

International Training Course on “Environmental Health and Food Safety”

**Faculty of Environment and Resource Studies, Mahidol University
7 – 21 December 2021**

1. Course Title:

Environmental Health and Food Safety

2. Duration

7 – 21 December 2021

3. Background and Rationale

Emerging discipline that examines relationship between the environment and human health are gaining awareness. With this regard, environmental quality is one of determinant factors affecting on human health status. Deteriorating environment become major threat to health and quality of life. Unquestionably, food and nutrition are vital to healthy life. Also, economic sectors such as agriculture, livestock, supply chain and logistics, and housing have profound impacts on human health. World Health Organization (WHO) defines food sanitation as a major context in environmental health area. Food contamination is acknowledged as an important health issue. Healthy and safe food has been governed by core agencies in Thailand and placed on their top agenda. The promotion of food safety in Thailand is one of the government’s priorities under “the Healthy Public Policies & Health Promotion Campaign”. Food should be safe for domestic consumption as well as for export. Environmental health of both natural and man-made types may potentially affect human health. Consumption of contaminated food may cause adverse impact on human health. Moreover, changes in climate may interfere the global food production and food security as well as emerging zoonosis.

Thus, the Faculty of Environment and Resource Studies put an attempt on a training program in environmental health focusing food security and related issues. This program offers a training course that provides an understanding of environmental health discipline linking with food related issues. Although food is essential to healthy life, it may be a major route if its contamination with toxic chemicals or food-borne pathogens via food web. Under concept of “Farm-to-Fork” or “Environment-to-Consumer”, the important related topics include organic agriculture, the standard of food production (e.g., GMP, HACCP), chemical and microbiological risk analysis, and so on. That would be an effective approach for solving the problem of food chemical and microbiological contaminations as well as minimizing environmental deterioration. This course will also provide the information of food quality control, food analysis both in chemical and microbiological parameters and food surveillance system in Thailand. Current issues on environmental risk assessment will also include. Updated knowledge and experiences of the development and movement of health system reform as well as research trend of health system in Thailand will be provided. The Royal Thai Government has overcome the emerging health crisis by undertaking radical health system in transition of past crisis in health system components since last few years.

4. Objectives

- 4.1 To develop well-educated people who have basic knowledge on environmental health with the emphasis on utilization to food relating issues
- 4.2 To improve the expertise in the environmental health and food safety aspects
- 4.3 To introduce a significant movement of health system reform in Thailand

5. Course Contents

5.1 Course Outline

- 1) Overview of Environmental Health
- 2) Integrating environment and health
- 3) “One Health” a better way for food safety beyond environmental health
- 4) National strategy of food safety and food quality control in Thailand
- 5) Toward a sustainable food system and health implication
- 6) Sustainability of food production in agricultural sector
- 7) Sustainability of food production in livestock sector with emerging zoonosis
- 8) Impacts of climate changes on food production and food security
- 9) Environmental risk assessment in food safety aspect
- 10) Food quality analysis and control and food surveillance system
- 11) Food quality standard
- 12) Public health risks to food hygiene and food contamination
- 13) Communication for food and nutritional development
- 14) Health system reform, its implication and health system research

5.2 Workshop/Practices

- 1) VDO-based practice: risk analysis of food and drinking water quality
- 2) VDO-based practice: food analysis of chemical and microbiological parameters

5.3 Case studies/Field trips

- 1) VDO-recorded field trip in the topic of “**Environmental risk assessment in food safety aspect in urban and rural Thailand**” at Nakhom Pathom and Kanchanaburi provinces
- 2) VDO-recorded field trip in the topic of “**Sustainable agriculture and food production in Thailand**” at Chiangmai and Petchaboon provinces
- 3) VDO-recorded field trip in the topic of “**Food safety program and quality assurance**” in Samut Sakorn and Nakhom Pathom provinces
- 4) VDO-recorded field trip in the topic of “**Industrial food production and food quality control**” based on local bio-resources in Ratchaburi and Samut Songkram provinces

Case studies on environmental health related to food safety and breakout group for mini-project discussion will be conducted. Training methodologies employed during this course via online Zoom platform include following activities:

- Lecture delivered by experts
- Discussion among participants
- Presentation of case study/mini-project by participants
- Online evaluation form

5.4 Advance Assignments: Country Report

- 1) General information of participant (1 page of A4 size paper) including; name of participant, educational background, country, name of affiliation, participant's position, duties and responsibilities (Briefly)
- 2) General information of the country (1-2 page of A4 size paper) including; geographical status of the country, climate, population, official language, social-educational-economic conditions, Gross National Products (GNP), Per-capita Income, major import and export goods, natural resources and environmental situation, etc.
- 3) Content (up to 4-5 pages of A4 size paper): The detail in your country report should cover with the following topics.
 - Current situation on environmental health with the emphasis on implementation to food related issues and food safety in your country.
 - Country policy related to environmental health and food safety.
 - The best practices related to environmental health, particularly in food safety.
 - Lessons learned about environmental health related to food safety.
- 4) Summary and recommendation (1 page of A4 size paper)
- 5) References and further information (If any) (1 page of A4 size paper)
- 6) Submission date: No later than **September 15, 2021**

6. Participant Criteria

- Age: No more than 40 years old
- Work experience in related fields: More than 2 years
- Education: Equivalent to Bachelor Degree or higher degree
- Language: Good command in English
- Availability to participate for the entire period of training course

7. Venue

This fifteen-day online course will be conducted on December 7 - 21, 2021 via Zoom cloud meetings from Faculty of Environment and Resource Studies, Mahidol University, Thailand.

8. Expected Results

Expected key results or knowledge is available for participants after completing training:

- Basic knowledge and concept of environment and human health areas.
- Information of current issue of food quality control and food surveillance system in Thailand.
- Understanding in chemical and microbiological risk analysis in food regimens
- Information of health system reform and the current research issues in Thailand.

9. Evaluation

- No paper examination after completing this training
- Participant must attend the class no less than 80% of total training period

10. Institution

10.1 Executing/Implementation Agency

- Implementation organization:

Faculty of Environment and Resource Studies, Mahidol University

- Staff availability:

15 Lecturers will be involved in this training.

20 Supporting staff will be in charge in this training.

- Training materials:

Hand-outs, VDO clips, electronic version of document and manual related to course topics are available.

- Equipment:

Computers, printers, LCD, media equipment, laboratory equipment are available.

- Other facilities:

Phone, fax, internet hours are available.

- Address:

Faculty of Environment and Resource Studies, Mahidol University
999 Phuttamonthon 4 Rd., Salaya, Phuttamonthon,
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- Course Leader:

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- Course Director:

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10.2 Collaborative Organization

- Chulalongkorn University, Thailand
- Maejo University, Thailand
- Prince of Songkla University, Thailand
- Silpakorn University, Thailand
- Thammasat University, Thailand