

South East European Development Network on Plant Genetic Resources – SEEDNet

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Aims of SEEDNet

SEED Net was established in 2004 to assist South-East European countries identifying, addressing and tackling their specific needs and priorities in plant genetic issues.

- ❑ The SEED Net programme is aiming at long-term conservation and sustainable utilization of the diversity of PGR within the region through a well co-ordinated network of functional national programmes.
- ❑ The network activities comprise *ex* and *in situ* conservation, utilisation of PGR, and institution and capacity building.



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- ❑ The network is financially supported by the **Swedish International Development Agency (Sida)** for an estimated period of 10-15 years. The **Swedish Biodiversity Centre (CBM)**, Swedish University of Agricultural Sciences provides the secretariat and coordination for SEEDNet.

 - ❑ A **Regional Steering Committee (RSC)** representing the 13 signatory partners of the network is the governing body of SEEDNet. The SEEDNet RSC meets regularly twice a year. One of the annual meetings is linked to a joint meeting with the chairs of the SEEDNet regional WGs.

Working groups

The core of SEEDNet forms seven regional working groups - six of them are crop oriented:

- ❑ **Cereals and Maize** (13 members, chair D. Murariu, Romania) ,
- ❑ **Medicinal and Aromatic Plants** (12 members, chair Z. Dajic Stevanovic, Serbia),
- ❑ **Vegetables** (13 members, chair Z. Matotan, Croatia),
- ❑ **Fruit Crops and Vitis** (22 members, chair L. Tomic, BiH-RS),
- ❑ **Fodder Crops** (12 members, chair V. Meglič, Slovenia),
- ❑ **Industrial Crops** (13 members, chair D. Kondic, BiH-RS),

one is thematic:

- ❑ **Documentation and Information** (chair F. Lashi, Albania).

The WGs are open for **one participant from each partner** of the network. Each WG is co-ordinated by a Chair and a Vice chair supported by a WG Secretary. They are elected by the WG among its members.

WG activities

WG activities are focused on specific crops/crop groups/themes :

- Inventorying,
- Collecting,
- *Ex situ* and on farm conservation,
- Seed and plant regeneration,
- Characterization and evaluation,
- Documentation and Information,
- Sharing of responsibilities.

The activities of the working groups are overseen by a Regional Steering Committee.

WG's meetings

The WGs organise at least one annual meeting:

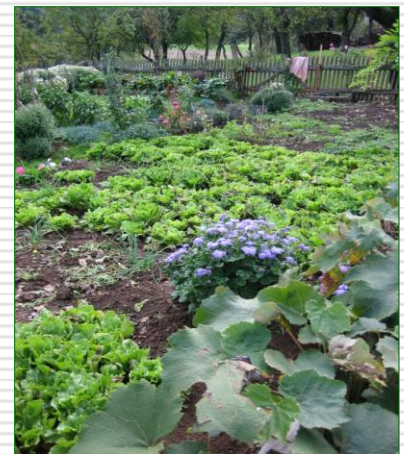
- discussion of issues related to specific crops and themes,
- discussion of WGs activities
- development of proposals for projects,....



5th meeting of the SEEDNet WG for Vegetables Ljubljana, Slovenia 26th of May 2009

WG projects

The WGs have initiated a number of common projects. Most of the project activities have been directed towards **inventorying and collecting of local material** since many areas in the region are still unexplored for occurrence of valuable plant genetic resources. Landraces of most cultivated crops are still cultivated by farmers, but most of this material is under direct threat and needs to be collected and conserved *ex situ* in the gene banks.



WG projects

- ❖ ***“Exploring, collecting and characterizing the local forms of industrial crops from SEEDNet area”*** (WG Industrial crops) - local cultivars of potatoes and industrial crops have been collected.
- ❖ ***“Characterization of apple local varieties (*Malus domestica* Borkh.) from South East European region”*** and ***“Collection and field evaluation of local plum (*Prunus domestica*) genetic resources from South East European network”*** (WG Fruit and *Vitis*) - collection and characterization of local cultivars. Collected data and photos taken will be compiled into two separate pomologies of Balkan local cultivars of apple and plum.
- ❖ ***“Identification, characterization and conservation of old and autochthonous vine varieties in Eastern European countries”*** (WG Fruit and *Vitis*) - local *Vitis* cultivars have been identified and described for both morphological and ampelografic characters and unique accessions have been identified with the help of DNA markers.

