



# Caring & Sharing

## Centre for Genetic Resources, The Netherlands (CGN)

Theo van Hintum

Joint PRO-GRACE-EMPHASIS policy symposium

Brussels, June 27<sup>th</sup>, 2024

# The Centre for Genetic Resources, The Netherlands (CGN)

5 minutes pitch of a well functioning national centralized plant genetic resources programme

- vision, mission and objectives
- organization
- outputs



# Vision, mission and objectives

# CGN's vision, mission and objectives

## Vision

- Easy access to sufficient plant genetic resources for current and future users to face the challenges of an ever-changing world.

## Mission

- To contribute to the better **conservation** of, and **access** to, plant genetic resources (PGR)

# CGN's vision, mission and objectives

## Objectives

- CGN aims at making the Dutch contribution to this mission
  - Management **ex situ PGR collections**
    - Crops important to the Netherlands, with special focus on vegetables
    - Serving the entire world
    - Strict quality management
  - Support **on-farm PGR management** activities of Dutch NGO's
  - Study, raise awareness of, and facilitate access to **crop wild relatives** (CWR)
  - Support development and help implement **international policy**
  - Carry out **methodological research** to improve efficiency of these activities



# Organization

# CGN's organisation

- Dutch governmental programme
  - Operating under 5-year agreements with the Government as 'statutory task'
    - Quality management
    - Independence from host institution
  - Host institution: Wageningen University and Research
    - Perfect scientific environment
  - Excellent collaboration with Dutch and foreign actors
    - Breeding industry advises and supports regeneration, evaluation and collecting
    - Good collaboration with Dutch on-farm NGO's and Nature Conservation Organisations
  - Active role in international platforms and initiatives
    - Collaboration is the only way to achieve our mission





# Outputs



# CGN's outputs

- High quality PGR programme



## MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:  
203914-2016-AQ-NLD-RvA

Initial certification date:  
18 November 2007

Valid:  
19 November 2022 – 18 November 2025

This is to certify that the management system of  
**Wageningen Research, WOT-unit CGN**  
Droevendaalsesteeg 1, 6708 PB Wageningen, Netherlands

has been found to conform to the Quality Management System standard:

**ISO 9001:2015**

This certificate is valid for the following scope:  
**Conservation of genetic material of plants and animals, documentation of associated data, promotion of use of genetic resources and supportive research.**

Place and date:  
Barendrecht, 11 October 2022

For the issuing office:  
DNV - Business Assurance  
Zwolseweg 1, 2994 LB Barendrecht,  
Netherlands



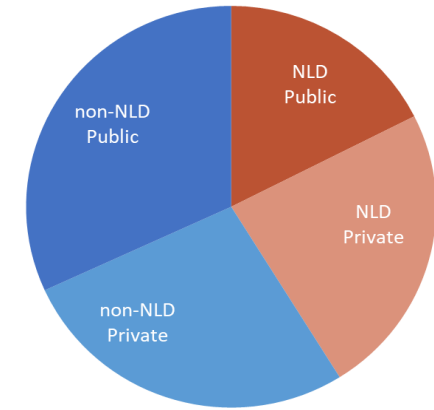
J.H.C.N. van Gijlswijk  
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV Business Assurance B.V., Zwolseweg 1, 2994 LB, Barendrecht, Netherlands - TEL: +31(0)102922689. www.dnv.com/assurance

