EU-FarmBook

Software contributions to the EU-FarmBook platform

A how-to guide about how to submit software and make it available from the EU-FarmBook platform

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Contents

1. What is this guide about?

Software is one of the categories of Knowledge Objects that are aimed to be delivered from the EU-FarmBook platform. By software we mean any kind of digital application related to agriculture or forestry, able to be executed offline or available online, which is the result of an EU-funded or national Research and Innovation project.

Considering the growing interest in and benefits of the digitalisation of the agriculture and forestry sectors, it is important to enable access to software from the EU-FarmBook platform. Within this context, the aim of this guide is to provide information and guidelines to contributors who want to make software contributions. The information delivered from this guide is about the ways in which software can be contributed to the EU-FarmBook platform.

Contributions of software, as well as of any other kind of Knowledge Object, can be made by either using the EU-FarmBook platform's upload form or its public API. Based on that, it is recommended to also read the Upload manual and the public API guide, as well as the Metadata guide available in the platform' Support page. Further support can become available after communicating with us via the EU-FarmBook platform's contact form.

This guide is a living document aiming to capture all the latest developments related to the kinds and types of software delivered from the EU-FarmBook platform to its users to cater for their knowledge and information needs to the best possible extent. Thus, regular updates will be made to this guide to better reflect developments.

In Section 2, details are provided about who this guide is for. Section 3 gives background information about the categories and types of software applications supported by the EU-FarmBook platform. The details of all the options available for making software contributions are available in Section 4. Finally, Section 5 contains important points to

be considered from contributors towards ensuring the quality of the software being contributed. An illustrative example is provided in Section 6 of this guide.

2. Who is this guide for?

This guide is aimed to be used by individuals working in EU-funded or national Research and Innovation projects related to agriculture and forestry, who have been assigned the role of contributor in the EU-FarmBook platform. Basic knowledge and skills on software development are considered a plus for the better use of the information and instructions in this guide. However, the focus of the document should not preclude any interested user wishing to obtain information and details about how software contributions are expected to be made to the EU-FarmBook platform.

3. Software that can be made available from the EU-FarmBook platform

Considering the EU-FarmBook platform's commitment to providing unrestricted access to information and knowledge that better serves the needs of its users, only open-access software is aimed to be delivered from it. The following characteristics are considered as important for the software to be made available through the EU-FarmBook platform:

- Release under a recognised open-source license (e.g., MIT, GPL, Apache).
- Free availability without any access restrictions.
- Source code publicly accessible for review and modification.

In addition to the above, the following points should be considered as a no-go for making software available through the EU-FarmBook platform:

- Proprietary or closed-source software.
- Software requiring paid licenses or subscriptions for core functionality.
- Software having a codebase with restrictive or unclear licensing.

The following categories of software are supported for upload to the EU-FarmBook platform:

- AI software
- Business software
- Data analysis software
- Data repository/database
- Decision Support Tool
- Educational/training software
- Farm Management Information System (FMIS)
- Game

- Scientific software
- Simulation

A short explanation of each of the supported software types is provide in Table 1 below. Details for the software types supported by the EU-FarmBook platform can be also found in the Upload manual.

Table 1. Types of software available in the EU-FarmBook platform

Type of software	Description
AI software	Software deploying Artificial Intelligence algorithms/models. As an example, we may refer to chatbots or Q&A tools the use of which allows the user to verbally pose queries.
Business software	Software developed to support various business activities (e.g., a CRM[1] software).
Data analysis software	Software applications used for performing various types of data analysis.
Data repository/database	Software used for the storage of data and information of various types.
Decision Support Tool	Software used to support decision-making processes. This type of software helps in the management, operations and planning levels of an organisation, as well as helps people in making decisions with respect to problems that may be rapidly changing and that cannot be easily specified in advance.
Education/training software	Software applications that have been specifically developed for education and training purposes.
Farm Management Information System (FMIS)	Software designed to assist farmers to perform various tasks related to operational planning, implementation and assessment of performed field work.
Game	Video game used to support training and educational purposes. It is considered as a separate type because of its prominent role in educational/training contexts. A serious game is a game designed for a primary purpose other than pure entertainment.
Scientific software	Software developed with the aim to support scientific purposes.
Simulation	Software developed to deliver an approximate imitation of the operation of a process or system representing its operation over time.

