

COUNTRY REPORT ON THE STATE OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

CZECH REPUBLIC





**Final Report on the Pilot Testing
of the
National Information Sharing Mechanism on
GPA Implementation in the Czech Republic**

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Note by FAO

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INTRODUCTION



1.1 Background

Czech Republic is an industrial country with intensive agriculture. The area of the Czech Republic is 78 886 km². It has total agricultural land of 36 683 km²; of which 27 470 km² is arable land and 8 750 km² are steady grasslands. The rest, about 463 km² acreage is composed of vineyards, hop-gardens and orchards. Forests cover 26, 430 km². Protected areas are spread on 12 510 km².

The latest detailed country report containing an overview of the status of plant genetic resources (PGR) in the Czech Republic was compiled in 1995, following FAO guidelines. At that time, data were collected from stakeholders within the country in the form of narrative reports and tables, mainly as hard copies which were centrally computerised. The country report was presented and discussed at the Regional Preparatory Meeting on PGR (September 1995, Nitra, Slovakia) and was used together with other 150 country reports as information source for the preparation of the first report on the *State of the World's Plant Genetic Resources for Food and Agriculture* and for the definition of the *Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture*, adopted by 150 countries at the FAO International Technical Conference on Plant Genetic Resources for Food and Agriculture (June 1996, Leipzig, Germany).

1.2 Overview of the pilot testing process

The activities of the pilot project for the establishment of a "National Information Sharing Mechanism on the GPA Implementation in the Czech Republic" started at the beginning of 2003 at the Research Institute of Crop Production Prague (RICP) in order to test a list of indicators and a reporting format on GPA implementation and set up a continuing participatory process able to gather and disseminate detailed information on the state of implementation of the GPA elaborate an improved and detailed overview through a wider participation of national stakeholders and partners.

The RICP has been working as the coordinating centre for the network of PGRFA institutions in the framework of the National Programme for Conservation and Utilisation of Plant Germplasm and Agro-biodiversity, which was established by the Ministry of Agriculture in 1994. The network involves research and breeding institutions, either governmental or private, and the University of Agriculture. The existing network of collaborating institutions has been used as a platform for the development of the information sharing mechanism on GPA in the Czech Republic.

The first preparatory phase was translation of the text of indicators and reporting format into Czech language. It was provided at the beginning of 2003. The last corrections of translation were carried out during the visit of RICP gene bank documentation officer in FAO Rome at the end of January. The first beta version 1.1 of the computer application was tested.

The first stakeholder meeting was organised in March 2003 at RICP in Prague. Besides the stakeholders previously identified, which are those directly involved with PGRFA activities in the country, also representatives from the Ministry of Agriculture and the Ministry of Environment were invited. Stakeholders were briefed about the Project, the National Information Sharing Mechanism (NISM) on GPA, the computer application and its functionality. The Beta version 1.2 of the computer application was presented on that occasion.

During the meeting, the National Information Sharing Mechanism on GPA Implementation was formally established and the National PGRFA coordinator was nominated as the coordinator of the NISM on GPA Implementation. During summer 2003, the coordinating institute provided data input into common tables (two tables mainly: cultivar and reference), generated keys and prepared installation CDs for stakeholders.

The 16 stakeholders participating in the Mechanism were gathered to participate in a second meeting in October 2003. They were given a CD with the computer application and were trained on how to install and use the application, complete the questionnaire and return their data to the National Focal Point. Deadline for data delivery was end of the year 2003. Individual technical assistance, covering also hardware/software problems, was provided upon request to particular stakeholders through visits or phone calls by staff from the RICP gene bank.

At the end of 2003 data were received at RICP Prague from participating stakeholders. Due to a delay in releasing version 2.1 of the computer application, which included a module for merging stakeholders' data, This activity was started at the end of January 2004, and completed in March 2004.

This report contains a summary of the pilot project activities and findings, and presents an overview of the status of PGRFA activities in the Czech Republic, based on the information compiled under the National Information Sharing Mechanism on GPA Implementation.

PARTICIPATING STAKEHOLDERS

The stakeholder group included the fourteen members (representatives of eleven institutions) of the existing PGRFA network that collaborate within National Programme on PGR Conservation and Utilization (see Table 1).

All stakeholders are equipped with suitable computers and have email accounts, and most of them Internet connection. Computer skills were different among stakeholders.

2.1 List of stakeholders

TABLE 1
Participating stakeholders

No.	Stakeholder
1	AGRITEC, Výzkum, šlechtění a služby s.r.o., Šumperk (AGRITEC, Research, Breeding and Services Ltd. Šumperk)
2	AMPELOS a.s, Znojmo-Vrbovec (AMPELOS Inc., Znojmo-Vrbovec)
3	Chmelařský institut, spol. s r.o. Žatec (Hop Institute Ltd., Zatec)
4	Genová banka, Výzkumný ústav rostlinné výroby, Praha (Gene Bank RICP Prague-Ruzyně)
5	Genová banka, Výzkumný ústav rostlinné výroby, pracoviště Olomouc (Gene Bank RICP Olomouc)
6	OSEVA PRO s.r.o., Výzkumná stanice travinářská, Zubří (OSEVA PRO Ltd. Grassland Station, Zubří)
7	OSEVA PRO s.r.o., Výzkumný ústav olejnin, Opava (OSEVA PRO Ltd., Research Institute for Oil Crops, Opava)
8	ProBio spol s r.o., Staré Město pod Sněžníkem (ProBio, trade company Ltd., Stare Město)
9	PRO-BIO, Svaz ekologických zemědělců, Šumperk (PRO-BIO, Association of Ecological Farmers, Šumperk)
10	Výzkumná stanice vinařská, VÚRV Praha, Karlštejn (Viticulture Station RICP, Karlštejn)
11	Výzkumný a šlechtitelský ústav ovocnářský, s.r.o., Holovousy (Research and Breeding Institute of Pomology Ltd., Holovousy)
12	Výzkumný ústav bramborářský Havlíčkův Brod s.r.o. (Potato Research Institute Ltd, Havlickuv Brod)
13	Výzkumný ústav pícninářský, s.r.o., Troubsko (Research Institute for Fodder Crops Ltd., Troubsko)
14	Výzkumný ústav S. Taroucy pro krajinu a okrasné zahradnictví, Průhonice (Research Institute S. Tarouca of Landscaping and Ornamental Gardening, Pruhonice)
15	Zahradnická fakulta, Mendelova zemědělská a lesnická univerzita, Lednice (Faculty of Horticulture, Mendel Agricultural and Forestry University, Lednice)
16	Zemědělský výzkumný ústav Kroměříž, s.r.o. (Agricultural Research Institute Ltd. Kromeriz)



