Programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2014–2020"

Introduction

The Programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2014–2020" (hereinafter *the Programme*) provides the objectives and the most important activities of the collection and conservation of plant genetic resources for food and agriculture. In Estonia, the Ministry of Agriculture and the Ministry of the Environment are responsible for the collection and conservation of plant genetic resources for food and agriculture.

Need to draw up the Programme

Drawing up the Programme was caused by the fulfilment of the commitments of the Republic of Estonia proceeding from international agreements, such as the Convention on Biological Diversity, the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture and the International Treaty on Plant Genetic Resources for Food and Agriculture (see Annex 1).

The Programme also serves as the basis for the promotion of the National Programme for Plant Breeding 2009–2019 approved by Order No 152 of the Minister of Agriculture, 3 July, 2008, and related to the assurance of the sustainable development of Estonian plant breeding and the conservation breeding of existing varieties, healthy and safe food, the sustainable use of natural and environmental resources, the maintenance of genetic and landscape diversity and the reduction of climate change hazards. The need to draw up the Programme 2014–2020 was caused by the finalisation of the Programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2007–2013" approved by Order No 67 of the Minister of Agriculture, 23 March 2007.

The Programme creates prerequisites for the collection, conservation and utilization of local plant genetic resources both in trade and research and regarding the conservation of plant genetic resources is in conformity with § 9 (2) of the Act on Sustainable Development.

Plant genetic resources for food and agriculture include varieties of agricultural and horticultural crops, breeding material, traditional cultivars, species and forms. Plant varieties, breeding material and traditional cultivars have been created as a result of long-term work and they must be conserved not only as biological diversity but also as the cultural heritage of mankind. It is not possible to revive several varieties, breeder's lines and species because their viability has been lost due to unsuitable conservation conditions. A part of accessions are

conserved only in the collections of the institutions participating in the Programme. In the future, it will be possible to detect in the conserved material with advanced molecular biological methods the values unknown so far, which can be used for the breeding of new disease resistant or otherwise value added varieties.

Conservation of biological diversity must be valued, to be able to appreciate natural diversity as a resource serving as the basis for higher life quality. Continuity is needed for the activities related to the long-term conservation of live organisms to avoid loss of valuable material. Genetic resources support the maintenance of biological diversity, promote sustainable agricultural production and contribute to the sustainable development and diversification of agricultural production. The accessions of collections are used in plant breeding, research and studies, as well in economic utilization of varieties, breeder´s lines or species.

Related strategic documents of the sector and the documents of international law

The Programme is related to several sectoral development plans, such as Estonian research and development and innovation strategy „Knowledge-based Estonia 2014–2020" and Estonian national strategy on sustainable development „Sustainable Estonia 21" and mutually supported by several sectoral development plans, such as „Estonian Rural Development Plan 2014–2020", „Estonian Environmental Strategy 2030" and „Nature Conservation Development Plan 2020".

„Knowledge-based Estonia 2014–2020" and „Sustainable Estonia 21"

Through smart specialisation, financing and activities of the research and development and innovation strategy „Knowledge-based Estonia 2014–2020" are directed at strong areas of economy with a view to achieve growth in value added. The strategy is concentrated on the assurance of the sustainable development of the society through research and development and innovation, contributing to the implementation of Estonian long-term development strategy „Sustainable Estonia 21". The strategy on sustainable development considers increase in the self reproduction capacity of nature, incl. the maintenance of natural diversity and nature areas to be the general objective of ecological balance. Not only the conservation of resources and natural environment but also their harmonious and balanced management in the interests of Estonian society are the main function of environmental protection. The objective of environmental protection is to consider nature as a value and a society centered development resource in the context of general promotion of Estonia.

At the same time, the strategy helps Estonia as an EU Member State to achieve the objectives of the strategy „Europe 2020" (EU economic development strategy).

Estonian Rural Development Plan 2014–2020

One of the objectives of the Estonian Rural Development Plan (hereinafter *RDP*) 2014–2020 is the environmentally friendly and region specific use of agricultural land, ensuring the conservation of biological, species and genetic diversity, traditional landscapes and high

nature value agriculture and forestry. Conservation and sustainable use of plant genetic resources for food and agriculture is important for both variety breeding and agricultural research and production in general, in order to ensure the development of variety breeding, agricultural research and production and to maintain biological diversity.

