

Report of the ECPGR Documentation and Information Network Coordinating Group

Fourth Meeting, 17-18 February 2010, Maccarese, Rome, Italy
L. Maggioni

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EXECUTIVE SUMMARY

Opening and welcome

The meeting was opened by L. Maggioni, welcoming all the participants to the Bioversity Headquarters, including the observers D.T. Endresen from NordGen, M. Skofic and J. Engels from Bioversity International. All members of the Documentation and Information Network Coordinating Group (Doc&Info NCG) were present, except for A. Tan, who had sent his apologies.

F. Begemann, Coordinator of the Network, expressed his satisfaction with the achievements reached so far, mainly as part of the EPGRIS3 initiatives, but he also invited the Group to establish new goals in order to make further progress. He informed the Group about his resignation as Network Coordinator at the end of this meeting and about the need to select a new Coordinator.

L. Maggioni reminded the Group about the relevant decisions taken at the last Steering Committee meeting in Sarajevo, Bosnia and Herzegovina (September 2008) (*presentation available online*). In particular, the Doc&Info NCG was assigned the responsibility of acting as the specific advisory body with the function of monitoring progress on the development and maintenance of EURISCO, as well as providing advice to Bioversity International acting on behalf of the ECPGR Secretariat, for the further development of EURISCO. The composition and Terms of Reference of the NCG were summarized, as well as the workplan and budget for Phase VIII of ECPGR, as agreed by the Steering Committee in Sarajevo (2008).

Discussion

Th. van Hintum asked to what extent the budget could be revised and re-shuffled.

F. Begemann and L. Maggioni replied that in broad terms the budget was fixed, as a result of a Steering Committee decision. The EURISCO budget line in particular was not expected to be touched in the course of Phase VIII. However, minor re-shuffling of the Network budget lines may still be possible, while significant changes will need to be approved by the Steering Committee.

Activities 2008–2009

EPGRIS3 activities

Presentation by Theo van Hintum available online

The philosophy of the EPGRIS3 platform is about involving active people in collaboration on the basis of self-funding. Collaboration is expected to allow cost-savings. The EPGRIS3 wish list (www.epgris3.eu) includes 22 activities, 10 of which have an identified leader and 6 have been completed. The wish list was also the starting point for the documentation activities proposed as part of the EUROGENEBANK project. Completed activities were:

- “The EPGRIS3 Wiki”. This was created at NordGen (www.nordgen.org/epgris3/wiki) and it is mainly a repository of information.
- “Link to ECCDBs”. Following a meeting in Bonn (2008), a discussion paper by F. Begemann, L. Maggioni and Th. van Hintum entitled “The European *ex situ* PGR

Information Landscape"¹ was presented at the Steering Committee in Sarajevo (2008) and published as a chapter in a book on "Information and Communication Technologies for Agriculture and Biodiversity Conservation".

- "SMTA reporting" and "MLS and AEGIS". Following a discussion in Bonn (2008), new descriptors for EURISCO were developed. Descriptors to describe whether accessions belong or not to the MLS have since been included in the uploading mechanism.
- "National Focal Points Training and Networking". This activity took place at a workshop organized in Prague, Czech Republic (June 2009), with 25 participants attending.
- "C&E data". A proposal for inclusion of C&E data into EURISCO was drafted, discussed, circulated and eventually approved by the Doc&Info Network in June 2009. Steps towards implementation of the plan are being taken (see topic "C&E Data in EURISCO" in this report).

In conclusion, EPGRIS3 served its purpose, although with only a few active players.

Discussion

F. Begemann commented that EPGRIS3 is a success story, reflecting the priorities and workplan of the Doc&Info Network. It is also a very useful tool to undertake actions in a transparent and open way. Activities can always be updated, some can be added and others dropped. An effort could be made to try to engage more people. This activity could be promoted for example with an article in the Newsletter for Europe.

Prague workshop for National Inventory Focal Points

Presentation by Iva Faberová available online

A training workshop for National Focal Points (NFPs) was organized in Prague, Czech Republic, on 29-30 June 2009, as part of the Doc&Info Network workplan as well as an EPGRIS3 activity. Objectives were to bring NFPs up to date, further improve quantity and quality of data in national inventories, facilitate the reporting of MLS accessions, promote and improve the frequency of upload to EURISCO, and develop and disseminate a "Frequently Asked Questions" manual. Short technical presentations were followed by practical demonstrations about data uploading procedures and error searching. Twenty-five trainees attended (eight of them funded by ECPGR, eight by SEEDNet and nine self-funded). Among the conclusions of the meeting, it was noted that 25 NFPs are responsible for 89% of the EURISCO content. The composition of the NFPs' group changes frequently. More than 50% of the NFPs have been replaced since 2003. This indicates that there is a frequent need to train newly appointed persons and to have instruction material available. Several updates to the data were made just before this meeting, which was therefore an occasion to stimulate the activity of the NFPs. It was shown that two to three days of training are sufficient and that co-financing is important to ensure the success of this type of training event.

Discussion

The recent reduction in the number of UK accessions in EURISCO was explained by the elimination from the National Inventory of *Arabidopsis* laboratory accessions. Only accessions collected from the wild were left in the inventory.

¹ Hintum Th van, Begemann F, Maggioni L. [in press]. The European *ex situ* PGR information landscape. In: Maurer L, Tochtermann K, editors. Information and Communication Technologies for Biodiversity Conservation and Agriculture. Shaker Verlag, Aachen. pp. 149-165.

The indirect effect of the Prague workshop on the uploading of data as the meeting drew near was remarked, as well as the impressive turnover of NFPs. It will be necessary to think how to pass on the information to new people when key people leave.

Th. van Hintum remarked that it would be import for ECPGR to ensure more resources reach the Doc&Info Network, which according to him was insufficiently funded, in comparison with the Crop Networks, and considering the number of activities it undertakes and their impact.

F. Begemann defended the philosophy of partial self-funding for participation in ECPGR meetings, which is the example offered by the Doc&Info Network during Phase VIII. He suggested pointing out in a letter to the ECPGR Steering Committee that a similar approach could be adopted by other Networks as well, and the Steering Committee should be invited to reconsider the balance of the budget allocation between the different Networks with the intention to increase the budget for the Doc&Info Network.

