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Enhancing the central ECPGR information system for *in situ* CWR data

Ad hoc Crop Wild Relatives Working Group Meeting 13–15 December 2022, Thessaloniki, Greece







- Definition of principles of data inclusion in EURISCO (T. van Hintum/J. Iriondo)
 - → approved by project partners + EURISCO AC

 To do: Implementation of data integration + extension of public web interface \rightarrow 10/2022 – 12/2023





Principles for the Inclusion of CWR Data in EURISCO

Prepared by Theo yan Hintum and José kipado, within the framework of the ECPGR project "Extension of EURISCO for Crop Wild Relatives (CWR) in situ data and preparation of pilot countries' data sets' (CWR data in EURISCO), funded by the German Federal Ministry of Food and Agriculture.

Agreed by project partners and EURISCO Advisory Committee in May 2022

Populations of crop wild relatives (CWR)¹ occurring in situ are potentially valuable resources for crop science and plant breeding. Therefore, they need to be conserved and made available to users. However, the current conservation of, and access to these CWR populations varies strongly. In situ conservation of CWRs is often in the hands of nature conservation organizations, who are sometimes not even aware that they are managing these resources. Other CWR populations occur in farmers' fields, roadsides and other locations, where they are not managed at all. Furthermore, information about the CWR populations, their occurrence and availability, is hardly available

The issue of CWRs has recently received much attention, e.g. from EU-funded projects such as Farmer's Pride and from the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The latter coordinated and led the publication of a descriptor list for CWRs conserved in itu (Alercia et al., 2021). For ECPGR and its database EURISCO, the issue of property handling information about in situ CWRs has been on the table for a while, but for various reasons never resulted

scattered over various sources or not available at all, whereas in some other European countries national checklists of CWRs, priority lists, population occurrence records and ex situ and in situ conservation assessments are available (e.g. Maxted et al., 2007; Smekalova, 2008; Phillips et al., 2014; Landucci et al., 2014; Labokas et al., 2018; Taylor et al., 2017; Rubio Teso et al. 2018, van Treuren et al., 2017). In ome cases, specific websites have been created to showcase CVVR in a country, providing information about the occurrence, distribution, availability and other data (such as https://www.cwmi.n/en/CWRni-1.htm with information about CWRs occurring in the Netherlands). This heterogeneity of cases is one of he reasons why it is difficult for users (plant breeders and crop scientists) to find out about and access

To improve the situation this proposal aims at:

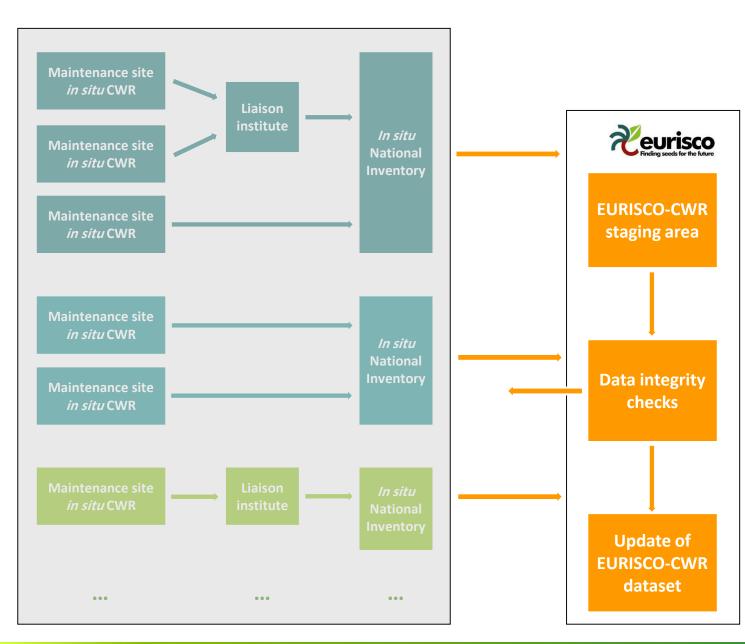
- 1- Supporting the development of CWR National Inventories providing information on the CWR taxa and occurrence of CWR populations, their conservation status and their availability.

 Feeding EURISCO with information on CWR populations that are – in principle – available

The approach suggested in this proposal is based on various documents such as the Concept for a ocssible extension of EURISCO for in situ crop wild relative and on-farm landrace data (Weise et al. 2020), the Descriptors for Crop Wild Relatives conserved in situ (Alercia et al. 2021), and on discussions held in various platforms. It also relies on previous publications on CWR descriptors, such as those of Thormann et al. (2017) and Bioversity International & University of Birmingham (2017). It presents an approach that will hopefully result in the desired outcome: a) properly organized information about CWRs occurring in a country, arranged in an in situ CWR National Inventory, and b) information in EURISCO about CWR populations occurring in situ and potentially accessible for use. However, success will depend on the willingness of the European countries to create these National Inventories for CWRs and

¹ This document is focused on CWR, however, most of the approaches proposed here can also be