2.2 Responsibilities of stakeholders

AGRITEC, Výzkum, šlechtění a služby s.r.o., Šumperk

(AGRITEC, Research, Breeding and Services Ltd. Šumperk) ID: S-167-15

- web page: <http://www.agritec.cz/>
- Private institution dealing with following PGRFA collections: legumes (field pea, field bean, soya, lentil, vetch, lupin) and fibre plants (flax and hemp). National Programme PGRFA participant.
- Total number of accessions: 4 737
- Other activities:
 - Research area: genetic resources of grain legumes and flax (including regeneration, characterisation, evaluation, documentation); genetics, breeding and biotechnology of legumes and flax; agro-technology of legumes and technical crop; integrated protection of legumes and flax.
 - Breeding area: breeding of pea, faba bean and special technical crops; maintenance breeding of own and licensed varieties; representation of foreign companies for variety testing; variety testing for the List of Recommended Varieties; production, adjustment, storage and sale of the seeds
 - Services: sale of pesticides; testing and chemical analysis of inorganic and organic compounds; electrophoretic identification of plant varieties; analysis of fibre content and quality in flax; seed testing for biological quality; production and sale of ornamentals, vegetables seedlings, *in vitro* propagation of ornamentals; seed production, flax and legumes varieties.

AMPELOS a.s, Znojmo-Vrbovec

(AMPELOS Inc., Znojmo-Vrbovec) ID: S-167-

- Private institution, dealing with germplasm collection of vine grape – thermophilic part of collection; germplasm vineyard (field gene bank), characterisation and evaluation of collection.
- National Programme PGRFA participant.
- Number of accessions: 286
- Other activities: vine production

Chmelařský institut, spol. s r.o. Žatec

(Hop Institute Ltd., Zatec) ID: S-167-14

- Private institution, holding hop germplasm collection at special germplasm hop-garden (field gene bank). National Programme PGRFA participant.
- Number of accessions: 316
- Regeneration, characterisation, evaluation, documentation, collecting expeditions.
- Other activities: Research brewery facility for hop quality testing. Breeding and research activities.

Genová banka, Výzkumný ústav rostlinné výroby, Praha

(Gene Bank RICP Prague-Ruzyne) ID: N-167-1 and ID: S-167-5

- web page: <http://www.vurv.cz>
- State owned institution belonging to the Ministry of Agriculture, National Programme coordinating institution.
- National gene bank, medium- and long-term storage of all generatively propagated species in collections. Capacity 93 000 containers. Cryo-bank established for vegetatively propagated species (hop, garlic, potato, apple).
- Coordinating institution of the National Programme for conservation and utilisation of plant germplasm and agro-biodiversity.
- Collections of wheat, winter barley, triticale, buckwheat, common millet, Amaranthus, and other alternative crops and catch crops, maize, beet, sunflower- regeneration, characterisation, evaluation, documentation, collecting expeditions.
- Total accession number: 14 798

Genová banka, Výzkumný ústav rostlinné výroby, pracoviště Olomouc

(Gene Bank RICP Olomouc) ID: S-167-6

- web page: <http://www.vurv.cz>
- State owned institution belonging to the Ministry of Agriculture, Gene bank branch.
- National Programme PGRFA participant.
- Collection of vegetables; spicy, aromatic and medicinal plants ; Field gene bank - vegetatively propagated species. International Collection - vegetatively propagated *Allium* sp.
- Total number of accessions: 10 581



OSEVA PRO s.r.o., Výzkumná stanice travinářská, Zubří

(OSEVA PRO Ltd. Grassland Station, Zubří) ID: S-167-7

- web page: <http://www.oseva.cz>
- Private institution, National Programme PGRFA participant.
- Collection of grasses including wild ecotypes and decorative grasses, phytocenoses of flowering meadows. Characterisation, evaluation, collecting expeditions, documentation.
- Number of accessions: 1 608
- Other activities: Seed production, research and breeding, trade.

OSEVA PRO s.r.o., Výzkumný ústav olejin, Opava

(OSEVA PRO Ltd., Research Institute for Oil Crops, Opava) ID: S-167-8

- web page: <http://www.oseva.cz>
- Private institution, National Programme PGRFA participant.
- Rape seed, mustard, poppy, other oilseed crops
- Number of accessions: 1 320
- Other activities: Seed production, research and breeding, trade

ProBio spol s r.o., Staré Město pod Sněžníkem

(ProBio, trade company Ltd., Stare Město) ID: S-167-102

- web page: <http://probio.cz>
- Private trade company
- The purchase of products from the organic farmers
- Organic food-processing (assortment contains about 260 kind of organic product, mostly cereal miller's products; special buckwheat programme)
- Distribution of organic food

PRO-BIO, Svaz ekologických zemědělců, Šumperk

(PRO-BIO, Association of Ecological Farmers, Šumperk) ID: S-167-103

- web page: <http://www.pro-bio.cz/>
- Private company, association of organic farmers, (NGO) non-governmental, non-profit organisation that supports and promotes ecological methods of farming; development of ecological farming and ecological education.

Výzkumná stanice vinařská, VÚRV Praha, Karlštejn

(Viticulture Station RICP, Karlštejn) ID: S-167-11

- web page: <http://www.vurv.cz>
- State owned institution belonging to the Ministry of Agriculture, Gene bank branch.
- National Programme PGRFA participant.
- Part of vine grape collection germplasm vineyard (field gene bank), characterisation and evaluation of collection, documentation; responsible institution for distributed Czech vine grape collection.
- Number of accessions: 272

Výzkumný a šlechtitelský ústav ovocnářský, s.r.o., Holovousy

(Research and Breeding Institute of Pomology Ltd., Holovousy) ID: S-167-12

- web page: http://www.vsuo.cz/index_e.htm
- Private institution, National Programme PGRFA participant.
- Collection of fruits (apple, pear, plum, cherry, hazelnut, walnut, strawberry and other berries).
- Field gene bank, characterisation and evaluation of collection, collecting missions, documentation.
- Number of accessions: 2 222
- Other activities: Seedling and graft production, nursery, consultancy.

Výzkumný ústav bramborářský Havlíčkův Brod s.r.o.

(Potato Research Institute Ltd, Havlickuv Brod) ID: S-167-9

- web page: <http://www.vubhb.cz>
- Private institution, National Programme PGRFA participant
- Potato collection (including wild and related species), *in vitro* preservation, field collection. Characterisation and evaluation of collection, documentation.
- Number of accessions: 2 018
- Other activities: services- resistance tests of potato genotypes

Výzkumný ústav pícninářský, s.r.o., Troubsko

(Research Institute for Fodder Crops Ltd., Troubsko) ID: S-167-13 8

- web page: <http://www.vupt.cz/>
- Private institution, National Programme PGRFA participant
- Collections: alfalfa, clovers, other fodder plants (including perspective wild forms)
- characterisation and evaluation of collection, collecting missions, documentation.
- Number of accessions: 2 502
- Other activities: research, breeding.

