Traceability platform – User guide

Quebec Wood Export Bureau (QWEB)

2025

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1. QWEB traceability project description

With the emergence of new standards and certifications in the international wood trade, notably the EUDR, it will soon be necessary to provide better traceability guarantees for Canadian wood products in order to be able to export them to several markets, particularly in Europe. With this in mind, the Quebec Wood Export Bureau (QWEB) has launched a project to provide forestry companies with a web-based tool to ensure wood traceability across Canada.

The FORAC research consortium, with its expertise in wood fiber traceability, is supporting QWEB in the further development of this tool, which integrates functionalities such as the geolocation of forest cut blocks, the analysis of these blocks, the integration of supporting documents and the generation of files compatible with the European information system. FORAC is also supporting QWEB in disseminating the tool to the Canadian forest industry and helping users to adopt it.

1.1. EUDR in short

The European Deforestation Regulation (EUDR), adopted in 2023, has been designed to respond to one of the most pressing environmental crises: global deforestation. Deforestation is responsible for a significant proportion of global greenhouse gas emissions and is a major factor in biodiversity loss. By imposing strict traceability requirements for certain products, such as wood fibers, the European Union is seeking to reduce the ecological impact of its imported products. The regulation aims to cut the link between the consumption of forest products and illegal deforestation and forest degradation, by ensuring that only companies respecting sustainable and transparent practices can access European markets.

For the purposes of the EUDR, deforestation is defined as the conversion of forests to agricultural land, as well as forest degradation at any time since December 31, 2020. Forest degradation, refers to structural changes in forest cover, notably the conversion of primary or naturally regenerated forests into planted forests. Products from such converted land may not be placed on European markets unless sustainable forest management systems are employed and do not lead to conversion meeting the definition of degradation.

From 31st December 2025, companies importing products, including wood fiber products, into the European Union will have to provide a due diligence statement attesting that their products do not come from recently deforested land or degraded forests, and that they have been harvested in accordance with local legislation. The EUDR also requires companies to submit files containing geolocated polygons describing the perimeter of each felling block from which the timber originates. For blocks of less than four hectares, a single geolocation point (latitude, longitude) will suffice. The regulations will apply to the entire supply chain, requiring the collection of precise data on the origin of wood fibers, as well as documentation attesting to the absence of deforestation, forest degradation and compliance with local legislation during harvesting operations.

1.2. QWEB traceability project objectives

The main objective of this project, led by QWEB with support from FORAC, is to develop a cloud-based platform enabling companies receiving wood from forest areas and their suppliers to track the traceability of their supplies and demonstrate the EUDR compliance of wood harvesting operations. The tool facilitates the transfer of information and data between companies, their suppliers and their customers, thus simplifying the steps required to demonstrate compliance with the EUDR.

The project also aims to mobilize all key players in the sector, including woodlot owners' associations, forestry groups, the Ministry of Natural Resources and Forestry, and primary processing plants. The EUDR is not limited to companies exporting wood fiber products to Europe: it requires product traceability along the entire value chain, involving the entire forestry industry.

1.3. Innovation opportunities offered by the project

The project presents opportunities for innovation far beyond the demonstration of EUDR compliance. Building on the databases set up and the information entered by platform users, QWEB could provide the public, organizations and governments with reports containing detailed information on forest value chains, including source maps of public and private forest supply and wood fiber traceability from the forest.

This project also presents opportunities for carbon footprint studies for the forestry sector, taking into account energy consumption and greenhouse gas (GHG) emissions associated with timber harvesting and transportation operations. The various aspects of forest management and supply operations likely to influence GHG emissions, scientific studies, available databases and information entered by platform users could help refine estimates of the forest industry's carbon footprint.

These studies of the forest industry's carbon footprint will complement QWEB's work on life-cycle analyses of wood products, in particular the energy consumption of forest and mill operations, and environmental product declarations. They will also deepen knowledge of the forest industry's role in Canada's decarbonization, and support strategic decisions aimed at promoting sustainable practices in the Canadian forest industry.

2. Traceability platform description

This section of the document describes the types of access to the platform, the functionalities, the flow of data upstream and downstream of the platform, and the data integrated into the platform.

2.1. Platform access types

The platform is designed for companies receiving wood from a forest area. The managers of these companies will have « manager » access. Managers will be able to grant access rights to their company's suppliers so that they can complete the supply portrait, without however being able to view the entire portrait or download information. « Manager » users will also be able to grant read-only access rights to their customers, enabling them to consult the supply portrait and download GeoJSON files compatible with the European information system, without however being able to modify the data (importing data or deleting cut blocks, for example).

2.2. Platform features

At this stage of development, the platform integrates five main functionalities, including import of cut blocks, geolocation of cut blocks, block analysis, integration of supporting documents by users, and generation of GeoJSON files compatible with the EUDR information system.

2.2.1. Cut blocks import

Users of « manager » or « supplier » type can import shapefiles (.shp) containing their geotagged cut blocks. The platform is flexible in terms of the content of imported shapefiles. Specifically, rather than imposing a single standard format, the platform adapts to users' data structuring methods. Through an interactive interface, users can tell the platform which fields in their files correspond, for example, to harvest date or harvest block name, among others.

2.2.2. Geolocation of cut blocks

Users of « manager » or « supplier » type can import Excel files containing the cadastral numbers of private lots in Quebec from which their wood originates. The platform associates each point of origin (cadastral number) with the forest parcels located on the corresponding private lots. To do this, the platform uses the « Parcelles de traçabilité du bois en forêt privée » layer produced by the Ministère de Ressources naturelles et des Forêts (MRNF). In this way, the platform geolocates the parcels and is able to describe their perimeters in line with EUDR requirements.

2.2.3. Cut blocks analysis

The platform performs a cut block analysis. More specifically, the platform is able to identify cut blocks located within a forest management unit for those in public forests, as well as identify blocks at risk of EUDR non-compliance, such as those in private forests located in agricultural or protected areas.

2.2.4. Integration of supporting documents by the users

Users of « manager » or « customer » type can upload supporting documents to demonstrate harvesting compliance with EUDR requirements. These documents may include supply guarantees on public land, government documents on sustainable forest management, forest management plans and harvesting permits in private forests. As the EUDR requires information to be available five years after products are placed on the European market, the platform will store all documents and data entered by users in a way that follows this requirement.

2.2.5. Generation of GeoJSON files compatible with the EUDR information system

The traceability platform also generates files compatible with the EUDR information system. More specifically, it produces files in GeoJSON format, while respecting the data structuring guidelines of the EUDR information system. For example, the information system does not accept files containing polygons with holes or intersecting lines. In such cases, the platform informs the user and automatically applies the necessary corrections to ensure that the files are compatible with the European information system.

2.3. Platform data flows

Companies receiving wood from a forest area can upload to the platform their cut blocks located in Quebec, Excel lists of cadastral numbers of private lots located in Quebec, as well as supporting documents attesting to the compliance of harvesting operations with EUDR requirements. The same applies to companies' suppliers. The platform accesses relevant databases to geolocate cut blocks, describe their perimeters and analyze them. Figure 1 illustrates the data flow upstream of the platform.

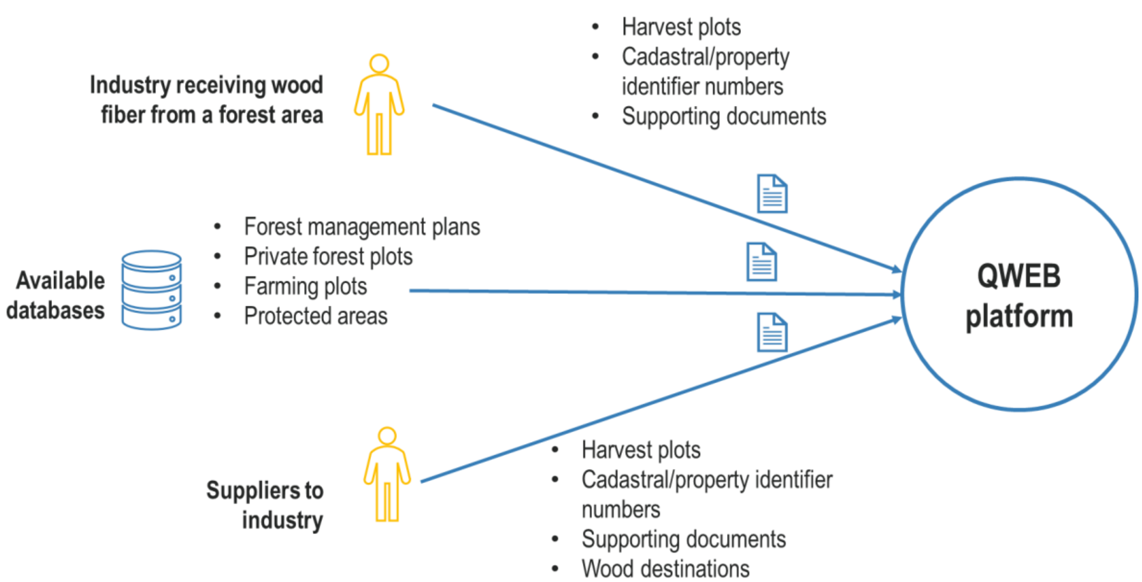

Figure 1. Data flow upstream of the platform

With all this data at its disposal, the platform is able to associate points of origin with the corresponding polygons, analyze imported cut blocks, integrate uploaded supporting documents and generate GeoJSON files compatible with the European information system. These files can be downloaded by companies receiving timber from a forest area and by their customers. The latter would forward the GeoJSON files to importers in Europe, who could in turn send them to the EUDR information system. Figure 2 illustrates the downstream data flow.

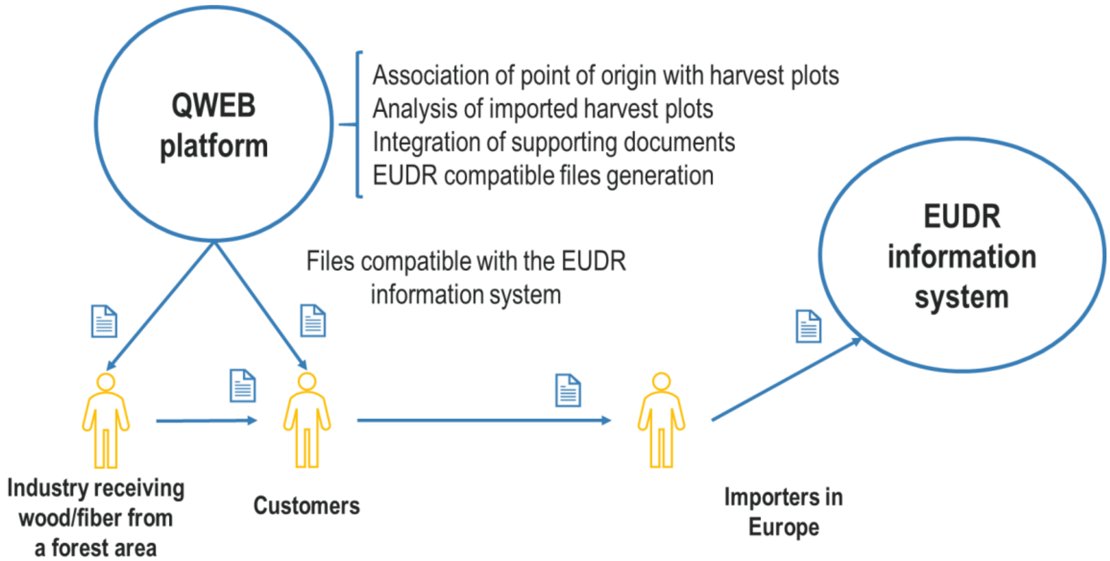

Figure 2. Data flow downstream of the platform

2.4. Data integrated into the platform

At this stage of development, the platform integrates databases enabling the geolocation and analysis of cut blocks located in Quebec. More specifically, these include the Unités d'aménagement forestier, the Registres des aires protégées au Québec and the Base de données des parcelles et productions agricoles déclarées. The platform also uses the « Parcelles de traçabilité du bois en forêt privée » layer, which can be made available by the Ministère de Ressources naturelles et des Forêts (MRNF) subject to the signature of a License.

