Youth Connect

Youth Community Resilience to Climate Change in the Mekong Delta (Y-CoRe)

Recycling Plastic Waste into Floor Tiles

Project background

According to data released by the Department of Natural Resources and Environment of Tra Vinh Province in 2020, the amount of household waste generated in the province increased steadily over the five-year period from 2016 to 2020, rising from 299.18 tonnes a day to 428.84 tonnes a day – an increase of 43.34 per cent. These annual reports also indicated that the collection rate of household waste only ranged from 63.46 per cent to 78.62 per cent, and waste had not been classified at the source.

Additionally, based on the survey results of Tran Tuan Viet and colleagues in their research on plastic waste management solutions in Tra Vinh Province, it was estimated that in 2021, the average household waste generated per person in Tra Vinh Province was 0.642kg a day, of which 5.32 per cent was plastic waste (approximately 0.034kg a day per person). The Department of Natural Resources and Environment also reported that in 2020, only 68.82 per cent of generated waste was collected and just 38.95 per cent of the collected waste was processed.

These statistics highlight the considerable shortcomings in Tra Vinh Province's household waste collection system. At Tra Vinh University, a preliminary survey conducted by the project showed that 500 students used plastic waste during each class session. With more than 20,000 students, trainees, and researchers currently studying at the university, along with over 1,200 staff members (according to 2024 statistics), Tran Tuan Viet and colleagues estimated that each person produces 0.034kg of plastic waste per day. If all students were to attend school on the same day, Tra Vinh University could potentially generate up to 720.8kg of plastic waste per day.

This number reveals the significant amount of plastic waste in our surroundings. Therefore, the project team aspired to develop an initiative to reduce the daily plastic waste at Tra Vinh University. Their aim was to contribute to a cleaner living environment while also making use of the massive amount of plastic waste being produced each day.

The project sought to create a practical, highly functional product for society. The process involved turning a plastic-sand mixture into tiles using a mould, followed by cooling, drying, and coating with eco-friendly paint. These tiles, made from plastic bags, are waterproof and can last for hundreds of years. Moreover, once aged or degraded, they can still be recycled. To help reduce the number of plastic bags released into the environment, the project proposed reusing this material mixed with sand to produce floor tiles for construction.

Project objectives

Within three months (October – December 2024), the project reduced 300kg of plastic waste discharged from Tra Vinh University into the environment by recycling it into floor tiles. These tiles were to be used in a youth-led construction project in Block D8 of the university, creating a Green Space made of recycled tiles where students can freely express their creativity.

Project overview

The project produced 400 floor tiles, helping to reduce 300kg of plastic waste at Tra Vinh University. When people live in a cleaner, low-waste environment, their mental and physical health is significantly improved. Tra Vinh University is already known as a ‘Green’ University due to its abundant greenery. In the near future, the project also aims to brand Tra Vinh University as a ‘Clean’ University with less plastic waste and improved campus landscapes.

Outstanding outcomes

400 floor tiles were produced from plastic waste, and a 300kg reduction of plastic waste was achieved, equivalent to 699kg of CO2 emissions mitigated from Tra Vinh University.

More than 500 students participated in the project, raising awareness about plastic waste recycling and spreading environmental consciousness in the community.

The product was applied in a youth-led construction project in Block D8, Zone I, Tra Vinh University.

Capacity-building workshops were conducted to enhance youth knowledge on climate change adaptation and promote community outreach.

Team member’s information

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