

Innovative solutions for Waste Bank Development in Surat Thani Rajabhat University

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Keywords: Municipal waste, Sustainable Development Goals, Waste management, Community waste bank

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Under the Low Carbon Cities project of the United Nations Development Programme (UNDP), it was found that a significant portion of municipal waste is organic waste, which represents approximately 60% of the total waste. It is estimated that inorganic waste (like plastic, glass bottles, and paper) comprise 25-30% of the waste stream, with recycling rates being relatively low and waste not being properly managed. This has resulted in waste remaining a primary concern. In addition, Surat Thani Province is one of fifteen pilot provinces striving to achieve the Sustainable Development Goals (SDGs) outlined by the National Economic and Social Development Council. Therefore, as part of its role as an SDG Integrator, the United Nations Development Programme (UNDP) selected Surat Thani Province to coordinate joint efforts towards national-level goals. As a result of a potential assessment of Surat Thani Rajabhat University (SRU), it was discovered that the university and the surrounding community faced challenges in terms of waste management. Additionally, the university was found to be well-positioned to take a leading role in a joint project due to its commitment to efficient waste management and its clear Key Performance Indicators (KPIs) for achieving sustainable development goals. Furthermore, the university was willing to provide the space, financial support, and personnel needed to establish a community waste bank, known as an “SDG Station”

Thus, the United Nations Development Programme (UNDP), in collaboration with the University, has developed the “Innovative Solutions for Waste Bank Development in Surat Thani” project under the co-financing and joint implementation schemes sponsored by Cargill Thailand, Government Savings Bank and Thailand Policy Lab and having Bright Management Consulting Co., Ltd. as a Consultant. The primary objectives and expected outcomes are (1) the creation of a circular economy society at Surat Thani Rajabhat University using human-centered design to develop the project integrated with a zero waste long-term target; (2) demonstration of a waste bank model successfully tested in Thailand that could potentially be replicated in other organizations or communities with similar sizes and characteristics; and (3) development of policy options to scale solutions at the provincial level.

In addition, the project activities are based on the Waste Bank concept, which plays a role in supporting the achievement of SDGs across various dimensions such as poverty reduction, gender equality, sustainable city, climate change, and partnership for the goals. Specifically, it focuses on enhancing sustainable waste management efficiency and contributing to the reduction of Greenhouse Gas (GHG) emissions within the University.

The project was initiated at the end of 2021 and began collecting data or developing project from January 2022 until September 2023, where the implementations focused in several activities, including: (1) the establishment of a sustainable waste bank at the university (as shown in Part 1); (2) monitoring and evaluation (M&E) of waste management and greenhouse gas reduction from various activities under the project, as well as the total greenhouse gas emissions (carbon footprint) for scope 1-3 for the university (as shown in Part 2); (3) the development of policy options, from the success of the project, lessons learned and key factors that contribute to success (as shown in Part 3); (4) creating participation, training and publicizing activities to enhance knowledge to raise the awareness and the behavior change as well as to consider the linkage of operational details to the sustainable development goals (as shown in Part 4); and (5) the proposal of recommendations to scale-up of the organic waste and recyclable waste management projects within the university to city level (as shown in Part 5) as described below.

Part 1 Sustainable Waste Bank of the University

To develop the waste bank project, a comprehensive understanding of the waste management and ecosystem within the university is necessary. This includes knowing the source of waste, the types and characteristics of waste, the waste management methods, the relevant stakeholders, and the waste disposal behavior to design a waste management system geared towards the circular economy within Surat Thani Rajabhat University. The development of a participatory waste management model (Human-Centered Design) based on the collection of information about the university's waste, including general information on waste generation and waste management at the university,

was conducted through surveys, interviews with target groups, and stakeholder workshops with university administrators and staff to gather information for defining project related activities.

Part 2 Assessment of Greenhouse Gas Emissions of the University and Emission Reduction Quantities from Various Activities under the Project

The “Carbon Footprint of Organization” is a method of measuring greenhouse gas emissions from various measures undertaken by the university each year. It can also be used in the management plan to reduce greenhouse gas emissions, which is also in alignment with the university’s Sustainable Development Goals (SDG 13 Climate Action). To prepare the greenhouse gas data report, data from all sectors was collected from 2019 to 2022 as the base year for calculating greenhouse gas emissions. To compare the amount of greenhouse gasses generated during different periods of time, the results of the assessment of greenhouse gas emissions can be summarized.

Part 3 Lessons and Factors of Success

Throughout the project's duration, opportunities were provided for all sectors within the university to participate in various activities under the project. This was achieved by defining the target group for each activity appropriately, conducting training processes to educate on waste management, publicizing various activities, and encouraging the participation of all target groups. The aim was to foster learning, raise awareness, and instill a sense of responsibility, leading to behavioral changes in waste management. This included waste separation at the source, such as organic waste that could be transformed into valuable products through the production of biogas, vermicompost, and non-turnover compost. In addition, recyclable waste was separated and included in the project through the “Recycling Waste to Win Luck with Trash Lucky” activity, which was further enhanced by the “30 Days Zero Waste Challenge” activity and the “Separate and Exchange Things” activity.

Part 4 Achievements in Alignment with the Sustainable Development Goals

The various activities of the project can be linked to the Sustainable Development Goals (SDGs) and their respective targets under the 17 SDGs, which are internationally recognized and practiced. As a result of the implemented project, the university will be able to achieve 11 Sustainable Development Goals.

Part 5 Policy Recommendations for Sustainable Waste Management

Policy recommendations for waste management under the “Innovative Solutions for Waste Bank Development: SDG Station” project and the expansion to city-level waste management are based on the analysis using information obtained from brainstorming opinions from stakeholders by using “Design Thinking” tools, including “Policy Journey Map”, to extract lessons learned from the recycling waste activities such as the “Trash Lucky” and “Organic Waste Management”. Furthermore, the “Policy Roadmap” and “Future Triangle” tools are adopted as design thinking tools to develop the guidelines for upscaling practices to the city-level waste management. The information extracted from the pilot project's lessons learned and case studies from three municipalities, including Surat Thani Municipality, Wat Pradoo Sub-district Municipality, Khun Thale Sub-district Municipality, highlights the key factors that influence the successful implementation of waste management initiatives. It was found that the “Policy of the Executives” is a crucial driving force/factor currently propelling waste management in each municipality (Push of the Present), as can be seen from setting challenging goals along with strict measures. However, it has been observed that “Waste separation behavior and participation” continue to present persistent challenges and significant hurdles from past operations (Weight of the Past). Concurrently, the “Urbanization Trend”, coupled with the continuous increase in “In-migrant' populations”, remains a continuous risk factor for the future (Pull of the Future) that necessitates ongoing monitoring. Therefore, future strategies for urban waste management should prioritize fostering participation and engagement in waste separation. Simultaneously, there is a need for sustainable development of businesses related to waste management to support the escalating quantities and complexities of waste separation. This includes the preparation of ecosystem and various necessary regulations.