Výzkumný ústav S. Taroucy pro krajinu a okrasné zahradnictví, Průhonice

(Research Institute S. Tarouca of Landscaping and Ornamental Gardening, Pruhonice)

- web page: <http://www.vukoz.cz> ID: S-167-10
- State owned institution belonging to the Ministry of Environment , National Programme PGRFA participant
- Collections of decorative species – (Rhododendron, Tulipa, Dahlia, Gladiolus, etc.) –flowers
- Field gene bank, *in vitro* preservation, characterisation and evaluation of collections, documentation.
- Number of accessions: 1 642

Zahradnická fakulta, Mendelova zemědělská a lesnická univerzita, Lednice

(Faculty of Horticulture, Mendel Agricultural and Forestry University, Lednice)

- web page: <http://www.zf.mendelu.cz/> ID: S-167-4
- State owned institution belonging to the Ministry of Education, National Programme PGRFA participant
- Collections of selected thermophilic vegetables, flowers and part of vine grape collection (hybrids); apricot, peach and almond; field gene bank , characterisation and evaluation of collections, documentation.
- Number of accessions:1 069
- Other activities: education

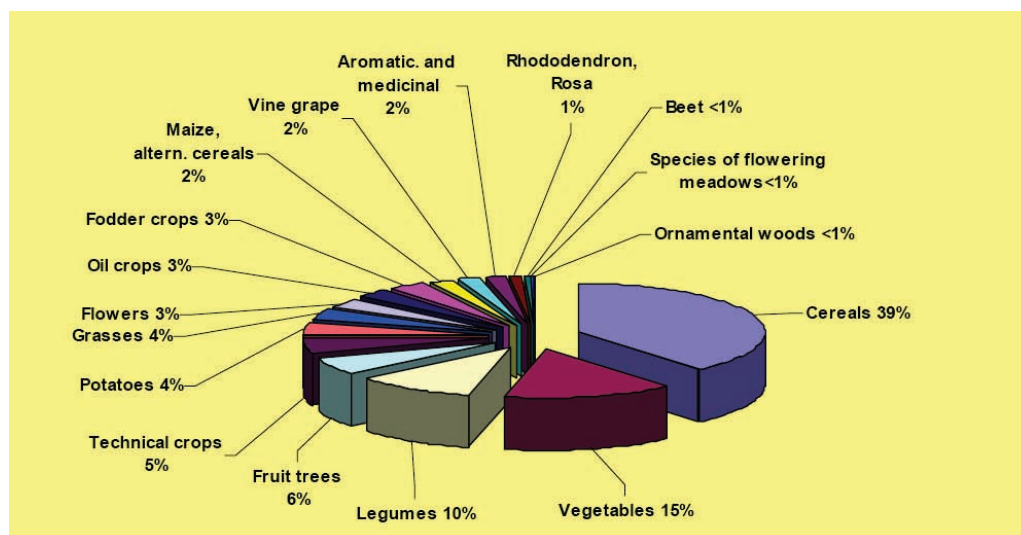
Zemědělský výzkumný ústav Kroměříž, s.r.o.

(Agricultural Research Institute Ltd. Kromeriz) ID: S-167-2

- web page: <http://www.vukrom.cz>
- Private institution, National Programme PGRFA participant
- Collections spring barley, oat, rye - characterisation and evaluation of collections, documentation.
- Number of accessions: 5 208
- Other activities: breeding and research, plant protection, advisory services

Feedback was received from all participants - with one exception, AMPELOS Inc., Znojmo-Vrbovec. The hardware facility at this institution was insufficient for the application running, therefore the resulting data set includes synthesis from 15 stakeholders only. Ampelos data will be included in the second GPA monitoring iteration, as they are planning to improve hardware equipment in the next future.

FIGURE 1

Proportion of accessions in PGRFA crop collections in the Czech Republic

OVERVIEW OF THE GPA IMPLEMENTATION



Priority Activity Area 1 - Surveying and Inventorying Plant Genetic Resources for Food and Agriculture

The Czech Republic practices intensive agriculture and *in situ* conservation could be provided in limited areas at the bordering regions, usually corresponding to the protected areas. *In situ* conservation is carried out in many cases in collaboration of bodies of Nature protection and the National Programme. Spectra of species in the category wild crop relatives is also relatively very narrow in the Czech Republic. Fruit trees and prospective fodder crops are the main candidates for conservation *in situ*. The mapping and documentation of fruit trees, grasses and fodder legumes has been carried out within special projects funded by the Ministry of Agriculture.

Summarisation of all results should be done.

Priority Activity Area 2 – Supporting On-Farm Management and Improvement of Plant Genetic Resources for Food and Agriculture

Activities of on-farm conservation have been growing recently in the country in particular for selected landraces of fruit trees (apples, pears, cherries, plums etc.) and neglected field crops (e.g. hulled wheat species, buckwheat). The inventory and monitoring of landraces (especially fruit trees) has been carried out and it will serve as the base for further development. On-farm conservation will be used in a limited extent only, because intensive production trend is prevailing.

Priority Activity Area 3 – Assisting Farmers in Disaster Situations to Restore Agricultural Systems

In the Czech Republic, there exists developed breeding and seed production in a main part of common agricultural crops and advanced variety testing procedure with a long tradition and relatively intensive network of experimental stations. The system including methodology of the elite seed propagation and certification of multiplication steps is a guarantee of germplasm maintenance in contemporary (commercially grown) genetic resources in case of disaster. All other genetic resources of domestic origin (old not registered cultivars, local varieties, genetic lines and wild related species) are kept in both base and active collections. Beside this there was established a mechanism of safety duplication between Czech and Slovak Gene banks (RICP Prague and RIPP Piestany). Above described system of three independently held seed samples allows relatively high level of safety. In comparison to generatively propagated, vegetatively propagated species are in risk, especially perennials in field collections. This situation is being solved by development of methods cryo-conservation for those species. The cryo-bank was officially established in November 2003 for fruit trees, potato, hop and vegetatively propagated *Allium* (garlic).

Priority Activity Area 4 - Promoting *In Situ* Conservation of Wild Crop Relatives and Wild Plants for Food Production

Several research projects were aimed in the last ten years to support *in situ* conservation of plant genetic resources. Those activities supported and enlarged sustainable efforts of the National Programme for germplasm conservation and utilisation.

TABLE 2

Most important collecting projects recorded under the NISM on GPA

Years	Project name	Agency/ Abbreviation
1993-1995	Collecting, gathering and conservation of wild related species and landraces in CR	GACR 506/93/0389
1995-2000	Mapping, collecting and conservation of disappearing landraces and crop wild relatives in CR and neighbouring European region	MZeCR EP960006430
2000-2003	Methods of conservation and monitoring diminishing germplasm of landraces and endangered wild crop species	MZeCR QC0063
1999-2001	Genetic diversity, collecting, exchange and evaluation landraces and wild genetic resources in CR and Slovenia	M MT – Kontakt 2001/004
2000-2001	Collecting and transfer of landraces and wild genetic resources in the Czech Republic and in Slovakia	M MT – Kontakt 47/2000

Effective collaboration with Slovakia, Poland, Slovenia and Austria was developed in order to enable collecting and monitoring of localities in the bordering region and this collaboration continues. Regions including plant genetic resources suitable for *in situ* conservation corresponded to the areas secured by the legislation for protection of wild species. In those cases *in situ* conservation is carried out in collaboration with other responsible authorities in the National Programme.