Inter-regional workshop on International Treaty implementation

Presentation by Lorenzo Maggioni and Frank Begemann available online

The Documentation and Information Network has included in its workplan for Phase VIII two inter-regional activities in support of the International Treaty (IT) implementation. Funds allocated by the Network will complement other available funds for the same types of action that were budgeted by the Inter-regional Cooperation Network, as well as additional carry-over funds from Phase VII (a total of € 56 700 is available). The objective, according to the terms of reference of the Inter-regional Cooperation Network, is to convey to other regions similar views and methods to those being used in Europe as regards the sharing of tasks, material and information, while at the same time facilitating and promoting the ratification and implementation of the IT.

A first workshop for capacity building was organized in March 2009 in Entebbe, Uganda, jointly by ASARECA, EAPGREN, ECPGR, FAO-Treaty Secretariat and Bioversity. F. Begemann and L. Maggioni, representing ECPGR, brought to the workshop the European experience regarding the regional implementation of the Treaty (National information systems, EURISCO and AEGIS). As a result, a road map for the national implementation of the Multilateral System (MLS) was drawn up, with priority assigned to the documentation of designated material, including the establishment and management of information systems. However, in practice, the ECPGR travellers received impressions of no firm commitment taken and of apparent stagnation at the regional network level.

As a lesson learned from this workshop, before other ECPGR actions are undertaken, it will be essential to verify in advance the existence of a genuine interest of the partner network to implement the MLS as soon as possible. Provision of inter-regional support should also be linked to the possibility of obtaining factual outcomes (i.e. MLS accessions designated, national or regional inventory established, etc.).

Opportunities for future actions will need to be carefully explored together with the FAO-Treaty Secretariat and Bioversity Regional Directors.

Report from the Conference TDWG-2009

Presentation by Helmut Knüpfner available online

Biodiversity Information Standards (TDWG) was known as the Taxonomic Database Working Group. TDWG is a not-for-profit scientific and educational association affiliated with the International Union of Biological Sciences that was formed to establish international collaboration among biological database projects. TDWG promoted the wider and more effective dissemination of information about the world's heritage of biological organisms for

the benefit of the world at large. Its mission is to develop, adopt and promote standards and guidelines for the recording and exchange of data about organisms (<http://www.tdwg.org>).

The theme of the recent annual TDWG conference held in Montpellier, France, 9-13 November 2009 was "E-knowledge about biodiversity and agriculture". Key institutions of the agricultural research community took part in this meeting, particularly Agropolis International (France), Bioversity International, FAO, ECPGR and the CGIAR. Plenary sessions on agricultural biodiversity informatics themes focused on "Sharing e-knowledge on agricultural diversity worldwide", "Identifying Biodiversity for Food and Agriculture", "Accessing information on Agricultural genetic resources and crop wild relatives" and "Agriculture Information for development". Among the projects presented were: ARCAD (Agropolis Resource Centre for Crop Preservation, Adaptation and Diversity); PROTA (Plant Resources of Tropical Africa); GENESYS (the global PGR accession level portal under development); EURISCO; SINGER and the Crop Trait Ontology of the Generation Challenge Programme. Elizabeth Arnaud (Bioversity) was Chair of both the International and the Local Organizing Committees and Helmut Knüpfper represented the Doc&Info NCG. Among the parallel sessions, relevant discussions were dedicated to the development of a crop trait ontology, the management of data quality, the documentation of local knowledge and the need to integrate it into biodiversity databases. It was clear that collaboration between TDWG and the genebank community is beneficial for both and can be put in practice by sharing infrastructures and exchanging tools, models and data.

Discussion

The Group noted that the TDWG community has very young and dynamic members. It is focused on new technologies and is ready to resolve problems related to data, but at the same time they have little access to real data. The genetic resources community has access to many data and needs to take advantage of the enthusiasm of young scientists who could bring solutions to the management of PGR data, although concrete and quick solutions are needed, and not necessarily cutting-edge technology.

The TDWG community is working on the documentation of herbarium specimens and these are described with something very similar to the PGR passport data, therefore opportunities for common solutions could be found.

It was felt that the Doc&Info Network should follow the ongoing standardization process and make sure that the PGR interests are considered, without trying to over-coordinate the process. Ideally, someone from the TDWG community could be attracted to participate in EPGRIS3 activities.

Decision 1

It was considered important that the Doc&Info Network remains informed of what the TDWG community is doing and it will be important to be present at their next meeting.

C&E data in EURISCO

Presentation by Theo van Hintum available online

The general provision of C&E data (scores of genotypic traits) is broadly considered very important, but so far it has not happened, since these data are complicated in nature (the phenotype information is composed of genotype information, environmental influence, genotype by environment interaction and experimental error). It is therefore challenging to provide meaningful information. C&E data are rarely available on genebank Web sites and even more rarely searchable. Obtaining C&E data from genebanks is very difficult due to the low level of computerization, the labour involved in the required standardization and also to

intellectual property issues. The challenge to get data from the source (genebank) needs to be a one-time solution that does not require too much manual input.

The proposed principle is to create a C&E data repository, by creating a data exchange format that is able to cope with non-standardized C&E data, at the same time providing a description of genotype, trait, method and experiment.

The elements to be included in the exchange format are therefore: 1) Genotype (should be linked to an accession included in EURISCO); 2) Trait (with no need to develop an ontology at this stage, but English should be used); 3) Method (it should be described in order to allow interpretation of the score); 4) Experiment (it should be described in order to characterize the circumstances in which the scoring was recorded). It should furthermore be possible to upload C&E data in packages consisting of one or more experiments, with possibly a generic methodological remark (such as the convention for handling variation within accessions). One experiment should contain n genotypes and m traits (with their method) and of course $n \times m$ or less scores. This approach will be easy to implement in relational databases. The upload should be implemented in any format (xml, xls, csv) with the possibility to either upload files or use Web services. The five elements of the uploaded file will be: DATASET, EXPERIMENT, TRAIT/METHOD, GENOTYPE and SCORE. The upload should be aligned with the current EURISCO upload mechanism and be accessible to any registered uploader. It should be possible for each uploader to upload data on accessions of more than one National Inventory. The downloading mechanism will need to be developed on a use-case oriented basis. A complicating factor is that EURISCO does not make use of a standardized division into separate crops. In order to download the data of interest, it should become possible to do a taxonomic selection (possibly by crop) and then a trait selection.