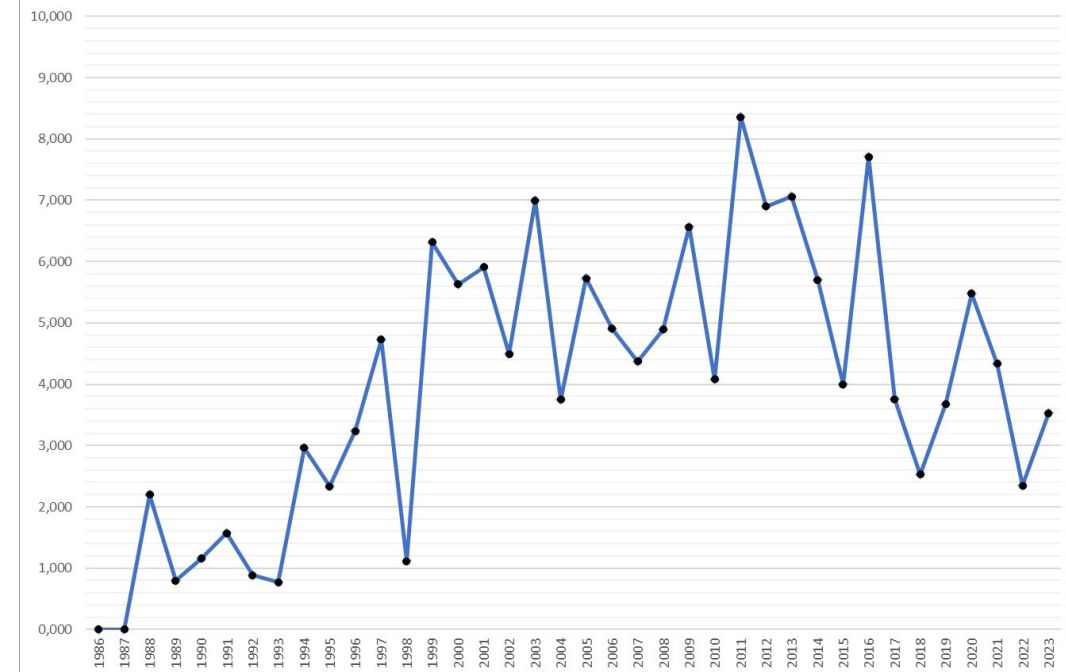
# CGN's outputs

- High quality PGR programme
- Well managed PGR collection

Recipients Distributed CGN Samples  
(2014-2023, n=43328 samples)

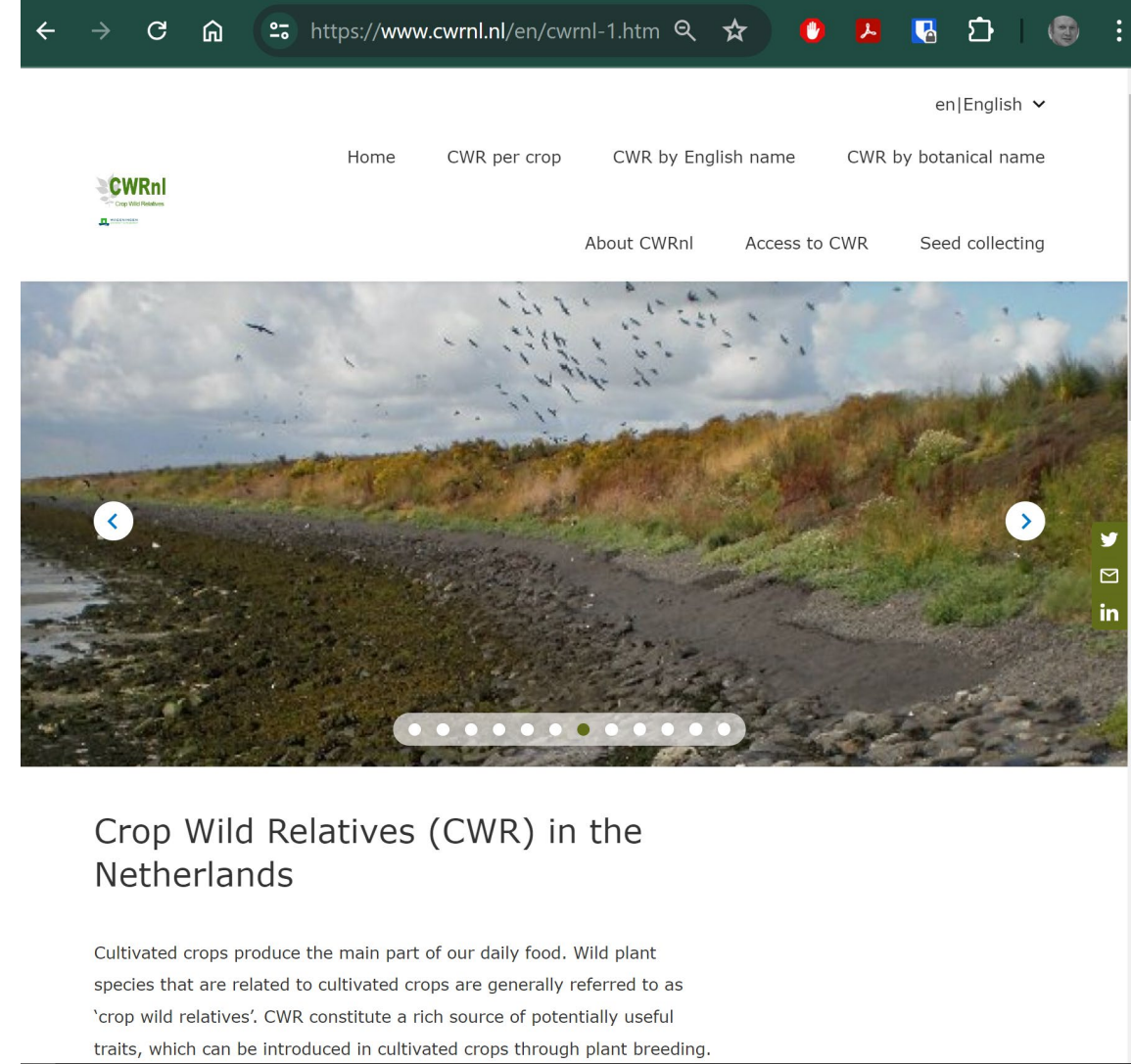


Number of distributed samples



# CGN's outputs

- High quality PGR programme
- Well managed PGR collection
- Contributions to various networks and initiatives



The screenshot shows a web browser displaying the CWRnl website. The address bar shows the URL <https://www.cwrnl.nl/en/cwrnl-1.htm>. The website has a navigation menu with links for Home, CWR per crop, CWR by English name, CWR by botanical name, About CWRnl, Access to CWR, and Seed collecting. The main content area features a large image of a coastal landscape with a large flock of birds flying in the sky. Below the image is the title "Crop Wild Relatives (CWR) in the Netherlands" and a paragraph of text: "Cultivated crops produce the main part of our daily food. Wild plant species that are related to cultivated crops are generally referred to as 'crop wild relatives'. CWR constitute a rich source of potentially useful traits, which can be introduced in cultivated crops through plant breeding."

