

PGR Secure Deliverable 5.1

Report on identification and discussions with stakeholders

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Introduction

After the start of the PGR Secure project in March 2011, key persons were approached in selected countries and requested to support the WP5 of the PGR Secure project. A list of questions was compiled for interviews with the various stakeholders involved in PGR exchange within Europe. Amongst others, information and knowledge on these interviews is intended to be used for formulating appropriate questions for the various stakeholders in a later stage of the project (mid 2012) concerning an online questionnaire. The analysis of the interviews and the answers collected via the online questionnaire will be used as a basic input for a workshop in 2013/14 on the utilization of PGR in Europe. In this report a summary of these interviews will be given.

The stakeholders initially included were genebanks, research organizations, breeding companies and agro-NGOs. After a first round of interviews the government was also included, being an important stakeholder. Around 20-25 questions per stakeholder were formulated to analyse the PGR network in different countries and to obtain answers on the utilization of PGR in various European countries. The interview method used was the 'semi-structured' or 'guideline-based' interview method.

For practical reasons related to the location of the partners involved in this work package, Europe was divided in three regions—north, middle and south—and countries were selected per region, which were thought to be representative. For Northern Europe, Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden were selected; for Middle Europe, Austria, Bulgaria, Czech Republic, Germany, the Netherlands, Poland, Romania and Slovenia, and for Southern Europe, Greece, Italy, France and Spain.

Paid key persons were appointed per country who prepared lists of stakeholders. From these lists a number of representative organizations were selected to be interviewed. These interviews took place in 2011 from June onwards. Per interview, around 1-2 hours were needed and per country around 1-1.5 weeks was needed to complete all interviews. The interviews were in a number of cases taped via a digital voice recorder. The completed question and answer form was sent to the interviewee for a check and most if not all the textual suggestions by the interviewed person were accepted. These harmonized interviews per country were used as a basis for writing a country report in which a preliminary SWOT analysis was included with a number of action points. With regard to the selected North European countries a regional report (including SWOT and actions points) was written as too few persons per country could be interviewed.

Southern Europe

Greece

A. Katsiotis PhD (University of Athens), as key person, prepared a list of stakeholders including two genebanks, three agro-NGOs, three breeding companies and seven research organizations. Interviews were performed from September 9 to 16 2011. The following organizations were interviewed:

1. Genebanks: - GGB (Thessaloniki) and Maich (Chania)
2. Public Research: - NAGREF Fodder Crops & Pastures Institute (Larissa),
- NAGREF Cereal Institute (Thessaloniki),
- University of Thessaly (Volos),
3. Commercial Breeding: - Spirou (Athens),
4. Agro-NGOs: - Peliti (Mesochori) and Aegilops (Volos)

Based on the interviews held, the picture emerged of an inadequately functioning PGR system in the country. Utilization of PGR from genebanks through public research projects was often limited as the PGR held in storage were not really accessible for users. Also the genebank operation of the national genebank was negatively influenced by a limited budget and inadequate control of the government. Many collections of the NAGREF research institutes were threatened as the storage conditions of these collections were far below standards. The only vegetable breeding company in the country worked together with Greek and foreign PGR providers to develop new cultivars. The agro-NGOs did function well as they had built up networks of maintainers of LR around them. Interviewing the government proved to be impossible due to reasons unknown.