- Forest management unities : This layer enables the platform to identify cut blocks in public forests and the corresponding forest management units.
- « Parcelles de traçabilité du bois en forêt privée »: This layer enables the platform to associate private lot cadastral numbers with forest parcels located in the corresponding private lots.
- Register of protected areas in Quebec : This layer enables the platform to identify cut blocks located in protected areas, which could present a risk of non-compliance with the EUDR. Among these protected areas, the platform uses the layers of exceptional ecosystems, wildlife and plant habitats, federal and national parks, biological refuges, biodiversity reserves, wildlife reserves, ecological reserves, recognized nature reserves and set-aside territories.
- Database of declared agricultural plots : This layer enables the platform to identify cut blocks located in agricultural parcels, which could present a risk of non-compliance with the EUDR.

The platform development plan does, however, call for the gradual integration of databases from other Canadian provinces, as well as from the United States. The inclusion of these data, including information from public and private forests, will depend on their availability. In cases where access to data is limited, the platform will adjust its level of precision by generating, for example, polygons that may correspond to the contours of an entire county rather than specific forest parcels.

3. Traceability platform navigation

This section describes how to navigate the platform, detailing the account registration and login pages, the home page, the account information page, and the cut block management page.

3.1. Account registration and login pages

On first use, the user must create an account (see Figure 3). By creating an account on the traceability platform, you acknowledge having read and accepted, unreservedly and in their entirety, the Platform Terms of Use, the Privacy Notice and the License for the use of MRNF data. These documents can also be downloaded from the platform's home page. Access to the traceability platform is exclusively via a Microsoft or Google account. By choosing this option, you authorize the platform to collect certain information from its third-party account, such as name, e-mail address and any other data required to facilitate access to and use of the services.

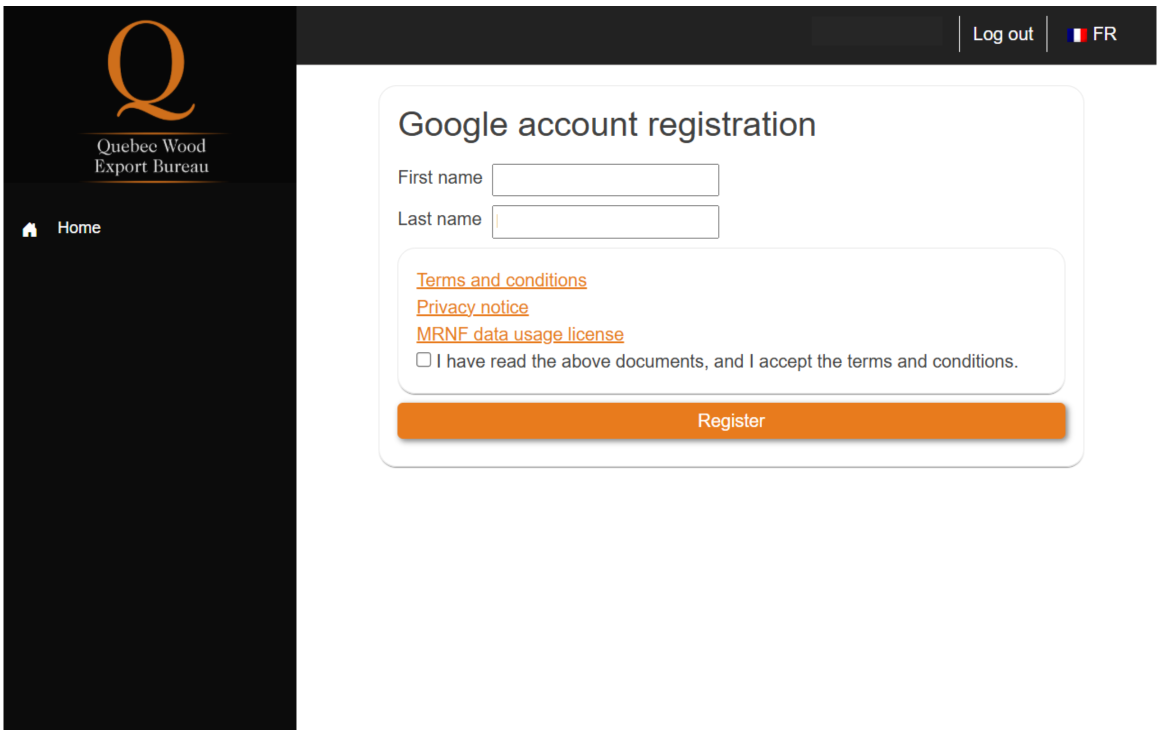

Figure 3. Account registration page

Once an account has been created, access to the platform is always via the login page (see Figure 4), by logging in with a Google or Microsoft account.

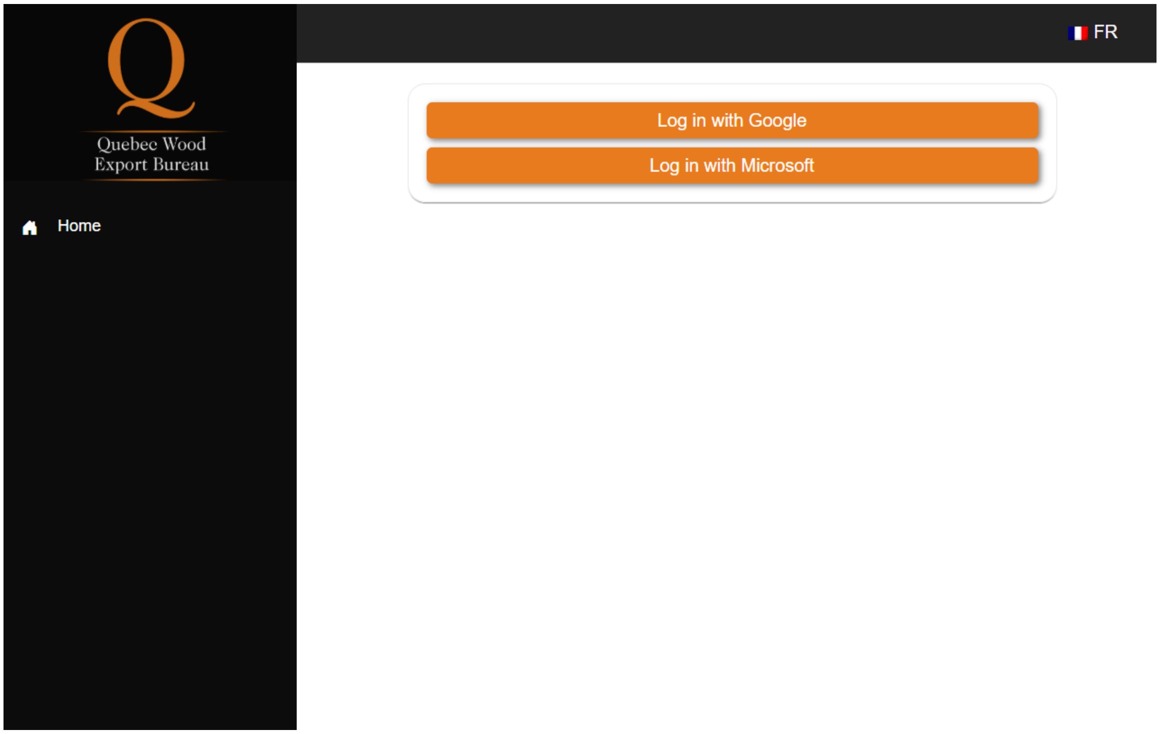

Figure 4. Connexion page

3.2. Home page

The home page features a black menu bar at the top left (see Figure 5), divided into three sections: home, account information and cut block management.

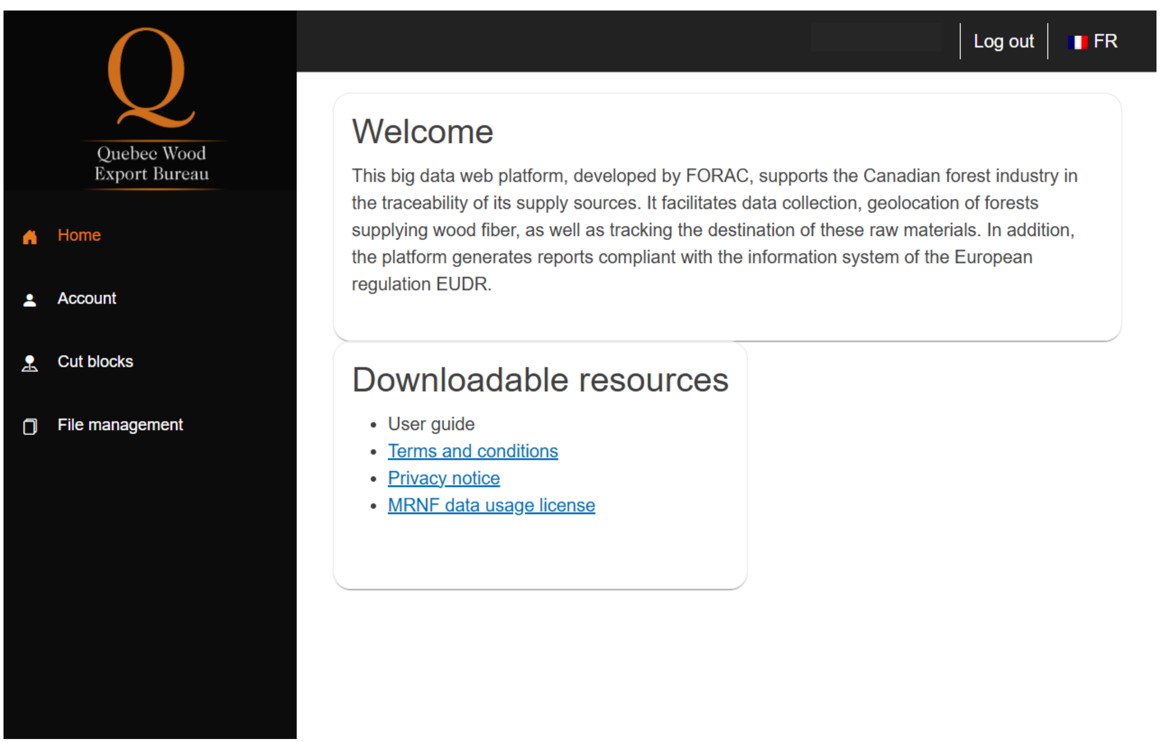

Figure 5. Home page

3.3. Account informations page

The account information page (see Figure 6) displays the user's informations, as well as the 'Groups' (organizations) to which the user has access, including the user's type of access (manager, supplier or customer) to the corresponding organization. The page also displays a tab for generating an « Access token », which is essential for transferring data automatically into the platform via an API connection.

