



**Improving access to FORest GENetic resources
Information and services for end-Users**

Deliverable D6.4

Results of the testing of the web application

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1 Summary

A beta-version of the updated EUFGIS website became available during the last reporting period. Luke led the development of the design of the web application. A stakeholder workshop in Madrid in late 2023 brought the first wave of potential end-user feedback. Some of that feedback was dealt with by direct programming, on the spot. Further feedback during RP3 was coordinated among WPs 5 and 6. This included bilateral contacts with selected stakeholders/potential end users in Austria and Italy. Regular meetings with 2-4 weeks interval, to check the technical feasibility of the model presented in D6.2, served to agree on the necessary adjustments and define the order of priority as well as sequence of work were held with LUKE, GIS, EFI, NV, BFW and CSIC-INIA.

Initial end-user testing sessions were conducted in Austria and Italy. While those tests confirmed the high interest of the end-users in the web application, it also provided input for further improvements, and stressed the desire to use a (near-to) final version for extended testing.

2 Introduction

The web application at this stage is still a work in progress, the final version to be released towards the end of the project. Nevertheless, feedback from stakeholders and potential end-users was sought already for the evolving « beta » versions, in order to create a final design answering their needs.

Therefore, this report will cover feedback obtained concerning the versions up to the one presented at the stakeholder workshop in Madrid in late 2023, and the additional updates implemented in 2024.

3 Results

3.1 Exploration of functionality of beta versions

The data presentation and design were continuously explored, focusing on GCUs known to the author (BH). In this respect, a current complication arose as the exact coordinates, map positions and some details of Austrian GCUs were not yet openly accessible. This is due to a concern regarding the publication of private ownership-related data for these GCUs. While this issue was resolved at the national level in early 2024, it is impractical, however, to update the data on the system every time a single item changes, as the remote sensing data set need to be updated and this is more efficiently done in large batches, at few occasions only (major updates).

Another issue during most of the reporting period was that project-generated data were only fed by and by into the system, as they became available. In general, data from remote observation/sensing were the first to appear and thus could be inspected best, while especially genetic data are only currently becoming available.

3.2 Testing during stakeholder workshop, Madrid November 2023

The detailed report of this meeting was presented in an Annex to MS 23. During this “live” testing, the stakeholders were first asked to freely browse the website. Then, they were confronted with several tasks (questions/waypoints) for which they should seek solutions in the website databases. Following a further guided tour through the website, their feedback was collected and whenever possible, live programming was done to incorporate agreed changes. A list of suggestions was collected, and a timetable was agreed to work on these suggestions at the end of the workshop.

The tasks/questions/waypoints for the stakeholders were the following:

1. What is genetic diversity of characterized GCUs of *Pinus pinaster* in Spain (range)?
2. Did conservation effort improve in Norway between 2010 and 2020?
3. Are there any FOREMATIS seed stands are less than 2 km away from any GCU of *Abies alba* in France?
4. Which genetic index shows genetic distinctiveness of populations?
5. Identify one GCU that will have higher precipitation in the future in February

Based on the feedback, technical suggestions for further developing the website were listed, as well as new writing (explanations, simpler texts, descriptions of terms), and items demanding further investigation by the team and consequent decision making. The essential feedback from different groups of the stakeholders present at the workshop is listed in the meeting report, and a simple summary version is copied here, in order to exemplify the kind of feedback.

Feedback from scientists group

- Provide summaries of indices per species per distribution range, ecological zone, country. Make tables and graphs as in beta.data. Also 2D plots for comparing 2 freely selected indices (last part on the next phase of development if technically possible)
- Home page: make circles of GCUs smaller
- Indices produced by FORGENIUS; one should be able to link to them directly from home page. Will be done when data is available
- Provide overview how many GCUs are characterized by indices per domain
- Improve navigation, difficult to go back and forth, buttons for going back not located on the same place across the pages
- Difficult to locate a particular GCU if the user does not have a number for the search box
- Linked information systems (IS; GD2, FOREMATIS): make visible at least some info from the linked systems, i.e. publication with the genetic data from GD2, some info from FOREMATIS. So that info is available through EUFGIS without needing to go back to FOREMATIS or GD2
- Make maps where GCUs cross with FOREMATIS units and populations from GD2
- Bug: not all species/populations have tabs Population and indices tabs, while GCU and site tabs are always visible; this is a result of defining GCUs and target populations and population indices only relate to target populations. Therefore, make species summary on country page
- Make available protocols for generating FORGENIUS compliant data. WP leaders when protocols are ready. Protocols should have costs associated to them.

