Metadata form of Silva Fennica

This form is designed for writing the elements of metadata, which are used in the description of research materials such as data and codes. The form is based on the work done in the Work Group "Description of research materials" under the Finnish Open Science Coordination.

| Item | Description | Responsible |
|---|---|---|
| *Name of the data / code* | Puupohjaisten tuotteiden korvausvaikutus fossiilisiin kasvihuonekaasupäästöihin Suomessa, EU27:ssä ja maailmassa. Effects of wood products substitution on fossil carbon emissions in Finland, EU27, and the World. | Author |
| *Author & ORCID* | Heräjärvi, Henrik (ORCID: 0000-0002-7256-3887)<br>Taylor, Adam<br>Mutanen, Antti<br>Tolvanen, Miika<br>Pykäläinen, Jouni | Author |
| *Authors' affiliation(s)* | University of Eastern Finland (00cyydd11)<br>University of Tennessee (020f3ap87)<br>Natural Resources Institute Finland (02hb7bm88)<br>University of Eastern Finland (00cyydd11)<br>University of Eastern Finland (00cyydd11) | Author |
| *Owner of the material* | University of Eastern Finland, Natural Resources Institute Finland | Author |
| *Publisher* | | Author |
| *Funder* | Natural Resources Institute Finland (02hb7bm88)<br>University of Eastern Finland (00cyydd11) | Author |
| *Description* | Public statistics data were used to calculate the Finnish, European, and World volumes of selected wood-based product (sawn timber, wood-based panels, pulp&paper) and energy production. | Author |
| *Methods* | Public production statistics data were taken to MS Excel, where they were converted into dry-matter tons of wood used and, furthermore, avoided fossil $CO_2$ equivalents using respective displacement factor (DF) sets that were adopted from literature. Sensitivity of avoided emissions for future wood use changes was tested by assuming +20% and -20% changes in Finnish wood use compared to 2020 level. Furthermore, computation was made with constant DFs and ones that decrease over time due to decarbonization of fossil-based production and products. All necessary assumptions and methodological limitations are explained in the Materials and Method section of the manuscript. Only the part of industrial wood-based energy that is delivered to the markets, has real substitution effects. Based on literature, the "market energy" proportion was calculated by subtracting industries own wood-based energy consumption from their total wood-based energy production. | Author |
| *Variables* | Production volumes of:<br>Pulp and paper (t)<br>Sawn timber ($m^3$)<br>Wood-based panels ($m^3$)<br>Energy ($t/m^3$) | Author |
| *Author keywords* | forest industry production statistics, FAOSTAT, Luke statistics | Author |
| *Vocabulary keywords (community standard)* | | |
| *Discipline* | | |
| *Type of material* | Official statistics data | Author |
| *Language* | ENG | Author |

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|---|---|---|
| *Time range covered* | 2020-01-01 – 2020-12-31 | Author |
| *Geographic region* | The World, EU27, Finland | Author |
| *Version* | | Author |
| *File format(s)* | | Author |
| *Availability of the materials (open, embargo, registration, limited, registration required)* | The raw data are fully accessible:<br>https://www.luke.fi/fi/tilastot<br>https://www.fao.org/faostat/en/#data/FO<br><br>Only the links to public databases can be provided. | Author |
| *Justification for access restrictions* | | |
| *Licence* | | |
| *Connections with other research materials* | | |
| *Access to the connected research materials* | | |
| *Codes only: hardware/software requirements for running the code* | | |
| *Connections to other products of research* | | |
| *Personal data* | | |
| *Confidential or secret data* | | |
| *Publication date* | | |
| *Preservation policy* | | |
| *Permanent identifier (PID)* | | |