Spain

J. Fajardo MSc (CRF, Madrid), as key person, developed a stakeholder list with 34 genebanks, 41 research institutes, 24 NGOs, 36 breeders/seed producers, and 17 (regional) or 1 (national) government(s). The stakeholders were interviewed by J. Fajardo and C. Kik. The following organizations were interviewed:

1. Genebank: - CRF (Madrid) and COMAV (Valencia),
2. Commercial Breeding: - Syngenta Seeds (Almeria),
- Semillas Fitó (Barcelona) and R.Arnedo (Calahorra),
3. Government: - Ministry of Environment, Rural & Marine Affairs (Madrid),
4. Agro-NGOs: - Llavors d'Aci, Carcaixent (Valencia),
- RAERM (Murcia),
5. Research organizations: - Neiker (Vitoria-Gasteiz) and IRTA (Lleida)

The genebank system functions satisfactorily as the content of the collections held by genebanks is visible via the internet and accessions are stored in a reasonable/good way. Points of concern are the limited fine-tuning between the regional genebanks and the limited utilization of the collections by users. The interaction between the government and central genebank on PGR issues is open and direct. The collections at the public research institutes are being used to carry out research with. However, the development of new cultivars using Spanish PGR in an interaction between research organizations and private breeding companies is limited. The agro-NGO Red de Semillas, which consists of a network of regional organizations, is a significant national stakeholder and has an effect on Spanish PGR policy. Within this network local landraces are being cultivated in mostly organic conditions.

Italy

L.F. D'Antuono PhD (University of Bologna), as key person, started to develop a list of stakeholders which eventually consisted of three genebanks, 24 research organizations, 35

breeding companies / seed producers, and two agro-NGOs. The following organizations were interviewed:

1. Genebank: - CNR Bari (Bari),
 - CRA Fruit Tree Research Centre (Rome)
2. Public Research: - University of Bologna (Bologna),
 - CRA vegetables (Monsampolo del Tronto)
3. Commercial Breeding: - Bejo Italy (Pisignano),
 - Cora Seeds (Cesena),
 - SAIS (Cesena),
 - SIS (San Lazzaro di Savena),
 - Porfiri (Urbisaglia),
 - Assosementi (Bologna)
4. Agro-NGOs: - Rete Semi Rurali (Florence),
 - Regional network of Tuscany (Florence)

The government was not interviewed due to agenda incompatibilities. The interviews by L.F. D'Antuono and C. Kik took place from November 20–26, 2011. The situation in Italy concerning the storage of PGR was poor / reasonable as most probably many genebanks maintain their PGR under sub-optimal conditions. Also, the accessibility of the collections is poor as it is not precisely known which accessions are present in collections. Currently, large updating activities of collections in public research institutes (CRA and CNR organizations) are taking place. Consequently, breeding companies cannot benefit optimally from these collections. The agro-NGO community is reasonably developed in Italy and sometimes supported by the regional government. The national and regional government has not really created awareness of access and benefit-sharing (ABS) regulations at the CRA and CNR institutes, as lack of knowledge concerning these regulations was present.

France

In February 2012 E. Geoffriau (ACO-IRHS, Angers) agreed to function as a key person for France. Stakeholder lists were obtained from V. Chable (INRA-Rennes; agro-NGOs), M.C. Dauney (INRA-Avignon; genebanks and government), whereas Geoffriau and Kik prepared lists of public research organizations and breeding companies respectively. In total 31 public research organizations / genebanks were identified, 10 agro-NGOs, 43 breeding companies and 1 contact at the government. On the basis of these lists the following stakeholders were selected for interviewing and from May 28 – June 2 2012 these organizations were interviewed by Geoffriau and Kik.

1. Public Research/Genebank: INRA-Avignon, INRA-Clermont Ferrand, INRA-Angers, INRA-Rennes
2. Commercial Breeding: Limagrain (Chappes), HM Clause (la Bohalle), Gautier Semences (Eyragues)
3. Agro-NGOs: Réseau semences paysannes (Aiguillon), Germinance (Bauge)
4. Government: Ministry for Food, Agriculture and Fisheries (Paris), Conservatoire botanique (Paris), FRB (Paris)

The PGR collections in France are not independently managed but are part of research programmes. This makes the long term maintenance of these collections vulnerable. Furthermore adequate coordination is lacking which has resulted in the use of different genebanking procedures at the eleven centres where the PGR collections are maintained, which are in some cases not adequate. The implementation of the CBD and IT in national policies has not really taken place. NFP and CNA authorities do not really function. The French parliament has recently adopted a law (law 660) which specifically addresses PGR

issues and recognizes the conservation of PGR in France. The agro-NGO sector is well developed and active on influencing (inter)national policies. Currently a main issue is the EU regulations on conservation varieties which are thought to be too restricted for the cultivation and marketing of this type of variety. Breeding companies mention that for most crops they have adequate resources to breed from. Access to PGR is in many countries difficult, MTAs among collection holders should be harmonized and international agreements on ABS need to be improved.

