

Joint French-South-East Asia Research and Training initiative

DYNAMIC OF LAND USE CHANGES AND SOIL ECOSYSTEM SERVICES (LUSES)



Internal Call for small proposal

Year 2013

Project responsible	Frederic Gay
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Title Ecobio: training session on ecophysiological and biochemistry tools to assess the physiological status of plant and trees
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LMI partners (French)	
P.Thaler	CIRAD, UMR Eco&Sols
R.Lacote	CIRAD, UPR 34

LMI partners (Asian)	Kasetsart University
P.Kasemsap	Kasetsart University, Thailand
C.Chayawat	Kasetsart University, Thailand

Others Partners	
Western Countries	Denis Fabre, CIRAD, UMR AGAP Anne Clément-Vidal, CIRAD, UMR AGAP
Asian Countries	

Type of support	Amount (€)
Deadline (14 th of February)	
Student support	
Student research expenses	
Student mission	
Support to project building	
Collective training expenses	3150
Mission (exploratory, support)	
Field support	
Exploratory project	
Beside project support (link to a bigger one)	
Equipment	
Others	

Asian Countries involved (put an x)

Thailand	Vietnam	Laos	Others
x	x	x	

Working package involved (put an x)

WP1 Soil fertility and the dynamics of mineral nutrients	WP 2 Soil and water functional biodiversity	WP 3 Carbon storage in plant biomass and soil	WP4 Regulation of water flow an erosion s
x	x	x	x

General context of the proposal

The scientific project of the LMI LUSES aims at developing a multidisciplinary approach combining agricultural science and environmental/ecological science to address the issue of the impact of land use and land use changes on soil ecosystem services. However, most of the researchers involved in the LMI are soil scientist or soil-oriented agronomists, and few of them only are plant scientists. Therefore, in order to guarantee the achievement of LMI objectives, it is necessary to improve the knowledge and the skills of LMI scientists on the methods to assess the physiological status and functioning of trees and plants.

Objective of the proposal

The objective of this proposal is to contribute to the funding of a training session called Ecobio on the ecophysiological and biochemistry tools to study the physiological status of plants and trees.

The specific objective of this training is to teach the participants to use ecophysiological and biochemistry methods to characterize the physiological status of plants and trees, particularly when they are undergoing stress conditions.

Link with the LMI project (regional aspect, partnership, working package)

This training course is opened to all LMI members from Thailand, Vietnam and Laos. It will be organized jointly by CIRAD and Kasetsart University.

It doesn't concern a working package in particular as specific studies on soil-plant interactions requiring the characterization of plant physiological status and functioning could be developed in any of the 4 WP of the scientific project of the LMI.

Project description (one page maximum)

This Ecobio training was developed about 10 years ago by CIRAD researchers in ecophysiology and has been organized in several countries, mainly in Africa, since then.

This training is open to graduate students, researchers or technicians who would like to gain knowledge on diagnostic tools for plants and trees based on ecophysiology and biochemistry.

The 5-day training will start with some theory and the presentation of the instruments and methods that will be used next for practical works on plants grown in the field or under greenhouse conditions. Data from these works would be then analyses in order to better understand the mechanisms taking place in the response of the plants to changing environmental conditions.

Six topics will be addressed during this training:

- Gas exchange, canopy structure and carbon balance
- Water balance and water stress
- Plant components
- Biochemistry indicator of stress
- Data acquisition
- Data mining

The cost of this training course will be shared between the Hevea Research in Partnership Platform (HRPP), the LMI LUSES and Kasetsart University as detailed in the table below. According to this sharing of the costs, participants from the LMI LUSES will be limited to 5 out of the 15 participants.

Budget description including identify amount budget from co -funding if it is available

Items	Amount	HRPP	Kasetsart University	LMI
Plane tickets France-Thailand for 2 CIRAD researchers	2400€	1200€		1200€
Accommodation and per diem for 2 CIRAD researchers (10 days*175€)	3500€	3500€		
Expenditures for training organization (Food 'n Beverage, working documents, experiment set-up...)	1500€		1500€	
Plane tickets for LMI participants from VN and Laos (x3*300)	900€			900€
Accommodation and per diem for LMI participants from VN and Laos (x3, 7 days*50€)	700€			1050€
Transportation, accommodation and per diem for Thai participants from outside of Bangkok (x5, 7 days*20€)	700€	700€		
Expenditures for training organization (Food 'n Beverage, working documents, experiment set-up...)	1500€		1500€	
Total	9700€	5400€	1500€	3150€