



GEN4OLIVE

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Workshop on Genetic Resources

Project coordinator: Concepción Muñoz Díez
(University of Cordoba, Spain)

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Mobilization of Olive GenRes through pre-breeding activities ensuring information availability for end users

Call: H2020-SFS-2020-1

Topic: SFS-28-2018-2019-2020 - Genetic resources and pre-breeding communities

Duration: 1/10/2020-30/09/2024

Overall Budget: 7.535. 758 €

GEN4OLIVE CONSORTIUM



- **Coordinator:** University of Cordoba, Spain
- **16 partners** - interdisciplinary and transdisciplinary
- **7 countries:** Spain, Morocco, France, Germany, Italy, Greece and Turkey
- **5 SMEs**
- **5 olive germplasm banks (GBs)**

OLIVE TREE

- Most extensively planted fruit crop
- **11 mha** olive orchards worldwide
- 65 countries, 5 continents
- Olive oil and table olives

Olive tree
(*Olea europaea* L.)



Mediterranean
diet



OLIVE GENETIC RESOURCES: THREADS

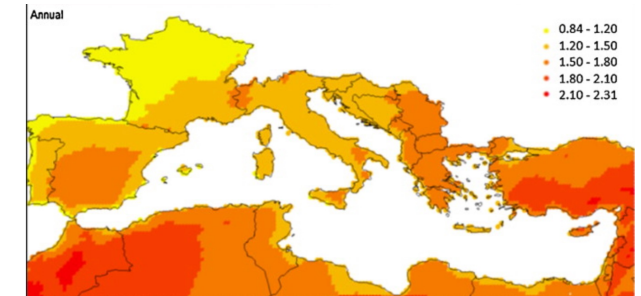
- Genetic Erosion



- Fragmentation, loss of diversity



- Climate change

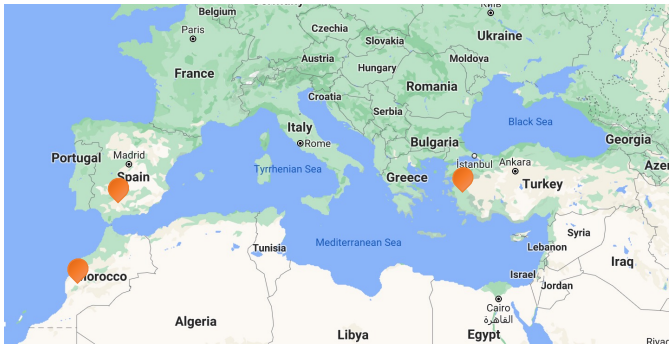


- Pest and disease outbreaks
- Wildfires

STRATEGIES

CONSERVATION

- **Not covered under Multilateral System (FAO)**
- **Ex situ collections** in 26 countries
- **3 International Collections - IOC**



- **Poorly connected**
- **Characterización?**
- **Wild olives** not represented

BREEDING

- **Still germinal**
- **<20 new cultivars**
- **Methodological issues. i.e. juvenile phase**



- **Lack of agronomical information**
- **Public initiatives**
- **Scarce private investment**

