



European Cooperative Programme for Plant Genetic Resources (ECPGR)

Phase X (2019–2023)

**Annual Progress Report
January-December 2020**

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ECPGR IN 2020 – HIGHLIGHTS

2020 – Covid year

2020 was a year of challenges for the whole world and the COVID-19 pandemic affected our work on multiple levels. The ECPGR Secretariat has been working from home since the beginning of the pandemic in March, supporting all ongoing projects and activities remotely. This has not always been easy. Meetings for projects and grant activities were postponed, cancelled or held through video conference. A number of activities within our projects could not proceed as planned due to lockdown measures in force at the time. Staff changes and the move of the office from Maccarese to Rome have also brought some difficulty to the Secretariat. However, significant progress was made in various areas, such as the EVA Network and the H2020 projects, as documented in this report.

European Evaluation Network (EVA)

- After the establishment of the ECPGR European Evaluation Network (EVA) in 2019 with financial support from the German Federal Ministry for Food and Agriculture, EVA gained steam in 2020 thanks to the full-time dedication of the new EVA Coordinator, with progress in all crop-specific networks, despite limitations imposed by the COVID-19 pandemic.
- Membership of the five crop-specific EVA networks on carrot, lettuce, pepper, maize, wheat and barley was extended to a total of 91 partners from 28 countries, including genebanks, research institutes and large and small breeding companies, working together to increase knowledge about valuable traits of publicly available crop germplasm with a view to introducing these into public and private breeding programs.
- Priority traits include biotic and abiotic stress traits, as well as agronomic characteristics, that will be important in broadening the genetic basis of crops and developing crops suitable for diverse agro-ecologies and able to cope with the challenges of a changing climate.
- Network activities in 2020 included multiplication and regeneration of accessions, development of standard protocols and data collection templates, and the start of genotypic and phenotypic evaluations in the field and laboratory. The generated data will be collected in a EURISCO-EVA intranet and made publicly available through EURISCO after a short embargo period.

Activity Grant Scheme

Four new activities were selected by the Executive Committee in 2020:

- GRIN-Global II (Information and Documentation WG)
- Eubraswild (Brassica WG)
- EUROPE.BERRIES (Berries WG)
- Cucurbitlocal (Cucurbits WG)

Horizon 2020 Project AGENT

- Activated GEnebank NeTwork (AGENT) - a Coordination and Support Action on 'Establishing an innovative gene bank network' started in May 2020 with the active participation of ECPGR stakeholders and the Secretariat. The project aims to establish a network of actively cooperating European genebanks, transforming them into active bio-digital resource centres.
- Using wheat and barley as example crops, partners are developing concepts and protocols for effective generation and documentation of phenotypic and genomic data of genebank collections, which could also be used for other crops and collections.
- AGENT is actively collaborating with the EVA Wheat and Barley network, providing support for the extension of the EVA activities to additional accessions and partners, as well as eventually contributing to the data analysis.
- CGN The Netherlands leads a task of AGENT dedicated to extending the peer review exercise promoted as a component of the AEGIS Quality System to ten genebanks.

Horizon 2020 project GenResBridge

- **GenRes Bridge** - a Coordination and Support Action on '[Joining forces for genetic resources and biodiversity management](#)', bringing together the three European genetic resources networks ECPGR, ERFP (European Regional Focal Point for animal genetic resources) and EUFORGEN (European Programme for Forest Genetic Resources) held the second annual meeting in Bonn, Germany in February 2020. Project partners discussed the outline, scope and content of a European Genetic Resources Strategy (EGRS), which is intended to provide a strategic framework for the genetic resources domains over the next decade, complemented by domain-specific strategies developed by the networks. The ECPGR community agreed to elaborate a European Plant Genetic Resources Strategy in line with the EGRS.
- The annual meeting also saw the official launch of Genetic Resources (www.genresj.org), a new open access online journal established with financial support from GenRes Bridge, aiming to serve genetic resources practitioners of all domains and inviting submissions from stakeholders worldwide. The ECPGR Secretariat serves as editorial office of the journal, which is published by Bioversity International on behalf of ECPGR. Two issues of the journal were published in 2020.
- In November 2020, a feedback workshop on the EGRS was held online, in conjunction with an extraordinary Steering Committee meeting of ECPGR and similar meetings of the other domain networks, to gather input on the draft strategy and develop it in line with the needs of the community. A first draft of the European Plant Genetic Resources Strategy was also discussed during this meeting.

EURISCO

- New staff was hired at IPK, Gatersleben, to strengthen the EURISCO development. Ms **Pragna Kotni**, software developer, came on board in mid-November 2020. By the end of 2020, Mr **Suman Kumar** was recruited and will dedicate his time to develop the extensions of the EURISCO infrastructure that are necessary for hosting and displaying the data gathered by the EVA networks.

New Staff at the ECPGR Secretariat

- Ms **Vanessa Bryant** and Ms **Loredana Maria** joined the Secretariat to provide administrative, secretarial and logistical support to the ECPGR Secretariat and team, while we bade farewell to Lidwina Koop, moving to another job.

1. ECPGR STRUCTURE AND MODE OF OPERATION IN PHASE X

1.1. MEMBERSHIP AND CONTRIBUTIONS

By the end of December 2020, 32 countries signed the LoA for Phase X membership. The list of signatory member countries is available online ([Membership webpage](#)).

Two additional countries (Belgium and North Macedonia) contributed funds for Phase X, even though they had not yet signed the LoA¹.

An additional €118,750, corresponding to outstanding contributions for Phase IX, was also received from Italy (€104,000), North Macedonia (€2,750) and Portugal (€12,000). The ECPGR budget for Phase X had been increased in 2019 from 2,688,250 originally (agreed in May 2018 in Thessaloniki) to 3,937,809 at the end of 2019. The additional contributions received in 2020 further increased the budget to a total of €4,048,949 at the end of 2020 (difference due to return of unspent funds to Germany; see details in the Financial report 2020).

1.2. RENEWAL OF MEMBERSHIP IN ECPGR WORKING GROUPS

Working Group members

National Coordinators provided updates and nominations of new WG members throughout the year. The [lists of WG members](#), including their respective categories of expertise, are available online and are constantly being updated. Membership lists by country are also available [here](#).