A “road map to the inclusion of C&E data in EURISCO”, that was developed at the EPGRIS3 meeting in Bonn, Germany (7 May 2009) was followed up to the stage of harmonization with the GIGA project and technical definition. Volunteer tester institutions for the provision of a first set of C&E data are available. The entire plan is included in the EUROGENEBANK proposal, but we should not wait for it to be funded or rely on this project before taking further action.

Discussion

Th. van Hintum pointed out the need to clean the EURISCO taxonomy fields and make sure that when a user launches a query for a given crop, all the appropriate accessions are picked up by the search, even if the original scientific name data are misspelled or synonymous. He said that this is easy to do, since it is sufficient to map all the taxonomic combinations to valid standard names. It would then be possible to search within an additional field, “interpreted valid name”, without the need to change the original data. He already made a test and he was able, by cleaning 191 genera, to get 95% of the accessions corrected.

Another element that is needed in EURISCO is the definition of crop name categories.

H. Knüpffer remarked that it will be necessary to encourage producers of C&E data to include the passport data of the accessions studied in EURISCO, so that the respective C&E data can actually be entered in EURISCO.

Decision 2

Th. van Hintum will circulate to the Group a proposal to improve access to EURISCO via the standardization of genus and species names. The proposal will be implemented by Bioversity with the help of volunteers from the Group. Evident errors and any imprecisions in taxonomy fields that are identified through this exercise will then be communicated to the NFPs by the EURISCO Coordinator through the taxonomic reports, with the aim of correcting the original data.

Decision 3

The Group agreed that a crop list will need to be jointly developed in collaboration between EURISCO and GENESYS.

Report on NordGen – GBIF activities

Presentation by Jonas Nordling available online

A germplasm extension to Darwin Core (DwC) was presented at TDWG 2009. This was instrumental to allow the use of new GBIF (Global Biodiversity Information Facility) technology in genebanks. A proposal was made to implement GBIF technology as a test in the European genebank community. A contract was signed between NordGen and GBIF, launching a feasibility study aimed at demonstrating the practical implementation of the GBIF decentralized architecture strategy, in particular in the context of the EURISCO Network. The work will focus on the adoption of the GBIF Integrated Publishing Toolkit (IPT) by selected genebanks in Europe, the publishing of richer content using the Darwin Core germplasm extension and the indexing of these published resources by the EURISCO platform. The work is to be implemented in the context of EURISCO and therefore in close collaboration with the EURISCO Coordinator.

The purpose of DwC is to facilitate data sharing, thanks to a well-defined standard core vocabulary and a flexible framework to maximize re-usability. The Darwin Core can be extended by adding new terms to share additional information.

The DwC Germplasm Extension DRAFT 0.1 (26 August 2009) includes the *Multi-Crop Passport Descriptors* (MCPDs) and additional terms to describe germplasm samples. It also includes the new terms for crop trait experiments developed as part of the European EPGRIS3 project and a few additional terms for International Treaty regulations.

The Integrated Publishing Toolkit (IPT) is a tool in support of data publishers. It consists of a straightforward mechanism to share primary biodiversity data following the Darwin Core standard. It is an open source, Java based web application.

The Harvesting and Indexing Toolkit (HIT) enables the aggregation of indexes of published primary biodiversity data. The Global Biodiversity Resources Discovery System (GBRDS) is a yellow page reference of biodiversity resources. The IPT and HIT instances installed in the course of this project will be registered in the GBRDS.

The objectives of the project will be: to evaluate the GBIF decentralized architecture; to upgrade the IPT with the Darwin Core extension for the genebank community and to develop associated documentation; to install and test the IPT in various genebanks in Europe that, as far as possible, are also EURISCO/ECPGR partners; to test the registration of the IPT installation through the GBIF GBRDS; to test the HIT installation for the EURISCO platform; to install an IPT instance on the EURISCO platform and synchronize it with the GBIF central index.

The project will run until 20 December 2010. The suggested sites for IPT installation are NordGen, Sweden; EURISCO at Bioversity-HQ, Italy; Bioversity-Montpellier, France; IPK Gatersleben, Germany; BLE, Bonn, Germany; WUR CGN, Wageningen, The Netherlands; CRI, Czech Republic; VIR, Russian Federation; the Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Macedonia FYR, Serbia, Romania); and the Baltic countries (Estonia, Latvia, Lithuania).

The compatibility of data standards between PGR and biodiversity collections will make it possible to integrate the worldwide germplasm collections into the biodiversity community.

Decision 4

The Group will look with interest to the results of the project run by NordGen, aiming to test in various European genebanks the use of the Integrated Publishing Toolkit developed by GBIF. By the end of the year this Group is expecting to be informed of progress.

Status of EURISCO

Presentation by Sónia Dias available online

Progress on the decisions taken at the last EURISCO Advisory Group meeting (12 March 2008, Bonn, Germany), was reviewed: The EURISCO Data Sharing Agreement is being sent out for endorsement and signature. Statement of objectives was included in the background of the document. Indicators of quality and of success of EURISCO were included in the workplan 2009-2013 and submitted to the Doc&Info NCG. A workplan for 2008 activities was delivered in 2008. A workplan for 2009-2013 was delivered to the Doc&Info NCG and presented at the ECPGR Steering Committee meeting in Sarajevo (September 2008). The new Terms of Reference of the Doc&Info NCG operating also as the EURISCO Advisory Group and including the governance of EURISCO were made available online on the ECPGR site.

