

TRAVEL REPORT FORM

출장보고서

결 재	선임연구원	팀장	부서장	원장
	03/02	03/02	03/02	03/03
협 조	김광형	김옥연	김형진	정진승

I. Reporter 보고자

Department 소속	Position 직위(직급)	Name 성명	Travel Date 날짜	Note 비고
연구본부 대외협력실	선임연구원 스태프	김광형 Christianne Aikins	2016/02/15- 2016/02/20	필리핀 나가시

II. Major Activities 주요업무 수행내용

1. Main Contents and Activities 주요내용 및 활동

-2016년 IRI 공동연구 수행

- 1) 4차 BAWP 기술워크숍 공동개최 (4thAnnual Technical BAWP Workshop)
- 2) BAWP 과제 협의
- 3) Bicol Rice Disease Project (BIRD)에 대해 BAWP 파트너들과 지역 참가자들에게 소개하고 피드백 수렴

2. Relevance to APEC Climate Center's Activities 결론 및 소감

-4차 BAWP 기술워크숍을 통해 지역 파트너 및 참가자들에게 APCC와 APCC의 주요 연구활동 등을 소개하였고, 앞으로 2년여간 CAMDT-Disease 의사결정도구를 통해 생산할 수 있는 정보 및 활용성에 대해 공유하고 피드백을 받을 수 있었음

-IRI와 CAMDT에 대한 구체적인 개발계획 및 활용방안에 대해 협의

-통그로병 모형 개발을 위한 현장조사자료 수집을 위해 농업부 비콜지역센터와 필드시험 기획: 5월 중에 필드시험을 시작하기 위해 MOA의 형태로 계약을 체결하기로 함

※ 자세한 내용은 첨부된 출장보고서 참고 (BIRD_Travel report_20160229.docx)

III. References 참고사항

(with attachment of any information or report in case of attendance of conferences, workshops and meetings) 학술대회, 워크숍, 회의 등 참석 시 관련 정보 및 문서 첨부

1. Presented and Collected Materials 주요 수집자료

2. Suggestions and Remarks 건의사항

Travel Report for Bicol Project

[2016.02.29. Prepared by Kwang-Hyung Kim @ Research Department and Christianne M Aikins @ External Affairs Department]

□ Travel summary

1. Name and position of traveler(s): Kwang-Hyung Kim (Research Fellow, Research Department), Christianne Aikins (International Project Officer, External Affairs Department)

2. Destination and travelling period: Naga City, the Philippines; 15-20 February, 2016

3. Purpose of Travel:

- For the APCC-IRI collaborative project, APCC has joined the Bicol Agri-Water Project of IRI funded by USAID as an implementing partner for the development of a rice disease/pest decision support tool

☞ To support and participate in the 4th Annual BAWP Technical Workshop

☞ Build relations with BAWP staff and partners

☞ Develop MOA with the Department of Agriculture: Regional Field Office 5 Bicol (DA RFO 5)

☞ Link expert Dr. Avelino Raymundo (an emeritus professor of UPLB in the Philippines, a plant epidemiologist) with Dr. Evangeline Trinidad (a chief of the Integrated Laboratory Division of the DA RFO 5, Bicol) and Dr. Elena Delos Santos (Regional Technical Director of the DA RFO 5, Bicol) to discuss the collaboration in data collection for rice disease/pest incidence in the Bicol region.

4. Expected outcomes:

- Increased awareness, support, and interest of BIRD through APCC presentations and presence

- Provide opportunity for project partners to familiarize with the models and tools for assessing and managing climate risks to agriculture and water resources.
- Enhanced relations with project partners, IRI, and local contacts
- Develop plan for field trial for data collection
- Increased visibility of APCC research and projects in the Asia Pacific

5. Itinerary:

Date	Hotel Accommodation	Time	Item
15/02/2016	Remington	21:00 - 23:55	Flight (Busan to Manila)
16/02/2016	Villa Caceres Hotel	09:00 - 09:30	Shuttle (Hotel to Airport)
		11:20 - 12:10	Flight (Manila to Naga)
		15:00 - 17:00	Partner's Meeting
17/02/2016	Villa Caceres Hotel	08:00 - 17:00	BAWP Technical Workshop
18/02/2016	Villa Caceres Hotel	08:00 - 17:00	BAWP Technical Workshop
19/02/2016	Villa Caceres Hotel	08:00 - 17:00	BAWP Technical Workshop
20/02/2016	N/A	07:00	Wrap-up workshop finances
		10:05 - 11:05	Flight (Naga to Manila)
		15:05 - 20:00	Flight (Manila to Busan)

