LMI LUSES - JEAI ECORUBBER - STOCK CANSEA

workshop agenda

12-13 September 2018

at The Lao-Japan Institute, National University of Laos, Dong Dok campus, Vientiane, Laos

PART I - OVERVIEW OF RECENT RESEARCH RESULTS OF ON THE IMPACT OF RAPID LAND USES CHANGE ON SOIL ECOSYSTEM SERVICES

12 September 2018

08.30 - 09.00 Registration

09.00 - 09.15 Welcome speech by the organizers - Meeting objectives

A- TREE PLANTATIONS AND THEIR IMPACTS

09.15 - 10.30 - summary of results by EcoRubber and LUSES/BIODIV-TREE researchers - 10' presentations + 5' questions

EcoRubber = impact of RUBBER tree plantations on soil and farmers - BIODIV-TREE: Impact of tree plantations on soil functioning (co-leaders: Dr. Supat Isarangkool (KKU), Dr. Alain Brauman (IRD))

09.15 - 09.30 - Dr Supat Isarangkool Na Ayutthaya (KKU, Thailand) – Rubber tree ecophysiology

09.30 - 09.45 - Miss Porntip Puttaso (KKU, Thailand) - Impact of chronosequence of rubber tree plantations on soil microbial activity

09.45 - 10.00 - Dr Arunee Promkhambut (KKU, Thailand) - Systems approach of rubber tree plantations in NE Thailand

10.00 - 10.15 - Mr Saysongkham Sayavong (DALaM, Laos) – Development of rubber tree plantations in Luang Namtha province, Northern Lao PDR.

10.15 - 10.30 - Miss Panthip Pangklang (LDD, Thailand) - Soil quality assessment after 3 chronosequences of rubber plantation

10.30 - 10.45 Coffee Break

10.45 - 12.00 - Summary of results by EcoRubber and LUSES researchers - continued

10.45 - 11.00 - Mr Xaysatith Souliyavongsa (DALaM, Laos) - Impact of tree plantations on soil characteristic in Northern Laos

11.00 - 11.15 - Miss Monrawee Peerawat (LDD, Thailand) - Control of soil biodiversity after land conversion in rubber tree plantations.

11.15 - 11.30 - Dr. Choochad Santasup (CMU, Thailand) - Summary of LUSES2_CMU activities

11.30 - 11.45 - Dr. Kanita Ueangsawat (CMU, Thailand) - Weather and Water cycle in coffee plantations of northern Thailand

11.45 - 12.00 - Miss Kawiporn Chinachanta (CMU, Thailand) - Soil Chemical and Microbial Analysis in coffee plantations of northern Thailand

12.00 - 13.30 Lunch

13.30 - 14.00 - Summary of results by EcoRubber and LUSES researchers - continued

13.30 - 13.45 - Dr Alain Brauman (IRD, France) - Development of a new integrated and operational framework to assess the impact of land management on soil quality

13.45 - 14. 00 - Dr Didier Lesueur (CIRAD/CIAT, Vietnam) - AMF in coffee plantations of Northern Thailand and / or microbiological activity associated with teak tree plantations

B – SOIL AGRO-ECOLOGICAL MANAGEMENT

14.00 - 15.15 - Summary of results by OMM and STOCK researchers

OMM: Organic Matter Management (co-leaders: Dr. Thuy Thu Doan (SFRI); Dr. Nicolas Bottinelli (IRD)) and STOCK : Soil: Testing the impact of OrganiC amendments for the benefit of marKet gardening farmers (Mrs Phimmasone Sisouvanh)

14.00 - 14.15 - Dr DOAN Thu Thuy (SFRI, Vietnam) - Optimal pig liquid waste vermifiltration treatment impacts to quality water and earth worm growth under tropical condition

14.15 - 14.30 - Dr C. Hammecker (IRD, Thailand) / C. Hartmann (IRD, France)- Physical and chemical fertility management (PCFM) project

