



Technical report on ECPGR Phase IX

January 2014 – April 2018

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1. Introduction

This report, prepared for the 15th Steering Committee (SC) meeting, is intended to complement the information provided in the 2014-2017 Annual Progress Reports. Section 2 of the present report follows the scheme defined by the “ECPGR Objectives logframe”.¹ Progress made with the implementation of the agreed activities as listed in the Objectives is presented here, based on the replies of National Coordinators (NCs) to an online questionnaire, and complemented with information available to the Secretariat. Section 3 reports on the proposal for a revised ECPGR Objectives logframe for Phase X, and Section 4 on the Mode of Operation of Phase IX and proposal for Phase X. The Activity Grant Scheme is analysed in Section 5 with the support of statistics and data on five Calls and with an assessment made by the Secretariat about achievements reached by the Grant Scheme towards the ECPGR Objectives. Section 6 summarizes and comments the progress reports received from the WG Chairs. Section 7 details the use of voluntary funds from Germany. Finally, an update of the financial situation of ECPGR is given in Section 8.

The following supporting background documents related to Phase IX are available from the ECPGR website ([here](#)):

- Technical report on ECPGR Phase IX (this document)
- Proposal for a revised ECPGR Objectives logframe for Phase X
- Results of questionnaire to survey progress on ECPGR Objectives during Phase IX
- ECPGR Activity Grant Scheme – End-of-Phase IX statistics
- EURISCO report
- WG Chairs’ reports for Phase IX
- ExCo report on Phase IX
- Annual progress reports (2014-2017)

2. Progress on ECPGR Objectives for Phase IX (2014-2018)

The document called “ECPGR Objectives” was completed at the beginning of 2014 in the form of a logframe with six Outcomes, each with several Outputs, Activities, Responsibilities, Indicators and Assumptions, with the intention to guide on the plan of work for ECPGR and also to be used for monitoring the progress of ECPGR. A revised version of the original document was issued in April 2015, following the endorsement by the SC of the *ECPGR Concept for in situ conservation of crop wild relatives in Europe*.

As the responsibilities for implementation of Outcomes and Outputs are distributed among different stakeholders, monitoring of implementation requires inputs from the Secretariat, National Coordinators and Working Group Chairs. Specific online surveys have therefore been completed with the involvement of the responsible stakeholders. Scores about progress with the implementation of each Activity were assigned by the responsible stakeholders, as indicated below for each given Output. Score values were in a 4-points scale: 0 = no progress; 1 = low progress; 2 = medium progress and 3 = high progress.

Questionnaires sent to National Coordinators were completed by 29 countries (Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark,

¹ [Objectives of ECPGR for Phase IX \(Long-term Goal and Outcomes\)](#)

Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Montenegro, the Netherlands, Norway, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey and United Kingdom). Considering the expectation to receive the reports from 36 countries, the reporting coverage was 80%. Scores obtained at Mid-Phase by each output are given in square brackets for comparison. It should however be kept in mind that only 17 countries had filled in the questionnaire in 2016.

Outcome 1 – AEGIS is operational. Accessions in AEGIS are characterized and evaluated

Output 1.1 – Membership agreements signed (Average progress score by Secretariat: 2.0) [Mid-Phase score: 2.0]

At the start of Phase IX, 33 countries were members of AEGIS. One additional Membership Agreement was signed by Italy in 2014. Although the number of members of AEGIS is reasonably high, there are significant remaining gaps left among the ECPGR members, namely France, Greece, Macedonia (FYR), Serbia and Spain.

Since the start of the Phase, the Associate Membership Agreements with institutions increased from 54 in 26 countries to 65 in 30 countries. The number of Associate Member Agreements is therefore significant and covers most of the relevant collections within the AEGIS member countries.

Activities 1.1.2 and 1.1.3 included in this section of the ECPGR Objectives document are actually not contributing to Output 1.1 and will be moved to a different Output in the revised logframe.

Output 1.2 – AEGIS collections established (Average progress score by NCs: 1.5) [Mid-Phase score: 1.4]

The number of accessions included in the European Collection by the end of March 2018 was 34 333, corresponding to a triplication of accessions in AEGIS during Phase IX. The growth of the European Collection has been slow and gradual. A target number of accessions included has not been identified. Assuming 35% of EURISCO accessions as a prudent estimate of unique accessions, the target number for AEGIS would be ca. 455 000 accessions (considering 1.3 M accessions in EURISCO, excluding *Arabidopsis*). In this case, AEGIS is still only at 7.5% of its potential.

Based on replies received from 29 countries, the average progress of this Output is low to medium, but variable across countries. The identification of eligible accessions to be proposed for registration as AEGIS accessions varies between countries from none to about 20 000 accessions identified, with the majority of countries declaring a low or medium progress. Positive exceptions declaring high progress were the Czech Republic, Germany, Latvia, the Netherlands and Slovakia.

From the replies received, the level of completion reached by each country in the process of identifying accessions is not evident. Therefore, an additional Indicator of the percentage of the national collection analysed for inclusion has been proposed in the revised logframe.

Accessions 'proposed for AEGIS' have been by some countries fully designated and flagged in EURISCO as AEGIS accessions (Bulgaria, Croatia, Czech Republic, Montenegro, the Netherlands, Romania and UK). In other cases none (Belgium, Norway), 20% (Latvia),

50% (Estonia), 60% (Slovakia), 70% (Germany), 98% (Italy) or 110% (Switzerland) of the proposed (candidate) accessions were flagged, indicating that different mechanisms were adopted by the countries before accessions are eventually flagged. Thirteen AEGIS member countries (38%) have not yet formally designated any accession as part of AEGIS.

Monitoring of the management of AEGIS accessions by the Associate Members (AMs) is also very variable, being indicated as 'absent' by 8 countries, 'low' by 4 countries, 'medium' by 13 countries and 'high' by 3 countries (Estonia, Germany and the Netherlands). Overall, at least 38 institutes were listed as having fully adopted the AEGIS principles, and 4 institutes as having at least partially adopted them or being in the process of adoption.

Output 1.3 – AQUAS quality system developed and operationalized (Average progress score by Secretariat: 1.3) [Mid-Phase score: 1.3]

Already by Mid-Phase the AEGIS Quality System (AQUAS) had been adopted by ECPGR with endorsement of its principles and guiding documents. The system has been developed with the approval of all its components. The operationalization of the system has however made only partial progress, due in part to the slow definition of crop-specific standards by the Working Groups, in part to the slow growth of the European Collection, which made it premature to invest energy into its monitoring. The various components of AQUAS and the respective level of implementation are described below:

- **Template for operational genebank manuals:** by compiling the template, which was developed during the previous Phase by the Secretariat, Associate Member genebanks publish information on their current mode of operation. The template has been filled in and published on the ECPGR website by only eight Associate Member institutions (12%) from the Czech Republic (two institutes), Estonia (one), Germany (three), the Netherlands (one) and Switzerland (one). Only three of these manuals were completed during Phase IX, indicating general reluctance to comply with this requirement.
- **Generic standards:** in the previous ECPGR Phase the revised FAO Genebank standards for PGRFA had been endorsed by the SC as the base standards to be used by Crop WGs to elaborate their crop-specific standards, with justified deviations from the FAO standards.
- **Crop-specific standards:** each WG is expected to formally agree with the FAO standards for its mandate crops and/or to develop crop-specific standards, to be eventually validated by the Steering Committee. Nine WGs (50%) completed the exercise and formulated crop-specific standards for the conservation of orthodox seeds (*Avena*, *Beta*, Cucurbits, Leafy Vegetables, *Prunus*, Solanaceae and Wheat WGs), for field genebanks (*Allium*, *Prunus*, *Vitis*) and for *in vitro*/cryopreservation collections (*Allium*). All these agreements were finalized during Phase IX.
- **Record keeping, reporting and monitoring:** a policy document was endorsed by the SC in January 2016. Implementation by the Secretariat has not been actively pursued since the European Collection is still developing. An experiment of peer-review has in the meantime been proposed by the Centre for Genetic Resources (CGN), the Netherlands, as part of the Horizon 2020 proposal 'GenRes Bridge'. If successfully implemented, the proposed methodology might require a revision of the procedures agreed in the above-mentioned policy document.

- **Safety-duplication policy and distribution guidelines:** these supporting documents had been approved by the SC in the previous Phase. The safety-duplication level of AEGIS accessions can be monitored through EURISCO. At the end of March 2018, out of 34 333 AEGIS accessions, 26 948 had a safety-duplicate (78%).

