Abstract for IGARSS10 invited session on

GEO/GEOSS—International Collaborative Opportunities Responding to the Regional/Global Climate Change Concerns in the 2010-2020 Decade

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Land use change, climate change and benefits of improved land cover data for climate policies

The earth has been subjected to land use change by humans for thousands of years. The main driver of clearance in the past was the need for land to cultivate crops or livestock. Whereas the largest single direct cause nowadays is still linked to subsistence farming, there are multiple processes which work simultaneously and are closely interlinked. These land use changes have led to historical emissions of CO2 that are estimated to amount to 156 PgC in the period from 1850-2000 – about 55% of the historical fossil fuel emissions (283 PgC). In order to Reduce Emissions from land use change a number of climate policies need to be put in place.

We give a general overview of current emissions from land use change and illustrate by using current land cover data and a global partial equilibrium model namely GLOBIOM the effects of different climate policies (specific biofuel targets) on emissions and effects of indirect land use change. Moreover we set up a GEOSS versus a non GEOSS scenario, i.e. a data rich versus a data poor scenario. We demonstrate the differences of the model outputs when using a GEOSS versus a Non-GEOSS scenario. We show the benefit we will gain through the data rich scenario by being able to design better climate policies. This leads to a general overview and discussion on EO related benefit assessment studies.