

National Collaboration in Research Data Management: The Finnish RDM Training Network

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Abstract

There is a growing demand for Research Data Management (RDM) services. The RDM and related FAIR principles represent a complex and multifaceted field that requires a diverse range of expertise. While the demand is increasing, research-related organizations struggle to find enough resources allocated to support services. In Finland, RDM specialists have formed a national training community to address some of the challenges by creating educational materials, training one another, and providing peer support. Here, we describe the structure of the network, how it functions, its relationship with international RDM networks, what can be achieved through national cooperation, and the current challenges.

Keywords

Research data management, open science, collaboration, networking

Introduction

Research Data Management (RDM) has become an essential part of modern research. Researchers are increasingly required to conduct open and responsible research practices, and the quality of RDM has become increasingly important for sustaining scientific progress (Wilkinson et al., 2016; UNESCO, 2021). At the same time, the expansion in data-intensive research has increased the expectations of research organisations and funders that research data is managed in accordance with FAIR principles, also complying with ethical and legal requirements (Wilkinson et al., 2016; European Commission, n.d.; European Commission: Directorate-General for Research and Innovation, 2018). This has increased the need for RDM support services, especially

the demand for experts who can support researchers throughout the entire research data life cycle (Perrier et al., 2017; Koers et al., 2020; Andrikopoulou et al., 2022).

The scope of RDM has also expanded. Supporting researchers now requires expertise in areas such as data documentation, storage, metadata management, data sharing, data repositories, and legal and ethical issues. In addition, experts must be familiar with the distinctive practices of research organizations, their guiding policies, and even the discipline-specific practices (Witt, 2012; Ashiq et al., 2022; Sheikh et al., 2025). Previous research has shown that well-organized RDM support services help researchers manage research data more effectively (Hofelich Mohr et al., 2024). Therefore, it is important for research organizations to provide comprehensive and well-developed RDM services that support researchers throughout the whole research process (Witt, 2012; Perrier et al., 2017).

Despite the growing importance of managing research data, many organisations struggle with limited resources and a lack of trained experts (Pinfield et al., 2014; Cox et al., 2017; Donner, 2023). For example, in Finland, each research organisation typically has on average one and half full-time RDM expert (Open Science Coordination in Finland, 2024). The experts are responsible for all RDM related tasks such as training, providing feedback on Data Management Plans (DMPs), and transferring RDM expertise to new employees. Additionally, the RDM sector is also characterised by high staff turnover, limited formal training opportunities, and ever-changing competence requirements (Roadmap for professional qualification of data management experts working group, 2024).

However, Finland has a long tradition of national cooperation in open science and research support services (UNESCO, n.d.; Open Science Coordination in Finland, 2025a; Ala-Kyyny, 2023; Backman et al., 2023). Based on this culture of collaboration, the Finnish RDM experts established a national collaborative network for RDM training in 2019, intending to develop and share expertise among RDM experts and to strengthen peer support.

This article examines the development and operating model of the Finnish national RDM training network as an example of national cooperation in RDM. The article analyses how a nationally coordinated peer network can support professional development and strengthen RDM competence in a small and geographically dispersed research community. The case of Finland shows that even in small countries with limited resources, national expertise can be strengthened through open cooperation and peer-to-peer networks.

The Finnish RDM field

Finland is a relatively small country with a population of 5.6 million inhabitants (Statistics Finland, 2026). As a result, the resources of the scientific community are small, and consequently, the number of RDM specialists is also limited. The country has 22 universities of applied sciences, 13 universities, 12 research institutes, and one RDM research infrastructure (Ministry of Education and Culture [Minedu], n.d.) scattered across the country. According to the Open Science Coordination in Finland (2024), Finnish research organisations have an average of 1.6 full-time RDM specialists.

Perhaps partly being a small country, Finland has a strong culture of cooperation. National cooperation has long been a natural part of our operating culture in the areas of open science, research administration, research support and research services (Open Science Coordination in Finland, 2025a; Backman et al., 2023)

An example of national cooperation is Finn-ARMA - a broad cooperation network - which brings together experts working in research administration and research services from higher education institutes and research institutes (Finn-ARMA, n.d.a). Another example of such cooperation is the Open Science Coordination in Finland (AVOTT), which promotes open science and open research in Finland. Its role includes discussing opportunities, challenges, and solutions, such as identifying barriers and addressing the needs of the research community to practice open science.