Middle Europe

Austria

Based on the information on published national reports and the expertise of P. Freudenthaler acting as key person, a draft interview plan was jointly developed by P. Freudenthaler / G. Neuhaus and respective stakeholders of the four groups (genebanks, public research institutes, NGOs and breeding companies) were interviewed during a country visit in August 2011. One stakeholder, the NGO Arche Noah, was interviewed by telephone. The following organizations were interviewed:

1. Genebank: - Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH (AGES), Linz,
 - Höhere Bundeslehranstalt und das Bundesamt für Wein- und Obstbau, Klosterneuburg (fruit genetic resources, grapevine),
2. Public Research: - Agrar-Forschungseinrichtung Raumberg-Gumpenstein, Irdning,
3. Commercial Breeding: - Reinsaat, Schiltern,
4. Agro-NGO: - Arche Noah, Schiltern

Austria is a country with a considerable LR and CWR diversity. In particular, LR of crops like cereals, beans and fruit genetic resources are well adapted to highly diverse regional ecogeographic conditions. The genebank at the AGES is well organized, functioning and has good interaction with all stakeholder groups. In 2005, the National Biodiversity Commission (NBC) adopted an updated National Biodiversity Strategy but a National Action Plan for conservation and sustainable use of genetic resources is lacking. Although the institutional structures for genebank facilities required for PGR are well developed, the PGR systems would benefit from a national action plan for PGR. Characterization and evaluation of accessions by genebank and public research institutions is mostly limited by a lack of sufficient funds. Commercial breeders working in the private sector integrate LR into the initial breeding process of crops. While LR and ecotypes are integrated into the initial breeding steps, the use of CWR in breeding is very restricted. The agro-NGO Arche Noah, acting as seed saver, has significant impact within Austria and even in Germany.

Czech Republic

In July, 2011 L. Dotlacil, Director of the genebank department at the Crop Research Institute (CRI) at Ruzyně/Prague agreed on participating in this survey. Based on a comprehensive list of potential interviewees and institutions—including genebanks (3), public research institutes (10), breeding companies (10) and NGOs (2)—an interview plan was jointly developed. Six interviews were conducted during a one week stay in August 2011 following the visits and discussions held in Austria. The following organizations were interviewed:

1. Genebank: - Crop Research Institute (CRI), Ruzyně/Prague,
 - CRI Viticulture Research Station Karlštejn, Karlštejn,
 - CRI Department Vegetable and Special Crops, Olomouc,

2. Public Research: - AGRITEC, Research, Breeding & Services, Šumperc,
3. Commercial Breeding: - SELGEN, Stupiče,
4. Agro-NGO: - PRO-Bio, Šumperc

The national genebank in the Czech Republic based at three locations (1) Ruzyně/Prague, (2) Olomouc and (3) Karlštejn, maintains comprehensive *ex situ* collections and is crop-specifically organized. Collections have been sufficiently evaluated and all data are accessible via EURISCO. The comprehensive genebank work is well organized and functioning. The same holds true for the cooperation between public breeding research and the commercial breeding sector. Today, several commercial breeding companies (mostly former state institutions) are involved in crop-specific pre-breeding approaches. The close relationship between public research and the private breeding sector facilitates the performance of public-private-partnership projects in the field of PGR conservation, characterization and use. Researchers in the public sector use LR but the utilization of CWR is mostly limited to certain crop groups. Fruit crops are of national origin, unique and therefore of special interest. Agro-NGOs acting as consultants cover a broad range of topics in agriculture have built a well-developed communication platform and maintain contacts with farmers all over the country.