4. Contribution of software to the EU-FarmBook platform

This section provides all the details related to the different options available for making software contributions to the EU-FarmBook platform using either the upload form or the platform's public API. There are three different options for making software contributions:

[1] Customer Relationship Management

- Provide a link to the ReadMe page of the software's GitHub repository (or any other similar repository).
- Provide a software installation file.
- Provide a link to the software application to embed it in an iframe.

The supply of a link to the ReadMe page of the GitHub repository of the software (or other similar repository) is the recommended way to make software contributions. Each of the above options is presented and explained next.

4.1. Link to the ReadMe page of the software's GitHub repository

This is the recommended option for making software contributions. Using the upload form or the EU-FarmBook platform's public API, contributors are expected to provide the URL of the software's GitHub repository (apart from the rest of the metadata expected to be provided). Given this option, a user wishing to access the software and use it will be able to do so following the instructions available in the ReadMe page. Therefore, the following information shall be made available from the ReadMe page:

- **Software name and description**: a brief description of the software, what it is about, its purpose, and its key features.
- **Installation instructions**: a description of the steps needed to be taken to install the software.
- **User guide**: instructions on how to use the software, including commands, configurations, and example use.
- **Configuration details** (if needed): information on environment variables, configuration files, or required settings.
- **Contribution guidelines**: information about contributions including coding standards, branching strategies, and pull request guidelines.
- **License information**: the open-source license under which the software is released.
- **Authors and acknowledgments**: credits to contributors, maintainers, or inspirations for the project.
- **Issues and bug reporting**: a link to the issues page and instructions on how to report bugs or request features.
- **Versioning and release notes**: information on versioning, updates, and change logs.
- **Links and resources**: links to additional documentation and related resources.

4.2. Upload of a software installation file

The second option related to software contributions to the EU-FarmBook platform is that of providing the installation file of the software or a zipped archive (folder) containing the

installation file together with other files. Users can download the installation file locally to their computers and install the software.

Contributors can upload software installation files in their original format (e.g., `.exe`, `.msi`, `.dmg`, `.apk`, `.sh`, `.deb`, `.rpm`) or as a compressed archive (`.zip`, `.rar`, `.tar.gz`, etc.). In case of software contributions consisting of multiple files (e.g., setup files and documentation), compressing them into a single archive and uploading the archive to the EU-FarmBook platform is recommended. Table 2 contains software installation file types per operating system than can be considered for making software contributions to the EU-FarmBook platform.

Table 2. Software installation file types per operating system that can be considered for software contributions to the EU-FarmBook platform

Operating system	Software installation file types supported
Windows	`.exe` (Executable File), `.msi` (Microsoft Installer Package), `.bat` (Batch Script), `.cab` (Cabinet File), `.zip` (Compressed Archive), `.rar` (Compressed Archive).
MacOS	`.dmg` (Apple Disk Image), `.pkg` (Package File), `.app` (Application Bundle), `.tar.gz` (Compressed Archive).
Linux	`.deb` (Debian Package), `.rpm` (Red Hat Package Manager), `.sh` (Shell Script), `.AppImage` (Portable Executable for Linux), `.tar.gz` or `.tar.xz` (Compressed Archives).
Android	`.apk` (Android Package Kit).
iOS	`.ipa` (iOS App Store Package).
Cross-platform	`.jar` (Java Archive), `.bin` (Binary Executable), `.run` (Linux Executable Installer).

A compressed archive could be uploaded in the case of making multiple files available together with the software installation file. Some indicative examples of files that could be contributed as a supplement to the software's installation file are provided below:

- **Documentation and user guides** helping users to install and use the software:
  - **ReadMe** file (ReadMe.txt or ReadMe.md) providing an overview of the software, including installation instructions and system requirements.
  - **User manual** (.pdf, .docx) being a detailed guide on software functionality and usage.
  - **Changelog** (Changelog.txt or Changelog.md) being a record of updates, bug fixes, and new features in different versions.
- **Licensing and legal information** ensuring compliance with software distribution policies:
  - **License Agreement** (License.txt or EULA.pdf) outlining terms of use and distribution rights.

- **Open-source** or **third-party attributions** (Credits.txt) acknowledging contributors and providing license details.