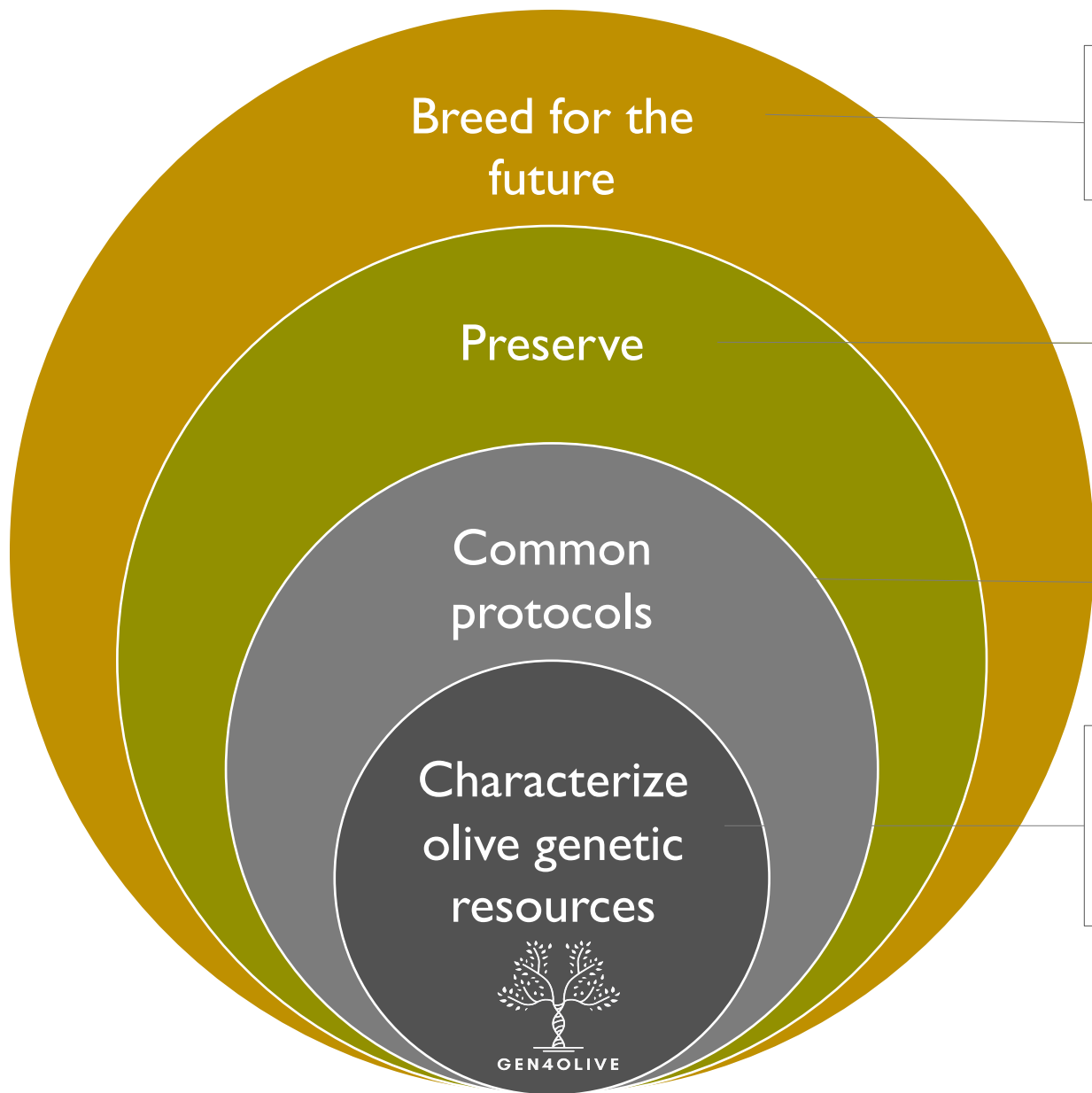


International
initiative

Boost breeding

Efficient
conservation

GOALS: PREBREEDING



Making olive genetic resources
accessible to end users

SMEs

GEN4OLIVE

- Adaptation to climate change
- Resistance to pest and diseases
- Suitable for new olive growing systems

- Cooperation among Germplasm Banks
- Adoption of harmonized evaluations and conservation protocols

- Easy and reliable evaluations
- New biotechnological tools

- Resilience to climate change
- Resistance to pests and diseases
- Production and quality
- Adaptation to modern planting systems