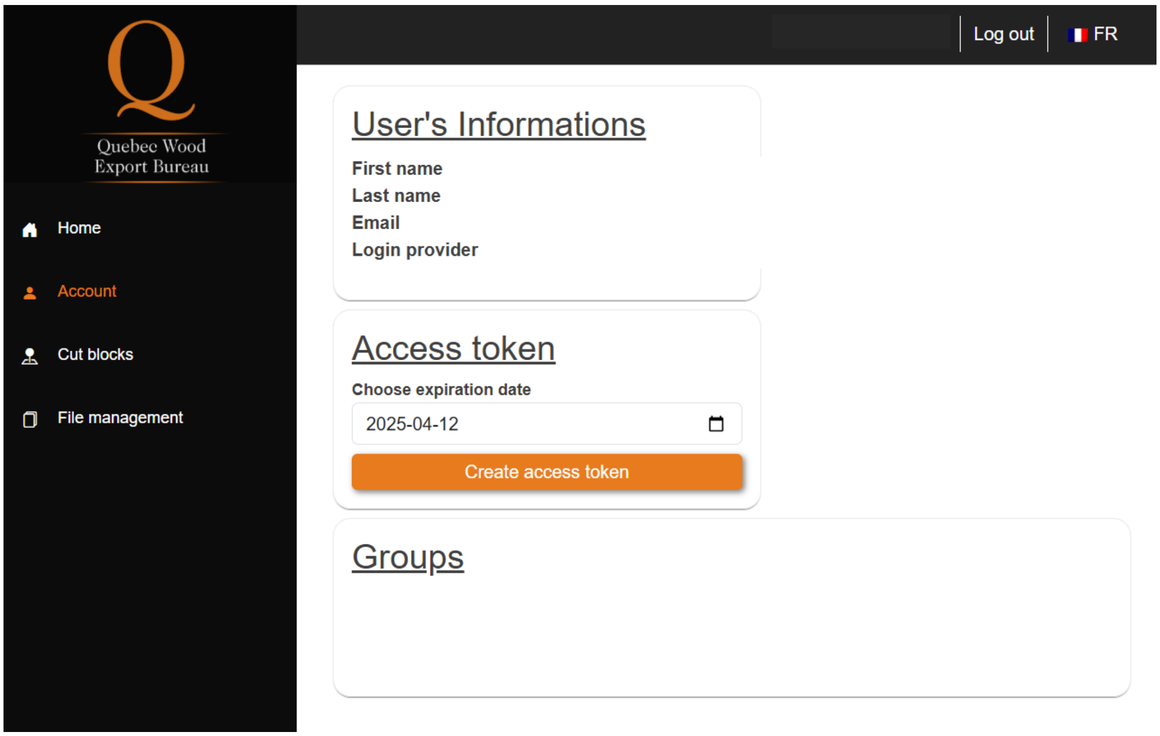

Figure 6. Account informations page

3.4. Cut blocks management page

All types of users can access an organization's cut block management page (Figure 7). However, their access rights vary according to their roles (see section 2.1). The cut block management page integrates the following features:

- Cut block search: a search bar at the top left of the map lets you find a cut block by entering its name;
- Filter by period: a selection bar on the left-hand side of the map displays only cut blocks during a specific period;
- Zoom the map in and out: two buttons at the top left of the cut block search bar make it easier to navigate the map;
- Import cut blocks: an orange « + » button at the bottom left of the map enables cut blocks to be imported;
- Exporting GeoJSON files compatible with the European information system: an orange button at the bottom left of the map, just next to the cut block import button (orange « + » button), lets you download files in GeoJSON format.

For better visualization and navigation, we use a background map from « OpenStreetMap », a free and open map database, updated and maintained by a community of volunteers. While this approach offers development flexibility, it is not an official source, which may result in slight inaccuracies in the visualization of the background map displayed in isolated cases, without however affecting the geolocation or outline of the cut blocks.

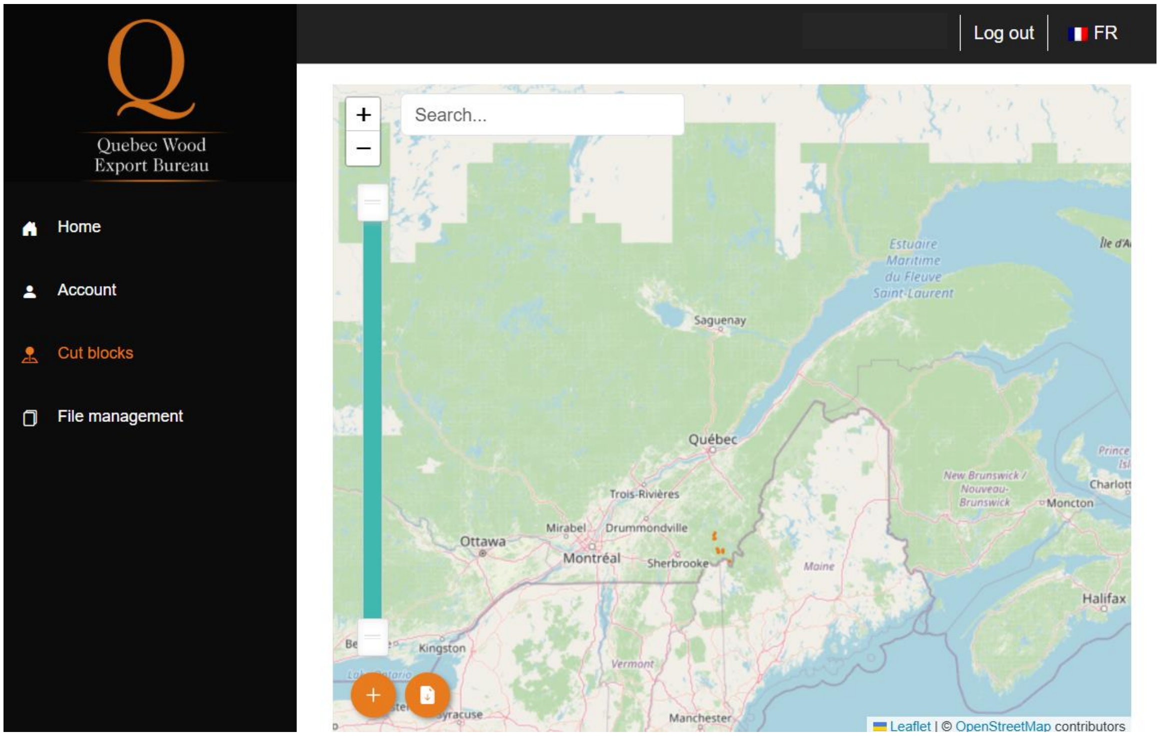

Figure 7. Cut blocks page

3.4.1. Importing shapefiles containing cut blocks

Cut blocks are imported via the orange « + » button at the bottom left of the map (see Figure 7). By clicking on this button, users can select the shape files they wish to import from their computer. Figure 8 illustrates the procedure. The platform accepts shapefiles in 'shapefile' format.

As illustrated in Figure 8, the import of a shapefile in 'shapefile' format must include all its component files. Specifically, the import must contain files in .shp, .shx, .dbf, .prj, .cpg and .qmd formats. In addition, the shapefile attribute table must contain the following columns: single cut block name, harvest or delivery date and area. As far as the coordinate system is concerned, the platform supports various systems and transforms them into the WGS84 coordinate system (EPSG:4326) with longitude and latitude units in decimal degrees (coordinate system used by the European Information System).

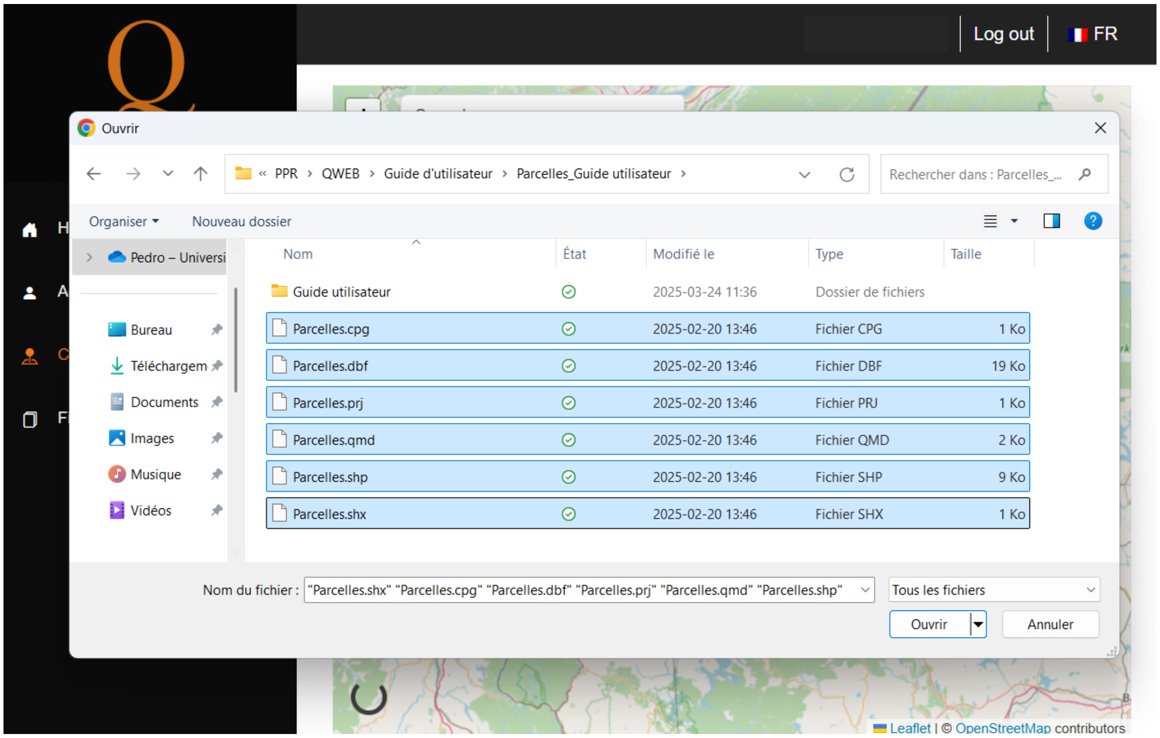

Figure 8. Cut blocks importation page

3.4.1.1. Reading fields in a shape file containing cut blocks

After importing a shapefile importing a shapefile containing cut blocks, the user will systematically see an exclamation mark in the top right-hand corner of the map, accompanied by a red symbol (Figure 9).

