

Program for Advancing Strategic International Networks to Accelerate the Circulation of Talented Researchers
Japan-ASEAN Collaboration Research Program on Innovative Humanosphere in Southeast Asia:
In search of Wisdom toward Compatibility Growth and Community in the World

Dispatch Report

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Place of fieldwork: Indonesia

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The wetlands are the special ecosystem which is flooded for a long period of time or frequency in the year. Organisms that grow there adapt such special environment. In Southeast Asia, the natural wetland ecosystems are line in order at mangrove forests, brackish water wetland forests, freshwater swamp forests and peat swamp forests from seaside to inland [Corlett 2009]. These wetlands are established under the sensitive balance of many kinds of organisms for plants, animals and microorganisms. The ecosystems are very fragile and the effect from environmental change might give catastrophic damages to them. The mangrove and peat swamp forests are the dominant wetland ecosystems in this region. However, forest degradation by development covered many parts of wetlands and is not negligible now.

Peat swamp forests work for carbon stock and a cradle of biodiversity. However, the function of peat swamp forests degraded and the huge amount of carbon emission had started in this two decades. They became a worldwide issue now. In particular, frequent peat fires which occur in dry season, destroy the forest ecosystems and cause extensive damage to human health by air pollution to the local and native countries. On the other hands, mangrove forests which covered most of coastal area in Southeast Asia region had been cut for making prawn ponds or charcoal. In this study, I will identify the effects of human activities to these ecosystems in sight from ecology.

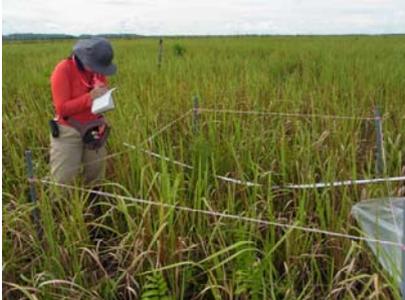
The objects of my research are to clarify effects and recovery from human induced disturbance in wetlands. I conducted my research in degraded peatlands in Riau province, Sumatra Island, Indonesia. At the after-burnt grassland, I checked distribution of grassland vegetation and identified their community types, and compared them with soil water and nutrient conditions. I also analyzed the possibility of recovery of vegetation. I sent all my samples to Research Center for Biology, Indonesian Institute of Science (RCB-LIPI) in Cibinong and identified their species name.

On the other hand, when we develop the best and sustainable way for the forest usage, we should to understand the real situation for forest degradation and the background in each countries and regions. The knowledge about ecosystems and soil characteristics is also important for conservation of the forests. Therefore, I visited Peninsular Malaysia, northeast Vietnam and Aceh, Indonesia to research about the current situation of them in Southeast Asia. I also made the research collaboration with the counterparts in their countries.

In this trip, I finished data collection and analysis for the research in peat fire sites in Riau region. Now, I already started discussion with Indonesian counterparts to submit the paper to international journal. I'll collect the same data set from other peatlands in Indonesia in the future.

References

Richard T. Corlett, 2014, The Ecology of Tropical East Asia, OUP Oxford



Field survey in Riau



Tropical forest and oil palm estate



Herbarium sample