

Enhancing knowledge on environmental management to cope with climate change (The Project on Education and Research (ED) for Integrating with UI Green Metric and SDG 13)

The School of Languages and General Education at Walailak University has organized a project to provide knowledge on environmental management to cope with climate change. This project is supported by the Academic Services Center of Walailak University and led by Assistant Professor Dr. Chuthamat Rattikansukha, an expert in environmental management. The project includes training on the causes of global warming to raise awareness in local communities about the impacts, mitigation, adaptation, and strategies to reduce the effects of climate change.

The event was attended by members of Ban Laem community, who work in various professions such as fishing, tourism, and restaurant businesses, as well as other related sectors. They applied the knowledge gained in managing the environment in response to climate change. Walailak University closely collaborated with Ban Laem Homestay entrepreneurs to organize the event, which will be held free of charge in 2024.

From discussions regarding the needs of the Ban Laem community, it was found that the community has limited knowledge and understanding of environmental management, particularly in waste management from fishing activities, especially concerning waste management practices to reduce greenhouse gas emissions. Additionally, the community has not yet been informed about the background of climate change. Walailak University recognizes the value of the Ban Laem community, which engages in a wide variety of occupations, making it significant in waste management, tourism, and various professions that contribute to reducing greenhouse gases. The goal is to promote Ban Laem community as a model community, demonstrating successful environmental management practices to other communities.

After identifying the community's concerns and needs regarding participatory environmental management, a series of knowledge-sharing activities on reducing greenhouse gases were organized. These activities included lectures, a greenhouse gas reduction game, and a session where the community proposed initiatives to cut greenhouse gas emissions. The community suggested two main activities: the use of solar energy and the management of fishing waste by producing fermented bio-extract from fishery wastes. The project emphasizes using fish and shellfish scraps as raw materials for producing fermented liquid. The knowledge shared during the project is divided into two key areas: knowledge on greenhouse gas management, which is the main cause of climate change, and knowledge on waste management to reduce greenhouse gas emissions.

In the knowledge-sharing activity on greenhouse gas management, Assistant Professor Dr. Chuthamat Rattikansukha delivered a lecture to the community, explaining the importance of greenhouse gases in natural phenomena that help maintain the Earth's temperature to be warm and appropriate for all living things in ecosystem. However, due to human lifestyles that release greenhouse gases into the atmosphere, the levels have risen beyond what the ecosystem can balance in the carbon cycle, leading to global warming, which causes climate change. Therefore, it is urgent for humans to reduce greenhouse gas emissions. If greenhouse gas levels cannot be controlled, the Earth's ecosystem may change permanently, resulting in high global temperatures, which will impact human life in the future, including food security, housing, disease outbreaks, and human health. Additionally, a game activity was organized to raise awareness among participants that if everyone fails to reduce greenhouse gases, life on Earth will become unsustainable. Thus, everyone must contribute to reducing greenhouse gases through various daily activities, such as using renewable energy and conserving electricity, waste separation to reduce waste, environmentally friendly transportation, choosing plant-based foods instead of meat, eating locally products, conserving resources, planting mangrove forests, and community participation. These actions will help create a low-carbon society in the community.

Walailak University organized a free waste management activity for the community, focusing on converting fishery waste into fermented bio-extract. The project provided the materials and equipment to the community. Assistant Professor Dr. Chuthamat Rattikansukha led the workshop, teaching how to produce bio-extract using microbial powder named "Super PD 2," that enhances the breakdown of proteins and fats, speeding up the decomposition process. Additionally, it helps reduce odors during

fermentation and increase the nutrient solubility in the product. The waste materials used in the process are fish and shellfish scraps, which are fermented with molasses to feed the microorganisms. Throughout the fermentation process, the bio-extract is stirred to ensure the oxygen-dependent microorganisms play a significant role in the decomposition. This results in the release of carbon dioxide instead of methane, which has 25 times more global warming potential than carbon dioxide. Therefore, this method of producing bio-extract also helps reduce global warming. The activity received great interest from the community, with many expressing a desire to produce their own bio-extract to create additional income for local fishermen in the future.

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