Working Group Chairs

Wheat Working Group: The Executive Committee nominated Albrecht Serfling, from the Julius Kühn-Institute (JKI), Federal Research Centre for Cultivated Plants, Quedlinburg, Germany, as WG Chair as of 1 June 2020, replacing the retiring François Balfourier.

Documentation and Information Working Group: Theo van Hintum stepped down from the Chair's position on 31 December 2020. The appointment of a new Chair will be made after the revision of the Terms of Reference for this position, which so far included the function of chairing also the EURISCO Advisory Committee. Theo van Hintum agreed to maintain this latter function until the end of 2021.

See full list of [ECPGR Working Group Chairs during Phase X](#).

1.3. SECRETARIAT

New Administrative Assistants

To replace Administrative Assistant Lidwina Koop, who left the ECPGR Secretariat in September 2020, two new posts were filled in 2020. Vanessa Bryant, a UK national, joined in August 2020 providing part-time temporary administrative support to the Secretariat with a focus on the EVA Network and the Genetic Resources journal. Loredana Maria, an Italian national, joined as Senior Administrative Assistant in October 2020, bringing several years of experience with Bioversity International and now providing administrative, secretarial and logistical support to the ECPGR Secretariat and team.

¹ Italy also signed the LoA in the first part of 2021.

New office

The ECPGR Secretariat is following the move of its host institution (The Alliance of Bioversity International and CIAT), preparing to relocate to Rome (Aventino area) in 2021. Due to a lack of storage space in the new premises, the Maccarese offices needed to be emptied and the ECPGR archive (paper documents, publications, etc) were partly disposed of and partly packed and deposited into a rented external storage space. Due to the COVID-19 restrictions, a working from home arrangement for all ECPGR staff was enforced as of March 2020, with limited possibility to work from the office. This arrangement was expected to continue in 2021.

1.4. CHANGES OF NATIONAL COORDINATORS

During 2020, the following changes of National Coordinators took place:

- Albania: Mr Ndoc Faslia, from the Agricultural University of Tirana, replaced Mr Fetah Elezi as of January 2020.
- Greece: Ms Anna Foulidi, from the Ministry of Rural Development and Food, replaced Ms Chara Christodoulou as of 10 February 2020.
- Norway: Ms Nina Sæther, from the Norwegian Institute for Bioeconomy Research (NIBIO), replaced Mr Morten Rasmussen as of 14 September 2020.
- Spain: Mr Jose Antonio Sobrino Maté, from the Ministerio de Agricultura, Pesca y Alimentación, replaced Mr Luis Guasch as of 6 February 2020.
- Turkey: Mr Gökhan Kizilci, from the Ministry of Agriculture and Forestry, replaced Ms Lerzan Gül Aykas as of 23 March 2020.

1.5. ACTIVITIES OF THE EXECUTIVE COMMITTEE (ExCo)

At the end of 2020, the ExCo was composed of Marianne Lefort (Chair), Vojtech Holubec (Czech Republic), Külli Annamaa (Estonia), Benvindo Martins Maçãs (Portugal), Beate Schierscher (Switzerland), replacing Marc Lateur (Belgium) as of 1 March 2020, and Lorenzo Maggioni (ECPGR Secretariat, *ex officio*).

The ExCo held two meetings in 2020:

- Fifteenth meeting, 26-27 February 2020 in Svalbard, Norway, back-to-back with the 12-year anniversary of the Seed Vault.
- Sixteenth meeting, 14 December 2020 (online).

During 2020, the main activities of the ExCo were related to the following items:

- Evaluation, selection and awarding of proposals submitted under the ECPGR Grant Scheme. Proposals for the Third and Fourth Calls of Phase X were selected and awarded (see details below).
- Appointment of WG Chairs
- Decision on the appointment of Jan Engels as temporary consultant for ECPGR

It was agreed that during 2021, Bioversity Honorary Fellow Mr Jan Engels would undertake a few tasks related to AEGIS (support to the preparation of genebank operational manuals and crop-specific standards).

- Contribution to the preparation of the European Plant Genetic Resources Strategy
The ExCo joined a drafting team of national coordinators, supporting the Secretariat for the drafting of the PGR Strategy.
- Participation of ExCo members in technical meetings
 - GenRes Bridge “Feedback workshop on the European Genetic Resources Strategy”, 24-26 November 2020, online
- Preparation of the ‘Jubilee Video’

The ExCo Chair coordinated a task force devoted to the preparation of a public awareness video (‘Jubilee Video’) prepared on the occasion of the 40th anniversary of the foundation of ECPGR. With inputs from the Secretariat and task force members Marc Lateur, Pavol and René Hauptvogel, Jens Weibull and Ewa Hermanowicz (Communication Officer of EUFORGEN), the UK company ‘Duckrabbit’ was eventually selected for the production, after the launch of a bid, and Lina Weibull was contracted as a consultant to serve as intermediary between Duckrabbit and the Task Force/ECPGR Secretariat. Marc Lateur was selected from four candidates as the main character/narrator of the public awareness story and the video was recorded in Belgium in September 2020. The video was due for release in early 2021².

2. ACTIVITIES CARRIED OUT IN 2020

2.1. ECPGR ACTIVITY GRANT SCHEME

Note: for all activities, details on the implementation and all available documents (interim and final reports, complementary data, references etc) can be found on the respective Activity webpages. The available final reports can also be found [here](#) (for Phase IX) and [here](#) (for Phase X).

Four proposals out of five have been selected for funding in the two 2020 Calls (see Table 1 below):

Table 1. Proposals approved by the ExCo under the Third Call of Phase X

Acronym	Title	Working Group(s)	Activity Coordinator	Budget in Euros
GRIN-Global II	GRIN-Global Workshop 2021 for European Genebanks	Documentation and Information	Ludmila Papoušková, Czech Republic	€18,450
EUBRASWILD	Capturing Brassica Wild Relatives Diversity in South Eastern Europe	Brassica	Smiljana Goreta Ban, Croatia	€20,000
EUROPE.BERRIES	Collaborative action for updating the documenting about berry genetic resources in Europe	Berries	Monika Höfer, Germany	€20,000
Cucurbitlocal	Exploitation of Cucurbita local germplasm for sustainable agriculture	Cucurbits	Maria Ercolano, Italy	€20,000

See details on the web pages: [Outcomes of the Third Call](#); [Outcomes of the Fourth Call](#).

