

Supplementary file 1: Empirical materials

In the Governing Digital Commons project (2017-2021), we organized workshops and interviews on the topic of forest data. In a national-level workshop in Helsinki in January 2018, the focus was on mapping, categorizing, and contrasting stakeholder expectations on the actor-level, sector-level, and society-level benefits of wider access to data on natural resources, with forest data as a sub-category. In August 2018, we organized a stakeholder workshop in Kuusamo, North-Eastern Finland, to explore the potential benefits of open natural resource and forest data for local livelihoods at the regional level. In this workshop, the participants were facilitated to explore how open, digital data on forests and nature could benefit the local livelihoods and knowledge related to use of data. The workshop data was complemented by six stakeholder interviews in March 2019. Kuusamo was selected as a focus region because it is a hub for multiple significant forest uses and forest-based livelihoods, including nature tourism, forest industry and nature conservation. Workshop participants and interviewees included forest-owners, forestry companies, tourism companies, non-governmental organizations (NGOs), regional developers, Kuusamo city representatives, and public authorities including the Ministry of Agriculture and Forestry and the Ministry of Environment, and scientists from the Finnish Environment Institute SYKE and the Finnish Natural Resources Institute (Luke). The workshop discussions and interviews were recorded and transcribed. The material was analyzed qualitatively for recognizing the benefits discussed. The benefits were categorized into 1) valorization of ecological functions, 2) valorization of bioeconomy products, 3) valorization of experiences, and 4) strengthening democracy.