



## Land-use Changes on Peatlands in Russia and Green House Gas Emissions

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Russia possesses vast areas of peatlands and associated paludified shallow peat lands, over 8 and 20% respectively. The country is the largest World peatland nation, and thus could be responsible for the large part of GHG exchange between peatlands and the atmosphere. Russian peatlands present a high variety of natural conditions from permafrost mires to bogs, fens and swamps within boreal, temperate, steppe and semi-arid zones, which have quite different rates of GHG flux, emitting or absorbing carbon dioxide and methane. Many regions of Russia still contain vast areas of virgin mires but in the central European part of Russia, West Siberia and Far East the appreciable part of peatlands was already modified. Peatlands were used in a broad spectrum of human activities connected with direct water level draw-down: peat extraction for different purposes (up to 1.5 million ha), drainage for agriculture, and drainage for forestry (each over 3 million ha). Many peatlands all over the country were affected by infrastructure development (by road, pipe line construction etc.) with related changes of their hydrology and GHG fluxes. These land uses are under consideration of LULUFC issues of UNFCCC, and peat excavation is directly included in IPCC 2006 Guidelines as a main wetland/peatland land use activity related to climate change mitigation. General estimates and geographical distribution of peatlands drained for agriculture and forestry as well as peatlands under excavation, extracted or abandoned are given based on existing statistical and sectoral information. GHG fluxes from disturbed peatlands are analyzed using available Russian data and the results of specially organized observations in 2004–2008 in the pilot regions in Central European Russia and West Siberia which included a variety of modified and virgin control sites.