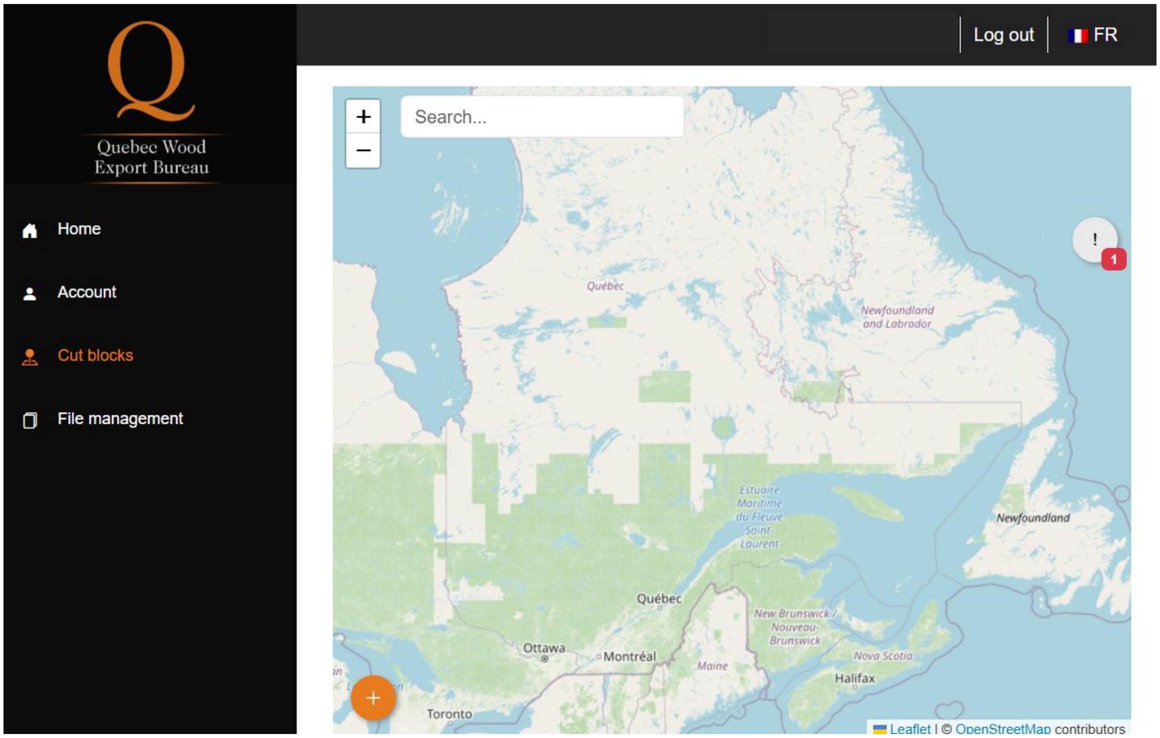

Figure 9. Page for reading shapefile fields

Clicking on this exclamation mark will open the « Incomplete importations » window (Figure 10). A red exclamation mark will appear, followed by the name of the imported file.

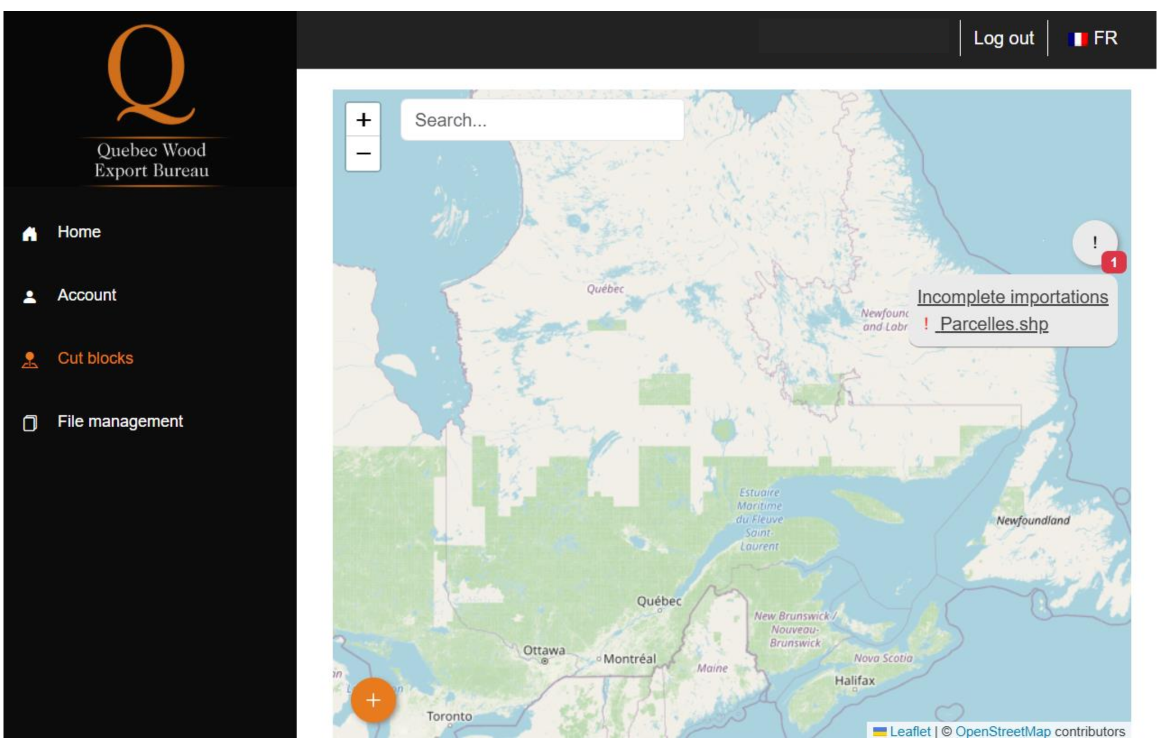

Figure 10. Window « Incomplete importations »

By clicking on the imported file in the window, the interface for reading the fields of a shapefile will open (Figure 11). Through this interactive interface, users can specify which fields in their files correspond to, for example, the harvest date or the name of the harvest block, among others. To do this, users must assist the platform in reading the fields of an imported shapefile. Figure 11 illustrates the procedure. The platform is flexible regarding the content of imported shapefiles. More specifically, rather than imposing a single standard format, the platform adapts to users' data structuring methods.

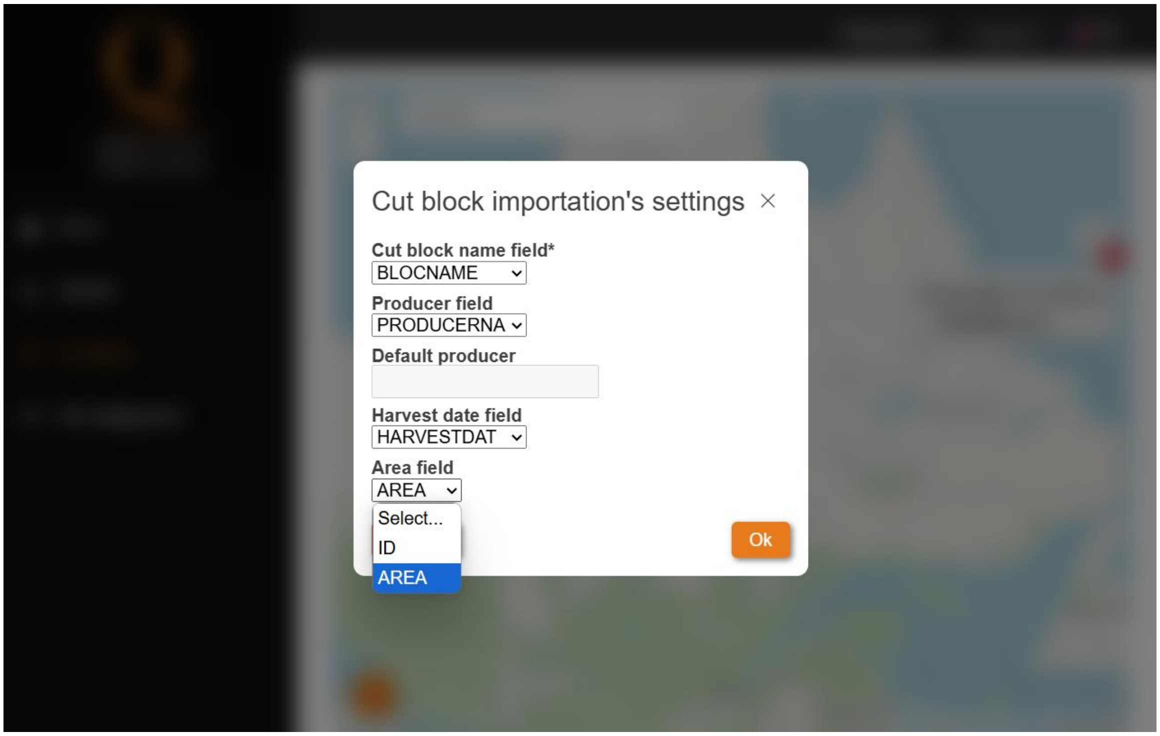

Figure 11. Cut block importation's settings page

After accepting the association of fields with the import parameters, the user will finally see their harvest blocks displayed in orange on the map (Figure 12). However, the blocks in Figure 12 are fictional and are only meant to illustrate the platform's functionality.

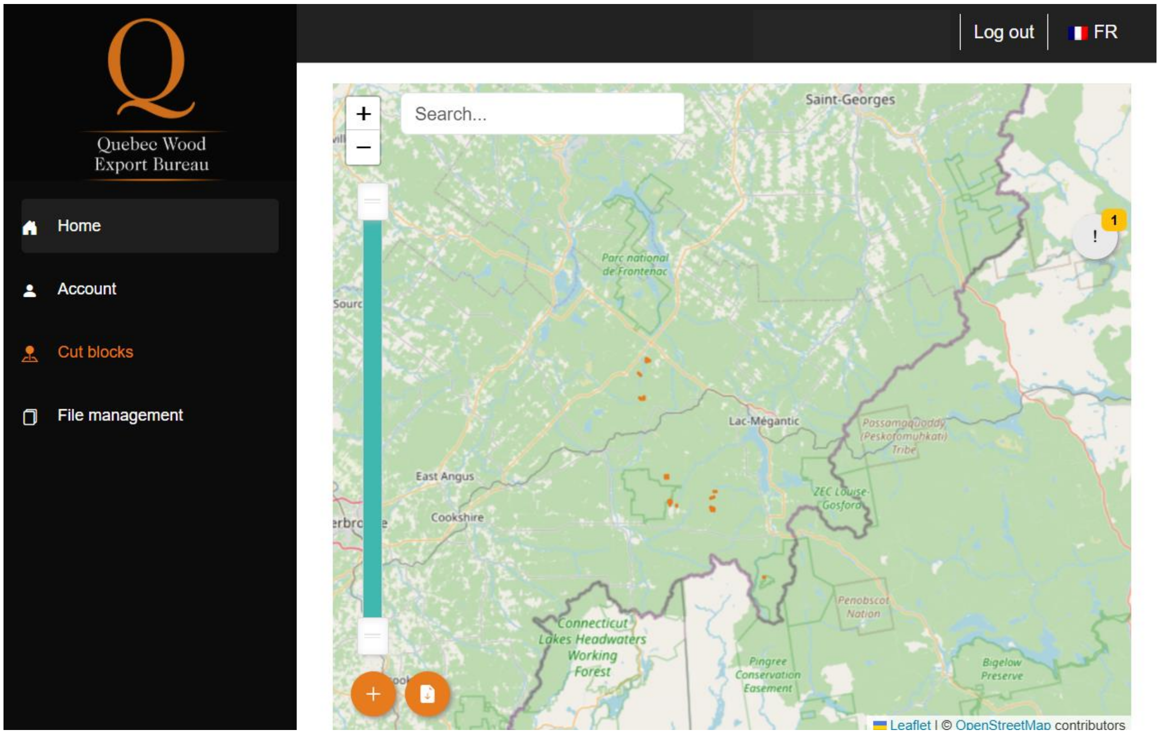

Figure 12. Cut blocks on the map

3.4.2. Importing Excel files containing cadastral numbers

The import of Excel files containing cadastral numbers is done in the same way as the import of cut blocks: via the orange « + » button located at the bottom left of the map (see Figure 7). By clicking this button, the user can select the Excel file they wish to import from their computer. The Excel file must include at least the following columns: cadastral number and harvest or delivery date. Figure 13 shows the template of the file supported by the platform.