Poland

In March 2011, J. and E. Czembor accepted to act as consultants. Stakeholders were interviewed during a visit in late August 2011; one interview (IHAR-PIB) was postponed and performed by email later. The following organizations were interviewed:

1. Genebank:
 - IHAR-PIB, Radzikow,
 - Laboratory of Potato Gene Resources and Tissue Culture, Bonin,
2. Public Research:
 - IHAR-PIB, Research Division,
 - Botanical Garden, Bydgoszcz,
3. Commercial Breeding:
 - Smolice Breeding Company,
 - Zamarte Breeding Company,
4. Agro-NGO:
 - Association for Old Cultivars, Pokrzydowo/Torun,
 - Ekoland, Ecological Food Manufactures Pokrzydowo/Torun

The genebank of the IHAR is the national coordinating institution for the PGR programme comprising three universities, seven research institutes, four (former state) breeding companies and the botanical garden Bydgoszcz. The genebank work is well organized and functioning. Passport data have been uploaded to EURISCO from where users can access accessions. Within the limits of the available funds characterization and evaluation is performed and the data recorded in a database. Besides cereals, fruit crops of national origin are taken into account. Public breeding researchers used LR in breeding programmes in former times and were also very much engaged in research on CWR. The cooperation with the public breeding research and commercial breeding sector is well developed. Nowadays, in a few crop specific projects, pre-breeding with LR and CWR is performed by breeding companies in close cooperation with IHAR. The visited agro-NGO maintains an impressive number of contacts with farmers working in traditional farming systems. A good interaction between all stakeholder groups was noted by the interviewer.

Bulgaria

L. I. Krasteva contributed to the project as a key person and consultant. Interviews with the selected organizations were conducted during September 2011. The following organizations were interviewed:

1. Genebank: - Institute of Plant Genetic Resources, Sadovo, Plovdiv,

- 2. Public Research:
 - Research Institute of Mountain Stockbreeding and Agriculture, Troyan,
 - Department of Breeding, Maintenance and Introduction of Vegetable Crops, Plovdiv,
 - Research Institute "Maritsa", Sadovo,
- 3. Public Breeding:
 - Institute of Forage Crops, Pleven,
 - Soybean Experimental Station, Pavlikeni,
- 4. Agro-NGO:
 - Agriculture Association, Plovdiv

The genebank department of the Institute of Plant Genetic Resources "Konstantin Malkov" at Sadovo hosts the *ex situ* collection of agriculture and horticulture plants and acts as the coordination point for all activities concerning PGR. The genebank work is well organized. The genebank maintains a highly diverse and systematically characterized collection. However, the upgrading of the information system is still pending due to limited financial means. Another point of concern is the evaluation of accessions, which is mainly limited by a lack of appropriate equipment and financial means. Public research institutes in Pleven and Sadovo specialize in breeding research on fodder plants and on characterization and utilization of vegetable germplasm. Both institutes use LR and CWR in breeding projects. The Research Institute at Troyan follows a research programme on extensive grassland. As the public research sector is closely affiliated with the breeding sector, the flow of ideas and materials is facilitated. It was not possible to get any information from a commercial plant breeding company. As a representative of the agro-NGO stakeholder group, the Secretary of the Agriculture Association was interviewed—an organization mainly working on an honorary basis that functions as an umbrella association supporting farmers in establishing local markets. A commercial breeding sector is apparently lacking, which may be taken as a short-coming.