AVOTT's coordination work is based on cooperation between working and expert groups established in the different areas of open science, as well as a steering group that outlines the activities. Expert panels establish working groups for specific tasks, and they operate for a fixed term. Working groups are open to the whole academic community (Open Science Coordination in Finland, 2023).

There is no separate compensation associated with the cooperation activities and the involvement is voluntary. Instead, the work is funded by the participants' home organisations, which allow and encourage employees to allocate part of their working time for this type of collaboration.

AVOTT and Finn-ARMA also have strong connections to international networks. (Fig. 1). Members of these organisations actively participate in various international forums e.g. The European Open Science Cloud (EOSC). This enables regular two-way knowledge exchange between national and international forums (Finnish Open Science and Research Coordination, 2025b).

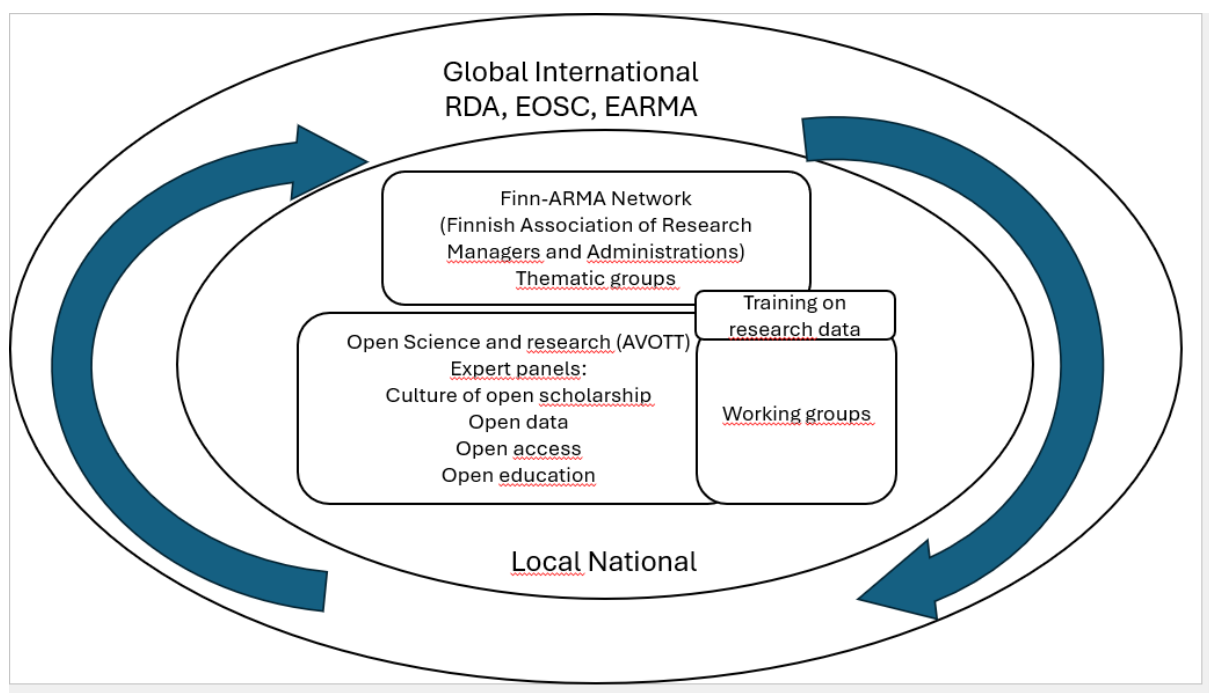


Figure 1. The collaboration structure and key actors of Finland's RDM training network.

