Event Completion Report
of the
ASEAN-CRN Knowledge Exchange Event and Partners Meeting

Amari Watergate, Bangkok, Thailand
28 – 30 March 2023

Executive Summary

The ASEAN-CRN Knowledge Exchange Event and Partners Meeting was held at the Amari Watergate Hotel, Bangkok, Thailand, during 28 – 30 March 2023. Thailand's Department of Agriculture (DOA) and the Philippines Department of Agriculture-Bureau of Agricultural Research (DA-BAR) jointly hosted this hybrid event which brought together over 40 participants, comprising the ASEAN-CRN Focal Points, relevant officials, and academic and research institutes from the ASEAN Member States (AMS). The event was supported by the GIZ ASEAN AgriTrade Project with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ), the Food and Agriculture Organisation of the United Nations – Regional Office for Asia and the Pacific (FAO-RAP), and Mekong Institute (MI) on behalf of the ASEAN AgriTrade Project. The objectives of the event were to:

- Enhance understanding of climate information services and the potential use of agro-insurance in accessing the 'loss and damage fund',
- Increase knowledge on how agriculture can help achieve national climate targets,
- Identify potential collaborations among partners of ASEAN-CRN, and
- Start identifying finance and implementation options to take the Koronivia Joint Work on Agriculture (KJWA) forward in the region in conjunction with the Green Climate Fund (GCF) Readiness Grant in Southeast Asia and other initiatives.

The event saw officials from AMS, international organisations, climate finance facilities and platforms, and investment advisory companies gather to examine how different climate fund streams intersect with agriculture. Following the findings of the latest Intergovernmental Panel on Climate Change (IPCC) report, the event drew attention to creating an enabling environment, such as institutional frameworks, policies, and implementation plans with clear priorities. It also weighed in on thought-provoking conversations about how agro-insurance and agricultural climate services could be in place to facilitate improving the enabling environment, which in turn contributes to attracting climate finance flow in agriculture. Although challenges exist on the types of mitigation and adaptation measures smallholder farmers can adopt, the participants recognized opportunities to apply Nature-based Solutions (NbS), scale up available techniques such as Alternative Wetting and Drying (AWD) and Biochar, etc., to shift to low emission agriculture.

Moving to the carbon markets, the rich discussions were evidence of their complexity. However, the interest of AMS in carbon trading is on an upward trajectory. The development partners introduced initiatives and approaches to support national efforts through financing, technology, emissions reductions, capacity-building, and more. All the participants agreed that convincing smallholder farmers to switch to climate-smart agriculture (CSA) and private-sector engagement requires financial incentives and commercial viability.

The evaluation results indicated that the event was a success. Participants commended the program's design, which addressed complex topics in a simple and engaging manner, and appreciated the opportunity to match development partners' support with their countries' needs. It was hoped that the knowledge and skills shared would have a ripple effect among AMS for infusing urgency into taking transformative climate actions in agriculture.

Contents

List of Figures

Abbreviations and Acronyms

ACIAR	:	Australian Centre for International Agricultural Research
ACGF	:	ASEAN Catalytic Green Finance Facility
AFOLU	:	Agriculture, Forestry and Other Land Use
AMAF	:	ASEAN Ministers on Agriculture and Forestry
ANGA	:	ASEAN Negotiating Group for Agriculture
APA	:	Adapting Philippine Agriculture to Climate Change
AMS	:	ASEAN Member States
ASEAN	:	Association of Southeast Asian Nations
ASEAN-CRN	:	ASEAN Climate Resilience Network
ATWGARD	:	ASEAN Technical Working Group on Agricultural Research and Development
AWD	:	Alternate Wetting and Drying
AR6	:	The IPCC Sixth Assessment Report
BAU	:	Business as Usual
BMZ	:	German Federal Ministry for Economic Cooperation and Development
BTR	:	Biennial Transparency Report
BUR	:	Biennial Update Report
CACCI	:	Comprehensive Action for Climate Change Initiative
CCAPA	:	Climate Change Action Plan for Agriculture
CDM	:	Clean Development Mechanism
CH_4	:	Methane
CSA	:	Climate-Smart Agriculture
CSO	:	Civil Society Organization
COP	:	Conference of the Parties
DA-BAR	:	Department of Agriculture-Bureau of Agricultural Research
DOA	:	Department of Agriculture
DOF	:	Department of Finance
E-READI	:	Enhanced Regional EU-ASEAN Dialogue Instrument
ETF	:	Enhanced Transparency Framework
ETS	:	Emissions Trading System

FAO-RAP	:	Food and Agriculture Organisation of the United Nations Regional Office for Asia and the Pacific
FTI	:	Federation of Thai Industries
FOLU	:	Forestry and Other Land Use
GCF	:	Green Climate Fund
GEF	:	Global Environment Facility
GHG	:	Greenhouse Gas
GHGI	:	Greenhouse Gas Inventory
GIZ	:	Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH
GST	:	Global Stocktake
IFPRI	:	International Food Policy Research Institute
IPCC	:	Intergovernmental Panel on Climate Change
ITMOs	:	Internationally Transferred Mitigation Outcomes
KJWA	:	Koronivia Joint Work on Agriculture
LDCs	:	Least Developed Countries
LMT	:	Land-Based Mitigation Technologies
LoCAL	:	Local Climate Adaptive Living Facility
LTS	:	Long-term Strategies
MI	:	Mekong Institute
MRV	:	Measurement, Reporting and Verification
NAMA	:	Nationally Appropriate Mitigation Actions
NAP	:	National Adaptation Plans
NbS	:	Nature-based Solutions
NDCs	:	Nationally Determined Contributions
N_2O	:	Nitrous Oxide
NGO	:	Non-government Organization
MAFF	:	Ministry of Agriculture, Forestry and Fisheries
REDD	:	Reducing Emissions from Deforestation and Forest Degradation
PEARL	:	Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood
PBCRGs	:	Innovative Performance Based Climate Resilience Grants
SCALA	:	Scaling up Climate Ambition on Land Use and Agriculture
SEI	:	Stockholm Environment Institute
TGO	:	Thailand Greenhouse Gas Management Organization (Public Organization)
SRLI	:	Sustainable Rice Landscapes Initiative
T-VER	:	Thailand Voluntary Emission Reduction Program
UNEP	:	United Nations Environment Program
UNCDF	:	United Nations Capital Development Fund
UNFCCC	:	United Nations Framework Convention on Climate Change
VCM	:	Voluntary Carbon Market

1. Introduction

The ASEAN Climate Resilience Network (ASEAN-CRN) has been working on climate resiliency by exchanging information, expertise, and experiences on climate-smart approaches to food systems. Since its formation in 2014, the network has significantly advanced ASEAN's agriculture and climate change agenda by providing a dialogue platform and linking policymakers with the scientific community. According to the ASEAN-CRN work plan for 2023, ASEAN-CRN focal points expressed interest in forging a greater understanding of adaptive and mitigation approaches in agriculture, which are framed within the context of understanding how agriculture can help achieve national climate targets. The selected areas included:

- Utilisation of agromet/ climate information services
- Digitalization of information in agriculture
- Potential use of agro-insurance in accessing loss and damage funds
- Development of carbon neutrality strategies in agriculture

This year, ASEAN-CRN also decided to revive its tradition of opening discussions and matching support from development partners with needs from ASEAN Member States (AMS). The event, which combined all the needs given above, was named the "ASEAN-CRN Knowledge Exchange Event and Partners Meeting", and organised at Amari Watergate Hotel, Bangkok, Thailand, from 28 - 30 March 2023. Thailand's Department of Agriculture (DOA), as the Chairman of ASEAN-CRN, and the Philippines Department of Agriculture-Bureau of Agricultural Research (DA-BAR), the incoming ASEAN Technical Working Group on Agricultural Research and Development (ATWGARD) Chair, jointly hosted the event. The event was conducted with support from the Food and Agriculture Organization of the United Nations – Regional Office for Asia and the Pacific (FAO RAP) and the GIZ Promotion of Sustainable Agricultural Value Chains in ASEAN (ASEAN AgriTrade) project with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ) with Mekong Institute (MI). The hybrid event brought together more than 40 participants comprising the ASEAN-CRN Focal Points, relevant officials, and academic and research institutes from the AMS.

This completion report summarises the event process, topics covered, and activities conducted. It is presented in 7 sections as follows:

- Introduction
- Objectives
- Participant Information
- Approach
- Contents
- Evaluation
- Conclusion

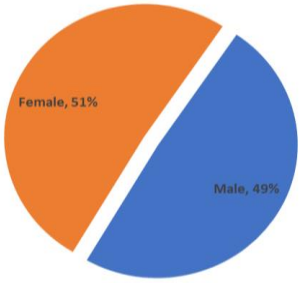
2. Objectives

The specific objectives of the event were to:

- Enhance understanding of the utilisation of agromet, climate information services, and digitalization of information as well as potential use of agro-insurance in accessing the loss and damage fund;
- Increase knowledge on how agriculture can help achieve national climate targets;
- Identify potential collaborations among partners of ASEAN-CRN; and
- Start identifying finance and implementation options to take the Koronivia Joint Work on Agriculture (KJWA) forward in the region in conjunction with the Southeast Asia's Green Climate Fund (GCF) readiness grant and other initiatives.

3. Participant Information

The hybrid event brought together over 40 participants, comprising the ASEAN-CRN Focal Points, relevant officials, and research institutes from AMS. The participant list appears in Annex 1.



4. Approach

This three-day event sought to build the capacities of ASEAN-CRN focal points while providing a venue for discussion on potential collaborations among the various partners of ASEAN-CRN. Hence, the program was designed in such a way as to allow the first two days to be dedicated to knowledge **Error! Bookmark not defined.**exchange on decarbonization, resilience and other relevant topics, including a partnership forum. Part of the discussion led to identifying finance and implementation options to take the KJWA forward in the region in conjunction with the GCF Readiness Grant in Southeast Asia.

