WORKING PAPER

The Data-Related Challenge

Elvire Roblin

Context

There is an urgent need to transform European agricultural practices to address two key challenges, alongside the imperative to finance this transformation while maintaining profitability:

- Transition toward sustainable agricultural practices (e.g., improved water resource management).

- Challenge 1: Environmental protection (e.g., the agricultural sector accounts for 20% of greenhouse gas emissions).

- Challenge 2: Food sovereignty, a priority brought to the fore by the war in Ukraine.

- Challenge 3: Establishing a new, virtuous economic model that enables financing the transition while preserving a degree of profitability.

The FINAGRI Chair (Alternative Financing for the Agricultural Sector), based at IAE Paris, aims to identify best agricultural practices and facilitate access to financing for farm operators:

- 2015-2022 : First phase conducted with INRAE to develop a scientific methodology capable of evaluating impacts across various sectors, crops, and regions.

- 2020 : Creation of the **FINAGREEN** structure, designed as a continuous labeling and rating agency for environmental impact measurement. The goal is to address the absence of a European taxonomy on sustainable agricultural practices to guide investment flows.

- 2022 : Second phase focusing on the development of innovative financial instruments that represent natural capital, valued through data. This phase involves five workstreams bringing together farmers, the scientific community, and the financial industry to conceptualize a certificate of natural capital. Workstream 4 addresses the **data-related challenge**.

- Ultimately, these certificates will be brought to market to support the development of sustainable agricultural practices.

Our Proposed Approach for the Data-Focused Workstream : We propose a three-part approach to address the data challenge

- Understanding the needs of stakeholders.

- Identification and structuring of existing and potential data within a harmonized data architecture

- Development of a roadmap to prioritize needs and sequence the project into development phases

- Timeline: 3-month diagnostic phase, from January 8 to March 29, 2024
Total cost: €45,000 (excluding VAT)
Duration: 60 working days, at an average daily rate of €750 (excl. VAT)

Our proposal for the data-focused workstream is structured around three main components:

1. Understanding Stakeholder Needs:
- Identify the needs of key stakeholders (farmers, scientists, buyers, legal experts)
- Clarify data implications (required data, interrelations, data usage)
- Prioritize stakeholder needs

2. Data Infrastructure Development:
- Map and assess available data sources
- Analyze integration and maintenance challenges
- Develop a prototype/test database

3. Implementation Roadmap:
- Identify and prioritize key initiatives
- Develop a phased project timeline
- Define necessary resources (skills, workdays, personnel)

Understanding stakeholder needs: preliminary list of questions:

Farmers:
- How can we identify farmers aligned with the project?
- At what level should agricultural projects be aggregated?
- What financing mechanisms can be implemented for farmers?
- What data can be collected? What data are required by cooperatives under existing specifications?

Scientists:
- What models and projects are they working on? What data do they use?
- What platforms/programming languages are involved? What difficulties have they encountered?
- What upcoming projects are planned, and on what timeline?
- What types of models do they aim to implement (e.g., labels, ratings), and what data inputs are required?
- How many researchers are involved, in how many countries? Who should have data access?

Buyers:
- What are the needs depending on buyer type (investors, companies, governments)?
- What financial instruments do they use to allocate capital, and what are the data implications?
- Are their investments legally mandated? How is economic return measured?
- What is the current state of thinking on financial tools, and how do these function?
- What is the European regulatory framework for agriculture? Are there similar frameworks in other sectors?
- What are buyers' timelines?

Legal Experts:
- Do data comply with GDPR criteria?
- What level of access can be granted?
- Should data security tools be implemented?
- For what purpose were the data collected, and can they be reused?
- What are the legal retention requirements for the data? Should data be anonymized?
- Are consent forms needed from farmers?
- Should an ethical charter be developed?
- What should the data-sharing agreement look like?

Understanding the Current Data Landscape – 5 Key Dimensions

1. Domain Scope:
Focus on two priority domains:
- Data related to land-based indicators

- Data on water resources (e.g., AQUO standard database from the Netherlands)
Geographic coverage: European-scale data granularity

2. Data Sources:
- Public datasets (e.g., ANCHOR, IGN, FAO, CAP data)
- Agri-food sector data (e.g., SODEBO)
- Scientific research data (e.g., Wageningen University datasets)
- Farm-level data (to be defined)

3. Data Characteristics:
- Real-time vs. historical data
- Satellite imagery?
- Plot-level data?
- Meteorological data?
- Data ownership / Open-source status?

4. Quality and Compliance Criteria:
- Transparency of data?
- Data quality and regulatory standards?
- GDPR compliance?
- Potential conflicts of interest?
- Need for an ethical charter?

5. Harmonization:
- Establishment of common data standards
- Analysis of current data formats
- Selection of a data management platform (e.g., REDCap)