In crop farming, biological diversity is related to plant breeding. Beside wild plant species it is also important to maintain the biological diversity of cultivated plant species. It is important with regard to both biology and economy, as the heterogeneous populations of diverse properties have the characteristics which can successfully be used in cultivated variety breeding and niche market material production. Genetic resources enable to develop environmentally friendly enterprise in rural areas and to ensure healthy diet.

Most varieties of Estonian agricultural crops have been bred during the 20th century. In Estonia, there are several unique endangered varieties of agricultural crops, which are valuable with regard to both genetic and species diversity.

According to „EU Biodiversity Strategy to 2020", the agri-environmental measures should be used better for the conservation of agricultural genetic resources. Therefore, cultivation of local plant varieties is supported under the RDP 2014–2020. The objective of support is to ensure the conservation of the plant varieties important with regard to cultural heritage and genetic diversity and to enhance the establishment of new nurseries with obsolete local fruit and berry varieties.

Estonian Environmental Strategy 2030

„Estonian Environmental Strategy 2030" is an environmental development strategy proceeding from the principles of Estonian long-term development strategy „Sustainable Estonia 21". Maintenance and development of biological diversity is important for the achievement of all development objectives. Conservation, collection, characterization, evaluation and documentation of plant genetic resources are important, regarding the Rome Declaration on World Food Security and the World Food Summit Action Plan objectives and sustainable agricultural development for the present and future generations. Plant genetic resources form the core of initial material for the improvement of the genetic characteristics of crops either by farmers, plant breeders or molecular methods. Plant genetic resources are important for adaptation to environmental changes and people's future needs. Plant genetic resources play important role in agriculture, environment protection, cultural property and trade.

Nature Conservation Development Plan 2020

According to the „Nature Conservation Development Plan 2020", decrease in the area of the habitats suitable to species, deterioration of living conditions, landuse change (revert of meadows to scrub) and disappearance of spread channels are the biggest threat to species. The development plan emphasizes that beside wild plant species it is also important to maintain the diversity of plant varieties and to exploit their capacity to adapt to changing environmental conditions. It is important to maintain genetic variation which would help to breed according to necessity. Besides conservation, it is important to cultivate different

varieties as a part of agricultural activity as widely as possible. That kind of activities have to be encouraged. In *ex-situ* conservation of plant species, botanical gardens and their international cooperation have significant role.

The Programme is dedicated to preservation of natural landscapes. As regards agricultural crops, those natural landscapes include natural and semi-natural grasslands and clover and alfalfa habitats used without replantation for a long time. Thus, the species of those habitats are better adapted to local environmental conditions.

Connection with international law

The Programme considers that the conservation and sustainable use of plant genetic resources for food and agriculture contributes to the observance of the „Convention of Biological Diversity", with the ratification of which in 1994 Estonia committed to maintain biological diversity in its territory and to protect plant genetic resources and to use them in a sustainable way. The aim of the „Global Strategy for Plant Conservation 2011–2020" is to maintain plant diversity and to use plants sustainably. The main objective of the regionally approved EU strategy „Our Life Insurance, Our Natural Capital: an EU Biodiversity Strategy to 2020" is to stop decrease in biodiversity and loss of ecosystem services by 2020 and to restore them as broadly as possible, increasing the EU contribution to the prevention of decrease in global biodiversity.

Under the „Convention of Biological Diversity", the „Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization" was adopted in 2010, dealing with access to genetic resources and the related knowledge and with the fair and equitable sharing of benefits arising from their utilization. With bringing the Protocol into effect in 2015, binding international judicial area for the protection of genetic resources will be established, new opportunities for nature based research will be created and the development of bioresource-based economy will be supported.

Efficient development of bioeconomy helps to maintain and enliven economic growth, to maintain or create jobs in rural, coastal and industrial areas, to reduce dependence on fossil fuels and to increase the economic and environmental sustainability of primary production and processing industry. The objective of the strategy „Innovating for Sustainable Growth: A Bioeconomy for Europe" is to improve resource efficiency and to promote the sustainable use of natural resources, the protection of biodiversity and habitats and the provision of ecosystem services.

