

Impacts of drainage on Indonesia tropical peatlands

Speaker: Lee Wan Aik, Desmond

Sustainable Development and Water Alliance, National University of Singapore

Chair: Winston Chow, Department of Geography, NUS

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Abstract

Indonesia's tropical peatlands contain the largest pools of terrestrial organic carbon in Asia but they have been poorly managed. Rapid unsustainable expansion and management of oil palm and pulpwood plantations since 1990s has led to a decline in Indonesia peatlands and has also caused several environmental problems such as loss in biodiversity, land subsidence, high levels of carbon emissions and transboundary haze events in Southeast Asia during 1997/1998, 2006, 2008, 2009, 2011 and 2013. The Singapore Delft Water Alliance (SDWA) has initiated a peatland programme (2008 – 2012) in close collaboration with Singapore National Environmental Agency and University of Jambi, has carried out long term field monitoring activities in Jambi province to contribute towards better understanding of the effects of different peatland water management conditions on peatland functioning, specially soil moisture content, carbon emission and thereby fire risk as well as soil subsidence. Unlike other environments in the world, the understanding and management of these environment parameters is required and crucial in policy making and planning. In this way, strategic and appropriate physical and social management and protection approaches can be applied and a number of environmental and economic problems, with local and regional implications can be reduced.

About the Speaker




Dr. Lee Wan Aik, Desmond, is Research Fellow in Sustainable Development and Water Alliance (Formerly known as Singapore Delft Water Alliance) of Civil and Environmental Engineering in the National University of Singapore.

His previous research work involves heavy metals pollution in urban runoff, urban sediment transport in the tropics and peatland management in the tropics. He was involved in consultancy work involving peatlands conservation and management, urban and coastal water quality, sustainable urban living, environmental impact assessment and groundwater.

He is also involved in Jurong Island Groundwater Modeling and Risk Assessment Study commissioned by Singapore Public Utilities Board. Dr. Lee has a Bachelor of Arts Degree in Geography and Philosophy from National University of Singapore. He has a MSc in Environmental Management from University of Tasmania, Australia and PhD in Physical Geography (urban fluvial geomorphology) from National University of Singapore.

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