The current list of National Focal Points was shown, indicating that one quarter of them were either new or replaced in 2009. National Inventories providing data to EURISCO reached the number of 40, with two new entries in 2008 (Albania and Turkey) and three new entries in 2009 (Belarus, Croatia and Montenegro). The number of accessions in EURISCO decreased in 2009 by about 200 000 units, corresponding to a decision from the UK to remove the laboratory *Arabidopsis* accessions. The number of data providers increased between 2005 and 2010, from about 175 to the current near 300. Sixty-two per cent of the countries have updated their National Inventories in 2009 or 2010. A diagram with completeness of descriptors and a sample status overview was shown.

The EURISCO Web site visits in the last year showed over 8000 visits from 105 countries. Dissemination activity was undertaken with presentations at conferences (EUCARPIA, GBIF, TDWG), publication in newsletter articles and the preparation of multilingual fact sheets. Seminars and training were carried out in Spain (November 08), Armenia (April 09), Russian Federation (May 09), Czech Republic (June 09), Ukraine (October 09) and Bosnia and Herzegovina (November-December 09), thereby training a total of 113 people.

A total of 333 taxonomic reports were sent to the NFPs in December 2009. Helpdesk support was ensured all the time.

In summary, EURISCO includes data from 40 National Inventories and 296 genebanks. The data refer to 5387 genera and 34 823 species (genus-species combinations), including spelling variants and synonyms. The accessions can be listed as wild species (99 524), breeding and research material (151 454), traditional cultivars and landraces (260 111). Accessions registered as MLS are 211 805. The total number of accessions is 1 050 197. Four National Inventories are still expected to be included in EURISCO (Belgium, Bosnia and Herzegovina, Malta and Moldova).

Among the improvements needed (and expected), there is the need to allow import from more data formats and enable direct upload by institutes. Also upload of partial datasets should be envisaged. Planned tasks for short- and medium-term action (February-September 2010) were presented for prioritization by the Group.

Discussion

A detailed workplan for the coming eight months was requested, in order to enable the NCG to comment, advise and establish priorities. More frequent progress reports to the NCG were also recommended.

EUROGENEBANK Project Proposal

Presentation by Jan Engels available online

A topic on an integrated European genebank was included in FP7 Work Programme 2010 Call on “Research Infrastructures” – Support to existing research infrastructures – Integrating Activities. Bioversity (i.e. ECPGR Secretariat) coordinated the development of a project proposal called EUROGENEBANK (Integrated research infrastructure for rational *ex situ* conservation and use of European PGRFA). The proposal was submitted on 3 December 2009. The project was squarely placed within the AEGIS framework and it included key aspects agreed upon by the ECPGR Steering Committee.² The project is an “independent” entity, but it would also manage the interface with the wider community. The outputs would be made available to all European genebanks. If funded, the ECPGR Secretariat will coordinate its implementation, with 32 partners in 19 countries. The total requested budget is € 8 683 685.

Several of the 11 Work Packages (WPs) planned include relevant activities on Documentation and Information, as follows:

- WP2: “Project website development and operation”.
- WP3: “Inventory of European PGR facilities, crops and actors (i.e. Knowledge Base)”; “Development of C&E information services facilitating PGR utilization”; and “Developing strategy for updating information in knowledge base”.
- WP4: “Develop European Accession Selector”; “Inclusion of selected MAAs in EURISCO by National Focal Points”; and “Develop a procedure for inclusion of new European Accessions in EURISCO”.
- WP5: “Analysis of user groups for crops (information to be fed into Knowledge Base)”.
- WP6: “Supporting training workshops and building capacity (including on Knowledge Base and of National Inventory Focal Points)”; “Packaging knowledge products”; “Training genebank staff in applying new tools, methods and protocols”; “Facilitating exchange of scientists”.
- WP7: “Creation of crop portals for model crops”; “Data mobilization for more and better data in EURISCO”; “Increase quality and quantity of EURISCO passport data”; “Improve public web-interface to EURISCO”; “Apply web-services technology for uploading National Inventory data to EURISCO”; “Create repository and interface for C&E data”; “Create trait ontology on basis of C&E data repository”.
- WP8: “Ensure through interface to EURISCO free access to data”; “Provide support (i.e. training, seminars, helpdesk function) to users”; “Improve functionalities, new tools, etc.”; “Contribute to better services and review of procedures”.
- WP9: “Inventory of genebank manuals and guidelines”.
- WP10: “Instructions and templates development for QMS case studies”.
- WP11: “Prioritizing germination tests – developing software for predicting seed storage and prioritizing accessions for viability testing”.

In conclusion, the active engagement and participation of the Documentation and Information Network members will be important. The project will provide an opportunity to speed up the AEGIS implementation process and will provide opportunities to further strengthen information management in Europe.

² ECPGR. 2009. A Strategic Framework for the Implementation of a European Genebank Integrated System (AEGIS). A Policy Guide. European Cooperative Programme for Plant Genetic Resources (ECPGR). Bioversity International, Rome, Italy.

Discussion

The Group expressed their hope for the project to be successful. If the project is not funded, the Network will need to continue its activities, identifying the priority areas to be covered within the framework of ECPGR (limited funds) and EPGRIS3 (self-funded activity).

Collaboration with the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

Inter-regional activity in collaboration with the Inter-regional Cooperation Network

Discussion

F. Begemann remarked that the organization of future workshops needs to start well in advance of the meeting and it is necessary to make sure that it is possible to make an impact. Early consultation with the Treaty will be necessary, in order to establish which Network requires training and leading to activities in the region. A formalized agreement of collaboration between ECPGR and the Treaty will need to continue being pursued.

Th. van Hintum suggested reconsidering the undertaking of this type of activity.

F. Begemann clarified that the process will be led by the Inter-regional Cooperation Network.

Vision of Article 17 of the Treaty on the Global Information System

Presentation by Frank Begemann available online

According to the provisions of the International Treaty, among the responsibilities of the Contracting Parties, Article 13.2(a) requires exchange of information as part of the benefit sharing in the Multilateral System (MLS). This includes catalogues and inventories of PGRFA, information on technologies, technical, scientific and socio-economic research and characterization and evaluation and utilization data. Such information shall be made available through Article 17, i.e. the Global Information System. This System, to be created in cooperation with the Clearing House Mechanism of the Convention on Biodiversity, has to be developed based on existing information systems.