„The FAO Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture" confirms the commitment taken by governments to ensure the utilization of plant genetic resources and its importance for the assurance of food security by sustainable agriculture in the context of climate change. Besides, the United Nations has declared the period 2011–2020 as the decade of biodiversity.

„The International Treaty on Plant Genetic Resources for Food and Agriculture" to which Estonia acceded in 2004 (Order No 171-k of the Government of the Republic, 18 March 2004

on accession to the International Treaty on Plant Genetic Resources for Food and Agriculture) provides an international framework for the conservation and sustainable use of agricultural crops. In addition to farmers' rights, the Multilateral System of Access and Benefit-sharing arising from the utilization of genetic resources are the central components of the Treaty.

The Programme is implemented by the following institutions:

1. Estonian Crop Research Institute (hereinafter *ECRI*) – seeds of cereals, legumes, forage grasses, vegetables, industrial and oil plants; and potato and horticultural crops by *in vitro* method;
2. Estonian University of Life Sciences Institute of Agricultural and Environmental Sciences Polli Horticultural Research Centre (hereinafter *Polli*) – horticultural and fruit crops and berries;
3. Botanical Garden of the University of Tartu (hereinafter *Botanical Garden*) – medicinal and aromatic plants and ornamentals;
4. Department of Gene Technology of the Tallinn University of Technology (hereinafter *TUT DGT*) – molecular analysis of accessions.

The current situation and the problems to be solved

The collection and conservation of plant genetic resources for food and agriculture was started under international cooperation projects in 1994. The national programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2002–2006" was approved by Order No 534-k of the Government of the Republic, 14 August 2002. Performance reporting on the development plan „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2007–2013" (hereinafter development plan) serves as the basis for analysis of the current situation.

Under the development plan, the collection and conservation of plant genetic resources for food and agriculture was guaranteed as a result of the activity of the coordinated cooperation network. During the implementation of the development plan, an inventory of the existing collections was taken and those collections were conserved and regenerated. The regeneration of the existing collections takes place after every certain period. The collections kept in field conditions may also need regeneration in case of climate, dangerous diseases or pest damages and the equipment needed for their maintenance must also be renewed. On 1 July 2013, 2788 accessions of cereals, legumes, forage grasses, vegetables, industrial and oil plants were under long term conservation in *ex situ* genebank and 598 potato and horticultural plant accessions in *in vitro* genebank, 1151 accessions of 17 fruit crops and berries in field collection and 643 accessions of medicinal and aromatic plants and ornamentals in the botanical garden. It is also important to ensure continual deposition of safety duplicates in other collections, with a view to guarantee the conservation of plant genetic resources for food and agriculture of Estonian origin.

On the initiative of the International Plant Genetic Resources Institute (since 2006, Bioversity International) and in cooperation with the UN, Genebank Standards for Plant Genetic

Resources for Food and Agriculture on the basis of which plant genetic resources are conserved were established in 1994. The new Standards were released in 2013. Conservation must be in conformity with internationally acceptable methods, enable the evaluation of accession characteristics under single criteria and ensure the viability of accessions.

According to international standards and methods, the biological and economic characteristics of the accessions of Estonian origin were evaluated and recorded, phenological observations were carried out and laboratory analyses, incl. molecular analyses, were performed. Without accession survey, characterization and evaluation, the genetic resources will be a useless collection which is conserved but the value of which is unknown. The survey of the impact of cryopreservation on the genetic stability of conserved plant material was started.

In the framework of the development plan in effect until 2007–2013, transfer to the use of Internet based databases was made, this improved the accessibility of recorded accession data and both national and international conservation cooperation. The inclusion of accession data in international databases widens the use of genebank material and increases the value of accessions. Passport data, viability data and genebank management data of Estonian accessions were recorded in the Nordic-Baltic common genebank documentation system SESTO and the data were provided to different European crop databases. As of 1 July 2013, SESTO contains information about 2985 accessions conserved in Estonia.

