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**Report of the  
3rd Special ASEAN Technical Working Group  
on Agricultural Research and Development  
(ATWGARD) Workshop on the Promotion of  
Climate Resilience in Rice and Other Crops  
10 November 2014 | Manila, Philippines**



**REPORT OF THE  
3<sup>rd</sup> SPECIAL ASEAN TECHNICAL WORKING GROUP ON  
AGRICULTURAL RESEARCH AND DEVELOPMENT (ATWGARD)  
WORKSHOP ON THE PROMOTION OF CLIMATE RESILIENCE  
IN RICE AND OTHER CROPS**

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## **INTRODUCTION**

1. The 3<sup>rd</sup> Special ASEAN Technical Working Group on Agricultural Research and Development (ATWGARD) Workshop on the Promotion of Climate Resilience in Rice and Other Crops was held on 10 November 2014 at Best Western Plus Antel Hotel in Makati City, Metro Manila, Philippines.

2. The Meeting was attended by the delegates from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam. Representatives from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Indonesia/ASEAN-German Programme on Response to Climate Change (GAP-CC); the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA); the International Rice Research Institute (IRRI); CGIAR Climate Change, Agriculture and Food Security (CCAFS) Southeast Asia (SEA); ASEAN-Swiss Partnership on Social Forestry and Climate Change (ASFCC), Mekong Adaptation and Resilience to Climate Change (ARCC) Project-United States Agency for International Development (USAID); USAID-Philippines; ASEAN Sectoral Working Group on Crops (ASWGC)-Philippines; and MicroEnsure-Philippines were also in attendance. The list of delegates appears as **ANNEX 1**.

## **OPENING SESSION**

3. Dr. Suwit Chaikiattiyos, Deputy Director General of the Thailand Department of Agriculture (DOA), served as the chairperson of the workshop and welcomed all the delegates from the ASEAN Member States (AMS) and partner institutions. Thailand, being the lead country, expressed its appreciation to the ATWGARD focal points and project team leaders for the conduct of the case study, as well as to SEARCA and GIZ for their commitment in the project implementation.

4. Ms. Christel Weller, GIZ Division Head for Rural Development and Agriculture, also welcomed and thanked the delegates for their participation. She noted that there is great potential in having a regional-level working group and exchange of information on the theme of response and resilience to climate change to ensure food security.

5. In his opening message, Mr. Thomas Heindricks, GIZ Principal Advisor, said that the regional meeting is an important avenue in defining the network's courses of actions. He noted two challenges: climate change, and regional level collaboration. Mr. Heindricks said that a bottom-up approach is the best way to address climate change-related issues, by looking at specific good agricultural practices and experiences from the grassroots level and provide enabling conditions for the upscaling and outscaling of these practices with support from the national and regional levels. He emphasized that support on the regional level can only be successful if it is based on national contributions, priorities, leadership, and needs. In addition, Mr. Heindricks mentioned that climate and food security will always be issues for



the region, and the network is a good platform to share each contribution from the AMS and decide on future actions. He further said that GIZ will continue to support the network in addressing these challenges.

6. Ms. Digna Sandoval, Institutional Development Division under the Department of Agriculture-Bureau of Agricultural Research (DA-BAR), represented DA-BAR Director Nicomedes P. Eleazar in delivering his opening message. She highlighted DA's efforts in ensuring agriculture sufficiency through research and development programs on climate change, identification of good practices, and capacity building and livelihood enhancement activities of the stakeholders.

7. SEARCA Director, Dr. Gil C. Saguiguit, Jr., said in his opening message that coping strategies and policies at the national and regional levels must be well-coordinated and directed towards effectively addressing the effects of climate change in the sector in which the majority of the population reside and eke out a living. He expressed gratitude towards the ASEAN and GIZ for entrusting the implementation of the project to SEARCA in addressing important development issues affecting the ASEAN region, which is consistent with the Center's mandates.

8. Dr. Suwit Chaikiattiyos, provided a brief rundown of the objectives and mechanics of the workshop.

#### **AGENDA ITEM 1:                    PROGRESS OF THE ASEAN CLIMATE RESILIENCE NETWORK'S (CRN) PROMOTION OF RICE AND OTHER CROPS**

9. Dr. Felino P. Lansigan, SEARCA Regional Team Leader and Value Chain Climate Resilience Specialist served as the overall facilitator of the workshop. Under the session, he presented the background, objectives, and highlights of the regional initiative. The seven (7) ATWGARD Focal Points of the pilot countries designated for the project likewise provided a brief presentation on the highlights of their chosen climate change adaptation (CCA) good practices, current status on the national level, and potential CCA good practice for regional upscaling and outscaling. The focal point for Malaysia also presented the current status of the country case study.

#### **Highlights of the CRN**

10. Dr. Felino P. Lansigan briefed the delegates on the rationale, objectives, current status and updates of the CRN. The highlights of the presentation, which appears as **ANNEX 2**, are as follows:

- *Interests on case studies:* technical requirements for implementation on a particular site, institutional constraints, capacity building needs
- *Common good practices as CCA measures for regional upscaling and outscaling:*
  - Rice and maize varieties that are stress-tolerant
  - Alternate Wetting and Drying (AWD)
  - Weather Index-based insurance (WIBI)
- *Updates on the CRN:* national case studies, regional synthesis, GIZ small grants to three AMS for the implementation of good practices, plan to upscale and outscale CCA measures.