Main topics in Administration group

- 1) Using as a national register:

- Spain and possibly some other countries are currently considering whether to establish a separate national register or to use EUFGIS
 - closed space for national purposes (Has been decided but needs to be elaborated)
 - possibility to add customized fields only for national use
 - also possible to have GCUs that do not fill minimum requirements
 - photos, documents as pdfs – possible risk to corrupt the system, external platform needed
 - e.g. for photos free choice if added on restricted or public space
 - field to mark “formally approved” / GCUs that in the process but not yet
- 2) Visualisation needs to be further developed
 - 3) Reporting:
 - there is a need to use EUFGIS for national reporting
 - reporting forms need to be developed
 - need to decide if and when used as national register, the source would be EUFGIS or national register
 - 4) linking too FOREMATIS
 - wish to link also Source identified FRM – category should be added

General comments

Scale should be the same across climate diagrams! Precipitation done, T cannot be changed-diagram rules.

Is seeing the method so important for the target groups using EUFGIS? It could be made less visible for target groups policy, forest manager. Maybe have method for all indices not just genetic? Discuss at annual meeting and make a decision on the inclusion of method descriptions

Update distribution maps when available, could it be done per country? External to EUFGIS. FOREMATIS: include also seed sources (source identified category) not only seed stands. Display seed stands and source identified category. Blue – round for seed stands and squares for source identified FRM. In summary list both categories should be visible, but keep them separate

Add data dictionary under data standards. Remove provider name and mail

As far as possible, changes based on these suggestions were done in the next beta version, which was to be tested by FORGENIUS partners at the annual meeting in Florence, January/February 2024.

3.3 Testing by FORGENIUS partners at annual meeting in Florence, January/February 2024

The current beta version was presented to FORGENIUS partners at the third annual meeting in Florence. Their comments and suggestions were fed into working documents by the WP6 & 5 coordination team and made available in the project Sharepoint.

3.4 Further individual testing

An individual test was carried out with a forest manager for a local GCU in Austria in April 2024, in conjunction with a WP2 data collection visit to the GCU. This forest owner manages several GCUs which were established up to 30 years ago. The beta portal website was presented, and the manager was asked for his specific interest. In this specific case, the test was hampered by the missing visibility of Austrian GCUs. It turned out that his main interest was exactly this kind of data on the location and comparability to one’s “own” GCUs. A point was made that the data would also be useful for comparing their GCUs to other stands under their management. This forest owner’s strategy in the face of climate change consists of sourcing the same main species of interest (Norway spruce, *Picea abies*) from more southern regions. It was noted that

data on such populations in the database are very useful for this specific purpose. It was agreed to repeat/update the testing once the relevant GCUs are visible in the database.

Partner VA (Veneto Agricoltura) initiated testing of selected modules with local end-users. Feedback from this group still needs to be reported and processed.

4 Conclusions

Initial testing provided valuable feedback for further developing the database. This feedback was discussed among the core group of WP6, and changes to be implemented were agreed. These will be incorporated, also following an agreed timeline. The next significant time-point is the presentation of the updated version at the forthcoming end-user event in Slovenia, and the annual meeting of FORGENIUS, both taking place in February 2025. Based on the first experience of testing with end-users of the new portal (EUFGIS database), a general conclusion is that most of them familiarized themselves easily with the structure of the tool and are thus eagerly waiting for a fully data-populated information system for their purposes.

5 Partners involved in the work

LUKE, GIS, EFI, NV, BFW, VA and CSIC-INIA.