Cadastral number	Harvest or delivery date	Municipality	Municipality code	Province	Species	Species code	Quantity	Unit of measure	Organisation name	Organisation code
	02/09/2024	Pohénégamook	13095	Québec					Scierie XYZ	
	07/10/2024	St-Athanase	13100	Québec					Scierie XYZ	
	14/10/2024	Témiscouata sur le lac	13073	Québec					Scierie XYZ	

Figure 13. Excel template for importing cadastral numbers

3.4.2.1. Reading the fields of an Excel file containing cadastral numbers

The platform is flexible regarding the content of the imported Excel files. Specifically, rather than enforcing a single standard format, the platform adapts to the users' data structuring methods. After importing an alternative Excel file, the user will always see an exclamation point in the top right of the map, accompanied by a red symbol (see Figure 9). By clicking on this exclamation point, the « Incomplete Importations » window will open (Figure 14). A red exclamation point will be marked, followed by the name of the imported file.

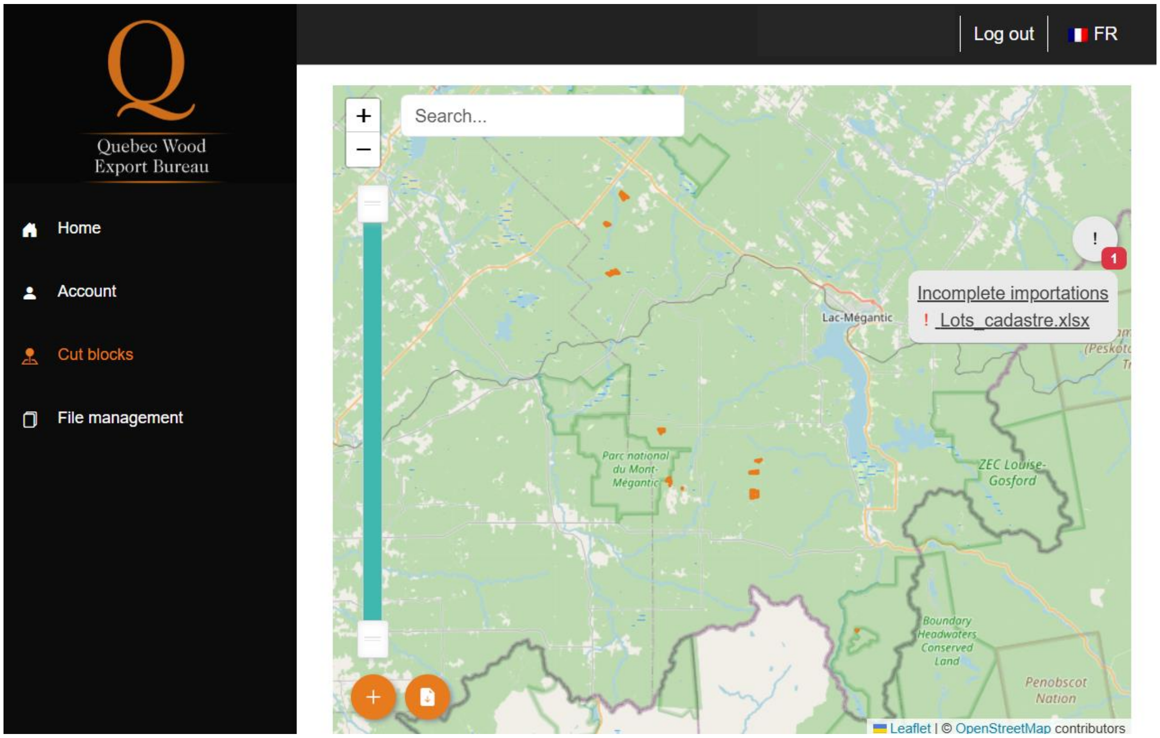

Figure 14. Window « Incomplete importations » for an Excel file

By clicking on the imported file in the window, the interface for reading the fields of an Excel file will open (Figure 15). Through this interactive interface, users can indicate to the platform which fields in their files correspond, for example, to the harvest or delivery dates, or to the cadastral numbers. To do this, users must assist the platform in reading the fields of the imported Excel file. Figure 15 illustrates the procedure.

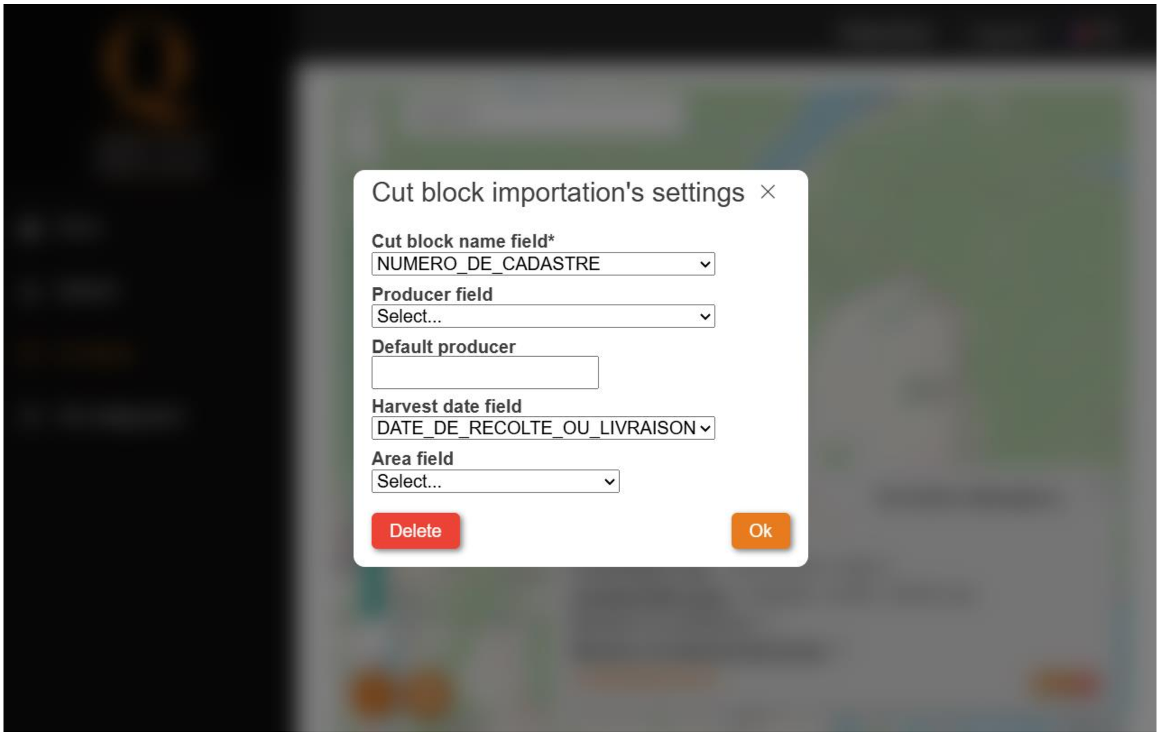

Figure 15. Cut block importation settings for an Excel file

3.4.3. Corrections to ensure file compatibility with the European information system

In Figure 12, an exclamation point accompanied by a yellow symbol is visible in the top right of the map. By clicking on this exclamation point, the correction window for cut blocks will open (Figure 16). This window will display a yellow exclamation point followed by the name of the cut block for which the platform has identified the need for corrections in order to ensure compatibility with the European Information System. These corrections to be made are identified in the imported shape files, as well as in the imported Excel files containing cadastral numbers.

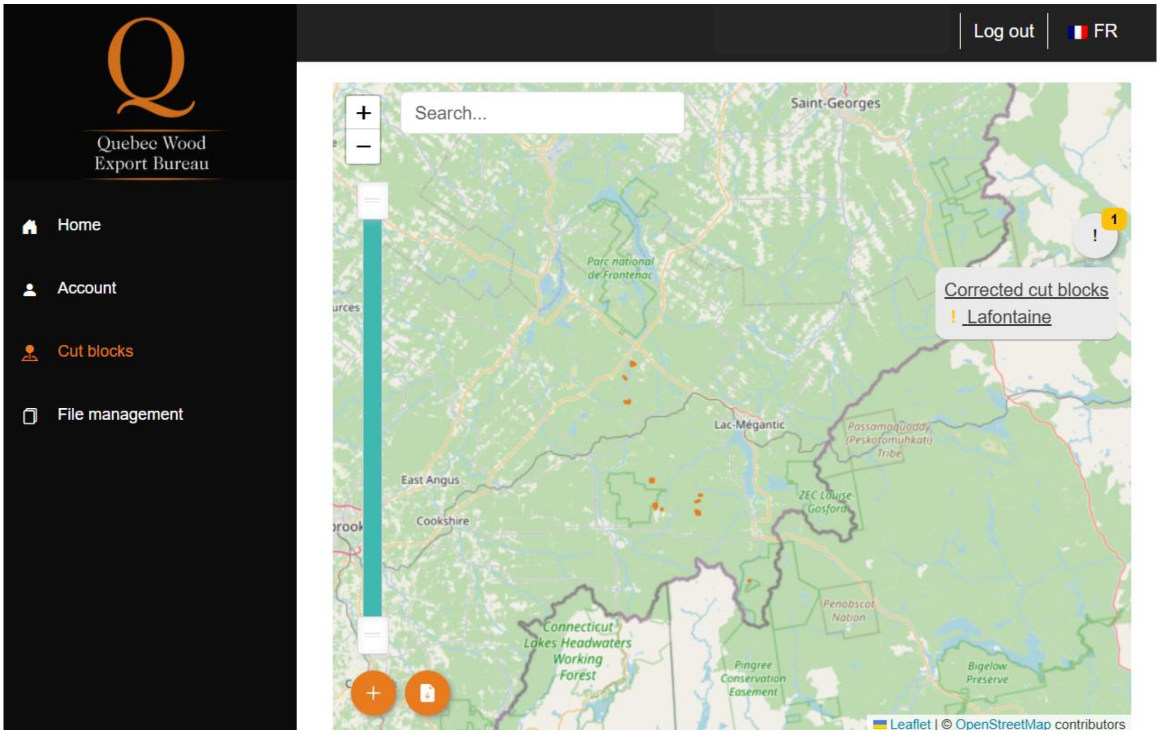

Figure 16. Cut block correction window

By clicking on the name of the cut block in the window, it will automatically be zoomed in on the map, and the « Cut Block's Information » window will open automatically (Figure 17). In this window, a message will inform the user that the geometry of the cut block has been corrected. By hovering over this message with the mouse, the original block and the corrected version will be superimposed, allowing the user to visualize the correction made.