# CGN's outputs

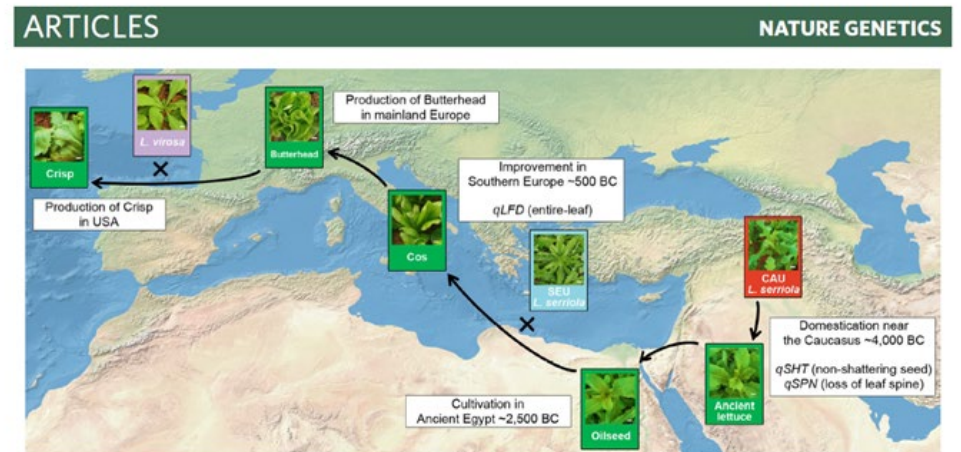
- High quality PGR programme
- Well managed PGR collection
- Contributions to various networks and initiatives
- Improved knowledge about PGR management

## Whole-genome resequencing of 445 *Lactuca* accessions reveals the domestication history of cultivated lettuce

Tong Wei<sup>1,11</sup>, Rob van Treuren<sup>2,11</sup>, Xinjiang Liu<sup>1,11</sup>, Zhaowu Zhang<sup>1,3</sup>, Jiongjiong Chen<sup>4</sup>, Yang Liu<sup>1</sup>, Shanshan Dong<sup>5</sup>, Peinan Sun<sup>4</sup>, Ting Yang<sup>1</sup>, Tianming Lan<sup>1,6</sup>, Xiaogang Wang<sup>7</sup>, Zhouquan Xiong<sup>7</sup>, Yaqiong Liu<sup>8</sup>, Jinpu Wei<sup>8</sup>, Haorong Lu<sup>8</sup>, Shengping Han<sup>8</sup>, Jason C. Chen<sup>8</sup>, Xuemei Ni<sup>1</sup>, Jian Wang<sup>1,9</sup>, Huanming Yang<sup>1,9</sup>, Xun Xu<sup>1,10</sup>, Hanhui Kuang<sup>4</sup>, Theo van Hintum<sup>2</sup>, Xin Liu<sup>1</sup> and Huan Liu<sup>1</sup>

Lettuce (*Lactuca sativa*) is an important vegetable crop worldwide. Cultivated lettuce is believed to be domesticated from *L. serriola*; however, its origins and domestication history remain to be elucidated. Here, we sequenced a total of 445 *Lactuca* accessions, including major lettuce crop types and wild relative species, and generated a comprehensive map of lettuce genome variations. In-depth analyses of population structure and demography revealed that lettuce was first domesticated near the Caucasus and wild crop breeding

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**Extended Data Fig. 10 | Proposed lettuce domestication and breeding history.** Proposed lettuce domestication and breeding history. Domestication, improvement, and breeding are indicated by arrows. The photos of cultivated lettuce are in green frames, *L. virosa* is in a purple frame, SEU and CAU groups of *L. serriola* are in blue and red frames, respectively. Scale bar, 2 cm. Potential introgression processes are indicated by "x". qLFD, qSHT and qSPN represent three loci controlling leaf morphology, seed shattering, and leaf spine. The world map was drawn based on the Natural Earth data set (<http://www.naturalearthdata.com>).



# THANK YOU



Dione Bouchaut  
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Collecties /  
Erfgoed zaden



Willem van  
Doojeweert  
Collecties



Wouter Groenink  
Collecties



Theo van Hintum  
Management /  
Onderzoek



Roel Hoekstra  
Collecties /  
Documentatie



Rik Lievers  
Collecties



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