Romania

S. Strajeru who was identified as key person proposed C. Brezeanu to act as consultant. Brezeanu assisted in translation of interviews. The following organizations were interviewed:

- 1. Genebank:
 - National Genbank, Suceava,
- 2. Public Research:
 - Vegetable Research and Development Station, Bacau,
 - National Institute for Agriculture Research and Development, Fundulea,
- 3. Commercial breeding:
 - SC Procera Agrochemicals, Romania SRL, Fundulea,
 - Farmacia Naturii, Bacau,
- 4. NGO:
 - Biomold Association, Bacau

The national genebank in Suceava mainly focuses on cereal crops and beans. The genebank system and its facilities are well developed and organized. In the future, intensifying of the molecular characterization of genetic resources including LR and CWR is envisaged. As regards public research, projects are focused mainly on the improvement of local varieties of vegetables and aromatic and medicinal plants. The public research and commercial breeding sectors are closely cooperating. Auspicious first attempts to bring CWR and LR into use are being pursued in a start-up within the commercial pharmaceutical breeding sector and in oil crops. Breeding of pharmaceutical plants will promote the use of CWR and LR. The agro-NGO Biomold mainly works on a project basis in close cooperation with the genebank, public research (VRDSB) and built up networks with other NGOs, to preserve local LR and support farmers in establishing new markets.

Slovenia

In July 2011, V. Meglič assisted as key person and consultant. The following organizations were interviewed:

1. Genebank: - Agriculture Institute of Slovenia, Ljubljana (KIS)
 - Institute of Hops and Brewery, Žalec,
 - Agriculture Faculty, University of Maribor,
2. Public Research: - Agriculture Institute of Slovenia, Ljubljana,
 - Biotechnical Faculty of the University of Ljubljana,
3. Commercial Breeding: - Semenara Ltd., Ljubljana,
4. NGO: - Assoc. for elementary schools, agricultural activities,
 - Urban Furrows, Maribor

The Agriculture Institute of Slovenia is responsible for the national genebank collection and related research. The genebank work is well organized. Public research is mainly performed at universities (Ljubljana/Maribor) and addresses two topics: education and development of new cultivars. Few breeding companies with breeding programmes in horticulture and in agriculture crops are based in the country. Slovenia's breeding sector is in a stage of renovation and very young breeding programmes are ongoing. Commercial breeding is performed in close cooperation with research and acts on market request. Native LR are used to develop varieties for the national and Balkan markets. Both, public research and the commercial breeding sector are cooperating well. Besides several small organizations, about five agro-NGOs are present. The NGO Urban Furrows collaborates with the national genebank (KIS) and with farmers. The use of CWR in breeding programmes is very limited, whereas LRs are used by commercial breeders and NGOs.

Germany

L. Frese performed telephone interviews in February 2012 and the following organizations were interviewed:

1. Genebank: - IPK, Gatersleben JKI, Siebeldingen,
2. Public Research: - University of Göttingen, Department of Crop Science,
 - JKI, Quedlinburg,
3. Commercial Breeding: - von Lochow KWS, Wietze, Hild Samen GmbH, Marbach,
4. Agro-NGO: - VERN, Greiffenberg,
 - VEN, Schandelah

The IPK genebank is certified according to DIN EN ISO 9001:2008, audited by DQS. An online genebank information system allows passport data to be retrieved and samples to be ordered. The well-organized genebank facilitates access to the germplasm holding which has considerably promoted the use of genetic resources in Germany and abroad. Depending on the crop, between 0 and 3% of the crop-specific collection that is distributed falls into the category of 'landrace/CWR'. The IPK holding is systematically characterized and evaluated, either in cooperation with external partners or in house. The JKI grapevine genebank collection is well maintained, systematically characterized and evaluated. Access to passport data and grapevine germplasm is provided online. Public research institutions conduct a wide range of projects in which LR and CWR play a key role. The research projects are partly performed in the frame of private-public-partnership programs. Data on genebank accessions generated in joint projects is recorded and sent back to the genebank(s) while breeding companies use the research material to improve the elite breeding pool. The activities of agro-NGOs range from very successful public relation work to the establishment of market niches for LR. Although improvements are always possible, it can be stated that Germany runs a fully integrated PGR conservation and utilization system which is based on a National Action Plan for PGRFA. All interviewed stakeholders noted the absence of a well-

organized and online accessible data repository for characterization and evaluation data which is a major reason why genebank collections cannot be fully exploited.