Priority Activity Area 5 – Sustaining *Ex Situ* Collections

Within the industrial region of the Czech Republic *Ex situ* methods for conservation system are developed and reaches international standards. All generatively propagated species are held in the gene bank storage at RICP Praha-Ruzyne. The gene bank was built in 1988 and since then a number of improvement have been made in the technology. Conservation of vegetatively propagated species is being carried out in field collections mainly. This method will be enlarged by the method of cryo-conservation in the next future. Potato collection has been maintained in collection *in vitro*.

Ex situ conservation is being guaranteed in a framework of the National Programme and there are no methodological or other obstacles. Collaboration among Czech and Slovak Gene Banks is very important contribution to safety of preserved materials, mainly in mutual conservation of safety duplications in both sites. Importance of international cooperation seems to be in the development of technologies, exchange of information and improvement of the safety level of collections.

Priority Activity Area 6 – Regenerating Threatened *Ex Situ* Accessions

Capacity for regenerating always needs to be considered when assembling collections and disseminating accessions. According to the last report of the National Programme at the end of 2003, 8 598 PGR accessions needed to be regenerated, they represent 16.6% of all collections.

Altogether 3 388 generatively propagated accessions have been regenerated during 2003 and from 2 919 accessions was received seed material. A total of 2 343 seed samples was delivered to the gene bank storage in the RICP Prague. Despite the work carried out, regeneration remains one of highest priorities of the National Programme for the future. At the RICP Genebank in Olomouc, there is an urgent need for regenerating 4 432 generatively propagated accessions, including part of material obtained from collecting missions. Similarly, regeneration must be carried out at the Fodder Crop Institute in Troubsko (1 746 accessions), at RICP Praha (648 accessions) and at AGRITEC Sumperek (582 accessions).

Potato *in vitro* collection at Potato Research Institute in Havlickuv Brod should be regenerated every year, recently it represents 1839 accessions). Relatively high regeneration need is also reported for fruit trees collections.

An important contribution to the safe conservation of vegetatively propagated species is enforcement of cryo-preservation methods. After the establishment of cryo-bank at RICP Praha in November 2003, routine cryo-conservation of selected vegetatively propagated species were started since the beginning of 2004.

Priority Activity Area 7 – Supporting Planned and Targeted Collecting of PGRFA

During the last decade, collecting activities have been carried out systematically in the Czech Republic. The earliest collecting activities were conducted for crops, whose breeding relies on wild species (grasses, fodder crops, aromatic and medicinal crops). Many grass cultivars bred in Roznov, have their origin in wild ecotypes collected in the thirties of the last century in the Beskydy Mts. area (Sevcikova, 1991). A similar case can be referred to cultivars of perennial fodder crops from Troubsko, which originated from wild ecotypes collected in the Brno region. Since 1990, collection activities started to be more intensive under the coordination of the Gene Bank Department of RICP. They have been supported through several research projects and the National Programme. Information about historic materials, landraces and obsolete cultivars from the beginning of the systematic breeding in our country until the current period, were gathered and recorded into a database. Altogether 4 283 records about crop accessions from various literature sources were collected.

The documentation system, EVIGEZ, includes 6 983 records on materials of Czech or Czechoslovak origin. Of this amount, 2960 records are Czech local materials included into collections after 1992. Collecting missions were carried out in the country every year during the last 12 years, with the exception of 1991 and 1992. Such missions were mainly concentrated into areas known as per their biodiversity richness and presence of field and garden crop landraces.

TABLE 3
Collecting missions on the territory of Czechoslovakia (up to 1992) and Czech Republic

Year	Region
1990	Biele/Male Karpaty Mts.
1993	Bile Karpaty Mts.
1994	Sumava Mts.
1995	Krkonose Mts.
1996	Orlicke hory
1997	Krusne and Doupovske Mts.
1999	Beskydy Mts.
2000	Jeseniky Mts.
2001	Moravsky kras and Low Tatra Mts.

TABLE 4
Collecting missions in the Czech Republic and neighbouring countries

Country	Localities no	Accession no.
Czech Republic	277	2 241
Slovakia	43	372
Poland	20	205
Austria	24	183
Total	364	3 001

The collecting book has been kept during collecting and mapping. Collected items were recorded together with basic information about locality and plant materials. Data were processed into the following databases:

- Database of common expedition missions
- Database of individual collecting activities
- Database of fruit tree mapping

All localities in the Czech Republic and bordering regions, where plant collecting missions and inventory of fruit trees have been carried out, were located by the satellite navigator Garmin.

Detail maps were elaborated accordingly (source: V. Holubec *et al.* 2002: Gathering germplasm of landraces and crop wild relatives).

Very important aspect of the most collecting expeditions was bordering collaboration with Slovakia, Poland and Austria. The relevance of regional and sub-regional collecting expeditions aimed to collect important local materials (landraces, wild crop relatives) should be stressed.

Either regional or international support in completing surveying and inventorying of PGRFA in an enlarged area of the upper Danubian region, including Austria, Germany-Bavaria, Czechia, Slovakia, Hungary and Slovenia, would be very important.



Priority Activity Area 8 – Expanding *Ex Situ* Conservation Activities

Ex situ conservation activities are well established and planned in case of generatively propagated species with orthodox seed character. The application of cryo-conservation methods looks very promising, but wider international collaboration is missing in this area. Czech Republic would be very interested in such collaboration (e.g. in a form of international project).

Priority Activity Area 9 – Expanding the Characterization, Evaluation and Number of Core Collections to Facilitate Use

Evaluation of plant genetic resources collections including characterisation, is carried out within the framework of the National Programme. Results of PGR characterization and evaluation activities, which are conducted using standard national descriptors, are carried out every year. Descriptor lists are available for 34 main crops. Available characterisation data, which include morphological, biological and economic traits, characteristics of storage proteins and isoenzymes, are enlarged by results of molecular genetics and DNA markers techniques.

The level of documentation of existing PGR collections has improved significantly in recent years. At the end of 2003, description data (in various extent) were available for 23 927 accessions, which covered nearly 49% of all genetic resources gathered in collections. This indicates considerable progress since the beginning of the National Programme. The documentation system EVIGEZ and its data content are at par with existing international systems.

