

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

Report of Ex situ conservation ERFP working group - – 2020/2021

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 genebanks 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	RAMLIJAK
Czech Republic	Jana	RYCHTAROVA
France	Delphine	DUCLOS
Georgia	Giuli	GOGOLI
Greece	Katerina	SARATSI
Italy	Gustavo	GANDINI
Latvia	Iveta	KLAVINA
Lithuania	Ruta	ŠVEISTIENĖ
Montenegro	Milena	DJOKIC
Nordgen*	Jaana	PEIPPO
Norway	Nina	SÆTHER
Poland	Ewa	SOSIN-BZDUCHA
Portugal	Rosa	PEREIRA
Romania	Livia	VIDU
Serbia	Srdjan	STOJANOVIĆ
Slovakia	Elena	KUBOVICOVA

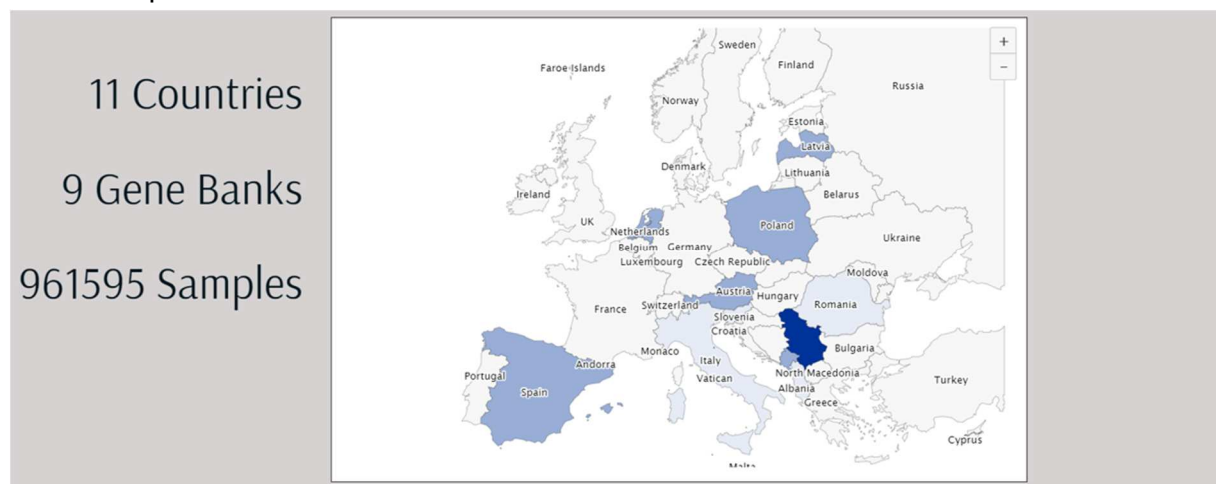
Country	Name Member	Surname
Slovenia	Tina	FLISAR
Slovenia	Danijela	BOJKOVSKI
Spain	Fernando	TEJERINA
Switzerland	Markus	NEUDITSCHKO
The Netherlands	Marjolein	NEUTEBOOM
Ukraine	Svetlana I.	KOVTUN
United Kingdom	Marcus	BATES

* *Observer*

3. Activities in the past year and output/results

1. Development of the EUGENA network.
2. Ending the Ad Hoc Action Development of specifications for a modern gene bank documentation software (CryoWEB 2.0) and further steps.
3. Ad hoc action Strengthening national capacities towards the development of a national Gene Bank strategy..
4. Collaborate in the development of AHA Transboundary breeds in Europe. Promote concerted action between countries
5. Collaboration with Ad Hoc Action GenRes Bridge Project – European Strategy on Animal Genetic Resources.
6. Annual meeting of the WG Ex Situ conservation, 2nd June (Webconference).
7. Webinar on ex situ conservation issues, 16st June.
8. Others..

3.1 Development of the EUGENA network.



*Data from Slovakia have not been updated yet.

In the past year the number of countries enrolled in EUGENA increased to 12: Italy, Romania, Montenegro, Slovenia, Albania, Spain, Poland, The Netherlands, Austria, Serbia Latvia and Slovakia. Latvia and Slovakia country enrolled EUGENA in 2021 . All countries signatories of the MoU have been included in EUGENA webpage.

Latvia communicated the recognition of the Latvia University of Life Sciences and Technologies as an EUGENA genebank and its information was added to the EUGENA portal (<https://eugena-erfp.net/en/>).

Slovakia communicated the recognition of the VÚZV Nitra as an EUGENA genebank in august 2021, and its information have not added to the EUGENA portal yet.