## Thailand

11. As the lead country, Thailand was the first to present the updates of the project, led by Dr. Margaret Yoovatana, SEARCA National Team Leader-Thailand and Thailand DOA Policy and Plan Specialist under the International Agricultural Affairs Group, Planning and Technical Division. Her presentation appears as **ANNEX 3**.

12. The highlights of her presentation are as follows:

- *Origin of the regional initiative:* 8<sup>th</sup> ATWGARD meeting in Singapore (13-14 May 2014) approved the Thailand DOA proposal “Production System Approach for Sustainable Productivity and Enhanced Resilience to Climate Change” under the ASEAN policy frameworks ASEAN Integrated Food Security Framework (AIFS) and the ASEAN Multi-Sectoral Framework on climate Change (AFCC), and supported by GAP-CC.
- *Timeline of the conduct of case study in Thailand*
- *Case studies of climate change adaptation good practices:*
  - Rice: a) cropping calendar, AWD, and Remote Sensing-Based Information and Insurance for Crops in Emerging Economies (RIICE)
  - Maize: a) Strengthening Seed Production through Maize Seed Village in Thailand, and b) use of stress – (drought) tolerant varieties
- *Suggested activities for regional upscaling:* knowledge exchange, technology mainstreaming, and networking

13. After the presentation of Thailand, the delegates and partner institutions posed for a group photo and proceeded for a working break.

## Cambodia

14. Dr. Ouk Makara, Director of Cambodian Agricultural Research and Development Institute (CARDI), presented the status of the project in Cambodia as highlighted below. His presentation appears as **ANNEX 4**.

- *Breakdown of the agriculture sector's contributions on Cambodia GDP:* Crops has the greatest contribution with 54.2%
- *Agricultural crop production areas:* Rice is the highest (79.97%), followed by cassava (10.28%)
- *Production systems for rice* (rainfed lowland and irrigated lowland) *and cassava* (wet and dry seasons)
  - Hazards: flood (rainfed lowland rice) and pests and diseases infestation (cassava)
- *Climate change adaptation good practices:*
  - Rainfed lowland rice: a) model farm, b) stress-tolerant varieties, and c) crop-water-nutrient management
  - Cassava: a) healthy planting materials, b) contour intercropping in sloping areas
- *Challenges in strengthening the ASEAN CRN:* financial support, technology sharing, regional coordination and collaboration

## Indonesia

15. Dr. Nyoman Widiarta, Deputy Director of Indonesian Center for Food Crops Research and Development (ICFORD) Research Planning and Evaluation under the Indonesian Agency for Agricultural Research and Development (IAARD) provided a brief



presentation on the progress of the national case study. The highlights of his presentation (**ANNEX 5**) are as follows.

- *Implementation of Integrated Crop Management (ICM) Farmer Field Schools*
  - Challenges: technology transfer, logistical arrangements, budget reduction
- *Dynamic Cropping Calendar based on National Climate Data*
- *Standing Crop Monitoring using Online CCTV*: used to monitor stages of planted rice online.
- *Next Activities*: further implementation of ICM Farmer Field Schools focusing on research and extension activities, and services for plants and diseases.

### **Lao PDR**

16. Dr. Outhai Soukkhy, National Team Leader-Lao PDR and Head of Educational Division, Students' Management, Agronomy Farm Activities and Curriculum Development, Northern Agriculture and Forestry College (NAFC) briefly presented the updates of the national case study in their country. His presentation is highlighted below and appended on **ANNEX 6**.

- *Background on Laos' agricultural sector*: rice and maize as staple crops
- *Climate change adaptation good practices*:
  - Rice: a) System of Rice Intensification (SRI), b) Rice Biodiversity Conservation, and c) use of stress- (drought and submergence) varieties
  - Maize: a) Direct Mulching Crop (DMC), b) maize integrated with legumes
- *Challenges*:
  - Only site-specific good practices
  - Need to strengthen human resource and development on CCA, as well as climate projection and scenarios

### **Malaysia**

17. Dr. Mohamad Zabawi bin Abdul Ghani, Deputy Director for Malaysia Agriculture Research and Development Institute (MARDI) presented the national adaptation strategies of rice to address climate change in Malaysia. Below are the points discussed in his presentation, which appears as **ANNEX 7**.

- *Climate change scenario by 2050*: increased annual rainfall and overall temperature
- *Current Situation of Rice*: 2.4MT/yr consumption
- *Adaptation Strategies*
  - Use of short maturing variety
  - Development of drought-resistant varieties
  - Soil management
  - Irrigation management
- Action plan of the government for drought and flood on crop management, straw management, irrigation management, and mechanization management.

### **Myanmar**

18. Dr. Aung Moe Myo Tint, Research Officer of the Department of Agricultural Research (DAR) under the Ministry of Agriculture and Irrigation and Dr. Khin Lay Swe, National Team Leader-Myanmar briefly discussed the national priorities on agriculture and developments of the national case study in Myanmar. The key points of their discussion are as follows



- *Departments and institutions in Myanmar active on addressing climate change:* Department of Agriculture (OA), DAR, and Yezin Agricultural University (YAU).
- *Strategies:*
  - Continuous development of stress-tolerant varieties (drought, flood, saline), mechanized farming and water management systems
  - Partnership with and assistance from international institutions, such as IRRI
- *Challenge:*
  - Need further micro-financing programs for farmers with regard to climate change issues
- *Climate change adaptation good practices:*
  - Rice: Dry seeding, use of tolerant rice varieties, change in cropping pattern
  - Maize: Compost making of maize husks and cobs, nutrition management practices
- *Updates on the conduct of the case study*
  - Peer review meeting for the national reports, through the assistance of IRRI and YAU
  - Finalization of the national case study

### **Philippines**

19. Dr. Romeo V. Labios, National Team Leader-Philippines and Scientist II-Agronomist of IRRI Myanmar Office, presented the initial results and findings of climate change adaptation good practices for rice and maize in the Philippines. The presentation appears as **ANNEX 8**.