5. Contents and Activities

Opening Session: Mr Joell H. Lales, Director, DA-BAR, the Philippines, as incoming Chair of the ATWGARD, warmly welcomed the participants and underlined the urgency of the climate crisis in the region. He acknowledged the importance of regional discussion to find solutions for the climate-related challenges in agriculture and called for collective climate actions to identify. He concluded with a wish for a fruitful exchange among the participants throughout the event.

Opening the event, Mr Rapibhat Chandarasrivongs, Director-General, DOA, Thailand, and the ASEAN-CRN Chair, further underscored the importance of transitioning toward climate-resilient agriculture (CRA). He also commended the role of the ASEAN-CRN platform in exchanging good

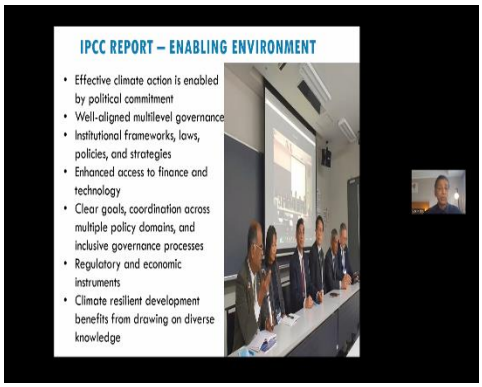
practices and knowledge to promote climate-resilient agriculture. He expressed Thailand's willingness to share its experience in implementing the Thailand Voluntary Emission Reduction Program (T-VER) and the development of a national carbon credit baseline on major economic crops. He ended his remarks by wishing the event every success.

Introduction and update on the ASEAN-CRN progress: Dr Margaret C. Yoovatana, DOA, Thailand, and the ASEAN-CRN Focal Point, gave an update on the progress of ASEAN-CRN and ASEAN Negotiating Group for Agriculture (ANGA) over the years. She underlined the Network's key milestones that contributed to producing knowledge products, policy/guidelines, and knowledge exchange events implemented in cooperation with ASEAN and other partners. She highlighted ANGA's active participation in the Conference of the Parties (COP) and engagement in the GCF Agriculture Readiness Grant launched in COP27. The workshop noted that the Network facilitated partnerships, collaborations, and coordination that contributed to the ASEAN Cooperation Vision 2025 on Food Agriculture and Forestry and the ASEAN Comprehensive Recovery Framework (ACRF).

Ice-breaking Exercise

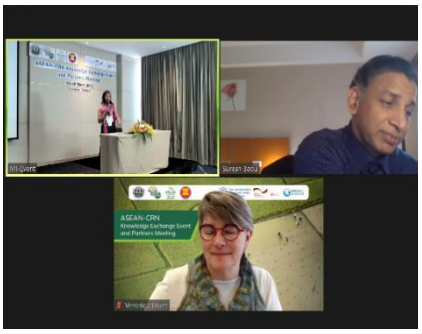
Session 1: Scientific Update and UNFCCC Foundations

Climate change and IPCC Priorities - CACCI approach to reversing global warming and adapting to the impacts of climate change: Dr Suresh Babu, International Food Policy Research Institute (IFPRI), began by briefing participants on the key takeaways from the Intergovernmental Panel on Climate Change (IPCC) report, drawing attention to the issues related to adaptation, mitigation, and the enabling environment. He explained the approach of the Comprehensive Action for Climate Change Initiative (CACCI) that helps countries to translate policies into actions on the ground and showcased the project in Tajikistan that supports strengthening the policy process, evidence-based research, and implementation, Measurement, Reporting, and Verification (MRV) system, and real-time data use for decision-making. He advised AMS to align the priority actions highlighted in the IPCC report, such as translating national climate change policies and strategies into Nationally Determined Contributions (NDCs), and mapping NDCs into national development strategies to work with the development partners effectively.



New ways to adapt and mitigate – What science tells us: Dr Veronica Doerr, Australian Centre for International Agricultural Research (ACIAR), shared the IPCC Synthesis Report of the Sixth Assessment Report (AR6), such as bringing multi-stakeholders together, improving the enabling environment and changing behaviours. She also shared the implications of the AR6 findings on the

key issues that the event brought to light. In the carbon market, she noted that it was important to recognise that the markets would be designed to optimise carbon, not co-benefits. Hence, it needs to be strategic in regulating the private market. Moving to climate services, she also noted that potential tools must be packaged with other services to create an enabling environment beyond information delivery. She also stated that agro-insurance would lead to de-risking the change process and creating an enabling environment only if it pays for farmers' losses while working to transition land uses. Capping off the session, she recommended using financial and technical support to 'crowd in' instead of 'distribute' and create a robust enabling environment for climate-resilient agriculture.



SCALA programme overview and Asia highlights - Scaling up climate ambition on land use and agriculture through NDCs and NAPs: Mr Janek Toepper, FAO-RAP, introduced the Scaling up Climate Ambition on Land Use and Agriculture (SCALA)'s approach, which aims to support countries to translate their NDCs and NAPs into actionable and transformative climate solutions in land use and agriculture with multi-stakeholder engagement. He alerted participants to gaps between science, planning and implementation of countries to reach their climate targets in land use and agriculture. He continuously underlined institutional anchors and focus areas in Thailand, Cambodia, Mongolia, and Nepal, the 4 SCALA countries in Asia. The participants also learned about the project's support to improving MRV and Monitoring and Evaluation (M&E), for instance under Thailand's Climate Change Action Plan for Agriculture (CCAPA). He lastly urged the countries to use a systematic approach and transformative lens in undertaking climate actions. Details of the SCALA programme https://www.fao.org/in-action/scala/en.

After the presentations, the event opened the floor for questions and discussions. The official from the Philippines appreciated the insights shared by the presenters as those reaffirmed that the country's current trajectory for climate actions in agriculture is on the right track.

Global context - Connecting science to policy - ASEAN submission on Joint Sharm-el-Sheikh work on agriculture: Ms Imelda Bacudo, the ASEAN-CRN Technical Advisor, enumerated the evolution of the agriculture position in United Nations Framework Convention on Climate Change (UNFCCC) at the outset of the presentation. She also gave a snapshot of the KJWA and its

milestones between 2017 and 2022. She conveyed the messages to implement critical outcomes for agriculture and food security from KJWA, such as applying a holistic approach, promoting synergies and strengthening engagement, providing technical advice on climate action, and enhancing research and development on issues. Moving to ANGA's submission to 'The Sharm el Sheikh Joint Work on Implementing Climate Action on Agriculture & Food Security', she noted that ANGA is reviewing the draft.

- Dr Margaret called for more ambitious actions on the ground at the end of the presentation.

Launch of UNFCCC negotiators course - An overview of the course and its purpose: Dr Pham Quang Minh, Head of Food, Agriculture and Forestry Division (FAFD), ASEAN Secretariat, praised the work of ASEAN-CRN and ANGA. He recommended that the countries appoint the focal point of ANGA for Climate Negotiations to enable effective participation in COP.

Afterwards, Ms Pouchamarn Wongsanga, GIZ Thailand, introduced the newly launched E-Learning course on "Climate Negotiations for Agriculture Stakeholders" at *https://bit.ly/3Z68bx3*. Together with Mr Moch Taufiqul Mujib, GIZ Indonesia, she elaborated on the course's objective, which is to enhance the ASEAN delegations' capacity in the negotiation landscape under UNFCCC and its Paris Agreement, notably on agriculture and food security in the international climate change agenda. The participants discovered that this e-learning course is a collaborative effort between the GIZ ASEAN-German Cooperation projects, FAO, and ASEAN with technical assistance from CAOS - Borboletas e Sustentabilidade, Lda, a Portuguese consultancy firm and the FAO E-Learning Academy.

Session 2: Carbon neutral, low emission agriculture

Foundation of Net zero in the Paris Agreement: Mr Beau Damen, FAO-RAP, recapped the mechanisms and instruments on low emission development in agriculture – NDCs, Long-Term Strategies (LTS), the Enhanced Transparency Framework (ETF) and Article 6 of the Paris Agreement. Citing the findings from the IPCC report that laid out how close the world is to missing the 1.5°C target, he called for early investment to ensure that agrifood systems could withstand future shocks. To help lay the groundwork for advancing

climate actions, he explained low emission development definitions, such as carbon neutrality, net zero carbon dioxide (CO_2) emissions, net zero greenhouse gas (GHG) emissions, and climate neutrality. Ultimately, he stressed that new technologies require more research, upfront investment, proof of concept at larger scales, and the agreed methods for MRV to make impactful actions on climate change.

The challenges of net zero for agriculture, Indonesian case: Dr Fahmuddin Agus, National Research and Innovation Agency (BRIN) Indonesia, reported that agriculture is the fourth largest contributor to Indonesia's GHG emissions. The highest contributors are emissions of CH_4 from lowland rice, CH_4 from livestock (enteric fermentation and manure), and N_2O from livestock manure, and fertilizers. He explained that emission reduction in lowland rice happens due to land conversion. Yet, intensification is necessary for food security and agricultural resilience. He then shared his observation that Net-zero Agriculture by 2060 is still a difficult task and it needs to be offset from other sectors. Nevertheless, he also asserted that adaptation measures, e.g., using organic matter or biochar for soil, and sustainable intensification, will improve resilience and mitigate GHG directly and indirectly.

Discussion

- The session was followed by a discussion whether AMS could reach net zero by 2050 or 2060. One of the participants asked Dr Fahmuddin if there is any ongoing research to determine viable technologies for reductions from the major emission sources in agriculture.
- Dr Fahmuddin responded that his team is applying to conduct a research into biochar production and fermentation from oil palm waste. Oil palm waste is abundant and promising feedstock for conversion into good-quality biochar. Unfortunately, biochar typically has a low heating value and thus cannot be a better energy source. Yet, it is suitable for soil fertility. He mentioned they are hopeful about the research making a difference.
- For livestock, there are two areas: managing feed quality and managing manure to reduce emissions. Successful feed quality improvement would reduce about 8% of enteric fermentation emissions. It cannot compensate for increased emissions from the increase in population. The emission reduction from this source is not significant enough to reach net zero.
- Monoculture farming remains the primary form of agriculture practice. The challenge is that mitigation demands additional costs. Encouraging farmers to reduce fertilizer emissions is not ideal, as the countries cannot disregard the fundamental issues of food security and the economic impact. However, Dr Fakhruddin is optimistic that the

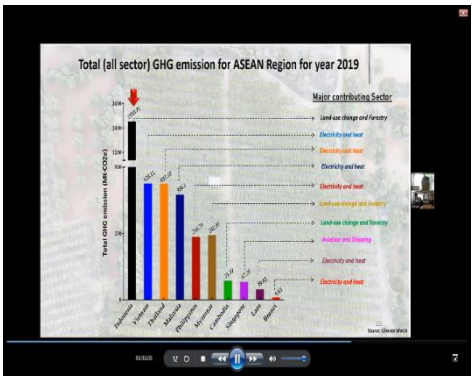
continued research and incentives for smallholder farmers to adopt mitigation and adaptation practices could significantly contribute to the climate pledges.