Information requirements under the Standard Material Transfer Agreement (SMTA) of the Treaty foresee that the Provider periodically inform the Governing Body about the SMTAs entered into (Article 5.e). The Recipient should make available to the MLS, via the Global Information System, information on research and development carried out on the material (Article 6.9). The Third Party Beneficiary (FAO) has the right to request appropriate information (Articles 5(e), 6.5(c), 8.3, Annex 2.3).

Among the activities of the Treaty Secretariat, there are plans to offer to the providers an offline IT tool (Gene-IT) and an online Ordering Tool Kit (OTK). To recipients, the Secretariat will offer a Datastore to report back to the Governing Body and a Permanent Identifier (PID) server to uniquely identify users.

As decided at the Third Session of the Governing Body (GB3), it will be a responsibility of the Secretariat to continue to collaborate with FAO and other relevant stakeholders on information technologies to facilitate their contribution, to promote greater access to relevant information and information systems by Contracting Parties and other relevant stakeholders, and to develop a vision paper to be presented to the Fourth Session of the Governing Body to take stock of existing information systems and to outline a process for the development of the Global Information System.

Regarding the reporting procedure under the SMTA of the MLS of the ITPGR for Providers, resolution 5/2009 of GB3 took decisions on “Third Party Beneficiary Procedures”. Two options were allowed, either the Provider transmits a copy of the completed SMTA, or alternatively it will need: 1) to ensure that the completed SMTA is at the disposal of the Third Party Beneficiary as and when needed; 2) to state where the SMTA in question is stored, and how it may be obtained; and 3) to provide the following information: identifying symbol/number attributed to the SMTA by the Provider; name and address of the Provider; date on which the Provider agreed /accepted the SMTA and in case of shrink-wrap, the date on which the shipment was sent; name and address of Recipient, and in case of shrink-wrap agreement, the name of the person to whom the shipment was made; and identification of each accession in Annex I of the SMTA, and of the crop to which it belongs.

Consequently, the procedure approved *ad interim* by the ECPGR Steering Committee in September 2008 for additional and voluntary reporting on concluded SMTAs is no longer applicable, since it did not consider details such as name and address of recipient or the identification of each accession.

In conclusion, for the reporting by Contracting Parties, genebank documentation systems, National Inventories and a regional system such as EURISCO play a key role. GENESYS, as global accession level information system, may also have a role to play.

Regarding the SMTA reporting obligations (two options) the Gene-IT tool will be made available by the Treaty Secretariat. It is not clear whether GRIN-Global will have a role. The online Ordering Tool Kit (OTK) developed by CIRAD will also be made available. It is not clear whether the online ordering tools developed by IRRI, CGN, IPK and NordGen will also be used for this purpose.

It is proposed that the ECPGR Doc&Info Network should stand ready to support the ITPGRFA vision paper process and the further development of IT tools needed.

Discussion

Critical comments were expressed about the excessive bureaucracy and legal impediments that were being created by the process of reporting to the GB and the Third Party Beneficiary. F. Begemann said that there was not enough European strength/unity during the negotiations in order to be able to limit such a trend.

The Group agreed that the Doc&Info Network should stand ready to support the process of preparing the vision paper (March 2011), especially with the intention to influence this paper with practical principles.

Decision 5

A formal letter should be sent by the Doc&Info NCG to the Secretary of the Treaty, Shakeel Bhatti, offering expertise to contribute to writing the vision paper, as well as offering technology solutions. The letter, to be drafted by F. Begemann and Th. van Hintum and sent by the Doc&Info Coordinator, should be copied to all National Coordinators.

Assessment of the registration of the MLS material in EURISCO

Presentation by Sónia Dias available online

In September 2008 the ECPGR Steering Committee agreed to use EURISCO as a service to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The proposed mechanism of registration of accessions in the Multilateral System (MLS) was approved, as well as an interim reporting procedure, at the national level, on the use of Standard Material Transfer Agreements (SMTA).

Consequently, two new descriptor fields were implemented in EURISCO in 2008 regarding MLS status of each accession. Descriptor fields for SMTA reporting were also

made available for National Inventories to manage them, but they were not published online.

So far, a total of 211 805 accessions have been registered by 13 countries as part of the MLS. These represent about 20% of the total material searchable in EURISCO, covering around 66% of the genera from Annex I of the ITPGRFA.

Countries that have registered accessions are: Austria, Czech Republic, Germany, Ireland, The Netherlands, the Nordic Countries, Poland, Portugal and Spain. Notifications of registration were also sent directly to the Treaty by Germany, The Netherlands, the Nordic Countries, Portugal, Romania and Switzerland.

Discussion

As indicated in the previous presentation, following the decisions of GB3, the interim SMTA reporting descriptors are no longer suitable for implementation.

F. Begemann specified that Germany sent a letter to the Governing Body, notifying them that information about German MLS accessions is available from EURISCO.

Collaboration with GIGA

Bioversity Informatics – Future directions

Presentation by Michael Mackay available online

Bioversity's Director General has reinforced the importance of sustaining one global genetic resources information system on genebank holdings, with multiple portals providing access into the same underlying data structure. The portals that will provide additional views into the information that will be stored in the GENESYS system, following its launch, are the Web sites of EURISCO and SINGER. This underlying principle was implicit in the GIGA project which is anticipated to be the first step towards achieving a global information system as identified in the International Treaty on PGRFA.

Bioversity is currently undertaking a strategic planning process for Biodiversity/Genetic Resources Informatics. This process is led by the Director of the "Understanding and Managing Biodiversity" (UMB) Programme, Laura Snook. Bioversity's last External Program and Management Review (EPMR) in 2009 recommended greater investment in informatics and expanding to cover bioinformatics – molecular biology data. Bioversity accepted this recommendation. As part of the CGIAR, Bioversity is primarily committed to supporting/servicing the developing world. The CGIAR change process is currently under way and will influence the way Bioversity and other centres are funded. This will affect Bioversity's future role in informatics. It is expected that Bioversity's role in the system will be clear by April 2010. The strategic plan under development at Bioversity will be ambitious, seeking to define where Bioversity should be 10 years from now. Some of the aspects and challenges to be considered might include:

- A move to include *in situ* genetic resources systems into the informatics portfolio in a greater way
- Including non-accessioned germplasm (e.g. breeders' material) in the portfolio
- Including genetic data
- Including more genebanks and public/private collection data in GENESYS
- Engaging more with pre-breeders and breeders in future iterations of GENESYS.