20. The highlights of the presentation of the Philippines are as follows:

- *Climate trends:* high temperature, intense rainfall, increase in tropical cyclones
- *Rice production systems chosen for the study:* irrigated and rainfed lowland
- *Maize production systems chosen for the study:* yellow corn and white corn
- *Climate change adaptation good practices:*
  - Rice: a) PalayCheck, b) Palayamanan, c) AWD
  - Maize: a) Site-Specific Nutrient Management (SSNM) for maize, village-type dryer, Sustainable Corn Production in Sloping Areas (SCOPSA)

### **Vietnam**

21. Mr. Nguyen Kim Chien, Deputy Head for General Affairs Division, Department of Science, Technology and Environment, Ministry of Agriculture and Rural Development (MARD) presented the chosen good practices in Vietnam as potential CCA measures for regional upscaling. His presentation, which is highlighted below, appears as **ANNEX 9**.

- *Climate change adaptation good practices:*
  - Rice: crop-pattern changes (one rice crop into aquaculture, e.g. shrimp), crop timing and use of varieties with short growing duration; AWD
  - Maize: use of suitable, high-yielding, and stress-tolerant varieties and quality seeds; proper fertilizer treatment; intercropping with leguminous plants; and, optimal cultivation practices for tropical maize in flat areas
- *Chosen CCA in Vietnam for regional upscaling:* rice-shrimp farming, AWD for rice, optimal cultivation of tropical maize
- *Areas for regional collaboration:*
  - Joint researches and studies on new varieties and farming practices
  - Technology and knowledge transfer on farming practices
  - Demonstration/pilot model
  - Agro-insurance technology and knowledge transfer



22. At the end of the presentation, Ms. Imelda Bacudo, Regional Advisor for GAP-CC, clarified the name of the project, that is, “**Promotion of Resilience in Rice and Other Crops**”, led by Thailand through ATWGARD and supported by GAP-CC. Ms. Margaret Yoovatana, representing Thailand, requested approval from the Chair and the focal points to finalize and formalize the ASEAN CRN as the main network to facilitate the implementation of the project, and that this be noted in the 3rd Regional meeting agenda. Dr. Ouk Makara (ATWGARD Focal Point for Cambodia and CARDI Director) seconded the suggestion, followed by the rest of the delegates. It was agreed that the terms of references of the CRN will be drafted prior to, and approved in the next ATWGARD meeting, as well as the workplan.

## **AGENDA ITEM 2: FORUM ON GOOD AGRICULTURAL PRACTICES AS CLIMATE ADAPTATION**

23. Technical experts from IRRI and MicroEnsure-Philippines presented and discussed the technical requirements, implementation issues and challenges, and applications of the following selected good practices or CCA measures: Planting Calendar, Alternate Wetting and Drying (AWD) Technology, Integrated Crop Management, Climate Stress Tolerant Varieties, and Agri-Insurance. Dr. Romeo V. Labios served as the moderator of the session.

### **Best Planting Date and Cropping Calendar for Rainfed Rice**

24. Dr. Keiichi Hayashi, Project Coordinator for Climate Change Adaptation in Rainfed Rice Areas Project (CCARA) and Soil Scientist under the Crop and Environmental Science Division in IRRI, provided expertise on best planting/cropping calendar. The highlights of his presentation can be found below:

- Proper timing of planting influences yield in rice, though at times it is difficult to coincide
- Due to unpredictable rainfall patterns, farmers have no way to predict the changes, which affect their farming operations and waste finite sources
- *Information gaps in rainfed production*: creates significant loss in yield. The following are types of information gaps: onset of rainfall, type of season, variety, timing of fertilizer and applications, and yield.
- CCARA’s decision support system to provide seasonal weather forecast and crop yield prediction
- Benefit of forecast in rice production
- *WeRise*: a web application system that provides localized seasonal weather forecast and crop yield prediction based on the forecast

### ***Open Forum/Discussion***

- Indonesia to introduce Dr. Hayashi’s study since it is in line with their cropping calendar project
- IRRI also works closely with IAARD
- The global-scale model is available in all countries and can be accessed via the web application, which will be released in March 2015 at the IRRI website

### **AWD Water Management for Climate Adaptation**

25. Dr. Ruben Lampayan, is a Water Management Specialist under the Crop and Environmental Sciences Division in IRRI. His presentation, which appears as **ANNEX 10**, is highlighted below.