In the country, several research institutions are presently well equipped and their staff are trained for conducting PGR characterization using DNA markers, therefore, they are able to effectively collaborate in these activities. Systematic studies of genetic diversity within collections and development of core collections are also carried out. In particular, a research project aiming at the development of core collection in two large crop collections - winter wheat and spring barley, is presently on-going. The project is expected to develop a common model for constructing core collections which can be applied also to other crops. International collaboration intensifying genetic diversity study would be highly desirable, particularly through international partnerships.

Priority Activity Area 10- Increasing Genetic Enhancement and Base-Broadening Efforts

International or regional cooperation would contribute greatly to the Czech National Programme namely in the following areas: - Cooperation and application of new technologies for genetic resources treatment (application of DNA markers, cryo-conservation research, methods of *in situ* and on-farm conservation, new findings in seed physiology and biochemistry for optimising of gene bank technologies, compatibility and integration of genetic resources information systems).

- Rationalisation of collections' treatment (namely core collections, collections of donors of important characters) and increasing of their user value for breeders and researchers.
- Research of inter- and intra-specific diversity in selected neglected crops, ecotypes, eventually landraces, and selection of resources for further verification of suitability for their utilisation. - Increasing public awareness on genetic resources and biodiversity importance for sustainable development and human life quality.

Priority Activity Area 11 - Promoting Sustainable Agriculture through Diversification of Crop Production and Broader Diversity in Crops

Crop diversity has substantial influence on sustainable development of agriculture. Local crop composition has changed markedly in history of agriculture particularly as a result of onset of new crops, change in crop breeding technologies and intensification of crop production. Some original crops were not suitable for such changed conditions and consequently they were not bred henceforth. Extensive implementation of large-scale production in time of collectivisation in agriculture led to reduction of growing of such crops for which suitable large-scale technologies were not available. It would be possible to reintroduce some of these original crops (or cultivars) and utilise their specific properties. It seems that public interest in such products recently has increased. However, in the Czech Republic there is still no effective system or instruments to change the situation. International support in the form of seminars, publicity and namely direct support would contribute to increase the utilisation of agro-biodiversity for sustainable development of Czech agriculture. In this regard, it is worth to mention that cooperation in organic farming is currently growing in the country.

Priority Activity Area 12 – Promoting Development and Commercialization of Under-Utilized Crops and Species

Non-traditional and neglected crops have recently become very popular, as they are frequently associated with healthy living. They are generally grown in conditions of organic farming and utilized as products for alternative medicine and as components of bio-products, whose niche markets appear attractive and with good potential growth. Establishment of contacts between farmers and producers of final products is very important for the broadening of neglected crops growing. Collaboration between growers (mainly organic farmers) and the Pro Bio trade company, which processes and markets such products, has recently increased in the Czech Republic.

Sustainable utilisation of neglected crops is supported in the Czech Republic mainly in indirect ways. One of the forms is state financial support of research projects that evaluate characteristics and properties of neglected crops from the point of view their utilisation in growing, product processing and marketing. A number of selected genotypes improved by breeders have been registered and are recommended for growing (e.g. spelt wheat 'Rubiota', forest rye 'Lesan').

Second form consists in subsidy and support of organic farmers because they are, with respect to the structure of Czech agriculture, frequent (or sometimes exceptional) growers of neglected species.

Priority Activity Area 13 – Supporting Seed Production and Distribution

TABLE 5

Crop composition on the Czech arable land in 2003 (total arable land 27 470 km²)

Crop/crop group	Arable area proportion (%)
Wheat	25.2
Barley	21.4
Oat	3.0
Triticale	1.8
Rye	1.6
Other cereals	3.5
Legumes	1.2
Potato	1.4
Sugar beet	3.0
Oil rape	9.8
Mustard	2.6
Sunflower	1.9
Poppy	1.5
Other oil crops	0.6
Flax	0.2
Spicy and medicinal crops	0.2
Other technical crops	0.2
Vegetables	0.5
Annual fodder crops	10.5
Clover	2.3
Alfalfa	3.1
Other perennial fodder crops	4.1
Other crops	0.2
Total	100



TABLE 6
Grown area proportion - Crop group summary in 2003

Crop group	Arable area proportion (%)
Cereals	56.5
Fodder crops	20.0
Oil crops	16.4
Sugar beet	3.0
Potato	1.4
Legumes	1.2
Technical crops	0.8
Vegetables	0.5
Other crops	0.2
Total	100

Seed production and distribution is being provided by activities of large seed producing companies and their policy need to be engaged in the enlargement of crop spectra. Most activities in broadening spectra of agricultural species are carried out by the small companies.

One of such companies Pro-Bio trade company Ltd., is aimed to enlargement of the list of agricultural species and putting their products on the market. Pro-Bio trade company is developing the new products from non traditional and neglected crops and additionally ensures also multiplication of seeds via network of farmers (e.g. spelt wheat, emmer). Seeds, which are used for organic farming, should follow legislatively based parameters and should originate in conditions of organic farming. This is the other content of activities which is carried out within the network of organic farmers, who own certificates for seed multiplication in conditions of organic farming.

Priority Activity Area 14 – Developing New Markets for Local Varieties and ‘Diversity-Rich’ Products

Food production in the Czech Republic is relatively stable and very traditional from the crop structure perspective. In last decades it has been enlarged to include more vegetables and fruits. The diversity of fruit and vegetable species has been broadened as well. The main part of food originating in plant production comes from conventional agricultural conditions.

Products originating in organic farming conditions are spread out in the market substantially.

The products from neglected and non-traditional crops from organic farming conditions are available not only in the specialised shops, but also in healthy food departments of supermarkets.

It is important, that the main part of those products have a local origin.

Priority Activity Area 15 – Building Strong National Programmes

Development and implementation of legislation concerning preservation and utilisation of genetic resources of plants and micro-organisms has significantly strengthened the importance and position of crop collections in the Czech Republic. Sustainability of activities connected to collection preservation and gathering has been ensured for the future, but the financial contracts are made separately for every year.

The utility value of PGRFA collections and their broader applicability for users is increasing significantly by the results obtained from methods of molecular genetics. Such activities require substantial financial support, therefore close cooperation of specialised institutions is encouraged.

Prospective plant genetic resources are evaluated in more detail in supplementary scientific projects aimed at recommendation suitable donors of important traits and characteristics.

Priority Activity Area 16 – Promoting Networks for PGRFA

The Research Institute of Crop Production (RICP) has been working as the coordinating institution of the National Programme for Plant Germplasm Conservation and Utilisation since 1993. RICP methodologically ensures activities of the network consisting of 14 PGRFA working places belonging to 11 institutions. All activities of crop specialised institutions

holding collections in the Czech Republic are coordinated within the National Programme. The recent work became more systematic and the intensity of collaboration between coordinating and participating institutions increased substantially. Definition of the Coordinating Institution and the National Coordinator, which is included in the text of the new law is very useful from point of view of network integrity. All network participants were involved during the preparatory phase of the law and the relevant executing edict. The final acceptance of the law on PGRFA conservation and utilisation was resulting from effort and support of the coordinated network activities. The advisory body, Board for Plant Genetic Resources in the Czech Republic, consists of participants of the National Programme, representatives of breeding companies, Ministry of Agriculture and Ministry of Environment. Regular meetings of the Board are organised once or twice a year and the directions are outlined for the following phase of activities.