The Secretariat did not organize any training of Associate Members in the development and implementation of AQUAS (and no requests were made).

Output 1.4 – Funds mobilized to help Associate Members to implement AQUAS (Average progress score by Secretariat: 0.5) [Mid-Phase score: 0.0]

Fundraising for establishing and implementing Associate Member quality systems was only partially pursued, considering the opportunity ventilated by the Crop Trust to fund the multiplication and safety-duplication of AEGIS accessions to Svalbard (see below, Output 6.3, page 11). Various elements of AQUAS formed part of the 2015 “PGR Gold” project proposal to Horizon 2020 that met the threshold of the EU but was not funded.

Specific requests for support from Associate Members for upgrading their quality system were not received.

Output 1.5 – Other capacity building schemes for Associate Members operational (Average progress score by NCs: 0.9) [Mid-Phase score: 0.9]

The overall score for this Output indicates general low progress, with a few countries where no action has started. However, several good exceptions can be identified, as evidenced by the indicators. In some cases, AMs have been significantly supported with internal capacity development such as training (Austria, Bulgaria, Czech Republic, Ireland, Italy, Montenegro, the Netherlands, NordGen, Romania, Slovakia and Turkey) and/or regular funding (Italy, Romania and UK).

Regarding provision of services, safety-duplication space is offered by Bosnia and Herzegovina, Bulgaria, Czech Republic, Denmark, Romania, Serbia, Slovakia and Sweden; genotyping expertise was reported by Bosnia and Herzegovina, Latvia, Montenegro, Slovakia and Switzerland and phenotyping facilities by Bosnia and Herzegovina, Bulgaria and Czech Republic; taxonomic expertise was mentioned by Bulgaria and Ireland; regeneration capacity was reported by Bulgaria, Montenegro and Slovakia; cryopreservation facilities are available in the Czech Republic; partnership for projects was mentioned by Germany.

No clear examples of external support for regeneration were given. In the Czech Republic, each AM carries out regeneration on its own material for delivery to the central genebank. In Ireland, Irish Seed Savers conduct an ongoing regeneration programme. In Montenegro, Norway and Romania, few accessions were regenerated by ‘other’ AMs.

Ten countries (Austria, Bulgaria, Czech Republic, Estonia, Germany, Ireland, Latvia, the Netherlands, Romania and Slovakia) declared having safety-duplicated accessions at different AMs or at least having initiated formal safety-duplication arrangements. NordGen holds accessions under black-box arrangement for Estonia, Finland, Israel, Lithuania, the Netherlands, Norway and Spain. The Global Seed Vault, Svalbard, was indicated as a safety-duplicate store by Bulgaria and Estonia.

Outcome 2 – Quantity and quality of data in EURISCO, including *in situ* and on-farm data, have been increased. Functionality of EURISCO meets users' expectations

Output 2.1 – All National Focal Points (NFPs) update national inventories effectively and timely (Average progress score by NCs: 2.3; by EURISCO Coordinator for Activity 2.1.3: 3.0) [Mid-Phase score by NCs: 2.0; by EURISCO Coordinator for Activity 2.1.3: 2.0]

The average progress of this Output was medium with respect to identification of National Inventory collections to be included in EURISCO and strengthening of collaboration between National Focal Points (NFPs) and collection-holding institutes. Particularly good progress at this regard was reported by Albania, Croatia, Czech Republic, Germany, the Netherlands, Spain and Switzerland.

The number of yearly updates of national inventories in EURISCO varied from 0 to 6, with the majority updating the inventory once or twice per year. EURISCO registered a total of 112 updates between 2015 and 2017. Interactions between NFPs and collection-holding institutes are permanent or very frequent in the majority of countries; in a few cases they take place once or twice per year. High progress was made in training NFPs, with 34 trained in specific workshops between 2015 and 2017. An additional training workshop involving about 10 other NFPs will take place in 2018.

Output 2.2 – C&E data in EURISCO included, with high quality and wide coverage (Average progress score by EURISCO Coordinator: 2.5) [Mid-Phase score: 1.0]

The extension of the EURISCO database to receive characterization and evaluation (C&E) data was fully implemented. The query interface was improved following receipt of feedback from test users. An additional upload procedure was developed and eventually approved by the SC in 2017, thus enabling NFPs to delegate the upload task to holding institutes. C&E data have been imported for 68 821 accessions from 7 countries (1 652 895 data points). Overall, 30 productive datasets were uploaded.

Output 2.3 – Inclusion of relevant *in situ*/on-farm data in EURISCO realized (Average progress score by Doc&Info Chair: 1.2; by EURISCO Coordinator: 0.2; score by NCs related to Activity 2.3.1: 0.6) [Mid-Phase score Doc&Info Chair: 1.6; by EURISCO Coordinator: 0.0; by NCs related to Activity 2.3.1: 1.0]

Progress with the identification of *in situ*/on-farm PGRFA qualifying for inclusion in EURISCO in each country received an average very low score in the replies from 29 countries.

An outstanding progress was indicated by Ireland, with 181 unspecified populations identified. Also Montenegro and Norway identified respectively 11 and 52 unspecified populations. Activities are signalled also by Germany (2 populations of wild grapevine and a number of populations of *Apium/Helosciadum* and of grassland species in genetic reserves under establishment), Slovakia (one unspecified population) and Switzerland (one *Mespilus germanica*, two *Pyrus pyraeaster* and one *Vitis* population).

A recommendation by the Documentation and Information (Doc&Info) WG was endorsed by the SC, proposing the inclusion into EURISCO of data about designated crop wild relative (CWR) *in situ* populations, accompanied by a list of National Focal Points

who could be contacted in case of need for *in situ* collecting. Progress towards implementation was low so far, but agreement on a format to document *in situ* data in EURISCO is in the workplan of the 'Farmer's Pride' project, funded by Horizon 2020.

Regarding the inclusion of on-farm information into EURISCO, no agreement has yet emerged within the Doc&Info WG on what type of data should be included and for what purpose. The *ECPGR Concept for on-farm conservation and management of PRGFA*, endorsed by the SC in January 2017, foresees that a list of descriptors should be agreed by the National Focal Points (NFPs) of countries wishing to contribute to an Inventory of the European on-farm diversity.

Output 2.4 – Users' expectations explored and functionalities of EURISCO increased (Average progress score by EURISCO Coordinator: 3.0) [Mid-Phase score: 2.5]

Expectations from users were collected through a user survey conducted in 2017 among the National Focal Points/National Coordinators in order to gather structured feedback and to collect new requirements for the public EURISCO web application. Feedback was received from 17 persons, whereby the overall response was positive. Some requests were immediately implemented (e.g. case-insensitive searches); more improvements of the search interface were being implemented in the frame of the "EURISCO Taxonomy" project (see below, Section 7).

Additional improvements are scheduled for implementation in 2018.

A large number of adaptations of EURISCO were carried out including a total of 14 PL/SQL packages with 177 functions (import, integrity checks, updates, AEGIS auditing etc.) for the EURISCO backend. For the EURISCO web, 9 packages with 38 functions (newsletter subscription system, download, C&E visualization, statistics, etc.) have been completed. In addition, 31 Java classes for data import and other functions were created.

Outcome 3 – *In situ* conservation of priority crop wild relative (CWR) and landrace (LR) populations are implemented throughout Europe. Mechanisms are in place for more effective utilization of the conserved germplasm

Output 3.1 – National CWR conservation strategies produced (Average progress score by NCs: 1.2; by Chair of the Wild Species Conservation in Genetic Reserves WG: 2.0) [Mid-Phase score by NCs: 1.2; by Chair of the Wild Species Conservation in Genetic Reserves WG: 1.5]

Evaluation of this Output according to replies received from 29 countries indicated that average progress remained low, with an overall higher level of progress registered by the Czech Republic, Germany, the Netherlands, Norway, Spain, Sweden and Turkey. The production of CWR checklists is the most advanced activity, with an average medium level of progress; completed national checklists were reported by 13 countries (Belgium, Czech Republic, Finland, Ireland, Germany, Lithuania, the Netherlands, Romania, Spain, Sweden, Switzerland, Turkey and United Kingdom). Prioritization of the checklists is variable, but the majority of countries have identified some priority species or the work is in progress. The number of prioritized taxa varies from one (Slovakia) to 870 (Turkey). The

percentage of prioritized taxa varies from 1% (Czech Republic) to 62% (Spain), but the majority values are between 5% and 25% of listed taxa.