² The Video was released in March 2021: watch [here](#)

Overall, seven activities have been granted in the first half of Phase X, three of which had started by the end of 2020.

During Phase IX, 31 activities had been granted. By the end of 2020, twenty-one had been concluded with an Activity report and eight reports were still pending. Two activities (ImprovLoliumCol and EUGrainLeg) were still ongoing. The status and/or outcomes of activities that were still ongoing or completed during 2020 is summarized in Table 2.

Table 2. Status of activities at the end of 2020

Working Group	Name of the Activity	Activity Timeframe	Main information and outputs
Allium	Safeguarding of potato onion (<i>Allium cepa</i> L. <i>Aggregatum</i> group) and garlic (<i>Allium sativum</i> L.) crop diversity in North Europe - Baltic region (SafeAlliDiv)	June 2017 – October 2019	Report published online in January 2020 (here)
Avena	Updated morphological Descriptors for Avena Species (UMORPHEAS)	March 2020 – February 2022	Actual starting date pending the possibility to hold a physical meeting
Berries	Collaborative action for updating the documenting about berry genetic resources in Europe (EUROPE.BERRIES)	January 2021 – June 2023	Activity approved in December 2020
Beta	Improving a cooperation network between actors involved in conservation and utilization of Beta genetic resources (BETANET)	December 2017 – November 2018	Final report pending
Brassica	Capturing Brassica Wild Relatives Diversity in South Eastern Europe (EUBRASWILD)	October 2020 – August 2023	The Activity is planning to identify and collect new accessions of Brassica CWRs for inclusion into AEGIS and to improve genebank management in accordance with the AEGIS principles. A first meeting was held online in November 2020 (meeting report here) and a second online meeting was planned for March 2021.
Cucurbits	Exploitation of Cucurbita local germplasm for sustainable agriculture (Cucurbitlocal)	February 2021 – January 2023	The Activity, approved in December 2020, is aiming to build a genetic resources inventory of local Cucurbita accessions, characterize primary traits of at least of 60 Cucurbita accessions and carry out agronomic evaluation of selected accessions in low input crop management systems. Selected accessions should be identified for inclusion in AEGIS and/or for promoting their use. An online meeting was planned for February 2021.
Documentation and Information	GRIN-Global Workshop 2021 for European Genebanks (GRIN-Global II)	September 2020 – February 2021	Implementation of the Activity was postponed owing to the COVID-19 pandemic. The Activity aims to organize a workshop dedicated to countries with an interest to adopt GRIN-Global. An invited expert will introduce past, present, and future of GRIN-Global. The workshop has been postponed until physical meetings can take place again.
Forages and Documentation and Information	Facilitating use on the European perennial ryegrass collection: improving access to genetic resources and C&E data (ImprovLoliumCol)	September 2018 – August 2021	The Activity is on schedule and planned to be completed in August 2021.
Grain legumes	Efficient management of resources for smart legumes utilization (SMARTLEG)	January 2017 – December 2017	Final report pending. A scientific paper has been completed: - Sinkovič L, Pipan B, Sinkovič E, Meglič V (2019) Morphological seed characterization of common (<i>Phaseolus vulgaris</i> L.) and runner (<i>Phaseolus coccineus</i> L.) bean germplasm: a Slovenian Gene Bank example. <i>BioMed Research International</i> , vol. 2019, Article ID 6376948, 13 pages, 2019. https://doi.org/10.1155/2019/6376948.s

Grain legumes	Lathyrus diversity: available resources with relevance to crop improvement – progress reviews and relationship with AEGIS (EUGrainLeg)	August 2018 – March 2021	Thanks to a no-cost extension of the Activity, partners from Greece and Romania carried out field experiments in 2020 to obtain more solid data.
Malus/Pyrus	Building and promoting a European Pyrus collection - a case study (EcoHisPy)	January 2015 – December 2016	Final report pending
Malus/Pyrus	Common ECPGR protocols and tools available for Characterization & Evaluation of Malus/Pyrus genetic resources (Pomefruit – C&E)	February 2017 – September 2019	Data and results analysis has continued in 2020. Scientific publications and the final activity report are expected to be completed in 2021. This Activity was supported by the German Federal Ministry of Food and Agriculture.
Medicinal and Aromatic Plants	Promoting the implementation and the establishment of the European MAP Collection (MAP EUROCOLLECTION)	September 2016 – September 2017	Agreements for multiplication of MAP accessions were established with Bulgaria, Germany, Portugal and Romania. More than 200 accessions from 57 species will be included into the European MAP Collection as part of AEGIS. The final activity report was expected to be completed in 2021.
Prunus	Testing, Use and Alignment of genetic data to distinguish unique and characterized accessions (Prunus Alignment)	February 2018 – April 2020	<p>The objective of the Activity was the alignment of microsatellite marker data across germplasm collections of cherry within Europe, as a significant step forward in the coordinated management of field collections of cherry in Europe. The aligned datasets allowed to identify groups of previously unknown matching accessions and to resolve a few errors.</p> <p>A meeting was held 18 February 2020 in Athens, Greece. The meeting report is available here. The final activity report was provided in January 2021 (here).</p> <p>Two articles were published:</p> <ul style="list-style-type: none"> - Gaši F, Sehic J, Grahic J et al. (2020) Genetic assessment of the pomological classification of plum <i>Prunus domestica</i> L. accessions sampled across Europe. Genetic Resources and Crop Evolution. https://doi.org/10.1007/s10722-020-00901-y. - Nybom, H., Giovannini, D., Ordidge, M., Hjeltnes, S. H., Grahi, J. and Gaši, F. (2020) ECPGR recommended SSR loci for analyses of European plum (<i>Prunus domestica</i>) collections. Genetic Resources, 1(1):40-48. doi: 10.46265/genresj.2020.1.40-48
Umbellifer crops	Improving the characterization and conservation of umbellifer crop wild relatives in Europe (CarrotDiverse)	February 2017 – September 2019	The Activity focused on wild carrot accessions from France, Germany, Portugal, Nordic countries and the UK. The final report is pending. This Activity was supported by the German Federal Ministry of Food and Agriculture.
Vitis	Enhancing quality and quantity of Vitis genetic resources in AEGIS (AEG-VIT-IS)	January 2020 – December 2020	Owing to the COVID-19 pandemic, the planned meeting in Spain was replaced by an online meeting in November 2020 (meeting report available here). Participants from 16 countries gave account of the status of Vitis genetic resources in the respective country collections. Over 900 candidate accessions from ten countries in the European Vitis Database were proposed for AEGIS. Partners agreed on a procedure to identify 'questionable' accessions, based on the use of passport data and SSR alleles. As a task foreseen by the Activity, each institution holding a collection was recommended to fill in the AEGIS operational genebank manual.
Wheat	Training on identification of botanical varieties in Triticum species (Training in Triticum species: TTS)	July 2018 – September 2019	The final report is pending.
Wild species conservation in genetic reserves	Identification, preparation of applications and approval of sites to join the European in situ PGRFA conservation network (Inclusion of CWR sites in European in situ network)	September 2019 – July 2021	After the joint workshop that took place with the Farmer's Pride Project in October 2019 in Santorini, activity members could not hold the final Farmer's Pride meeting in Portugal, since this was cancelled due to the COVID-19 pandemic and postponed to 2021.