- Irrigated rice as the biggest recipient of developed water resources



- Water scarcity for irrigated rice, especially during the dry season. This will be further aggravated by climate change.
- *Objectives of IRRI's researches on water management:* help farmers use water more productively and cope with water scarcity. Specifically,
  - Develop technologies that are productive and profitable without compromising the environment
  - Achieve widescale adoption by working with key partners
- AWD (or intermittent irrigation) allows the rice fields to dry at certain number of days before re-irrigating again. During days of non-flooding conditions, unproductive losses due to percolation, seepage will be minimized. This water management practice is a departure of the usual farmers' practice of continuous flooding.
- *When to irrigate while using AWD:* If the *perched water table* reached around **15cm** during the dry season or **20 cm** during the wet season from the soil surface.
- Benefits of AWD:
  - 40% savings in irrigated water
  - Promotes higher zinc availability on soil and grains
  - Reduces methane emissions
  - Better root anchorage to reduce lodging
- *Widespread dissemination of AWD in the Philippines*
  - Policy support through Administrative Order 25 (11 September 2009): "Guidelines for the Adoption of Water Saving Technologies in Irrigated Rice Production in the Philippines"
  - National Irrigation Administration (NIA) directed regional offices to create Regional Technical Working Groups
- *AWD Needs and Challenges*
  - Improved canal irrigation and infrastructure, maintenance and operation
  - Capacity building of irrigation managers and farmers
  - Policy development

### **Open Forum/Discussion**

- *Why does AWD still need policy support? Why it is not adopted?*

Farmers know the benefits of AWD. But in most cases, it is not practiced since farmers feel that it's difficult to do. AWD has to achieve wide-scale adoption, and policy support is still needed.

### **Climate Stress-tolerant Varieties of Rice and Other Crops**

26. Dr. Glenn B. Gregorio, Senior Scientist and Plant Breeder at the Plant Breeding, Genetics and Biotechnology Division in IRRI, provided expertise on the technical requirements of climate stress-tolerant varieties. His presentation appears as **ANNEX 11** and is highlighted below:

- *Challenges in rainfed rice:* major abiotic stresses (drought, uncontrolled flooding, salinity)
- South and SEA are the most vulnerable to flooding due to climate-induced sea-level rise. Coastal zones with the densest populations, lowest elevations, and/or inadequate adaptive capacity are at most risk.
- Climate stress tolerant varieties are available and ready for upscaling
- *Progress in submergence tolerance:* Positive impacts of Swarna Sub1



- *Progress in salinity tolerance:* e.g. BRRI dhan55, BINA dhan10, BRRI dhan61, etc.; responds better to improved crop and nutrient management as well as proper nursery and field practices
- *Combined tolerance of salinity and submergence:* (SalTol + Sub1); 2-in-1 rice, combined tolerance of salinity and submergence produces better grain quality
- Salt and heat tolerant rice successful
- Drought tolerant rice
- *Multi-Environment Testing (MET) for Irrigated Rice:* 94 locations on 20 countries as of 2014
- *C4 Rice:* increased yield by 50%, double water-use efficiency, improve nitrogen-use efficiency
- *Challenges:*
  - Continued rice germplasm exchange and joint evaluation of stress tolerant rice
  - Seed system: producer, what seed to be multiplied and promoted, involvement of private sector for sustainability
  - Restructuring of R&D institutions to develop market-driven and product-oriented programs

### **Open Forum/Discussion**

- Rice has benefitted by climate change, and zoning is very important. What are the hotspot areas in the ASEAN? How can they match new technologies with the existing problems in specific problem areas? Policies from the ASEAN could be directed in these specific areas.
  - A group of experts should provide advice, e.g. farmers, government units. There are many initiatives that focus on vulnerability mapping, e.g. PRISM, as well as countries that developed these maps. The question is how to fit in all technologies and how the policies can upscale these.
- Introducing new variety in the seed system is also important (in the case of Indonesia). Government gives the new varieties to the private sector to produce them but the seeds will not be produced if they are not marketable.
  - The problem with private-sector involvement in stressed environments is that farmers are poor and they do not want to buy seeds. So the government and NGOs distribute them. Plants become less-tolerant because they are planted in stressed environments. Seeds should be grown in a normal condition.

### **Agri-Insurance as Climate Risk Management Strategy in Rice and Other Crops**

27. Mr. William Martirez, Country Manager of MicroEnsure-Philippines, shared the goal of their company as well as the recent developments in agri-insurance. The highlights of his presentation, which appears as **ANNEX 12**, can be seen below.

- *Background of MicroEnsure:* provides a range of life, health, property and weather-index products via a range of distribution partners that include microfinance companies, banks, cooperatives and mobile network operators.
- *Risks in Agriculture:* weather-related (drought, typhoon, flood, frost, hail); non-weather-related (displacement, price collapse, pests, etc.)
- *Risk Management in Agriculture:* crucial in investment and financing decisions of farmers; provides food security



- *Agricultural Insurance*: designed for agricultural producers/farmers to protect themselves against loss of crops due to pests, diseases, and natural disasters such as drought, typhoons and floods.
  - *Types*: a) traditional: multi-peril and named peril crop insurance; b) weather index insurance (typhoon, drought)
  - Infrastructures and conditions necessary for weather index insurance
  - Potential regulatory/legal issues, such premium cap, marketing and distribution of product, etc.
- *Recommendations*: Public-Private Partnership (PPP) on agriculture insurance, dedicated satellite for risk assessment, availability and accessibility of weather and crops data, among others.

### **Open Forum/Discussion**

- Is it possible to upscale Agri-insurance in a regional level? Can you give guidelines for consideration of the AMAF?
  - We can work on Catastrophic Insurance to reduce the premium in the country. For instance, identify events in 20 years that are catastrophic. 30% of risk will be taken care of by the government (portion of which will be shared by the ASEAN), 70% by the private sector.

