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## **National Land Survey of Finland's Open Science Policy**

### **1. Objective and background**

*The objective of the Open Science Policy of the National Land Survey of Finland is to specify the organisation's principles for open access publications and open publishing and licensing of research data. The NLS's Open Science Policy is an evolving document that is specified when necessary.*

Universities Finland UNIFI published 28.5.2018 Open Science and Data (ATD) Action Plan for the Finnish research community. It is stated in the program: Open Science is a science policy movement that strives to update the practices of openness, which is a basic part of science in the digital environment. Free online access to scholarly information and research products (such as publications and data), enhances the quality of science, promotes democratic decision-making, enhances public understanding and awareness, and serves the business community. The key principles of Open Science include accountability: as open as possible, as closed as necessary.

In the NLS we are following up the execution of the ATD-programme. Therefore special attention is paid to open access publishing and open research data in this document. The number of publications written by National Land Survey of Finland's personnel is part of the NLS's performance metrics meaning it is important that all the scientific and professional publications are reported and that where possible made openly available. The information is reported from the NLS to the Ministry of Agriculture and Forestry as well as to the Ministry of Education and Culture's VIRTU publication information repository as part of the NLS's publication reference collection process. Statistics Finland also utilises the publication data reported to ministries. Research funding instruments and other decision-makers utilise the Ministry of Education and Culture-maintained national data on publication activities by universities and research institute personnel. The European Union's Horizon 2020 framework programme and for terms for application of research funding from the Academy of Finland on 27 September 2017 stipulated that publications produced with public funding, or their self-archived version, are made openly available to all. Open access increases the impact of scientific and professional publications, as publications, which are openly available are cited more often than others.

The National Land Survey's Research Policy published on 14 June 2017 stipulates the following on the openness of research and science: "Many key funding agencies (such as the EU, Academy of Finland, Tekes) require that organisations applying for research funding be committed to the objectives of Open Science and Research (ATT). The goal is to make the publications and public information produced by public research organisations easily accessible to all for further use. Open publication policy promotes the broader use of research data to meet the needs of research and business. A mechanism and common principles will be created to ensure that publications produced with public funding will be made openly available to all, wherever possible, by self-archiving materials in a machine-readable format and storing them in a suitable publication archive or database, from which they can be easily accessed free of charge."

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The National Land Survey collects data into the VIRTAs publication information repository via the JUSTUS publication data service, on the use of which the NLS has entered into an agreement with the IT Centre for Science (CSC). The JUSTUS Service facilitates the entering and electronic saving of publication data in the VIRTAs publication information repository, and users can access them through the JUULI portal ([juuli.fi](http://juuli.fi)). The JUSTUS Service is intended especially for organisations, which do not have their own research information systems or publication register. The NLS has entered into an agreement with the University of Helsinki on an electronic self-archiving service, which was built to be part of the University of Helsinki's HELDA digital archive. The purpose of the NLS HELDA is to increase the visibility, use and impact of the NLS's research and professional publications by offering open access to publications via the NLS's own open publication archive. The NLS's HELDA website can be found at <https://helda.helsinki.fi/handle/10138/220958>.

## 2. Open Access publishing

*The National Land Survey has made the decision to publish research and professional publications as high standard open access publications whenever possible.*

Open Access (OA) publishing is an electronic publication model quickly growing in popularity, which supports open access to scientific data as an alternative to traditional commercial and publisher-focused publishing. The requirement for openness applies particularly to peer reviewed articles, but projects and authors are also encouraged to publish other publication types openly.

The instructions and terminology that supplement the publishing policy can be found on the information services page of the NLS intranet. <http://mmlintra.nls.fi/node/147871>.

### 2.1 Costs and open publishing methods

*The central policy for the National Land Survey's publication activities is that, as a rule, the projects that produce publications are mainly responsible for all costs related to the publications.*

Plans for Academy of Finland research and EU projects must take into account the costs possibly related to open publishing. In other cases, costs related to publishing can be covered from e.g. a research department's general funds if this is soundly justified.