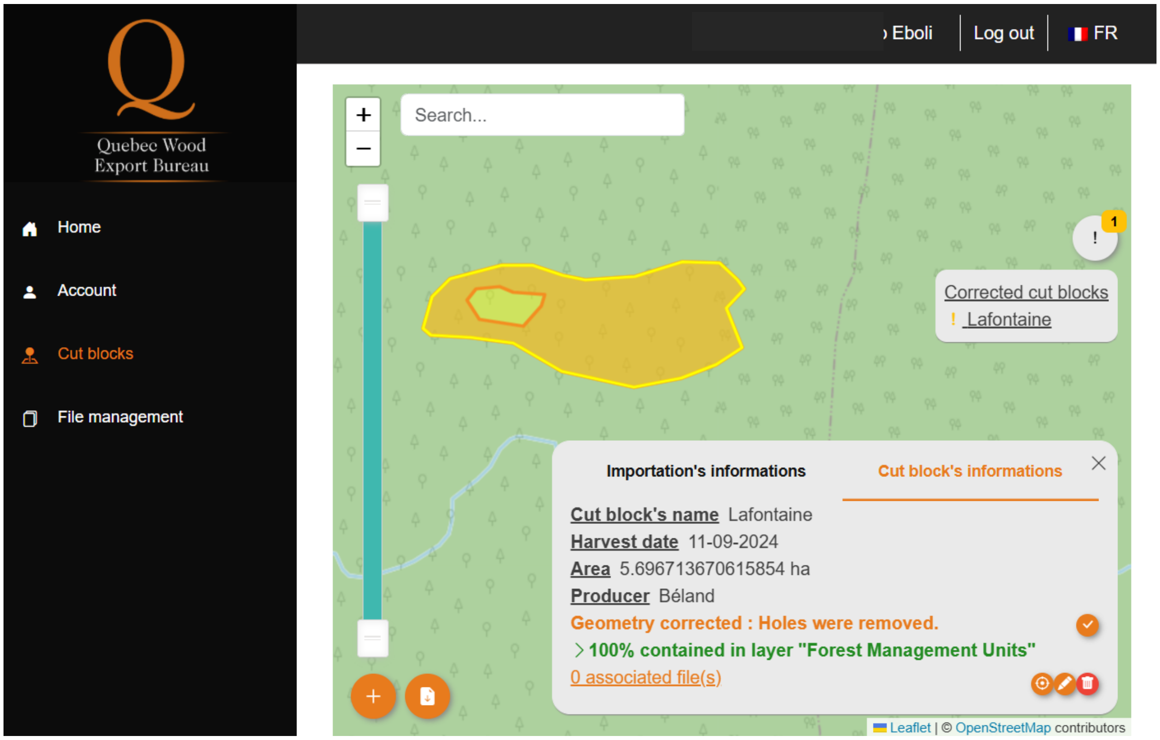

Figure 17. Cut block corrected

In the example illustrated by Figure 17, the correction concerns a hole in a polygon, which is not supported by the European Information System. The user can choose to accept the correction. However, when generating a GeoJSON file for export, the corrections will be applied automatically.

3.4.4. Cut block's information tab

By clicking on any cut block on the map, the « Cut block's information » tab will appear (see Figure 17). This tab, located at the bottom right, displays the information of the cut block and contains three buttons:

- The first button, represented by a target, allows the user to locate a cut block on the map;
- The second button, represented by a pencil, allows the user to edit the information of the selected cut block;
- The third button, represented by a trash can, allows the user to delete the cut block.

3.4.5. Importation's informations tab

By clicking on a cut block on the map, the Cut block's information tab will appear (Figure 18). This tab, located at the bottom right, displays the « Importation's information » tab at the top left. This tab presents the import information and contains three buttons:

- The first button, represented by a notebook, allows access to the import log. In cases where cut blocks were ignored during an import, the user can consult this log to identify the ignored blocks. The user can then correct them using a Geographic Information

System (GIS) software (e.g., QGIS or ArcGIS) before reimporting them into the platform;

- The second button, represented by a pencil, allows the user to modify the import information;
- The third button, represented by a trash can, allows the user to delete an entire import.

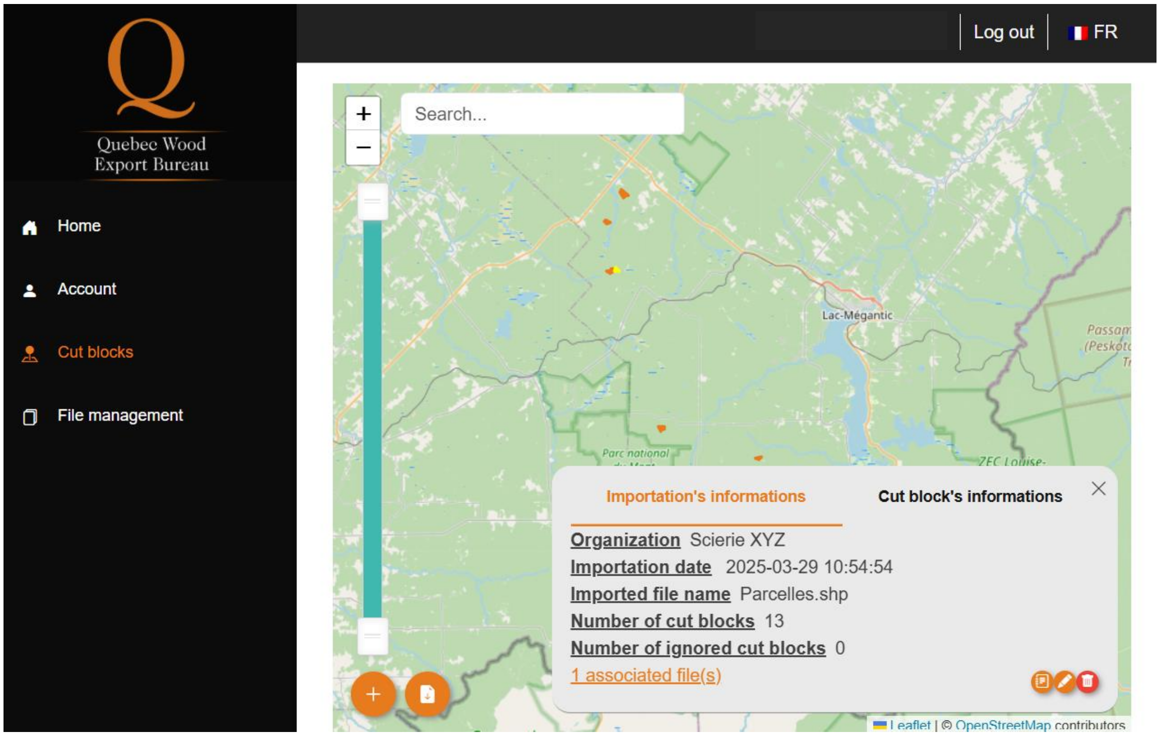

Figure 18. Importation's information

3.4.6. Analysis of imported cut blocks

Once the cut blocks are imported onto the map, the platform analyzes them. Specifically, the platform identifies cut blocks located within a forest management unit for those in public forests in Quebec, as well as those presenting a risk of non-compliance with the EUDR, such as private forest blocks located in agricultural areas or protected zones. Figure 19 illustrates an example of the analysis performed by the platform. Note that the blocks in Figure 19 are fictional and are used solely to illustrate the platform's functionality.

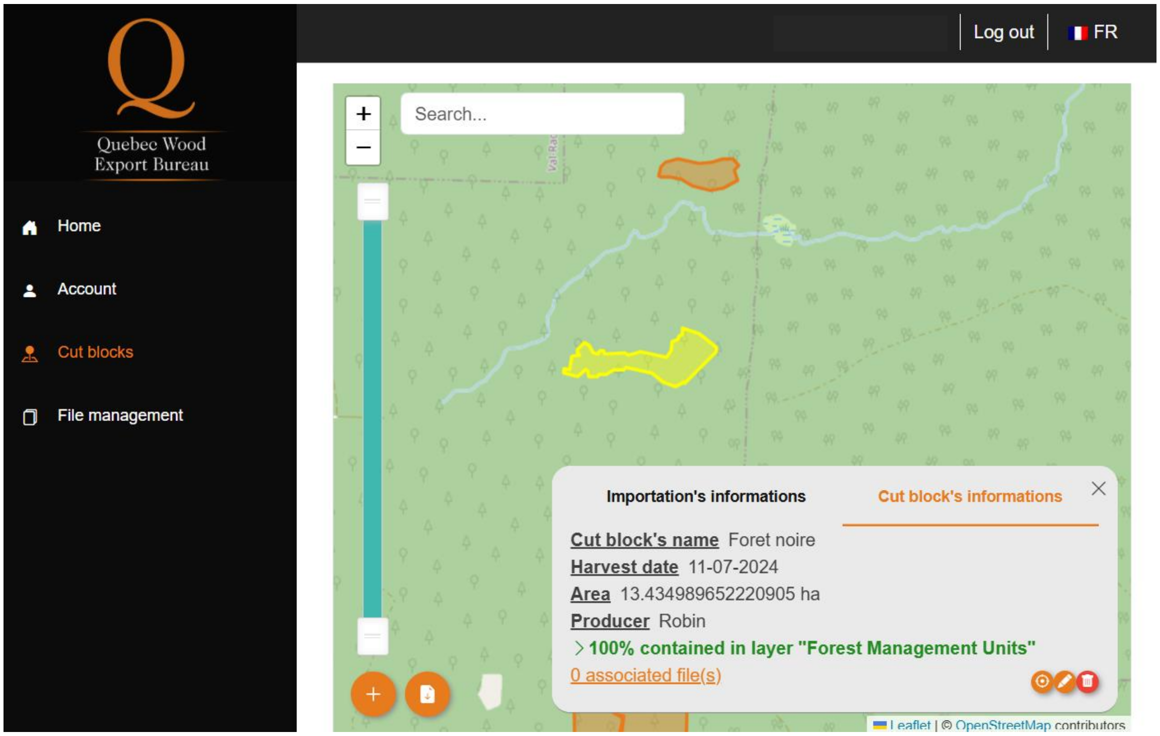

Figure 19. Analysis of a cut block

By clicking on a cut block on the map (in yellow in Figure 19), or searching for it by its name in the search bar, the « Cut block's information » window will appear. This window presents various information, including the layer on which the cut block is located (in green). By clicking on this layer, the corresponding forest management unit for this example will be displayed, and its boundary will appear on the map (Figure 20).