- Ms Imelda noted that similar situations were observed in other regions, such as Africa and the Middle East. Most countries are still working on definitions and plausible directions to meet climate pledges based on realistic conditions.
- The official from the Philippines' DOA noted that a combination of available technologies could be possible for reduction in one emission source, explaining the strategies for emission reduction from irrigation in the rice sector. The Philippines employs Alternate Wetting and Drying (AWD), renewable energy, and Nature-based solutions (NbS) in the dry season, and uses AWD, NbS, Aquifer flood control, and carbon management in the wet season. The official was optimistic that combining technological options could achieve Net Zero by 2050.
- The Philippines' ASEAN-CRN Focal Point also suggested using a combination of available technologies to reduce emissions from one source, noting, like the DOA official, that the Philippines employs AWD, renewable energy, and NbS in the dry season while using AWD, NbS, Aquifer flood control, and carbon management in the wet season for emission reduction from irrigation in the rice sector. She is positive that such strategies would drive emission reductions that correspond to the climate pledges.

E-READI carbon neutrality guidelines, reaction, and summary of next steps: Ms Imelda Bacudo and Dr Rathana Peou Norbert Munns, Enhanced Regional EU-ASEAN Dialogue Instrument (E-READI), next presented E-READI's study, which aims to improve understanding of potential threats and opportunities externally, such as climate change, and internally with changing diets and economic priorities in production. Using the Climate Foresight exercises, the E-READI team worked on a systematic understanding of the support required to take transformative actions. The study explored the member states' latest NDCs, the available modelling tools, and key databases. to quantify the emission narratives. The study found a lack of clarity in the collective position in agriculture since each AMS sets the baseline year differently, making it difficult to compare them. The researchers informed the participants that the study draft would be shared to receive the comments from ASEAN-CRN members before it was finalized.

Study on decarbonizing the ASEAN agriculture and forestry sector: Dr Sahapat Chalachai, GIZ consultant, presented the summary on decarbonizing the ASEAN agriculture and forestry sector. The study found that approximately 43% of total GHG emissions from the ASEAN region come from the Forestry and Other Land Use (FOLU) sector. Indonesia, Thailand, Malaysia, Viet

Nam, and the Philippines are the major emitters in ASEAN. The study also assessed the farmers' knowledge levels and information sources on GHG emissions on their farms. The study found that 87.5% of the farmers need more knowledge and experience with on-farm GHG emissions, and 66.6% of farmers received knowledge and experience with on-farm GHG emissions from the internet or traditional media. Among the motivating factors for reducing on-farm and outdoor GHG emissions, 'personal belief' ranked the highest at 62.5%, followed by 'organized farm succession' at 50%. It was learned that the GIZ study would be the baseline for the E-READI Study.



After the two presentations, the moderator opened the floor for comments and questions about the studies.

Comments

- One of the experts commented that any agronomical practices introduced on a wider scale needed to look at financial incentives, commercial viability and how it could be distributed to the smallholder farmers to adopt the practices. Specific reference was mad e to System of Rice Intensification (SRI) roll-out that lags behind expectations.
- The official from Viet Nam inquired about the data sources for emissions/mitigation used in the study.
- The Philippines' ASEAN-CRN Focal Point also commented that countries need not just climate finance access but also technology transfer as a package.

Understanding the potential of land-based negative emission solutions: Dr Stefan Bößner, Stockholm Environment Institute (SEI), gave a presentation on the EU-funded 'LAND-use based MitigAtion for Resilient Climate pathways' (LANDMARC) project that employs a land-climate-development nexus, adding that the project aims to improve understanding of how Land-based Mitigation Technologies (LMT) could be effectively deployed to quantify their impacts. Based on the 16 case studies and five regional platforms where the project was implemented, he reported that LMT adoption and scaling must be context specific. He acknowledged that there are still significant questions regarding the efficiency and effectiveness of negative emissions solutions and much more research is needed to understand more accurately the impacts on soil, people, socio-economic and the environment, and other trade-offs. He also delivered the concluding message that technologies and practices need to bring tangible benefits to convince farmers to adopt them. Details and updates can be found in the project consortium website: https://www.landmarc2020.eu/

Session 3: GHG offset (carbon) markets

FAO Review of Carbon Markets for agriculture sectors: Mr Beau Damen, FAO-RAP, presented the FAO review of carbon markets for the agriculture sector conducted in 2022. First, he revealed the state of the carbon markets after COP26, the level of readiness across agriculture sector for climate finance, and the options to support climate actions. The study compared each Baseline setting, Permanence, and Leakage under the different mechanisms, such as Clean Development Mechanism (CDM), Gold Standard, and Verra (Verified Carbon Standard: VCS). Regarding the level of readiness among the four sectors: Forestry, Livestock, Agriculture, and Fisheries, the agriculture sector came in second place after the forestry sector. The review found that the agriculture sector has limited experience with CDM on wet rice management and inoculant-based fertilizer reduction. He ended the presentation by echoing the need for more studies on the applicability of the available methodologies for the Voluntary Carbon Market (VCM).

Thailand Voluntary Emission Reduction Program (T-VER): Dr Puttipar Rotkittikhun, Thailand Greenhouse Gas Management Organization (Public Organization) (TGO), took a deep dive into the T-VER program, a domestic mitigation mechanism launched in 2014. She reported that T-VER's credit framework corresponds with ISO 14064-2, and the Monitoring and Verification framework of GHG emissions aligns with ISO 14064. The majority of the participating projects fall under renewable energy. Regarding the agriculture sector, she explained there are two Standards in T-VER: Good Fertilization Practice in Agricultural Land and Carbon Sequestration and Reducing Emissions for Perennial Crop Plantation. The Premium T-VER is available in Enhanced Good Practices in Agricultural Land. To promote carbon credit trading, TGO has launched a carbon credit platform, FTIX, in collaboration with the Federation of Thai Industries (FTI).

Climate cooperation under Article 6 of the Paris Agreement: Dr Vicky Janssens, KliK Foundation, spoke about the Foundation's work to fulfil the legal obligation of Swiss motor fuel importers, mandated under the Swiss CO_2 Act. The program provides financial support by purchasing the Internationally Transferred Mitigation Outcomes (ITMOs). She then informed the workshop about the criteria requirements for signing any bilateral cooperation agreement with Switzerland. The eligible programs in the agriculture

sector include AWD, solar irrigation, agricultural organic waste management, and feed additives for dairy cattle for low methane milk. Thailand is one of the partner countries with Switzerland working on the electric mobility program. The potential areas for further cooperation include AWD, green cooling, and sustainable cement.

Smallholder farmers and carbon markets in Southeast Asia - Multi-partner discussion paper: Dr Rodney Luimulti presented the multi-partner discussion paper to identify the opportunities and challenges available to smallholder farmers in the carbon markets. The study interviewed key informants from Cambodia, Thailand, Indonesia, Singapore, and Viet Nam and reviewed available information. The study mentioned that rice production has a significant GHG footprint, with about 26.64 million tonnes of CO_2 released annually. It also detailed the different types of carbon markets, such as Cap-and-Trade, Carbon Offset Programs, and VCM. It also detailed the landscape of Emissions Trading Schemes (ETS) in Southeast Asia, Indonesia, and Malaysia. The case studies included the Indian Rice Project (by Bayer India), which started in 2021, the Thai Rice NAMA Project (GIZ, 2018-2023), and Katingan Mentaya Forest Conservation Project (2007- ongoing).

Discussion

- The Philippines' ASEAN-CRN Focal Point asked Dr Puttipar Rotkittikhun, TGO, about the Thai government's support for creating an enabling environment for carbon credit.
- Dr Puttipar replied that the development of VCM provided a carrot rather than a stick to encourage the private sector to reduce emissions. Thailand has just started with VCM and is exploring the possibility of developing the mandatory ETS. Dr Margaret also added that Thailand, an export-oriented economy, has put VCM in place to comply with international trading standards.
- One of the Vietnamese officers noted that the different carbon schemes are confusing for many countries. He asked if having ETS could affect achieving NDCs. He also raised the concerns shared by the farmers that it needs additional costs to register and verify the sources to enter the carbon market. The interest in engaging in the market might be scant since the carbon price is too low in VCM compared to the compliance market. He also asked about the factors that led to the stark price difference between VCM and ETS.
- Dr Vicky answered that implementing Article 6 is about looking into the countries' readiness to know the priority sectors and the support needed. It is about the country's clear direction in emission reductions other than having ETS in place. Concerning registration costs and additional associated costs related to verification and validation, she clarified that the companies must include them as part of the proposed budget. She added that the Foundation is continuously working with the experts to make the project financially sustainable by factoring in these additional costs.
- Responding to the question about price differences, Mr Beau commented that the carbon price depends on different forces, including supply and demand in the market. For

example, the rising demand for carbon credits certified under CDM after COP26 made prices of carbon credits high.

- Ms Imelda also added to the conversation, saying that the monetary return for the farmers could be small, and it could only contribute as subsidies for getting insurance to mitigate risks at present. There might not be one definitive answer to the questions on the carbon markets. It needs to be an ongoing discussion while continuously improving market development.
- The Vietnamese participant who asked the questions suggested that the studies presented earlier should include a summary of different carbon schemes and the recommended options (sectors and schemes) for AMS based on each context.

