Difference between 1.5 and 2 degree scenarios

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Difference between 1.5 degree and 2 degree target (from pre-industrial periods) are investigated by using aglobal climate model. Emission and land use scenarios for 1.5 and 2 degree target were developed using an integrated assessment model, and used as input into an Earth system model (ESM). The emission scenario was developed assuming a common path for the two scenarios that diverge from 2050. ESM outputs showed significant difference between the two scenarios in Arctic sea ice concentration and coral bleaching. Gross primary production on land showed notable difference in aridlands around the Sahara desert. These results show that there are at least some significant differences in response of climate system between 1.5 and 2 degree scenarios. Although cost to achieve 1.5 degree target is expensive, there is room to consider that scenario, dependent on what we consider important.

Keywords: Earth system model, integrated assessment model, 1.5 degree target, 2 degree target