The Netherlands

C. Kik organized the collection of information on the PGR stakeholder community in the Netherlands. Most of the information was extracted from a recent report on ABS in the Netherlands written by Visser & van der Wouw (2011). Visser & van der Wouw interviewed the following stakeholders:

1. Genebank:
 - CGN (Wageningen), Radboud University (Nijmegen),
 - Delft botanic garden (Delft),
 - Leiden botanic garden (Leiden),
 - Utrecht botanic garden (Utrecht),
 - Pomologische Vereniging,
 - Noord Holland (Opmeer),
2. Public Research:
 - PRI-WUR (Wageningen),
 - VU (Amsterdam) and University of Leiden (Leiden),
3. Commercial Breeding:
 - Wiersum (Dronten),
 - Agrico (Emmeloord),
 - Bayer - Nunhems Zaden (Haalen),
 - Nickerson-Zwaan-Limagrain (Tuitjenhorn),
 - ENZA (Enkhuizen),
 - Rijk Zwaan (Fijnaart),
 - Barenbrug (Wolfheze),
 - de Ruiter - Monsanto (Bergschenhoek),
 - Syngenta (Enkhuizen),
 - van Rijn – KWS (Emmeloord),
 - BGS (Warmenhuizen),
4. Agro-NGO:
 - Op goede gronden (Veere)
5. Government:
 - CGN (Wageningen)

Although already interviewed by Visser & van der Wouw, Kik held also a number of interviews with breeding companies in July 2012 to obtain more background information, namely Bayer (Nunhems Zaden), Limagrain (Nickerson-Zwaan), Bejo – de Groot & Slot, Rijk Zwaan and ENZA Zaden.

The Dutch government ratified the CBD and the IT and incorporated both of them in the Dutch law. The most important PGR policy document 'Sources of existence' was in 2002 adopted by the Dutch parliament and regulates the exchange and use of material. The NFP authority functions and the CNA authority is not active as the Netherlands has a no-PIC policy. The Dutch national genebank (CGN) holds in total around 24000 accessions of mainly arable and vegetable crops. The collections of CGN are placed within the MLS of the IT and accessions can be ordered using the sMTA of the IT. Distribution of accessions takes place to a large extent. This is due to the visibility of collections on (inter)national websites, the easy ordering of the material via a shopping cart and the documentation of the collections. CGN works closely together with breeding companies with respect to collecting, regeneration and evaluation. The genebank is ISO 9001-2000 certified. Furthermore the genebank facilitates a network of organizations involved in the conservation and use bio-cultural heritage (www.deoerakker.nl). Also CGN is active on the (inter)national policy level. A large portion of the breeding companies are focusing on vegetable breeding and are global players. Access to PGR on a national level is no problem but on an international level it is. Also the presence of several MTAs is seen as a complication. Furthermore the Nagoya protocol for regulating ABS is seen as a small step on a still long road. The public research institutes work closely together with the private sector due to the 'Topsectoren' policy, in which the AgroFood is one of the nine focal sectors. The Dutch agro-NGO sector is not well

developed. There are a number of organizations active in the Netherlands but they do not as a political movement.

Northern Europe

Country key persons were identified for Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden. These key persons prepared lists of stakeholders in their countries and a total of 128 stakeholders were identified for northern Europe. Of these stakeholders, 24 were interviewed—five representing genebanks, eight public research, nine commercial breeding and two agro-NGOs (Table 1).