□ Meeting reports

1. Partner's Meeting

Date: February 16, 2016

Location: Villa Caceres Hotel in Naga City, the Philippines

Purpose: Introduce new staff and review

Participants: BAWP staff, IRI (Remi Cousin, Dr. Bradfield Lyon, Dr. Eunjin Han, Dr. Amor Ines), and APCC (Dr. Kwanghyung Kim, Christianne Miko Aikins)

Chair: Dr. Agnes Rola

Opening: Dr. Rola welcomes everyone to Naga and discusses major progress on the BAWP project

Introductions: Each person introduced themselves and their connection to BAWP. Dr. Rola introduced new BAWP staff members and their roles

BAWP project updates:

- Dr. Rola welcomed everyone to Naga and discusses major progress on the BAWP project
- Dr. Eunjin Han talked about progress made with CAMDT and the potential features
- Amor Ines discussed WEAP
- Dr. Kwanghyung Kim gave a brief overview of how disease modelling will be integrated into CAMDT
- Dr. Remi Cousin noted that the Knowledge Portal (KP) was not a focus of 2015, but will be as the project wraps up
- Dr. Bradfield Lyon discussed the Climate Predictability Tool (CPT) and how it will be used to assess and account for bias in the climate predictions for the Bicol region

Workshop overview: Brief overview of the upcoming workshop

Discussion on KP features: Although Dr. Rola attempted to get input from the BAWP staff, there was minimal discussion, in large part because the upcoming workshop would cover this topic.

Actions: None

2. Workshop – February 17-19, 2016

Presentations:

1. Dr. Evangeline C. Dela Trinidad (Chief, Integrated Laboratories Division and Regional Crop Protection Center, Dept. of Agriculture, RFO-5) – *Pest Surveillance: A tool in developing prediction models for rice*

- Overview of the Pest Surveillance Tool, which develops prediction models for rice and discussed the use of GIS in Pest Monitoring & Detection by data visualization/query; Survey data collection, management, and analysis; Risk and pathway analysis; and Change detection
2. Dr. Avelino D. Raymundo (Chief, Professor Emeritus Crop Protection Cluster, U.P Los Banos Laguna, Philippines) – *Introduction to Modelling and Simulation of Plant Disease Epidemics*
- Discussed the association of climate change with the occurrence of pest and disease, as well as quantitative techniques in epidemic analysis
 - Overview of the Disease Forecasting Network and case studies
3. Dr. Kwanghyung Kim (APCC) – *Application of rice disease model for seasonal yield loss simulation in the Bicol region*
- Discussed the role of climate in seasonal yield loss due to diseases and pests, as well as the potential to respond to climate predictions with Climate Smart Agriculture
 - Discussed BIRD and the final outputs
4. Dr. Bradfield Lyon (IRI) – *Climate Predictability Tool*
- Discussed the role of climate predictability in developing useful tools for agriculture
 - Brief introduction to CPT
5. Dr. Eunjin Han (IRI) – *CAMDT*
- Gave an overview of CAMDT and planned features
4. Dr. Amor Ines (IRI) – *Water Evaluation and Planning tool*
- Discussed the role of WEAP in using both the Quinale A Model and the Lake Buhi Model.
4. Remi Cousin (IRI) – *Knowledge Sharing Portal*
- Discussed the updates on the KSP and next steps: updated rainfall data from all the project sites

Day 2

The second day of the workshop was devoted to hands-on learning through practical exercises. Participants were sub-divided into simultaneous training sessions. Dr. Eunjin Han led the workshop on Climate-Agriculture Modeling Decision Tools (CAMDT) with support from Dr. Kwang-Hyung Kim. WEAP was facilitated by Dr. Amor Ines from the Michigan State University.

The activities of the workshops were a combination of step-by-step demonstration and in-depth discussion coupled with practical exercises. Participants were also permitted to ask

questions all throughout the workshop. They were also given take-home activities to reinforce learnings.