- **Dependencies and supporting files**:
  - **Required Libraries** or **DLLs** (.dll, .so, .dylib) needed for execution.
  - **Configuration files** (.ini, .cfg, .xml, .json) with pre-configured settings for smooth operation.
  - **Database files** (.sql, .db) in case the software requires a local database.
- **Verification and security files** ensure integrity and security:
  - **Checksum file** (SHA256.txt, MD5.txt) allowing users to verify file integrity after downloading.
- **Optional extras** with additional resources that may enhance user experience:
  - **Sample data** (.csv, .json, .txt) that help users test software functionality.
  - **Demo videos** or **screenshots** (.mp4, .jpg, .png) providing visual aids for installation or usage guidance.
  - **Uninstallation script** (Uninstall.exe, Uninstall.sh) for removing software.

An important point that needs to be considered is that of the naming of the installation file or compressed archive. A good practice is to use a name that clearly indicates name of the software and its version (e.g., FarmSoft_v2.3_setup.exe or ForestryApp_1.1.zip).

4.3. Embed software applications in an iframe

A final way to contribute software to the EU-FarmBook platform is by embedding it directly within the platform. This is possible in the case of web applications using an iframe. To this end, the following information needs to be provided:

- Basic information:
  - **URL of the web application**: the direct link to the web application that will be embedded to the EU-FarmBook platform.
  - **Permissions for embedding:** allow the embedding of the web application by checking or modifying the X-Frame-Options and Content-Security-Policy headers on the target website.
  - **Authentication details** (if needed): make authentication parameters available (e.g., API keys, OAuth tokens, or session-based authentication), in case the web application requires login.
  - **Embedding parameters**: Contributors may need to specify allowed domains (the domain of the EU-FarmBook platform).
- Information enabling optional customisation:
  - **Display settings**: Contributors can define (i) the iframe's width and height, (ii) border and styling options, (iii) full-screen mode support.

- **Interaction handling**: if needed, the iframe can communicate with the "parent" website using the postMessage API for secure data exchange.
- **Security considerations**: the embedded web application needs to follow best security practices to prevent clickjacking, data leaks, or cross-origin issues.

5. Important remarks

The EU-FarmBook platform provides open-access software. However, it holds no responsibility for managing, updating, or maintaining the available software. Each software contribution hosted on the EU-FarmBook platform is maintained solely by its creator or development team. This means:

- The creator is responsible for updates, bug fixes, and improvements.
- Any issues, security vulnerabilities, or feature requests should be directed to the software creator(s).
- The EU-FarmBook platform cannot guarantee the support or functionality of hosted software contributions.

The EU-FarmBook enables access to software developed in EU-funded and national Research and Innovation projects and does not:

- Modify or maintain **the hosted** software.
- Provide technical support for **the hosted** software.
- Ensure long-term availability of **the hosted** software.

Users are advised to always check the software's documentation, GitHub repository (if available), or contact the software's development team for updates and support.

6. An illustrative example

In this section, we give the example of the upload of the installation file of a hypothetical FMIS (Farm Management Information System) called FarmSoft. The name of the file to be uploaded is FarmSoft_v2.3_setup.exe and the upload is done using the upload form.

The first step is to upload the installation file. You can either drag and drop the installation file (left box in Figure 1) or select it using the dialog box that opens after clicking on the file upload icon (the little document icon with the arrow looking upwards in it).