Regarding the production of CWR national inventories providing the distribution range of CWR taxa, five countries indicated high progress (Czech Republic, Ireland, the Netherlands, Spain and Sweden) and four countries medium progress, having partially completed the inventory (Denmark, Finland, Germany and Norway). In most countries low progress was made regarding diversity and gap analysis, with some exceptions: in the Czech Republic, Finland and Norway, over 200 taxa each have been analysed; in Bosnia and Herzegovina focus was dedicated to wild fruits with an ongoing Doctoral Thesis in the Banja Luka region; in Germany 300 species of the Genebank for CWR have been analysed, as well as 2 *Apium* species, 2 *Helosciadium* species, one wild grapevine and several species of wild fruit crops; in Spain 25 taxa are included in a three-year international project funded by the Crop Trust; in Bulgaria, Lithuania and Turkey gap analysis is under progress. Regarding the definition of national CWR conservation actions and the production of action plans, progress is again generally low. A few countries are however more advanced, such as the Czech Republic where three conservation plans have been defined in protected regions; also in Germany three conservation action plans have been defined for *Apium/Helosciadium*, wild grapevine and for sites of historic grassland; in Ireland the National Plant Strategy Report has made 40 recommendations in relation to *in situ* and *ex situ* conservation; in Norway 52 CWR species are included in management plans; in Sweden red-listed taxa are continuously monitored. CWR genetic reserves to be established have also been defined in Lithuania (4) and in the United Kingdom on the Lizard peninsula, although no formal recognition has taken place yet. Specific contracts with genetic reserve managers were made in the Netherlands regarding CWR conservation actions.

The evaluation made by the Chair of the Wild Species Conservation WG is generally more positive, indicating an average medium progress for this output and estimating 1000 priority taxa having been subject of diversity and gap analysis.

Output 3.2 – Regional (European) CWR conservation strategy produced (Average progress score by Chair of the Wild Species Conservation in Genetic Reserves WG: 3.0) [Mid-Phase score: N/A]

A regional CWR inventory as well as action plan has been produced by S. Kell and the endorsement is planned as part of the project Farmer's Pride.

Output 3.3 – Integrated European strategy for CWR conservation produced (Average progress score by Chair of the Wild Species Conservation in Genetic Reserves WG: 1.5) [Mid-Phase score: N/A]

Work at this regard has been advanced in draft form, but is incomplete. A list of agreed regional and national Most Appropriate crop Wild relative Populations (MAWPs) for inclusion in the *in situ* network is planned as part of the project Farmer's Pride.

Output 3.4 – European MAWP Network established (Average progress score by Chair of the Wild Species Conservation in Genetic Reserves WG: 1.0) [Mid-Phase score: N/A]

Completion of a list of officially designated MAWPs is planned as part of the project Farmer's Pride.

Output 3.5 – Integrated regional (European) CWR conservation strategy operational (Average progress score by Chair of the Wild Species Conservation in Genetic Reserves WG: 1.0) [Mid-Phase score: N/A]

Preparation of periodic reports indicating national and regional MAWP conservation status and conservation management actions is planned to be organized as part of the project Farmer's Pride.

Output 3.6 – MAWP network germplasm effectively utilized. Score: N/A

Activities related to this output can start after the MAWP network will have been established.

Outcome 4 – Commitment and regular resources of national governments are sustained or increased, and commitments and resources of the European Commission (EC) as well as other potential donors towards ECPGR are increased

Output 4.1 – Relationship between ECPGR and EC/EU and responsible national ministries strengthened and sustainable funding of ECPGR secured (Progress score by Secretariat: 2.0) [Mid-Phase score: 1.0]

The number of countries renewing ECPGR membership in Phase IX reached 33, and 3 additional countries paid contributions without formalizing the agreement. Former member countries that have not renewed membership or contributed in Phase IX were Armenia, Georgia, Malta, Poland, Russian Federation and Ukraine. Israel did not formalize its membership either, but contributed for the first year. Contributions in the first four years of Phase IX were regularly paid by 30 countries. A special agreement was made with Bosnia and Herzegovina, who contributed 'in kind' to part of the local costs of the Mid-term SC meeting in 2016, equivalent to one year of contributions. A few countries have delayed their contributions for several years, which introduced an element of risk to the management of the Programme. Overall, commitment of national governments was reasonably regular and sustained and it was significantly increased in the case of Germany, which contributed exceptionally with voluntary funding. Progress for this Output was therefore scored as 'medium'.

Regarding the opportunity to receive a regular contribution from the EU, no progress was made, as ECPGR is not recognized as a formal regional instrument of cooperation by the EU. Following from the conclusion in June 2016 of the 'Preparatory action on EU plant and animal genetic resources in agriculture' and its recommendations, the European genetic resources networks joined forces, inviting the EC to support the existing collaboration frameworks and help the implementation of the network's workplans. This request was partially satisfied with the launching of relevant Horizon 2020 calls for proposals. It remains disputable whether engaging into the preparation of project proposal for Horizon 2020 is overall advantageous for the networks' Secretariats or rather a drainage of time and resources.

Output 4.2 – Increased awareness of the value of PGRFA amongst policy-makers at national and regional level (Average progress score by NCs: 1.2) [Mid-Phase score: 1.4]

Based on replies from 29 countries, regular communication with policy-makers scored an average medium level (1.9) within relevant ministries, but a rather low level (0.6) within the European Commission.

Regular or frequent communication with policy-makers within relevant national ministries was confirmed to take place in the majority of countries. Especially satisfactory about the number of contacts were the evaluations made by Bosnia and Herzegovina, Hungary, Italy, Turkey and the United Kingdom. On the other hand, communication with policy-makers within the EC was reported by the vast majority of the responding countries to be absent (55%) or low (34%); only Estonia, Germany and Ireland indicated a medium level of interaction.

Output 4.3 – Increased collaboration between ECPGR and the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA) and FAO Commission on Genetic Resources for Food and Agriculture (CGRFA) (Progress score by Secretariat: 2.0) [Mid-Phase score: 2.0]

A Memorandum of Understanding (MoU) between the Secretariats of the International Treaty and of ECPGR was signed in December 2016. The MoU established a framework for cooperation on a range of activities related to access to and exchange of information and the sharing of expertise, in order to collaborate in areas of mutual interest, with the aim of promoting synergies and the coherent implementation of Art. 5, 6, 16 and 17 and the objectives of the Treaty. A comparable initiative with the FAO Commission on PGRFA was eventually not pursued.

Output 4.4 – Increased awareness of the value of PGRFA amongst users and the wider public (Progress score by Secretariat: 2.0) [Mid-Phase score: 1.0]

Several events have taken place within ECPGR countries. A dedicated webpage pointing at [National Programmes' Public Awareness Activities in Europe](#) was setup by the Secretariat. The development of a communication and public relations strategy started with the definition of a dedicated Task Force during the 14th SC meeting in 2016. A draft document was prepared and tabled for discussion at the 15th SC meeting in May 2018.

Outcome 5 – Relations with users of germplasm are strengthened

Output 5.1 – Good knowledge of which C&E data are of high relevance to potential users (Average progress score by NCs: 1.0) [Mid-Phase score: 0.8]

No or very low progress was registered by 75% of the countries. Six countries (Austria, Bosnia and Herzegovina, Czech Republic, Hungary, Italy and Slovakia) recorded medium progress and one country (the Netherlands) had high progress referring that analysis of needs is a permanent process. In other countries needs are mostly expressed through exchange of contacts with users and on the occasion of specific joint projects, but generalized formal analysis are not carried out. Needs of hop breeders have been heard in Finland; germplasm was provided to identify traits to combat predicted climate change effects in

Ireland and the needs of heritage malting barley searching for a production niche were also evaluated.

Output 5.2 – Expectations of users regarding genebank services known and answered (Average progress score by NCs: 1.9) [Mid-Phase score: 1.8]

Medium progress was registered on average. Among the services to users that are available across ECPGR, the most common are storage of PGRFA including breeding material, provision of information through databases and distribution of seed or budwood. In Romania, each year traditional varieties are distributed to individuals practicing small-scale agriculture. In Belgium a trade mark for fruit genetic resources is provided. Educational training on PGRFA is organized in Bosnia and Herzegovina, Bulgaria, Czech Republic, Montenegro, Slovakia and Turkey. PGRFA advice via email is guaranteed in Denmark and Sweden; presentations to different user groups to increase public awareness are organized in Estonia and Spain; Finland has a tool developed for receiving information on potential genetic resources; Hungary organizes a permanent exhibition on genebank activities; genotyping and genetic analysis is provided for users in Latvia; advice on legal issues (Nagoya protocol) is offered in the Netherlands; a protocol for germplasm exchange is established in Spain.

