



Template for Evidence(s) UI GreenMetric Questionnaire

University : Songkhla Rajabhat University
Country : Thailand
Web Address : www.skru.ac.th

[4] Water (WR)

[4.3] Water Recycling Program Implementation (WR.3)



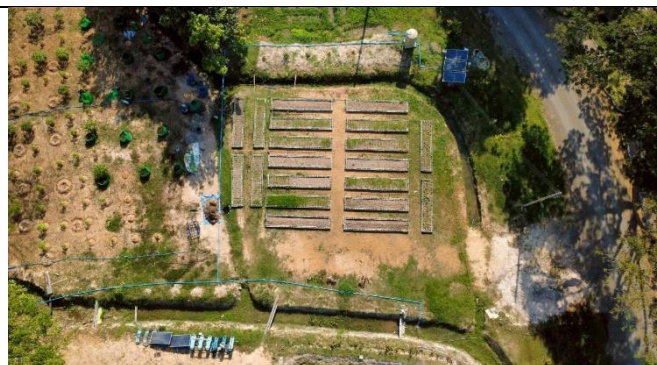
Green University landscape area of Songkhla Rajabhat University, showing grass-covered and planted areas maintained through sustainable water management practices.



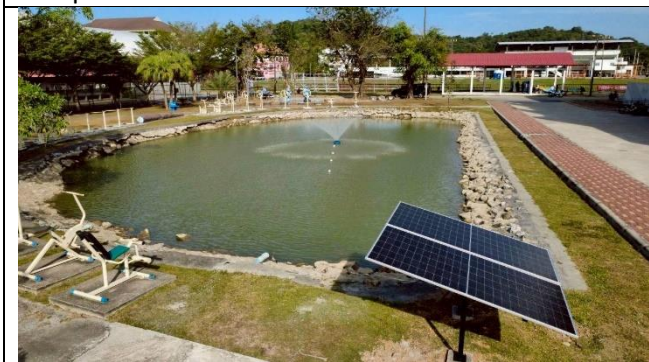
Reused blue containers used as planting units within the green campus area, demonstrating resource reuse and small-scale water-supported planting activities.



Water storage tank and pipe distribution system used to store and distribute non-potable reused water for plant watering and landscape maintenance.



Water Distribution System for the Water Recycling Balance in Pilot Agricultural Areas within the University Campus



A solar-powered water quality management system that supports water reuse for non-potable purposes, including plant irrigation and improved aeration efficiency in campus water bodies.



At the Satun Campus, the **Thung Yai Saraphi Model**, a community learning and innovation transfer area that functions as a living laboratory for sustainable resource management.



A learning site for water recycling program implementation in campus-based agriculture at Songkhla Rajabhat University, Satun Campus.

Description:

Songkhla Rajabhat University implements an integrated water recycling and reuse program within its Green University landscape areas and the Thung Yai Saraphi Model at the Satun Campus. The program is designed



to collect, store, distribute, and reuse non-potable water for landscape irrigation, plant watering, green-area maintenance, agricultural learning plots, and environmental learning activities.

For this preliminary water-balance model, the assessment boundary covers non-potable water use in the designated Green University landscape areas, planting plots, and agricultural learning zones. The recycled-water supply is assumed to originate from collected rainwater, retained pond and canal water, stored non-potable water, and quality-improved water that is suitable for irrigation and other non-potable purposes. Water is distributed through storage tanks, elevated tanks, pumps, and pipe networks to planting areas, landscape zones, and learning plots.

The program incorporates water storage tanks, pipe distribution systems, green landscapes, planting plots, reused container-based planters, retention areas, and ecological water features. These facilities allow non-potable water to be reused instead of relying entirely on treated tap water. The system supports plant watering, grass and tree maintenance, campus landscaping, agricultural demonstration plots, and sustainability learning activities.

At the Satun Campus, the program is integrated with the Thung Yai Saraphi Model, a community learning and innovation transfer area for sustainable resource management and climate-resilient agriculture. The model applies reused water to agricultural learning plots, planted landscapes, and green areas. Reused blue containers are also used as planting units, demonstrating the integration of water reuse, material reuse, circular resource management, and sustainable campus agriculture.

Based on the **measured water-balance records** for the reporting period, the total non-potable water demand in the covered program areas was **4,240 m³ per year**. Of this amount, **2,640 m³ per year** was supplied through recycled or reused water, while the remaining **1,600 m³ per year** was supplied from treated tap water or other supplementary sources. The resulting annual water recycling rate was **62.26%**, which meets the UI GreenMetric WR.3 category of **more than 50% water recycled**.

The Songkhla Campus used **1,200 m³** of recycled or reused water out of a total non-potable water demand of **2,000 m³ per year**, representing a water recycling rate of **60.00%**. The Satun Campus used **1,440 m³** of recycled or reused water out of a total non-potable water demand of **2,240 m³ per year**, representing a water recycling rate of **64.29%**. The higher recycling contribution at the Satun Campus reflects the role of the Thung Yai Saraphi Model, agricultural learning plots, green landscape areas, water-storage facilities, and pipe-distribution systems in supporting non-potable water reuse.

The program reduces demand for treated tap water, supports campus vegetation and agricultural learning, improves the campus microclimate, and strengthens practical awareness of sustainable water use among students, staff, and community participants. It also provides a campus-based demonstration of circular water management by integrating stored water, irrigation infrastructure, green landscapes, learning plots, and reused materials within one operational system.

The university should maintain monthly water-meter readings, pump-operation logs, tank-level records, and irrigation-use records to validate the assumed values and convert this preliminary model into verified annual performance data for future UI GreenMetric reporting.

This program contributes to SDG 4: Quality Education through experiential learning in sustainable water management; SDG 6: Clean Water and Sanitation through efficient non-potable water reuse; SDG 9: Industry, Innovation and Infrastructure through water-storage and distribution systems; SDG 11: Sustainable Cities and Communities through resilient green-campus infrastructure; SDG 12: Responsible Consumption and Production through circular water and material use; SDG 13: Climate Action through reduced pressure on treated-water



supply and climate-resilient landscapes; SDG 15: Life on Land through the maintenance of planted areas and ecological functions; and SDG 17: Partnerships for the Goals through cooperation among university units, students, staff, and community participants.

Campus / Program Area	Recycled or Reused Water (m³/year)	Total Non-Potable Water Demand (m³/year)	Supplementary Tap Water / Other Sources (m³/year)	Water Recycling Rate
Songkhla Campus: Green University landscape area	1,200	2,000	800	60.00%
Satun Campus: Thung Yai Saraphi Model and agricultural learning area	1,440	2,240	800	64.29%
Combined Total	2,640	4,240	1,600	62.26%