Session 4: Climate resilient agriculture: Agrometeorology and agro-insurance

Best Practices on agromet and climate information services - A regional investment roadmap for Agricultural Climate Services: Dr Monica Petri, FAO-Laos provided a snapshot of the understanding of the types of agricultural climate services (ACS) along the value chain in Asia and the Pacific in the first place. She stressed that countries need transformational ACS to anticipate, absorb and accommodate shocks resulting from climate variability and change; and minimize future risks through measures that can deliver adaptation and mitigation co-benefits. She then explained the rationale for investment in ACS in GCF and potential investment packages that encompass inter-ministerial coordination, co-production of tailored agrometeorological advisories, reaching the last mile, and participatory engagement and climate-informed planning and risk assessment. She unpacked climate services for climate-resilient agrifood systems along the value chain using inter alia Lao PDR, Nepal, and Kenya as case studies.

Guided Group Discussion: The session continued with the group discussion. The participants were divided into 2 groups to set the ACS roadmap following the questions below.

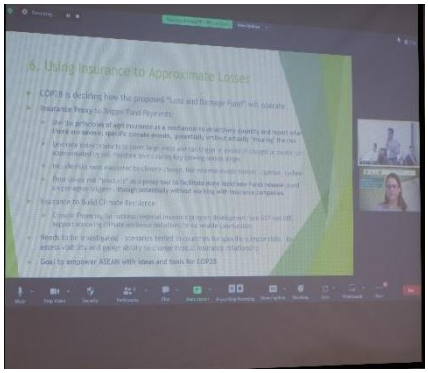
- *Reflect on the examples that have been presented. What approaches impressed you? What are the approaches that should be adopted and/or scaled up? As a group, brainstorm on ideas for an expanded set of climate services that would address the needs of a wider range of users across the full agrifood system. What types of interventions (capacity, resources, partnerships) do you would need to make your vision a reality?*

Group 1: New Investment Proposals: Malaysia, Myanmar, Thailand, Viet Nam				
	Malaysia	Myanmar	Viet Nam	Thailand
Examples from country	- Early warning - Standardized Precipitation Index (SPI)	*index- based* crop insurance	- Annual climate risk mapping - Targeting extension	- Thai apps TMD-forecast weather - Seasonal f orecast - 16-day GISTDA - National monthly pest and disease forecast - Web-based app
Challenges	Digital literacy	-Difficult to engage private sector -Insurance examples	- Moving to other sectors (aquaculture) - Decentralisation of information - Data security and privacy	Transfer technologies to farmers
Innovation			- Piloting pest and diseases - Carbon footprint - Data sharing (two-way exchange of data)	Private companies developed apps to estimate and manage rice missions
Capacities				Private sectors and Civil Society Organisations (CSOs)'s commitments
Resources		- Localised ACS applications - Decision support services	- ACS Platform with multiple data types - Private ACS	
Partnerships			Public-private partnership (PPP)	

Group 1: New Investment Proposals: Malaysia, Myanmar, Thailand, Viet Nam				
	Malaysia	Myanmar	Viet Nam	Thailand
Group 2: Additional requirement on top of present investment: The Philippines, Lao PDR, Cambodia				
Aspiration	▪ Climate risk vulnerability mapping ▪ Automatic Agromatic System (Production and Use) ▪ Capacitated government staff ▪ Open data (government, private sector, and users)			
Vision	▪ Accessible and location-specific integrated agromatic climate services ▪ Digital-integrated agromatic climate system			
Barriers	▪ Cost of products/data ▪ Lack of capacity ▪ Data sharing and accessibility			
Capacities	*Resources*	*Partnerships*		
Capacity building	Amazon Web Services (AWS)	Working groups		
Automatic data generation	Budget / budget for capacity building / Climate finance	Academic institutes		
Automatic advisory preparation	Transformative data infrastructure	Private Sectors and CSOs ’s commitment		

Regional Exchange – Best practices, gaps and needs and untapped potentials on agro-insurance and agrometeorology

Potential use of agro-insurance in accessing loss and damage fund: Dr Laura Johnson Blair began the presentation by stating that agricultural climate insurance transfers the risk from those impacted by climate risks (farmers, businesses, governments) to external sources who can provide and mobilise rapid compensation in response to climate losses. She also introduced ongoing regional initiatives such as the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), ASEAN Disaster Risk Financing and Insurance Phase 2 (ADRFI-2) plan of action, and National Programs. Since COP28 will decide on details regarding the operationalisation of the loss and damage fund, Dr Laura shared ideas on insurance proxy to trigger fund payments to build climate resilience. She also raised questions for further discussion among AMS, such as revising the “10 Phases Guide” for national agri-insurance programs,



developing guidelines on "How To" access climate finance to deploy national agri-insurance from GCF, GEF, and others, and investigating ASEAN's proposal for COP28 discussions - developing "index insurance type" monitoring to trigger "climate loss and damage fund" compensation.

Discussion

- One of the participants shared the challenges faced in the agro-insurance industry based on Viet Nam's experiences and asked for Dr Laura's views on the challenges indicated below.
  i. Since getting insurance contains high transaction costs that the farmers bear, how can the schemes cover it?
  ii. The insurance companies need guarantors for issuing insurance for farmers to minimize the risk. Even if the government could use the loss and damage fund to serve this purpose, it will depend on the political will to facilitate them by providing market information or subsidies. In Viet Nam, the government has an existing insurance policy to pay the farmers fully if their loss is more than 70%. Against this backdrop, he asked if there were any means to combine the different schemes and provide the best option for the smallholder farmers.
  iii. Regarding insurance products, he is aware that the Index (Parametric) product is easy to apply in agriculture. Yet, there are some limitations as it only pays out claims based on a predetermined set of indexes such as rainfall levels or wind speeds; it cannot cover multiple climate-related risks experienced in agriculture.
  iv. Furthermore, Viet Nam faces fraudulent cases from farmers who lie about crop loss to cash in on the government-backed insurance program.
- Dr Laura appreciated the insightful observations of participants on the insurance industry, and said this is why the international communities are having the conversations. She also pointed out that although the coverage could not meet 100% of the loss farmers face, the current schemes could cover around 70%, which is a good starting point for the countries. However, she recognized that it needs continuous efforts and that dialogue on these issues will provide better solutions.
- Mr Julian Tost, GIZ Thailand, also shared with Dr Laura that GIZ supported revising the "10 Phases Guide" for national agri-insurance programs.

Caravan session: In this session, participants were split into 3 groups. Each group spent 10 minutes at each of the 3 stations: 1. Agri-Climate Risk Financing (by GIZ), 2. Southeast Asia Agricultural Risk Finance Facility (by FAO), and 3. Risk-informed Work on Disaster Risk Management (DRM) and Anticipatory Action at National and Regional Level in ASEAN (by FAO). After 10 minutes, the moderator asked the groups to move to the next station.

While at the 3 stations, the participants discussed the following topics:

- Key insights from the morning sessions: which of the presented ideas and approaches should be taken further?

- Which of these are most relevant to work at national level, and where can ASEAN/ASEAN-CRN make progress as a regional body?

Reflection

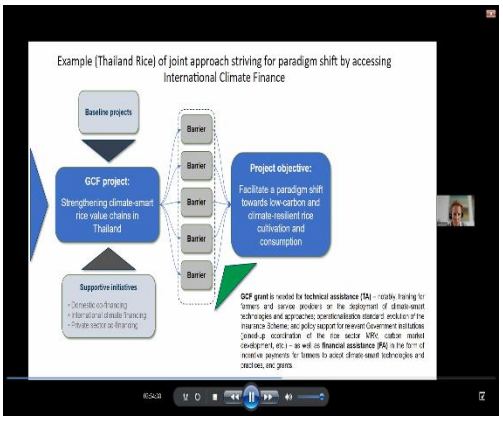
- The participants found the GIZ project relevant as it covers the farmers' risks and investments.
- They also pointed out that all regional countries face disaster risks. Mechanisms to ensure all countries are involved in regional disaster risk management and rapid response are essential.
- The implementation effectiveness of the FAO-led scoping on a SEA Risk Finance Facility under the GCF Readiness project will depend on each country's institutional capacity.
- The participants also suggested leveraging the funding sources as the governments have national plans and budget allocations for supporting the farmers. Thus, it is essential to bring in the participation of other actors, such as climate working groups, to incorporate climate actions into the agriculture programs effectively.

Session 5: Experiences with climate finance for agriculture and innovative approaches

Climate Finance: Mr Beau Damen, FAO-RAP, dissected the broad contours of climate finance for developing countries. He explained that climate finance has increased over the past decade but fallen short of the USD100 billion target. He then shared the analysis which revealed that climate finance channelled to agriculture and land use is proportionally much less (agriculture mitigation around 1% and adaptation around 7% of the climate finance landscape). To make finance accessible to smallholder farmers, he underscored the opportunities from the blended finance model. However, this remains untapped due to issues with aligning risk-return profiles. He affirmed that public climate finance (GEF, GCF, Bilateral, etc.) is crucial for addressing the climate finance gap for agriculture, particularly for providing grant and concessional finance for investments with poor risk-return profiles but broader social and environmental benefits.

Moving beyond grants – Options to attract climate finance to agriculture sector priorities - Climate finance: Dr Nana Kuenkel, GIZ Thailand, introduced the joint approach of the Thai Rice NAMA Project in striving for a paradigm shift by accessing international climate finance. The baseline GCF project, namely "Strengthening Climate-smart Rice Value Chains" in Thailand, built upon Government priorities: NDC & NAP, updated LTS, Climate Change Master Plan, National Economic & Social Development Plan, Agriculture & Cooperatives Strategy, and Thai Rice Strategy. These interventions address barriers such as capacity development and financial

assistance in the form of incentive payments for farmers to adopt climate-smart technologies and practices and grants.



Countries striving for paradigm shift tap into GEF, NAMA, and GCF support - The Philippines: Ms Jenevive Lontok, Department of Finance (DoF), the Philippines, stated that the DoF is participating in COP to push climate finance definitions for developing countries. The Philippines believes climate finance should cover three elements: grants, investments, and subsidies. The government also promotes private sector engagement and multi-lateral partners to participate in climate mitigation and adaptation projects. After explaining the latest policies and government-led finance initiatives, she introduced the 'People Survival Fund' that supports climate projects through local government units and community organisations.