WG projects

- ❖ **“South East European Solanaceae Germplasm Collection, Conservation and Sustainable Use”** (WG Vegetables) – collection of pepper, tomato and eggplant accessions.
- ❖ **“Inventorying and collecting of indigenous onion (*Allium cepa* L.) and leek (*Allium porrum* L.) germplasm for further ex-situ conservation”** (WG Vegetables) - a number of accessions of leek, garlic and onion have been collected.
- ❖ **“Collection, characterization, and regeneration of local kale (*Brassica oleracea* var. *acephala*) population germplasm from eastern Adriatic coast region for their conservation in gene banks”** (WG Vegetables) - the project partners have collected and described local cultivars of kale.

WG projects

- ❖ **“Collecting local landraces of maize and cereals (wheat, barley, rye, oat, millet and buckwheat) in South Eastern Europe”** (WG Cereal and Maize) - a large number of maize, wheat, barley, rye, oat, millet, buckwheat and accessions of some other species of *Sorghum* and *Triticum* have been collected.
- ❖ **“Regional collecting expedition and ex situ conservation of *Trifolium pratense* L., *Festuca pratensis* Huds., *Dactylis glomerata* L. and *Medicago falcata* L.”** (WG Fodder crops) - collection of accessions of red clover, yellow alfalfa, cock s foot and meadow fescue.
- ❖ **“Genetic Structure of Dalmatian Sage (*Salvia officinalis* L.) Populations: A Model for a Collaborative Research on MAP Genetic Resources”** (WG Medicinal and Aromatic Plants) - the biodiversity of Dalmatian sage populations have been studied and the amount and structure of population genetic diversity, the geographic differentiation, the occurrence of demographic bottlenecks and the ecotypic divergence have been assessed.

Capacity building and training

- ❑ Capacity building and training is an important element of SEEDNet. Courses and training workshops within different fields are regularly organized for the network members.

- ❑ During the existence of the network a total of 30 training courses have been organised covering a wide range of topics:
 - a 2 year international Master of Science programme in management of biological diversity;
 - information and documentation technology;
 - application of genetic and molecular markers in gene banks; conservation strategies;
 - gene bank management and operations; *in vitro*, *in situ* /on farm conservation;
 - PGR policy; project administration, reporting, accounting and auditing.

Achievements

- During the course of the programme gene banks with facilities for long term conservation have been set into full operation in all partner institutions. Active and base collections are being established and internationally accepted gene bank standards are being implemented. Field gene banks for fruit and *Vitis* are as well established in most partner countries.
- Several partner gene banks are regularly uploading accession pass port data to the common European inventory data base EURISCO. Characterization of collected and conserved accessions is now a standard activity of most of the partner gene banks. Evaluation of accessions of selected species has also been initiated by several gene banks. In some cases this is done in collaboration with breeders.



Achievements

- The SEEDNet partners are in general very active with regards to raising awareness of the importance of conservation and use of plant genetic resources. Activities have been directed towards schools, farmers and the general public through various media. It seems as if the actions have resulted in a higher degree of awareness of the need for a sustainable conservation and utilisation of PGR and not the least involvement of new stakeholders from both general public and the farming community in this joint effort.
- All partners have made important progress in the field of PGR within a rather short period of time and are now in a much stronger position having acquired knowledge that allow them to better manage, conserve and utilise their PGR. In addition the network participants have built up and strengthened a solid partnership and a platform for future project collaboration and sharing of conservation responsibilities.

Forage crops WG

The strategy of the SEEDNet Forage crops WG reflects the needs and interest for Conservation and exchange of the most important and priority forage species of the whole region.

Project: “Regional collecting expedition and ex situ conservation of *Trifolium pratense* L., *Festuca pratensis* Huds., *Dactylis glomerata* L. and *Medicago falcata* L.”