Establishment of the RDM Training Network

In November 2018, the Researcher's Data Services Working Group was established under the Open Research Data Expert Group of AVOTT. The group had several smaller working groups focused on various themes linked to the RDM field. These themes covered a wide range of RDM-related topics, including applying FAIR principles (Lehtisalo et al. 2023), citing research data, and using Persistent Identifiers (PIDs) (Parland-von Essen et al. 2019; Lahtinen et al. 2020) as well as RDM training. It soon became apparent that RDM training was a broad topic with a growing need. It became apparent that the group needed its own permanent network of cooperation; hence, a separate RDM training network was established in 2019. Initially, the network operated under AVOTT for a few years as a fixed-term working group but transitioned to Finn-ARMA in 2022 because its work required a more continuous structure than the fixed-term working groups typically operating under AVOTT.

The primary aim of this network is to bring together all RDM professionals in Finland and serve as a forum for collaboration and peer support. Additionally, the network produces various training materials and sessions related to RDM for Finnish research organisations and organises national training sessions to avoid duplication of effort and save resources. A key objective is also to train RDM specialists using a train-the-trainer model and facilitate knowledge exchange between trainers.

The activities of the network are open: anyone involved or interested in RDM training in higher education or research institutions can participate in the events. Members can choose how actively they participate in the network's activities. Participation in training events is also open to non-members.

The network meets approximately every two months. In addition, smaller groups are formed around topical themes. The smaller groups work on training or instructional material considered necessary at any given time, and they meet more closely according to the working group's wishes and the needs of the work process. The aim is to document the work of the smaller groups and the materials produced in as much detail as possible, and to present the process to all network members. This ensures that the work to be done is known to all members of the network and thus to all organisations.

An established form of activity is the annual RDM Trainers' Days. During the Trainers' Days, RDM trainers have had the opportunity to receive training on topics related to RDM. The events are typically hybrid and last half a day. Past activities have included training on topics such as the anonymization of research data, evaluating the functionalities of different repositories, and the replicability of research.

The challenge for the network is that it lacks a predefined action plan. Instead, activities and smaller working groups are formed in response to the needs identified by the members.

Assessing national RDM training needs

One of the first tasks of the network after its establishment was to form an overall picture of the RDM training offered in Finland. To this end, in 2020–2021, the network carried out a national survey of RDM training offerings of research organisations and universities (Kanerva et al. 2022). The results of the survey were utilised in the planning of the network's operations and in the development of training materials.

Although the number of respondents to the survey was quite small – 36 out of 76 research organisations – and was limited to higher education organisations (Universities and Universities of Applied Sciences), it provided a good overview of the current situation. The results showed that most organizations offered RDM training at a general level, but there were only a few discipline-specific and more advanced training courses offered. A key reason was identified as the lack of competence among trainers. The results suggested that even though Finnish organisations had established a strong foundation for basic-level RDM training, providing discipline-specific and advanced training would require strengthening RDM expertise in research support services.

To meet the needs identified in the survey, the network has over the years produced training materials on topics such as data repository selection and data organisation, along with various guidelines, such as data protection guidelines for thesis advisors, and guidelines for writing and commenting on research infrastructure data management policies. All the training materials and guidelines produced by the sub-groups, are openly available in the Zenodo training network community (Datakoulutukset-työryhmä, n.d.) for anyone to use when planning a training (Table 1).

Communication is an important part of the network's activities, as it helps the training materials and other guidelines produced by the group to reach the wider open science community in Finland. The network makes use of national collaboration networks, such as AVOTT and Finn-ARMA, to disseminate information. In addition, the network's extensive organizational representation promotes the spread of materials, as members actively share information within their own organizations and networks.

Table 1. Examples of materials created in 2019–2026.

Type of material	Title
Training materials	• How to choose a service for data sharing and publishing? (Fuchs et al. 2025) • Data Organisation ABC workshop (Fuchs et al. 2023) • Managing data management in a research project (only in Finnish) (Karhapää et al. 2024) • (In progress) How to find and use research data?
Instruction materials for thesis supervisors	• Master thesis and data protection (only in Finnish) (Kanerva et al. 2024)
Instructions for research infrastructures	• Data Management Policy for Research Infrastructures (Research Council of Finland, n.d.)
Instructions for RDM specialists	• How to evaluate research infrastructure data management policies (only in Finnish) (Finn-ARMA, n.d.b) • Data management competency objectives: table (only in Finnish) (Ruuskanen et al. 2025) • Perspectives on ethical and responsible research in social media (only in Finnish) (Eilo et al. 2026) • (In progress) Data management guidelines in arts and humanities • (In progress) Updating the Data management competency objectives
Surveys	• Survey of the Finnish Research Data Management (RDM) training 2020-2021 (Kanerva et al. 2022)