28. After the presentation, Dr. Felino Lansigan provided a brief round-up of what has been discussed. The meeting paused for a lunch break and resumed at 01:30 PM.

### **AGENDA ITEM 3: PRESENTATION OF REGIONAL COOPERATION ON CLIMATE CHANGE ADAPTATION IN RICE, CORN AND/OR CASSAVA UNDER THE CRN**

29. In this session, guidelines for implementation for regional cooperation planned for the CRN based on the country case studies recommendation are discussed. The small grants awardees from Indonesia, Laos, Thailand and Vietnam likewise presented the proposed guidelines for regional cooperation of their chosen CCA

#### **Guidelines for Implementation of CCA Options for Regional Cooperation**

30. Dr. Felino Lansigan presented the outline of the draft guidelines for consideration of the ATWGARD focal points and other delegates from the AMS. The presentation appears as **ANNEX 13**. Highlights of the presentation are as follows:

- *Selection criteria of CCA measures to be implemented*: a) potential for enhancing climate resilience; b) can be easily adopted by farmers under local conditions; c) economically efficient
- *Documentation of field implementation*: should be fully documented from the design phase to monitoring and evaluation (M&E) phase; cross visits of CRN members on field demonstration sites
- *Technical Assistance*: May be provided by the CRN members or related projects operating within the region, as well as expert dispatch programs
- *Financing for upscaling of CCA measures*: ideally, each participating AMS will cover the in-country operational expenses; CRN to explore provision of funds for foreign and in-country travels related to regional collaboration, if necessary.
- *Setting-up of an M&E system*: involves cost-effective data acquisition of key indicators of climate resilience, and cover farming communities and crop production systems.



- *Information sharing and exchange*: open access to and sharing of data among CRN members for comparative analysis; to be facilitated by a knowledge platform through SEARCA.
- *Dissemination of Research Results and Capacity Building*: Results of the upscaling of CCA measures will be shared via regional workshops, seminars, symposia organized by the members of the CRN; publication of research results as journal articles are also encouraged.

### **Regional Cooperation on Stress-tolerant Maize Varieties**

31. Dr. Margaret Yoovatana, presented Thailand's small grants proposal for the regional cooperation on stress-tolerant maize under GIZ, specifically on the Knowledge Exchange on Community-Based Maize Seed Production. Her presentation appears as **ANNEX 14**.

32. The highlights of Thailand's presentation can be found below:

- *Background on Thailand's maize production and distribution*
  - *Constraints to maize productivity*: unavailability of quality seeds and high seed input cost for the purchase of hybrid seeds
- *Maize Seed Village*: launched to farmers and farmer organizations and local seed companies to ensure seed sufficiency and save cost for hybrid seed purchasing
  - The proposed knowledge exchange will provide a learning platform for Thailand to share experiences on the establishment of "Maize Seed Village" to the AMS and initiate an ASEAN Maize Seed Network as an adaptation measure to climate change.
  - Involved country: Philippines (through small workshops and exchange visits)

33. Mr. Viengsavanh Phimpachanhvongsod, Deputy Director for Planning and Cooperation and Research Management Division under the National Agriculture and Forestry Institute (NAFRI) also presented Laos' research on maize. The highlights of the presentation, which appears as **ANNEX 15**, is highlighted below.

- *Background of NAFRI*: carries out research and development activities to attain food security, commercialized agriculture, and sustainable agro-biodiversity and forest resources management.
  - Survey and conservation of plant germplasm and animal breeds
- Cash crop research (maize)
  - Developed new Lao hybrid maize
  - Released new Lao hybrid maize with high potential yield
  - Trials and produced Lao glutinous varieties
  - Developed maize production techniques for farmers
  - Survey and conservation of indigenous maize; indigenous maize breed study
  - Pure variety identification
  - Crossed pair testing

### **Regional Cooperation on Stress-tolerant Rice Varieties**

34. Dr. Romeo V. Labios, presented the proposed regional cooperation on stress-tolerant rice. The complete details of his presentation appears as **ANNEX 16**. The key points discussed are listed below:

- Climate-ready Rice Varieties: Challenges and Areas for Regional Collaboration
  - Cambodia, Indonesia, Laos, Myanmar, Philippines, Vietnam
- Proposed Guidelines for National Promotion and Dissemination of Stress Tolerant Rice Varieties



- Cambodia, Indonesia, Laos, Myanmar, Philippines, Vietnam
- Proposed Guidelines for Regional Cooperation on the Promotion and Dissemination of Stress Tolerant Rice Varieties (Cambodia, Indonesia, Laos, Myanmar, Philippines, Vietnam)
  - Regional networking and collaboration for action research and development e.g. Asia Pacific Advanced Network (APAN) on climate change; CGIAR CCAFS; SEARCA networks; GIZ climate change program, etc.)
  - Support to capacity building (degree and non-degree) on CCA, mitigation and resilience for next generation scientists
  - Better policy on germplasm exchange of stress-tolerant rice varieties between AMS
  - Institutional collaboration and networking for seed systems of stress tolerance rice varieties
  - Institutional collaboration and networking for breeding programs of stress tolerance rice varieties and associated best management practices
  - Institutional collaboration towards a community-based conservation of rice diversity
  - South-South expert exchange for technical information and dissemination of stress-tolerant rice varieties
  - Fellowship for research and training at IRRI and other international institutions on stress-tolerant rice
  - Financial and technical support on application of mechanization in the farmer level

### **Regional Cooperation on Agriculture Insurance**

35. Ms. Do Lien Huong, Member of the National Team under the project and Project Team Leader for Strategy and Policy Research Division under the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD). Her presentation on the lessons learned and areas for regional cooperation of Vietnam's agricultural insurance appears as **ANNEX 17**.