Output 5.3 – Enhanced use of CWRs realized (Average progress score by NCs: 1.0) [Mid-Phase score: 1.2]

Low progress was registered on average for this output. However, significant use of CWR was documented by some countries, such as Belgium (over 6000 seeds of wild indigenous apple), Bulgaria (150 accessions), Czech Republic (110-300 per year), Estonia (forage grasses and legumes used in breeding programmes), Hungary (852), Ireland (3 per year), the Netherlands (regular distribution), NordGen (3364 wild and semi-wild accessions between 2014 and 2017) and Turkey (200).

Output 5.4 – Improved collaboration with users in public and private sector (Average progress score by NCs: 1.7) [Mid-Phase score: 1.9]

The average score for this output indicated low/medium-level progress. However, the indicators reflect a large number of partnerships between genebanks and users that are going on in Europe. These involve pre-breeding, networking and characterization/evaluation in the Nordic countries, characterization/evaluation and research projects in France, Germany, Ireland, the Netherlands, Slovakia, Spain, breeding and increased use of genetic resources in Greece, re-introduction of old maize landraces in Italy, genotyping of barley and *Festulolium* breeding material in Latvia, distribution of seed to small organic producers in Montenegro, a national network for multiplication and characterization/evaluation in Romania, national actions for conservation and utilization in Switzerland. More than 300 partnerships were registered in Turkey. An initiative to increase regional public private partnerships and establish a European Evaluation Network was promoted through a project funded by the German Federal Ministry of Food and Agriculture (see below, Section 7).

Outcome 6 – Organizational structure and secretarial support are adequate to effectively sustain the operations of ECPGR

Output 6.1 – New structure for the operations of WGs implemented and operational (average progress score by Secretariat: 3.0) [Mid-Phase score: 3.0]

The Output was fully reached. The new structure for ECPGR operations in Phase IX was entirely defined and implemented. Terms of Reference (ToRs) of WG Chairs were defined and published online. All the Working Groups were formed as pools of experts and Chairs were nominated for each WG. The possible range of fields of expertise of Working Group members was defined, although the respective criteria were not detailed. Updated lists of WG members (942 at the time of writing) were made available from the ECPGR website. Three Chairs who resigned during this phase (Barley, Cucurbits and Potato WGs) were replaced according to Phase IX nomination procedure. Chairs were evaluated by the WG members and on this basis the ExCo at mid-term reconfirmed all the Chairs until the end of Phase IX.

Rules for Phase IX operations were defined, including a country quota system; quotas can be monitored online. Procedures for WGs to submit expressions of interest and proposals for Grant Scheme Activities were defined and six Calls for proposals were launched during the first four years. Procedures to select proposals and to grant projects were established. Twenty-eight Activities, selected by the ExCo, were granted funds under the first five Calls. The Mode of Operation was evaluated by the WG members at mid-term, resulting in a high rate of satisfaction, but with only partial satisfaction expressed by ca. 20% of the respondents. Areas of criticism were partly addressed at mid-term, introducing elements of flexibility, and the proposal to draft a slightly revised Mode of Operation for Phase X was commissioned to the Secretariat (see p. 16).

Output 6.2 – Effective operation of Executive Committee (ExCo) and Steering Committee (SC) (average progress score by Secretariat: 3.0) [Mid-Phase score: 3.0]

The ExCo operated effectively during Phase IX, with rotation by selection of a new member each year (current and past members are listed on the website). The Committee held meetings every year (minutes of the meetings are published on the website). The ExCo reported regularly to the SC, either with minutes of their meetings or with specific messages sent by the ExCo Chair. The ExCo activity is also reported in the ECPGR Annual Progress Reports and at the Steering Committee meetings. The Steering Committee has effectively interacted with the ExCo and approved the budget for Phase IX; it has also constructively interacted through the dedicated listserver throughout the Phase. The 14th meeting of the SC was held in May-June 2016 in Bosnia and Herzegovina and the 15th meeting was scheduled for May 2018 in Thessaloniki, Greece.

Output 6.3 – Synergies with external partners are realized (i.e. BGCI, CPVO, EC, ESA, ETP, EUCARPIA, FAO, SEEDNet (Progress score by Secretariat: 2.0) [Mid-Phase score: 2.0]

Synergies with external partners were significantly strengthened during Phase IX, to the extent of possible and relevant interactions.

The most outstanding result is possibly the establishment of an MoU between the FAO Treaty and ECPGR Secretariats, as described above under 4.3 (page 9), which was signed in

December 2016 and will be in force until December 2022. Within the framework of collaboration with the Treaty, the ECPGR Secretariat has been invited to participate in the Expert Meeting on the Toolbox for Sustainable Use of PGRFA (2016) and to the Scientific Advisory Committee on Article 17 (GLIS) of the Treaty (2016-17). The FAO Treaty Secretariat was invited in 2017 to participate in the Advisory Group for the Private Public Partnerships (PPP) project (see p. 23), to be a member of the External Advisory Board of the Horizon 2020 project “GenRes Bridge” and to participate in the SC meetings in 2016 and 2018.

Interactions with the **European Seed Association (ESA)** have also intensified. ESA was involved in collaborations with ECPGR for the preparation of project proposals for Horizon 2020 submissions. The inclusion of ESA in the Advisory Group for the PPP project facilitated the compilation of the online PPP knowledge base in 2017 and the drafting of an MoU that might be concluded in 2018 to strengthen the link between ECPGR and ESA towards collaboration for a European Evaluation Network. ESA was also involved in the project as a member of the Task Force developing the draft ECPGR Communication strategy. The ECPGR Secretariat participated in 2016 in the ESA Annual and European Seed Trade meeting, where ESA presented a public awareness video on ‘Biodiversity – a legacy for the future’, also featuring genebank colleagues from CGN, the Netherlands.

The Secretariat attended a meeting of the **South East Development Network (SEEDNet)** in Ljubljana, Slovenia, in 2014, with the aim to inform the Southeast European countries about the developments of ECPGR and to promote active participation in its activities. However, SEEDNet was no longer active in the subsequent years.

ECPGR and **EUCARPIA** jointly organized events such as the final conference of the EC-funded PGR Secure project Consortium in Cambridge, UK, June 2014, and the Genetic Resources Section meeting in Montpellier, France, May 2017. Participation in respective meetings and exchange of information between ECPGR and EUCARPIA was frequent during Phase IX.

The most important interactions with the **European Commission (EC)** in the first part of Phase IX consisted in the participation of the Centre for Genetic Resources, the Netherlands (CGN) and of the Federal Office for Agriculture and Food (BLE), Germany in the ‘Preparatory action on EU plant and animal genetic resources in agriculture’, respectively as Coordinator and participant. Several ECPGR members also participated in workshops organized as part of this action or were interviewed in related surveys, and participated in a Focus Group on ‘Genetic Resources – Cooperation models’, organized in the framework of ‘A European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI)’. Officer A. Kozłowska from the Directorate-General for Environment (DG-ENV) participated in the Mid-term SC meeting, providing information on the EU Regulation 511/2014 (Nagoya Protocol).

Following-up from the conclusion of the ‘Preparatory action’ in 2016, ECPGR joined animal (ERFP), forest (EUFORGEN) and microbial (MIRRI) genetic resources networks in a lobbying action encouraging a closer collaboration between the EC and these networks, among others for the development of a “EU Agrobiodiversity Strategy”. Possibly thanks to this action, the Horizon 2020 Work programme 2018-2020 included a topic on ‘Genetic resources and pre-breeding communities’ and the three networks on crop, forest and animal GR jointly prepared a project proposal (GenRes Bridge) to respond to the 2018 Call for a Coordination and Support Action on ‘Joining forces for GenRes and biodiversity management’.

The preparation process for GenRes Bridge was instrumental to further realize synergies with partners such as **Botanic Gardens Conservation International (BGCI)**, with the intention, among others, to increase the use by botanic gardens of ECPGR instruments such as AEGIS and EURISCO.

