Australian Government
Department of Foreign Affairs and Trade

MEKONG INSTITUTE

REGIONAL TRAINING PROGRAM ON CLIMATE–SMART POSTHARVEST TECHNOLOGIES

February 19–23, 2024 | Mekong Institute, Khon Kaen, Thailand

Background

The Greater Mekong Subregion (GMS) is facing challenges related to climate change and its impact on food systems. Innovations to foster the resilience of the agriculture sector have been increasing for years, such as climate-smart agriculture (CSA). These climate-smart technologies can be practices, equipment, and methodologies that increase productivity, enhance resilience (adaptation), and reduce greenhouse gases (mitigation) where possible in agricultural and food processes. Adoption of these practices ensures sustainability and addresses the pressing challenges of climate change in agriculture.

While the majority of CSA practices are concentrated on the production side, there are emerging technologies applicable to other stages of the agrifood value chain. In Lower Mekong Countries, there are initiatives to apply climate-smart technologies in food processing, distribution, and marketing. For example, energy-efficient processing equipment to reduce greenhouse gas emissions has been introduced, including solar-powered dryers, biogas installations at processing facilities, and the use of agricultural waste for bioenergy. Food distribution systems have integrated renewable energy-powered cold chain systems. Mobile applications and platforms using big data and AI to optimise logistics, reducing food waste and carbon footprints during transportation, are being made available to the digital market.

In the marketing sector, e-commerce platforms have become pivotal in facilitating direct connections between producers and consumers. Additionally, blockchain technology has been gaining popularity for supply chain transparency and to verify the environmental impact of products.

Though national consultations with key stakeholders from Cambodia, Lao PDR, Thailand, and Vietnam (CLTV) revealed that the stages of adoption of these technologies differ in each country, the same challenges remain. The major concerns are the accessibility of technical services to use the technologies, financing climate-smart investments, and cross-border cooperation.

To make sure that climate-smart technologies are adopted in the agricultural value chain, national agencies, academic institutions, and the private sector can provide better human resource development. This can lead to higher product quality and productivity, which can help the Lower Mekong Countries have more exports and trade opportunities. This can boost the regional economy and provide new market opportunities. Further, shared training programmes can promote collaboration and knowledge exchange between CLTV, fostering collective action against the shared challenges of climate change.

Objectives

The five-day training aims to build the capacity of national agencies, academic institutions, and the private sector on climate-smart postharvest technologies. Specifically, it will:
1. Enhance the awareness of participants about climate-smart technologies and their importance to food security and environmental sustainability;
2. Provide knowledge on the application of climate-smart technologies in food processing, distribution, and marketing;
3. Develop capacity for planning and implementing climate-smart food systems at the local level; and
4. Foster national and regional collaborations for improved agrifood value chain resilience against climate change.

Expected Outcomes

1. Participants will:
    1. Gain comprehensive knowledge on replicable CSA technologies and innovations in food processing, distribution, and marketing.
    2. Have clarity on the practical implementation of CSA techniques in their respective areas.
    3. Develop action plans for promoting or scaling up CSA practices in their work, contributing to the overall resilience of the agrifood value chain in Lower Mekong countries.
2. An established network of connected and empowered stakeholders equipped to drive CSA adoption within their respective sectors and locales.
3. Feedback and success stories documented post-training will act as catalysts for regional adoption of CSA practices.

Target Participants

The training is aimed at representatives from national agencies, academic institutions and the private sector who are directly working in the agrifood value chain of Cambodia, Lao PDR, Thailand, and Vietnam.

Training Contents

The training will highlight the importance of climate-smart technologies in food security and environmental sustainability. It will cover some of the replicable CSA technologies in food processing, distribution and marketing identified during the concluded series of National Consultations on the Implementation and Replicability of CSA Technologies in the Lower Mekong Countries.

Module 1: Introduction to Climate-Smart Technologies in the Agrifood Value Chain

Module 1 provides a foundational understanding of how climate change affects agriculture and food systems, particularly within the GMS. Participants will learn the fundamentals of CSA and food systems as a strategic approach to responding to these challenges. This module will highlight the significance of integrating climate resilience into food processing, distribution, and marketing to ensure food security and sustainable development.

By establishing a solid foundation in the key concepts of CSA and food systems, participants will be better equipped to contribute to the development and dissemination of innovative climate-resilient solutions in the processing, distribution, and marketing sectors.