As consequence of the incorporation of the new genebank (Latvian) in EUGENA and by the updating of the information from the previous genebanks in the net, the number of samples in EUGENA genebanks reached 961.595 (+ 96.241 than in 2020) and the number of breeds reached 340 (+99 than in 2020). 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/>

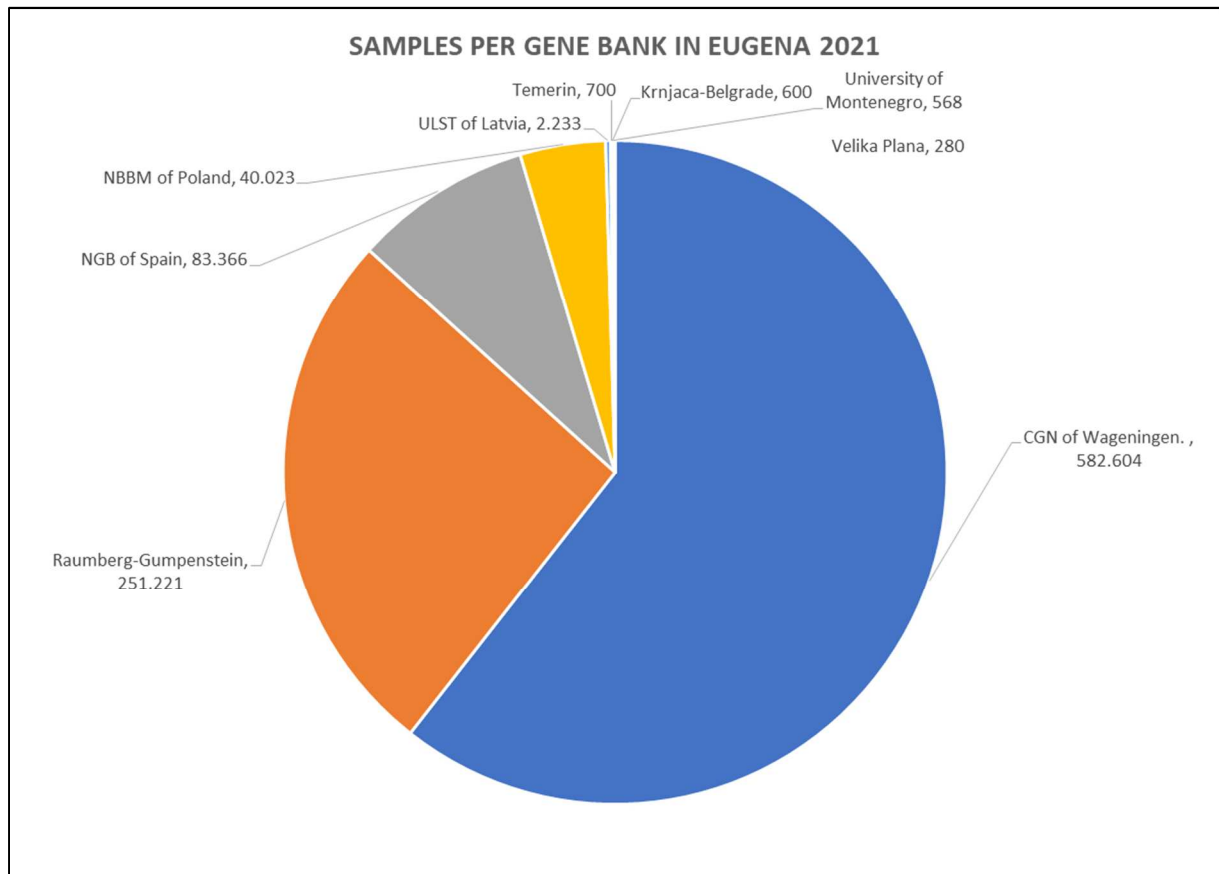


Figure 1. Samples per genebank in EUGENA.

