

FARMER-OWNED DATA WAREHOUSE FOR INTEROPERABLE AGRICULTURAL DATA MANAGEMENT FOR IMPROVED DECISION MAKING

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MAIN CHALLENGE/ OBJECTIVES

Farm data is fragmented across manufacturer and service provider systems, preventing farmers from using their own data for informed decisions. This leads to missed economic, environmental, and operational benefits. A farmer-owned data warehouse is needed to integrate diverse data sources (machines/sensors/FMIS) for better decisions and collaboration.

MAIN RESULTS/ OUTCOMES

Developed scalable, farmer-owned data warehouse to store, control, and share farm data. EFDI standards and Tritom for seamless two-way data flows between machines and digital services is achieved, eliminating data silos for improved decision-making, better-timed operations, higher yields, reduced inputs & improved collaboration between farmers and advisors.



PRACTICAL IMPLICATIONS / RECOMMENDATIONS

Farmers led the initiative by identifying data silos as a key issue and co-developing the solution with researchers, advisors, and agri-tech firms in the Operational Group. This ensured the technology met real farm needs and built trust in data sharing and farmer data ownership. The project set up automated data pipelines from machines, services, and public sources, enabling secure, FAIR data sharing with clear licensing under farmer control. On-farm pilots (e.g. sowing, harvesting) showed how real-time data from sensors and tools supported better decisions. Improved data analysis helped optimize sowing and harvest timing, boosting yields and reducing waste. These demonstrations proved the value of data-driven decisions; economic (higher yields, input savings), environmental (precise input use), and operational. Collaboration among farmers, advisors, researchers, and tech providers was key, with workshops and field days enabling knowledge exchange and tool refinement. The model is scalable for EU contexts and aligns with the EU Data Act and Common Agricultural Data Space, promoting farmer data sovereignty and cross-actor collaboration.

GEOGRAPHICAL LOCATION

Finland

FURTHER INFORMATION

DataSato was an EIP-AGRI Operational Group project in Finland (2022–2024) centered in the Central and North Ostrobothnia, Central Finland, and Uusimaa regions. It was coordinated by Centria University of Applied Sciences in partnership with JAMK University of Applied Sciences and local agri-tech companies, with participating pilot farms. The project was part-funded by the EU (European Agricultural Fund for Rural Development) under Finland's CAP Strategic Plan. The final report (in Finnish) is published by Centria (Report series 97, ISBN 978-952-7604-24-3).

Keywords: farm data warehouse, digital agriculture, data interoperability, smart farming, fair data, data sharing, data ownership, EFDI, Tritom, Operational Group, Finland.



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