Priority Activity Area 17 – Constructing Comprehensive Information Systems for PGRFA

Documentation system of Plant Genetic Resources EVIGEZ is centralised in framework of the National Programme for Conservation and Utilisation of Plant Germplasm and Agro-biodiversity. The special application has been developed and international standards for data structure are accepted. The rules for data exchange are set up and updated information is provided regularly among the cooperating network of institutions. Passport and characterisation/evaluation data are processed at collection holding institutions and summarised in the central database. Information about samples stored in the gene bank storage is distributed from RICP to the relevant crop institutions - crop collection holders.

Full information is available at the Gene bank department of the Research Institute of Crop Production Prague-Ruzyně and each institute of the network has been working with the information regarding relevant collections. Regular update is carried out once or twice a year (depending on the type of collection) at the coordinating institute and at collaborating institutions as well.

Passport information is fully documented in the system. Characterisation and evaluation information is available in 49% of all genetic resources in collections. The gene bank storage is documented fully as well.

Priority is the continuous and rapid update of the characterisation/evaluation data and by this enlargement of user value of collections. There are no obstacles in domestic or international level. The extent of works has been limited by the available financial means.

Support from international or regional level is very important, especially in development of methodologies and for integration of our national activities into international activities, mainly GPA and ECP/GR.

The National PGRFA inventory consisting of passport information is available on the web page <http://www.genbank.vurv.cz/genetic/resources/> since 1998.

Passport information on Czech collections is included in many Central Crop Databases in the ECP/GR network and European catalogue of plant genetic resources EURISCO, which was the main output of the EU project EPGRIS (finished 2003).

Priority Activity Area 18 – Developing Monitoring and Early Warning Systems for Loss of PGRFA

Ex situ collections of genetic resources are preserved systematically but maintenance of the existing diversity within crop collections is more or less stable. Safe conservation is ensured in case of generatively propagated species in the genebank. At present, 86% of generatively propagated species are kept in medium- and long-term storage. More endangered are vegetatively propagated collections, particularly those, which are kept in the field collections only. The newly established cryo-bank would improve their situation in the next future.

The present situation regarding *in situ* collections is a bit different. An inventory of *in situ* collections is being carried out and the assessment of genetic erosion will be based on the output of this inventory.

Priority Activity Area 19 - Expanding and Improving Education and Training

Regular workshops of National Programme participants could be taken as training opportunities, which are necessary for the activities concerning PGRFA collections. The work with PGRFA collections have sustainable character and that is why the urgent need of training courses is not envisaged.

Welcome would be opportunity to participate in international training courses, particularly for the young staff.



Priority Activity Area 20 – Promoting Public Awareness of the Value of Plant Genetic Resources for Food and Agriculture Conservation and Use

Efforts to increase public awareness on PGRFA should become part of regular activities of the National Programme participants, because it is necessary to inform people continuously using proper and understandable form of the report. Enlargement of popularisation activities using all available communication means is needed. The interested researchers should be motivated to present results of their work to public in a popular format to generate public interest.

HIGHLIGHTS OF FINDINGS FROM THE DATA GATHERING, ANALYSES AND REPORTING

4.1 *In situ* conservation and development

The Czech Republic practices intensive agriculture and more than 80% of the surface is covered by agricultural or forest areas. Acreage sum of protected areas reaches 12 510 km², but the absolute area size is lower as some protection categories overlap.

TABLE 7
The extent of protected areas in the Czech Republic

Category of protected area	Size (km ²)
Protected Landscape Areas	10 400
National Parks	1 190
Nature Reserves	340
National Nature Reserves	280
Nature Monuments	270
National Nature Monuments	30
Total	12 510

In situ conservation is being established in relatively low extent in smaller areas at the bordering hilly regions. Effective collaboration with Slovakia, Poland, Slovenia and Austria was developed in order to enable collecting and monitoring of localities in the bordering regions. Areas including plant genetic resources suitable for *in situ* conservation very often correspond to the land secured by the legislation for protection of wild species. In those cases *in situ* conservation is carried out in collaboration of bodies of Nature protection and National Programme. Fruit trees are considered as the main candidates for conservation *in situ*.

Occurrence of crop wild relatives on the territory of the Czech Republic is relatively sporadic.

Such species use to be generally included into environmental impact assessments (EIA) when they fall into the group of endangered species or indicate specific localities or ecosystems.

Deeper attention devoted to these species is expected from intensifying cooperation between nature protection authorities and National programme on conservation and utilisation of plant genetic resources for food and agriculture.

The extent of *in situ* conservation will be limited in conditions of the Czech Republic and will perform task of additional dynamic preservation.

Altogether 26 collecting expeditions connected to *in situ* conservation are included in the Project table of the National Information Sharing Mechanism on GPA implementation.



TABLE 8
Collecting missions documented in the NIMS GPA (Iteration 1)

ID_inst	Title	Acronym	Year	Participating countries
S-167-7	Collecting expedition Bile Karpaty CZEKARP	CZEKARP-94	1994	CZE
S-167-7	Collecting expedition Sumava Mts. CZESUM	CZESUM-94	1994	CZE
S-167-7	Collecting expedition CZECESTR	CZECESTR-95	1995	CZE
S-167-7	Collecting expedition CZEKRK	CZEKRK-95	1995	CZE
S-167-6	Collecting expedition Orava region, Slovakia		1995	CZE
S-167-7	Collecting expedition CZEORL	CZEORL-96	1996	CZE
S-167-7	Collecting expedition CZEDYJE	CZEDYJE-97	1997	CZE
S-167-7	Collecting expedition CZESLES	CZESLES-97	1997	CZE
S-167-6	Collecting expedition Orlické hory Mts.		1997	CZE
S-167-7	Collecting expedition CZEKRUH	CZEKRUH-98	1998	CZE
S-167-6	Collecting expedition in Krusné hory Mts.	KRUH98CZ	1998	SVN, CZE
S-167-6	Collecting expedition Male Karpaty Mts.		1998	CZE
S-167-6	Collecting expedition Beskydy Mts.	CZEBES99, SVKBES99, POLBES99	1999	POL, CZE, SVK, SVN
S-167-6	Collecting expedition in Slovenia (The Alps)	SVNJULALP99	1999	SVN, CZE
S-167-6	Collecting expedition Jeseníky Mts.	CZEJES00	2000	POL, CZE, SVK, SVN
S-167-6	Collecting expedition Roháčské Mts., Slovakia	SLOROH00	2000	POL, CZE, SVK, SVN
S-167-6	Collecting expedition Travná Gora, Slovenia	SVNTRG00	2000	SVN, CZE
S-167-6	Collecting expedition in Moravský Kras and Nízké Tatry Mts.	CZEMKRAS01, SVKNAT01	2001	POL, CZE, SVK, SVN
S-167-6	Collecting expedition Piran, Slovenia	SVNPIR01	2001	CZE, SVK, SVN
S-167-14	Collecting mission Zatec region 2001	Rabštejn 2001	2001	CZE
S-167-13	Collecting expedition Gemer 2002	SLOGEM02	2002	CZE, SVK
S-167-13	Collecting expedition Slovenia	SVN2002	2002	CZE, SVN
S-167-14	Collecting mission Belgium 2002	Belgium 2002	2002	CZE, BEL
S-167-6	Collecting mission Slovenia, Croatia	HRVISTRA02	2002	HRV, SVN, CZE, SVK
S-167-6	Collecting expedition South Moravia, Palav Mts.	CZEPAL03	2003	SVK, CZE
S-167-14	Collecting mission Canada 2003	Canada 2003	2003	CZE, CAN

