

Mr. Fernando Tejerina
Chair of the Ex situ conservation working group

Report of Ex situ conservation ERFP working group - - 2022/2023

1. Objectives of the group (Summary)

The three main aims of the WG Ex Situ are:

1. To exchange experiences and knowledge between European countries on Ex Situ conservation strategies;
2. To support the establishment, further development, efficiency and effectiveness of national gene banks for AnGR
3. To develop the European Gene Bank Network for AnGR (EUGENA)

2. Membership of the group (chair in grey)

| Country | Name Member | Surname |
|----------------|-------------|-------------------|
| Albania | Lumpturi | PAPA |
| Austria | Beate | BERGER |
| Belgium | Sandrine | VANDENBEMPT |
| Bulgaria | Valentin | GEORGIEV |
| Croatia | Jelena | RAMLJAK |
| Czech Republic | Jana | RYCHTAROVA |
| EFFAB* | Ana | GRANADOS CHAPATTE |
| France | Delphine | DUCLOS |
| Georgia | Giuli | GOGOLI |
| Germany | Steffen | WEIGEND |
| Germany* | Julia | KÖGLER |
| Germany* | Sinje | BÜTTNER |
| Greece | Katerina | SARATSI |
| Italy | Gustavo | GANDINI |
| Latvia | Dainis | RUNGIS |
| Lithuania | Ruta | ŠVEISTIENĖ |
| Montenegro | Milena | DJOKIC |
| Nordgen* | Jaana | PEIPPO |
| Norway | Nina | SVARTEDAL |
| Poland | Ewa | SOSIN |

| Country | Name Member | Surname |
|-----------------|-------------|-------------|
| Portugal | Rosa | PEREIRA |
| Romania | Livia | VIDU |
| Serbia | Srdjan | STOJANOVIĆ |
| Slovakia | Alexander | MAKAREVIČ |
| Slovenia | Tina | FLISAR |
| Slovenia | Danijela | BOJKOVSKI |
| Spain | Fernando | TEJERINA |
| Switzerland | Markus | NEUDITSCHKO |
| The Netherlands | Annemieke | RATTINK |
| Turkey | Vedat | KARAKAŞ |
| Ukraine | Svetlana I. | KOVTUN |
| United Kingdom | Marcus | BATES |

* *Observer*

3. Activities in the past year and output/results

1. Development of the EUGENA network and EUGENA Steering Board meeting.
2. Task Force on documentation software for genebanks (2022-2023).
3. Ad hoc action on specific measures for AnGR ex situ conservation in the framework of the animal health legislation
4. Ad hoc action Strengthening national capacities towards the development of a national Gene Bank strategy.
5. Collaboration with Task Force AnGR Strategy-Action Plan.
6. Annual meeting of the WG Ex Situ conservation.
7. Others.

3. 1. Development of the EUGENA network and EUGENA Steering Board meeting.

The current situation of EUGENA is summarize in the next image:



In the past year the number of countries enrolled in EUGENA was 13: Italy, Romania, Montenegro, Slovenia, Albania, Spain, Poland, The Netherlands, Austria, Serbia, Latvia, Slovakia and Hungary.

Serbia communicated the recognition of a new genebank, *Institute for Animal Husbandry*, and the removal of *Livestock Veterinary Centre "Krnjača"*, due to that institution was not fulfilling the requirements to keep involve in EUGENA.

The information of the new genebank (contact data and samples) had uploaded in the EUGENA webpage.

