

International Short Course on Ecosystem Health

Year 2020 Volume 1

- Interactive Learning Activities
- OH Problem Identification

- Laboratory Practice
- One Health Capacity Development

- Risk Communication & Community outreach
- Interview

CONTACT

Editor

Asst. Prof. Dr. Saengduen Moonsom
Dr. Somphob Leetachewa
Mr. Pratchaya Minsakorn

Prepared by

THOHUN-National Coordinating Office
9th FL, Tranakchit Harinasuta building,
420/6 Ratchawithi Road, Bangkok
Thailand, 10400

Contact



contact.thohun@gmail.com
www.facebook.com/ncothohun
<https://thohun.org>

THOHUN TELI



THOHUN TELI was adapted from the “ Tufts Environment Literacy Institute (TELI) ” workshop that organized by Tufts Institute for the Environment (TIE). It has been conducted in Year 2 to 5 of the OHW project under EPT2 program, and Year 1 of OHW-NG. The course developed by integration of OH into the field and community-based learning, curricula and research, access resources, design ideas and engage with the community. It participated by multi-disciplinary graduate students and governmental personnel from the health sector of national ministries by multi-disciplinary experts. Before field practicum, the fun damental knowledge has been delivered to participants as an online course consisting of three 3 modules



Two weeks of field-based and project-based classes is an out-roof program designed with a concise theoretical content and hands-on exercises in the target area. This allows participants to apply knowledge and skills in biological hazard detection, prevention, control, risk communication, and social innovation to the field. The activity also includes a field survey and facilitator's planning for the didactic sessions and group activities.

OBJECTIVES

1

To gain a **strong knowledge of complex interconnections** of health-related environment, companion/ domestic/ wild animals, and human

2

To improve **One Health Core Competencies (OHCCs) and enhance technical skills** such as epidemiologic approach for infectious diseases, cause identification, participatory epidemiology, entrepreneurial solution, and social innovation for OH problem including risk assessment and communication of the future workforce (undergraduate and graduate students). These aim to increase experiences coping with complex health issues in the real situation of the village through both multi- and trans-disciplinary approach.

3

To document the studying of **OH problems and corresponding solutions** after field experience.





Background of the Lawa Model

Assoc .Prof. Dr. Sirikachorn Tangkawattana

Background of the OH villages in the Bann Phai district, Khon Kaen, including geographic locations, population, and existing health problems was presented. Moreover, the Lawa model, which is a sustainable, integrated opisthorchiasis control program using the Eco-Health approach, One Health approach, government commitment to sustainable control, stakeholder meeting, a baseline survey of intermediate, reservoir hosts, questionnaire in-depth interview, on-site health check, and targeted treatment was overviewed.

One Health Perspective

Assoc. Prof. Dr. Pratap Singhasivanon

Participants were introduced with OH perspective of the epidemiologic approach for the infectious disease, and practised on Participatory Epidemiology (PE) to capture infectious disease problems and other health problems, as well as to acquire qualitative information within a short time frame.



One Health is a collaborative, multisectoral, and transdisciplinary approach working at the local, regional, national, and global levels with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.

Geographic Information Systems

Mr. Irwin F. Chavez

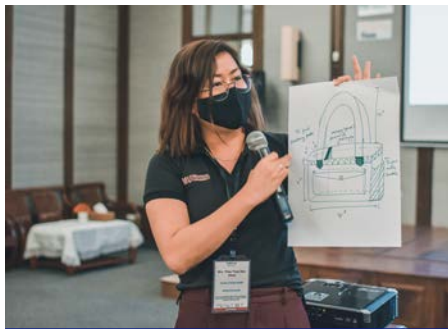
In parallel with PE learning, students also studied and practised on **Geographic Information Systems (GIS)**. The basic geography and the fundamental elements are reviewed in terms of how they work, applications, global systems from other countries/regions, and user-level experience. A software, Epicollect5, was selected to be used for the geographic survey. Participants were experienced on how to set up a project, design a survey form, data downloading into a smartphone, data collecting, and data visualization and management.



Design Thinking

Mr. Pisate Virangkabutra

This session was mandatory for the participants as a design thinking system. It is a human-centred approach (mindset) towards innovation to create products, processes, and services that will be adopted by people. Students were divided into four groups for research exercises. The instructor explained how research works, such as interviews, resource management, co-creation workshop, and graphic design, etc.





Visiting The OH Village

Since participants have learned PE, they were divided into three groups, i.e.

Group 1 : Water-borne disease and wastewater management.

Group 2 : Vector-borne disease.

Group 3 : Helminthic disease.

“ A survey using questionnaires under facilitators’ and local officers’ guidance ”





Student visited the village at Ban Lawa subdistrict to proceed PE as assigned by facilitators. The students conducted a survey and collected the necessary information of villagers on the three areas of the given topic with

a designed questionnaire. In this regard, the villagers were also asked to collect their faecal and their buffalo faecal. These samples will have used to practice the technical skills in stool examination by week 3.

