater Treatment System: Enhancing Water Quality and Supporting Agriculture
- ◆ Water Consumption Tracking Across the University
- ◆ The Local, Regional, National, and Global Collaborative Efforts in Water Security Through the Living Weirs

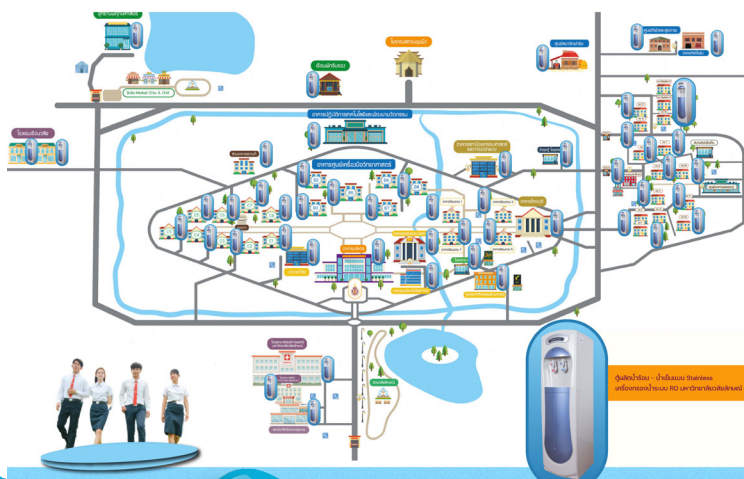


Sustainable Water Management at Walailak University

Situated in the heart of southern Thailand's Nakhon Si Thammarat Province, Walailak University occupies a central location near the equator, flanked by mountainous terrain and peninsulas on either side. This geographical positioning exposes the university to the influence of varying monsoon winds from the Indian Ocean and tropical cyclones originating in the South China Sea. Consequently, the region boasts a wealth of diverse plant and animal species, which marks a cornerstone of agricultural production. This natural abundance also positions the area as a hub of high natural capital, particularly in the service sector and tourism. The university's exceptional care for natural resources, like water, means its commitment to effective water management: dealing with flooding in the rainy season and water storage in the drought.

Walailak University has water conservation and natural catchment areas, such as reservoirs, ponds, pools and so on. Among these reservoirs, the Monkey Cheek Project stands out as a collaborative effort between Walailak University, the Royal Irrigation Department, members of the House of Representatives, and local agencies. This project has been successfully completed and in 2022, it is poised to provide crucial support for water needs at Walailak University Hospital and the surrounding community. Moreover, it serves as a recreational area, open to employees, students and the wider public.

Furthermore, Walailak University's commitment to efficient water management is exemplified by its provision of over 140 free drinking water dispensers for students, staff, and visitors, spreading across all buildings in the form of RO systems and stainless steel, with two - temperature drinking water dispensers.



Sustainable Wastewater Treatment System: Enhancing Water Quality and Supporting Agriculture



Walailak University has wastewater disposal and treatment methods taking into account the environment and the well-being of the community. A wastewater treatment process occurs in each building and the water that has been treated is reused by a Wastewater Management System Development Project established in an area of 9,600 square meters in 2002 and it has been carried on continuously.

In 2022, the university created and developed an additional wastewater treatment system by successfully implementing a wastewater treatment system capable of processing 4,000 cubic meters of wastewater daily with a BOD (Biochemical Oxygen Demand) level of 150 mg/L. The treatment converts wastewater into effluent discharged from the system at a BOD of 20 mg/L.



The well-designed biological treatment system includes an aerated lagoon, two facultative ponds, an ultraviolet sterilization system and a Wet Land Pond. Notably, the treated water plays a vital role in replenishing the natural water cycle and serves as a valuable resource





for nurturing aquatic life in four fishponds. The rest of the effluent is used as a coolant in the incinerator and as a water supply for plants and farming activities on the university grounds. The use of water in such activities indicates that the effluent from the university's wastewater treatment system has a quality like that of raw water from natural water sources, which is suitable for agricultural purposes.

Water Consumption Tracking Across the University

As for using water within Walailak University, there is a system for producing tap water from raw water that is taken from the mains supply (the university's reservoirs) and a complete water treatment plant to treat wastewater coming from various parts of the university, such as classroom buildings, operating buildings, student dormitories and cafeterias etc.

The university measures the amount of water used across the whole university. In 2022, the university has a water conservation area with a total of 1,668,217 square meters, storing water in the amount of 14,631,521 cubic meters. This is sufficient for water use within the university throughout the year. The university can produce tap water of 4,800 cubic meters per/day. Comparing data in 2020, 2021, and 2022, it is found that in 2022, the university population consumed Water with an average of 2,451.18 cubic meters per/day, which is likely to decrease from 2020 and 2021.

From the monitoring of water consumption in 2022 during summer, the university's population consumes water in the amount of 2,030.30 – 2,497.90 m³ per/day (52% of waterworks' capability per day). It shows that the amount of tap water production is sufficient for use.



The Local, Regional, National, and Global Collaborative Efforts in Water Security Through the Living Weirs

Walailak University (WU) cooperated in the field of water security with local, regional, national and global agencies to develop living weirs in the middle of the Wang Heep River, Na Mai Phai Subdistrict, Thung Song District, Nakhon Si Thammarat Province. It is a cooperation project with Prince of Songkla University, Deutsche Gesellschaft für International Zusammenarbeit (GIZ) Germany, together with local and regional agencies.



In 5 years of operation (2018-2022), WU emphasized the development of prototypes on methods for monitoring and evaluating the impacts and benefits of living weirs and on environmental resource conservation and climate protection to support water conservation outside the university area. Also, it has methods for monitoring and evaluating the digital changes and benefits of implementing Ecological-based Adaptation (EbA) with living weirs to conserve and store water, reduce soil erosion, reduce the severity of the stream in the creek, and enhance biodiversity; it is a habitat for aquatic animals and a source of water for consumption.

In 2022, WU cooperates by providing advice and consultation on questionnaires and focus group discussions for data collection in the study area and participating in the knowledge exchange training program and experience, ready to present the results of studies on water resource management through ecosystems, together with representatives of the German International Cooperation Agency and representatives of International Union for Conservation of Nature.

