CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

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Workshop on the Impact of Climate Change on Crop Pests & Diseases, and Adaptation Strategies for the GMS

30 July -1 August 2014
Hotel Continental Saigon, Ho Chi Minh City, Vietnam

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FOREWORD

DR. LEOCADIO S. SEBASTIAN

Regional Program Leader (Southeast Asia), CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Greetings !

We at the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) are very delighted to partner with CABI in sponsoring this workshop on the "Impact of Climate Change on Crop Pests and Diseases, and Adaptation Strategies for the Greater Mekong Sub-region (GMS)."

This event is quite timely as it brings together world-class experts on pests and disease management, including national partners to discuss how agriculture, farmers in particular, can cope with the challenges brought about by climate change.

Keen observations in the field confirms that pests and diseases are indeed evolving rapidly to adapt to climate change. Hence, CCAFS would be very interested to know what actions, measures and strategies can be jointly pursued to secure the livelihoods of farmers and maintain food security under climate change.

Briefly, CCAFS is a 10-year strategic research partnership of CGIAR and Future Earth. It brings together the world's leading scientists on climate science, agricultural science, development research and earth system science. Our primary concern is to identify and address the most important interactions, synergies and trade-offs among climate change, agriculture and food security. CCAFS has 3 focus countries in Southeast Asia, namely Vietnam, Cambodia and Laos.

Most of CCAFS's R4D interventions will be implemented in these countries. In addition, Indonesia will be the focus of our work on mitigating the impact of oil palm as a driver of deforestation. Moreover, we will also work in the Philippines to mitigate the effects of sea level rise (risk mitigation and coping with tidal surge in coastal areas), and in Myanmar as a highly vulnerable area that will be targeted for future expansion.

I congratulate CABI in leading the conduct of this workshop - an event that will help us plan and prepare the best set of actions we can do together under climate change. Discussions of the workshop will enable us to deliberate, diagnose and identify optimum efforts that will benefit the rural poor.

I am therefore very happy in joining CABI in welcoming all participants to this workshop.

Sincerely yours,

INTRODUCTION

Climate change can induce elevated temperatures, droughts, rising sea-levels, floods, changes in wind patterns and abnormal weather. These events can cause changes in ecosystem balance that can disrupt ecosystem services and favor crop pest development resulting in heavy crop losses, heavy / injudicious pesticide use and in extreme cases, poverty, due to disruption of livelihoods.

At the moment, farmers' pest management practices and pesticide use are causing environmental and human health concerns in food crop agro-ecosystems. Climate change is adding new dimensions to the multiple challenges agricultural policy makers and farmers are facing. However, links between climate change and pest scenarios are not well known, and much less known are adaptation options that may be adopted by agricultural policy makers and farmers to reduce vulnerability.

Recent expansion and advances of insect and disease phenologies may be associated with regional increases in mean or minimum temperatures, like pests in Japan and rice blast. Crop pests and diseases have made significant pole-ward shifts of 2.7 ± 0.8 km per year since 1960 threatening global food security by the emergence and spread of crop pests and pathogens. Spread is facilitated primarily by human transportation, but climate change allows establishment. For instance, *Nezara viridula*, a rice pest, shifted its distribution range about 70 km north from 1960 to 2000.

Climate change also affects natural enemies and their interactions with pests in terms of predation behavior, mobility, tolerances and adaptive responses to temperature changes and wind patterns.

Many pests and pathogens exhibit considerable capacity for generating, recombining, and selection capacity and thus, there is little doubt that any new opportunities resulting from climate change will be exploited by them. The extent to which crop pests, their natural enemies and pathogens adapt in response to global warming and the impact on food production, especially in the GMS region, is still largely unknown. Better understanding of mechanistic effects on crops will be needed to develop realistic predictions on crop production on a regional scale and thereby, assist in the development of more robust regional food security policies.

Changes in intensity and wind patterns may have contributed to China's recent pest outbreaks in rice production. Increase in drought frequencies and intensities can also cause pests, such as army worms and locusts, to outbreak. Failure to take into account climate change induced pest scenarios in land use planning and farm management can exacerbate their impacts.

OBJECTIVES

- To assess climate change scenarios and their potentials in inducing pest and disease developments in the Greater Mekong Sub-region (GMS) region;
- To develop a process to assess the impact of climate change induced pests and diseases on major food crops in the GMS region; and
- To establish a process for developing adaptation strategies that will reduce the vulnerability of major food crop systems to losses due to pests and diseases in the GMS region.