14.30 - 14.45 - Mr Rhin Pham Dinh (SFRI, Vietnam) Quantification of soil engineers on the dynamics of soil structure and water flow using soil bag experiments

14.45 - 15.00 - Miss Phimmasone Sisouvanh (NUoL, Laos)- Results of the STOCK project on composting/vermicomposting for vegetable gardening in Laos

15.00 - 15.15 - Dr Christian Hartmann - more on the STOCK project

15.15 - 15.30 - Coffee break

15.30 - 16.15 - Perspective/opinion lecture

17. Dr Naoise Nunan (iEES-Paris, France): Microbiology in relation with organic matter dynamics in soil

Dr Nunan is a researcher with the French National Research Center (CNRS) at the Institute of Ecology and Environmental Sciences Paris (iEES-Paris). His main research interest is to contribute to the advent of an eco-biogeochemical understanding of continental environments. A major and recognized barrier to the understanding of element and substance fluxes in terrestrial ecosystems is the low consideration of the microbial component. Dr Nunan uses experimental ecology approaches to manipulate microbial communities in different media (soil or artificial structured environment) so as to understand the link between microbial diversity, soil physical structure, and C dynamics in soils.

16.15 - 17.00 - Questions/Discussion

Free evening

13 September 2018

C- LAND USE, WATER QUALITY, ECOTOXICOLOGY AND IMPACTS ON HUMAN HEALTH

ECOFILTER: Effect of land use on stream-ground water interactions in the critical zone of tropical agrosystems (co-leaders: Mr. Oloth Sengtaheuanghoung (DALaM); Dr. Olivier Ribolzi (IRD))

09.00 - 09.15 - Dr Huong Mai (USTH, Vietnam) - heavy metal concentration in different earthworm species in soil and mollusc species in water compartments in the Dong Cao catchment

09.15 - 09.30 - Dr Sayaphet Rattanavong (LOMWRU, Laos) / Dr A. Pierret (IRD, Laos) - Interactions between land use, morpho-pedological features and the occurrence of the pathogenic bacterium *Burkholderia pseudomallei*

09.30 - 09.45. O. Sengtaheuhanghoung (DALaM, Laos) - impacts of land use change on the interactions between land use, fluxes of water and sediments, and the spread of bacterial contaminants in the uplands of northern Lao PDR.

09.45 - 10.00 Dr Jean-Louis Janeau (IRD, Thailand) - Siltation estimation of the Maethang reservoir, Phrae province, North Thailand (to be confirmed)

Overview of capacity building and outreaching activities

10.00 - 10.15 - A. Brauman (IRD, France) / C. Hartmann (IRD, France) / A. Pierret (IRD, Laos)

10.15 - 10.45 - Mrs Nopmanee Suvannang (GLOSOLAN/FAO, Thailand) and Dr Christian Hartmann (IRD, France) - **update on SEALNET (South East Asia Laboratory) activities**

10.45 - 11.00 - Coffee Break

11.00 - 11.30 Other projects relevant to the impacts of LUC on soil ecosystems perspectives and Perspectives

11.00 - 11.15 - Dr Trinh Anh Duc (VAEI, Vietnam) - Framework to promote research collaboration between Vietnam and Laos and perspective for collaboration b/w Vietnam Atomic Energy Institute, Ministry of Science and Technology and IRD-Vietnam for research and training.

11.15 - 11.30 - Dr Tran Tien (SFRI, Vietnam) - Soil health in maize-based systems in mountainous areas in Northwest Vietnam.