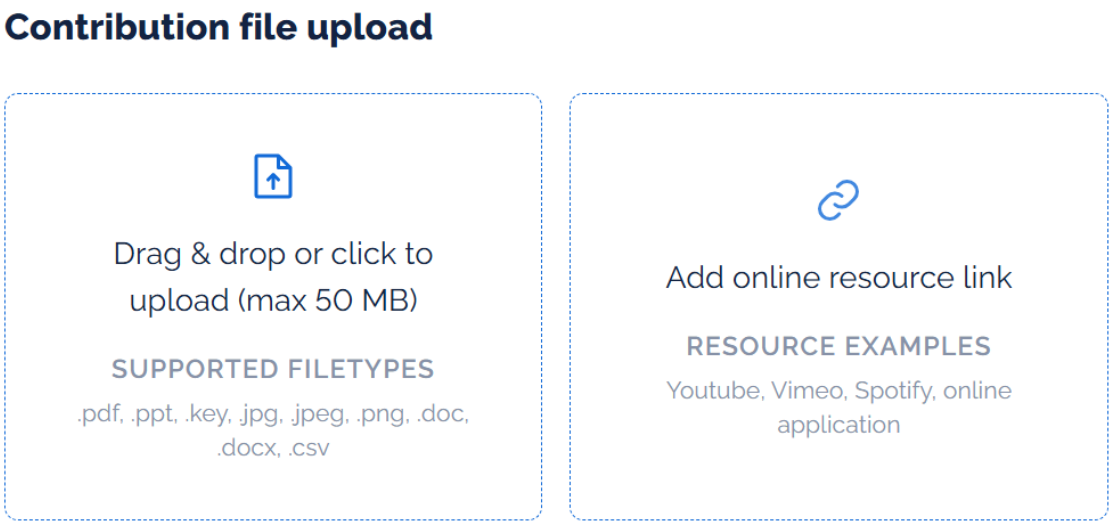

Figure 1: Upload of the FarmSoft installation file.

The next step is to select the category of the Knowledge Object provided to the platform, which is “Software Application”.

Figure 2: Selecting the category for FarmSoft.

After having selected the category of the Knowledge Object, a new section of the upload form appears to select the type of the software intended to be contributed. In the case of our example, the software is an FMIS (Farm Management Information System).

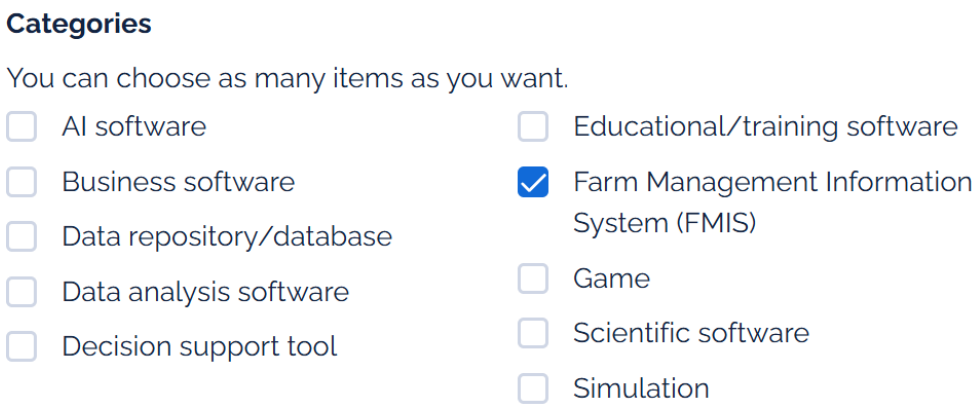

Figure 3: Selection of the type of software application for FarmSoft.

The date of creation (date of completion) of FarmSoft is provided next. Let us assume that this date is the 12th of September 2019.

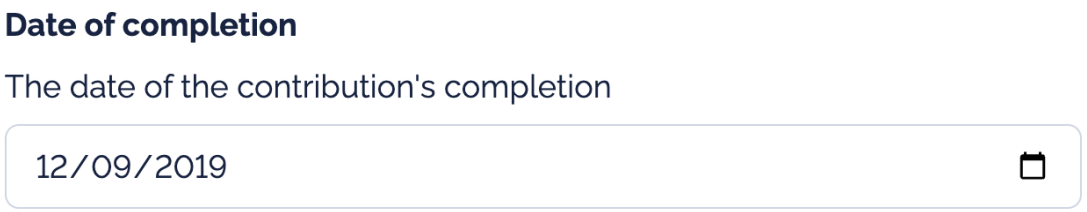

Figure 4: Providing the date of creation (date of completion) of FarmSoft.

Let us assume that FarmSoft supports operations and activities related to data storage/ access, monitoring, prediction/forecasting, and decision-making support. All these activities can be chosen as values to the “Purpose” field of the upload form.