EXPECTED OUTPUTS

- Climate change scenarios and their impact on pest and disease development in food crops in the GMS assessed;
- Process to assess the impact of climate change induced pests and diseases on major food crops in the GMS region developed;
- Process for developing adaptation strategies that will reduce the vulnerability of major food crop systems to losses due to pests and disease in the GMS region developed; and
- A plan for implementation of recommendations outlined.

PROGRAM

DAY ONE

Wednesday, 30 July 2014

8.30 a.m.	Registration
9.00 a.m.	Welcome address **Dr. Leocadio S. Sebastian** Regional Program Leader (Southeast Asia) CGIAR-CCAFS, Vietnam
9.15 a.m.	Opening remarks **Dr. Wai Hong Loke** Regional Director, CABI Southeast Asia, Malaysia
9.30 a.m.	Official address and opening **Dr. Nguyen Xuan Hong** Director General, Plant Protection Department, MARD, Vietnam
9.45 a.m.	Introduction to workshop objectives **Dr. K.L. Heong / Dr. Monina M. Escalada** Associate Principal Scientist, CABI Southeast Asia, Malaysia / Communication Scientist, Visayas State University, Philippines
10.00 a.m.	Coffee break
10.15 a.m.	Group photograph

Session 1. Climate Change and Pest Scenarios in Food Crops

Chairperson: Dr. Wai Hong Loke

10.20 a.m.	Climate change impact on food security **Dr. Oliver Schweiger** Senior Research Scientist, UFZ Germany

10.40 a.m. Impact of climate change on rice diseases
Dr. Adam Sparks
Plant Disease Management Specialist,
IRRI Philippines

11.00 a.m. Understanding the impacts of changing climates on insect pests on global, regional and local scales: A modeling and GIS mapping approach
Dr. Jürgen Kroschel
Science Leader Agroecology / IPM
International Potato Center / Global Crop Diversity Trust, Peru

11.20 a.m. Effects of global warming on rice pests
D**r. Jiranan Piyaphongkul**
Kasertsart University, Thailand

11.40 p.m. Climate change experiments: Limitations of research in laboratories and greenhouses
Dr. Lu Zhongxian
Deputy Director,
Institute of Plant Protection and Microbiology, ZAAS China

12.00 p.m. Question and answer session

12.30 p.m. Lunch

Session 2. Frameworks for Sustainable Agricultural Programs

Chairperson: Dr. Monina M. Escalada

2.00 p.m. Climate change adaptation plans of FAO
Mr. Jong-Ha Bae
FAO Representative, Vietnam

2.20 p.m. Climate Change Affecting Land Use in the Mekong Delta: Adaptation of Rice-based Cropping Systems (CLUES)
Dr. Ngo Dang Phong
IRRI Post Doctoral Fellow,
Can Tho University, Vietnam

2.40 p.m. Plantwise: A framework for sustainable plant health in support of resilience to climate change
Dr. A. Sivapragasam
Deputy Regional Director,
CABI Southeast Asia, Malaysia

3.00 p.m. The Environment-Friendly Agriculture Promotion Act of South Korea
Dr. Yoo Han Song / **Dr. K.L. Heong**
Professor Emeritus, Gyeongsang University, South Korea / Associate Principal Scientist, CABI Southeast Asia, Malaysia

3.20 p.m. Question and answer session

3.40 p.m. Coffee break

Session 3. Climate Change Adaptation Strategies focusing on Crop Pests and Diseases

Facilitators: Dr. K.L. Heong / Dr. A. Sivapragasam

4.00 p.m. Key issues in adaptation strategies for pests and diseases
Group discussion

5.00 p.m. End

7.00 p.m. Dinner reception (venue to be confirmed)

DAY TWO
Thursday, 31 July 2014

8.30 a.m. Recap of Day One
Dr. K.L. Heong / Ms. Su Li Khing

Session 4. Communications and Funding in Developing and Implementing Adaptation Strategies

Chairperson: Dr. Jürgen Kroschel

9.00 a.m. Challenges in communicating climate change adaptation strategies to manage pests and diseases
Dr. Monina M. Escalada
Communication Scientist,
Visayas State University, Philippines

9.20 a.m. GEF-6: Assessing GEF country allocation funds
Ms. Cristina M. Regunay
OIC Chief,
Department of Environment and Natural Resources, Philippines

9.40 a.m. Question and answer session

10.00 a.m. Coffee break

Session 5. Group Discussions

Facilitators: Dr. K.L. Heong /
Dr. Monina M. Escalada

10.30 a.m. **Workshop 1**. Research, development and policy issues on climate change and what it means for crop pests and diseases

12.30 p.m. Lunch

2.00 p.m. Presentation on Workshop 1

2.30 p.m.	**Workshop 2**. Adaptation strategies and techniques to combat pests and diseases in a sustainable manner
4.30 p.m.	Coffee break
5.00 p.m.	Presentation on Workshop 2
5.30 p.m.	End