International expeditions are prevailing in last five years and cooperation in bordering regions increased.

4.2 *Ex situ* conservation

Prevailing conservation activities are using methods *ex situ*. All generatively propagated species are held in the gene bank storage at RICP Praha-Ružyně. At present, 86% generatively propagated accessions are maintained in the gene bank, under medium- or long-term storage conditions.

Conservation of vegetatively propagated species is being carried out in field collections mainly.

Potato collection and part of *Rhododendron* and hop collections, have been maintained *in vitro* under slow growth conditions. Cryo-conservation facilities at RICP Praha will enlarge possibilities of long term conservation *ex situ*. Cryo-protocols for apples, pears, hop, potato and garlic have been developed.

Ex situ conservation of all PGRFA collections is one of the most important activities of the National Programme and it is regulated under the law no. 148/2003 Sb. "Conservation and Utilisation of Plant Genetic Resources and Micro-organisms Important for Food and Agriculture" and its executive edict no. 458/2003 Sb.

Safety of germplasm conservation depends on the capacity for regenerating. Collection holders are responsible for regeneration of PGR. All efforts should be made to regenerate threatened collections and accessions. Overview of regeneration needs is made regularly every year in the Annual Report of the National Programme, which is submitted to the Ministry of Agriculture.

Table 9 presents an overview of existing *ex situ* PGRFA collections.

TABLE 9
Overview of existing *ex situ* PGRFA collections

Institution	Number of accessions in regular PGRFA collection			Number of items in working collection (besides regular coll.)	
	Total	of it propagated		Collected in expeditions	Other items
		vegetatively	generatively		
RICP GB, Praha	14 798	0	14 798	0	207
ARI Kroměří	5 208	0	5 208	0	241
AGRITEC Sumperk	4 737	0	4 737	0	0
PRI Havlíckuv Brod	2 018	2 018	0	0	0
HI Zatec	316	316	0	0	153
RICP GB, Olomouc	10 581	1 110	9 471	668	1053
BRPI Holovousy	2 222	2 222	0	0	0
RIOLOG Pruhonic	1 642	1 396	246	0	532
RIFC Troubsko	2 502	0	2 501	1 570	0
OSEVA PRO GS Zubří	1 720	112	1 608	1 459	62
OSEVA PRO ORI Opava	1 320	0	1 320	0	26
RICP, VS Karltejn	272	272	0	0	0
FH Agr. Uni. Lednice	1 069	916	153	22	257
AMPELOS Znojmo-Vrbovec	286	286	0	0	0
Total	48 691	8 648	40 042	3 719	2 531

4.3 Use of genetic resources

PGRFA utilisation is defined in the National Programme for Plant Germplasm Conservation and Utilisation and it is based on law no. 148/2003 Sb. "Conservation and Utilisation of Plant Genetic Resources and Micro-organisms important for Food and Agriculture" and its executive edict no. 458/2003 Sb.

Characterisation and evaluation of PGRFA, utilisation of molecular technologies allowing identification, represent the main improvement of information, which contributes significantly to facilitate germplasm utilization. Available plant material together with characterisation and evaluation data are the main indicators of PGRFA usability.

Evaluation of plant genetic resources collections (including characterisation) are carried out regularly and the results of every year experiments with plant genetic resources are assessed according to National descriptor lists. Characterisation of genetic resources is being broadened particularly using morphological traits, characteristics of storage proteins and isoenzymes, and mainly with development of techniques used in molecular genetics and DNA markers.

At the end of 2003 description data (in various extent) were available for 49% of all genetic resources gathered in collections.

Non traditional and neglected crops are becoming very popular as healthy food alternatives and often became components of bio-products, and increasing demand in markets. Establishment of contacts between farmers and producers of final products is very important for the broadening of neglected crops growing. Collaboration of organic farmers with companies processing the products and putting them to the market, growing in the Czech Republic.

4.4 Institution and capacity building

The National Programme on PGR Conservation and Utilisation was established in 1994 and since then all PGRFA activities are coordinated within the network of involved eleven institutions.

The recent activities of the network have become more systematic and the intensity of collaboration between coordinating and participating institutions increased substantially. The acceptance of the law on PGRFA conservation and utilisation in 2003 was resulting from effort and support of the network. The advisory body of the National Programme, Board for Plant Genetic Resources in the Czech Republic, consists of participants of the National Programme, representatives of breeding companies, Ministry of Agriculture and Ministry of Environment. Regular meetings of the Board are organised once or twice a year and the priorities are defined for the following phase of activities.

Up to now, activities of the existing network of institutions were summarized. The main contribution of the GPA pilot project will be deepening with collaboration within existing network, enhancement of collaboration with NGO's,



breeders and other partners. The other important point would be information assembly on projects and publications into one available source.

Recently, the new national PGRFA documentation system, which will be updated on-line via the internet is being developed. Its development was inspired with the philosophy of NISM GPA application – using free software, similar structure of scripts (scheme of access rights, etc.) Data inputs during pilot project in the Czech Republic - iteration 1 are given in the Table 10.