2.2 WORKING GROUP MEETINGS

- Allium WG

The eighth meeting of the Allium WG was originally planned for 26–27 May 2020 in Skierniewice, Poland. It was cancelled and is planned to be rescheduled when physical meetings will be possible.

- Berries Working Group

The first meeting was organized 14–15 January 2020 in Dresden, Germany in collaboration with the Julius Kühn-Institut (JKI) and sponsored by the German Federal Ministry of Food and Agriculture. Participants from 17 countries reported on the status of berries' genetic resources in their collections. Conservation and breeding activities mostly focus on strawberry, raspberry, blackberry, blueberry and currants, but also occasionally on minor crops such as cranberry, elder, myrtle and others. Several wild-harvested berry species are endemic of Europe and carry an astounding genetic diversity, which is often threatened or under-investigated.

Many participants highlighted the difficulties they were facing for the management of the respective collections, owing to scarce available resources. Challenges are particularly heavy for these vegetatively propagated crops that require to be maintained as living plants in the field or greenhouse, require frequent rejuvenation (every two years in the case of strawberry) and are susceptible to serious infections from several pathogens. Micropropagation and cryopreservation techniques are partly developed and implemented by a few institutions, but further investments in this direction are needed, ideally with a jointly coordinated planning at European level.

The Group agreed to start its activity with an inventory of all the existing berry germplasm that is maintained in Europe. These data should then find their way into the EURISCO catalogue and set the basis for priority characterization, evaluation and molecular analysis as well as to select the most important and unique accessions for inclusion into the European Collection.

- Solanaceae Working Groups

The second meeting of the Solanaceae WG, originally planned for June 2020 in Pontecagnano, Italy, back-to-back with the EVA Pepper Network annual meeting, was cancelled and is planned to be rescheduled when physical meetings will be possible.

2.3 AEGIS

2.3.1. AEGIS membership

During 2020 no additions were made to the number of countries or Associate Members of AEGIS, which remains at 35 member countries and 68 Associate Members (details [here](#)).

2.3.2. Status of the European Collection

By the end of December 2020, a total of 57,690 accessions from 19 contributors were part of the European Collection.

In 2020, the European Collection has increased by 872 accessions. One new country contributed for the first time (Portugal). The changes in the composition of the European Collection over 2019 are shown in Table 3 below.

Table 3. The European Collection: breakdown by contributors

Contributor	No. of accessions flagged as AEGIS		Difference
	by end 2019	by end 2020	
1. Albania	8	8	-
2. Bosnia and Herzegovina	22	29	+7
3. Bulgaria	341	341	-
4. Croatia	90	90	-
5. Czech Republic	1636	1659	+23
6. Estonia	129	129	-
7. Germany	26757	26725	-32
8. Italy	8132	8815	+683
9. Latvia	27	27	-
10. Lithuania	45	45	-
11. Montenegro	31	31	-
12. The Netherlands	5845	5841	-4
13. Nordic Countries	4779	4779	-
14. Poland	443	443	-
15. Portugal	0	86	+86
16. Romania	623	732	+109
17. Slovakia	640	640	-
18. Switzerland	5611	5611	-
19. United Kingdom	1659	1659	-
Total	56818	57690	+872

2.3.3. Follow-up to the Action Points agreed during the AEGIS Workshop ‘Assessing current practices and procedures to strengthen AEGIS’ held in December 2018 in Madrid, Spain

During 2020, very little progress was made towards the implementation of the AEGIS Action Points, partly due to various constraints linked to the COVID-19 pandemic (obstacles in travels and meetings, shifting priorities, etc). However, preparatory work has been made:

- Within the framework of the Horizon 2020 project AGENT (see below), the recommended genebank ‘peer review’ approach is being implemented in a scaled-up form. This approach was tested as part of the GenRes Bridge project in early 2019 with three genebanks, consisting of genebank curators visiting and reviewing each other’s genebanks as a way of improving the quality in genebanks. The AGENT project includes a task led by CGN, the Netherlands, extending the peer review exercise to ten genebanks. A preliminary planning was made for the first cycle of gene bank visits, which remained pending due to the COVID-19 pandemic.
- Within the framework of the Horizon2020 project GenRes Bridge, preparations started for the organization by the ECPGR Secretariat of a workshop on phytosanitary barriers for genetic resources in February 2021, with the aim of raising awareness among genetic resources stakeholders and initiate a discussion on phytosanitary issues relevant for genetic resources conservation and sustainable use. The ECPGR Working Groups on fruit trees were involved, particularly considering that quarantine pests and diseases may prevent the exchange of AEGIS material.
- Arrangements were made to engage Mr Johannes Engels, Honorary Fellow of The Alliance of Bioversity International and CIAT, to dedicate a small part of his time during 2021 to help the Secretariat with AEGIS-related tasks. Jan will mainly assist Associate Members with completing their operational genebank manuals and Working Group Chairs to complete crop-specific conservation standards.

2.4. EURISCO

Both the activity report for 2019 and the workplan for 2020 were made available online on the EURISCO web interface (section ‘Statistics and documents’ → ‘Plans / reports’).