As consequence of the incorporation of the new genebank in EUGENA and by the updating of the information from the previous genebanks in the net, the number of samples in EUGENA genebanks reached 1.869.169 (+ 490.084 than in 2022) and the number of breeds reached 345. For first time EUGENA collect information of three new species: Turkey, Honey Bee and Guinea Fowl. Furthermore, the categories of material types have been updated, and information about samples of primordial germ cells, ovarian tissues and stem cells have been added to the database. In the next figures or tables are presented the number of samples per genebank (Figure 1), the number of samples per specie (Figure 2), the number of breeds per specie (Figure 3) and the samples per type of material (Table 1). More information in <https://www.eugena-erfp.net/en/>

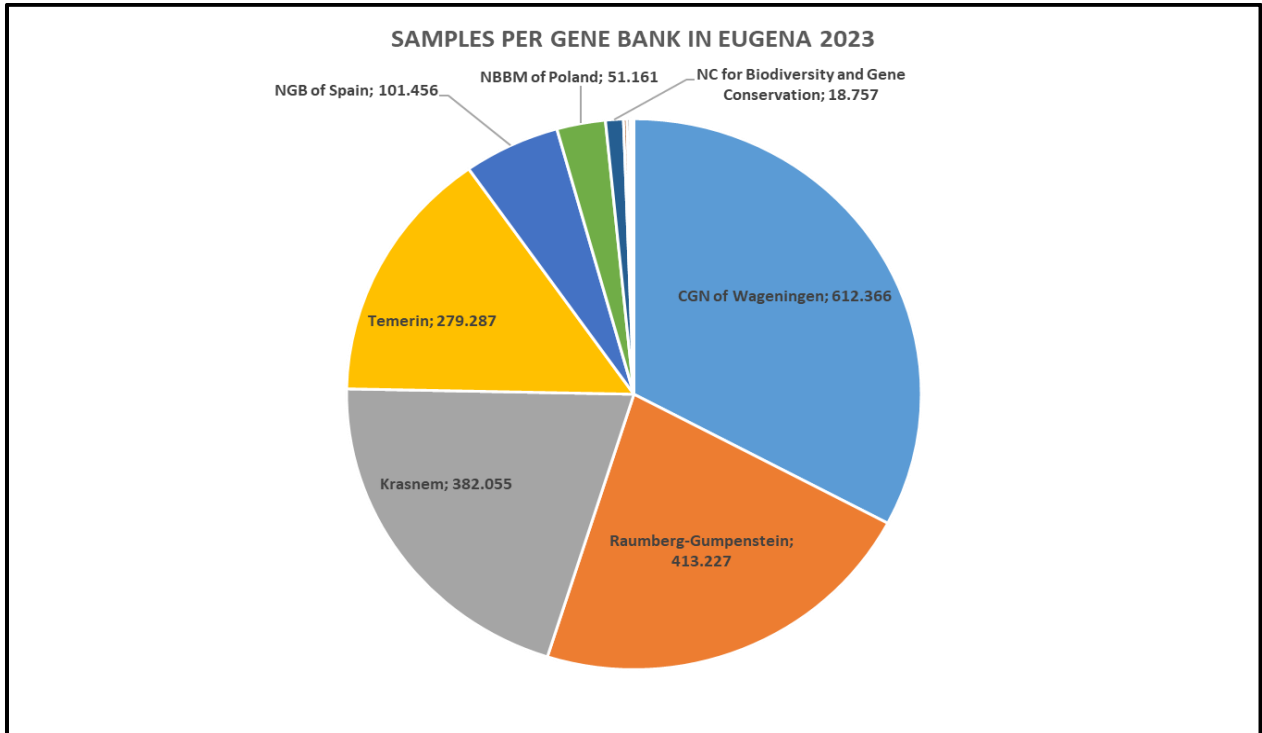


Figure 1. Samples per genebank in EUGENA.