One example of open publishing methods is the so-called hybrid model, which refers to a combination of subscriptions and unpaid use. The author can open his or her article to the public by paying a fee determined by the publisher. However, hybrid publishing is a temporary solution on the path to open publishing.

Other publishing methods based on the Ministry of Education and Culture's, and Academy of Finland's practices include the so-called green and gold models. In the case of the green model the article is published in a traditional subscription-based scientific journal and self-archived in machine-readable format to an electronic publication archive or database with open access. In the gold model, the article is immediately published in an openly accessible publication channel of high standard, which operates in accordance with the principles of open science, in other words as an Open Access publication. In this case, the publisher is responsible for ensuring open access to the article and the article is immediately available for public viewing. Often times, a publisher will collect a fee that is included in the

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project's research costs. Open publication types are described in more detail on the information services page of the NLS intranet <http://mmlintra.nls.fi/node/147871>.

## 2.2 Self-archiving

*The National Land Survey encourages the publication of the final, i.e. peer reviewed and edited version of an article first and foremost in the National Land Survey's HELDA electronic self-archiving service.*

If the publication agreement does not allow this, the article can often be self-archived as a so-called pre-print version, i.e. the researcher's own final draft. Self-archiving is also possible after an embargo in line with the practices of international publishers, which usually lasts at most six months. At the National Land Survey materials are self-archived in PDF format in accordance with the HELDA information service instructions, see National Land Survey intranet <http://mmlintra.nls.fi/node/147871>.

## 3. Open publishing and licensing of research data

*The National Land Survey of Finland recommends that the research data for projects be published openly. The project leaders (PIs) are responsible for seeing to it that the research data at least for projects funded by the EU and the Academy of Finland are archived and opened as quickly as possible after research results have been published in national or international archive or repository service of importance in one's own field.*

However, materials may have different levels of openness from completely open to confidential. The research project and the party publishing the materials must ensure that publishing the material does not violate the Act on the Openness of Government Activities, the Personal Data Act or the Copyright Act or breach any of the National Land Survey's other agreements (e.g. research agreements). When open access is given to materials, licensing of the material must be seen to (see the instructions provided by the Academy of Finland <http://www.aka.fi/en/funding/responsible-research/open-science/>).

*The National Land Survey's policies concerning the institute's open topographical data and their licensing (CC-BY-4.0) are described on the following web page:*

- <http://www.maanmittauslaitos.fi/kartat-ja-paikkatieto/asiantuntevallekayttajalle/maastotiedot-ja-niiden-hankinta>
- <http://www.maanmittauslaitos.fi/kartat-ja-paikkatieto/asiantuntevallekayttajalle/maastotiedot-ja-niiden-hankinta>

*The National Land Survey also recommends (CC-BY-4.0) licensing of research data.*

*The National Land Survey of Finland recommends the following open data publishing services in line with the Academy of Finland's recommendations.*

a) Open Science's national services (<https://avointiede.fi/palvelut>)

- AVAA a publishing platform for open research data (includes the Paituli service for geospatial data)
- Etsin service for research data search
- IDA Research Data Storage
- Tuuli data management plan tool

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- b) - CERN's Zenodo open data repository
  - The European Data Infrastructure (EUDAT) Collaborative Data Infrastructure (especially for EU funded projects)

Part of the services offer temporary user rights only for university researchers or other separately determined research projects, but even now projects funded by the Academy of Finland can get usernames on request e.g. to IDA. The National Land Survey is in the process of seeking user rights also for research institutes.

#### **4. Responsible research practices**

*The openness of science must always be promoted using responsible research practices and respecting the legal operating environment.*

In 2016, the National Land Survey committed to the guidelines on the Responsible Conduct of Research (RCS) laid out by the Finnish Advisory Board on Research Integrity (TENK).