In 2020, some organizational changes took place. Since February 2020, the EURISCO Coordinator, Mr Stephan Weise, has been working part-time (50%) for EURISCO, but continuing to perform all coordination tasks, while development tasks have been transferred to a new position. The new EURISCO Software Developer, Ms Pragna Kotni, was hired by IPK, Gatersleben, and joined in mid-November 2020.

2.4.1 EURISCO coverage

In 2020, the number of accessions documented in EURISCO reached a total of 2,043,282 from 43 National Inventories. In addition, further phenotypic data were provided, so that by the end of 2020, data on 86,041 accessions from nine countries (Azerbaijan, Czech Republic, Estonia, Germany, Latvia, The Netherlands, Poland, Romania and the United Kingdom) were available.

Besides the continuous increase of passport and phenotypic data, a major output was the increase in Digital Object Identifiers (DOIs). DOIs are increasingly adopted as permanent unique identifiers (PUIID) by plant genebanks. The number of accessions documented in EURISCO with a permanent unique identifier significantly increased to a total of 226,814, provided by six countries. Since 2019, the EURISCO coordination, in close cooperation with the ITPGRFA, has offered a service to support genebanks in registering their accessions for a DOI.

	Progress in 2020	Countries that contributed to the progress
Documented accessions	+ 23,868 (1,2%)	Several countries. In addition, passport data updates of >400,000 accessions
Phenotypic data records	+ 31,149 (1,2%)	Azerbaijan, Czech Republic, Estonia, Germany, Latvia, The Netherlands, Poland, Romania, The United Kingdom
DOI/PUIIDs	+166,314 (+73%)	Azerbaijan, France, Germany, Italy, The Netherlands, Romania

2.4.2 EURISCO Newsletter

The EURISCO Newsletter was circulated in December 2020. This publication is considered very important for providing feedback to the EURISCO users.

2.4.3 EURISCO development

The main features of the development in 2020 focused on: i) the intranet support mechanisms for National Inventories and ii) activities for the development of the EVA infrastructure (see details below).

- Intranet support mechanisms for National Inventories
 - Upload and update mechanism for National Focal Points (NFPs) had to be revised (changed licence conditions and discontinuation of the used technology by the software provider)
 - Various solutions evaluated and a PL/SQL implementation chosen (for complete and user-friendly embedding of the functionality into existing infrastructure)
 - Implementation carried out successfully
 - Revision of intranet interface to take place in 2021
- Infrastructure for the ECPGR European Evaluation Network (EVA)
 - Two exchange formats for phenotypic data developed

- One simplified format for user-friendly capturing of already existing (historical) phenotypic data of genebank accessions
- Second exchange format developed with EVA coordination and project partners
 - Aims at user-friendly collection of new phenotypic data from EVA consortia
 - Much more detailed than previous formats
 - Import tools to be developed in the course of 2021
- Basic database requirements of EVA infrastructure recorded
 - More detailed use cases to be collected in 2021
 - Synergy effects between EVA and EURISCO infrastructure will be sought

In 2020, the revision of the public web interface was largely postponed due to time constraints. The work started at the end of the year. Thanks to the appointment of the new developer, the revision of the web interface will be continued in 2021 (more details in [EURISCO 2020 activity report.](#))

2.4.4 EURISCO training

The 2020 EURISCO training workshop was scheduled to take place in Plovdiv, Bulgaria in May 2020, jointly organised with the Institute for Plant Genetic Resources “K. Malkov” and in the framework of the GenRes Bridge project. Due to the COVID-19 pandemic, this was initially postponed to September, but had to eventually be cancelled for this year and postponed to a date to be confirmed.

2.4.5 Information on EURISCO provided at national and international meetings

The EURISCO Coordination has made various efforts to raise awareness of EURISCO in the community through presentations and publications:

- Presentation, at the workshop First Meeting of the ECPGR Berries Working Group, Dresden, Germany, 14–16 January 2020
- Presentation (video conference), at the ad hoc action meeting Development of specifications for a modern gene bank documentation software (CryoWEB 2.0), Madrid, Spain, 11–12 March 2020
- Webinar, in the frame of the European, Middle Eastern & African Society for Biopreservation and Biobanking (ESBB), 15 December 2020
- Paper in Plants (DOI 10.3390/plants9081050)
- Book chapter of the Handbook of Plant Breeding series (DOI 10.1007/978-3-030-38792-1_1)

2.4.6 Participation in project consortia

In 2020, the EURISCO Coordination participated in the three already running Horizon 2020 projects ‘EUCLEG’ (work package lead) and ‘Farmer’s Pride’ (task lead) as well as ‘GenRes Bridge’, all of which are related to EURISCO.

Another Horizon 2020 project (AGENT, see below in 3.1.1) was approved for funding end of 2019 and started in May 2020. The EURISCO Coordination is mainly involved in two work packages aiming at the development of guidelines and data standards, and at the development of the infrastructure for managing and analysing genotypic and phenotypic data about genetic resources, respectively.

Within the framework of the European Evaluation Network (EVA), the ECPGR was able to provide funding for a sub-project to the EURISCO Coordination thanks to a grant from the German Federal Ministry of Agriculture. This will finance a developer position through which the extensions to the EURISCO infrastructure necessary for EVA can be made. By the end of 2020, a qualified developer, Mr Suman Kumar, was recruited to take up the post on 1 January 2021. A number of preparatory activities were carried out in 2020. These included participation in numerous meetings of the EVA consortia, the

development of data exchange formats and the collection of requirements for the development of the technical infrastructure.

2.5. EUROPEAN EVALUATION NETWORK (EVA)

<https://www.ecpgr.cgiar.org/european-evaluation-network-eva>

Following the establishment of the ECPGR European Evaluation Network (EVA) in 2019, with financial support from the German Federal Ministry for Food and Agriculture, and the reinforcement of the ECPGR Secretariat with Sandra Goritschnig joining as EVA Coordinator in November 2019, EVA made substantial progress in 2020, notwithstanding the COVID-19 outbreak impacting project activities on multiple levels.

As of December 2020, 91 partners from 28 countries signed the Letter of Commitment, some of these participating in more than one of the five crop-specific networks. All networks have elaborated specific workplans for the phenotypic and genotypic evaluation of crop accessions as well as cooperation agreements, which have been signed by all participating evaluation partners.

