

Germplasm Conservation

- ❖ Safe conservation of germplasm is essential for its present and future utilization in crop improvement programs.



Holding genetic resources at ICRISAT in trust with FAO.

Facilities for germplasm conservation

Short-term store

- ❖ Maintained at 18-20°C temperature and 30-40% relative humidity (RH), used for temporary holding of seeds.

Medium-term store

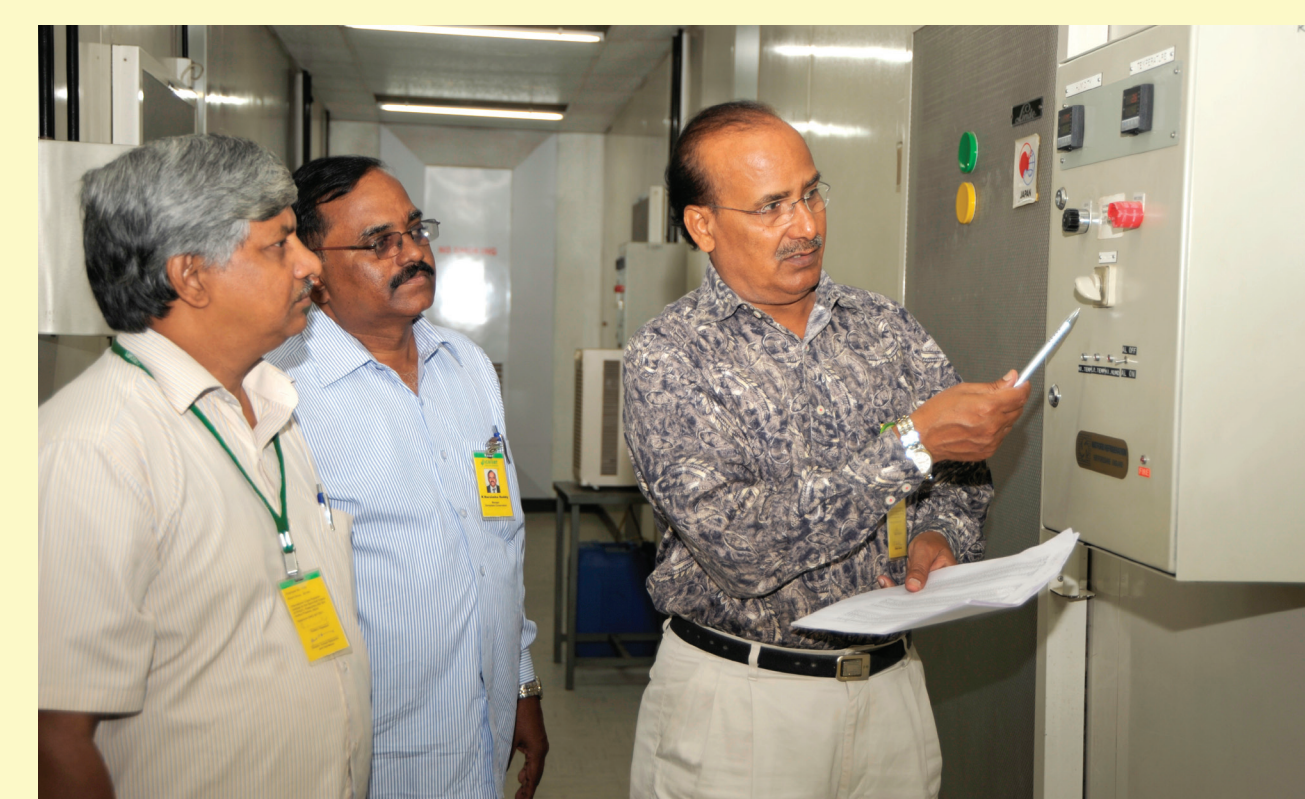
- ❖ Maintained as active collection at 4°C temperature and 30% RH.
- ❖ Seeds are stored in aluminium cans.
- ❖ Seed viability can be maintained above 85% for 15-20 years.

Long-term store

- ❖ Maintained as base collection at -20°C temperature.
- ❖ Seeds are vacuum sealed in aluminium foil packets.
- ❖ Seed viability can be maintained above 85% for 50 years or more.



Medium-term store.



Genebank modules.



Medium-term store of regional genebank, Niamey.



Long-term store.

Seed drying room

- ❖ Maintained at 15°C temperature and 15% RH for drying seeds
- ❖ Seeds are dried to 8-9% moisture content for medium-term conservation and to 4-7% moisture content for long-term conservation.



Seed drying room.

Seed biology laboratory

- ❖ Seed laboratory is used for conducting germination and seed health tests.



Testing the viability of stored germplasm.

Glasshouse



Wild relatives of non-seed producing groundnut maintained as live plants in glasshouse.

Field genebank

- ❖ Non-seed/less seed producing wild species of sorghum and pearl millet are maintained as live plants in the field genebank.