Day 3

The last day featured final training sessions for CAMDT and WEAP, followed by presentations from participants on their mini-projects. The afternoon featured a session on CPT led by Dr. Bradfield Lyon. Dr. Cely Binoya wrapped up the workshop with a summary and closing remarks.

3. Field Trial Meeting and MOA with DA RFO 5 – February 19, 2016

Date: February 19, 2016

Location: Villa Caceres Hotel in Naga City, the Philippines

Purpose: Discuss field trial details and MOA

Participants: Dr. Avelino Raymundo (an emeritus professor of UPLB in the Philippines, a plant epidemiologist), Dr. Evangeline Trinidad (a chief of the Integrated Laboratory Division of the DA RFO 5, Bicol), Dr. Elena Delos Santos (Regional Technical Director of the DA RFO 5, Bicol), Dr. Kwanghyung Kim (APCC), and Christianne Miko Aikins (APCC)

Chair: Dr. Kwanghyung Kim

Notes: Details about field trial for data collection were discussed.

1) Two trial sites were selected: Polangi and DA experimental plot in Pili. Trial site should be near AWS location, so that it can get weather data. Trial site should be within a major rice cultivation area and be included in the BAWP study sites. Polangi was selected due to a good maintenance of the AWS by the municipality and it is known as an endemic site for the tungro disease every year. Another site is an experimental plot within the DA station (Pili). There is an AWS in Pili, maintained by PAGASA. And Dr. Trinidad said that there are always large amount of inoculum sources of the tungro disease existing there, thus the disease infestation should be always assured. And because it is near the RCPC office, data collection is easy. Farms in Polangi will be rented from the owner, with a conditional contract that all products from the farms will belong to the owner at the end of trial.

2) Trial protocol was designed: For each site, two trial farms will be selected. Within each trial farm, four replicate plots will be separated. Each replicate plot needs to be distant to each other and the size of plot will be 100 hills x 100 hills, total 10,000 hills per a replicate plot. A rice cultivar susceptible to the tungro disease will be selected by Dr. Trinidad's recommendation. Data collection will be conducted once a week from 15 days after transplanting until 8 weeks after transplanting. All managements including fertilizer, agrochemical spray, weeding will be conducted following regular farming protocol, except for insecticide spray. The insecticide spray is prohibited during the trial period (for 8 weeks from transplanting). Data collection will be done by a new staff at RCPC under Dr. Trinidad's supervision. The new staff hired for the project should have a basic knowledge and experience on tungro disease and be capable of distinguish the typical symptom of tungro disease from other similar symptoms by nutrient deficiency or disease/pest damages. The

level of training will be the first priority when hiring the staff for the trial. Dr. Raymundo will act as a resource person for the trial and help to analyze the data for the model development and validation.

3) Trial period was discussed: Transplanting will be done from late May to early June. Contracting with the owners of the trial farms need to be done beforehand. Trials can be repeated based on this first trial results (based on the extent of epidemics) in around September or October.

MOA: An MOA will be created, which will act as a formal contract between DA RFO 5 and APCC. While a draft of the MOA has already been developed, the details of the field trial must be finalized and financial estimates created before the MOA can be finalized.

□ Action Items and Next Steps

1. Tech. Workshop wrap-up

- Technical workshop project and financial reporting (By Miko)

2. Field trial for data collection

- Starting from March, a field trial protocol will be circulated with Dr. Trinidad and Dr. Raymundo. Financial estimates will be provided by Dr. Trinidad together with the trial protocol.
- Once the protocol is completed, contracting with farmers owning the trial farms need to start by Dr. Trinidad, and other decisions on the protocol need to be set by the end of April.

3. MOA with DA RFO 5

- After the field trial specifics and financial estimates are created, ideally by the end of March or beginning of April, the MOA will be drafted by Miko and signed by both parties.

4. CAMDT-Disease development

- Based on feedbacks from the local partners at the Workshop, CAMDT-Disease will focus on tungro disease, and sheath blight and bacterial leaf blight from EPIRICE model.
- Putting a seasonal pest outlook from CAMDT-Disease on the CLEA bulletin for each municipality requires more discussions on 'how' and 'who' with other implementing partners such as IRI and DA RFO 5.
- Tungro simulation model will be developed from a basic concept note from Dr. Raymundo and will require a lot of literature review to realize the concept to model algorithm due to lack of experimental data. Translating the algorithm in Stella language into R script will be done by May.