36. The highlights of her presentation can be found below:

- *Overview of pilot agricultural insurance program*
  - *Objective:* provide agricultural insurance on a pilot basis to help agricultural producers take the initiative in remedying and recovering from financial losses caused by natural disasters or epidemics, contributing to assuring social welfare in rural areas and promoting agricultural production.'
  - *Pilot timeframe:* 3 years
  - *Beneficiaries:* poor farmers and other agricultural production organizations
  - *Implementers:* Ministry of Forestry (MOF), MARD, Vinare, and other agro-insurance companies
  - *State support:* 100% premium for poor farmers; premium decreases depending on the socio-economic condition of the beneficiary.
  - *Insured risks:* natural disasters and epidemics
  - Policy reviews on central and ministerial levels
- *Key findings and lessons learned:*
  - Need for agro-insurance and financial support from the government
  - Appropriate ways to approach farmers and promote agro-insurance
  - Application of PPP model in the effective implementation of agro-insurance
- Pending issues/challenges:
  - Technical barriers in (1) premium calculation, (2) data/statistics, (3) collecting and analysis, (4) disease identification, (5) avoiding moral hazards
  - Farmers' awareness raising activities



- Tailor-made implementation mechanism
- Support from international agencies
- Areas for regional cooperation
  - Knowledge sharing and experiences in solving technical barriers
  - Joint promotion of PPP models by providing research results and technical assistance
  - Sharing of experiences and tools to raise farmers' awareness and willingness to agro-insurance

37. Likewise, Dr. Perdinan, National Team-Indonesia and Lecturer under the Department of Geophysics and Meteorology in Bogor Agricultural University also presented the current progress of crop insurance in Indonesia. The highlights of his presentation (**ANNEX 18**) can be found below.

- Climate variability and global climate change affect crop production. Farmers need to adapt via crop insurance
- *Current progress and mechanism of crop insurance:*
  - Government supports via Law No.19/2013 (37): propose to protect farmers
  - Pilot project of the insurance: crop failure (paddy), livestock: cattle
  - Pilot site: Bantul, Sleman, Boyolali, and Limapuluh Kota
  - Government partially subsidized (80%) the purchase of premium
- *Weather-Index Based Crop Insurance*
  - At initial (i.e., research) phase: introduction to farmers at a study site (Indramayu); capacity building of agricultural extension workers and awareness raising of farmers
  - Concept: payment is made when a certain climate condition has not met (climate index), no proof of crop failure; farmers pay a premium for climate index (e.g., rainfall index)
  - Payment Mechanism: payment will be made when climate index has not met; partial payment: less than "Trigger"; full payment: less than "Exit"
- *Implementation challenges*
  - Capacity to understand the benefits of the insurance
  - Development of climate index that is *simple* and *reliable*
  - Farmers' ability to pay the premium
  - Availability of weather/climate infrastructure
- *Areas for regional collaboration:* knowledge sharing and capacity building
  - Crop Insurance Benefits
  - Evaluation of farmers' acceptance
  - Designing of crop insurance

38. After the presentations of the grant awardees, an open forum/discussion was conducted to gather the views and comments of the AMS and other delegates on their proposed guidelines for regional cooperation. The highlights of the discussion can be found below:

- This session is the meat of the 3<sup>rd</sup> regional workshop
- A review of good practices per AMS was conducted during the kick-off workshop to give policy recommendations to ASEAN in building crop resiliency. One of the outputs is a body of recommendations and policy advice to ASEAN through ATWGARD and Senior Officials Meeting - ASEAN Ministers of Agriculture and Forestry (SOM-AMAF), which will influence the implementation of agricultural practices in each AMS.
- The sharing of the small grants awardees are concrete manifestation of regional collaboration



- How do we direct policies technologies as regards to technologies available and how do we use the ASEAN CRN? A good example would be the catastrophic insurance as an adaptation tool in which ASEAN pays a premium
- SEARCA to draft the guidelines for the review and consideration of the ATWGARD focal points, who still need to consult with their respective ministers/directors (except Singapore).
- The guidelines have to be finalized and sent for review of the ATWGARD in May, which will then be endorsed to the SOM-AMAF. It should be incorporated and adopted within the ASEAN structures. Once agreed among the AMS, it can then be suggested in other conferences
- Suggestions/comments on the structure/outline of the proposed guidelines
  - Technical experts to be consulted on specific requirements for each good practice/CCA measure
  - Timeline: draft guidelines to be sent/circulated to the focal points for their review and consideration by the end of 2014; reviewed guideline should be sent back to SEARCA by February 2015
  - Lead countries for each CCA measure
    - Stress-tolerant maize: Thailand
    - Stress-tolerant rice: Philippines
    - WIBI: Indonesia/Philippines
- Collaboration for each CCA measure is open to all interested AMS

39. After the session, Dr. Suwit Chaikiattiyos provided a summary of the agreements made by the network.

#### **AGENDA ITEM 4: DONORS FORUM ON CCA MEASURES OF INTEREST AND POSSIBLE COLLABORATION WITH CRN**

40. Representatives from identified donor agencies operating in the region presented their respective programs and activities that are relevant to the CRN for potential collaboration with and support to the AMS.