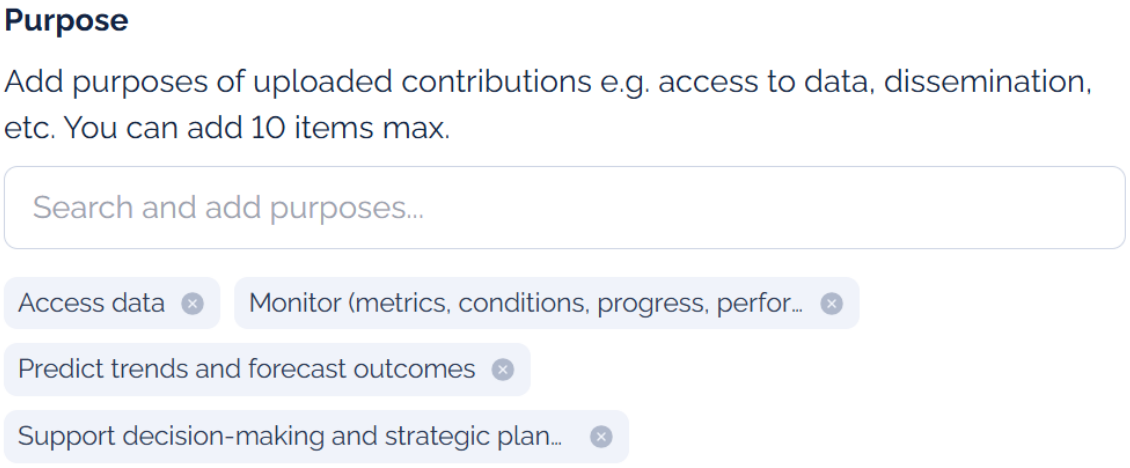

Figure 5: Specifying the Purpose of FarmSoft.

Suppose that FarmSoft is specialised in French farms. One can then pick France as the Location in the following field.

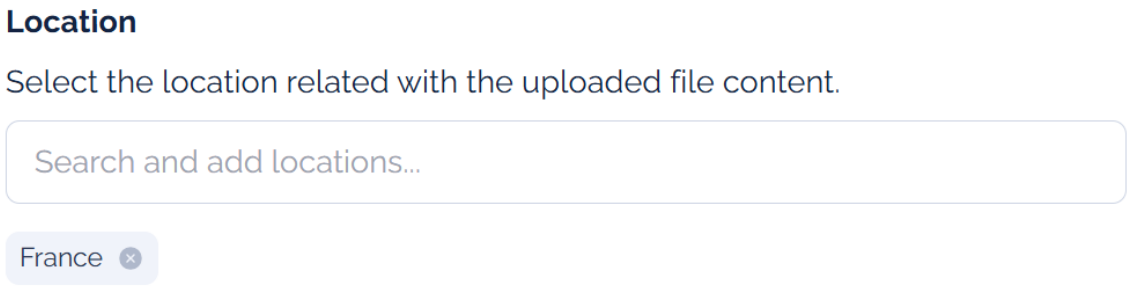

Figure 6: Providing the geographic location related to FarmSoft.

Basic information about FarmSoft needs to be provided next. The name of the software is the first piece of information to be provided.

Figure 7: Providing the name of the software application.

Next, a one-line description of FarmSoft can be provided.

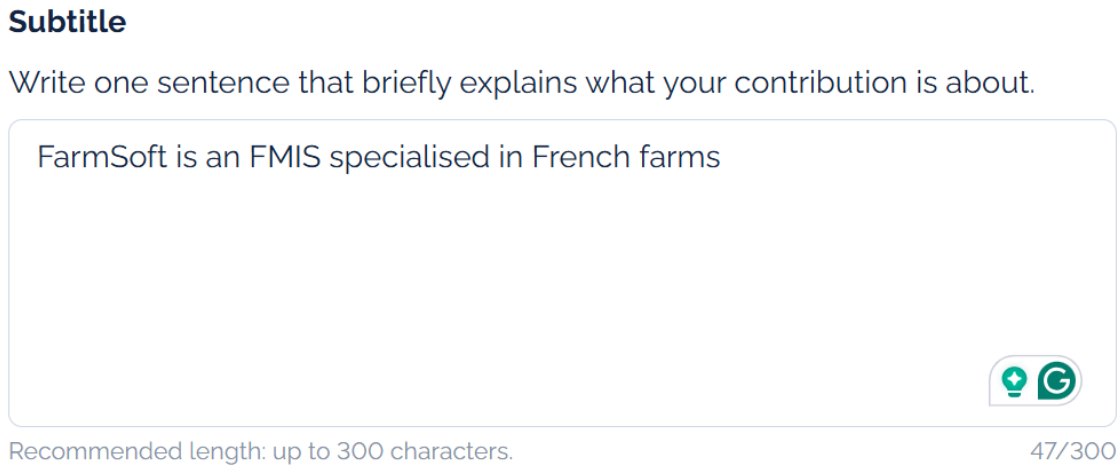

Figure 8: A one-line description of FarmSoft.

