



AGENT

Innovation for Global Access to Plant Genetic Resources









CHALLENGES

-  Redundancies between local collections
-  Climate change requires adaptation of crops for breeding and agriculture
-  7.4 million accessions peripherally stored in 1,750 gene banks worldwide
-  Lack of unified international standards for managing and exploiting genetic resources
-  Deficient database infrastructure for data mining of global collections
-  Difficulties in finding the right accessions for different purposes

VISION

Establishing a global gene bank network to sustainably unlock the genetic diversity of food crops for future generations and make them intuitively accessible for modern breeding programmes

OBJECTIVES

-  Establish an actively cooperating gene bank network
-  Evaluate the quality and redundancy of existing GenRes collections
-  Provide the community with a new database and novel data-mining tools
-  Establish a stakeholder network of breeders, farmers and NGOs
-  Complement existing genotypic information for wheat and barley
-  Establish coordinated GenRes training populations for phenotyping of independent collections
-  Use FAIR ("Findable | Accessible | Interoperable | Reusable") principles to allow application to any crop species
-  Mine new and historic genotypic and phenotypic information to drive the discovery of genes, traits and knowledge

APPROACH



DURATION
5 Years



FUNDING
7 Million €





18 PARTNERS
15 Countries



13 GENE BANKS
5 Bioinformatics Centres

AGENT will analyse data for plant height, flowering time and weight (TKW) across gene banks through:

-  trials with checks to understand trait-specific genotype-environment patterns: 50 winter and 50 spring accessions
-  bridging genotypes to connect present and historic phenotypic data across gene banks: 75 winter and 75 spring accessions

AGENT will verify and refine the categorisation of regions with similar climatic conditions ('mega environments').



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