In the framework of the development plan, international cooperation in the following areas was implemented: participation in the „European Cooperative Programme for Plant Genetic Resources“ (ECPGR), implementation of Council Regulation (EC) No 870/2004 of 24 April 2004 establishing a Community programme on the conservation, characterization, collection and utilization of genetic resources in agriculture and repealing Regulation (EC) No 1467/94 (Text with EEA relevance) (OJ L 162, 30.04.2004, p.18–28), participation in the Nordic and Baltic genetic resources conservation working groups and in the Nordic and Baltic genetic resources conservation projects financed by the Nordic Council of Ministers, deposition of safety duplicates in other countries, making proposals for Commission draft directives on conservation varieties and their implementation and germplasm exchange according to international agreements. Under the implementation of Council Regulation (EC) No 870/2004, the European Commission approved 17 projects. The development plan implementing institutions participated in two projects: „Avena Genetic Resources for Quality in Human Consumption“ (AVEQ) and „Core Collection of Northern Europe Gene Pool of Ribes“.

In case of the absence of international cooperation and projects, the whole work on genetic resources and international recognition may be declined. With the Programme, the co-financing opportunity has been provided in the related operational programme, considering the participation of programme implementing authorities in European Cooperative Programme for Plant Genetic Resources (ECPGR) and in the Community programme.

Today, intensive production using only a small number of high yield varieties prevails in European agriculture. As in the present economic and production conditions local varieties

have lost their competitiveness, have become small numbered and in many cases have completely perished, their cultivation must be better promoted, to ensure the conservation of genetic variation. The promotion of the *in situ* and *on-farm* conservation of the crop wild relatives is the obligation proceeding from the „International Treaty on Plant Genetic Resources for Food and Agriculture".

Under the RDP 2007–2013, cultivation of the local winter rye variety „Sangaste" was supported on 1130 hectares in 2012 and the list of local plant varieties supported under the RDP 2014–2020 has been supplemented by the varieties of arable crops, fruit crops and berries.

According to the Plant Propagation and Plant Variety Rights Act (hereinafter *the Act*), the varieties which are naturally adapted to Estonian conditions and in the long run are endangered by human intervention or environmental changes causing decrease in biodiversity are accepted as conservation varieties for inclusion in the Variety List. According to the Act § 28 (3), to decide on the inclusion of a conservation variety in the Variety List or on denial, an opinion of an authority administering conservation of plant genetic resources (Ministry of Agriculture) is needed. By Order of the Minister of Agriculture, the evaluation commission on collection and conservation of plant genetic resources for food and agriculture was established. With the approval of that commission, the following varieties were included in the Variety List as conservation varieties: potato „Jõgeva kollane" in 2010, potatoes „Endla" and „Väike verev" in 2011, fodder beet „Jõgeva Eckendorf" in 2012 and winter wheat „Sani" in 2013.

In scientific papers and in popular science publications both in Estonia and in foreign countries, articles have been published on the implementation of the development plan „Collection and Conservation of Plant Genetic Resources for Food and Agriculture" and presentations have been made at conferences, seminars and study days.

Problems:

1) as a consequence of change in the intended use of land, in home gardens, local varieties and traditional cultivars are in danger of perishing and natural habitats may be liquidated;
2) insufficient characterisation and evaluation of the biological and economic descriptors of accessions ;
3) insufficient information of the traits of local varieties;
4) an Internet based database enabling accession data management and inquiries needs updating and supplementation about accession characteristics and traits;
5) Internet based databases are not compatible;
6) limited opportunities to promote international cooperation because of severity of the authorities responsible for conservation and utilization of plant genetic resource in other countries;
7) limited opportunities for the introduction of new analysis and conservation methods which need additional financial resources or investments;
8) deposition of safety duplicates is not adequate.

Programme strategic objectives and activities

During the implementation of the Programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture“ it is most important to ensure the quality and viability of conserved material in accordance to the internationally recognized standards. The genome of the accessions must remain unaltered, in order to maintain the identity of varieties and species.

At the same time, it is necessary to regularly improve knowledge of the characteristics of the plant genetic resources conserved in Estonia, continuing the activities started under the development plan of 2007–2013 in the field of accession inventory, collection conservation and accession evaluation and characterization. To add value to accessions, their quality must be controlled, their economic values assessed and their molecular biological and biochemical characterisation task carried out. Characterization and evaluation of genetic resources provides prerequisites for the utilization of the conserved material in the diversification of agriculture, the promotion of breeding and research and the improvement of living environment both at national and international level. To find the best *ex situ* conservation conditions, conservation methods must constantly be improved.

