

Integrated Nordic-Baltic Genebank Information Management System

Jan Svensson
Nordic Genetic Resource Centre
#NordGen

Genebank

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Biobank



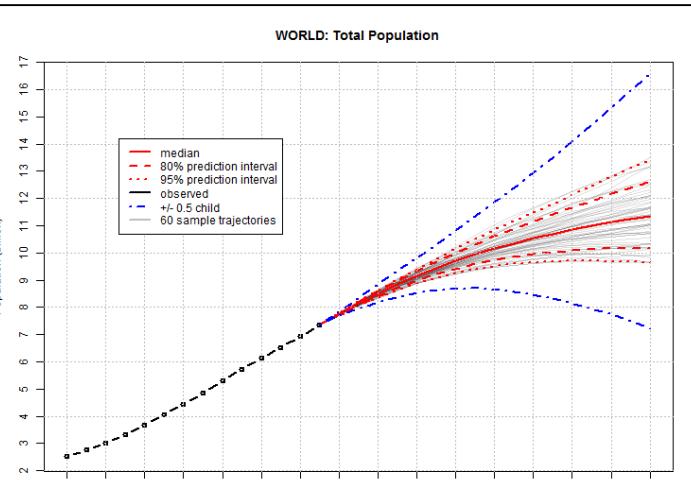
Genebank

- conservation of plant genetic resources (PGR)
- utilization of PGR (public domain)
- cooperation and communication
- documentation -> open data access



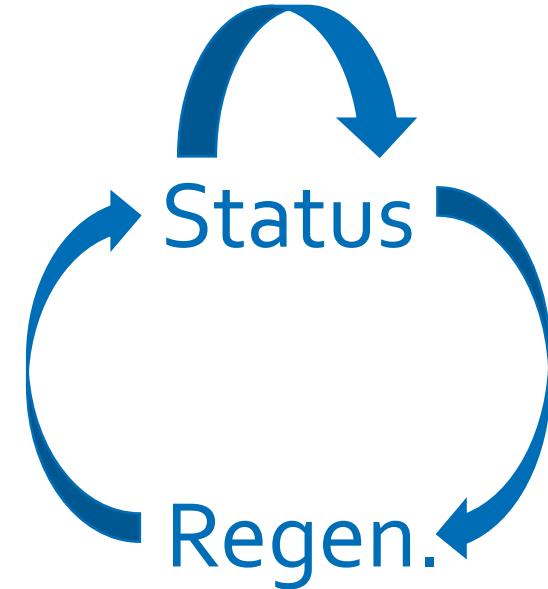
Importance of PGR – changing climate

- abiotic stress (drought, flooding, weather extremes)
- biotic stress (changes in disease pressure)
- broad genetic base
- PGR is the basis for adaptation for resilient and sustainable agriculture



Genebank workflow

- living material
- regeneration
- characterization/evaluation



149992

58896



NordGen current database

- passport data
- inventory
 - quality
 - amount
 - location
- order system (SMTA)