Non-seed/less-seed producing pearl millet wild species maintained in field genebank.

Field

- ❖ Sufficient precision field space is available for regeneration, characterization and evaluation of germplasm accessions.

Safety of conserved germplasm

- ❖ Genebank is designed on modular principle to withstand natural disasters and is equipped with all safety and security measures.
- ❖ To maximize longevity, and quality pre-dried seeds are packed in moisture-proof containers and stored in cold stores.
- ❖ Three regional genebanks, at Niamey, Niger; Nairobi, Kenya and Bulawayo, Zimbabwe were established to cater research needs of African countries.

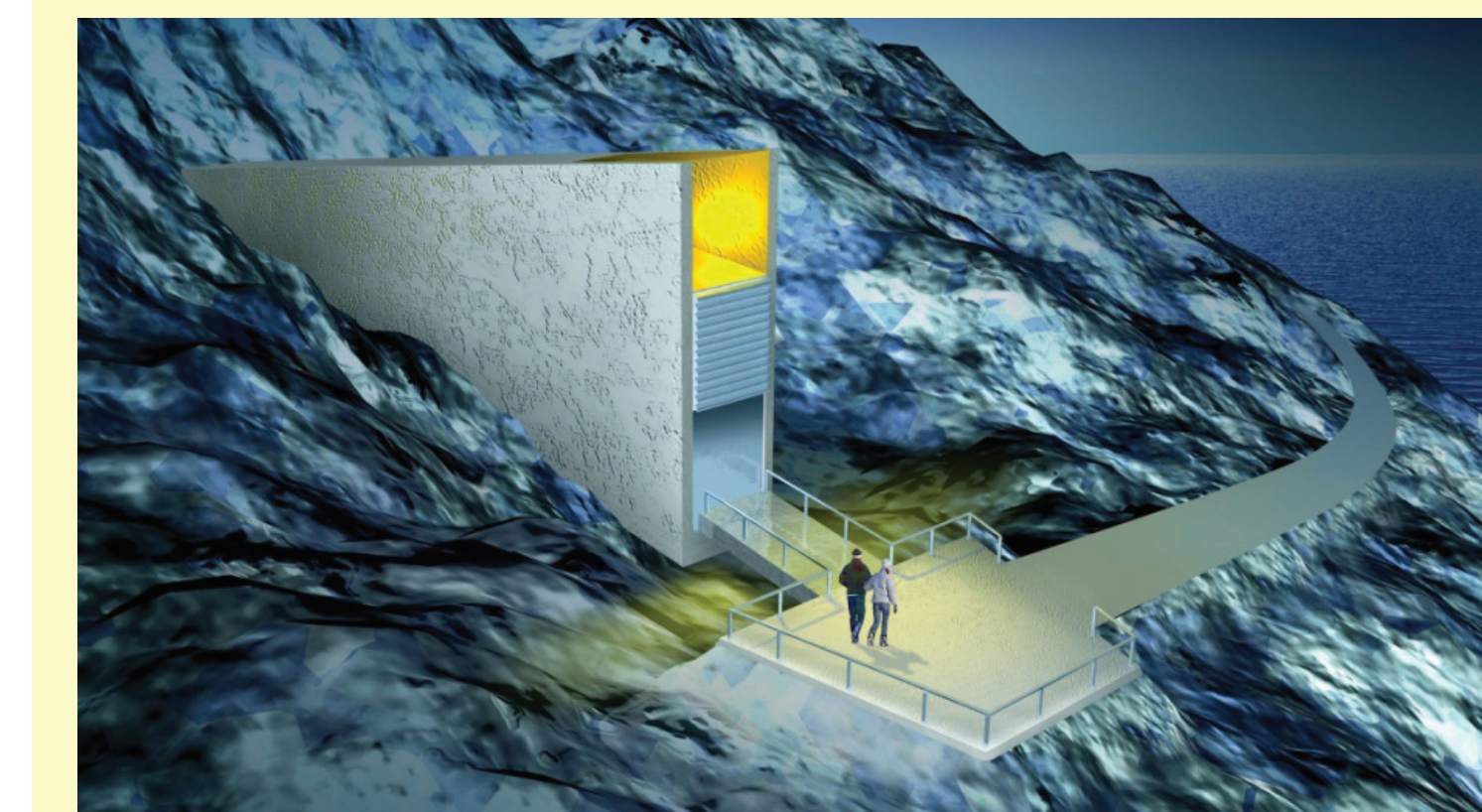
- ❖ Safely duplicated over 110,000 accessions of six mandate crops and five small millets at the Svalbard Global Seed Vault (SGSV), Norway



Vacuum sealing of seeds for long-term conservation and safety duplication.



Boxes containing seed for shipment to Svalbard Global Seed Vault, Norway.



External view of Svalbard Global Seed Vault, Norway.