As the conservation of plant genetic resources proceeds from the international obligations of the Republic of Estonia and this work is closely connected with international coordination, international standards must be followed and better conditions for participation in international cooperation must be established. For the improvement of international cooperation, it is necessary to know about innovations at European level. This presumes participation in training and capacity building to ensure and improve professional competence.

To evaluate the fulfilment of the Programme period 2014–2020 objectives, a mid-term evaluation is organised, so that the evaluation commission for collection and conservation of plant genetic resources for food and agriculture can make proposals for Programme supplementation or amendment. For the direction of the Programme during the new period and for the improvement of coordination and activities in the field of crop genetic resources, it is important to internationally evaluate the activities related to collection and conservation of plant genetic resources for food and agriculture in Estonia. To this end, foreign experts should be involved to give recommendations and make proposals for the further development of conservation activities, for funding and for changes necessary in Estonia.

The structure of databases should be improved regularly and new accession data should be recorded. The assurance of the availability of documented information presumes the standardisation of databases according to plant species. For Programme implementation, the following international databases are most widely used: Nordic-Baltic genebank documentation system SESTO, the European Genetic Resources Search Catalogue (EURISCO) and the crop-based databases of the European Cooperative Programme for Plant Genetic Resources (ECPGR) (see Annex 2). Databases ensure maintenance and accessibility of information, thus providing an additional value to the collection.

To improve the efficiency of the utilization of plant genetic resources for food and agriculture in plant breeding and agricultural production, cultivation of underutilized crops should be promoted and farmers should be provided with updated information.

Programme objectives

1) to ensure by coordinated activities the collection, conservation, evaluation, documentation and distribution of plant genetic resources for food and agriculture of Estonian origin as the cultural heritage of mankind, with which preconditions are created for the assurance of sustainable development in line with the environmental strategy, global, regional and bilateral conventions and treaties into which the Republic of Estonia has entered;

2) for the wider utilization of collected and conserved plant varieties, breeding material and traditional cultivars, they must be made available for research and study, plant breeding and to other users for non-profit making objectives.

Programme sub-objectives

1) collection, conservation, characterization, evaluation, documentation and distribution of the accessions of cereals, legumes, potatoes, grasses, vegetables, technical and oil crops, fruit crops and berries, medicinal and aromatic plants and ornamentals;
2) *in vitro* conservation, evaluation, characterization and documentation of meristem plants of potatoes and horticultural crops, evaluation, characterization and documentation;
3) assessment of the economic and biological characteristics of local varieties and breeder's lines maintained in collections;
4) inventory of private collections;
5) raising public awareness on the conservation of plant genetic resources in Estonia;
6) providing access to plant genetic resources to users;
7) promotion of international cooperation on characterization and assessment projects.

Table of indicators

Initial level	**Target level**						
2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Indicator 1: the number of accessions maintained in collections and documented in electronic databases							
4849	4913	5058	5113	5200	5255	5340	5425
Indicator 2: the number of accessions characterised and evaluated within a year							
618	591	631	680	720	730	885	885
Indicator 3: participation in international cooperation							
16	22	25	23	25	24	26	23
Indicator 4: the number of publications and presentations							
17	16	16	15	18	18	17	18

Measures and activities needed for the fulfilment of objectives

Measure 1: Collection and conservation of genetic resources

To continue the activities started under the development plan 2007–2013, i.e. to continually maintain and improve the collections of plant genetic resources for food and agriculture conserved in Estonia and to evaluate and characterise accession descriptors, incl. to control the quality of accessions, to assess their economic characteristics and to continue their molecular biological and biochemical characterization.

1.1. acquisition, conservation, and systematic regeneration of germplasm;
1.2. evaluation and phenotypical and molecular characterization of accessions;
1.3. conservation of safety duplicates in other collections, incl. in Svalbard Global Seed Vault;
1.4. arrangement of expeditions for the collection of obsolete varieties and natural species used in breeding and for the mapping of their habitats;
1.5. management and updating of electronic and Internet based databases and making them compatible, if possible;
1.6. germplasm distribution according to international agreements;
1.7. compilation of operational manuals of collections;
1.8. compilation of the crop-based descriptor lists of accessions;
1.9. renovation of the equipment, devices and materials necessary for the long-term conservation of accessions;
1.10. transmission of accession evaluation results to the donor genebank, aggregation of accession evaluation results, sent to users by the genebank.