41. Dr. Bessie M. Burgos, Acting Head of the SEARCA Research and Development Program presented the programs and activities of the ASEAN-Swiss Partnership on Social Forestry and Climate Change (ASFCC) Phase II. Her presentation appears as **ANNEX 19**.

#### **ASEAN Social Forestry Network (ASFN) Strategic Response Fund (ASRF)**

- *Background of ASFCC Phase II:* funded by the Swiss Agency for Development and Cooperation; supports the ASFN; aims to integrate social forestry into CCA and mitigation strategies of the ASEAN and its member states
- Partnership among various regional agencies
- Promotes inclusion of communities, women and vulnerable groups in social forestry and climate change adaptation and mitigation measures
- *Objective of ASRF:* enable AMS focal points to quickly respond to emerging issues and challenges and articulate policy recommendations and directions on social forestry as it relates to climate change, food security, and poverty alleviation
- *Types of projects:* quick studies, exploratory reviews, meta-analysis, study tours, dialogues, position papers as inputs to policy debates and decision-making, training scholarships
- *General Criteria:* relevant to the objectives of ASFCC and ASFN; addresses gaps and issues on food security, climate change, and poverty; reasonable costing
- *Duration per project:* maximum of 6 months



### **Open Forum/Discussion**

- Covers projects on agriculture (landscape approach) under social forestry
- Analysis and position papers on carbon credits (e.g. REDD+) are also considered
- The facility is meant to cater to the needs of the focal points and understand their needs. In some AMS, forestry and agriculture are in one ministry so it would work best, though in most countries, it is separated and thus there is a need to touch base with the focal points/directorates of Forest and come up with a joint proposal with other stakeholders
- Usually takes two (2) months for the approval of proposal, and awardee of grantees

42. Dr. Leocadio Sebastian, Regional Program Leader for CGIAR CCAFS SEA, presented the institutions flagship projects. The presentation appears as **ANNEX 20**.

### **Research for Development (R4D) Collaboration on Climate Change in Southeast Asia**

- Research initiative of CGIAR and Future Earth to overcome the threats to agriculture and food security from a changing climate
- *Climate change challenges*: climate variability, sea level rise, greenhouse gas emission
- *Objectives of CCAFS*: Pro-poor adaptation and mitigation activities for agriculture; agriculture within climate change policies.
- *Focus countries*: Vietnam, Cambodia and Laos (most vulnerable in the region; hotspots)
- *Strategies to attain outcomes*: R&D innovation, convergence, national program integrations, complementation of development projects, partners mobilization
- *Priority R4D Innovations*: a) climate-smart agricultural practices; b) climate information services and climate informed safety nets; c) low-emissions agricultural development; and, d) policies and institutions for climate-resilient food systems.
- *CCAFS SEA Region-based Projects*:
  - Innovative Approaches in Organizing and Sustaining Climate Smart Villages in SEA (organizing and sustaining CSVs)
  - Upscaling Climate Smart Agriculture (CSA) Innovation in SEA (CSA innovations)
  - Partnerships on Mainstreaming CSA with National Governments in SEA (CSA mainstreaming)

### **Open Forum/Discussion**

- No CCAFS activities in Thailand due to country prioritization (mapping of SEA countries)
- CCAFS approach on CCA measures is holistic and not just components

43. Ms. Joanne Dulce, United States Agency for International Development (USAID) Philippines Project Management Specialist, presented the programs and activities that the agency supports with regard to climate change adaptation in the Philippines, which appears as **ANNEX 21**. The key messages of her presentation are highlighted as follows:



## **Integrating Climate Change Adaptation on Philippine Agriculture Sector**

- Country Development and Cooperation Strategy (2012-2016): more stable, prosperous and well-governed Philippines
  - Broad-based and inclusive growth accelerated and sustained; peace and stability in conflict-affected areas in Mindanao improved; environmental resilience improved.
- USAID addresses climate change by:
  - promoting low emission development strategies and building community resilience
  - promoting the use of weather and climate monitoring instruments and decision support tools and field-testing of flood-tolerant and drought-resistant rice varieties
  - implementing Climate Field Schools on sustainable agriculture and climate impacts
  - introducing small scale irrigation systems
- *Opportunities for regional collaboration:*
  - Upscale community-based initiatives to integrated CCA in agriculture
  - Support for R&D under the Partnerships and Enhanced Engagement in Research

44. Mr. Paul Hartman, Chief of Party of the USAID Mekong Adaptation and Resilience to Climate Change (ARCC) Project, shared the overview of their project. His presentation appears as **ANNEX 22** and is highlighted below.