Obviously Bioversity will need partners to achieve its goals.

Regarding EURISCO, this year the European genebank passport (and allied) data provided by the National Focal Points will be made available directly from the EURISCO

Intranet to the GENESYS data warehouse at the same time they are published in the EURISCO portal. The GENESYS data warehouse may require some modifications to accommodate non-MCPD EURISCO data.

Sometime in the future, as the EURISCO portal is being maintained and updated, it will migrate to accessing the data from the same structure as the GENESYS portal.

A demonstration of GENESYS, the gateway to genetic resources (www.genesys-pgr.org) then followed. Feedback from users would be welcome.

Creating synergy between EURISCO and GENESYS

Presentation by Theo van Hintum available online

EURISCO is currently hosting passport data. These have already been included in GENESYS. Both EURISCO and GENESYS wish to handle C&E data. It will therefore be important to benefit from each other and especially to avoid duplication of work.

In order to inform each other about the plans and products, Fawzy Nawar from Bioversity visited Theo van Hintum and other CGN staff in Wageningen in December 2009 and Siegfried Harrer and Frank Begemann, BLE, Bonn, Germany, also joined them. As a result, a note on "Creating synergy between GENESYS and EURISCO" was drafted by Th. van Hintum and F. Nawar, with the objective of analysing both approaches and finding overlaps and possibilities for synergy. An inventory was also made of the adaptations required for the two systems to become compatible.

It was observed that GENESYS is a database with a C&E data design that is based on sample GRIN and ICARDA data sets. It offers technical solutions for practical problems (such as one table per crop/trait/method combination), it is crop-based and adopted some pragmatic solutions, such as the trait categories. On the other hand, the EURISCO proposal for a repository of C&E data aims at the easiest possible upload and is not based on a crop concept. GENESYS is not well documented in terms of schema and data dictionary (with format rules, etc.). The structural differences with EURISCO are however non-significant and only the fact that GENESYS is crop-oriented might cause problems.

In order to make steps forward, the following action points are proposed:

1. EURISCO and GENESYS operators need to make sure that they stay informed about each other's progress, and representation in each others' planning meetings should be arranged.
2. GENESYS should develop its documentation to clarify its structures, format rules, etc. Once this information becomes available, a detailed comparison of the two formats should be made and in case of non-compatibility, solutions should be discussed and implemented.
3. GENESYS and EURISCO should compile a joint list of crops and their names and agree on using these as a standard. The list should cover (close to) all species occurring in both systems, with priority given to crops for which C&E data are available or can be expected in the near future.
4. GENESYS and EURISCO should jointly develop a system of standardized trait names. These will need to be compatible with the trait categories in GENESYS and based on existing ontologies (such as those of the Generation Challenge Programme, the Trait Ontology Consortium, etc.).
5. EURISCO should incorporate the crop concept into the taxonomy system it will develop, even though this will not be part of the uploading format.

6. EURISCO should expand its uploading format with a few optional fields that are essential for the proper use of GENESYS, i.e. add Methods.Unit & Methods.Options that allow automatic de- and recoding of scores (this information is already contained in the proposed element TRAIT.TRAIT_METHOD).
7. GENESYS and EURISCO should both consider adding additional optional fields, i.e.:
 - a. GENESYS:
 - DATASET.UPLOADERCODE and TRAIT.TRAIT_REMARKS
 - b. EURISCO:
 - Metadata.Institute, Metadata.E_Date, Metadata.Location, Metadata.Alt, Methods.Range

In conclusion, given the obvious complementarity and relatively small differences between GENESYS and EURISCO, it is advisable to let the two approaches converge. It is hoped that the functionality of GENESYS, using the elements developed by EURISCO, will make the EURISCO activities in this field redundant. For the time being, the systems are too different in scope and objectives to eliminate either of them.

Discussion

M. Mackay specified that the GENESYS structure is evolving according to the needs of the user communities and therefore it can still be shaped and adapted accordingly.

Decision 6

The Group supported the recommendations made by Th. van Hintum in his presentation (action points 1-7 above). An updated road map to the inclusion of C&E data into EURISCO will need to be prepared (Maggioni, Hintum and Mackay, by the end of April 2010).

Update on GRIN-Global

M. Mackay clarified that GRIN-Global is a genebank management software package under development with a publishable Web site. It is supported by the Global Crop Diversity Trust, USDA-ARS and Bioversity and is due for release at the end of 2010. In March 2010, an installable CD will be ready. Fifteen people will be trained in Beltsville in April 2010 to help with GRIN-Global deployment in various genebanks. There are plans to have test users in Europe, currently CRI, Czech Republic; IPK and other smaller genebanks in Germany; Central Agricultural Office, Hungary; CGN, The Netherlands; various genebanks in Portugal; NordGen, Sweden and others.

The PGR Secure project proposal

Presentation by José Iriondo available online

PGR Secure is a project about “Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding”. The project, coordinated by Nigel Maxted and Brian Ford-Lloyd from the University of Birmingham, UK, was submitted under the EU Seventh Framework Programme, Work programme, topic KBBE.2010.1.1-03 – *Characterisation of biodiversity resources for crop wild relatives to improve crops by breeding*. It includes ten partners from seven countries and has a duration of three years with a budget of € 4 million. The project aims to research novel characterization techniques and conservation strategies for European crop wild relative and landrace diversity. It also aims to enhance the use of crop wild relatives by breeders as a means of underpinning European food security in the face of climate change. The project has four research themes: 1) Novel characterization

techniques; 2) Informatics; 3) Crop Wild Relatives (CWRs) and Landraces (LRs) conservation; and 4) Improved breeder use. Case studies are planned for *Avena*, *Beta*, *Brassica* and *Medicago*, using as a reference trait the resistance to sap-feeding insects.

