Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

HTT08-05 Room:203 Time:May 20 10:00-10:15

Robust Monitoring Techniques on Large Scale Carbon Dynamics for REDD+ in Tropical Peatland-Forest

OSAKI, Mitsuru[1*], Kazuyo Hirose[2], Farhan Helmy[3]

[1]Research Faculty of Agriculture, Hokkaido University, [2]Center for Sustainability Science, Hokkaido University, [3]National Council for Climate Change (DNPI) , Indonesia

The Earth remaining tropical forests are found mainly in the peatlands and lowland of the Amazon, Central Africa, and Southeast Asia, especially in regions of Kalimantan, Sumatra, and Papua New Guinea, where rich biodiversity can still be found and large amounts of carbon are stored in peat soils (UNDP, UNEP, WB, and WRI, 2000). Indonesia, for example, has a peatland area and carbon stocks of about 20Mha and 45-55GtC respectively, and a forest area and carbon stocks of about 88Mha and 10-26GtC respectively, indicating that more than half the amount of carbon in tropical peat is stored in the peat of Indonesia (Maria Strack ed., 2008, J. Jaenicke et al., 2008, J.O. Rieley et al., 2008, H. K. Gibbs et al., 2007). It is estimated that the Indonesian peat contains between 7.5-24.2 times more carbon below-ground than above-ground.

Therefore, REDD+ is very important for storage of carbon as well as the conservation of biodiversity. To establish REDD+, an MRV system that is coupled with two components ? satellite sensing and grand tools - is urgently required. Presently, our JST-JICA Project on ”Wild Fire and Carbon Management in Peat-Forest in Indonesia” is the only project in the world to propose all aspects of MRV in tropical peatlands, enabling it to contribute significantly to biodiversity estimation.

REDD+ itself is only considerd as one of Carbon Credit Mechanisms. However as MRV for REDD+ is composed of integrated system of satellite sensing and grand tools, REDD+ and MRV system contribute to develop new scientific fields and advance forest research in various tropical forest ecosystems, including forest management and social activity research. Thus, this JST-JICA project intends finally to establish REDD+ system in tropical peatland.

References

Gibbs, K. H., Brown, B., Niles, O. J. and Foley, A. J. (2007) Monitoring and estimating tropical forest carbon stocks: making REDD a reality. Environ. Res. Lett: 2 045023: 13.

Jaenicke, J., Rieley, J.O., Mott, C., Kimman, P. and F. Siegert (2008) Determination of the amount of carbon stored in Indonesian peatlands. Geoderma: 147: 151?158.

Maria Strack ed. (2008) Peatland and Climate Change, International Peat Society, 223.

Rieley, J.O., Wust, R.A.J., Jauhiainen, J., Page, S.E., Wosten, H., Hooijer, A., Siegert, F., Limin, S. H., Vasander H. and Stahlhut, M. (2008) Chapter 6: Tropical peatlands: carbon stress, carbon gas emissions and contribution to climate change process, Maria Strack ed. Peatlands and climate change, International Peat Society, Finland: 148-181

UNDP, UNEP, WB, and WRI (2000) In: C. Rosen (ed.) World Resources 2000-2001: People and Ecosystems: The Fraying Web of Life, illustrated edition, Elsevier Science, Amsterdam, Lausanne, New York, Oxford, Shannon, Singapore, Tokyo.

Keywords: Biodiversity, Carbon Flux Model, Grand Tools, MRV, REDD+, Satellite Sensing