Then, a more detailed description of the software is provided.

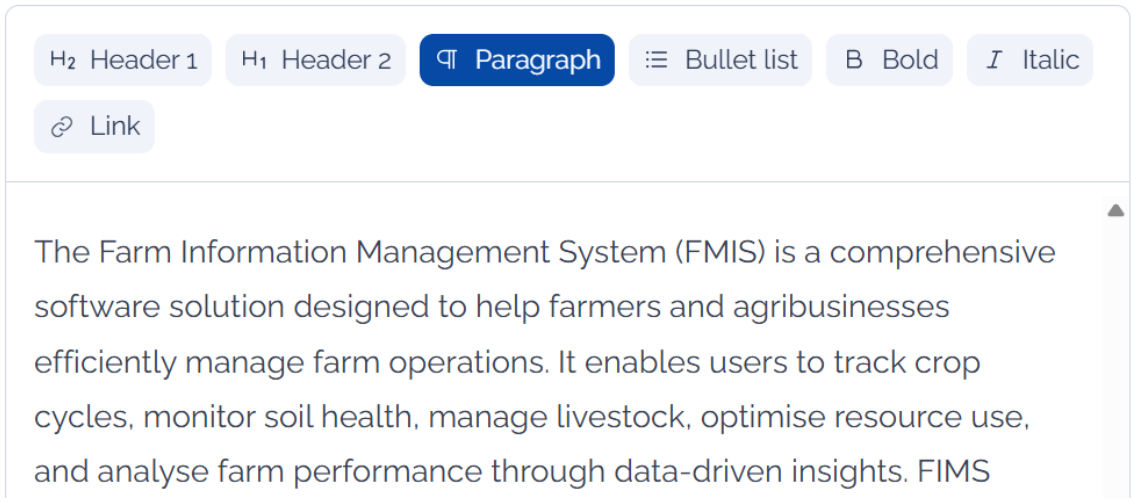

Figure 9: A detailed description of FarmSoft.

FarmSoft is related to Livestock and Crop farming, so we tick the corresponding boxes for the following Topics field.

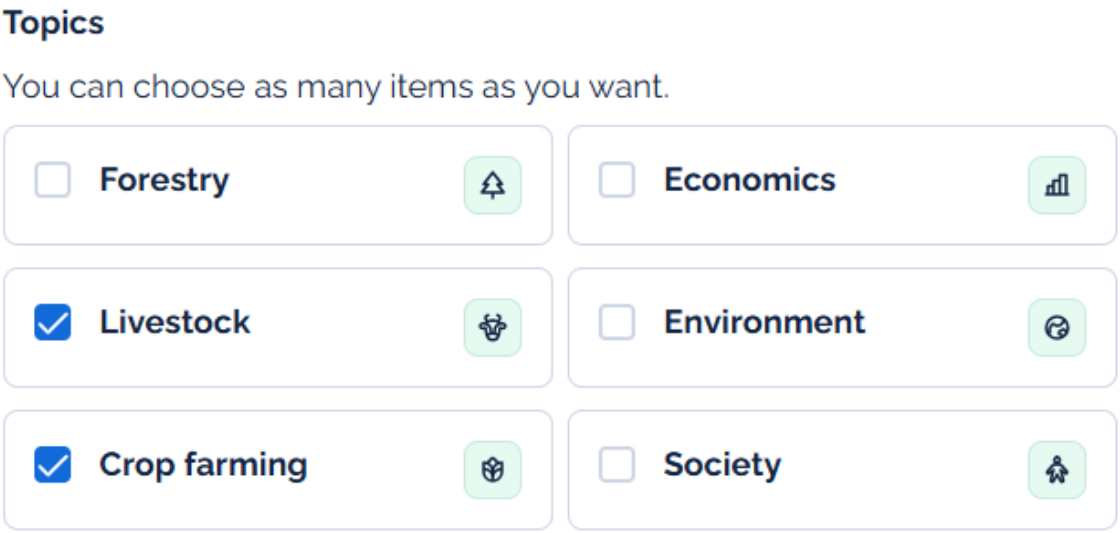

Figure 10: Topics assigned to FarmSoft.