### **Mekong ARCC**

- The study looked at range of factors to determine how climate change will lead to ecological shifts in Lower Mekong ecosystems and how crops, fisheries and livestock that now flourish in an area will be suited to projected new conditions.
- *Climate requirements, current distribution, and climate change impacts of selected crops:* coffee, cassava, rubber, soya, rainfed rice, and maize
- *Losses/gains in yields and species productivity caused by:*
  - Temperatures >35°C reduce rainfed & irrigated rice yields
  - impact of water availability/soil moisture
  - heat/water stress in flowering, fruiting or ripening stages
  - extended dry season, drought, offseason rainfall
  - salinity intrusion in the delta
- *Strengthening resilience for cassava, maize, and soybean* with regard (a) to increasing temperature, drought, and heat extremes [water conservation technologies (e.g., planting pits, infiltration ditches, mulching, contour banks; crop rotation, permanent vegetal cover, direct mulch seeding, reduced tillage; shift to more heat-tolerant crops (maize)], and (b) increased precipitation, storms, and flooding [use of short term early maturing varieties; improve drainage systems and erosion control techniques on slopes; crop rotation, permanent vegetal cover, direct mulch seeding, reduced tillage; shift to more robust species or more waterlog-tolerant crops].
- *Techniques:* bottom-up community climate story, top-down scientific climate story, and vision & outcome mapping
- *Community Adaptation Options Implementation*
  - Natural system adaptation
  - Human solutions
  - Land use planning
  - Institutional mechanisms development



### **Open Forum/Discussion**

- Capture success stories and make use of the results of the USAID Mekong ARCC in formulating the guidelines for presentation to the ASEAN leaders
- Mekong ARCC is open to discuss possibility of a partnership with the CRN's existing projects

45. Mr. Thomas Heindrichs and Ms. Imelda Bacudo from GIZ discussed an overview of the GAP-CC initiative and its projects for 2015 and beyond, one of which is the Climate Smart Value Chains. The highlights can be found below, and the copy of the presentation appears as **ANNEX 23**.

#### **GAP-CC - Climate Smart Value Chains: Perspectives for cooperation beyond 2015**

- *Background and overview of GAP-CC: 2012-2017, focusing on agriculture and forestry, specifically supporting capacities for climate resilience and competitiveness (knowledge, instruments, structures, processes, and policy framework)*
- *Structure and Context: global, regional and bilateral projects of GAP-CC*
- *Climate Smart Value Chains: upscaling of climate smart practices in agriculture and/or forestry value chains within ASEAN and supported by German bilateral projects*
  - *Interrelated and interdependent approaches and elements: Climate Smart Value Chains (supporting best practices), Climate Finance Opportunities (climate finance), and Knowledge Platform (regional knowledge management)*
  - *Main elements:*
  - *International partners, e.g. ASEAN, AMS, international research agencies, etc.*

#### **AGENDA ITEM 5: SYNTHESIS: WHERE DO WE GO FROM HERE: CRN – WHAT'S NEXT?**

46. Dr. Felino Lansigan provided breakdown of the action points and next steps for the drafting of the regional guidelines of the identified good practices as CCA measures, which appears as **ANNEX 24**, can be found below. The highlights of his presentation and key conclusions derived from the discussions are as follows:

- *CRN Upscaling and Outscaling Plans*
  - Information sharing on good practices and technology transfer through existing networks and programs of regional institutions
  - Capacity building to enhance climate resilience of local communities and crop production systems
  - Climate-proofing of other crop production systems (integration of CCA in farming activities)
  - R&D on CCA, provision of technical inputs on CCA options, procedures, and protocols
  - M&E system to assess climate resilience of local stakeholders crop production systems, and ecosystems
  - Establishment of a Regional Center to analyze climate scenarios in regional and national levels, and assist in mainstreaming climate change policies.
- *CRN Activities*
  - Capacity building through training programs, seminars, workshops,
  - Regional exchange of knowledge and knowledge brokering.



- Explore co-financing of CCA initiatives (within country and SEA)
- Communications within CRN and partnership with other similar networks in SEA
- *Network and Operational Issues*
  - Coordination and technical backstopping
  - Sustaining the network (funding, preparation of CRN workplan)
  - Promotion of mainstreaming climate resilience in agricultural crop production systems through ATWGARD and other networks

### ***Open Forum/Discussion***

- Conduct research activities complementing activities of CGIAR, National Agricultural Research Systems (NARS), and other academic institutions
  - Look into adaptive research (testing, validation, technology adoption)
- Launching of the national case studies: to be finished by mid-January and to be officially launched at the 10<sup>th</sup> ATWGARD meeting
- Indonesia still needs more expert contributions from other AMS and institutions on cropping calendar
- Need for a regional centre on climate projection to foresee production and changing planting calendar
  - ASEAN Technical Working Group (TWG) on Climate Change that looks into forecasting data
  - Other TWGs may be involved/partnered to the CRN
  - Tap the Coordinated Regional Climate Downscaling Experiment (CORDEX): a regional centre that contributes to the downscale of climate projections for agriculture use; the CRN is mentioned to the CORDEX thru Dr. Rizaldi Boer
- Climate projection is available, what is needed is to capacitate extension workers to downscale these projections
- Mechanism to tap the private sector: guidelines for private-sector involvement still needed; integrated academe with business for development

### **CLOSING CEREMONIES**

47. Ms. Imelda Bacudo, delivered the closing remarks and briefly wrapped-up the conclusions and recommendations gathered from the workshop. On behalf of GIZ, she expressed her gratitude towards Thailand DOA and the respective ATWGARD focal points for their active participation and for the establishment of the CRN; to SEARCA for bringing together the national resource teams; to IRRI, CCAFS, and other regional institutions for their continuous partnerships; to the private sector in its, hopefully, future involvement with the network; and to all the resource persons who have joined the CRN. Dr. Suwit Chaikiattiyos, closed the workshop and expressed Thai DOA's sincere appreciation to the delegates from the ATWGARD, GIZ, SEARCA, and partner institutions.