The informatics Work Package is focusing on predictive characterization, aiming to identify populations/accessions which are likely to contain desirable pest resistance traits through the Focused Identification of Germplasm Strategy (FIGS) and to explore the broad utilization of FIGS methodology to aid breeders' selection of CWR and LR accessions.

It also aims to produce a Web-based CWR and LR Trait Information Portal building on existing databases that will provide:

1. Useful trait information on European crop wild relatives (CWRs) and landraces (LRs), particularly for *Avena*, *Beta*, *Brassica* and *Medicago*
2. Baseline biodiversity information on CWR and LR diversity and its conservation
3. Links with related existing information systems regarding genomic characterization (e.g. EMBL Nucleotide Sequence Database) and other PGR information systems (e.g. CWRIS, EURISCO, ECCDBs, ENSCONET) across Europe.

CWR and LR conservation will be promoted by creating European and national CWR inventories and a Europe-wide LR inventory of (at least) the case study taxa, containing basic biodiversity data and moderated by national PGR programmes.

Discussion

F. Begemann asked what plans exist to make use of the existing ECPGR infrastructure of *in situ* Focal Points. J. Iriondo replied that there is not much detail in the proposal about this, but the project is expected to build on the existing infrastructure. F. Begemann remarked that EURISCO should also remain the reference platform for *in situ* data.

Decision 7

The ECPGR meeting of In situ National Inventory Focal Points that is planned in Bonn, Germany in June 2010 will need to invite PGR Secure representatives.

Advice to EURISCO

S. Dias provided a draft workplan of activities on EURISCO to be carried out by Bioversity until September 2010. The document, attached in revised form as Appendix I, raised a few points of discussion, as detailed below:

Discussion

Th. van Hintum: the Internet portal functionality improvement needs to be based on users' feedback. It will be important to put a list of "things done" and "things to do" on the Web, frequently communicate with users and respond to their feedback. The Internet interface should be revisited, since the search page is counter-intuitive.

S. Dias: the search page was prepared in order to respond to the feedback received from users. Information about the implemented feedback is already present on the EURISCO Web site. The helpdesk has always communicated with users and taken into consideration the feedback received.

The Group agreed that the improvement of the Internet interface is the priority, while the restructuring of the Intranet is not seen as a priority.

M. Skofic clarified that rebuilding the EURISCO Intranet remains a priority internally, since the system is old and unstable. The new Intranet will allow generating automatic

reports on taxonomy and georeferences, retrievable by the National Inventory Focal Points. It will also provide the additional option for NFPs to grant institutes access to directly uploading data to the NI Intranet.

I. Thomas: it is not a priority for UK institutes to be able to upload data directly. The possibility to interact with Google Earth for mapping georeferenced accessions would be useful.

S. Dias: the possibility of downloading data in MCPD format is already available, even though it is not intuitive and it will be necessary to make this option more evident.

A comparison of the data in EURISCO with the data in the ECCDBs would be appreciated, in view of identifying appropriate chunks of data that are present in the ECCDBs and not in EURISCO. The next step would be to encourage inclusion of such data into EURISCO.

The proposal to analyse the EURISCO data quality and develop quality indicators was questioned and not considered a priority.

The opportunity was discussed to enable the uploading of only the new and changed data and not of the entire National Inventory each time. A time stamp could be introduced, allowing incremental uploads. This would also reduce band-width use and reduce errors. It should also be possible to delete individual accessions. This type of change was considered to be linked to the introduction of Web services.

It was noted that at future meetings the workplan should be distributed in advance of the meeting, allowing the participants to prepare and properly discuss the plans.

Decision 8

J. Nordling agreed to take the issue of incremental upload into consideration, while he tests the Integrated Publishing Toolkit as part of the NordGen-GBIF project. A proposal for a changed approach drafted by J. Nordling will be considered by the NCG after the end of the testing phase of Web services, at the beginning of 2011.

Decision 9

The Bioversity workplan for EURISCO activities (February-September 2010) was approved in the form that is attached to this report as Appendix I. It should be noted that the Internet improvement has the highest priority. Collaboration with GENESYS also has high priority, while networking and helpdesk is considered ordinary routine. The exercise of comparison between ECCDBs and EURISCO will be appreciated. The Intranet rebuilding has a lower priority for the Group.

Decision 10

A progress report on the implementation of the above workplan will be sent by the EURISCO Coordinator to the Doc&Info NCG in October 2010, including the achievements and a new proposed workplan with specific targets.

Election of new NCG Coordinator

Theo van Hintum was elected as new Coordinator of the Doc&Info Network Coordinating Group. The Group thanked F. Begemann, former Coordinator, for his constructive and proactive chairing of the Group in the past years.

Closing remarks

Th. van Hintum remarked that this Network, which is currently partially self-funded in its activities, should in future receive more support from ECPGR, similarly to the other Networks. He also noted that there have been communication problems in the past years which have made it difficult to guide the EURISCO development. There will need to be more transparency in the near future in order to make it possible for the NCG to exercise more effective guidance.

F. Begemann thought that the principle of a self-funding Network, where possible, is a valid one and it should be appreciated that European institutions attach importance to subsidizing the programme, as is currently the case for many meetings of the Doc&Info Network. Th. van Hintum agreed that it is optimal to organize meetings at low cost, but the approach should be balanced across the entire ECPGR. Focus should be on supporting the output-oriented meetings.

Th. van Hintum announced that the EUCARPIA genetic resources section meeting will be organized in Wageningen, The Netherlands, 5-7 April 2011, and the motto will be "to serve and conserve". Consequently, the ECPGR Doc&Info NCG meeting should be organized in February or in May 2011.

A comment was made on the need to revisit the MCPDs and it was hoped that Bioversity could take the lead in this process.