DAY THREE
Friday, 1 August 2014

8.00 a.m.	Recap of Day 2
8.15 a.m.	**Workshop 3.** Ideas on issues, topics, ways and action plans beyond the workshop
10.00 a.m.	Presentation on Workshop 3
10.30 a.m.	Coffee break
11.00 a.m.	Depart for My Tho
12.30 p.m.	Lunch at My Tho
2.00 p.m.	Depart for Long An
4.30 p.m.	Return to Ho Chi Minh City

SPEAKERS

Dr. Nguyen Xuan Hong
Director General,
Plant Protection Department,
MARD, Vietnam

Dr. Leocadio S. Sebastian
Regional Program Leader
(Southeast Asia),
CGIAR-CCAFS, Vietnam

Dr. Oliver Schweiger
Senior Research Scientist,
UFZ Germany

Dr. Adam Sparks
Plant Disease Management
Specialist,
IRRI Philippines

Dr. Jürgen Kroschel
Science Leader Agroecology /
IPM,
International Potato Center /
Global Crop Diversity Trust,
Peru

D**r. Jiranan Piyaphongkul**
Kasertsart University, Thailand

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IRRI Post Doctoral Fellow,
Can Tho University, Vietnam

Dr. Wai Hong Loke
Regional Director,
CABI Southeast Asia, Malaysia

Dr. A. Sivapragasam
Deputy Regional Director,
CABI Southeast Asia, Malaysia

Dr. K.L. Heong
Associate Principal Scientist,
CABI Southeast Asia, Malaysia

Dr. Monina M. Escalada
Communication Scientist,
Visayas State University,
Philippines

Dr. Yoo Han Song
Professor Emeritus,
Gyeongsang University,
Chinju, South Korea

PARTICIPANTS

Dr. Nguyen Xuan Hong
Director General,
Plant Protection Department,
MARD, Vietnam
E: nxhong4456@yahoo.com

Dr. Leocadio S. Sebastian
Regional Program Leader
(Southeast Asia),
CGIAR-CCAFS, Vietnam
E: l.sebastian@irri.org

Dr. Oliver Schweiger
Senior Research Scientist,
UFZ Germany
E: oliver.schweiger@ufz.de

Dr. Adam Sparks
Plant Disease Management
Specialist,
IRRI Philippines
E: a.sparks@irri.org

Dr. Jürgen Kroschel
Science Leader Agroecology /
IPM,
International Potato Center /
Global Crop Diversity Trust,
Peru
E: j.kroschel@cgiar.org

D**r. Jiranan Piyaphongkul**
Kasertsart University, Thailand
E: jxp816@gmail.com

Mr. Jong-Ha Bae
FAO Representative, Vietnam
E: JongHa.Bae@fao.org

Dr. Lu Zhongxian
Deputy Director,
Institute of Plant Protection and
Microbiology, ZAAS China
E: luzxmh@gmail.com

Dr. Ngo Dang Phong
IRRI Post Doctoral Fellow,
Can Tho University, Vietnam
E: n.phong@irri.org

Dr. Wai Hong Loke
Regional Director,
CABI Southeast Asia, Malaysia
E: w.loke@cabi.org

Dr. A. Sivapragasam
Deputy Regional Director,
CABI Southeast Asia, Malaysia
E: a.siva@cabi.org

Dr. K.L. Heong
Associate Principal Scientist,
CABI Southeast Asia, Malaysia
E: kl.heong@cabi.org

Dr. Monina M. Escalada
Communication Scientist,
Visayas State University,
Philippines
E: m.escalada@gmail.com

Dr. Teodoro S. Solsoloy
Director III / Scientist I,
Bureau of Agricultural Research
Elliptical Rd., Diliman, Q.C.
Philippines
E: tsolsoloy@bar.gov.ph

PARTICIPANTS

Dr. Payorm Cobelli
Senior Scientist (Plant Pathology & Plant Molecular Biology),
Bureau of Rice Research & Development (BRRD),
Rice Department (RD)
50 Phaholyothin Rd.,
Chatuchack, Bangkok,
10900 Thailand
E: payorm.c@rice.mail.go.th

Ms. Wantana Sriratanasak
Senior Entomologist,
Bureau of Rice Research & Development (BRRD),
Rice Department (RD)
50 Phaholyothin Rd.,
Chatuchack, Bangkok,
10900 Thailand
E: wantana.s@rice.mail.go.th

Dr. Ho Van Chien
Director,
Southern Regional Plant Protection Center,
Long Dinh, Tien Giang
Vietnam
E: hvchien@vnn.vn

