ERASMUS+

HIGHER EDUCATION – INTERNATIONAL CAPACITY BUILDING PROGRAM

Participatory and Integrative Support for Agricultural Initiative

Module 2
Environmental/Ecosystem for Sustainable Agriculture

Module 2

1. Scope Environmental/Ecosystem for Sustainable Agriculture

2. Team Leader: KhonKaen University

Member: 1. IRD/CIRAD (Agrinatura)/SupAgro

2. Helsinki University

3. Period: 12nd November – 1st December 2018

4. General Learning Objectives

1) To understand the effect of agriculture practice on environment

2) To identify the various of cropping systems for the sustainable agriculture

Date	Time	Topics	Resource persons
Thursday (8/11/18)*	All day	Arrival date of professor team	KKU staff
Friday (9/11/18)	9:00 – 16:00	Meeting group and discussion on the course outline and topic activities	KKU staff
Saturday (10/11/18)	9:00 – 16:00	Visit some exampled farms	KKU staff
Sunday (11/11/18)	All day	Arrival date of students (16 Thai students + 2 to 5 European students)	KKU staff

*EXPECTING DATE AND CAN BE CHANGED

*Session 1/1 (week 1): Nov 12th-17th, 2018
Session 1 Ecosystems service for sustainable agriculture in a challenging environment (week 1) Learning Objective(s): 1) To understand the common farming systems in northeast Thailand 2) To develop capacity for building a farming systems appraisal 3) To be able to identify and characterize a activity system at the household scale, i.e; a set of agricultural activities combined and interrelated with each other (cropping systems and animal rearing systems), and off-farm activities, guided by coherent decision taking 4) To be able to identify system properties of each household(productivity, profitability, vulnerability resilience and sustainability) Keywords: plant production, animal production, farming system, cropping system, animal husbandry system, environment, farmer's survey, Participatory Rural Appraisal, farm typology (Department of Agricultural extension and Agricultural systems, Department of Agricultural Economics)

Date	Time	Topics	Resource persons
Monday: 12 November 2018	8:30-9:00	Opening ceremony	Assist.Prof.Dr.Denpong Soodphakdee Vice President for Academic Affairs and Communications, KKU
	9.00-11.00	Introduction sustainability in Northeast Thailand: Challenge issues on sustainable agriculture Northeast Thailand	Assoc. Prof. Dr. Suchint Simaraks
	11.00-12.00	Group work on "Indentify environmental challenges in Northeast Thailand and alternative farming systems for better performance"	Didier/ Benedicte/ Arunee/Sukanlaya
	13.00-14.00	Groups' report and feedback session	
	14.00-14.15	Break	
	14.15-15.00	Introduction to the assessment of farming systems	Didier
	15:00- 16:00	Group work on "Agricultural practices and its impacts on environment"	Didier/ Benedicte/ Arunee/Sukanlaya
	16.00-17.00	Groups' report and feedback session	
Tuesday: 13 November 2018	9:00-10:00	Farming system concepts: definition, component, level and methods of analysis	Prof. Dr. Anan Polthanee
	10.00-11.00	Group work : Building interview guide for household data collection - Group 1 works on the means of production of the farm - Group 2 works on the cropping systems (1) - Group 3 works on the cropping systems (2) - Group 4 works on animal rearing systems - Group 4 works on history of household, and the economic results	Didier/ Benedicte/ Arunee/Sukanlaya
	11.00-12.30	Groups' report and feedback session	Didier/ Benedicte/ Arunee/Sukanlaya
	13:30 –15:00	Concept of economic evaluation (cost and returns) of the farm activities	Satit and Yoawarat
	15.00-15.15	Break	
	15.15-16.30	Interview guide and conceptual tools for village level interview	Didier/ Benedicte/ Arunee/Sukanlaya
	16.30-17.30	Techniques for Semi-Structured Interview	
Wednesday: 14 November 2018	07.00-09.00	Traveling to Ban Nongwaengklang, Koksa-nga sub-district, Phon district, Khon Kaen province	Didier/ Benedicte/ Arunee/Sukanlaya
	9:00-12:00	Group interview with village leaders for general understanding of the village	(stay overnight in the village)

Date	Time	Topics	Resource persons
	13.00-16.00	Household interview by using questionnaire and interview guide for 1st case	
	16.00-17.00	Break and personal free time	
	17.00-18.00	Dinner	
	18.00-20.00	Group work and feedback for the 1st household interview: tools and methods for data collection revision	
Thursday: 15 November 2018	08.00-09.00	Breakfast in the village	Didier/ Benedicte/ Arunee/Sukanlaya
	09.00-12.00	1st Household re-visit and 2nd household interview	
	13.00-16.00	3rd Household interview	
	16.00-17.00	Group discussion	
	18.00-20.00	Traveling back to KKU	
Friday: 16 November 2018	09.00-10.30	Group work: Preparation of household analysis	Didier/ Benedicte/ Arunee/Sukanlaya
	10.30-12.00	Groups' report and feedback session	
	13:00-15.00	Vulnerability, adaptive capacity and resilience assessment	Benedicte
	15.00-15.15	Break	
	15.00-17.00	Group work: students have to analysis - Farm typology and indicators for classification - Economic evaluation of the farm - Vulnerability/resilience assessment of the farm - Analysis of decision making of the farmers - Farm constraints, problem and opportunity - Proposed a better farm management/model	Didier/ Benedicte/ Arunee/Sukanlaya/Satit/Yoawarat
Saturday: 17 November 2018	9:00-12:00	- Finalisation/preparation of the presentations	Didier/ Benedicte/ Arunee/Sukanlaya/Satit/Yoawarat
	13:00 - 16:00	- Presentation of the analysis and feedback session	All team + invited guests Alexis and Tum, Dr. Buncha