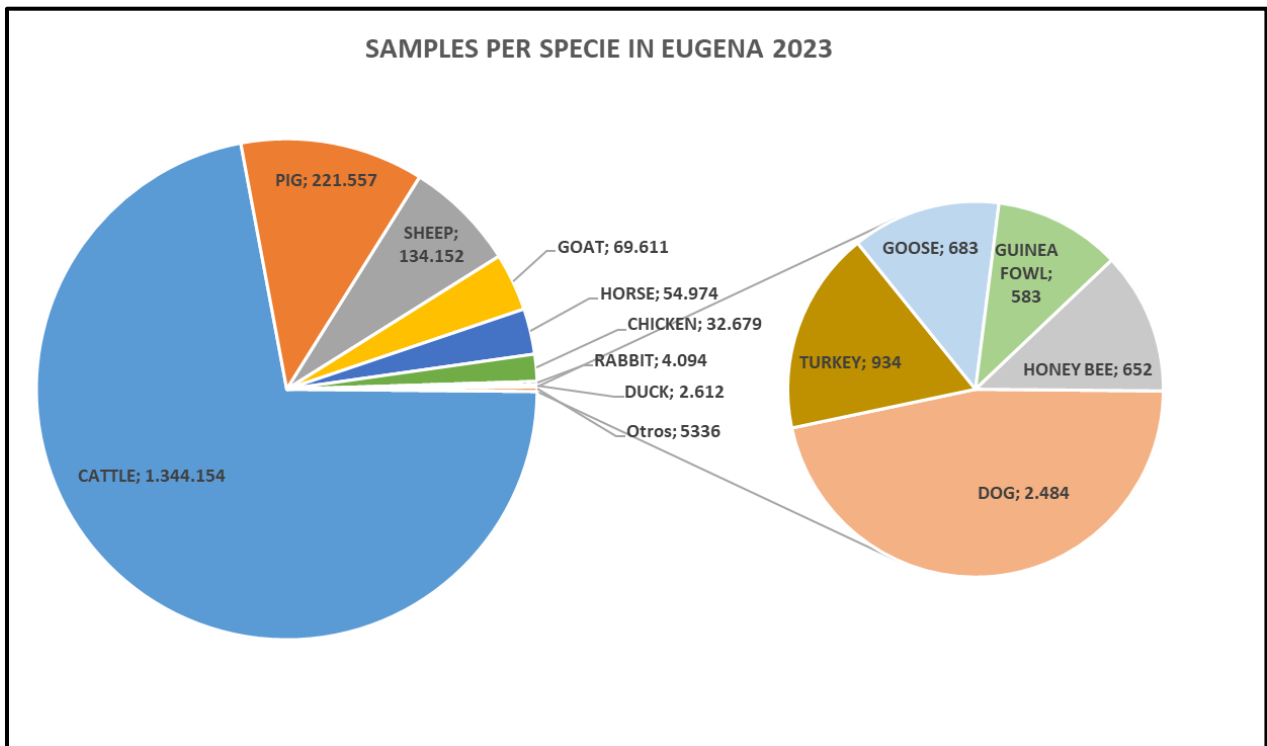


Figure 2. Samples per specie in EUGENA.