Measure 2: International cooperation

To create better opportunities for Programme implementors for inputs and participation in the following fields of international cooperation:

2.1. the European Cooperative Programme for Plant Genetic Resources (ECPGR);
2.2. cooperation network of plant genetic resources of the Nordic-Baltic countries and Russia;
2.3. recording data in the Nordic-Baltic genebank documentation system SESTO, updating the European Genetic Resources Search Catalogue (EURISCO) and participation in development of SESTO;
2.4. An European Genebank Integrated System (AEGIS);
2.5. the EC Committee on the Conservation, Characterization and Utilization of Genetic Resources in Agriculture;
2.6. the FAO Commission on Genetic Resources for Food and Agriculture;
2.7. the International Treaty on Plant Genetic Resources for Food and Agriculture;
2.8. bilateral and multilateral cooperation projects;
2.9. drafting of international implementation documents and implication of agreements.

Measure 3: Programme management and public awareness

3.1. management of the activities of the evaluation commission for collection and conservation of plant genetic resources for food and agriculture;
3.2. information management and dissemination;
3.3. compilation of informational materials and publications, webpage management;
3.4. providing opinions on the inclusion of conservation varieties to the Variety List;
3.5. involvement of foreign experts in the evaluation of plant genetic resources activities in Estonia.

Estimated budget of the programme (in Euros)

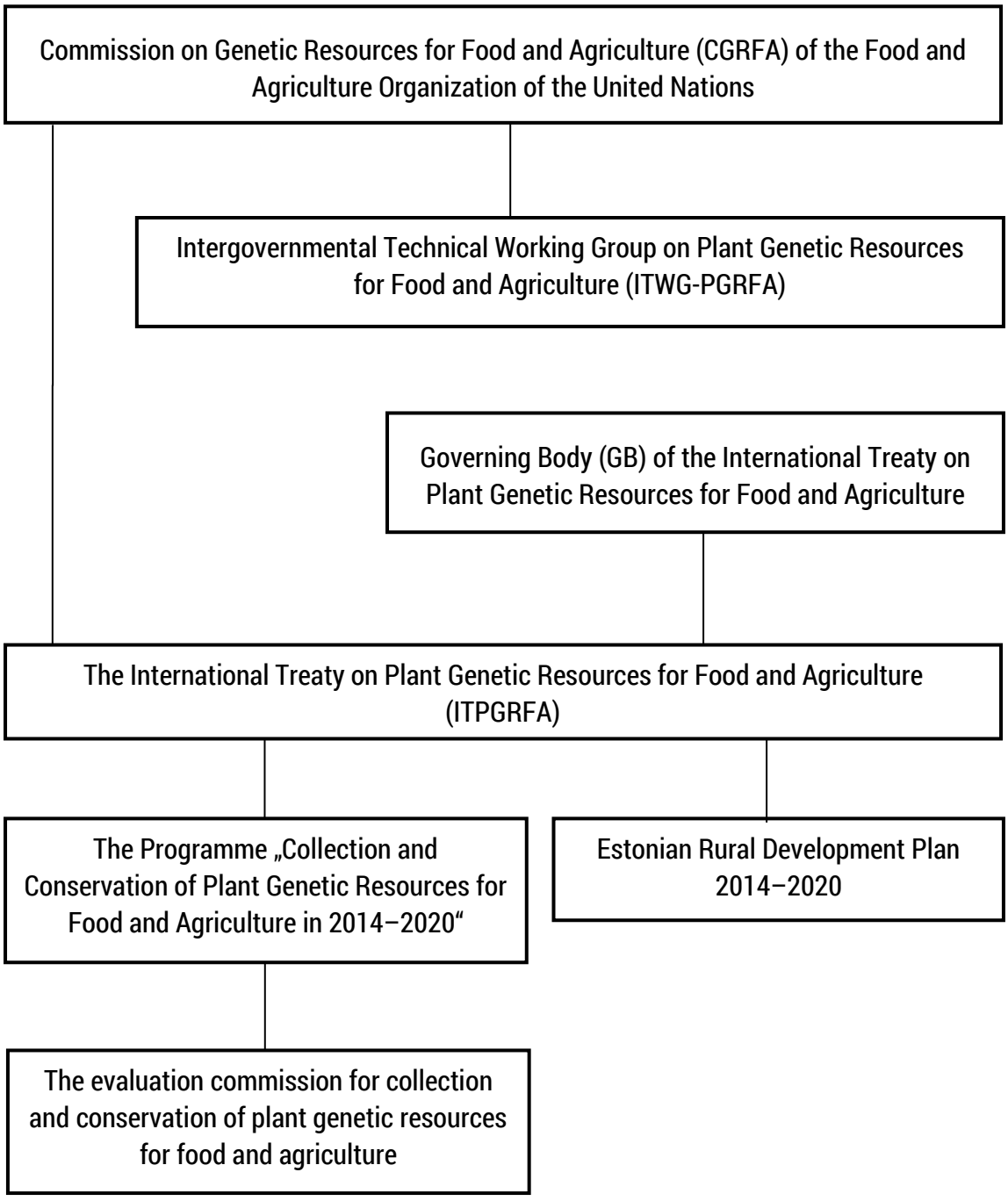
Measure	2014	2015	2016	2017	2018	2019	2020
Measure 1: Collection and conservation of genetic resources	164 494	207 086	215 847	217 027	232 237	233 897	235 247
Measure 2: International cooperation	23 090	27 800	27 820	29 490	33 150	33 660	32 450
Measure 3: Programme management and public awareness	3832	6530	6530	7300	7530	12 900	8280
Total	**191 416**	**241 416**	**250 197**	**253 817**	**272 917**	**280 457**	**275 977**

