

Examples of capacity building: Genebank peer reviews

Dagmar Janovská & Zoltan Ay
9 October 2025

Capacity building

Capacity building is the **process of strengthening:**

It is an internal, long-term, and dynamic process that focuses on **changing mindsets and attitudes**, rather than just one-off interventions.



Romania, Suceava, 9 – 11 April 2025

Suceava Genebank (SVGB) – Banca de Resurse Genetice Vegetale „Mihai Cristea”

- under the “Gheorghe Ionescu-Șișești” Academy of Agricultural and Forestry Sciences, Bucharest
- Over 25,000 accessions; 19,037 distinct genotypes across 597 taxa, 454 species, 234 genera, and 44 families. Includes: 5,754 maize, 2,731 common bean, 2,550 common wheat
- Long- and medium-term conservation of seed-propagated plant species important to Romanian agriculture; includes cereals, legumes, vegetables, industrial, forage, medicinal, aromatic, and ornamental crops
- ~55% of the collection consists of traditional landraces ("peasant seeds"); material is distributed under SMTA incl. non-Annex I crops; National Focal Point for ITPGRFA; ISO 9001:2015 and SR 13572:2016 certified; established in 1990; acts under national laws and governmental mandate



Recommendations for RO Genebank

1. Develop a long-term financial strategy to ensure sustainable funding and reduce reliance on short-term projects.
2. Broaden safety duplication through formal agreements with regional and international genebanks beyond Svalbard.
3. Improve regeneration plans for open-pollinated crops.
4. Clarify seed request limits based on purpose and availability.
5. Publish the distribution policy online, listing all conserved PGRFA.

Tsilkani, Tbilisi, Georgia 28 – 30 April 2025

LEPL Scientific Research Center of Agriculture (SRCA)

- Tbilisi, Georgia (main office); Genebank in Tsilkani (30 km from Tbilisi)
- 846 wheat, 1,473 bean, 486 maize accessions
- Collection, conservation, documentation, and distribution of plant genetic resources; focus on landraces and endemic species
- *In vitro* lab for potato and grapevine conservation; safety duplication at Svalbard; collaboration with Tbilisi Botanical Garden





Recommendations for GE genebank

1. **Governance and Financing:** Establish a national PGRFA programme that defines priorities, roles, and international commitments; pair it with a long-term financial strategy that accounts for inflation and project gaps; include an operational contingency plan.
2. **Targeted Collecting and Baseline Conservation:** Prioritise key crops and local landraces; secure material now (collect and store) and plan for future regeneration; set a minimum seed quantity per accession in line with international norms.
3. **Risk and Safety:** Implement formal safety duplication in a second genebank and adopt a policy for this; install emergency backup systems (e.g. generator, compressors) to protect storage during outages.
4. **Seed Quality System:** Adopt viability thresholds and standard operating procedures; invest in drying and cold storage capacity; perform regular viability testing and automatically flag accessions for regeneration.
5. **Access and Distribution Policy:** Define clear minimum and maximum seed quantities per request to balance user demand with conservation goals.
6. **Data and Documentation:** Digitise vegetative collections; standardise procedures; publish passport and characterisation data to EURISCO; adopt GRIN-Global (or equivalent) for end-to-end curation.

Czechia, Prague, 19 May 2025

Czech Agrifood Research Center

- Under Ministry of Agriculture
- National programme on PGRFA, central storage
- Long-term conservation, -18 °C
- Capacity 187,000 containers, more than 43,000 acc.
- MLS, SMTA



Czech genebank recommendations

1. Secure stable long-term funding to manage large collections and complex operations, reducing project dependence.
2. Use vacuum-sealed aluminium bags for base and safety duplication.
3. Fully implement the barcode system for active use.
4. Strengthen viability testing by investing in staff training and facility upgrades.

Hungary, Tápiószele, 23-24 April 2025

National Centre for Biodiversity and Gene Conservation (NBGK)



Reviewers: Lise-Lykke Steffensen (NORDGEN)
Sylvia Vogl (AGES)

Reviewed sites: headquarter
storage rooms
fields
orchards
in vitro collection
seed handling spaces
laboratories – seed viability
genetics
analytics
on farm partner

Hungary, Tápiószele, 23-24 April 2025

National Centre for Biodiversity and Gene Conservation (NBGK)



Established in 1959.

Under the Ministry of Agriculture.

Not the only but central genebank in Hungary.

> 57000 accessions

15 cooling chambers (9 medium- and 6 long-term)

~ 130 employees



Hungary, Tápiószele, 23-24 April 2025



Hungarian genebank – strengths

1. Large capacity for facilities and human capital. Huge collection.
2. Lots of space, beautiful surroundings, deep black soil.
3. Recently built and well equipped functions.
4. Transparent processes.
5. Well trained staff. *The Institute could be taken to the next level.*

Hungarian genebank – recommendations

General: Introduce a Quality Management System. Reduce risk of losing knowledge with written procedures, standards and instructions. Prepare contingency plan. Install fire alarms. Rethink open-door policy. 2000 free visitors per year are risky. Train the staff for digitalization and English language.

Documentation: Change the Excel based system to new database. Apply more people.

Seed storage: Rethink storing duplicates acquired from other genebanks. Apply phytosanitary expert. Incube incoming material. Introduce silica gel into the glasses.

Hungarian genebank – recommendations

Plant regeneration: Sow more seeds. Use pollinators. Shade the greenhouse.

***In vitro*:** Write protocols. Separate workplace and storage. Train the staff to decrease contamination. Renew plants more frequently.

Distribution: Provide more information for requesters. Poor collaborations with third parties → communicate, communicate, communicate!

PRO-GRACE Online questionnaire edited by Theo v. Hintum in 2023

Distributed samples	Hobby gardeners	Farmers	Research institutes	Educational institutes	NGO's	Museums	Municipalities	TOTAL
2019-2023	76185	1037	744	659	13297	70	108	92100

→ What does national variety mean?

SUMMARY

Peer reviews are very useful and helpful.

More eyes see more.

Better to know our weaknesses then not to know. 😊

'The staff was very helpful. We felt a true spirit of a peer review' – Lise Lykke & Sylvia

THANK YOU

Dagmar Janovská: dagmar.janovska@carc.cz

Zoltán Áy: ay.zoltan@nbgk.hu