



Riverine export of dissolved organic carbon from tropical peatlands in central Sumatra, Indonesia

A. Baum (1), T. Rixen (1), J. Samiaji (2) and V. Ittekkot (1)

(1) Center for Tropical Marine Ecology, Germany

(2) University of Riau, Indonesia

Within the joint Indonesian German Project SPICE (Science for the Protection of Indonesian Coastal Marine Ecosystems) sources and discharges of DOC from the Siak and its tributaries the Mandau and the Tapung Kanan have been studied. DOC concentrations in the Siak range between 560 to 2,590 mol l⁻¹ and peak downstream of the Mandau above the Siak estuary. The Mandau drains parts of the central Sumatra peatlands and can be characterized as a typical black water river due to its high DOC concentration, its dark brown-colored, acidic water (pH 3.8-4.8) and its relatively low concentrations of suspended matter (12-41 mg l⁻¹). Our data suggests that the Mandau supplies ~50% of the DOC that enters the Siak estuary where it conservatively mixes with the sea water. For the Siak, we estimate a DOC input into the sea of ~0.5 Tg C yr⁻¹ for 2004. Additional data from the rivers to the south (Kampar) and north (Rokan) of the Siak imply a total DOC export from the peat-draining rivers of central Sumatra of 2.7 Tg C yr⁻¹, a value that falls in the range of DOC discharges from some of the worlds major rivers.