Collaboration with the **Crop Trust** was related to the ongoing germplasm database interaction, whereby EURISCO is the major contributor of data to GENESYS, which relies on EURISCO for about 54% of its data. The Trust offered advice to EURISCO by participating in its Advisory Committee. A training workshop on GRIN-Global was organized jointly in 2017. The ventilated possibility that the Trust could offer funds for regeneration of AEGIS accessions to be multiplied and safety-duplicated to the Svalbard Seed Vault was pursued in 2017. Several genebank curators were prompted to provide estimate costs, and a proposal for funding the multiplication and safety-duplication of ca. 2000 accessions from five countries was submitted, but the funding from the Trust did not materialize eventually, owing to insufficient fund-raising with the Trust's respective donors.

Courtesy contacts took place with the Executive manager of the **European Technology Platform (ETP) 'Plants for the Future'**, although no concrete joint initiative was developed. The developing ECPGR Evaluation Network might become a potential area of mutual interest in the next Phase.

In the absence of a well-defined goal, no interactions were developed with the **Community Plant Variety Office (CPVO)**.

Output 6.4 – Fundraising is undertaken (Average progress score by Secretariat: 2.8) [Mid-Phase score: 1.7]

Fundraising within the traditional circle of ECPGR implementing agencies has ensured a higher budget than originally established, raising Phase IX budget by ca. € 380 000 (from € 2.79M to € 3.17M). This increase was due to the receipt of outstanding contributions from previous Phases and to substantial voluntary contributions received from Germany upon submission of specific project proposals. Phase IX budget would have been even higher, were it not for the withdrawal of Israel and Poland from stable membership. Fundraising was additionally pursued by the Secretariat through participation in four project proposals under Horizon 2020 calls. Two of these were 5th and 6th in the rank of the Call SFS-7-2014/2015, but were not funded. The outcome of the proposal GenRes Bridge (SFS-28- 2018-2020) is expected for May/June 2018. Additional scouting opportunities were explored with the Crop Trust, with no success.

Output 6.5 – Effective operation of the Secretariat (Average progress score by Secretariat: 3.0) [Mid-Phase score: 3.0]

Activities coordinated by the Secretariat in Phase IX included, among others, the following (details available in the Annual Progress Reports):

- finalization of the hosting arrangement with Bioversity International and of the budget for Phase IX
 - fine-tuning and finalization of the agreement between Bioversity and the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) for the hosting arrangement of EURISCO
 - facilitation of the move of EURISCO from Bioversity to IPK
-

- preparation of the new Mode of Operation for ECPGR in Phase IX, including the compilation of the ECPGR *Goal, Rules of procedure and Terms of Reference for the operational bodies*² and the log-framed Objectives of ECPGR³
- managing and monitoring the ECPGR funds (receipt of contributions and disbursements)
- facilitation of selection and appointment of WG Chairs
- monitoring of WG composition and use of country quotas
- launching of six Calls of the Activity Grant Scheme
- help-desk support for the preparation and submission of proposals by the WG Chairs
- supporting the evaluation of the proposals by the ExCo and preparation of ca. 50 contracts with partners for the implementation of the Activities
- organization of five ExCo meetings (2014-2018) and of two SC meetings (Mid-term, 2016, and end-of-Phase, 2018)
- assistance to ExCo Chair and members for document preparation and general advice
- support for the organization of 28 other ECPGR meetings and direct participation of the Secretariat in 13 of them
- monitoring of Activities' implementation, editing and finalization of Activity reports and dissemination of results on webpages
- presentations offered at ECPGR Activity meetings and other national or international events
- participation in the preparation of four Horizon 2020 project proposals and attendance to four preparatory meetings
- preparation of three proposals funded by the German Government and management of the related activities
- establishment of Memorandum of Understanding with the Secretariat of the FAO International Treaty
- preparation of AEGIS Quality System documents
- assistance to Associate Members for the compilation of genebank manuals
- assistance to WG Chairs for the compilation of crop-specific standards
- finalization of *ECPGR Concept for in situ conservation of crop wild relatives in Europe*
- drafting of third version of *ECPGR Concept for on-farm conservation and management of PGRFA* and finalization of the document until approval
- maintenance and development of ECPGR website
- production of 13 e-bulletins, 4 annual progress reports and 4 annual financial reports
- production of public awareness publications and ECPGR and AEGIS brochures
- distribution of information through the listserver
- publication of news on the ECPGR website
- preparation of scientific papers and book chapters, etc.

² [ECPGR Phase IX \(2014-2018\) – Goal, Rules of Procedures and Terms of Reference for the operational bodies \(Approved by the Steering Committee - Revised second edition, February 2018\)](#)

³ [Objectives of ECPGR for Phase IX \(Long-term Goal and Outcomes\) - \(v2, April 2015 – outcome 3 on-farm component to be finalized\)](#)

Output 6.6 – ECPGR Secretariat adequately staffed (Average progress score by Secretariat: 3.0) [Mid-Phase score: 3.0]

The ECPGR Secretary for Phase IX was reconfirmed by the Steering Committee and consequently re-appointed by Bioversity International. One full-time Programme Assistant and one half-time Scientific Assistant were also reconfirmed for Phase IX. The AEGIS Coordinator (Senior Scientist consultant) was reconfirmed and worked at 50% time (2014), 25% (2015) and 15% (2016). Support was added from part-time Research Assistant (40%) from January to November 2017 for the German-funded Private Public Partnerships (PPP) project.

Output 6.7 – ECPGR Secretariat effectively hosted by Hosting institution (Progress score by Secretariat: 3.0) [Mid-Phase score: 3.0]

The relationship with the hosting institution, Bioversity International, has been conducive to effective operation of ECPGR, with provision of expected facilities, services and general support. Membership Letters of Agreement with Bioversity were signed by 33 countries, representing 90% of the expected budgetary contributions of Phase IX. As the cash flow has always been largely positive, Bioversity did not need to intervene with anticipated funds during this Phase.

3. Proposal for a revised ECPGR Objectives logframe for Phase X

During its last meeting in Višegrad, Bosnia and Herzegovina, May-June 2016, the Steering Committee assigned to the ECPGR Secretariat the task to lead the revision and update of the ECPGR Objectives for Phase X, with inputs from the SC. Then the Executive Committee suggested to circulate a first draft of the revised Objectives to both the Steering Committee and the Working Group Chairs/WGs for comments. Based on comments received from these bodies and groups, the Secretariat prepared a final draft which was included for discussion and approval among the background documents to the Fifteenth SC meeting in Thessaloniki, Greece, May 2018.

The rationale for some of the major changes compared to the Phase IX Objectives is given as follows:

1. In the Long-term Goal, “National, Sub-regional and Regional Programmes in Europe” has been replaced with “Stakeholders in Europe”. The past formula was considered rather long and possibly it is no longer important to mention these three levels of collaboration in the goal. Originally, “National Programmes” were included to indicate that ECPGR could also act in support of national systems. “Sub-regional” had been included having in mind sub-regional networks such as the South East European SeedNet, which has since faded away. It was therefore proposed to simplify the Long-term Goal by simply using “stakeholders” as an all-inclusive wording.
2. The category “OUTCOME” has been replaced by “OBJECTIVE”, which is better understood than the logframe jargon term “outcome”.
3. The number of “Objectives” (former “Outcomes”) was reduced from 6 to 5, by separating ‘crop wild relatives’ conservation’ and ‘on-farm conservation and management’ into two independent objectives. Two former “Outcomes” were also removed, being considered of a different nature (i.e. more strategic or administrative than content-driven). Specifically, “Outcome 4” about ensuring commitment and regular resources was eliminated since this aspect is included in the Terms of

Reference (ToRs) of the ECPGR bodies (National Coordinators, Executive Committee, Secretariat). Additionally, “Outcome 6” about ensuring the organizational structure and secretarial support was removed since this aspect is also largely taken care of by the definitions in the ToRs of ECPGR and by the agreement of the member countries to provide a budget for Phase X.

4. A few revisions/updates were made for the AEGIS and EURISCO Objectives (respectively 1 and 2), also with the inclusion of a new output on phytosanitary issues. The ‘*in situ* CWR’ Objective (3) remained almost unchanged as originally drafted; the ‘on-farm’ Objective (4) has been created anew, based on the approved ECPGR on-farm concept; the Objective on the ‘use of PGR’ (5) has also been revised based on recent initiatives within ECPGR and on suggestions received from National Coordinators.