Annual project meetings of the crop-specific networks, planned in the first half of 2020 and intended to bring together the different network partners to plan their respective activities, had to be held virtually. The virtual meetings were largely effective for planning and coordination of activities in the short-term, but have also shown the value of in-person meetings for newly established networks to allow partners to engage in strategic discussions, especially with respect to the planning of project continuation as self-sustaining evaluation networks. Additional online project meetings were held as necessary, mainly to discuss, review and plan ongoing activities. Reports of the annual meetings are available in Section 4 of this report.

Some key indicators for the EVA networks are listed in the table below.

Table 4. Key indicators for the EVA networks

EVA Network	Countries involved	Public partners	Private partners	Meetings held in 2020 ¹⁾	Trials in 2020	Accessions evaluated in 2020
EVA Wheat and Barley	21	23	24	3	108	1153
EVA Carrot	9	6	8	2	10	60
EVA Lettuce	8	5	6	3	5	228
EVA Pepper	10	9	6	2	0 ²⁾	0 ²⁾
EVA Maize	10	10	8	2	0 ²⁾	0 ²⁾

1) Including annual meeting and coordinating project meetings. Only the reports from annual meetings are made publicly available.

2) The EVA Pepper and Maize networks started evaluations only in 2021.

Standard protocols for the evaluation of different traits by the crop networks were compiled and corresponding data collection templates developed and made available to partners in the crop-specific networks. These protocols and templates are intended to become publicly available for further use in evaluations.

Phenotypic evaluations were started in 2020 by three networks. EVA Wheat and Barley initiated evaluation of a first set of barley, wheat and durum wheat accessions, mainly for biotic stress responses, with data collection planned for summer 2021. EVA carrot performed field evaluations on European carrot accessions and landraces, collecting data for agronomic traits as well as biotic stress responses. EVA lettuce started lab trials on wild lettuce accessions to test for resistance to *Bremia lactucae*, and also performed field trials on cultivated lettuce accessions, from which a subset will be more thoroughly screened in additional locations in 2021.

The EVA Pepper network activities in 2020 focused on seed multiplication and distribution. Phytosanitary inspection visits to multiplier sites and testing of harvested seeds were organized to comply with the EU Plant Health Regulation (2016-2031) and to facilitate issuance of import authorizations and appropriate phytosanitary certificates prior to distribution of seeds at the end of 2020.

The EVA Maize workplan for evaluations was developed on the basis of a survey among partners for traits of interest and capacity for evaluations. The workplan, as agreed by partners, foresees a two-step evaluation process, whereby several partners perform initial characterization of the full set of accessions, from which a subset will be selected based on agreed criteria for production of hybrid populations in winter nurseries and in-depth evaluation of both landraces and hybrids in the following year. Activities in 2020 focused on multiplication and genotyping of genebank accessions.

Existing characterization/evaluation data for a large number of wheat, barley and maize accessions in the EURISCO catalogue have been collected. For wheat, C&E data of nearly 700 accessions from four countries, as well as data present in The European Wheat Database (EWDB) from ten countries, have been identified and are ready for migration to EURISCO. Barley C&E datasets cover around 1600 accessions from four countries. C&E data for 98 accessions of the European maize core collection, as well as additional datasets, related to nearly 1600 maize accessions from two countries were also compiled. Data upload into EURISCO was pending agreement with responsible national focal points.

3. LINKS WITH OTHER NETWORKS AND INITIATIVES

3.1. EUROPEAN COMMISSION

3.1.1. H2020 projects

- [GenRes Bridge](#) - a Coordination and Support Action on '[Joining forces for genetic resources and biodiversity management](#)'

The project, coordinated by the European Forest Institute and involving the three European networks (ECPGR, EUFORGEN and ERFP), held its second annual meeting in Bonn, Germany in February 2020. Project partners discussed the outline, scope and content of a European Genetic Resources Strategy (EGRS), which is intended to provide a strategic framework for the genetic resources' domains over the next decade. The ECPGR community also agreed to elaborate a complementary domain-specific European Plant Genetic Resources Strategy.

Due to the developing COVID-19 crisis, a workshop on innovative ways of sharing resources among genebanks and conservation sites was held online on 17-19 March 2020, organized by IDELE, France, in collaboration with the ECPGR Secretariat. Experts from the plant, animal and forest domains exchanged experiences, explored common interests and identified areas that could benefit from enhanced collaboration as well as perceived constraints. Two webinars accompanied the workshop, recordings and additional information are available on the website: <http://www.genresbridge.eu/about-us/events/event/workshop-on-sharing-resources-among-genebanks-and-conservation-sites/>.

A feedback workshop on the draft EGRS was held online on 24–26 November 2020, involving the entire ECPGR Steering Committee. Participants discussed and developed the key commitments of the strategy. The three GR domain networks provided their input from discussions within their steering committees and relevant comments were considered in the subsequent drafts of the EGRS, which were circulated for further consultation. A series of webinars provided background information for the workshop, presenting global and EU strategies and policies of relevance, as well as products of the GenRes Bridge project, including the strategy itself and demonstration cases for a concept for integrated conservation and sustainable use of genetic resources at landscape level. Recordings of the webinars and more information can be found at the website: <http://www.genresbridge.eu/about-us/events/event/feedback-workshop-on-the-european-genetic-resources-strategy/>.

This workshop was held in conjunction with an ad hoc Steering Committee meeting of ECPGR (held online on 23 November 2020) and similar meetings of the other domain networks, to gather input on the draft strategy and develop it in line with the needs of the community. At this meeting, ECPGR also discussed the outline of a Plant Genetic Resources Strategy, on the basis of a preliminary working document.

Genetic Resources journal

GenRes Bridge has also offered a framework and financial support for the establishment of Genetic Resources, a new open access journal inspired by the no longer existing Plant Genetic Resources Newsletter and Animal Genetic Resources journal and aiming to fill the gaps created by their discontinuation. The ECPGR Secretariat provides the editorial office of the journal, which is published by Bioversity International on behalf of ECPGR.