Steps to integrate data into EURISCO

- Descriptors for uploading in situ CWR passport data
- Upload to EURISCO
 - By an authorised CWR Focal Point (can be the ex situ NFP or another)
 - In situ CWR data separated from ex situ data
- Database schema extension
- Development of import tool for in situ CWR data
- Development of procedures for data integrity checks and data integration
- Web interface extension according to user requirements



Recent developments

- Compilation of EURISCO in situ CWR passport data standard
 - Mapping of CWR information on current EURISCO structure
 - CWR population considered similar to an ex situ accession
 - Population ID like the accession number
 - New concept: institute for liaison between potential user and managing organisation
 - Other EURISCO descriptors can be used for in situ CWR data
 → slightly wider interpretation
 - Additional status terms for some of the descriptors
 - 28 descriptors
 - Standard description + Excel template available



Descriptors for uploading in situ CWR passport data to EURISCO

2022-11-02

1 Introduction

This descriptor list describes the data exchange format for uploading passport data from the National Inventories for in situ CWR to EURISCO.

The descriptors in this list are a selection from those of the ex situ format for upload, with the addition of a few. In case the descriptor name or description is deviating from the ex situ upload format, this is indicated in the description.

A significant departure from the ex situ data exchange format is the concept of an in situ CWR population being an accession. As a result, the population identifiers becomes the ACCENUMB in EURISCO, and the managing institute code and name the INSTCODE/INSTNAME, respectively.

The mandatory fields are, similarly to the ex situ upload format, NICODE, INSTCODE, ACCENUMB and GENUS. The combination of these fields has to be unique.

2 General formatting rules

The general formatting rules that apply to the ex situ data also apply to the in situ data:

- If a field allows multiple values, these values should be separated by a semicolon (;) without space (e.g. Accession name: Symphony; Emma; Songino).
- A field for which no value is available should be left empty (e.g. Elevation). If data are exchanged in ASCII format, a field with a missing numeric value should be left empty. If data are exchanged in a database format, missing numeric values should be represented by generic NULL values.
- Dates are recorded as YYYYMMDD. If the month or day is missing, this should be indicated with hyphens or '00' [double zeros]. If both (month and day) are missing, two double zeros are needed (e.g. 1975000: 197506--, 19750600).
- Country names: Three-letter ISO codes are used for countries. The ISO 3166-1 standard country or
 area codes are available online at: https://unstats.un.org/unsd/methodology/m49/.
 Note: The list of obsolete codes can be found at: https://en.wikipedia.org/wiki/ISO 3166-1 alpha-3#Reserved code elements.
- For institutes, the codes from FAO WIEWS should be used. The current set of institute codes is available from the FAO WIEWS site (http://www.fao.org/wiews).
- If new institute codes are required, they can be generated online by FAO National Focal Points (http://www.fao.org/agriculture/crops/thematic-sitemap/theme/seedspgr/gpa/national-focal-points/en/) or they can be requested from: WIEWS@fao.org.
- In case no FAO WIEWS code of the institution responsible for, and/or organization that manages
 the CWR population is available and cannot be generated, the code ('DUMMY') can be used.
- For institutes that no longer exist, or that were not assigned a FAO WIEWS institute code, please
 provide full details in the descriptors INSTNAME and LIAISONNAME, respectively.



Recent developments

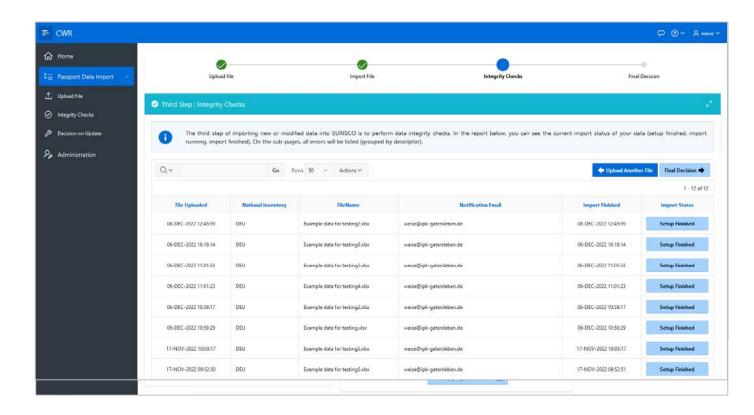
- Development of upload mechanism
 - Preparation of MS Excel file using the EURISCO in situ CWR data standard
 - Upload via the EURISCO intranet
 - Upload by CWR Focal Point
 - Pure web-based upload of data
 - No third-party software needed
 - No specific firewall settings needed





Recent developments

- Interface separated from *ex situ* data upload, but same design
- As simple as possible





What's next?

- Database schema extension
- Development of procedures for data integrity checks and data integration
- Web interface extension according to user requirements

- Training of country Focal Points in charge of in situ CWR data
 - Online workshops/webinars
 - Helpdesk function
- Public awareness products → ECPGR Secretariat



M. Grau / IPK



Thank you for your attention