For the implementation of the Programme, the state budget funds have been planned into the budget of the Ministry of Agriculture and have been indicated in the state budget strategy for 2014–2017. The estimated budget of the Programme indicates the funds planned for the activities on plant genetic resources for food and agriculture until 2020. The Programme implementation plan indicates the contribution of each institution within 2014–2020 (see Annex 3).

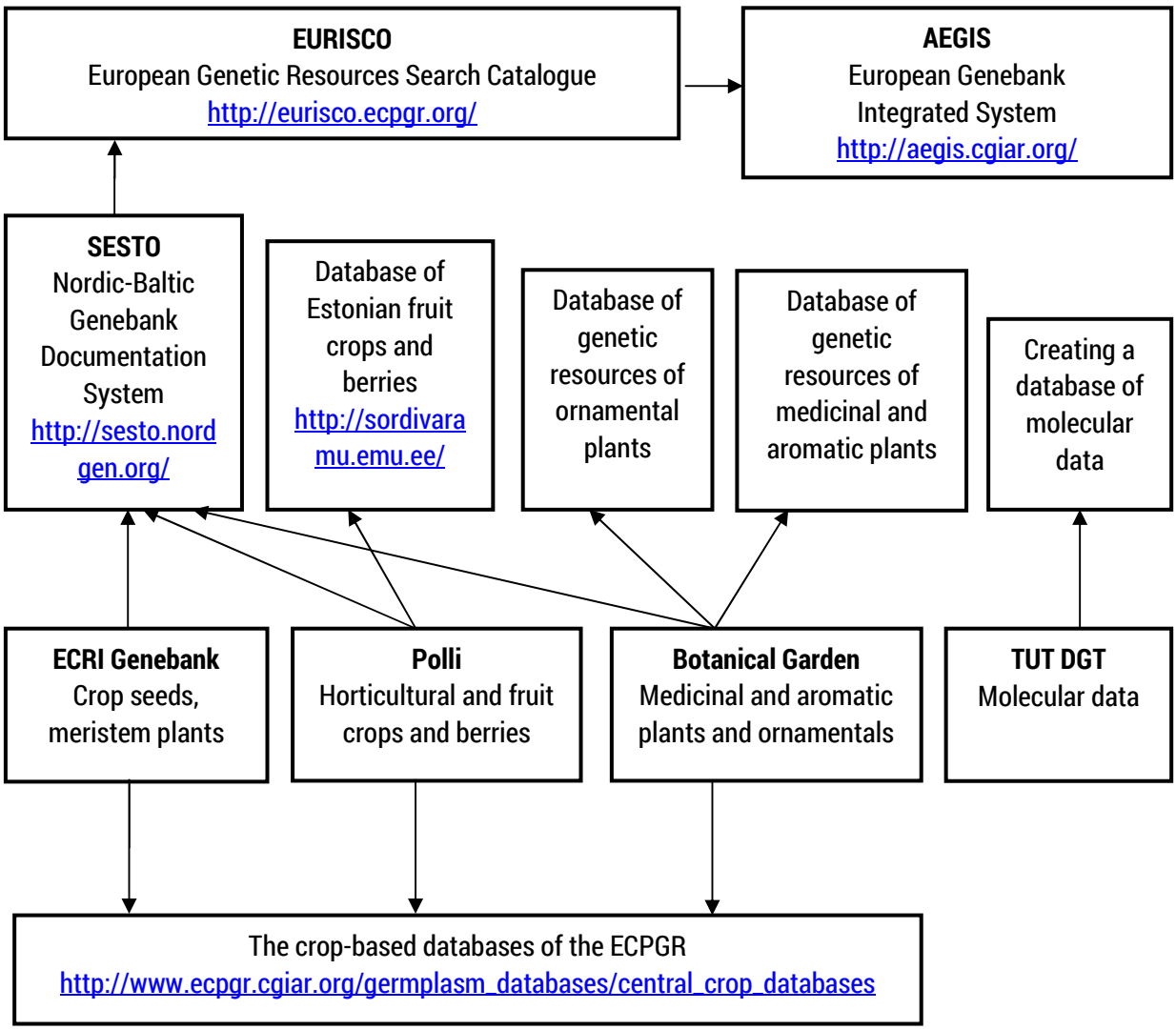
Programme management

1. Programme fulfilment is coordinated by the Ministry of Agriculture;
2. the Ministry of Agriculture signs the contract with the Programme implementors for the planned activities and controls implementation of the Programme;
3. by the last working day of November each year the Programme implementors present the report to the Ministry of Agriculture;
4. Programme implementation is controlled by the evaluation commission for collection and conservation of plant genetic resources for food and agriculture, in 2017, the commission will organise a mid-term evaluation to evaluate Programme implementation and in 2019, it will organise another evaluation to prepare for the new period;
5. in 2017 and 2020, the evaluation commission for collection and conservation of plant genetic resources for food and agriculture will review the Programme and, if necessary, make proposals to the Ministry of Agriculture for the supplementation, change or extension of the Programme.