As defined by its Editorial Team, the journal aims at disseminating global knowledge and tools used by the community of practitioners of plant, animal and forest genetic resources involved in monitoring, collecting, maintaining, conserving, characterizing and using genetic resources for food, agriculture and forestry, welcoming contributions from all world regions. Genetic Resources publishes original research as well as methods, strategies, guidelines, case studies or reviews on a variety of topics of interest on the present and future use of genetic resources. These may include the documentation, conservation, management, assessment, characterization and evaluation of genetic resources and their link to broader biodiversity, socioeconomic practices, policy guidelines or similar, serving stakeholders within and across sectors. Occasionally, Genetic Resources publishes special issues with a focus on selected topics of interest for the genetic resources' community.

The journal website (www.genresj.org) went public in February 2020 and has been accepting submissions since. The first two issues of Genetic Resources were published in August and December 2020, respectively, and are accessible here:

<https://www.genresj.org/index.php/grj/issue/view/genresj.2020.1>.

<https://www.genresj.org/index.php/grj/issue/view/genresj.2020.2>.

The two issues include contributions from all three GenRes domains and thus representing the journal as a truly cross-cutting medium providing information for stakeholders in the different fields.

The editorial office continued to work on improving and streamlining the review and production processes for future issues and can rely on a continuous pipeline of articles to be published in future issues.

- [Activated Genebank NeTwork \(AGENT\) - a Coordination and Support Action on 'Establishing an innovative gene bank network](#)

The AGENT project, coordinated by the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Gatersleben, Germany, officially started on 1 May 2020 and includes ECPGR relevant activities such as capacity building for genebanks, genebank reviews and an extension to the EVA Wheat and Barley network, including also the involvement of an Italian organic farmers' network, coordinated by 'Rete Semi Rurali'. AGENT aims to unlock the full potential of the biological material stored in genebanks around the globe by using FAIR international data standards and an open digital infrastructure for the management of plant genetic resources. The ECPGR Secretariat leads one work package (WP7): 'Innovation management: Promoting use, sharing resources, capacity building and communication and dissemination of results.

In person genebank review visits, planned for 2020, had to be postponed due to the COVID-19 pandemic and travel restrictions. However, preparations for these reviews proceeded through online meetings where the task was introduced and peer review protocols discussed and adjusted where appropriate. Three cycles of gene bank visits are planned during the project, each involving three genebanks, and the first cycle planned for 2020 is pending due to the COVID-19 pandemic.

- [Farmer's Pride](#), a Coordination and Support Action on "Networking, partnerships and tools to enhance in situ conservation of European plant genetic resources'. The project is coordinated by the University of Birmingham and it involves both Chairs of the Working Groups on 'Wild species conservation in genetic reserves', Nigel Maxted, and on 'On-farm conservation and management, Valeria Negri.

A number of Farmers' Pride achievements were made accessible from the ECPGR On-farm Conservation and Management Working Group website (here), including guidelines for in situ landrace propagation management and access, a best practice evidence-based database on in situ landraces and

other products and reports. The project's final conference 'Ensuring Diversity for Food and Agriculture – Plant genetic resources in nature and on-farm' was held 28 June- 1 July 2021, online.

- [BRESOV: Breeding for Resilient, Efficient and Sustainable Organic Vegetable Production](#)

BRESOV, coordinated by the University of Catania, Italy, aims to tackle the nutritional challenges of a growing world population and changing climatic conditions by enhancing productivity of different vegetable crops in an organic and sustainable farming infrastructure. BRESOV works on brassica, snap bean and tomato. The ECPGR Secretariat is represented on the scientific advisory board of BRESOV by EVA Coordinator, Ms Sandra Goritschnig.

- [BreedingValue: Pre-breeding strategies for obtaining new resilient and added value berries](#)

This Horizon2020 Innovation Action, coordinated by the Università Politecnica delle Marche, Italy, focuses on berries (strawberry, raspberry and blueberry) to identify conserved germplasm appropriate for sustainable berry production throughout the EU. It will apply the latest genotyping and phenotyping tools for the characterisation of local varieties. The ECPGR Secretary was invited to be part of the Advisory Board of this 4-year project starting in January 2021.

3.2. FAO INTERNATIONAL TREATY ON PGRFA

The ECPGR Secretary was invited to a 'Virtual Briefing on the Implementation of Article 17 of the International Treaty on PGRFA' (November 2020). Article 17 deals with the Global Information System on PGRFA and participants were updated on its programme of work. Among others, the following updates were offered:

- The Portal of the Global Information System had registrants from 45 countries and was giving access to over one million DOIs for PGRFA and over 2,000 genera and more than 9,000 species. Continuous interactions were established with Genesys, GRIN Global, WIEWS and EURISCO. Advanced data access services for researchers and breeders were established through a Query API and improvements were made in taxonomy searches and taxonomic data quality.
- The Treaty Secretariat had been working on a project funded by Germany on the 'Development of a globally agreed list of descriptors for in situ CWRs documentation'. Based on an online survey and the advice of a Core Advisory Group, an agreed list of 24 'Descriptors for crop wild relatives conserved under in situ conditions' (CWRI v.1) was published in September 2020.
- Prioritization of crops to revise or develop respective descriptor lists was being consolidated with inputs from the Scientific Advisory Committee on the Global Information System of Article 17.

3.3. GLOBAL CROP DIVERSITY TRUST (CROP TRUST)

- The ECPGR Executive Committee decided to meet on the occasion of the Global Seed Vault (GSV) celebration in February 2020 in Svalbard, Norway, to acknowledge the importance of the GSV as a safety-duplication site for AEGIS material. At this event, the Chair of the ECPGR Executive Committee, Marianne Lefort, and the Director General of the Crop Trust, Martin Schmidt, signed a Memorandum of Cooperation to formalize future cooperation with the objective of improving Conservation and Documentation of Plant Genetic Resources for Food and Agriculture and to facilitate their use as a contribution to a global system of conservation and use (see online posts from [ECPGR](#) and the [Trust](#)).

4. PUBLICATIONS AND PUBLIC AWARENESS

4.1. PUBLICATIONS PRODUCED IN 2020

4.1.1. Administrative and operational documents

- ECPGR [Annual Progress Report 2019](#) and Financial Report 2019

4.1.2. Reports from ECPGR Bodies

- [Minutes of the fifteenth meeting of the ECPGR Executive Committee](#), 26-27 February 2020, Longyearbyen, Svalbard Islands, Norway
- [Minutes of the sixteenth meeting of the ECPGR Executive Committee](#), 14 December 2020, online

4.1.3. Grant Scheme Activity Reports and related data

- [Safeguarding of potato onion \(*Allium cepa* L. *Aggregatum* group\) and garlic \(*Allium sativum* L.\) crop diversity in North Europe - Baltic region \(SafeAlliDiv\)](#) - by H. Stavelikova et al.