4. Mode of Operation of Phase IX and proposal for Phase X

The new Mode of Operation introduced in Phase IX included several changes compared to the past.

- Working Groups became large pools of experts, with no limitation in number of members per country, as opposed to groups of country representatives (only one per country).
- The WG Chair was no longer elected by the WG members, but rather selected by the Executive Committee based on Expressions of Interest.
- The WG Chair responsibilities were increased, including the task to promote and submit proposals for Activities under a Grant Scheme Call.
- The Grant Scheme procedure for the WGs to obtain funding with a recommended overall ratio of 75% for meetings and 25% for other actions was also a new introduction.
- The country quota system regulating the maximum availability of funds for participation in meetings had been slightly changed in its mechanisms compared to the past, but maintaining the same general principles.

Although generally considered satisfactory, the new Mode of Operation was rated only partly satisfactory or not satisfactory by 21% of the WG members through a dedicated questionnaire (see Mid-Term report).⁴ Suggestions for improvement were consistently referring to the need for more flexibility and reduction of some elements of complexity, such as the country quota and the 75:25 ratio. The SC at its Mid-term meeting requested that the Secretariat prepare a proposal for the Mode of Operation of Phase X, suggesting the introduction of two budget lines of similar amounts, one exclusively dedicated to meetings and the other to “other actions”. The intention was to increase flexibility and eliminate the 75:25 ratio ‘meetings’ vs. ‘other actions’, but still maintain a country quota system to guarantee a balanced participation.

A proposal for a new Mode of Operation (see background documents to be discussed for approval) was presented by the Secretariat to the WG Chairs during their meeting in Ljubljana, Slovenia, October 2017 and received their general appreciation.

[4 Mid-term report on ECPGR Phase IX \(January 2014 - April 2016\)](#)

5. ECPGR Activity Grant Scheme

Statistics

Data and statistics about the Activity Grant Scheme were collected after five awarded Calls. All details are included in the background document [ECPGR Activity Grant Scheme – Phase IX statistics](#). The five Calls were launched in June 2014, April 2015, January 2016, September 2016 and June 2017. A sixth Call was launched in November 2017, but not yet awarded at the time of writing. After five Calls, 28 proposals were awarded with a total budget of € 472 850, out of 40 eligible proposals received. The budgeted ratio of meetings vs. ‘other actions’ after five Calls was 56:44. Five additional eligible proposals will be evaluated by the ExCo prior to the SC meeting of May 2018. Nineteen WGs have submitted specific proposals under the six Calls and 17 WGs were involved in the 28 proposals that have been awarded so far. The WGs on Fibre Crops and Potato have never tried to submit a specific proposal, but participated in the Activity ‘ECPGR Networking’ that was submitted jointly by all WGs.

Regarding country quotas, the original available total of 757 was raised to 905 in April 2017, thanks to the voluntary extra funds provided by Germany for the Grant Scheme. Figure 3 in the background Statistics document shows the level of use of country quotas by country after five Calls. Most countries have used a high percentage or entirely exhausted their quotas. A few others have only used a small part of their quotas or none (Austria, Belgium, Denmark, Iceland, Ireland, Macedonia FYR, Switzerland and Turkey). The quotas of Azerbaijan, Poland and Spain were ‘frozen’ after the three countries incurred into the provisions based on Rule 1.7 of the ECPGR Rules of Procedure for delayed payment of annual fees. The quotas of Israel were re-distributed to all other countries when it became official that Israel would no longer contribute to Phase IX.

For the first five Calls, a total of 224 WG members were involved in meetings using country quotas (Table 3 of background Statistics document) while 44 participants attended meetings on a self-funded basis (Table 4).

Figure 4 shows the funds allocated to each country for ‘other actions’ after five Calls. The most successful countries were able to attract more than € 10 000 (France, Portugal, Italy, the Netherlands), or even more than € 20 000 (United Kingdom).

Finally, Table 5 of the Statistics document offers an attempt to calculate the monetary returned benefits to each of the ECPGR member countries. On one side, the total 5-year Phase regular contributions (nominal value, assuming that all regular payments would be made) and voluntary pledges are considered. On the other side, the funds received from ECPGR by each country in terms of participation to meetings (either using quotas of the Grant Scheme Activities or being members of special ECPGR bodies such as the SC, the ExCo, the EURISCO Advisory Committee or other Task Forces) were considered. Also the funds received for ‘other actions’ were considered. As a result, a percentage return value over total contributions made is calculated, showing a range of return for the ECPGR countries varying from 5 to 115%.

Progress towards ECPGR Objectives as a result of the Grant Scheme

Of the 28 proposals approved under five Calls of the Grant Scheme, 8 started to be implemented during 2015 (all completed), 12 started in 2016 (8 completed), 8 started in 2017

(2 completed). The contributions deriving from the Grant Scheme Activities towards the Objectives of ECPGR are summarized below:

ECPGR Outcome 1 (AEGIS Operational, including characterization and evaluation)

This Outcome was the target of the Activities successfully submitted under the first five Calls by the *Allium*, Barley, *Beta*, *Brassica*, Forages, Grain Legumes, Medicinal and Aromatic Plants, *Malus/Pyrus*, *Prunus*, Umbellifer Crops and Wheat WGs. In these Activities, the following numbers of accessions were suggested for inclusion into AEGIS so far: about 15 000 barley, 7700 forages, 6200 wheat, 350 rye, 300 medicinal and aromatic plants, 85 plum, 30 *Brassica* and 20 *Patellifolia*; lists of alliums, beans, wild carrot, sweet cherry and *Pyrus* accessions are still being prepared. Criteria for selection were variable and jointly agreed by each Activity Group.

A good part of the additional ca. 23 000 accessions included into AEGIS during Phase IX is the direct result of the Activities funded by the Grant Scheme. This is certainly the case of forages (currently 10 500 accessions in AEGIS), wheat (6500 accessions included during Phase IX) and barley (1837 accessions directly deriving from 14 countries participating in Activity HordEva). At the same time, several of the suggested accessions have not yet received the respective National Coordinators' approval or are held in countries that have not yet implemented the AEGIS procedures or signed the AEGIS MoU. In the case of *Prunus*, one reason to keep on hold the inclusion of accessions into AEGIS was due to the heavy phytosanitary requirements that are preventing the transfer of material.

The Forages WG tried to involve all the ECPGR countries in the AEGIS process, obtaining the mobilization of only 10 countries in the selection of AEGIS accessions. Activity 'ForageDataAccess' surveyed the reasons for limited success of inclusion of accessions into AEGIS, revealing that the most important factor is the lack of funding for regeneration.

Most of the accessions involved in the Grant Scheme Activities have also been (or are planned to be) characterized to various extents, either morphologically and/or for molecular or biochemical traits, according to agreed minimum descriptors and uniform protocols. C&E and molecular data are initially made available from the respective WG webpages, although the aim is to include such data into EURISCO or in the respective Central Crop Databases (see below).

ECPGR Outcome 2 (EURISCO)

All the Activities mentioned in the previous paragraph also contributed to Outcome 2 (Quantity and quality of data in EURISCO). In most cases, updated passport and C&E data were transferred to the respective National Focal Points for inclusion into EURISCO.

The Activity 'Barley C&E' data aimed specifically to increase the number of C&E data in EURISCO. Upload of C&E data was started.

The Forages WG, through Activity 'ForageDataAccess' used its C&E data as one of the first datasets testing the new capacity of EURISCO to host this type of data. As a result, over 35 000 C&E records were included in EURISCO. This activity is also aiming at producing a standardized basic list of characterization descriptors (5-10 traits) to be used for evaluation of AEGIS accessions, ensuring better comparability of data in EURISCO. Analysis of the Central Forage Databases in comparison with EURISCO was useful to identify missing sets of data and provide these for inclusion in EURISCO.

Data from characterization of ca. 200 *Phaseolus coccineus* and ca. 300 MAP accessions are expected to eventually flow into EURISCO from 'SMARTLEG' and 'MAPEUROCOLLECTION' Activities, respectively.

C&E and SSR data for 91 plum accessions have been published by the 'PRUNDOC' Activity and are waiting to be included in EURISCO. Similar data on ca. 200 cherry accessions are being prepared by the EU.CHERRY Activity.

C&E data from wheat and rye (TRAID and TRISECA) activities should also be included in EURISCO.

Data generated by CarrotDiverse on wild carrot are planned to be uploaded where possible to EURISCO.