Dr Alicia G. Ilaga, Climate Resilient Agriculture Office (CRAO), Department of Agriculture (DoA), the Philippines, spelled out climate action strategies guided by the Climate Change Act 2009. She began by presenting the Adaptation and Mitigation Initiative in Agriculture (AMIA) Program that enables all communities, especially those dependent on agriculture and fisheries, to become resilient to climate change's increasing adverse effects. AMIA villages become model communities for others to learn from and emulate. This paves the way for other communities to access climate-relevant support services. It was noted that the established 163 AMIA villages fostered gender equality, championed the adoption of CRA, and increased income and yield. Lastly, she introduced the GCF-funded Adapting Philippine Agriculture to Climate Change (APA) Project (2023-2030).

Public-Social-Private Partnerships for Ecologically-sound Agriculture and Resilient L ivelihood (PEARL) project in Northern Tonle Sap Basin: Dr Mak Soeun, Ministry of Agriculture, Forestry and Fisheries (MAFF), Cambodia introduced the GCF-funded project, PEARL (2023-2029), that aims to enhance climate change resilience of farmers and local communities. The participants learned that the project would deploy three sets of interventions to improve farmers' capacities to manage climate change impacts and related disaster risks, provide market incentives through agricultural certification programs for farmers and other value-chain actors to provide a strong rationale for integrating climate-resilient approaches into local agricultural and environmental management practices; and ensure enabling conditions for effective public-social-private partnerships through a coherent and robust policy, legal and institutional framework.

Countries working towards paradigm shift by accessing GEF, NAMA, and GCF support - Examples from Thailand in the rice sector-Grant-based finance for adaptation and mitigation outcomes in agriculture: Dr Nana Kuenkel, Agriculture and Food Cluster Coordinator, GIZ

Thailand, introduced the Thai Rice NAMA project's objective of enabling Thailand to transform the Thai rice sector to low-emission rice production effectively. The project promoted innovative farming methods of Laser Land Levelling (LLL) technology, AWD, Site Specific Nutrient Management, and Straw and Stubble Management. She then introduced the participants to other GCF-funded projects in Thailand as follows.

- **Thai Rice-Strengthening Climate-smart Rice Value Chains**: This project is designed to facilitate a paradigm shift towards sustainable, climate-smart rice cultivation and consumption. The project aims to scale up climate-smart rice farming across mitigation and adaptation goals and through an innovative financial mechanism. In partnership with the Office of Natural Resources and Environmental Policy and Planning (ONEP) and GCF, it is intended that the project will start in the last quarter of 2023.

- **GCF-United Nations Development Programme (UNDP)**: Enhancing climate resilience in Thailand through effective water management and sustainable agriculture: This project targets adapting water management and agricultural livelihoods in the Yom and Nan river basins to respond to climate change-induced extreme weather events. The project will address improving climate information and cross-sectoral coordination to enhance climate risk-informed planning in the water and agricultural sectors, strengthening water infrastructure by Ecosystem-based Adaptation (EbA) measures to improve water management (Royal Irrigation Department: RID/GIZ), and on-farm adaptation measures to reduce the volatility of agriculture livelihoods in drought and flood-prone areas. In partnership with GCF, UNDP, and RID, the project will run from Q2/2022 – Q2/2027.

- **GEF Inclusive Sustainable Rice Landscapes in Thailand**: The project's aims are to transform the Thai rice sector and value chain for environmental sustainability by upscaling Good Agricultural Practices (GAP) through Sustainable Rice Platform (SRP) Standards and improving sustainable rice landscapes, watershed, water efficiency, biodiversity, and reduce GHG emissions and chemical usage toxic to the environment. The project will support national policy and institutional development for integrated multi-sectoral management of sustainable rice landscapes; Integrated landscape management for productive agriculture and environmental sustainability in Chiang Rai and Ubon Ratchathani provinces; Upscaling of sustainable rice production and value chains through model provincial rice sector investments; and Knowledge management and outreach for national and regional replication and impact assurance systems. In partnership with SRP, United Nations Environment Program (UNEP), and GEF, the implementation phase of the project has been from Q4/2022 - Q4/2026.

Session 5: Moving beyond grants – Options to attract climate finance to agriculture sector priorities - Perspectives from public and private finance providers at national, regional and global levels

Green Climate Fund (GCF): Ms Kunduz Masylkanova, GCF, delved into GCF, the world's largest climate fund, which supports developing countries in realizing their NDC ambitions toward low-emissions and climate-resilient pathways. Following the country-driven approach, the GCF is focused on agriculture, GCF supports three main areas: promoting climate-resilient agriculture, facilitating climate-informed advisory and risk management services, and reconfiguring food systems. The financial instruments provided to the public sector are concentrated highest in loans, whereas the private sector is in equity. She then familiarized the participants with ASEAN Catalytic Green Finance Facility (ACGF), Asia's first regional 'green recovery' to kickstart countries' low-emission investments. The program supports at least 20 high-impact, low-emission sub-projects in the region in the agriculture, energy, and urban sectors. She also gave an overview of the projects that assist other sectors, including water resources management and ecosystems.

Building partnership for more inclusive, resilient and sustainable food systems: Ms Chrissa Mari Borja, Grow Asia Investment Academy, explained that Grow Asia works as a multi-stakeholder platform to respond to the regional priorities in agriculture and food systems in Southeast Asia. Established in 2015 by the World Economic Forum, it has launched multi-donor impact funds to strengthen Southeast Asia's food, agriculture, and forestry sectors. She pinpointed one of the flagship programs, the GrowRight program, which supports accredited training and investor matching initiatives that promote more sustainable investments and green finance mechanisms in Southeast Asia's agrifood sector.

Catalytic financing tools for climate finance in agriculture: Ms Sakshi Chadha, United Nations Capital Development Fund (UNCDF), explained that UNCDF mitigates the missing middle or financing gaps faced by developing countries. She notably introduced the Global Local Climate Adaptive Living Facility (LoCAL) mechanism for financing locally-led adaptation. The project enables local governments and their communities to access and effectively use climate finance at the local level, promotes the integration of climate change adaptation in local government planning and budgeting systems, and uses innovative Performance Based Climate Resilience Grants (PBCRGs) to guarantee programming and verification of local adaptation expenditures.

Clarmondial, Independent investment advisory company: Ms Tanja Havemann, the company's co-founder, explained that Clarmondial provides solutions and mobilises investments for sustainable natural resource management. The company has a great deal of experience in de-risking investments using blended finance in agriculture, forestry, and conservation projects, primarily in emerging markets. It was highlighted that the company's work on developing specific guidance for the Climate Bonds Initiative mobilises the participation of several leading international research organisations and corporates.

Discussion

- A question was raised to clarify whether combining the present funding sources from UNCDF, Clarmondial, and Grow Asia is possible to make one program.

- The presenters replied that the partnership approach is desirable in principle based on the nature of each project. There will not be a one-size-fits-all answer for it. One possible scenario is that the project could apply to UNCDF to design an investment strategy. Then the project could sound out the possibilities for receiving technical support from other financial platforms, such as Grow Asia. Clarmondial showed interest in engaging more in South Asia's agriculture and land use sector.
- The GCF presenter also mentioned that GCF prefers investment proposals that could attract financing from other sources. She spoke about the upcoming new financial access model - Project Specific Accreditation Agreement, for the GCF project-specific assessment for the GCF's accreditation process, under which three projects are piloted each year. The agriculture sector is also eligible for this fund. For priority areas for emission reductions, GCF is looking at the livestock, rice, and transition to sustainable and healthy diets, and carbon neutral and resilient food systems. If participants had any ideas for projects, she would like them to contact her.

Deep dive into the pathways to achieve net-zero GHG emissions in the agrifood and land uses systems: As a continuation of the two events that developed the seed pathways, Dr Rathana Peou Norbert Munns, E-READI, led a follow-up discussion on how to monitor the actions along the paths. She used "Seed#6: New technology in agrifood is developed" to set realistic targets and baselines using Mentimeter apps. As to the targets for monitoring, 10 participants felt that the progress should be monitored every three years. For the current baseline, participants perceived the cost of agrifood technology as being high in contrast to access to the technology, which is low. Dr Rathana would distribute questionnaires to the participants to complete the exercises for the remaining actions.

Day 3

Session 6: Taking forward finance and implementation options

Finance and implementation options to take the KJWA forward in the region - Introducing the SEA GCF Readiness Grant to advance country priorities: Mr Beau Damen, FAO, shed light on agriculture sector readiness for enhanced climate finance and implementation of the Koronivia Joint Work on Agriculture priorities in Southeast Asia (2022-2025). He succinctly explained the essential elements of the project, such as objectives, outcomes, and implementation approach, using the Theory of Change (TOC) to support Cambodia, Malaysia, Lao PDR, Thailand, the Philippines, and Viet Nam. In line with the evolving expectations from the GCF phase 2 in delivering the project, he also explained other FAO Co-Financing Initiatives to help developing tools and capacity for accessing GHG offset markets and readiness. He wrapped up the presentation

by highlighting the following steps to commence the project: starting activities at the regional level and in countries that have been approved, hiring regional project teams, and so forth.

Comments

- Cambodia agreed to scale up the project. However, the Focal Point noted that the government prefers capacity development of the staff who understand mechanisms for financial access upon completing the project. He suggested choosing the right partners on the ground for implementation and engaging with the Agricultural and Rural Development Bank (ARDB). He also asked about the modality of the grant. He referred to the World Bank, which provides farmers with a 40% matching grant.
- Mr Beau explained that it would be in the form of grants for the smallholder farmers based on the preliminary design of the finance structure facility on which FAO is working on.
- Viet Nam is concerned about country ownership and wants information about beneficiaries. In response to the participant from Viet Nam, Mr Beau explained the nature of the regional approach compared to the national approach using the case of the Inclusive Sustainable Rice Landscapes (ISRL) Project. In short, he pinpointed the regional approach use of "aggregation methodology" to measure the beneficiaries who benefitted from the project's support.

