Dynamics of Fine Root towards Improve understanding of Carbon Stock and Emission in Secondary Dry Dipterocarp Forest western Thailand.

presented by

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ABSTRACT

Majority of this reforested areas were dry dipterocarp forest (DDF), tis well known for its high timber value. Hence, much of the remaining DDF cover in Thailand is secondary after Thai government has banned logging on all forests since 1989. This makes carbon stock and uptake in secondary forests become increasingly important parts of national carbon inventory and of global tropical forest carbon budgets. Underground carbon dynamics in secondary forest is therefore still an issue of understudy and not well represented in the current forest carbon budgets. The objectives were quantifying fine root growth so crucial to the understanding of ecosystem structure and function and predicting how ecosystems respond to climate variability. In this study, dry dipterocarp forest in Ratchaburi Province, western, Thailand was carried out for measuring fine root growth by using minirhizotron technique (handheld scanner). The fine root observations have been carried out since 2010 - 2019. We are planning to deep study root dynamic and CO₂ production as 4 topics, as i) Soil CO₂ concentration deep profile and root dynamics in a secondary dry dipterocarp forest, western Thailand, ii) Growing root without leaves: 8 years of deep fine roots dynamic under Dry Dipterocarp forest in western, Thailand, and iii) Timing and environmental controls fine root growth and dormancy at surface and deep soil layers in secondary dry dipterocarp forest, Thailand. iv) Modeling root dynamic and CO₂ production. On this talk we will present the first result at the beginning of the studies and data analysis on 8 years observation period. We will discus about this result, in perspective of publications and some opportunities of project. After jointed Junior Research Fellowship Program, from French Embassy in Thailand, Undertaking research collaboration with AMAP, CIRAD laboratory, France give me an excellent opportunity to expand my research skills in using new approach and technology. For my future career, I expect to bring the advanced knowledge and research experience to help improve the science of carbon cycle and climate change. In addition, I will get involved in the scientific networking, which is important for our future work. I would be a great opportunity for me to learn how ecosystem processes involving carbon dynamics and fine root dynamic. By sharing European and Asian viewpoints in this field, this research collaboration would also surely be of mutual benefit in the future.

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