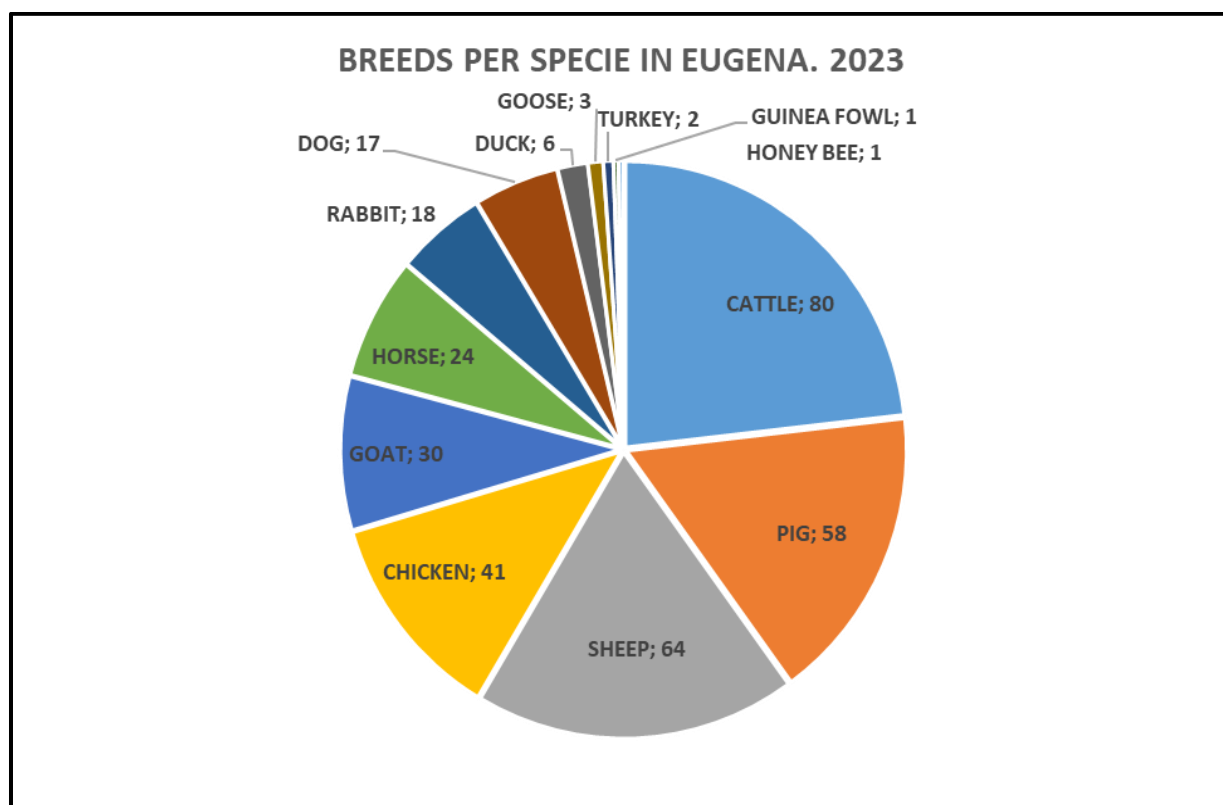


Figure 3. Breeds per specie in EUGENA.

Table 1. Samples per material type.

| MATERIAL TYPE | SAMPLES 2019 | SAMPLES 2020 | SAMPLES 2021 | SAMPLES 2022 | SAMPLES 2023 |
|-----------------------|----------------|----------------|----------------|------------------|------------------|
| Blood | 1.198 | 1.397 | 1.673 | 3.291 | 11.037 |
| DNA | | 0 | 24 | 1.109 | 4.489 |
| Embryos | 413 | 590 | 844 | 967 | 979 |
| Primordial germ cells | | | | | 540 |
| Steam cells | | 0 | 0 | 328 | 339 |
| Hair | 48 | 48 | 218 | 218 | 218 |
| Ovarian tissue | | | | | 213 |
| Semen | 796.373 | 863.289 | 956.603 | 1.373.172 | 1.851.354 |
| Total | 798.032 | 865.324 | 959.362 | 1.379.085 | 1.869.169 |

The number of breeds (345) with material stored in EUGENA genebanks represented the 8% of the total number of breeds in the European Region (4.063, in accordance with EFABIS).

The EUGENA activities are coordinated by the **Steering Board**, which consists of a genebank representative per Member Country (one person per country) nominated by the NC. The Steering Board is supervised by the ERFP Assembly and assisted by the ERFP Working Group on Ex situ conservation.

The first EUGENA Steering Board meeting was celebrated on 20th April, the objectives of that meeting were:

- Report on the EUGENA status and inform about other activities of the Ex – Situ Conservation WG.
- Inform about the tools of the EUGENA web page.
- Knowing better each other – team building.
- Discuss on the further steps to develop EUGENA and EUGENA web page.