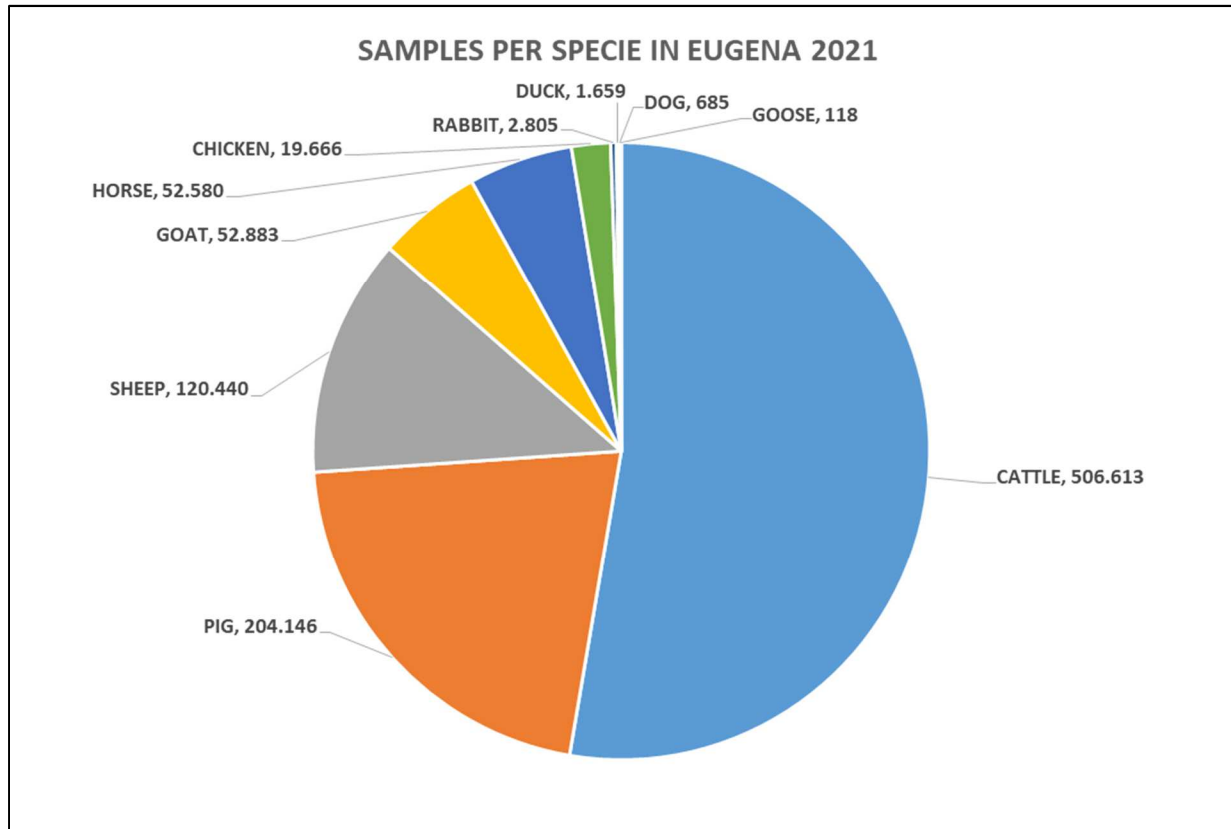


Figure 2. Samples per specie in EUGENA.