In the following field, called Themes, the uploader can provide information on FarmSoft at a higher level of granularity compared to the Topics field, choosing words or phrases from a predefined list of concepts.

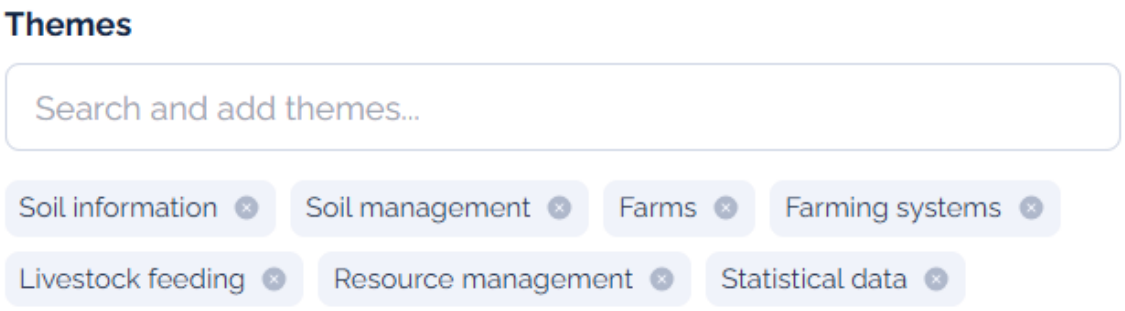

Figure 11: Themes assigned to FarmSoft.

A list of Keywords can be provided next. There is no predefined list for Keywords. Uploaders can choose them freely. The keywords selected for our example are: farm management, precision agriculture, crop monitoring, agri-tech software, and data-driven farming.

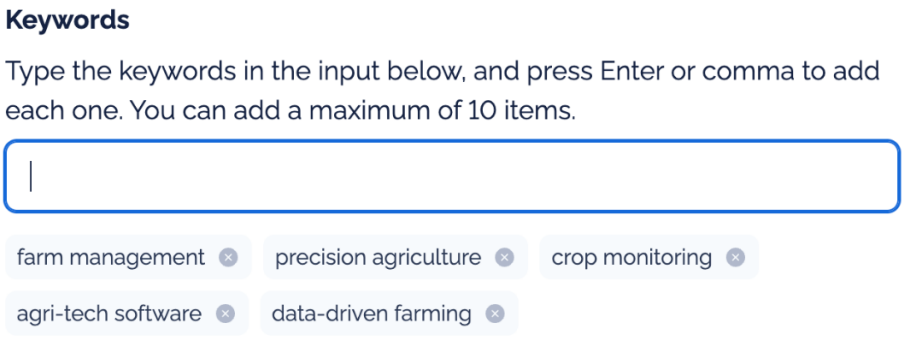

Figure 12: Keywords assigned to FarmSoft.

A few steps before the end of the software contribution process, the names and the emails of the creators of the software are provided. For the sake of our example, let us consider that the creators of the FarmApp FMIS are John Smith (johnsmith@example.com) and Maggie Johnson (mjohnson@example.com).