*Session 1/2 (week 2): Nov 19th-24th, 2018

Session 1/2 Ecosystems service for sustainable agriculture in a challenging of environments (week 2)
Learning Objective (s):

1) To learn on the tools for evaluate of environment conditions
2) To analyze the sustainable agriculture systems

Keywords: plant production, soil quality, biodiversity, macro and micro fauna

(Department of Soil Science and Environment, Department of Entomology, Department of Horticulture, Department of Plant Pathology)

Date	Time	Topics	Resource persons
Monday (19 Nov 2018)	8:30-10:00 10:30-12:00	Introduction to soil quality (Exercise on papers based on soil quality) Introduction to soil biodiversity	Mr. Alexis (LMI) Dr. Alain (IRD)
	13:00-16:00	Soil quality concept and application	Dr. Alain/Mr. Alexis/ Ms. Phantip (IRD/LMI)
Tuesday (20 Nov 2018)	9:00-12:00	Practice the tools in the field (Biofunctools): Soil quality &biodiversity analysis [Same area as session 1-1)Phon district] - Split students into four groups - Each group will take responsibility for each land use (Rice, Sugarcane, Cassava, Guava) - Using Biofunctool for monitoring soil quality (POXC, in situ respiration, bulk density, soil fauna etc.)	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
	13:00-16:00	Practice the tools in the field (Biofunctools): Soil quality &biodiversity analysis [Same area as session 1-1)Phon district]	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
Wednesday (21 Nov 2018)	9:00-12:00	Practice the tools in the field (Biofunctools): Soil quality &biodiversity analysis [Same area as session 1-1)Phon district]	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
	13:00-16:00	Biofunctools: laboratory work	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
Thursday (22 Nov 2018)	9:00-12:00	Introduction to R and Data analysis workshop	Ms. Phantip (LMI)
	13:00-16:00	Analyses data and preparing the presentation on agricultural effect on environments	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
Friday (23 Nov 2018)	9:00-16:00	Analyses data and preparing the presentation on agricultural effect on environments	Dr. Alain/Mr. Alexis/ Ms. Phantip/Dr. Phrueksa/ /Ms. Porntip (KKU/IRD/LMI)
Saturday (24 Nov 2018)	9.00-16.00	Group or individual presentation and discussion	KKU/IRD/LMI/SupAgro/ All team

*Session 2 (week 3): Nov 26th- Dec 1st, 2018

Session 2 Utilizing genetic resources for sustainable agriculture (week 3)
Learning Objective(s):

1) To understand on the animal production in term of sustainable agriculture
2) To understand of the importance of the genetic resources for sustainable agriculture

Keywords: Genetic resource, animal production, fishery production

(Department of Animal Science, Department of Fishery)

Date	Time	Topics	Resource persons
Monday	9:00-12:00	Genetic resource for animal production in sustainable agriculture (Lecture)	KKU/IRD (Dr. Theerachai/Dean)
	13:00-16:00	Genetic resource for crop production in sustainable agriculture (Lecture)	KKU/IRD (Dr. Jirawat)
Tuesday	9:00-12:00	Animal and fishery productions in northeast Thailand (Lecture)	KKU/IRD/SupAgro (Dr. Penpan/Dr. Theerachai)
	13:00-16:00	Visit the integrated animal/fishery farm in KKU (Livestock unit/fishery farm unit)	KKU/IRD/SupAgro (Dr. Penpan/Dr. Theerachai)
Wednesday	9:00-12:00	Visit the animal production in the small farmer scale (Farm 1)	KKU/IRD/SubAgro (Dr. Theerachai)
	13:00-16:00	Visit the animal production in the commercial scale (Farm 2)	KKU/IRD/SupAgro (Dr. Theerachai)
Thursday	9:00-12:00	Visit the fishery production in the farmer scale (Farm 3)	KKU/IRD/SupAgro (Dr. Penpan)
	13:00-16:00	Visit the fishery production in the commercial scale (Farm 4)	KKU/IRD/SupAgro (Dr. Penpan)
Friday	9:00-12:00	Preparation of final presentation of the whole module by the students	All teams
	13:00-16:00	Final presentation	All teams

* Remark: number of session depends on each module design