Discussion and conclusions

The Finnish RDM training network demonstrates how effective national cooperation can support the quality of RDM services. Rather than each organisation using its limited resources to develop RDM expertise and training independently, the network enables organisations to share expertise and knowledge, e.g. with jointly developed training materials, thus reducing duplication of effort. In a few years, the network has grown into an active community of RDM professionals from research organisations across Finland.

Openly available licensed materials benefit not only the Finnish community but also anyone working in RDM. A good example is the hands-on workshop materials about file and folder naming practices, version control, and other documentation-related concepts –Fuchs et al. (2023) – that have been downloaded more than 2,000 times. Since the Finnish RDM community is relatively small, the high number of downloads may indicate a wider interest in the materials beyond Finland.

The training materials created serve the community through a train-the-trainer concept, adding value to the limited training opportunities for RDM specialists. Additionally, they enhance the existing training materials in the RDM landscape.

The value of the network extends beyond producing training materials. Regular meetings, informal discussions and peer support have provided opportunities to exchange experiences, discuss common challenges and develop practical solutions together. These activities have also supported the professional development of RDM specialists by creating opportunities to discuss the competencies and roles required in RDM support. Discussions within the network have emphasized that high-quality RDM support requires more than just technical or subject-matter expertise. Soft skills – such as communication and collaboration skills, which often receive less attention than subject-matter expertise – are crucial for providing effective research support.

Finnish research organisations have created a solid base for general RDM training, but there is still a clear need for more discipline-specific support. The Research Data Management Training Survey (Kanerva et al., 2022) showed that meeting this need requires deeper RDM expertise within research organisations. Similar observations have been reported elsewhere, where generic RDM training has been found useful for raising awareness but insufficient for addressing discipline-specific needs (Oo et al., 2022; Lefebvre et al., 2018). These findings also suggest that the network would benefit from involving a wider range of specialists, such as data stewards, data managers and researchers with discipline-specific expertise.

One of the practical results of the network has been to define a RDM skills matrix for different target groups, including undergraduate students, doctoral students, researchers, and data support staff (Ruuskanen et al. 2025). Initially, the aim of defining these levels was to help with the planning of training, but it was noted how difficult it is to define what different stakeholders should know in practice. There were no clear answers to questions such as what kind of RDM expertise is expected of doctoral candidates or how responsibilities should be shared between researchers and support services.

The discussions also highlighted the fact that the definition of competence is related to broader questions about professional roles and to strategic issues about the organisation of RDM services in research organisations in general. Clarification of responsibilities can help organizations to consider the way RDM services are organised, the required expertise, and the best possible allocation of limited resources.

As RDM continues to develop and demand for specialised expertise grows, collaborative networks can help research organisations strengthen their RDM support services. However, maintaining such a network is not without challenges. Participation is voluntary and depends on members finding networks' activities useful and being willing to contribute their time. The network also depends on home organisations recognising the value of the work and allowing staff to participate during working hours.

This flexibility has been one of the network's strengths, allowing it to respond quickly to emerging topics. At the same time, a clearer long-term direction could help support the continuity of the network.

Overall, this case study suggests that national collaboration offers an effective way to develop and share RDM expertise within a small research community. Sustaining this type of collaboration requires continued commitment from both research organizations and network members, as well as the establishment of long-term goals.

About the authors

Tanja Lindholm works as a research data management expert at the University of Helsinki's research stations, where she is responsible for developing their research data management practices. Her work focuses on mapping metadata from long-term monitoring studies and creating data management plans for the University of Helsinki research stations. With a background in geology and biology, she has previously worked at Aalto University, University of Helsinki, and in data support at the University of Helsinki Library. Lindholm is an active trainer and science communicator who promotes FAIR data principles in both national and international research infrastructures, including the eLTER network.

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