Annex 1. Collection and Conservation of Plant Genetic Resources for Food and Agriculture



Annex 2. Transmission of information of accessions to databases



Annex 3. Programme „Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2014–2020" implementation plan (in Euros)

Measure	Institution	2014	2015	2016	2017	2018	2019	2020	Total
Measure 1: Collection and conservation of genetic resources	ECRI	80 055	108 950	112 350	113 230	116 790	118 150	119 200	**768 725**
	Polli	43 099	54 000	59 000	59 000	70 000	70 000	70 000	**425 099**
	Botanical Garden	30 793	31 270	31 631	31 931	32 581	32 881	33 181	**224 268**
	TUT DGT	10 547	12 866	12 866	12 866	12 866	12 866	12 866	**87 743**
Measure 2: International cooperation	ECRI	19 010	22 420	20 440	21 710	22 870	24 080	22 870	**153 400**
	Polli	1000	2000	4000	4000	6000	6000	6000	**29 000**
	Botanical Garden	3080	3380	3380	3780	4280	3580	3580	**25 060**
	TUT DGT	0	0	0	0	0	0	0	**0**
Measure 3: Programme management and public awareness	ECRI	3832	5480	5480	6250	5480	10 600	5980	**43 102**
	Polli	0	1000	1000	1000	2000	2000	2000	**9000**
	Botanical Garden	0	50	50	50	50	300	300	**800**
	TUT DGT	0	0	0	0	0	0	0	**0**

Budget by institutions	ECRI	102 897	136 850	138 270	141 190	145 140	152 830	148 050	**965 227**
	Polli	44 099	57 000	64 000	64 000	78 000	78 000	78 000	**463 099**
	Botanical Garden	33 873	34 700	35 061	35 761	36 911	36 761	37 061	**250 128**
	TUT DGT	10 547	12 866	12 866	12 866	12 866	12 866	12 866	**87 743**
Total		**191 416**	**241 416**	**250 197**	**253 817**	**272 917**	**280 457**	**275 977**	**1 766 197**