It should be mentioned that C&E data flow to EURISCO has not proceeded swiftly in many cases. Even though the data were published on the respective WG webpages, proactive initiative of WG members in coordination with the respective National Focal Points is required to complete this step. It is beyond the possibility of the Activity Coordinators to make sure that the upload onto EURISCO takes place.

Outcome 2 was also the focus of the main Doc&Info Activities, which provided sub-regional training involving so far over 40 participants. Another training targeting National Focal Points will be carried out in 2018.

ECPGR Outcome 3 (*In situ* conservation)

This Outcome was targeted by the WG on Wild Species Conservation in Genetic Reserves that also joined forces in the Activities carried out by the *Beta* and Forages WGs. The *Beta* WG's Activity 'GeDiPa', focusing on *Patellifolia* species that are CWR of cultivated beet, has defined taxonomic standard accessions and developed microsatellites for the identification of the accessions and the characterization of their diversity. Population sites were surveyed and newly discovered. The geographic distribution of genetic diversity and genetic differentiation between occurrences was studied. Appropriate sites were recommended for the establishment of genetic reserves and specific recommendations were made to fill *ex situ* gaps in the collection of diversity.

Strategic planning for strengthened *in situ* conservation of forages in collaboration with the WG on Wild Species Conservation in Genetic Reserves was the contribution of the Forages Activity to Outcome 3.

The Leafy Vegetables WG, through Activity 'CCLEAFY', assessed the threat levels of nearly 30 of the main leafy vegetable CWR occurring in the European region. Their distribution was analysed and the level of threat assessed based on climate change modelling scenarios. It became evident that the expected effects of *in situ* conservation on the survival of species in southern regions need to be examined on a case-by-case basis and that conservation priority should be given to species that are not expected to migrate northwards, such as artichoke CWRs and *Asparagus maritimus*.

The ongoing 'CarrotDiverse' Activity is expected to elaborate, together with the WG on Wild Species Conservation in Genetic Reserves, a global conservation plan for carrot CWR.

The *Vitis* WG's Activity 'InWiGrape' built a distribution map of wild grapevine populations in Europe, accessible online from the European *Vitis* Database. Specific descriptors were elaborated to identify and describe *in situ* wild populations and

vulnerability indicators to be taken into consideration for efficient *in situ* conservation were compiled. Activity 'GrapeOnFarm' of the *Vitis* WG focused on inventorying minor and neglected grape varieties on farm. On-farm descriptors and criteria to determine vulnerability of rare varieties were assembled, as well as national procedures recommended for inclusion of minor varieties in the national variety catalogues.

The Activity 'CWR Conservation strategies' of the Wild Species Conservation in Genetic Reserves WG, through the proceedings of a joint Nordic/ECPGR workshop held in Lithuania in 2016, documented the development status of national CWR conservation strategies throughout Europe and reiterated criteria and examples of the selection of priority CWR and proposed standards for CWR genetic reserves. The proceedings include the result of brainstorming discussions and recommendations to ECPGR. The workshop was especially conducive to the preparation of project 'Farmer's Pride', subsequently successfully awarded with funding by the EC under Horizon 2020.

ECPGR Outcome 4 (Commitment and regular resources are sustained and increased)

The *Allium* WG, with its Activity 'SafeAlliDiv', has focused on ECPGR Output 4.4 (Increased awareness of the value of PGRFA amongst users and the wider public). The project is targeting the potato onion crop in the North Europe – Baltic region, aiming to clarify the scale of minor crop cultivation as part of the bio-cultural heritage. An action plan should be developed for safeguarding the target crop cultivation in each country.

ECPGR Outcome 5 (Relations with users of germplasm are strengthened)

Research partnerships between genebanks and research institutions were established within several Activities, as listed below.

- The *Beta* WG Activity 'BETANET' is addressing the relationship between the PGR conservation and user community and the nature conservation community. Such interactions will be encouraged in the workshop organized in Venice, Italy in June 2018.
- The Grain Legumes WG Activity 'SMARTLEG' established a firm collaboration with the EU-funded research project BEAN_ADAPT, investigating the genetic architecture of adaptation of *Phaseolus vulgaris* and *P. coccineus*.
- The *Prunus* WG Activity 'EU.CHERRY' built a cooperation alliance with the COST ACTION FA1104 for sustainable production of high-quality cherry in the European market.
- The *Vitis* WG Activity 'GrapeOnFarm' promoted the effective utilization on farm of minor and neglected grape varieties.
- The On-farm Conservation and Management WG Activity 'LINKAGES' started to work for the assessment of the status of linkages between genebanks and direct users. Surveys were organized with the two communities and the results will be analysed in a workshop in Florence, Italy, in June 2018.

6. Reports from Working Group Chairs

Chairs were invited to report on the activities of their WGs during Phase IX, based on a report template provided by the Secretariat. Reports were received from 20 out of 21 Chairs, with one missing report from the *Malus/Pyrus* WG. It should be reminded that Phase IX

Chairs were all formally nominated by the ExCo at the end of 2014 or beginning of 2015. The Chairs of the Barley, Cucurbits and Potato Working Groups had to be replaced for various reasons and the respective new Chairs started their term in the beginning of 2017.

As it could be expected, the Mode of Operation of Phase IX generated a more unbalanced rate of activity among the WGs compared to previous phases and this is mainly linked to the different rate of success the WGs obtained with their engagement with the Grant Scheme (See Figs. 1 and 2 of the 'Statistics' document). Six WGs created partnerships through the Grant Scheme involving rather few countries (between 4 and 9). Nine WGs were more successful, involving between 10 and 18 countries. The Doc&Info WG mobilized the maximum number of countries (37) in its activities. A few WGs undertook cross-WG activities, with proposals jointly submitted under the Grant Scheme by the Doc&Info WG with the Barley, Forages and On-farm Conservation and Management WGs, the Wild Species Conservation in Genetic Reserves WG with the *Beta* and Forages WGs, or engaging in collaborations as part of the successful activities (Umbellifer Crops with Wild Species, and Barley with Forages WGs). The ECPGR Networking Activity involved all the WGs together. Some groups established links within successful proposals funded by the EC (see below).

Most of the achievements and success stories reported by the Chairs reflect the actions carried out through the Grant Scheme Activities (see above, Section 5).

In addition to the actions funded by the Grant Scheme, a few WGs collaborated towards the agreement on crop-specific conservation standards for the AEGIS Quality System (*Allium*, *Avena*, *Beta*, Cucurbits, Flax and Hemp, Leafy Vegetables, Solanaceae, *Prunus*, *Vitis*, Wheat). Some groups were also active in the attempt to maintain updated crop documentation systems: the *Beta*, Cucurbits and Forages WGs are facing the impossibility to maintain updated European Central Crop Databases (ECCDBs) and have made efforts to identify which data in the respective ECCDBs should be included in EURISCO and to encourage National Focal Points to take action. The Wild Species Conservation in Genetic Reserves and On-farm Conservation and Management WGs completed the respective 'concept' documents, setting the frame for their future activities. Several national level CWR conservation strategy development workshops were promoted and held. The Doc&Info WG organized a workshop to allow representatives from European genebanks to study the functionalities of GRIN-Global (the open source genebank documentation system developed by the USDA). The Doc&Info WG was also involved with advisory functions to EURISCO and to the Global Information System of the International Treaty for PGRFA.

Several WGs were involved in the preparation of project proposals for EC funding (*Avena*, *Beta*, *Brassica*, Forages, Grain legumes, *Malus/Pyrus*, Medicinal and Aromatic Plants, Potato, *Prunus*, Solanaceae, Wild Species Conservation in Genetic Reserves and On-farm Conservation and Management).