4.1.4. European Evaluation Network (EVA)

- [Report of the ECPGR Workshop for the establishment of a European Evaluation Network \(EVA\) on wheat and barley, 27-28 November 2018, Berlin, Germany](#)
- [Report of the EVA Lettuce network annual meeting, 30 March 2020, online](#)
- [Report of the EVA Wheat and Barley network annual meeting, 5 May 2020, online](#)
- [Report of the EVA Carrot network annual meeting, 11 May 2020, online](#)
- [Report of the EVA Maize network annual meeting, 27 May 2020, online](#)
- [Report of the EVA Pepper network annual meeting, 9 June 2020, online](#)

4.1.5. Working Groups

- [Report of a Working Group on Maize, First Meeting, Belgrade, Serbia, 2-3 December 2019](#) – by L Maggioni and S Ensslin

4.1.6. ECPGR Information Bulletin

The Bulletin was published in April (issue no. 20). The Bulletin is distributed by email to all Steering Committee and WG members and is also available [online](#).

4.1.7. External publications with contribution from Secretariat

Maggioni L, Bozzano M, Danchin C and Goritschnig S (2020) Genetic Resources – A new attempt at serving the community, *Genetic Resources*, 1(1), pp. 1-3.

<https://doi.org/10.46265/genresj.2020.1.1-3>.

Maggioni L, von Bothmer R, Poulsen G and K. Härnström Aloisi (2020) Survey and genetic diversity of wild *Brassica oleracea* L. germplasm on the Atlantic coast of France. *Genet Resour Crop Evol* 67, 1853–1866.

<https://doi.org/10.1007/s10722-020-00945-0>

Branca F and Maggioni L (2020) Exploiting Sicilian *Brassica oleracea* L. complex species for the innovation of the agricultural systems and products: a review analysis. *Acta Hort.* 1267, 187-196.

<https://doi.org/10.17660/ActaHortic.2020.1267.29>

4.2. PARTICIPATION IN INTERNATIONAL MEETINGS

The Secretary and/or other ECPGR members represented ECPGR in the meetings listed below, offering presentations and/or contributing to project planning and/or attending as observers.

- 18-21 February 2020, Bonn, Germany
GenRes Bridge second annual project meeting
- 17-19 March 2020, online
GenRes Bridge workshop ‘Sharing resources among genebanks and conservation sites’
- 18-21 May 2020, online
AGENT kick-off meeting
- 30 June-3 July 2020, online
BRESOV second annual meeting, ECPGR Secretariat participated as member of scientific external advisory board
- 11-13 October 2020, online
Euroseeds annual congress
- 24-26 November, online
GenRes Bridge stakeholder feedback workshop on the European Genetic Resources Strategy

5. ECPGR MEETINGS HELD IN 2020

5.1. WORKING GROUPS

- [First meeting of the ECPGR Berries Working Group](#), 14-15 January 2020, Dresden, Germany (sponsored by the German Ministry of Food and Agriculture).

5.2. GRANT SCHEME ACTIVITIES

- [Testing, Use and Alignment of genetic data to distinguish unique and characterized accessions in Prunus \(Prunus Alignment\)](#), 18 February 2020, Athens, Greece.

5.3. ECPGR BODIES

- [Fifteenth meeting of the ECPGR Executive Committee](#), 26-27 February 2020, Svalbard, Norway.
- [Ad hoc meeting of the ECPGR Steering Committee](#), 23 November 2020, online.
- [Sixteenth meeting of the ECPGR Executive Committee](#), 14 December 2020, online.

5.4. EUROPEAN EVALUATION NETWORK (EVA)

- [EVA Lettuce Network annual project meeting](#): due to the COVID-19 pandemic, the annual project meeting, originally planned for 30-31 March 2020 in Salsomaggiore Terme, Italy, was replaced by a virtual meeting on 30 March 2020.

- [EVA Wheat and Barley Network annual project meeting](#): due to the COVID-19 pandemic, the annual project meeting, originally planned for 5-6 May 2020 in Quedlinburg/Gatersleben, Germany, was replaced by a virtual meeting on 5 May 2020.
- [EVA Carrot Network annual project meeting](#): due to the COVID-19 pandemic, the annual project meeting, originally planned for 11-12 May 2020 in Angers, France, was replaced by a virtual meeting on 11 May 2020.
- [EVA Maize Network annual project meeting](#): due to the COVID-19 pandemic, the annual project meeting, originally planned for 27-28 May 2020 in Paris, France, was replaced by a virtual meeting on 27 May 2020.
- [EVA Pepper Network annual project meeting](#): due to the COVID-19 pandemic, the annual project meeting, originally planned for 8-9 June 2020 in Pontecagnano, Italy, was replaced by a virtual meeting on 9 June 2020.

6. COORDINATING SECRETARIAT

During 2020, the following staff employed by Bioversity International have worked for the Coordinating Secretariat: Lidwina Koop (ECPGR Programme Assistant, assisting in all administrative and financial matters and website maintenance) until 31 August 2020; Sandra Goritschnig (Scientific Officer - EVA coordination and editorial management of the Genetic Resources journal); Elinor Lipman (half-time Scientific Assistant, based in Montpellier, France, involved in the compilation and layout of ECPGR publications, website quality check and general support to the Secretariat activities); Lorenzo Maggioni (ECPGR Secretary); Vanessa Bryant (half-time Administrative Assistant) joined 16 September 2020; Loredana Maria (Senior Administrative Assistant - assisting in all administrative and financial matters and website maintenance) joined 15 October 2020. Stephan Weise (IPK, Gatersleben, Germany) acted as EURISCO Coordinator.

The scientific and technical contributions, as well as management and administrative support provided by other staff from Bioversity International and IPK to the work of ECPGR, are duly acknowledged.

★★★

Lorenzo Maggioni
ECPGR Secretary

(with inputs from Vanessa Bryant, Sandra Goritschnig, Loredana Maria and Stephan Weise)

Rome, 27 August 2020

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