



Developing climate indices for nature-based tourism in Norway

Stephanie Mayer (1,2,5), Inger Hanssen-Bauer (3,5), and Eivind Brendehaug (4)

(1) Norwegian Research Centre, NORCE Climate, Norway (stma@norceresearch.no), (2) Bjerknes Centre for Climate Research, (3) Norwegian Meteorological Institute, (4) Western Norway Research Institute, (5) Norwegian Centre for Climate Services

Norway is a very attractive destination for nature-based tourism. Either tourists do outdoor activities (e.g. fishing, hiking or skiing) or they just come to experience Norway's unique climate, landscape, wildlife and culture.

Within the CLIM-TOUR project (2018-2021), we investigate impacts of present and future climate change on Norwegian nature-based tourism. In close dialogue with practitioners which are active in the tourism sector, we are identifying and developing relevant and useful climate indices for single destinations in Norway (e.g. Jotunheimen, Flåm, Hardanger, Lofoten).

One major concern is the future increase of mean and extreme precipitation in frequency and intensity under the high emission scenario, RCP8.5. A warmer and wetter climate can lead to an increased risk for existing infrastructure such as exposed roads and railways which may hamper tourism flow and safety. At the same time longer periods with precipitation accompanied with windy episodes may reduce the quality and also safety of nature-based tourist activities and experiences such as (guided) hiking tours in the Norwegian mountains and on glaciers.

We are analysing the change in climate indices, such as the probability of consecutive wet days, changes in precipitation phases (snow, sleet, rain) relevant for the skiing season. We make use of the Norwegian climate data store, a 1x1km gridded data set consisting of an ensemble of ten Euro-CORDEX bias-corrected regional climate model projections for Norway which are available at <https://nedlasting.nve.no/klimadata/kss>.

We aim to publish a selection of climate indices relevant for the tourism sector on the webpage of the Norwegian Centre for Climate Services, <https://klimaservicesenter.no> towards the end of the project.