Table 1. Organizations interviewed in Northern Europe

Stakeholder group	Countries	Organizations
1. Genebank	Estonia	– The Genebank at Jõgeva Plant Breeding Institute, Jõgeva
	Latvia	– Genetic Resources Centre at the Latvian State Forestry Research Institute 'Silava, Salaspils – Pure Horticultural Research Centre, Pure
	Lithuania	– The Plant Gene Bank, Kedainiai distr.
	The Nordic countries	– The Nordic Genetic Resource Centre, Alnarp
2. Public research	Denmark	– Department of Agriculture and Ecology, Faculty of Life Sciences, University of Copenhagen – Molecular breeding group, Department of Agriculture and Ecology, Faculty of Life Sciences, University of Copenhagen – Agrologica, Mariager
	Estonia	– Institute of Gene Technology, Tallinn University of Technology, Tallin
	Iceland	– The Agricultural University of Iceland, Borgarnes
	Norway	– Department of Plant and Environmental Sciences, Norwegian University of Life Sciences, Ås
	Finland	– Department of Agricultural Sciences, University of Helsinki
	Lithuania	– Institute of Agriculture, Lithuanian Research Centre for Agriculture and Forestry, Kėdainiai distr.
	3. Commercial breeding:	Denmark
Estonia		– Jõgeva Plant Breeding Institute, Jõgeva
Latvia		– State Stende Cereal Breeding Institute, Dizstende – State Priekuli Plant Breeding Institute, Priekuli
Norway		– Graminor AS, Bjørke forsøksgård, Ridabu
Sweden		– Lantmännen Lantbruk in Svalöv (Bo Gertsson) – Lantmännen Lantbruk in Lännäs (Linda Öhlund)
Finland		– Boreal Plant Breeding Ltd., Jokioinen
4. Agro-NGO:	Denmark	– Frøsamlerne, Tjele
	Estonia	– MTÜ Maadjas

Cooperation among the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) is well developed and they have a single joint gene bank for all five countries called the Nordic Genetic Resource Centre (NordGen). In Estonia and Lithuania, there is a single genebank dealing with plant genetic resources in each country (at Jõgeva and Kedainiai distr.) and in Latvia there is also one main gene bank (in Salaspils). The Estonian, Latvian, Lithuanian and Nordic genebanks are cooperating and information on their collections is publically available from the same website, SESTO at NordGen (www.nordgen.org/sesto/) and, at least partly, also from EURISCO (<http://eurisco.ecpgr.org/>). Accessions can be ordered from all the gene banks and characterization and evaluation of CWR and LR is taking place. However, for the Estonian, Latvian and Lithuanian genebanks this information is not available in the public online databases, and two of them state that this would be an important next step to improve accessibility of the data.

Both LR and CWR are used in public research and even though many of the research groups focus on basic research and education, all interviewees think that genetics / breeding is an important topic within their group. Systematic characterization and evaluation is conducted and in most countries this data are then transferred into databases. Except for Norway, there are no national programmes that promote LR or CWR research. The interviewees identified a lack of available funding as the major constraint for this kind of research, as well as a lack of political priority at national and international levels.

Nearly all of the interviewed commercial breeders have used LR or CWR in their breeding programme but most of them state that they have not used them recently, or very little. In recent times the use has been more frequent in Estonia and Latvia than in the Nordic countries. The most commonly given explanation for not including LR or CWR in breeding is that it takes more time to produce a new variety than using highly bred material and that the demand for speed has increased. However, the commercial breeders cooperate within public-private-partnership programmes on the utilization of LR and CWR.

The two agro-NGOs interviewed are quite different. Frøsamlerne is Denmark's largest NGO and members are systematically collecting landraces, describing them and documenting information in a database. MTÜ Maadjas on the other hand, is a recently founded, small Estonian NGO, which as yet lacks funding and is run on a voluntary basis. Both NGOs cooperate with genebanks, public research organizations, breeders, or other NGOs in their own country.