APPENDICES

Appendix I. Workplan for EURISCO activities, to be implemented by Bioversity International before the end of September 2010

- 1. Internet:** Improve the EURISCO portal functionalities, on the basis of user's feedback
 1. Introduce searching options such as: "View aggregate data per National Inventory"; "View aggregate data per institute";
 2. Add drop down menus or instructions to query for institute names;
 3. Improve the NI/NFP geographic map on the web site;
 4. Add functionalities to display accessions with coordinates on a map;
 5. Improve the option to download in MCPD format;
 6. Others as per user's feedback.

- 2. Rebuilding EURISCO Intranet**
 1. The new Intranet will allow the generation of automatic reports on taxonomy and georeferences, retrievable by the NFPs;
 2. It will also provide the additional option for NFPs to grant institutes access to directly uploading data to the NI Intranet;
 3. The script that is capturing and transferring data to the GENESYS database will be modified to also work with the new EURISCO Intranet;
 4. Introduction of the option to upload sets of data.

- 3. Networking and help desk**
 1. Assist the National Focal Points in resolving technical issues relating to the data sets;
 2. Follow up about taxonomy and geographic reports;
 3. Compare ECCDBs and EURISCO data for gaps.

- 4. Collaboration with GENESYS**
 1. Dictionary comparison among GENESYS and EURISCO fields, in order to prepare GENESYS to receive all the EURISCO data.
 2. A script will be created to transfer data to GENESYS.
 3. Test the functionalities /queries of EURISCO data once they are included in the common data structure, in order for the EURISCO portal eventually to retrieve data directly from the same data structure as the GENESYS portal.
 4. Developing "Plug-in" to allow display of geographic positions of EURISCO accessions on a map.
 5. Send to the Doc&Info NCG a progress report on the above-mentioned activities and their detailed milestones. Also include a workplan for the following six months (by October 2010).

Appendix II. Acronyms and abbreviations

AEGIS	A European Genebank Integrated System
ARCAD	Agropolis Resource Centre for Crop Preservation, Adaptation and Diversity
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
BLE	Bundesanstalt für Landwirtschaft und Ernährung (German Federal Agency for Agriculture and Food), Bonn, Germany
C&E	characterization and evaluation
CGIAR	Consultative Group on International Agricultural Research
CGN	Centre for Genetic Resources, the Netherlands, Wageningen
CIRAD	Centre de coopération Internationale en Recherche Agronomique pour le Développement, France
CRI	Crop Research Institute, Czech Republic
CWR	Crop Wild Relative
CWRIS	Crop Wild Relative Information System
DwC	Darwin Core
EAPGREN	Eastern Africa Plant Genetic Resources Network
ECCDB	European Central Crop Database
ECPGR	European Cooperative Programme for Plant Genetic Resources
EMBL	European Molecular Biology Laboratory
ENSCONET	European Native Seed Conservation Network
EUCARPIA	European Association for Research on Plant Breeding
EURISCO	European Internet Search Catalogue
FAO	Food and Agriculture Organization of the United Nations
FIGS	Focused Identification of Germplasm Strategy
GB	Governing Body (<i>of the ITPGRFA</i>)
GBIF	Global Biodiversity Information Facility
GBRDS	Global Biodiversity Resources Discovery System
GIGA	Global Information on Germplasm Accessions
GRIN	Genetic Resources Information Network
HIT	Harvesting and Indexing Toolkit
ICARDA	International Center for Agricultural Research in the Dry Areas (CGIAR)
IPK	Leibniz Institute of Plant Genetics and Crop Plant Research, Gatersleben, Germany
IPT	Integrated Publishing Toolkit
IRRI	International Rice Research Institute (CGIAR)
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LR	Landrace
MLS	Multi-Lateral System
NCG	Network Coordinating Group
NFP	National Focal Point
OTK	Ordering Tool Kit
PGR	Plant genetic resources
PROTA	Plant Resources of Tropical Africa
SEEDNet	South East European Development Network on Plant Genetic Resources
SINGER	System-wide Information Network for Genetic Resources (<i>of the CGIAR</i>)
SMTA	Standard Material Transfer Agreement
USDA-ARS	United States Department of Agriculture-Agricultural Research Service
VIR	N.I. Vavilov Research Institute of Plant Industry, St. Petersburg, Russian Federation
WUR	Wageningen University and Research centre, Wageningen, The Netherlands

Appendix III. Agenda

ECPGR Documentation and Information Network Coordinating Group (NCG) Fourth Meeting, 17-18 February 2010, Maccarese (Rome), Italy

17 February, 13:00 – 18:00 (*coffee break 15:00-15:30*)

1. Opening and welcome (*Lorenzo and Frank*)

2. Activities 2008 – 2009

- 2.1. EPGRIS3 activities (*Theo*)
- 2.2. Prague workshop for NI / NFP (*Iva*)
- 2.3. Entebbe workshop with ASARECA / ITPGR (*Frank and Lorenzo*)
- 2.4. Report from TDWG meeting (*Helmut*)
- 2.5. C&E data in EURISCO (*Theo*)
- 2.6. Report on NordGen - GBIF activities (*Jonas*)

3. State of EURISCO (*Sonia*)

4. EUROGENEBANK project proposal (*Jan Engels as invited observer*)

18 February, 09:00 – 13:00 (*coffee break 11:00-11:30*)

5. Collaboration with ITPGR

- 5.1. Inter-regional workshop in collaboration with the Inter-regional Cooperation Network (*Lorenzo and Frank*)
- 5.2. Vision of Art 17 of the Treaty on the Global Information System (*Frank*)
- 5.3. Assessment of the registration of the MLS material (*Sonia*)

6. Collaboration with GIGA

- 6.1. Demonstration of the Global Portal "Genesys" (*Michael*)
- 6.2. Proposal for the integration of C&E data from EURISCO into "Genesys" (*Theo*)

7. The PGR SECURE project proposal (*José Iriondo*)

8. Election of new NCG Coordinator (*Lorenzo*)

9. Closing (*New NCG Coordinator*)

Appendix IV. List of Participants

ECPGR Documentation and Information Network Coordinating Group (NCG) Fourth Meeting, 17-18 February 2010, Maccarese (Rome), Italy

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