TABLE 10

Overview of number of records added by participating stakeholders into the common tables and in some tables of the questionnaire

INSTITUTE	CULTIVAR	REFER	PROJECT	AREA	SYSTEM	AGREEMENT	Q139	Q147	Q149	Q150	Q187	Q276	Q279	Total
RICP Praha NFP	2353	215	38	0	8	1	7	210	2	253	3	29	16	3135
RILOG Pruhonice	360	2	0	0	0	0	na	na	na	na	0	na	na	362
Pro-Bio Ltd.	0	104	1	0	0	0	na	na	na	na	0	na	na	105
Pro-Bio Trade	0	1	3	0	0	0	na	na	na	na	0	na	na	4
RICP VRS Karlstejn	0	1	2	0	0	0	na	na	na	na	0	na	na	3
BRIP Ltd. Holovousy	0	25	3	3	0	0	na	na	na	na	0	na	na	31
RIFC Ltd. Troubsko	9	21	5	6	0	0	na	na	na	na	0	na	na	41
HI Ltd. Zatec	0	21	12	1	0	0	na	na	na	na	0	na	na	34
AGRITEC Ltd. Sumperk	0	2	6	44	0	0	na	na	na	na	0	na	na	52
ARI Ltd. Kromeriz	6	19	10	1	0	0	na	na	na	na	0	na	na	36
FH Agr Uni. Lednice	35	3	3	1	0	3	na	na	na	na	0	na	na	45
RICP GB Praha	0	2	29	0	0	1	na	na	na	na	0	na	na	32
RICP GB Olomouc	0	51	60	14	0	0	na	na	na	na	0	na	na	125
OSEVA GRI Zubri	7	24	25	14	1	0	na	na	na	na	0	na	na	71
OSEVA RIOČ Opava	2	10	2	0	0	0	na	na	na	na	0	na	na	14
PRI Havlickuv Brod	0	10	2	0	0	0	na	na	na	na	0	na	na	12
Total	2 772	511	201	84	9	5	7	210	2	253	3	29	16	4 102

Note: Table 10 doesn't include all answers included in the Reporting Format

ACHIEVEMENTS, CONSTRAINTS AND SUGGESTIONS FOR IMPROVING THE NATIONAL INFORMATION SHARING MECHANISM



5.1 Utility of indicators and reporting format

Generally, indicators are well suggested as they describe in detail situation regarding 20 priorities belonging to the four themes of the GPA (*in situ*, *ex situ*, utilisation and capacity building). The reporting format is a necessary guide helping to answer questions properly. It wouldn't be possible to input data without this explanation. Description of Indicators and Reporting Format should be available to users as the first information before data input.

As the indicators should cover very different situations of all countries in the world, they are elaborated in very deep detail. It is not possible to answer fully all questions, but part of them only corresponding to the relevant country situation.

Comments to priorities:

Priority 1

Implementation of the priority 1 into „*in situ* block“ could cause confusion – PGRFA inventory should be provided in both *ex situ* and *in situ* conditions. Perhaps the structure of questions should take this into account and indicate separately *ex situ* part and *in situ* part.

Priority 5

Information on the number of accessions in collections in case of priority 5 should be more clear to the user – there is necessary to view collection according to single criteria only (like country of origin, than status of accession, than storage facility, etc.) – the existing overview of collection concerning two or three criteria at once seems to be impossible in case of large collections, where more than one hundred countries of origin are documented. Perhaps only in case of indigenous material would be information specified in more detail – using combination of criteria (e.g. origin + status, origin + storage method, etc.). All other accessions originated in foreign countries could be counted descriptor by descriptor.

Priority 13

List of cultivars and their proportion in growing area of relevant crop is mentioned in the question Q150. Perhaps the total area of country should also be mentioned in the NFP version and global specification of proportions of agricultural area (arable area, forests, pastures, etc.). In case of current cultivars it would be important to include information about size or proportion of the relevant crop area to know, which crops are the most important within country.

Note to the translation

Flat tables used for translation were in some cases insufficient source of information, because the context was not known and the resulting translated texts or statements are not completely understandable to user (wrong translation of multivalent words, grammatical inconsistencies, etc.). Possibility of the final correction of the translated text in comparison to the English original would be appreciated.

General notes

- Particularly in case of countries starting to develop PGRFA information structure, NISM GPA Implementation would be very helpful tool to get systematic data.
- Unequal position of Small countries x Large countries.
It is possible to complete information within smaller countries, but merging data in large countries with hundreds of stakeholders could cause a problem, particularly in the case of following iterations.

- Data input and merge are time consuming work and it seems to be a bottleneck. The repeated data input in iterations including translation is expected to be done as contribution in kind. Involvement of active, reliable and responsible stakeholders is essential and existing networks could help substantially.

5.2 Utility of the computer application

The structure and philosophy of the application was prepared very wisely. The current beta version 2.3 of the application looks to be useful tool for data input and merge on the national level. Since its first release, the user-interface has been improved substantially.

The philosophy of the computer application is a bit different from usual PGRFA database management systems. All participants are allowed add, delete or update existing data. This high level of freedom is pleasant for stakeholder, but could cause difficulties during data merge.

Notes

Version for stakeholder should include also fields marked with an asterisk (= repeated fields in international language) to reduce the translation burden on the NFP.

Merging data

It was experienced that while processing a corrupted record received within stakeholder dataset, an error message was displayed and the application broke down. The reinstallation from the last backup was necessary.

For data input it would be useful to have an option "set carry on" that copies data into the new record (the information from the selected record applicable for the next record). In case of repeated inputs of similar records and necessity of search in large tables like 'taxon' it would save a lot of time.

Additional questions

- Would it be possible to validate previously invalidated records ?
- How will be solved problem of duplicated/multiplied records during data merge at FAO level?

5.3 Usefulness of the guidelines and background materials provided

Both the guidelines and the background material are considered as indispensable for the proper work with the computer application.

As the Manual was ready at the end of June 2003 together with the version 1.8 of the computer application, participants could appreciate its value. User manual together with the general information about indicators and reporting format (document CGRFA-9/02/7) are very important documents explaining clearly all steps.

Document CGRFA-9/02/7 containing general information on NISM GPA implementation should be available before starting documentation activities and user manual would be sufficient on the installation CD with the application.

Note

Data processing was relatively easy for those stakeholders, who had basic knowledge in computer and have had the opportunity to attend short training workshop.

5.4 Strength and weakness of the technical assistance received

The central organisation of data flow within country should follow the structure on the international level. In both cases it is necessary to ensure assistance for solving difficulties connected to the local installation of the application. All technical support provided by FAO-AGPS during the pilot project was very effectively and quickly. Technical assistance provided by RICP to the stakeholders also resulted very effective, since all participants were able to install application and input data after short training. Basic computer skills by stakeholder is required to use the computer application.

Appreciated features of the computer application are the possibility to install it either on a LAN server or on a local machine, and the possibility to make two or more installations on the same computer.

A disadvantage is the relatively high hardware requirement (one stakeholder of 16 was not able to start application due to lack of appropriate hardware).

NEXT STEPS AND FUTURE PLANS

As the results show, the data set needs to be completed in many priority activity areas of the GPA. Some stakeholders didn't respond to many important questions, either they didn't fill in the requested tables or didn't understand correctly the question. Slight corrections in the Czech translation of fields should be carried out.

To have an overview that better reflects the reality of PGRFA in a country, it may be necessary to increase the level of details in complex answers. During the next planned meeting of stakeholders it will be evaluated the degree of involvement of participants and will be highlighted and discussed the main areas, where information still needs to be completed.

The data should be improved and deepened in the next versions, current overview could be used as the first overall information. Establishment of the web page with the overview of results is being planned at the coordinating institute.