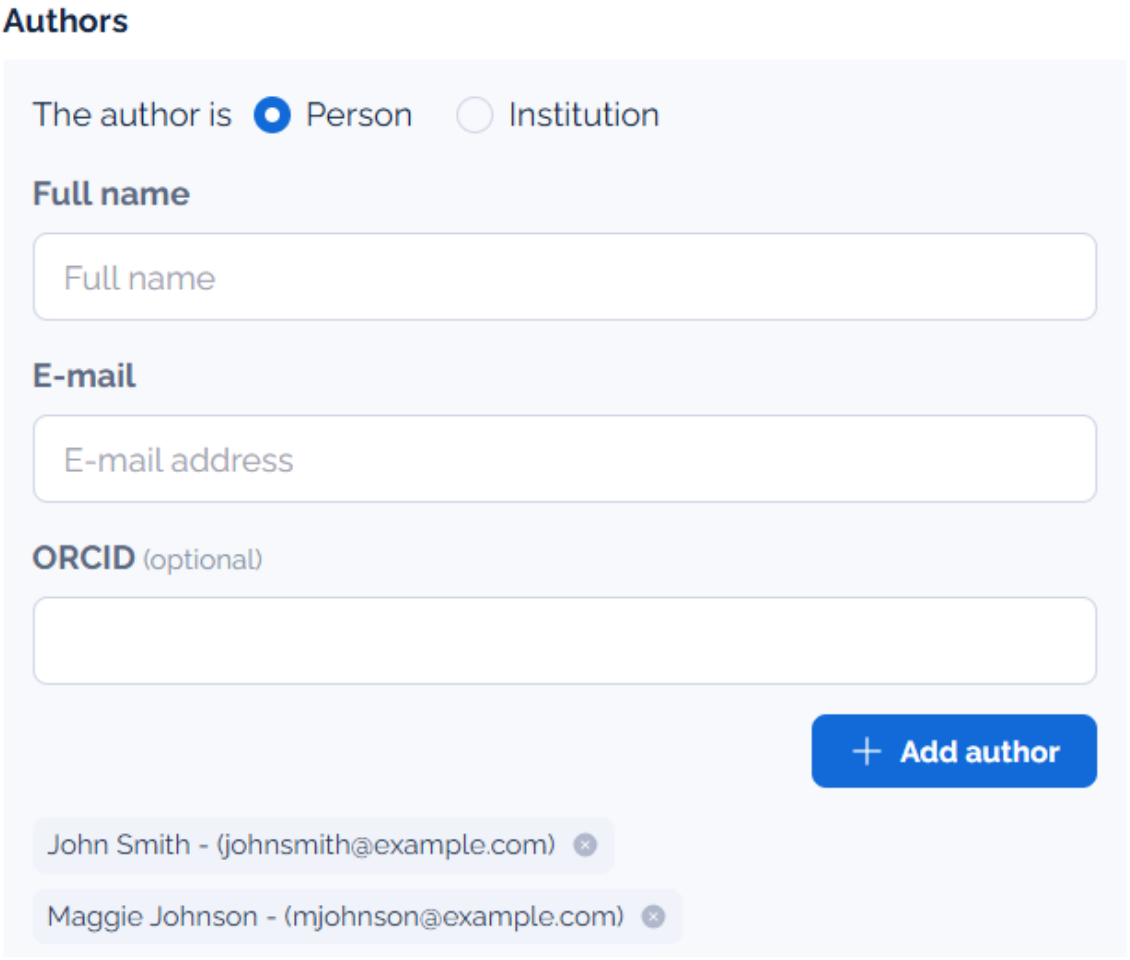

Figure 13: Providing the names and the emails of the creators of FarmSoft.

Finally, the license under which the software has been released needs to be provided. Let us assume that the FarmApp is released under the CC BY license. We select the CC BY license from the table in Figure 14.

Figure 14: Selecting a license for FarmSoft..

7. Annex

In this annex, we provide some examples of archive compression applications that could be considered for compressing the files needed to be provided for contributing software to the EU-FarmBook platform.

- **Free and open-source software**:
  - 7-Zip: Supports multiple formats (`.zip`, `.7z`, `.tar`, etc.) with high compression efficiency.
  - PeaZip: Supports more than 200 formats and includes security features.
  - Brotli: A fast compression algorithm by Google, often used for web applications.
  - Zstandard (Zstd): High-speed compression with adjustable ratios, developed by Facebook.
  - GNU Tar + Gzip/Bzip2/XZ: Common in Linux for creating compressed archives.
- **Proprietary and commercial software**:

- WinRAR: Popular for creating and extracting RAR archives (trial version available).
- WinZip: Well-known tool for ZIP archives with cloud integration.
- PowerArchiver: Supports various formats and advanced encryption.
- Ashampoo ZIP Pro: Comprehensive compression and encryption suite.
- Bandizip: Fast and efficient, supporting multiple formats.

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