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	Luu Thi Nguyet Minh (ICH) / Didier Orange (IRD)

Title: POCIS-school
POCIS summer school: Passive samplers and water quality survey

LMI partners (French)	
	BIOEMCO-Vietnam BIOEMCO and ECOSOLS -Thailand BIOEMCO-Laos

LMI partners (Asian)	
	Vietnam: ICH, IET, INPC, SFRI, USTH Thailand: LDD, National Park, Wildlife and Plant Conservation Department Laos: NAFRI

Others Partners	
Western Countries	EPOC, ECOLAB, IMMPC
Asian Countries	IIS (India)

Type of support	**Amount (€)**
Deadline (15 th of February)	
Student support	
Student research expenses	
Student mission	
Support to project building	
Collective training expenses	4,400 €
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	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 and erosion**
	X		X

General context of the proposal

Based on the JEAI-BioGEAQ, ICH and SFRI have decided to develop together research activities on nutrient cycles and contaminant transfer through water pathways within large river basins, from the uplands to the deltas. This proposal will support the ability of this research team to use POCIS system, a new modern methodology to address the water pollution by organic components. This methodology is well developed by H. Budzinsky and P. Mazellier from EPOC and lecturers at the USTH. Moreover this proposal is embedded with the new research joint program NUCOW proposed to the new research department WEO of the USTH in February 2013 for 5 years, and with the proposal PEST-VN applied in January 2013 to the PPR-SELTAR. The purpose of the PEST-VN project is to apply the POCIS system in a polluted river (Day River) and an agricultural lake (Dong Cao) through respectively a partnership with an IFS project and the MSEC network.

Objective of the proposal

The objective of POCIS-school is to create a research synergy within a multi-disciplinary team around one modern methodology very new for Vietnam (i.e. the passive samplers): the POCIS system, *Polar Organic Chemical Integrative Sampler*, through a summer school. The summer school will provide a description of the advantages of this methodology, an overview of scientific results already published, the requirements for use and a brainstorming to launch project ideas. Because this methodology allows to tackle the organic pollution in different aquatic systems, the summer school POCIS-school will be opened to all the stakeholders of the LMI-LUSES, with limited number of participants due to the limited budget.

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

The summer school POCIS-school is linked to the evolution of the JEAI-BioGEAQ, which is an important constitutive team of the LMI-LUSES. The main scientific purpose of the JEAI-BioGEAQ is the impact of land-use on the biogeochemistry in water bodies. The way to be able to catch and survey organic contaminants by passive samplers is appeared to be a new dramatic advantage. Moreover the recent link with the USTH and the EPOC team has leaded to this project.

The training component will be realised by the EPOC team and the future PhD defence (in October 2013 at Bordeaux), Mr Bui Van Hoi from USTH. The two researchers from EPOC invited to chair the POCIS-school, H. Budzinski (Miège et al., 2012) and P. Mazellier, are internationally regarded as specialist of this methodology and will also participate with ICH, SFRI, IET, INPC and IRD-BIOEMCO to the new research project NUCOW on NUtrient cycles and COntaminants in Waters (submitted to the USTH).

Project description (one page maximum)

The POCIS-school will be hold between ICH and SFRI at Hanoi.

The summer school POCIS-school will discuss the advantages and drawbacks of POCIS (*Polar Organic Chemical Integrative Sampler*) for the evaluation of organic pollution of waters in different water environment (stream, lake, mangrove). First of all, the POCIS-school will confirm that POCIS is a valuable tool for monitoring hydrophilic organic molecules in river and wastewaters. And secondly, the POCIS-school will train the participants to the use of this methodology through a mix of conferences, debates and demonstrative field works.

The summer school will be organized on 4 days, hopefully between November 2013 and January 2014. The tentative schedule could be:

- Day 1: Conferences
- Day 2: Conferences
- Day 3: Field work on the polluted Day River and the agricultural lake of Dong Cao (MSEC)
- Day 4: Question on field practices, Recommendations, Brainstorming for new ideas of collaborative research projects

One announcement will be done to the LMI partners and the participants will be chosen to equilibrate representatively the regional countries and institutions. We expect to apply the summer school POCIS-school for almost 10 people (4 people from abroad, 2-3 people from Vietnam, 3-4 French researchers from the LMI-LUSES and one invited speaker from EPOC).

Budget description

	LMI demand	Others
Budget for invited speaker		
One airticket (for Helene Budzinski or Patrick Mazellier), Bordeaux-Hanoi	1,200€	
5 nights in Hanoi (5x80€)	400€	
Budget for invited participants		
4 regional airticket (2 from Thailand, 2 from Laos) (4x300€)	1,200€	
5 nights for 4 people in Hanoi (5x4x80€)	1,600€	
Budget for the conference		
Conference room location (3 days)		150€ *(1)*
Coffee break, lunch (10 participants)		300€ *(1)*
Budget for the field work		
Participants transportation to the field (one bus for 10 people x 200 km)		250€ *(1)*
Equipments (POCIS, …) provided by the project PES-VN and JEAI-BioGEAQ		

TOTAL requested to LMI = 4,400€

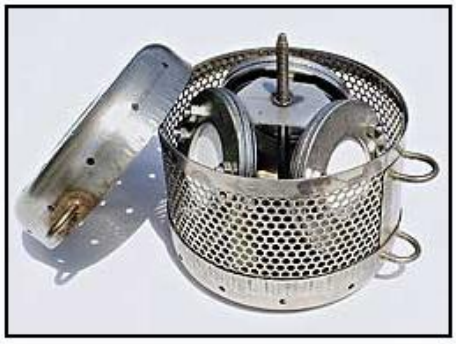
Co-funding:
(1) Expenditures paid on the budget of the JEAI-BioGEAQ
(2) The cost for the Vietnamese colleagues are in charge of the JEAI-BioGEAQ and the IRD-BIOEMCO-Vietnam.

Example of equipment POCIS

Small

Description: Holds one POCIS carrier on which one to three POCIS can be mounted.

Dimensions: 15 cm high x 16 cm wide



Cited References

Miège C., Budzinski H., Jacquet R., Soulier C., Pelte T., Coquery M., 2012. Polar organic chemical integrative sampler (POCIS): application for monitoring organic micropollutants in wastewater effluent and surfacewater. J. Environ. Monit., 2012,14, 626-635. **DOI:** 10.1039/C1EM10730E