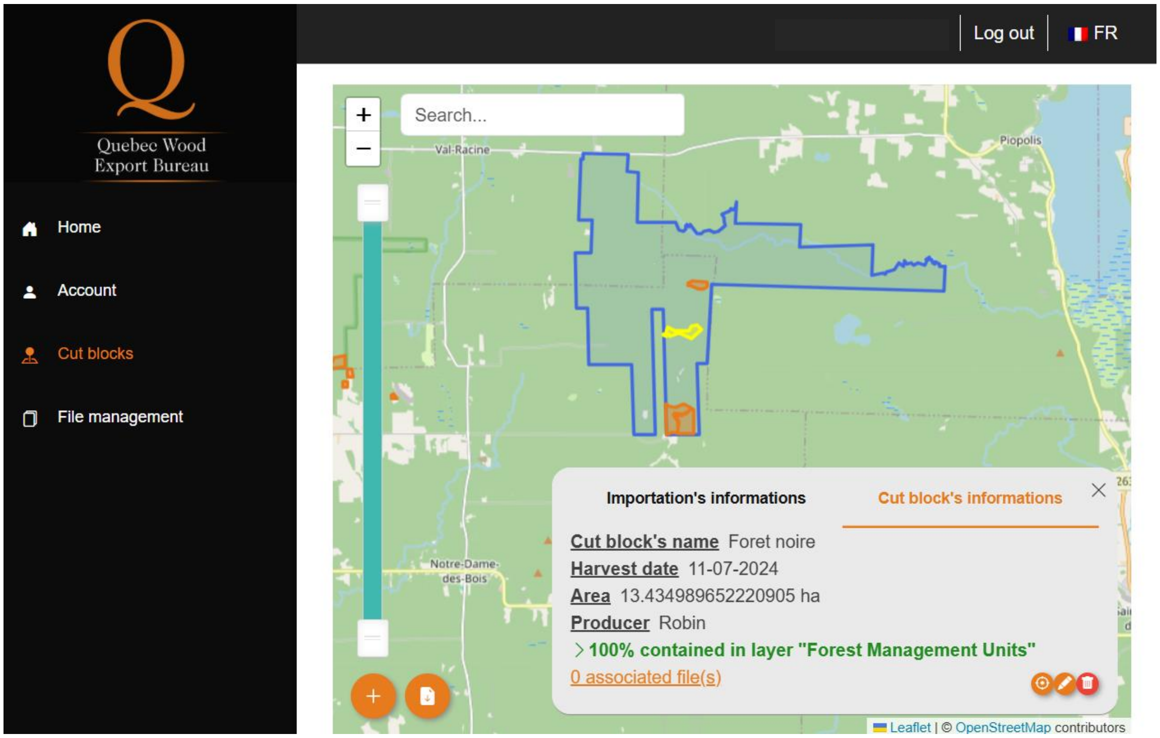

Figure 20. Boundary of the layer on which the cut block is located

3.4.7. Importing supporting documents

Users of the platform can upload documents to demonstrate the compliance of harvests with the EUDR requirements. This upload can be done either for a specific cut block or for an import containing multiple blocks. To upload files for a specific cut block, the user must first select the desired cut block.

At this point, the « Cut block's information » window will appear. In this window, at the bottom left, an orange indicator shows the number of files associated with the selected cut block. For example, in Figure 20, this indicator shows that no files have yet been associated with the selected block. By clicking on this indicator, an upload window will open (Figure 21). The user can then click the « + » button to select the supporting document from their files to upload, corresponding to the selected cut block.

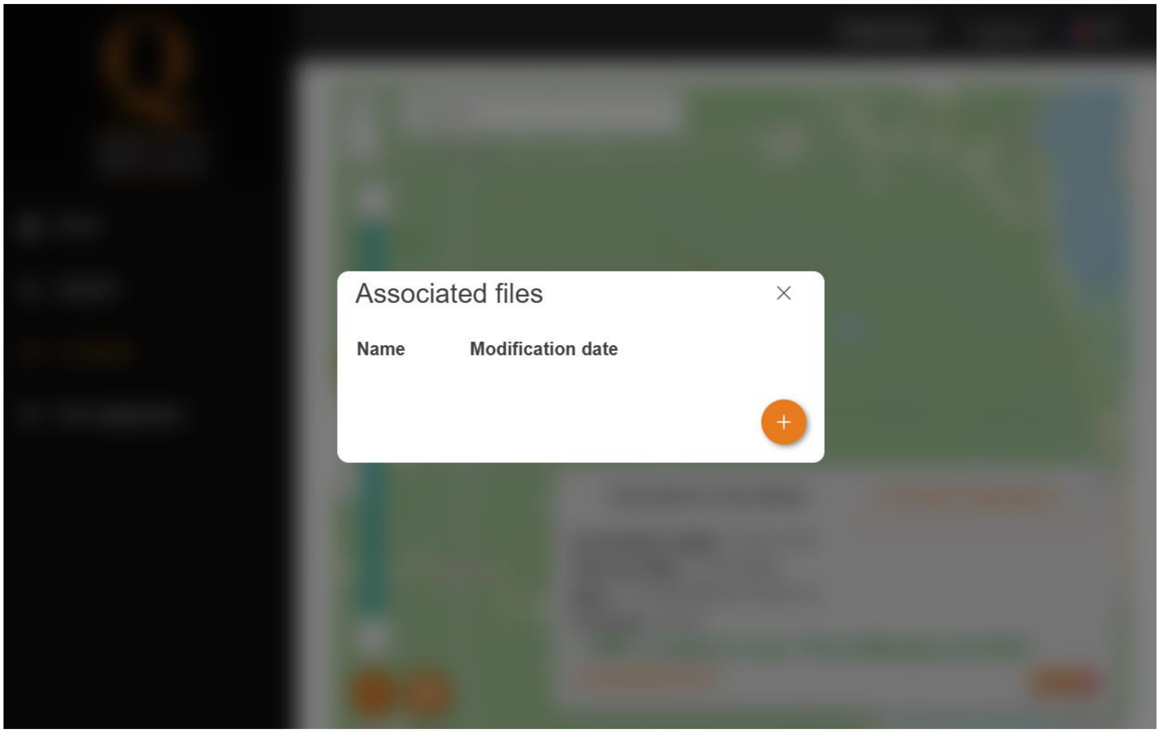

Figure 21. Uploading supporting documents for a cut block

Similarly, uploading supporting documents can also be done for an import containing multiple cut blocks. To do this, the user must first select the cut block within the desired import. At this point, the « Cut block's » window will appear. In this window, the « Importation's Information » tab is located at the top left. By clicking on this tab, the detailed import information will be displayed (Figure 22).

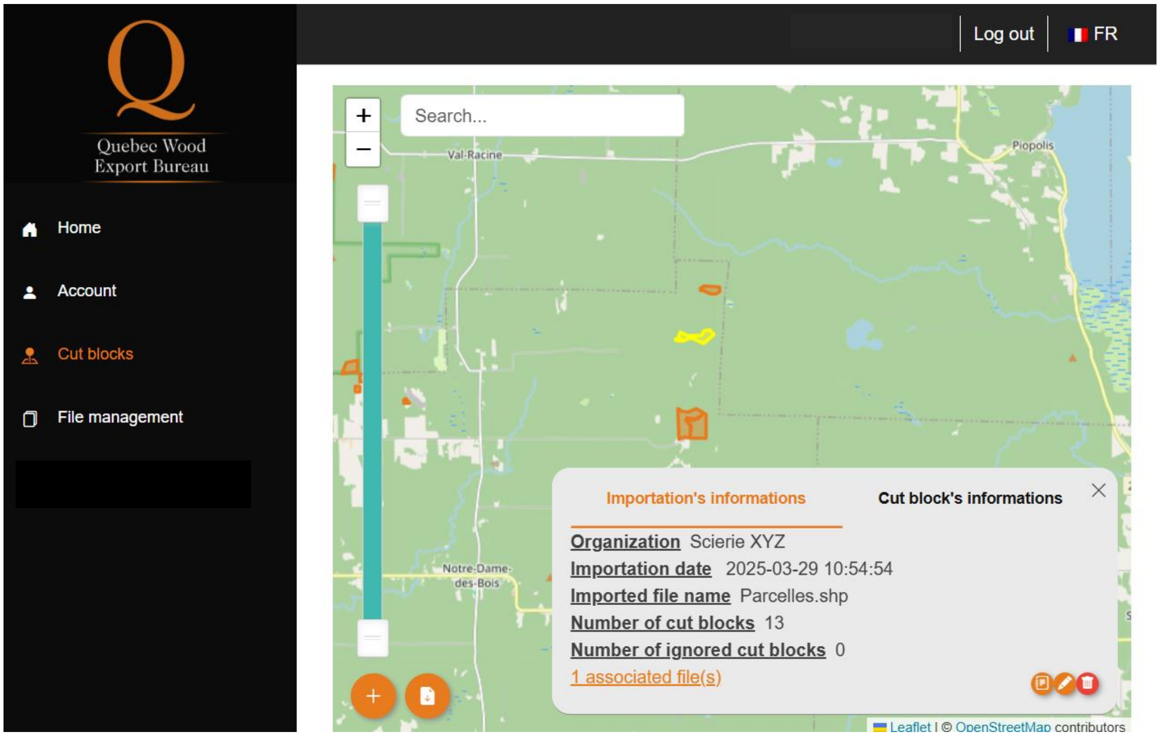

Figure 22. Importation's information

In this tab, an orange indicator located at the bottom left shows the number of files associated with the selected import. For example, in Figure 22, this indicator shows that one file is already associated with the import: the corresponding shape file. By clicking on this indicator, the « Associated Files » window will open. The user can then click the « + » button to select the supporting document from their files to upload for the selected import (Figure 23).