Main goals of the project:

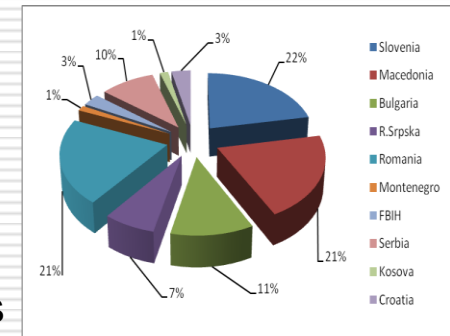
- Enlargement of the genetic basis of regional forage GR collections with new germplasm of two grass and two legume species defined as priority species for the region.
- Collection of seeds from its nature populations (different floristic, environmental or pedological regions belonging mainly to permanent grassland habitats).
- Regeneration, characterisation and further evaluation; preparation of seeds for long term storage.
- Documentation of characterization and evaluation data and on line publication.
- Strengthening regional, sub regional and international cooperation.

Forage crops WG - Project

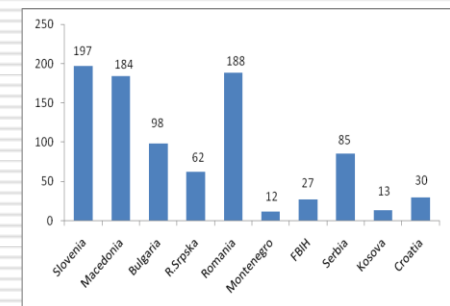
Collecting was focused on different bio-geographic regions, altitudes, grassland types and land use. Each project partner visited characteristic locations that were chosen based on prior knowledge and inventorisation of target species. In total 896 accessions were collected.

Collected seeds were included in national gene bank collections in the form of active and base collections as a source of forage germplasm for breeding. Seeds were regenerated, processed and accessions have been stored vaults at -20°C . All collected and multiplied seed accessions are supplied with multi crop passport descriptors (EURISCO) and with information on collection sites and grassland habitats.

A better knowledge of ecotype populations deriving from well-defined habitats could help in planning of future collection missions, selecting adapted genotypes for direct further use and/or for breeding purposes and finally in defining valuable sites for *ex-situ* and *in-situ* conservation.



Contribution to the total number of samples collected by each partner.

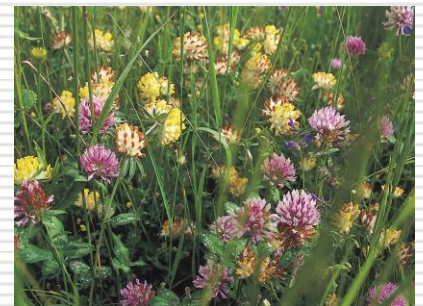


Total number of accessions collected by partner

Forage crops WG - Project

Impact and benefits:

- Enrichment of the national *ex situ* collections with new species.
- Specified sites for *in situ* conservation of forage grasses and legumes in different habitats.
- Contribution to decision making as to the focus of conservation on either *in situ* or *ex situ* conservation.
- Seed exchange among SEEDNet partners and other Gene banks.
- Collected plant material of forage species and characterization of collection sites and grassland habitats important as a of forage germplasm for long term preservation and source for breeding programs.
- Increased scientific staff proficiency at regional and local level.



Vegetables WG - project

Project: “Inventorying and collecting of indigenous onion (*Allium cepa* L.) and leek (*Allium porrum* L.) germplasm for further *ex-situ* conservation”.

The aim of the project:

- ❖ to collect and protect indigenous germplasm which may be in danger of extinction
- ❖ long term preservation of onion and leek accessions of regional origin well documented, described, and evaluated
- ❖ to strengthen regional, sub regional and international cooperation and documentation for a broad use and exchange of information and seed

Expected results:

- ❖ regional, subregional and international cooperation and documentation for a broad use and exchange of information and seed obtained data included in the international information system and subsequently sent to the EADB (European Alliums Database)

Vegetables WG - project

- Within the project the working group from the Agricultural institute of Slovenia carried out activities on inventarization and collection of new local onion accessions. In 2009 and 2010 expeditions were organized in autumn in traditional onion growing regions of Slovenia (Podravje, Bela Krajina, Primorska).
- 21 onion accessions have been collected, the majority belong to the old variety Ptujska rdeča as well as to the variety Belokranjka.



<http://www.seednet.nu/>

