Digital Object Identifiers (DOI) for Crop Wild Relatives

Standardizing Crop Wild Relatives identification globally

Introduction

Plant breeders, genebank managers, researchers, and farmers face a persistent challenge: when crops, including CWRs derived material, is transferred between institutions, locally assigned identifiers fail to uniquely track material across systems. This prevents effective collaboration on conservation and breeding, and causes valuable associated data to be lost in transfer. The FAO's Global Information System (GLIS) addresses this by implementing Digital Object Identifiers (DOI) as a universal, permanent solution for identifying plant genetic material across institutions and borders.

Objectives

This Practice Abstract aims to present the FAO GLIS - DOI system and the reasons why it is useful in Crop Wild Relatives conservation and use.

Results

The GLIS-DOI system aims to solve the fragmentation of the data exchange between genebanks by assigning each accession a globally unique and permanent identifier, enabling any stakeholder to access linked research, provenance data, and transfer histories regardless of which institution currently holds the material.

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For CWRs collected *in situ*, this fragmentation is a reality : the material often passes through multiple institutions, from collector to genebank to breeder. The DOI system allows each transfer to be recorded and linked, so that research results generated anywhere along that chain can always be traced back to the original wild population, preserving the scientific value of the material over time.

The system also established a standardized metadata framework covering mandatory descriptors aligned with the FAO/Bioversity Multi-Crop Passport Descriptors (MCPD). Registering CWR accessions through GLIS ensures interoperability with existing European and global databases, reinforcing the documentation standards reccomended for in situ CWR populations.

Recommendations

Genebank managers should assign one DOI per available accession and include DOI references in all material transfers and publications. Breeders and researchers receiving material under Standard Material Transfer Agreements can use the DOI system to fulfil their reporting obligations under SMTA Article 6.9 simply by citing DOIs in publications. Farmers managing traditional varieties may register inherited material to preserve provenance records. Adoption creates a traceable, interoperable chain of custody that protects rights, supports benefit-sharing compliance, and enables richer discovery of performance data across global crop collections.

Further reading

- Alercia, A., López, F.M., Sackville Hamilton, N.R. and Marsella, M., 2018. Digital Object Identifiers for food crops - Descriptors and guidelines of the Global Information System. Rome, FAO.

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