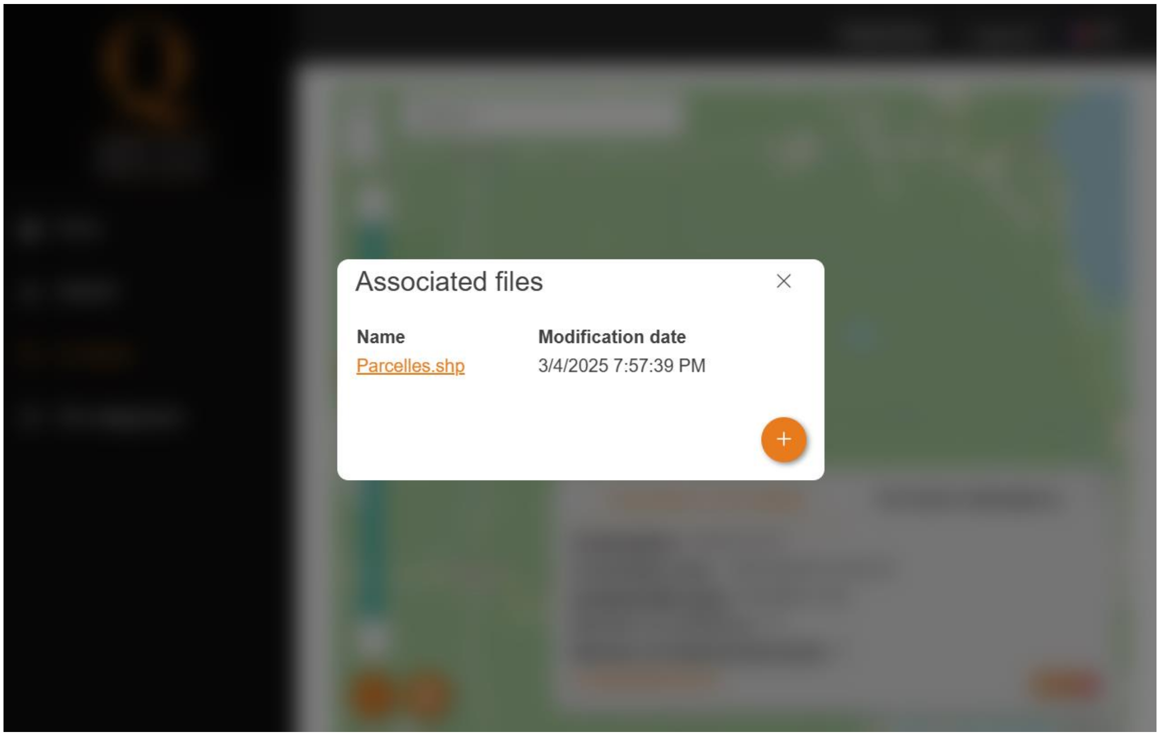

Figure 23. Uploading supporting documents for an importation

3.4.8. Exporting GeoJSON files compatible with EUDR information system

The platform provides a feature for exporting files in GeoJSON format. These files will contain the cut blocks in a format compatible with the European Information System. To access this feature, the user must click on the orange button located at the bottom left of the map (the one represented by a file). A window will open to generate the file (Figure 24). This window allows the user to select the desired organization, define the desired period, and assign a name to the GeoJSON file to be generated.

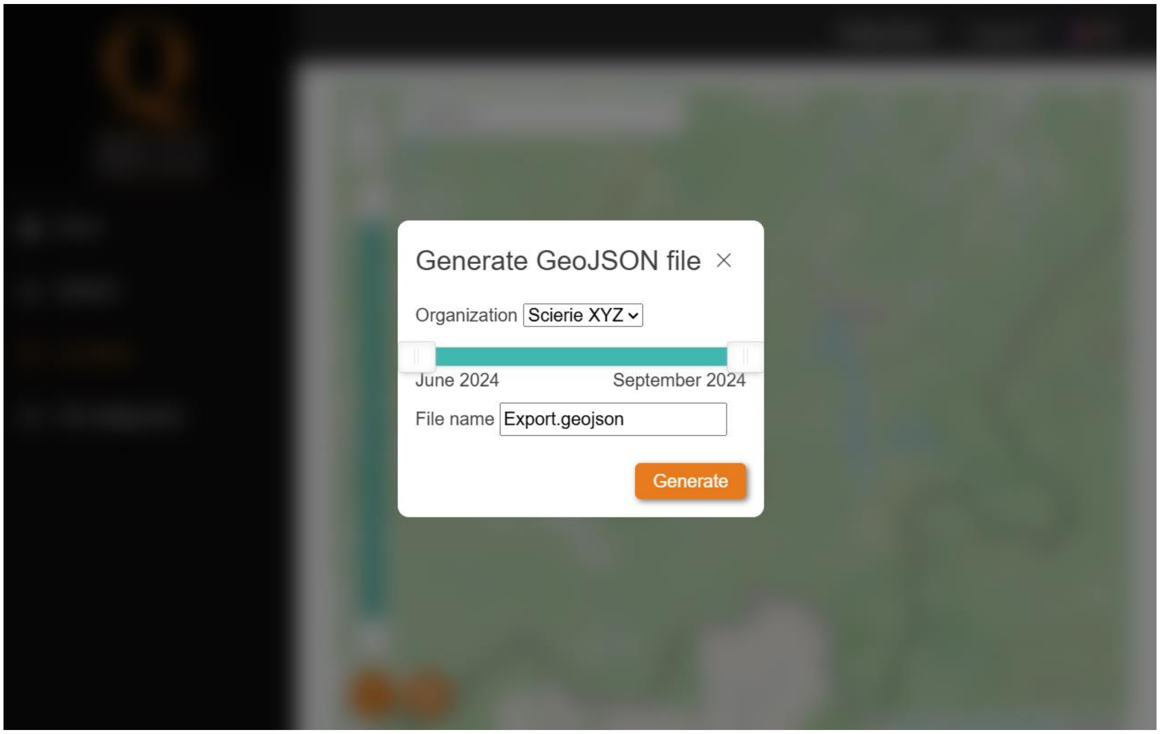

Figure 24. Export of GeoJSON files

After the GeoJSON file is generated, the user will always see a notification at the top right of the map, accompanied by a green symbol. By clicking on this notification, the window displaying the generated GeoJSON file will open (Figure 25). This window will display a green checkmark followed by the name of the generated file. By clicking on the file name, the download will then begin.

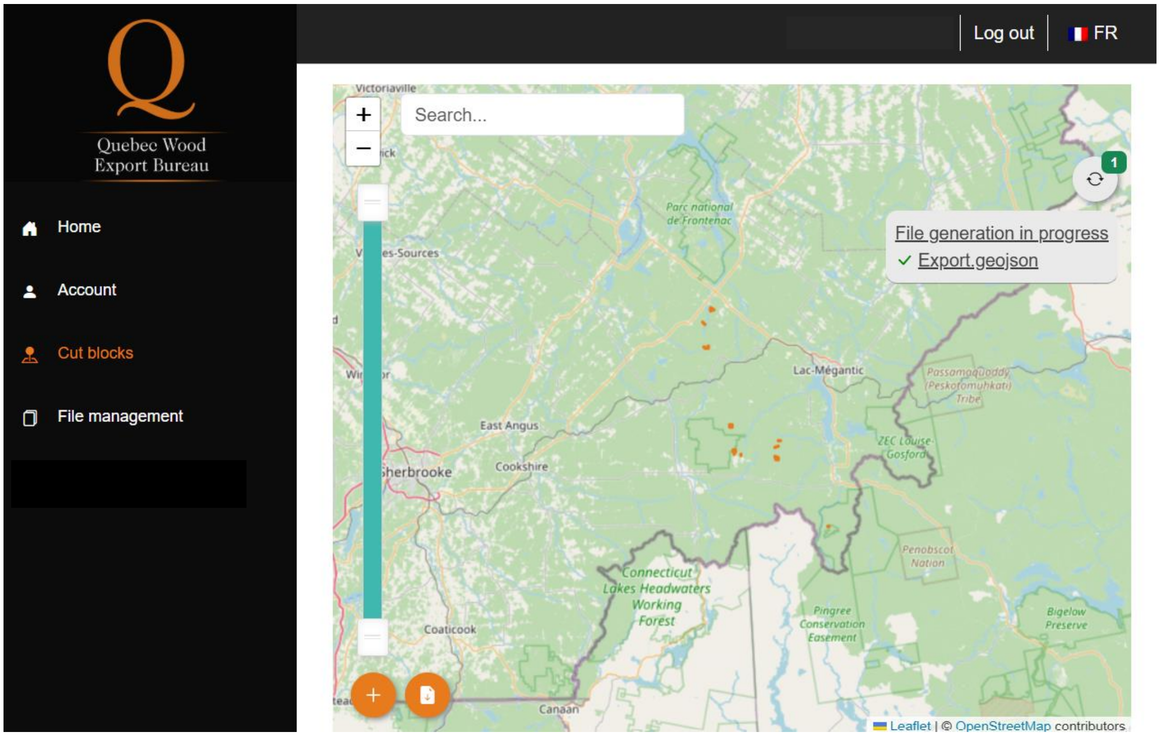

Figure 25. Window displaying the generated GeoJSON file

3.4.9. File management page

The platform allows users to manage their imported and exported files (Figure 26) and serves as long-term data storage. In the case of a European audit, users will be able to easily trace the history of their data exchanges to demonstrate compliance with regulatory requirements. Additionally, this feature is especially useful for suppliers working with multiple organizations, as well as for those who are customers of several organizations.

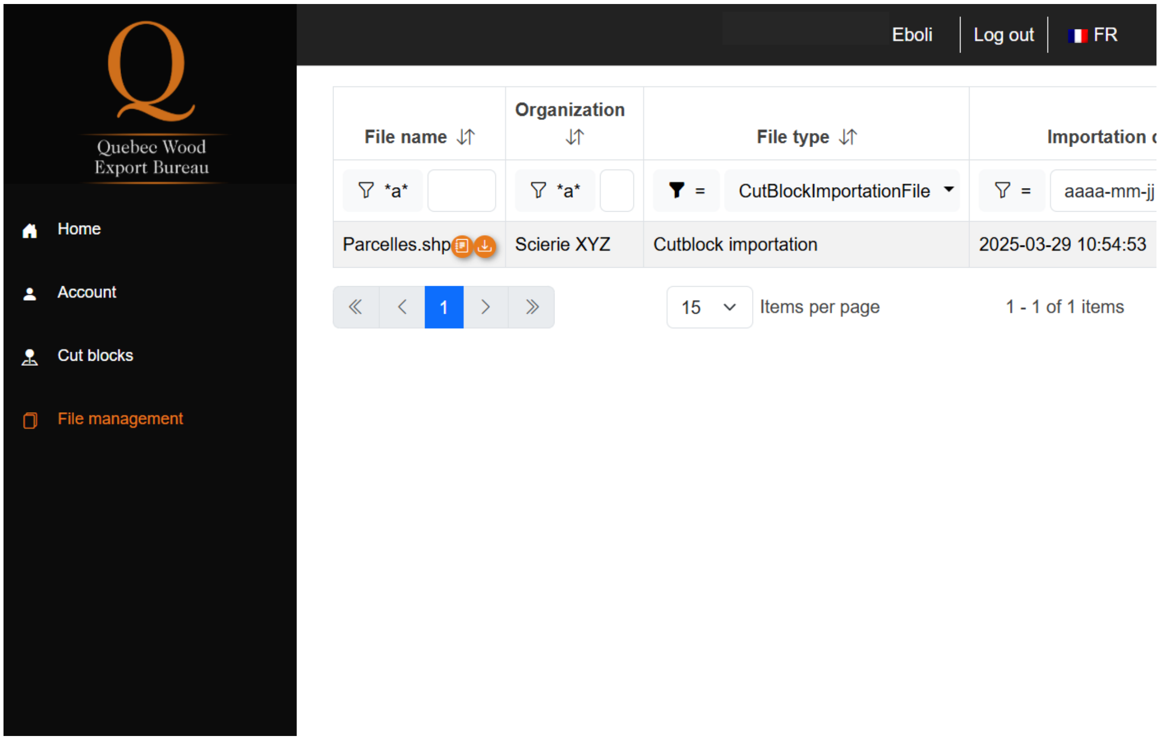

Figure 26. File management page