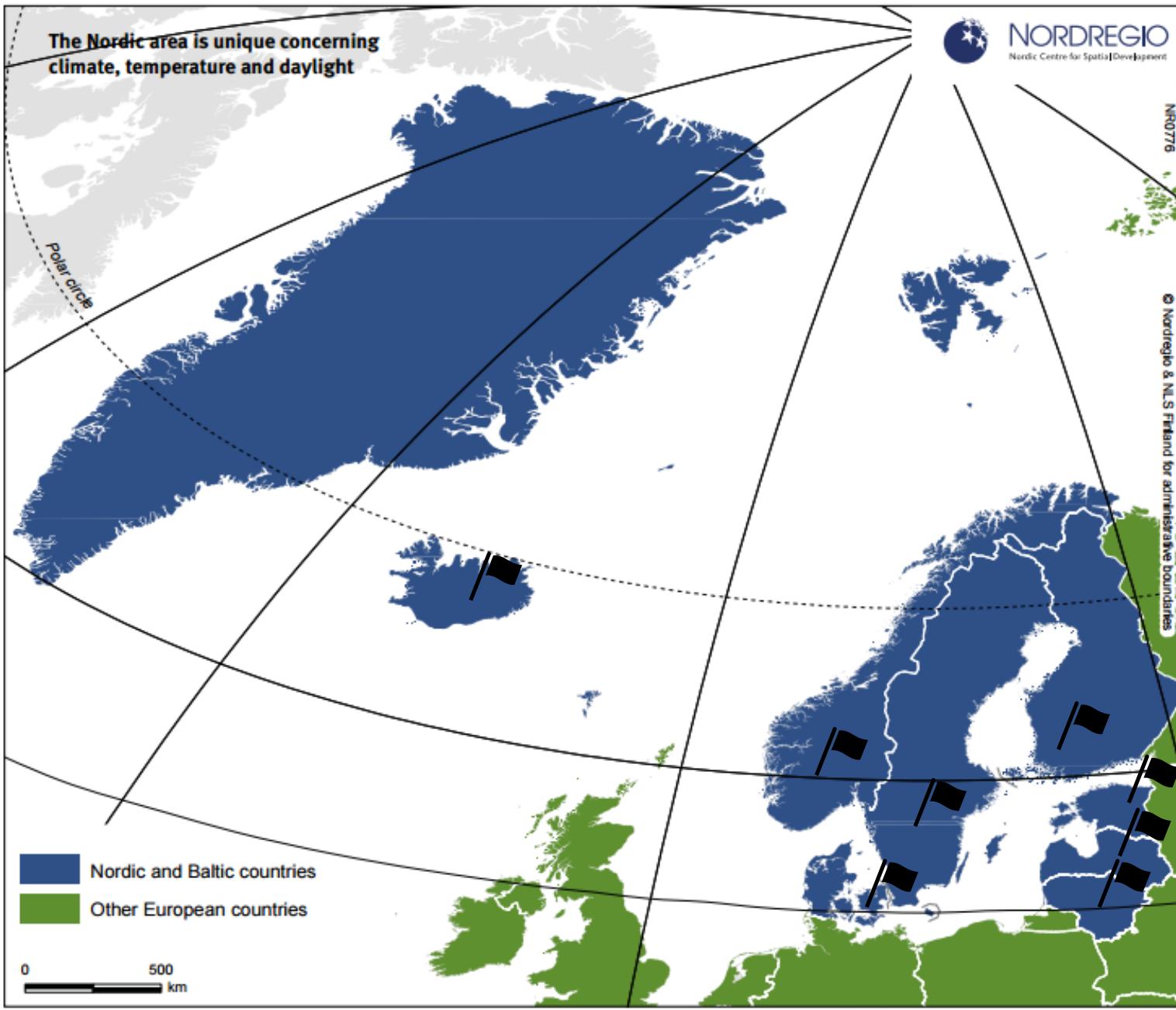
Integrated Nordic-Baltic Genebank Information Management System

This document describes the Integrated Nordic-Baltic Genebank Information Management System (INB-GIMS), a comprehensive software solution designed to manage genebank operations across the Nordic and Baltic regions. The system is built on a modular architecture, allowing for customization and integration with existing systems.

Key Features:

- Inventory Management:** Comprehensive management of seed collections, including accessions, varieties, and subspecies. The system supports multiple classification levels and provides tools for tracking seed provenance, quality, and usage.
- Conservation:** Advanced features for seed banking, including low-temperature storage, regeneration, and long-term preservation strategies. It includes a database for managing seed viability and regeneration cycles.
- Research and Breeding:** Tools for trait selection, breeding, and genetic analysis. This includes a library of molecular markers, a database for trait descriptions, and a platform for sharing genetic resources and research findings.
- Data Management:** A central repository for all data generated by the genebank. This includes field data, laboratory results, and administrative records. The system supports data entry through various interfaces, including web-based forms and mobile applications.
- Reporting and Analysis:** Powerful reporting tools for generating reports on seed availability, collection status, and research progress. These reports can be customized to meet specific user needs.
- Integration:** The system integrates with other genebanks and external databases through APIs and standard data exchange formats.

The INB-GIMS is developed using modern software engineering practices, including agile development, continuous integration, and a focus on user-centered design. The system is built on a robust infrastructure, ensuring high performance and reliability. It is available in multiple languages and can be deployed on-premises or in the cloud.



Map layout: Linus Rispling, Nordregio

The future GRIN-Nordic-Baltic

- passport data
- inventory
- order system (SMTA)
- phenotype**
- genotype**



GRIN-Nordic-Baltic after launch

- FAIR data principles
- GIS data
- data analysis tools
- connectivity to other db.
- integrated QMS
- natural language processing



Thank you!

Three species, maize, rice and wheat supply
42.5 % of the world calorie intake (FAO).

jan.svensson@nordgen.org

>10,000 plants species are edible