The main conclusions of the meeting were:

- With the objective to enlarge the net:
 - EUGENA members should work actively to encourage other genebanks to enrol the net, at national and European level.
 - The incorporation to the net of **Ex situ – In vivo facilities** was proposed, but a further discussion with the In Situ Conservation WG and the analyse of implications for EUGENA web page and EUGENA ToR are needed.
- EUGENA must be promoted at national and European levels with the objective to increase awareness about the activities of the members genebanks and the role of genebanks in the proper conservation of AnGR.
- The networking between genebanks and countries should be promoted, with special interest, in:
 - Quality Management Systems – Best practices in genebanks.
 - Develop of MTA/MAA.
 - Animal health issues, the members of the steering board will be report about the proposed guidelines from the AHA Animal Health Legislation-Gene banks
 - Better integration between in situ and ex situ conservation activities, breeder societies are a key actors in this task.
- In relation with EUGENA web page:
 - The 31st March was stabilised as deadline for the annual updates.
 - Information about the implementation of QMS is going to be added to the EUGENA web page.
 - The addition of new information about the animal health status was discussed, but a deep analyses must be developed
- All members agree in propose a physical meeting next year and ask for funds to ERFP to organize it.

3.2. Task Force on documentation software for genebanks (2022-2023).

See the specific report.

3.3. Ad hoc action on specific measures for AnGR ex situ conservation in the framework of the animal health legislation.

See the specific report.

3.4. Ad hoc action Strengthening national capacities towards the development of a national Gene Bank strategy.

See the specific report.

3.5. Collaboration with Task Force AnGR Strategy-Action Plan.

The WG Chair has attended to the meetings of this Task Force and collaborate in the development of the Animal Genetic Resources Strategy for Europe and the Multi-year Programme of Work for the ERFP.

6. Annual meeting of the WG Ex Situ conservation.

The WG annual meeting was celebrated in Toledo the 22nd of May.

The issues of the meeting agenda were:

1. Inform on activities of the WG in the last year.
2. Report on the EUGENA status and inform about conclusions of EUGENA Steering Board meeting.
3. Share the experiences of several regional genebanks in Spain in the ex situ conservation of animal genetic resources.
4. Report the advances of the Task Force on documentation software for genebanks.
5. Report the advances of the Ad Hoc Action on specific measures for AnGR ex situ conservation in the framework of the animal health legislation.
6. Discuss on the proposed actions in relation with Ex Situ Conservation for the ERFP MYPOW.
7. Present and approve the Guidelines on practical recommendations for the development of genebanks for animal genetic resources, some practical examples from France, Norway and Portugal were presented to the WG members.
8. Share with the WG members the experiences of the Veterinary Faculty of Murcia and inform about novelties in the production and cryoconservation of porcine embryos.
9. Propose the Workplan for 2024.



The presentations of the meeting can be downloaded from: <https://www.animalgeneticresources.net/index.php/event/working-groups-meeting-day-1-toledo-spain/>

4. Plans and priorities for the next year (to be formally approved by Assembly)

The Chair presented a proposal of Workplan for 2023-2024 in the annual meeting, after the meeting a consultation process was opened to collect comments to the proposal. After this first step a ranking of the task was developed by the members of the Working Group (with the exception of EUGENA development, which is the highest priority for the WG).

12 countries (Albania, Austria, Croatia, Germany, France, Italy, Latvia, Poland, Serbia, Slovenia, Spain and The Netherlands) sent their ranking for the tasks, and the final result is the next:

1. **EUGENA** development.
2. Design a guidelines with recommendations to implement derogations for the collection, processing, storage and use of germinal products intended to be kept in genebanks. (AHA Animal Health Regulation and Genebanks).
3. Promote the incorporation of the ex situ conservation activities in the breeding programs of breeders societies
4. Continue the collaboration in the development of the Action Plan for the European strategy for Animal Genetic Resources and ERFP MYPOW.
5. Sharing knowledge and expertise in relation with cryopreservation protocols by species.
6. Analyze the incorporation of ex situ – in vivo facilities to EUGENA, in collaboration with the In situ Conservation WG.
7. Spread information about ex situ conservation and EUGENA in collaboration with the Communication Strategy of the ERFP.
8. Support the implementation of a modern genebank documentation software (Task Force on documentation software for genebanks)
9. Support the utilization of Quality Management Systems in Genebanks.

5. Other

The WG have collaborated with ERFP Secretariat in the dissemination of information and knowledge (about ex situ conservation activities) in the ERFP Webpage and Social Media.