Partnership Forum: Resource matching between country needs and priorities and ongoing or potential support projects by partners

Promoting sustainable agricultural value chains in ASEAN (ASEAN AgriTrade): Mr Moch Taufiqul Mujib, GIZ Indonesia, explained about ASEAN AgriTrade (2020-2023) that supports improved framework conditions for the implementation of sustainability standards in agricultural value chains in the ASEAN region – with a focus on climate-relevant aspects. The project produced the following outputs: regional cooperation and gender-sensitive approaches, regional cooperation on climate-relevant elements along the value chain, national roadmap and public-private collaboration in the CLMV countries, and enhanced lessons from development partnership (iPPP) with private sectors.

United Nations Capital Development Fund (UNCDF): Ms Sakshi Chadha, UNCDF, noted that UNCDF is working with financial service providers at the local and regional levels by introducing different financing instruments, such as loans and guarantees, to have greater equality in supporting smallholder farmers. UNCDF focuses on the missing middle finance gap – businesses and projects that are too large for microfinance but still considered too small and too risky to be served. It works with financial service providers to identify what small farmers and SMEs need, coupling this with

development expertise across five priority areas, including the well-established flagship areas of inclusive digital economies and local transformative finance, as well as the emerging areas of women's economic empowerment, climate, energy, and biodiversity financing, and sustainable food systems financing.

Potential Partnerships with ASEAN-CRN and its Focal Points: Dr Kuntum Melati and Dr Albert M Salamanca, Stockholm Environment Institute (SEI), introduced their organisation's work on climate, water, air and land-use issues, governance, the economy, gender, and health. To support decision-making and induce change towards sustainable development worldwide, SEI provides integrative knowledge that bridges science, policy, and practice in the field of environment and development. Next, the presenters highlighted the Agroecology and Safe food SystEm Transitions (ASSET) project that aims to transform food and agricultural systems in Southeast Asia into a more sustainable, safer, and inclusive program by harnessing agroecology's potential. Finally, the Mekong Thought Leadership and Think Tanks Network program was introduced, which seeks to develop clear and actionable evidence-based solutions to water, energy, and development challenges in the Mekong Region to bring about positive changes in policy and practice.

ASEAN Access: Ms Yanin Sriudomphong, GIZ Thailand, introduced the participants to ASEAN Access, an online portal serving ASEAN SMEs and other businesses for ASEAN trade and market access information. The ASEAN Access is implemented under the Strengthening Regional Structures for Small and Medium Enterprise Promotion in the ASEAN Region (ASEAN SME) project, by GIZ. She also introduced ASEAN Access MATCH, an official business matchmaking and market access event platform that supports regional SME trading. Moreover, participants were exposed to another upcoming platform, 'The ASEAN Access Learn, Policy and Beyond', which would be launched to provide a digital solution tool and features.

AgriG8: Ms Ho Qian Yu, AgriG8, explained that AgriG8 is an Agri-FinTech platform that incentivises lenders and farmers to invest in climate-resilient farming. The company integrates real-time monitoring with proprietary farmers' behavioural analysis to provide financial institutions employing MRV with the capacity to reduce their lending risk. The platform has developed a gamification mechanism that results in real-world incentives for the farmers that could encourage adopting sustainable agricultural practices.

Mekong Institute (MI): Ms Than Tha Aung, MI, explained that MI has been working on improving agriculture productivity by (i) moving farmers from subsistence to commercial farming (e.g., introducing GAP and diversification to raise incomes and reduce risks); (ii) promoting rural non-farm employment (e.g., by promoting value-adding agriculture processing activities and the development of SMEs in rural areas); (iii) integrating small-scale producers and agriculture-based SMEs with regional and global value chains.

FAO in the Asia-Pacific region - Action to accelerate sustainable natural resources management for climate action: Mr Beau Damen, FAO-RAP, shared the actions on which FAO is focusing at the regional level. Under 'Enhancing climate action and partnerships', the initiatives include providing support to ASEAN-CRN and partners to engage with UNFCCC & KJWA, Scaling Climate Ambition in Agriculture and Land-use, with UNDP & BMU (German Federal Ministry for Environment, Nature Conservation and Nuclear Safety), and the REDD+ (Reducing Emissions from Deforestation and Forest Degradation) Lower Mekong Initiative. Actions under agriculture climate services and decision support were given as Capacity Building Initiative for Transparency (GEF-CBIT), Regional roadmap for agriculture climate services (with World Meteorological Organization: WMO), Foresight and scenario planning for agrifood systems under climate change, and Framework for NbS in agriculture, and relevant actions under the Anticipatory Action for Disaster Risk Management.

After learning about the support and services provided by each organisation, the participants listed the country's priority actions and needs. Next, the potential partner organisations marked the areas they could support to address the countries' needs.

The Philippines	
Activity	Needs
Baselining crops: FAO, GIZ	Methodologies and instruments
Reducing carbon footprints for agricultural products: SEI	Technical Expertise: **AgriG8**
Carbon sequestration measures: FAO	Technology transfer/access: **GIZ-ASEAN Access**
Transition to renewable energy: MI	Grant/Loans
Scaling proven CRA approaches	

Innovative CRA financing for smallholders: FAO, UNDP	

Thailand	
Activity	Needs
Baselining crops: FAO NEXT, GIZ-ASEAN AgriTrade, GIZ- ASEAN Access	Technical support: **FAO**
Methodologies: SEI	Financial assistance: **FAO**
Carbon Credits/offsets/markets: UNCDF	Experts: **FAO**
Capacity building for Validation and Verification Body (VVB): FAO	Capacity building (government, farmers, producers)
Carbon Footprint: GIZ	Infrastructure
	Laboratories

Viet Nam	
Activity	Needs
Technical support - Readiness Access: climate finance for implementation: Net Zero Commitments: FAO	Technical assistance and capacity building: **GIZ**
	Technologies: **AgriG8**
	Pilot /Grant Project: **FAO**
	Legal Framework for ETS and carbon market development
	Regional policy dialogues: **MI**
	Connecting with appropriate facilities/ sources/ scheme: **UNCDF, SEI**
Cambodia and Lao PDR	
Needs	
Capacity building to scale up climate finance: **SEI**	

Establish model mechanism to implement climate friendly low carbon emission programs
Improved access to technology
Scaling up CSA: **GIZ-ASEAN AgriTrade**
Improve capacity of the implementers and beneficiaries to adapt and mitigate climate risks: **UNCDF**
Country and Regional knowledge exchange: **SEI, MI**
Climate information Services: **FAO**
Partners: FAO, GIZ, Academic institutes, Consortium of International Agricultural Research Centers (CGIAR), financial institutions

Malaysia	
Activity	Needs
Policy on agriculture climate resilience: FAO, GIZ-ASEAN AgriTrade	Technical experts, policy dialogues: **SEI**
Livestock - improved breed and feed formulation: GIZ-ASEAN AgriTrade	Public Awareness, Technical experts, Finance facilities: **UNCDF**
Crops-Paddy decreased methane and chemical fertilizers: GIZ-ASEAN AgriTrade, AgriG 8	Climate resilient technologies, public awareness, finance facilities
Improve GHG Inventory and emission estimates: FAO	Technical expert, methodologies
Gender/underserved/social inclusion: FAO, MI	Policy dialogues

6. Evaluation

An after-event evaluation was conducted. The questionnaire scales ranged from 5 to 1 (5 being the highest and 1 the lowest). Specifically, the questionnaire was designed to evaluate the following:

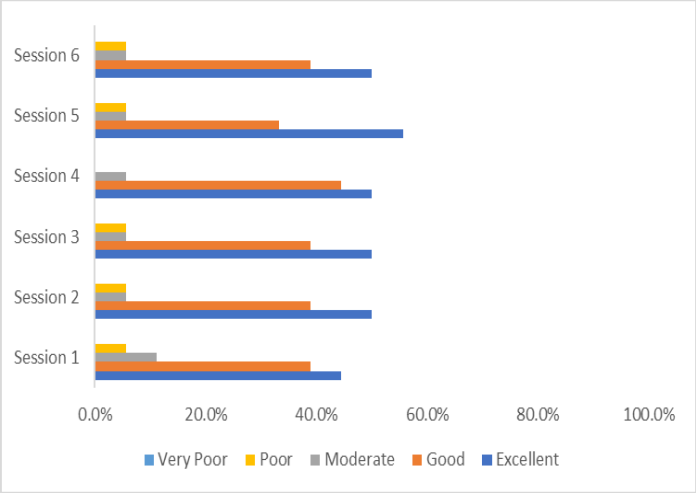
- Improvement and relevance of knowledge and skills
- Contents

- Methods
- Time allocation for each session, and
- Logistics arrangements

Improvement and Relevance of Knowledge and Skills

The figure shows that most participants rated 5 (highly) and 4 (mostly) for each sub-question under this category. For knowledge improvement, 55.6% placed it at 5, and 33.3% at 4. The comments also demonstrated that participants were pleased with the knowledge acquired from the event and showed enthusiasm to apply this in their works. For relevancy and willingness to use them at their workplaces, 61.1% rated this at 5, and 27.8% rated this at 4.