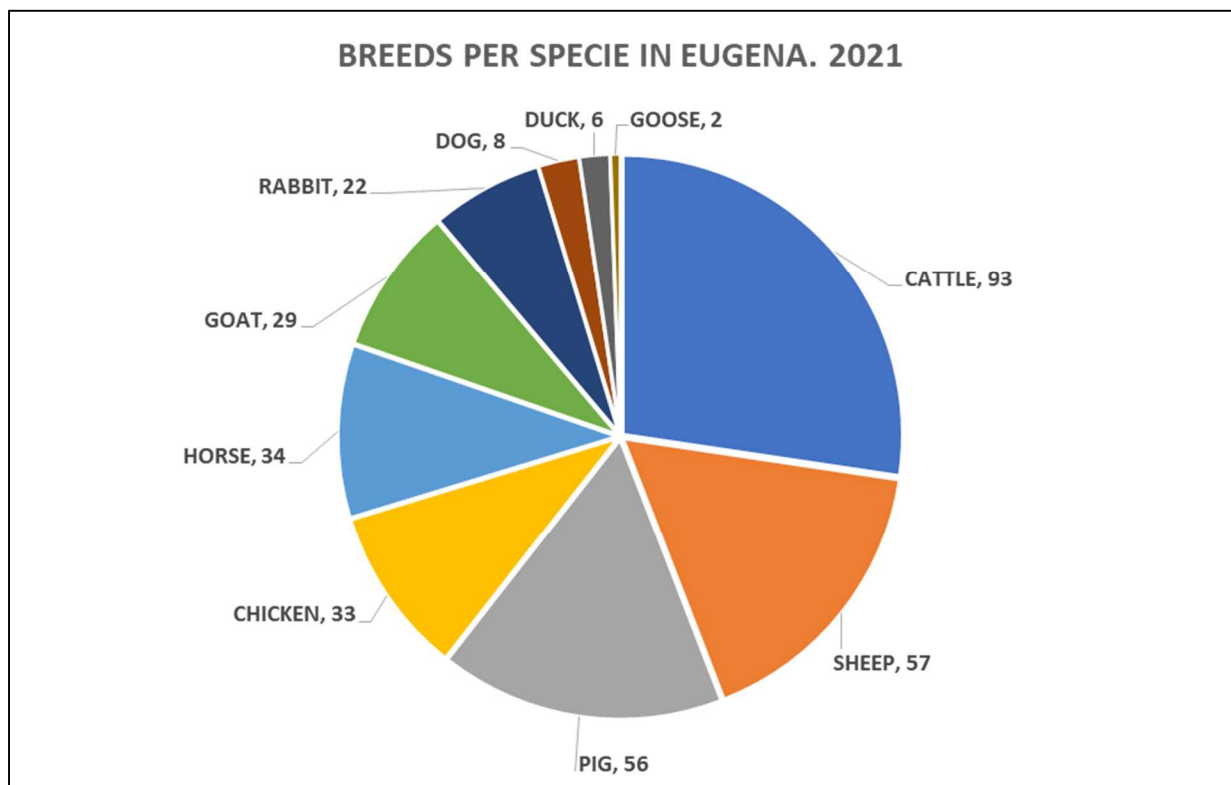


Figure 3. Breeds per specie in EUGENA.

Table 1. Samples per material type.

MATERIAL TYPE	SAMPLES 2020	SAMPLES 2021
Blood	1.397	2.864
DNA	0	1.066
Embryos	590	844
Hair	48	218
Semen	863.289	956.603
Total	865.324	961.595

The number of breeds (340) 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 Ex Situ Conservation WG have developed a new proposal of EUGENA ToR to facilitate the enrolment of new countries and genebanks in EUGENA. The new ToR add a new procedure to nominate genebanks to EUGENA in only one step whereas the incorporation of a new country is recognised with the first genebank nomination. A new statement of nomination and declaration of commitment are developed also for this single step procedure and the previous EUGENA MoU and LoA have been updated.

These new ToR and other documents will be presented for their approval by the ERFP General Assembly.

3.3 Advances in the development of specifications for a modern genebank documentation software.

The AHA Development of specifications for a modern genebank documentation software ended the previous year, with the commitment to continue analyzing the options to develop this software in a common action by the ERFP.

To fulfil the commitment, Zhivko Duchevev developed a document with the basic requirements of the software, which was presented during the WG meeting. After the approval by the WG members, the document has been used to ask for budgets to 6 software companies to estimate the cost of the software and their annual maintenance. The companies consulted were:

- Ruralbit from Portugal.
- Pyramis from Spain.
- BioAware Belgium.
- Agilebio from France.
- Tragsa from Spain.

- Consortium Comtechsys Ltd. + Technical University –Sofia- Technologies from Bulgaria.

The offers from these companies will be presented in the GA, where a decision on the further steps on the development of this project should be taken.

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

The aim of the AHA is assess current situation, needs and barriers and define solutions and priorities to support national efforts towards the development of a national cryo-conservation strategy.

The AHA have developed by a team of the next WG ex situ members or experts in ex situ conservation: Lumturi Papa (Albania), Beate Berger (Austria), Michele Teixeira Boichard (France), Christina Ligda (Greece), Dimitrios Tsiokos (Greece), Sharon Walshe (Ireland), Gustavo Gandini (Italy), Anna Caroline Holene (Norway), Ewa Sosin (Poland), Rosa Lino (Portugal), Srdjan Stojanovic (Serbia), Tina Flisar (Slovenia) and Fernando Tejerina (Spain).

The team designed a questionnaire to collect:

- General information about the management of AnGR in each country
- specific information about the ex situ conservation activities in relation with:
 - the actors involve in ex situ conservation,
 - the role of the ex situ conservation in the breeding programs,
 - the legal framework,
 - the organizational aspect of genebanks,
 - technical aspects,
 - sources of founding,

The questionnaire were sent to the WG members and 11 answer were collected. On the base of these answers a key findings were defined on the situation of the Ex Situ conservation in European countries. .

Following a “Metaplan” procedure, the drawbacks on the ex situ conservation were defined and ranked. In this procedure each member of the team sent a list of drawbacks operating in their countries, the leaders of the AHA summarize the proposals from the countries in a list of 27 final drawbacks, and they were finally ranked (the most relevant was the lack of funding).

