

Integrated Education Program for Product Development and Climate Change Adaptation

In an era where climate change has become a critical global issue affecting many communities, especially in the agricultural sector, sustainable development of local products has gained increasing importance. The promotion of integrated education for value-added product development and climate change adaptation is crucial for farming communities in Thailand. In this context, Assistant Professor Dr. Rungruang Janta and her research team have been working collaboratively with the community of nutmeg growers and processors in Ban Suan Chan, Ron Phibun Subdistrict, Ron Phibun District, Nakhon Si Thammarat Province. The project exemplifies a comprehensive approach to sustainable agricultural development in the face of climate change. By combining scientific assessment (carbon footprint analysis) with practical knowledge transfer and market-oriented strategies (GI registration), it addresses multiple facets of the challenges faced by local farming communities. The project involves the following initiatives:

1) The team evaluated the carbon footprint of three nutmeg products: sliced nutmeg, three-flavored nutmeg, and candied nutmeg. The assessment considered the entire life cycle of the products, from raw material acquisition to disposal. The findings highlight opportunities for improving production processes to reduce greenhouse gas emissions (Climate Change Mitigation) throughout the product lifecycle. Results showed that the carbon footprint of all three products ranged from 420 to 421 grams of carbon dioxide equivalent per product unit. The main sources of greenhouse gas emissions were identified as raw material acquisition (72%) and production waste (27%). Based on these findings, the team designed prototype product labels displaying the carbon footprint to inform consumers about the greenhouse gas emissions associated with product consumption. The researchers proposed strategies to reduce greenhouse gas emissions from the products, such as using biodegradable packaging and converting nutmeg shells into fertilizer. These innovations address both environmental and economic concerns. Not only do they help reduce waste and dependence on chemical fertilizers, but they also serve as unique selling points to attract environmentally conscious consumers, potentially creating new market opportunities for local products in the future.

2) The project team worked with the Nakhon Si Thammarat Provincial Commercial Office to provide local education program and campaign on climate change risk and guidance on registering for Geographical Indication (GI) certification. This initiative targeted nutmeg growers and processors in Ron Phibun Subdistrict, Ron Phibun District, Nakhon Si Thammarat Province. The collaboration involved exchanging information with the community about climate change and strategies for both reducing greenhouse gas emissions and adapting to climate change impacts. The focus was on developing a pathway for GI registration of nutmeg products, which would add value and create a distinct identity for local products. This approach aims to promote sustainable development and improve community well-being under changing climatic conditions. Key aspects of the knowledge transfer included:

1. Building understanding of the causes and impacts of climate change, focusing on current and projected effects on agricultural areas.

2. Educating about methods to reduce greenhouse gas emissions (mitigation) in the agricultural sector, particularly in the production and processing of nutmeg.

3. Advising farmers on adaptation strategies for changing climate conditions, in line with local government measures and tailored to the specific context of the area.

Integrating climate change adaptation knowledge into nutmeg production represents a crucial next step. This includes improving water management systems, developing flexible planting calendars, and early warning as measures to help farmers cope with future climate uncertainties.

In conclusion, this integrated education program demonstrates how academic research can be effectively translated into practical, community-level action. By combining environmental assessment, product development, and climate education, the project provides a model for holistic, sustainable agricultural development in the face of climate change. Such initiatives are crucial for building resilient communities and sustainable local economies in Thailand and beyond.

Related Link >> <https://solgen.wu.ac.th/?p=26379>