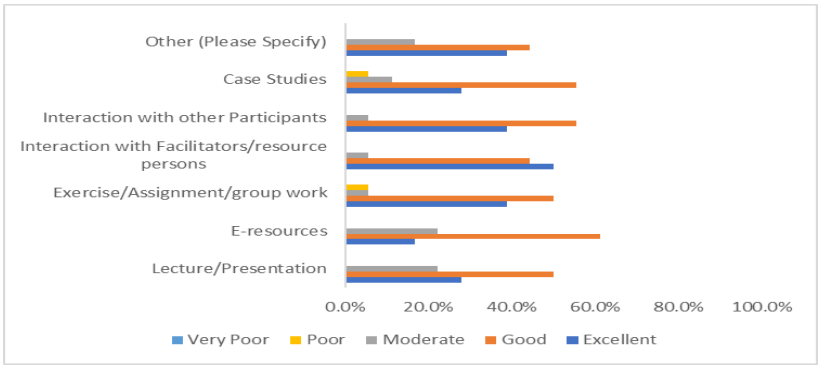
Contents



Session 1: Scientific Update and UNFCCC Foundations
Session 2: Carbon neutral, Low emission agriculture
Session 3: GHG Offset (Carbon) markets
Session 4: Climate Resilient Agriculture: Agrometeorology and agro- insurance
Session 5: Experiences with climate finance for agriculture and innovative approaches
Session 6: Taking forward finance and implementation options

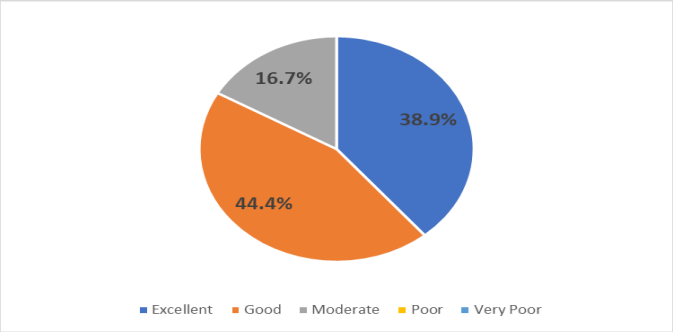
This category inquired about the participants' satisfaction with the events' contents. Remarkably, 'Session 5: Experiences with climate finance for agriculture and innovative approaches' received a '5 (excellent) score' from the highest percentage (55.6%) of participants out of all sessions.

Methods



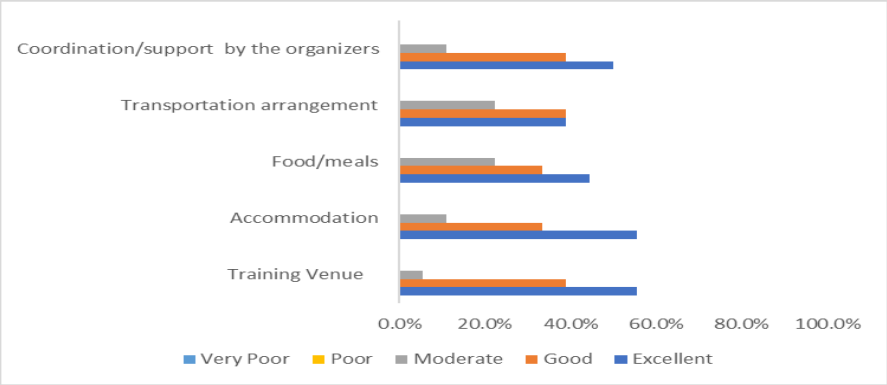
The participants perceived the training as highly participatory. They appreciated the designs and methods, such as the presentations and group discussions. On average, 34.1% rated 'excellent 'and 51.6% 'good'.

Lengths of each Session



The figure unveiled that 44.4% of participants found time allocation for each session ‘excellent’ and 38.9% of them ‘good.’

Coordination Support and Logistic Arrangements



Similarly, the ratings of the participants under this category were positive. The participants were particularly pleased with the training venue and the accommodation.

It was noteworthy that no participants scored ‘very poor’ in any category. The majority of them chose excellent or good. Most comments appeared as ‘notes of appreciation’ for the events. This translates as the participants being exceptionally pleased with the event in general.

7. Conclusion and Recommendations

The evaluation results indicated that the event was a success. Participants commended the program's design, which addressed complex topics in a simple and engaging manner. More importantly, the participants appreciated the opportunity to match development partners' support with their countries' needs. All the participants agreed that convincing smallholder farmers to switch to

climate-smart agriculture and private sector engagement requires financial incentives and commercial viability. It was hoped that knowledge and skills shared in this event would have a ripple effect among AMS for infusing urgency to take transformative climate actions in agriculture.

The organizing team made the following recommendations based on the participants' feedback.

Contents

- Participants showed interest in more in-depth discussions on agro-insurance and carbon markets (compliance and voluntary markets). A follow-up event or spin-off event focusing on these topics is recommended.
- Some of them expressed the view that the content and information provided on Day 2 was overly packed, and they felt overloaded.

Administrative Arrangement

- Myanmar participants requested that official contact for the invitation be made at least one month before the event to facilitate the approval process.

Follow-up actions with the results from partnership matching

- It is recommended to follow up with the participants to translate the proposals from matching exercises into actions.

Annex 1: Participant List

1) ASEAN Member States (AMS)

No.	Full Name	Position and Institution
Brunei		
1.	Mrs Siti Hamizah Binti Haji Zinal Abadin	
2.	Mrs Masjuwita Hj Muhin	
3.	Mr Marhim Hj Misir	
Singapore		
4.	Ms Bee Ling POH	
5.	Ms Melissa CHANG	
Cambodia		
6.	Dr Mak Soeun	General Directorate of Agriculture, Ministry of Agriculture, Forestry and Fisheries (MAFF)
7.	Mr Sum Cheat	Department of Climate Change, Ministry of Environment
Indonesia		
8.	Dr Haris Syahbuddin (tbc)	
9.	Dr Asmarhansyah Bastari	
Lao PDR		
10.	Ms Bounthanom Bouahom	National Agriculture and Forestry Research Institute (NAFRI)
Malaysia		
11.	Mr Azizi bin Ahmad Azmin	Climate Change Programme (BE01), Agrobiodiversity and The Environment Research Center, Malaysian Agricultural Research and Development Institute (MARDI)

No.	Full Name	Position and Institution
12.	Ms Noor Abidah Binti Mohd Dawi	Sustainable Agriculture Section, Policy and Strategic Planning Division, Ministry of Agriculture and Food Security
Myanmar		
13.	Dr Aung Moe Myo Tint	Department of Agricultural Research, Ministry of Agriculture, Livestock and Irrigation (MOALI)
14.	Dr Htwe Min Thant	Horticulture Research Section, Department of Agriculture Research, MOALI
The Philippines		
15.	Mr Joell H. Lales	Department of Agriculture – Bureau of Agricultural Research (DA-BAR)
16.	Ms Mara Shyn M. Valdeabella	Senior Executive Assistant, Office of the Director, Acting Head, International R4D Relations Unit, DA-BAR
17.	Dr Alicia Galacgac Ilaga	Department of Agriculture-Climate Resilient Agriculture Office (DA-CRAO)
18.	Ms Wendy Dunasco	DA-CRAO
19.	Ms Joy Calvar	DA-CRAO
20.	Dr Jenevive Lontok	Department of Finance (DoF)
21.	Ms Riely Aster Rojo	DoF
Thailand		
22.	Dr Margaret C. Yoovatana	International Agricultural Affairs Group, Planning and Technical Division, Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives
23.	Dr Saovalak Kittithanawat	Horticulture Research Institute, DOA
24.	Dr Theerawut Chutinanthakun	Horticulture Research Institute, DOA
25.	Mr Choosak Kunuthai	Field and Renewable Energy Crops Research Institute (FCRI), DOA

No.	Full Name	Position and Institution
26.	Ms Ratsamee Simma	FCRI, DOA
27.	Ms Sirapa Lasakul	Rubber Division, DOA
28.	Mr Patchara Inthasang	Rubber Division, DOA
29.	Mr Kittikhun Boonvanich	Rubber Division, DOA
30.	Mr Wanchad Viprod	Rubber Division, DOA
31.	Ms Benjawan Sittiwet	Rubber Division, DOA
32.	Ms Rosalind Amornpitakpun	Climate Measure and Mechanism Development Section, Office of Natural Resources and Environmental Policy and Planning (ONEP)
33.	Ms Krittaya Chunhaviriyakul	Climate Measure and Mechanism Development Section, ONEP
Viet Nam		
34.	Dr Dai Nghia Tran	Department of Natural Resource and Environmental Economics Studies, Institute for Policy and Strategy for Agriculture and Rural Development (IPSARD), Ministry of Agriculture and Rural Development (MARD)
35.	Dr Dinh Pham Hien	Global Integration and Investment Division, International Cooperation Department, MARD
36.	Dr Pham Van Thuyet	Department of Crop Production, MARD
37.	Dr Doan Phuong Duy	National Designed Authority (NDA), Ministry of Planning and Investment (MPI)

2) Resource Persons

No.	Full Name	Position and Institution
1.	Mr Rapibhat Chandarasrivongs	Director General, DOA
2.	Dr Babu Suresh	International Food Policy Research Institute (IFPRI)
3.	Dr Veronica Doerr	Australian Centre for International Agricultural Research (ACIAR)
4.	Dr Pham Quang Minh	Head of Food, Agriculture and Forestry Division (FAFD), ASEAN Secretariat
5.	Dr Fahmuddin Agus	National Research and Innovation Agency (BRIN) Indonesia
6.	Dr Sahapat Chalachai	GIZ consultant for the study on 'Decarbonising the ASEAN Agriculture and Forestry Sector'
7.	Dr Stefan Bößner	Research Fellow, Stockholm Environment Institute (SEI)
8.	Dr Rathana Peou Norbert Munns	Climate Foresight and Scenarios Development Expert, SNKE E-READI
9.	Dr Puttipar Rotkittikhun	Director, Carbon Credit Certification , Thailand Greenhouse Gas Management Organisation (Public Organization) (TGO)
10.	Dr Vicky Janssen	General Manager Southeast Asia, Klik Foundation
11.	Dr Rodney Lui	Multi-partner paper with Bayer support
12.	Dr Monica Petri	Project Coordinator, FAO- Laos
13.	Dr Erkin Isaev	Agrometeorologist, Climate Change Specialist, FAO- RAP
14.	Dr Laura Blair	Consultant, UK