All the before tasks were developed in a 3 on-line meetings of the team and working by distance.

The last step in the development of the AHA have been the celebration of a Workshop on 26th of May, where each country representative presented practical solutions which could be useful to face the drawbacks identified previously.

The AHA have not ended and in the next year the team analyses the practical solutions proposed by countries in order to word a guidelines to support the development of ex-situ conservation.

3.5. Collaborate in the development of AHA Transboundary breeds in Europe. Promote concerted action between countries.

The overall goal of this AHA is propose the pathways to develop a common management of the endangered transboundary breeds by developing respective ERFP guidelines.

Two members (Ewa Sosin and Srdjan Stojanovic) and the Chair of the Ex-situ conservation WG have participated actively in the meetings of the AHA, which has not finished yet.

3.6. Collaboration with Ad Hoc Action GenRes Bridge Project – European Strategy on Animal Genetic Resources.

Two members (Srdjan Stojanovic and Ruta Šveistiene) and the Chair of the Ex-situ conservation WG have participated actively in the meetings of the AHA to develop the European Strategy for Animal Genetic Resources.

3.7. Annual meeting of the WG Ex Situ conservation, 2nd June (Webconference).

Due to coronavirus restrictions to travel, the WG annual meeting was a Webconference and it was celebrated on 2nd of June (30 attendances in total).

The issues of the meeting agenda were:

1. Report on the activities of the WG in the last year.
2. Report on the final results of the AHA development of specifications for a modern genebank documentation software (CryoWEB 2.0) and present the proposal of basic requirements of this software to ask for budgets.
3. Report on the final results of the AHA to support the development of EUGENA, to identify candidate EUGENA genebanks, and improve the information about the genebanks in Europe.
4. Update of the EUGENA status and present the proposal of new EUGENA ToR.

5. Update of the development of the European Strategy for Animal Genetic Resources and discuss about the key commitments on *Ex situ* conservation.
6. Report on the development of Ad Hoc Action to strengthening national capacities towards the development of a national Gene Bank strategy.
7. Election of the Chair WG for 2021-2024 period, Fernando Tejerina, from Spain was re-elected as WG Chair.
8. Workplan for 2021-2022: The chair presented a proposal of the. After the meeting a consultation period will be opened to send comments to the proposal, and also for a prioritization of the tasks (with the exception of EUGENA development, which is the high priority for the WG).

3.8. Webinar on ex situ conservation issues, 16st June.

Due to the short time to celebrate the WG meeting in a webconference format a short Webinar was organised on 16st June (21 attendances in total), with the next presentations:

- Creation of a Spanish poultry breeds cryobank: Optimization of freezing procedure and influence of endogenous and environmental factors on sperm cryoresistance. Julian Santiago Moreno. Spanish National Institute of Agricultural Research.
- Self-assessment tool of quality management for livestock gene banks. Michèle Tixier-Boichard. French National Research Institute for Agriculture, Food and Environment.

3.9 Others activities.

- Dissemination of last IMAGE outputs.
- Collaborate with ERFP Secretariat in the dissemination of information and knowledge in the ERFP Webpage and Social Media.
- Presentation on EUGENA in the International Congress on the Breeding of Sheep and Goats (15th October, Bonn, Germany).

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

The Chair presented a proposal of Workplan for 2021-2022 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**).

11 countries (Albania, Croatia, The Netherlands, France, Italy, Serbia, Montenegro, Portugal, Slovenia, Spain and United Kingdom) and one observer organization (Nordgene) sent their ranking for the tasks, and the final result is the next:

1. Development of a modern genebank documentation software.

2. Supporting the development of national regulation about germinal products collection intended to be kept in genebanks and the recognition of genebanks at national level.
3. Collaboration in the development of the European genetic resources strategy and specific European strategy for animal genetic resources.
4. Sharing knowledge and expertise in relation with cryopreservation protocols by species.
5. Support the utilization of Quality Management Systems in Genebanks.
6. Develop AHA strengthening national capacities towards the development of a national genebank strategy.
7. Supporting the application of the new regulation of germinal products in relation with the procedure for germinal products moved to genebanks in another Member State.
8. Collaboration in the development of tools for the assessment of breeding programmes.
9. Collaboration with the Ad Hoc Action: Transboundary breeds in Europe. Promote concerted action between countries.
10. Spread information about ex situ conservation and EUGENA in collaboration with the Communication Strategy of the ERFP.

5. Other

Two members of the WG have retired in the last year: Martina Henning and Eva-Marie Stålhammar. The WG acknowledges their actively collaboration and work developed.