Topics
- Understanding the effects of climate change on agriculture and food systems
- Fundamentals of climate-smart agriculture and food systems

Learning Objectives

By the end of Module 1, participants should be able to:
1. Recognise the impacts of climate change on agriculture and food systems within the Lower Mekong Countries, including the risks and vulnerabilities posed to food security and livelihoods;
2. Explain the concept of CSA and its role in addressing climate change, including the three pillars of CSA: sustainably increasing agricultural productivity, adapting and building resilience to climate change, and reducing greenhouse gas emissions where possible; and
3. Identify key elements of climate-smart food systems, emphasising the interdependence of processing, distribution, and marketing in the context of climate change adaptation and mitigation.

Module 2: Climate-Smart Food Processing

Module 2 focuses specifically on climate-smart technologies and innovations in food processing. The module will explore a range of strategies to make food processing more energy-efficient, sustainable, and resilient to the impacts of climate change. Participants will learn about the application of renewable energy technologies, such as solar and biomass, in food processing and how these solutions can reduce the carbon footprint and operational costs.

This module will also delve into advancements in processing technologies that conserve energy, minimise waste, and enhance productivity. Additionally, it will cover innovative techniques that can boost the shelf life of food products and diminish post-harvest losses, which are critical for both food security and economic stability in the region.

Topics
- Renewable energy solutions for food processing (solar, biomass, etc.)
- Energy-efficient and waste-reducing processing technologies
- Techniques for enhancing shelf life and reducing post-harvest losses

Learning Objectives

By the end of Module 2, participants should be able to:
1. Understand the importance of integrating renewable energy solutions in food processing to promote sustainability and reduce reliance on fossil fuels;
2. Identify the types of renewable energy technologies suitable for food processing, including solar, wind, and biomass, and evaluate their applicability and benefits within the context of regional food systems;
3. Assess energy-efficient technologies and their potential to reduce energy consumption, operational costs, and environmental impact during the food processing stage;
4. Recognise the role of innovative processing technologies in reducing waste and enhancing the efficient use of resources, including raw materials and by-products;

5. Analyse techniques for enhancing food shelf life and their significance in reducing post-harvest losses, contributing to enhanced food security, and mitigating climate change impacts.

Module 3: Sustainable Distribution and Logistics

This module zeros in on the key components that make the distribution and logistics of agricultural products more resilient to the impacts of climate change. Participants will delve into strategies for building and managing effective cold chains crucial for preserving the quality of perishable goods in a warming climate. Additionally, this module covers the use of Information and Communication Technology (ICT) to enhance supply chain efficiency, ensuring that products are moved from producers to consumers in a manner that minimises carbon footprint and waste while enhancing productivity and resilience.

Topics
- Cold chain development and management for climate resilience
- ICT for efficient supply chain management

Learning Objectives

Upon completing this module, participants will be able to:
1. Understand the concept of the cold chain and its significance in climate resilience for agricultural products, specifically in the context of Lower Mekong Countries facing variable Learn about the role of ICT solutions in supply chain management, including the use of data analytics, GPS tracking, and other digital tools to streamline the flow of goods, reduce delays, and optimise resource use;
2. Explore case studies from the region of successful implementation of climate-smart logistics and cold chain management practices that lead to reduced losses, better quality control, and improved farmer incomes.

Module 4: Climate-Resilient Marketing and Trade

Module 4 is designed to equip participants with the capabilities to leverage technology for promoting and selling climate-smart food products. This module explores the synergy between digital marketing and climate resilience. It highlights various online tools and platforms that can transform marketing strategies, allowing producers to reach a wider audience while minimising their environmental footprint.

Learning Objectives

Upon completion of this module, participants will:
1. Acquire practical knowledge of various digital platforms, from social media to specialised e-commerce sites, and how to effectively use them to target the right consumers;
2. Understand how to use e-commerce platforms to expand market reach, reduce carbon footprints, and create systems that are resilient to climate-induced disruptions.

Module 5: Learning Visit

A significant feature of this course is a learning visit to a local site that successfully implements climate-smart technologies, providing participants with an actual example and the opportunity to engage with practitioners. The site visit will facilitate a deeper understanding of the practical challenges and solutions for CSA implementation.

Module 6: Action Planning

To apply the knowledge and skills learned, participants will work on an action plan - something they can work on that is relevant to their work and their organisation. The proposed action plan will be implemented three to six months after returning to their respective countries. These action plans provide opportunities to transfer their learnings and multiply the project impact within their own organisations and food MSMEs.

Applications

- Please fill out the online application form by January 22, 2024, Monday: https://bit.ly/CSA-PH-Application. Please answer the action plan part thoughtfully.
- Seven participants per country are eligible for a full training scholarship, including international airfare and accommodation.
- MI will send a formal invitation letter to selected applicants no later than January 29, 2024.

Contacts

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