Mr. Le Quoc Cuong
Vice Director,
Southern Regional Plant Protection Center,
Long Dinh, Tien Giang, Vietnam
E: lqcuongtg@gmail.com

Dr. Buyung Hadi
Entomologist,
International Rice Research Institute (IRRI),
Los Banos, DAPO 7777,
Metro Manila, Philippines
E: b.hadi@irri.org

Ms. Soojin Kim
Programme Officer (UNV),
Sustainable Environment and Natural Resources Management
Food and Agriculture Organization of the United Nations
E: Soojin.Kim@fao.org

Dr. Yoo Han Song
Professor Emeritus,
Gyeongsang University,
Chinju, South Korea
E: songyoohan@gmail.com

Mr. Am Phirum
Deputy Head,
Agricultural Land Resources Management Department,
General Directorate of Agriculture,
#54B, St. 656, Toek Laak 3,
Toul Kork, Phnom Penh
Cambodia
E: amphirum@yahoo.com

Dr. Nguyen Van Hoa
Director General,
Southern Horticultural Research Institute (SOFRI),
Long Dinh, Tien Giang, Vietnam
E: hoavn2003@gmail.com

SECRETARIAT

Dr. K.L. Heong
Associate Principal Scientist,
CABI Southeast Asia, Malaysia

Dr. Ho Van Chien
Director,
Southern Regional Plant Protection Center, Vietnam

Dr. Wai Hong Loke
Regional Director,
CABI Southeast Asia, Malaysia

Dr. Monina M. Escalada
Communication Scientist,
Visayas State University, Philippines

Mr. Fook Wing Chan
IT Specialist,
CABI Southeast Asia, Malaysia

Ms. Su Li Khing
Scientist,
CABI Southeast Asia, Malaysia

FIELD VISIT

Friday, 1 August 2014

The TV series on ecological engineering in rice ecosystems was launched in Tan An City, the capital of Long An province on 22 May 2014, in conjunction with the "International Day for Biodiversity (IDB)". Twenty 15-minute episodes[1] were developed using *entertainment education*[2] principles to educate farmers about biodiversity, ecosystem services and ecological engineering techniques to conserve biodiversity in rice ecosystems.

Participants will be visiting a village in Long An province to see the practice of ecological engineering by farmers growing nectar-rich flowering plants[3] on the bunds, and abstaining from insecticide use during early crop stages. This strategy serves to conserve and augment natural biological control services.

The field site is about an hour by road from Ho Chi Minh City.

[1] The TV series if available from Long An TV website http://goo.gl/aBB5sh

[2] Entertainment education is the process of designing and implementing a program (e.g. a TV series) to entertain and educate so as to increase audience members' knowledge, create favorable attitude, shift norms and change behavior.

[3] The flowers provide shelter, nectar, pollen and serve as alternative hosts for natural enemies.

TRAVEL INFORMATION

VENUE

All delegates will stay at the Hotel Continental Saigon.

The workshop will be held in the “Vietnam Room”.

Hotel Continental Saigon
132 - 134 Dong Khoi St., Dist 1,
Ho Chi Minh City, Vietnam.
T: (84.8) 38 299 201
F: (84.8) 38 290 936
E: continentalhotel@vnn.vn
W: http://continentalsaigon.com/

HOTEL LOCATION

The approximate distance between Hotel Continental Saigon and the Tan Son Nhat International Airport is 8.4 km (21 mins drive).

GETTING THERE

After you have landed and cleared the immigration and customs counters, turn left when you exit. You will see counters for moneychangers. There will be several counters for taxi service. Please purchase tickets for the taxi at the counters.

Do not purchase from taxi peddlers.

You can consider using Mai Linh taxi or the Vinasun taxi. The Mai Linh company has a counter on your right after you clear customs.

The fare to the hotel is about USD15 or VND 300,000.

EXCHANGE RATE

The approximate current exchange rate between USD and the Vietnamese Dong is shown below. Please check with the latest exchange rate when you change your money.

USD 1.00 = VND 21,180

INTERNET

Wi-Fi is available in the hotel rooms and in the lobby.

PLUGS / SOCKETS AND WATTAGE

Voltage is 127 – 220 V. Plug types are A, C and G.

CLIMATE

The weather is hot and rainy during the end of July to August. The temperature varies from 24 - 33°C.

TIME ZONE

The time zone in Ho Chi Minh City is GMT + 7 hours.

PLACES OF INTEREST AROUND THE HOTEL

- Municipal Theatre
- Notre Dame Cathedral
- City Post Office
- People's Committee of Ho Chi Minh City
- Reunification Palace
- Ben Thanh Market
- Shopping malls
- Restaurants