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CDEFs securities in high carbon reservoir ecosystem of tropical peatland

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The CDEFs security is new concept on estimation and management of high carbon reservoir ecosystem, especially in tropical peatland such as; climate change security, (bio) diversity security, energy security, food/feed security, and social security. Peatland is typical case, which relate closely with the CDEFs security, because peatland sustains high water table and high carbon reservoir, and high biomass productivity, contributing mitigation and adaptation to climate change security, high bio-diversity, high biomass energy production, high food/feed production, and social security throughout CDEF security. In past, unfortunately tropical peatland management and development have been misleading against high CDEFs security of tropical peatland. Let's remind again what is the tropical peatland principle? Tropical peatland is typical case of wetland, and then water is most functional element among other wetland. Especially, high water table, not moisture is most rational principal for peat formation and peat conservation; because oxygen permeability is a key factor of peat decomposition. Even if peat keeps wet condition, O_2 permeates until water table of peatland, then, peat is decomposed quickly. Internationally, water is most important resource for terrestrial ecosystem. Global Risks 2015 reported top 10 risks in terms of global impact in which water crises is ranked as number one. Thus, it is better to change basically national policy on tropical peatland management used as wet-peatland, not dry-peatland. Wet-peatland functions as large water reservoir which is great benefit, rolling as natural capital such as water dam. Natural capital of wet-peatland as water reservoir is inestimable, because especially wet-peatland securer to supply water in dry season even if El Niño year, which contribute to the national food/feed security, and at same time, to reduction of CO_2 emission. In other words, wet-peatland contributes globally to both mitigation (reduction of CO_2 emission) and adaptation (water supply for plant growth in severe dry) against climate change.

Biography

Mitsuru Osaki is Professor of Research Faculty of Agriculture, Hokkaido University and Professor of Graduate School of Agriculture, Hokkaido University from 2006. He was trained as a Plant Physiologist and Soil Scientist, and obtained his Doctorate degree from the Faculty of Agriculture, Hokkaido University, in Japan in 1981. He worked as an Associate Scientist in Maize Unit of CIMMYT in Mexico from 1982 to 1984. Until 2006, he has been working with the Graduate School of Agriculture, Hokkaido University in Japan, to implement a research and teaching on rhizosphere management. He also has been carried out many collaborative researches and teaching projects on tropical land management and rehabilitation of tropical forest. He is a Project Leader of JST-JICA Project on Wild Fire and Carbon Management in Peat-Forest in Indonesia from 2008 to 2014. He is also interested in sustainability viewed from soil fertility, food production, bio-energy and land management.

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