Laboratory Practice

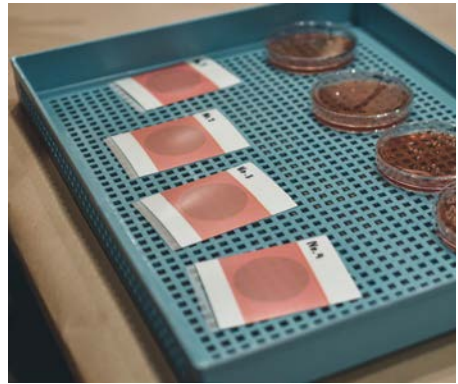
Participants had the opportunity to laboratory practice on water quality assessments, diagnosis of helminthic, and vector-borne diseases.



Water Quality Assessments

Asst. Prof. Dr. Preeyaporn Koedrith

Technical skills on the quality assessments of water were transferred to students such as water sampling methods from the surface, deep, drinking water, and their physical and chemical properties of water, including their biological testing.



Vector-Borne Disease

Asst. Prof. Dr. Ronald Enrique Morales Vargas

The procedures on mosquito adult trapping, mosquito larval survey and mosquito identification were provided previously through e-learning modules. On-site, participants, set up traps, placed their traps around the training venue and collected them in the following day. Participants practised on mosquito identification using a mosquito guide book and guidance from the instructors.



Diagnosis of Helminthic

Dr. Pannamas Maneekarn

Assoc. Prof. Dr. Sirikachorn Tangkawattana

Common human and animal helminths were demonstrated by microscopy. Participants practised on helminthic and protozoal detection by microscopy using direct stool smear and Kato thick sample methods with identification keys provided as posters, and handbooks.



Skill Transfer

Developing **S.M.A.R.T.** goals



Participants were guided on development SMART. Using ball-basket activity was a model for their planning for the hazard detection section. Instructors provided the participants with different specific statements, different details, and

complexity in the context and allowed students to discuss what/how much the S, M, A, R, and T fit over each given statement. Then, put the ball into SMART marked baskets.

Team Building



Planning & Management, Collaborations & Partnerships, Culture & Belief, Leadership, Systems Thinking

- Take care candle
- Water carrying

At the weekend, team building and OHCCs development were delivered to participants through 4 outdoor games.

Communications & Informatics

- Drawing King
- Safe your egg



The RACI model



The RACI model, a delegating tool to identify roles and responsibilities group members for project-based assignments, was also introduced. Three-multidisciplinary groups were divided and asked to develop SMART objectives of their duties and activities to fulfill their purposes. These included members' assignments to be responsible for events, such as developing



a questionnaire survey contents, questions for PE, sample size and locations for stool sample collection, mosquito adult trapping, mosquito larval survey, and water sampling from up-stream, mid-stream, and down-stream. Some groups practiced developing the questionnaire survey form using the Epicollect5 platform to collect demographic information of the respondent and knowledge/attitude/practice related to their assigned projects.

Visit OH village



Risk communication to villagers

The main activity of students in this section was related on how to disseminate the main findings, including results of field survey, interview, and laboratory analyses, to villagers in the effective way. The representative students from each group kindly made the short presentation about 20 min for risk communication regarding of sharing the significant outcomes and rehearsing of health education. The detailed information regarding the obtained results and findings of each student' group can be summarized as follows:





Group 1: Water quality & waste management

- Most of drinking water and usable water samples collected in La Wa village were met water drinking water standard and criteria.
- The main detection of total coliform bacteria and *E-coli* in drinking water samples may be possible resulted from personal hygiene and unclean-drinking water container.

Group 2: Vector borne disease

- There were discovering of the special *Mansonia* mosquito in La Wa, which can be the important cause of vector borne disease.
- Applying the good sanitation systems for controlling vector borne disease as (i) cleaning of house and setting area, (ii) cleaning of waste management and (iii) cleaning of water containers as breeding site should be considered as effective approach for vector borne disease controls.



Group 3: Helminthic infection

- Detecting of *Taenia* eggs and *Strongyloides* in faces samples.
- Possible causes of these findings may be related to personal hygiene of eating uncook food as well as walking barefoot.



Moruf Adebayo Salau

Ph.D. Global Health: Study Plan
B-Infectious Diseases, Faculty of Public
Health, Thammasat University

“It was an interesting short course fully loaded with impactful lectures, laboratory works, field data collection and communication of findings to the community in the penultimate day to the end of the program. Classically, a social innovation approach was used to address and communicate the problems detected to the community, I want to use this opportunity to wish future participants the best.”

Alina Pant

Ph.D student in Mahidol University
from Nepal

“This 2 weeks have been an amazing experience for me I have learned a lot from this THOHUN training and also I have made many new friends this course has taught me how to coordinate and collaborate and how to better understand about the three discipline of One Health that is animal health, environmental health and human health how to link between these three disciplines and also from this course we start we could study about the risk communication, the risk analysis and also we visited fields and then we could communicate with the villagers over there and then we had a amazing learning experience from this two weeks”

