



All-in-one farm information management system

farmB Digital Agriculture S.A.

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Problem Statement

Fragmented data in digital agriculture presents significant challenges, as stand-alone precision agriculture applications often fail to provide holistic solutions for crop production. This fragmentation leads to uncertainty in the traceability, especially, of protein-based agricultural products, complicating efforts to ensure transparency and accountability in the protein supply chain. Moreover, the lack of real data on field production hampers accurate environmental and social impact assessments, making it difficult to understand the true implications of farming practices on the protein supply chain. Additionally, processing and generating metadata for Life Cycle Assessment (LCA) in primary production is fraught with difficulties, further complicating efforts to measure and mitigate the environmental footprint of agricultural activities towards the design and validation of plant protein crop systems. These challenges underscore the need for integrated digital solutions to enhance data coherence and reliability as farmers leverage the added-value opportunities of protein crop production.

Solution



The farmB's all-in-one farm information management system overcomes the "fragmented information problem" in precision agriculture applications by combining IoT, AI, Cloud, and Big Data technologies providing data analytics and decision-making under a holistic assessment of the available information for protein crop production. farmB operates based on dynamic data collected in the field (by proximal and remote sensors, UAVs, agri-machinery, agri-robotics, and digital log of agricultural operations) throughout the cultivation season. In its database, it also incorporates all the information needed for real market products and machinery, in a way to ensure the quality of the data collected. farmB.log offers the inventory analysis mechanism that automatically prepares all the information needed for an LCA assessment in protein crop production, based on the inserted data, facilitating environmental assessment.

Benefits

farmB serves as a valuable decision-making tool promoting sustainability and circularity into the agricultural practice for protein products. All the primary production information is organized in a systematic manner within the platform, safeguarding the traceability of the final protein product. This benefits the standardization of the processes while enhancing the quality of the environmental assessment due to the originality of the collected data. Social impacts can also be addressed through the assessment of dedicated social indicators.

Practical recommendations

The users, insert agricultural practice data in farmB.log throughout the cultivation season. They then can extract the data needed for performing LCA with external software. Nonetheless, an instant environmental assessment is readily available with a calculation of the carbon footprint for each separate operation and for the entire cultivation altogether within the platform.

Environmental Impact

farmB provides directly to the user a variety of environmental assessment indicators. Carbon footprint is calculated for each operation separately, allowing for the identification of hot spots in the cultivation process of protein products so that interventions for improvements can take place. The calculation tool is certified according to the GHG protocol for agricultural production.

Weblinks

<https://farm-b.com/>

<https://valpropath.eu/>

About this practice abstract and VALPRO Path

This practice abstract is elaborated in the VALPRO Path project based on the EIP AGRI abstract format. VALPRO Path, a Horizon Europe project, spanning 4 years, from September 2022 until August 2026. With the participation of 22 partners from 9 countries, VALPRO Path is developing fresh possibilities, validating and showcasing ways to enhance plant protein production for food and feed in the EU.



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Project website: <https://valpropath.eu/>