GOAL I: DEVELOPING COLLECTIVE PRE-BREEDING ACTIVITIES → TO CHARACTERIZE OLIVE GERMLASM

WP3. Cultivated and wild olives - evaluation of valuable agronomical traits



T3. Cultivar evaluations. 5 GBs

- Abiotic
- Biotic
- Agronomical
- Oil quality

44 Evaluations
500 cvs



- Every Germplasm Bank is evaluating their own collections (~100 cvs each)
- The consortium shares the results
- The consortium coordinately publishes the results in scientific journals and other media



We do not foresee any conflict regarding IP at this level

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500 cvs

• *Xylella fastidiosa* evaluation

Quarantine pest



Advisory Board

- FAO
- International Olive Council

- Cultivar shipment → Italy – Xf. Evaluation
- **Special agreement** between the Germplasm Banks
- Phytosanitary policies

GOAL III: ENGAGING THE PRIVATE SECTOR IN INNOVATION THROUGH TWO OPEN CALLS TO FACILITATE SMES' PRE-BREEDING ACTIVITIES



WP7. Pre-breeding **specific calls for SMEs** involvement (FCTA)

- **First call for projects:**
 - **8 funded projects**
 - Prebreeding activities
 - Enabling technologies for breeding
 - External experts independent evaluation
 - Budget: 700.000€
 - **Second call for projects:**
 - **25 funded projects**
 - Breeding plans
 - External experts independent evaluation
 - Budget: 250.000€
- Periodic controls
 - Companies do not have to share the results or make them public (unless special agreement)

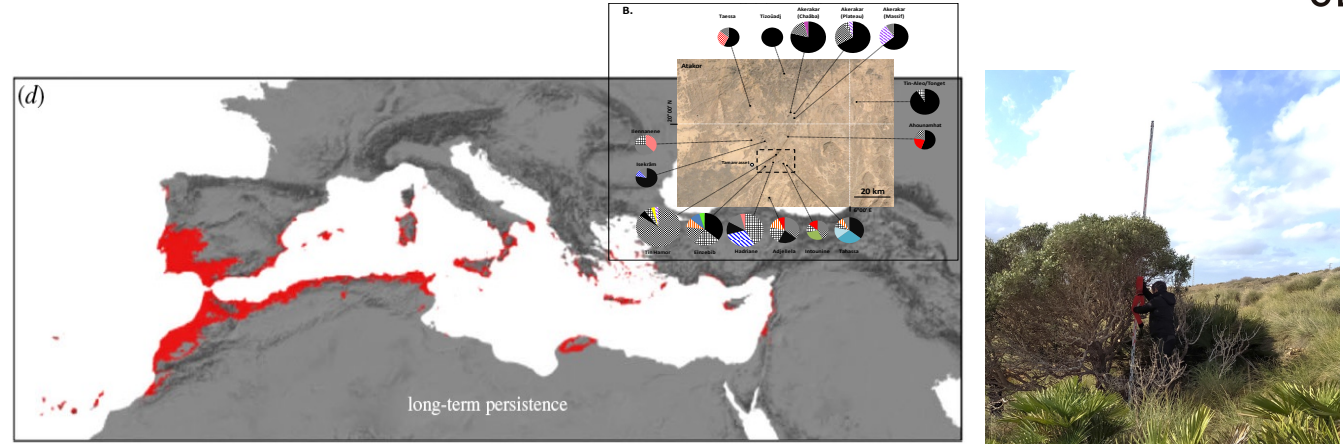
GOAL I: DEVELOPING COLLECTIVE PRE-BREEDING ACTIVITIES → TO CHARACTERIZE OLIVE GERMPASM

WP2. Wild olives – sampling,
characterization and
establishment of germplasm
banks

T2.1. Delimitation of the
geographical areas

T2.2. Sampling and Multi-scale
characterization of wild olive
diversity

T2.3. Establishment of reference
wild olive germplasm banks



Participating countries → Delimiting areas + sampling
National policies

Multiscale Diversity Analysis

Conservation and taxonomic purposes

Not “use” Art.2 Nagoya Protocol

Seed collection Location?



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Thank you!

www.gen4olive.eu