No.	Full Name	Position and Institution
15.	Mr Julian Tost	Project Director, GIZ Thailand
16.	Ms Hang Thi Thanh Pham	Senior Resilience Officer, FAO-RAP
17.	Dr Nana Kuenkel	Director of Agriculture and Food Cluster, GIZ Thailand
18.	Ms Chrissa Mari Borja	Grow Asia Investment Academy
19.	Ms Kunduz Masylkanova	Green Climate Fund (GCF)
20.	Ms Sakshi Chadha	United Nations Capital Development Fund (UNCDF)
21.	Ms Tanja Havemann	Clarmonidal AG
22.	Dr Albert M. Salamanca	Senior Research Fellow, Stockholm Environment Institute (SEI) Asia
23.	Dr Kuntum Melati	Research Fellow, SEI Asia
24.	Ms Yanin Sriudomphong	Project Officer, GIZ Thailand
25.	Ms Ho Qian Yu	E-READI SNKE – AgriG8

3) Organisers

No.	Full Name	Position and Institution
1.	Ms Pouchamarn Wongsanga	Regional Component Leader, GIZ Thailand
2.	Ms Luksawan Kridbhudhitham	Office Manager, GIZ Thailand

No.	Full Name	Position and Institution
3.	Ms Napaporn Rattanametta	GAP Expert, GIZ Thailand
4.	Ms Natasha Angsakulchai	Project Officer, GIZ Thailand
5.	Ms Saniwan Buaban	Project Advisor, GIZ Thailand
6.	Mr Moch Taufiqul Mujib	Technical Advisor, GIZ Indonesia
7.	Mr Beau Damen	Natural Resources Officer , FAO-RAP
8.	Mr Janek Toepper	Climate Change & Disaster Risk Financing Specialist – Asia Pacific, FAO-RAP
9.	Ms Yupaporn SimuangNgam	IT Clerk, FAO-RAP
10.	Ms Yasmine Khalil	Regional Operations and Hand in Hand Coordination Specialist, FAO-RAP
11.	Mr Suriyan Vichitlekarn	Executive Director, Mekong Institute (MI)
12.	Ms Imelda Bacudo	Lead Consultant/ MI, FAO-RAP and E-READI
13.	Ms Anusara Tanpitak	Communications and Knowledge Management Manager, MI
14.	Ms Than Tha Aung	Program Coordinator, MI
15.	Mr Narathip Dahan	Senior IT Officer, MI

Annex 2: Agenda

Day 1 Agenda: Tuesday 28 March 2023

Time (UTC+7)	Activities	Resource Speaker
08:45-09.00	Registration	
Session 1 – Introduction		
09:00-09:15	Formal Opening Ceremony Welcome Remarks Opening Remarks	Dr Saniwan Buaban, GIZ TH, Emcee - Mr Joell H. Lales, Director, Department Agriculture-Bureau of Agricultural Research (DA-BAR), the Philippines - Mr Rapibhat Chandarasrivongs, Director-General, Department of Agriculture (DOA), Thailand and ASEAN-CRN Chair
09:15-09:35	Introduction and Update on ASEAN-CRN progress	Dr Margaret C. Yoovatana, Director of International Agricultural Affairs Group, Planning and Technical Division, DOA, Thailand and ASEAN-CRN Focal Point
09:35-09:40	Group Photo	
09:40-10:00	Getting to know each other	Anusara Tanpitak, Mekong Institute, Event Support
10:00-10:10	Summary, introduction to the event, and event logical flow	Imelda Bacudo, Overall Moderator
10:10-11:00	Science update: IPCC and Climate Outlook with Impacts on ASEAN Agriculture: How climate change and agriculture initiatives are trying to reverse global warming and adapt to impacts of climate change Possible priorities for ASEAN-CRN	- Babu Suresh, International Food Policy Research Institute (IFPRI) - Veronica Doerr, Australian Centre for International

Time (UTC+7)	Activities	Resource Speaker
		Agricultural Research (ACIAR) - Janek Toepper, FAO SCALA programme
11:00-11:20	Tea/Coffee Break	
11:20-12:00	The role of agriculture under the UNFCCC in climate *negotiations* ASEAN submission on Joint Sharm-el-Sheikh work on agriculture Launch of UNFCCC Negotiators Course: overview of course and purpose	- Dada Bacudo - Dr Pham Quang Minh, Head of Food, Agriculture and Forestry Division (FAFD), ASEAN Secretariat - Pouchamarn Wongsanga, Regional Component Leader, GIZ TH - Moch Taufiqul Mujib, Technical Advisor, GIZ ID
12:00-13:00	Lunch on the 4th Floor	
Session 2: Carbon neutral, Low emission agriculture		
13:15-13:45	Recap: Foundation of net zero in the Paris agreement	Beau Damen, FAO
13:45-14:15	The challenges of net zero for agriculture, Indonesia case	Fahmuddin Agus, BRIN
14:15-15:15	E-READI carbon neutrality guidelines, reaction and summary of next steps Feedback/response from: GIZ decarbonization team and GIZ project EU project on decarbonization in agroforestry/ EU LANDMARC ASEAN-CRN focal points Followed by 10-min for discussion	Dada Bacudo Dr Rathana Peou Norbert Munns, EREADI EU and GIZ projects and Stefan Boessner (10-min each)
15:15-15:30	Coffee break	

Time (UTC+7)	Activities	Resource Speaker
Session 3: GHG Offset (Carbon) markets		
15:30-16:15	Moving ahead with GHG offset markets for agriculture FAO global-level assessment on Article 6 implications for AFOLU (10 min) Country Perspective: Cooperation with DOA and the agricultural sector (15 min) •Development of carbon credits via T-VER project in agriculture •Development of national carbon credit baseline in commodity crops KliK Foundation: feasibility of carbon offsets in agriculture (10 min) Asia Rice Carbon Markets: How farmers can benefit (10 min) Followed by Q&A	- Beau Damen, FAO - Dr Puttipar Rotkittikhun, Director, Carbon Credit Certification, Thailand Greenhouse Gas Management Organisation (TGO) - Vicky Janssen, Klik Foundation - Rodney Lui, Multi-partner paper with Bayer support
16:15-17:00	Options to advance development of results-based incentives and readiness for emissions trading for low emission agriculture	Beau Damen – structured discussion
17:00-17:15	Wrap-up and Closing of Day 1, reminders for Day 2	Moderator - Imelda Bacudo

Day 2 Agenda: Wednesday 29 March 2023

Time (UTC+7)	Activities	Resource Speaker
09:00-09:15	Greetings, check-in, and recap of Day 1	Moderator - Saniwan Buaban Presenter - Janek Toepper
Session 4: Climate Resilient Agriculture: Agrometeorology and agro insurance		

Time (UTC+7)	Activities	Resource Speaker
09:15-10:30	Best Practices on Agromet and Climate Information Services: A Regional Investment Roadmap for Agricultural Climate Services	Monica Petri, FAO Laos Erkin Isaev, FAO-RAP
10:30-10:50	Tea/Coffee Break	
10:50-11:10	Potential use of agro-insurance in accessing loss and damage funds	Laura Blair, Consultant, UK
11:10-12:00	Regional Exchange – best practices, gaps and needs and untapped potentials on agro-insurance and agrometeorology GIZ project presentation: Innovative Climate Risk Financing for the Agricultural Sector in the ASEAN Region and/ or ASEAN guidelines Regional Risk Finance Facility concept proposed under GCF readiness grant: background and stakeholder views Risk-informed work on DRM and Anticipatory Action at regional and country level in ASEAN Participant reflections	"Caravan session" (12-min) - Julian Tost, GIZ - Janek Toepper, FAO-RAP and Philippine DA - Hang Thi Thanh Pham, FAO-RAP
12:00-13:00	Lunch on 4th Floor	
Session 5: Experiences with climate finance for agriculture and innovative approaches		
13:00-14:30	Country experiences with (grant-based) climate finance for climate action in agriculture Introduction: Climate Finance and Innovation Reflection on ASEAN country experience mobilizing climate finance for agriculture Countries working toward paradigm shift by accessing GEF, NAMA and GCF support Cambodia Philippines Thailand	Beau Damen, FAO and Dr Nana Kuenkel, GIZ TH Dr Mak Soeun, Cambodia Dr Alicia Ilaga, Philippines Dr Nana Kuenkel, GIZ TH

Time (UTC+7)	Activities	Resource Speaker
	Group discussion of readiness to access different types of climate finance	
14:30-15:00	Tea/Coffee Break	
15:00-16:00	Moving beyond grants – Options to attract climate finance to agriculture sector priorities Perspectives from public and private finance providers at national, regional and global levels: Grow Asia Investment Academy Green Climate Fund (GCF) – Agriculture team WBCSD/FAO – Rice Finance Facility UNCDF Clarmondial Group discussion needs to explore new, innovative climate finance models for agriculture	Moderator - Beau Damen - Chrissa Mari Borja, Grow Asia - Kunduz Masylkanova, GCF - Beau Damen, FAO - Sakshi Chadha, UNCDF - Tanja Havemann, Clarmonidal
16:00-17:00	Validation of the key actions and continuation of climate foresight exercise	Dr Rathana Peou Norbert Munns, Climate Foresight and Scenarios Development Expert, SNKE E-READI
17:00-17:15	Wrap-up and Closing of Day 2	Moderator - Imelda Bacudo
18:30 onwards	Participant's Dinner hosted by the Government of the Philippines at the hotel's sky lounge	

Day 3 Agenda: Thursday 30 March 2023

Time (UTC+7)	Activities	Resource Speaker
09:00-09:15	Greetings, check-in, and recap of Day 2	Moderator - Saniwan Buaban Presenter - Janek Toepper
Session 6: Taking forward finance and implementation options		
09:15-09:45	Finance and implementation options to take forward KJWA in the region: Introducing the SEA GCF Readiness Grant to advance country priorities	Beau Damen, FAO
09:45-11:30 (Including Tea/Coffee break)	Partnership Forum: Resource matching between country needs and priorities and ongoing or potential support projects by partners (5-7 min for each presentation)	Moderator - Imelda Bacudo ASSET GIZ ASEAN Access Platform Grow Asia One CGIAR IRRI SEI SRP UNCDF GIZ AgriTrade FAO RAP Mekong Institute
11:30-12:00	Closing	DA Philippines, Thailand DOA, FAO
12:00 onwards	Lunch on the 4th Floor End of ASEAN-CRN Knowledge Exchange Event	