11.30 - 12.00 - Questions/Discussion

12.00 - 13.30 Lunch

13.30 - 14.00 - (to be confirmed) Group discussions about new directions / directions to strengthen in preparation for afternoon debate/round table

14.00 - 15.30

Debate/round table. Towards a roadmap for research on the impacts of LU/LUC on soil ecosystem services in the Lower Mekong Basin - co-chaired by Dr Ruamporn Moonjun (LDD, Thailand), Dr Nivong Sipaseuth (DALaM, Laos) Dr Tran Tien, (SFRI, Vietnam)

The Lower Mekong Basin (LMB), home to 60 million people, 40% of whom live within a 15-km corridor along the river, cuts across four countries, including most of Cambodia and Lao PDR, and substantial portions of Thailand and Viet Nam. The territories that comprise the LMB make up a shared natural resource and there are important linkages between the use and condition of resources such as rivers and soils, and the socio-economic development of the people who live in the region. Remarkably, the Mekong River Basin also harbors a number of unique ecosystems, exceptionally rich in biodiversity. Land degradation as a result of land use, land use change and other physical alterations through infrastructure development has resulted in considerable loss of natural resources. Comprehensive and reliable information on the state of land and water resources of the Mekong Basin is needed to better understand the mechanisms of land degradation in the region and to guide development planning in such a way that further negative impact of human activities is prevented as much as possible.

Expected outcome of the debate: to define and qualify the building blocks of a roadmap of how can IRD through its partnership instruments and its network of regional partners assist regional agencies to comply with their international commitments regarding e.g. land degradation neutrality, biodiversity conservation, GHG emission reductions, Sustainable Development Goals? what type of activities (e.g. monitoring, forecasting, impact assessment) are most needed? what are the associated needs for capacity building? do we want/cab do.

15.30 - 15.45 Coffee break

15.45 - 17.00 Continued Discussion and Conclusion

18.30 - 21.30 Ice-breaking party with the executive of each organization

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PART II - RESEARCH PERSPECTIVES ON THE IMPACT OF RAPID LAND USES CHANGE ON ECOSYSTEM SERVICES IN THE CONTEXT OF CLIMATE CHANGE AND ECONOMIC TRANSFORMATION OF THE LOWER MEKONG BASIN

The objective of this last morning session is to bring together researchers and stakeholders to discuss / express opinions regarding research and capacity building needs to address the challenges of future land use and land use change in the Lower Mekong Basin, in the context of climate change and economic transformation of the region.

Thailand and Vietnam to express views and expectations.

8.30 - 9.00 Registration

9.00 - 9.15 Introductory statement by the organizers

9.15 - 10.00 - Dr Cornelia Rumpel (CNRS, France) - Managing soil organic matter to increase its ecosystem services

Dr Cornelia Rumpel is a distinguished researcher working for the French National Research Center (CNRS) at the Institute of Ecology and Environmental Sciences Paris (iEES-Paris). Dr Rumpel is the chair member of the Scientific and Technical Committee of the 4 per 1000 initiative "Soils for Food Security and Climate".

The 4 per 1000 initiative aims to:

- Improve estimates of the baseline and of the potential of soil carbon sequestration (or loss) according to a large range of land management practices;
- Design and co-construct agronomic strategies and practices for soil carbon sequestration;
- standardize Metrics and methods for monitoring, reporting and verify (MRV) soil carbon sequestration;

- Facilitate Institutional arrangements and public policies, including financial mechanisms, that aim at promoting and rewarding relevant practices.

Dr Rumpel leads the Paris Soil Organic Matter Group and studies the origin and fate of terrestrial organic matter, with the aim to understand the mechanisms controlling carbon sequestration in soils. Dr Rumpel has carried out work in temperate and tropical climates and the results of her research changed of a number of paradigms. Since a few years, her interest has focused on the development of fertilization strategies and agricultural techniques to reduce greenhouse gas emissions and to foster carbon sequestration in soil.

10.00 - 10.15 Coffee Break

10.15 - 11.50 Open tribune -

Invited delegates from Laos, Thailand and Vietnam to express views and expectations regarding research and capacity building needs to address the challenges of future land use and land use change in the Lower Mekong Basin, in the context of climate change and economic transformation of the region.

11.50 - 12.00 Group Photo

12.00 - 13.30 Lunch and Departure