Successful projects funded by the EC and other initiatives catalysed the activities of a number of WGs or provided occasions for collaboration. A selection of the most relevant international collaborations is listed below:

- FP7 'PGR Secure' on 'Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding', concluded in 2014 (*Beta*, Wild

Species Conservation in Genetic Reserves and On-farm Conservation and management WGs)

- Horizon 2020 'Farmer's Pride' on 'Networking, partnerships and tools to enhance *in situ* conservation of European PGR' (2017-2020) - (*Beta*, Forages, On-farm Conservation and management and Wild Species Conservation in Genetic Reserves and WGs)
- LIFE 'Recover Natura' on the establishment of a genetic reserve for *Beta patula* in Madeira, Portugal (*Beta* WG).
- Horizon 2020 project 'BRESOV' on 'Breeding for resilient, efficient and sustainable organic vegetable production' (2018-2020) - (*Brassica*, Grain Legumes and Solanaceae WGs)
- FACCE-JPI ERA-net+ 'GrassLandscape' – Bridging landscape genomics and quantitative genetics for regional adaptation of European Grasslands to climate change (2014-2017) – (Forages WG)
- ERA_CAPS 'BEAN_ADAPT' on 'Evolution in a changing environment: the genetic architecture of adaptation outside centres of domestication of *Phaseolus vulgaris* and *P. coccineus*' (Grain Legumes WG)
- Horizon 2020 'G2P-SOL' – 'A global research alliance to preserve and revive the genetic resources of solanaceous crops' (Potato and Solanaceae WGs)
- COST Action FA1104 'Sustainable production of high-quality cherries for the European market' (*Prunus* WG)
- COST Action FA1003 'East-West Collaboration for Grapevine Diversity Exploration and Mobilization of Adaptive Traits for Breeding' (*Vitis* WG)
- Wheat Initiative (international framework to establish strategic research and organisation priorities for wheat research at the international level in both developed and developing countries) (Wheat WG)
- Nordic CWR project 'Wild genetic resources – a tool to meet climate change (2017-2018) (Forages, Wild Species WGs)
- EU Preparatory Action (2012-2016) – (Several WGs)
- H2020 'DIVERSIFOOD' (2015-2019) 'Embedding crop diversity and networking for local high quality food systems' (On-farm Conservation and Management WG)
- H2020 'DYNAVERSITY' (2017-2020) 'DYNAMIC seed networks for managing European diveRSITY' (On-farm Conservation and Management WG)
- AKER (2012-2020) (*Beta* WG).

Gaps and constraints identified by the WG Chairs repeatedly refer to some aspects of the Mode of Operation of Phase IX, such as the difficulty to operate with very numerous WGs, with few possibilities to meet and know each other. The low response received by Chairs when approaching WG members was of concern for various WGs. The rules of ECPGR, impeding the use of funds for ineligible countries or for participation in meetings of members whose countries exhausted the country quota, were also considered a constraint. These and other aspects of the Mode of Operation of Phase IX were also expressed during the meeting of all Chairs in October 2017. Recommendations from the Chairs were heard by the ExCo and some changes were proposed, including a new Mode of Operation for Phase X, which will be under discussion at the 15th SC meeting in May 2018.

Among the technical constraints, various WGs were concerned about the slow progress of AEGIS, specifically referring to inefficiencies at the country level, as well as to the lack of resources for multiplication of the seed material.

Other constraints mentioned by single WG Chairs were:

- the under-representation of breeders in the WGs;
- the discrepancies between Central Crop Databases and EURISCO;
- the lack of success in raising funds from the EC or from the ECPGR Grant Scheme;
- the uncertainty about how to handle *Prunus* material once included into AEGIS, especially considering phytosanitary constraints that are limiting the possibility of exchange;
- the limited interest of the *Vitis* WG in EURISCO, considering the better functionality of the Central *Vitis* Database;
- the uncertainty about the choice of a national documentation system;
- the lack of proper data about *in situ* and on-farm material, contrasting with the desire to give access to this type of information.

The joint workshop held by the partners of the Forages and Barley WGs' Activities in 2017 developed a list of recommended actions⁵ (available from the ECPGR website) on AEGIS, EURISCO and ECPGR in general. These were also expressed at the ECPGR Networking meeting in October 2017 and taken into consideration by the ExCo in their response to the Chairs (minutes of the 10th ExCo meeting, Slovenia, 2017).⁶

7. Use of voluntary funds from Germany

During 2016 and 2017, the German Federal Ministry of Food and Agriculture (BMEL) made available to ECPGR, on a project basis, additional funds for an amount of ca. € 333 000. These funds sponsored four Grant Scheme Activities (EURISCO Training 2017, GRIN-Global, CarrotDiverse and Pomefruit (C&E), the Private Public Partnerships (PPP) project and the EURISCO Taxonomy project.

The overall objective of the PPP project was to work towards the establishment of Private Public Partnerships on the use of PGRFA across and for the benefit of the European region. During the first phase of the project (January-July 2017) a survey of PPPs on the use of PGRFA in Europe was carried out and provided the data to develop the knowledge base on PPP projects, which was made available on the ECPGR website. A workshop involving 48 participants from genebanks and the private and public sectors, from 18 European countries, enabled to share experiences with PPPs in Europe and to discuss options to enhance use of PGRFA through European-wide private public partnership collaboration in characterization and evaluation of PGRFA. The second phase of the project (August 2017–March 2018) aimed to prepare a framework for a European Evaluation Network. A Proposal document for the establishment of the European Evaluation Network was prepared for endorsement by the Steering Committee. In parallel, an MoU for enhanced cooperation between ECPGR and ESA was drafted and recommended for signature by the ECPGR

⁵ [Workshop recommendations \(Forage and Barley workshop 2017\)](#)

⁶ [Minutes of the tenth meeting of the ECPGR Executive Committee](#)

Steering Committee and the Board of ESA. Proposed steps to get the Evaluation Network started were also outlined, involving model crops and their communities.

The EURISCO Taxonomy project (May 2017–April 2018) was intended to improve the taxonomic functionalities of EURISCO. At the end of the project, automatic mapping of the submitted taxonomic terms will be performed at every data upload, thus providing suggestions to the NFPs in case of unclear taxonomic terms. In addition, the web search functionality will also be improved, enabling users to search material by taxon, also via synonyms and similarity searches.

8. Financial situation

At the beginning of Phase IX the budget was set at € 2 796 868. Subsequently, the budget required adjustments every year:

- In 2014 some outstanding contributions related to Phases VII (€ 12 100 from Israel) and VIII (€ 74 700 from Denmark, Greece, Israel, Romania and Serbia) were received, and a previously unaccounted pledge for Phase IX (€ 60 000) was made by Portugal.
- In 2015 a small voluntary contribution (€ 750) was made by Finland.
- In 2016 Israel announced that it would no longer contribute to Phase IX and the budget was reduced by the corresponding amount (€ 44 000).
- During 2016 and 2017 the total budget was further increased by € 333 152 (€ 290 266 net of overheads) representing a voluntary contribution from Germany for earmarked activities.
- In 2017 the budget was also decreased by € 62 500 owing to missed contributions from Poland during Phase IX.

As a result of the above adjustments, at the end of 2017 Phase IX budget was set at € 3 171 070. This was an increase of € 374 202 (€ 328 335 net of overheads) compared to the initial budget. Part of this increase is earmarked to specific activities (German funds). The remaining net € 38 069 could be theoretically spent for more activities. However, until further notice, the Secretariat considers uncertain the receipt of outstanding contributions from Azerbaijan and Spain, which is equivalent to € 101 750 (net of overhead = € 83 282).

Expenditures for Secretariat staff and travel and for Steering Committee and ExCo meetings and travel costs during the first four years have been maintained below the budgeted figures. Combined under expenditures in this regard amounted to ca. € 43 000. Also the EURISCO maintenance and development costed less than budgeted during the first two years, mainly owing to a late start of the operations at IPK at the beginning of 2014. Underexpenditures in this regard amount to ca. € 25 400.

The budget allocated for Grant Scheme Activities was € 454 170 (see Table 1 in the *Terms of Reference of ECPGR*). Additional € 88 900 were accrued to the Grant Scheme Activities through German funds, raising the total available to € 543 070. This new figure (the 75% to be dedicated to meetings) was the basis to increase the country quotas available to all countries. After five Calls for proposals, € 472 850 have been granted to 28 successful proposals. Therefore, based on these figures, ca. € 70 000 can still be assigned through the sixth Phase IX Call.

At the end of 2017 the total outstanding contributions for the years 2014-2017 was € 146 051.

The cash balance throughout the Phase was positive, amounting to € 389 233 at the end of 2017. Therefore, no advance funds from Bioversity were necessary.

Finally, it should be noted that, as of January 2018, Azerbaijan and Spain were subjected to the provisions of Rule 1.7 of the ECPGR *Rules of procedures*. Owing to non-payment of outstanding membership fees for two calendar years, these countries have lost the right to use any ECPGR funds and the right to vote until the contributions will have been paid.

★★★

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(with inputs from Lidwina Koop, Elinor Lipman, Eva Thörn and Stephan Weise)

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