Genmeda
NETWORK OF MEDITERRANEAN PLANT CONSERVATION CENTRES

4th Mediterranean Plant Conservation Week
VALÈNCIA | 23-27 OCTOBER | 2023

GENMEDA network: results and future challenges for the conservation of the Mediterranean flora

Gotsiou, P., De Montmollin, B., Favier, C., Kokkinaki, A., Meloni, F., Touhami, I., & Bacchetta, G.

- *Mediterranean Plant Conservation Unit, CIHEAM Mediterranean Agronomic Institute of Chania, Alsyllio Agrokepio, 1 Makedonias str Chania, Crete, 73100 Greece*
- *IUCN/SSC/MPSG - Mediterranean Plant Specialist Group, Switzerland*
- *Conservatoire Botanique National de Corse (CBNC), France*
- *Laboratory of Management and Valorisation of Forest Resources, National Research Institute of Rural Engineering, Water and Forestry (INRGREF), Tunisia*
- *Centre for Conservation of Biodiversity (CCB), Sardinian Germplasm Bank (BG-SAR) - Department of Life and Environmental Sciences, University of Cagliari, Italy*

GENMEDA co-organizing MPCWs

Organizers 4th MPCW

Organizing Committee

PREVIOUS EDITIONS

1st Mediterranean Plant Conservation Week

Ulcinj (Montenegro) – 24-29 october 2016

"Building a regional network to conserve plants and cultural diversity"

2nd Mediterranean Plant Conservation Week

La Valetta (Malta) – 12-16 november 2018

"Conservation of Mediterranean Plant Diversity: Complementary Approaches and New Perspectives"

3rd Mediterranean Plant Conservation Week

Chania, Creta (Grecia) – 27 sep-1oct 2021

"Plant conservation strategies: from science to practice".

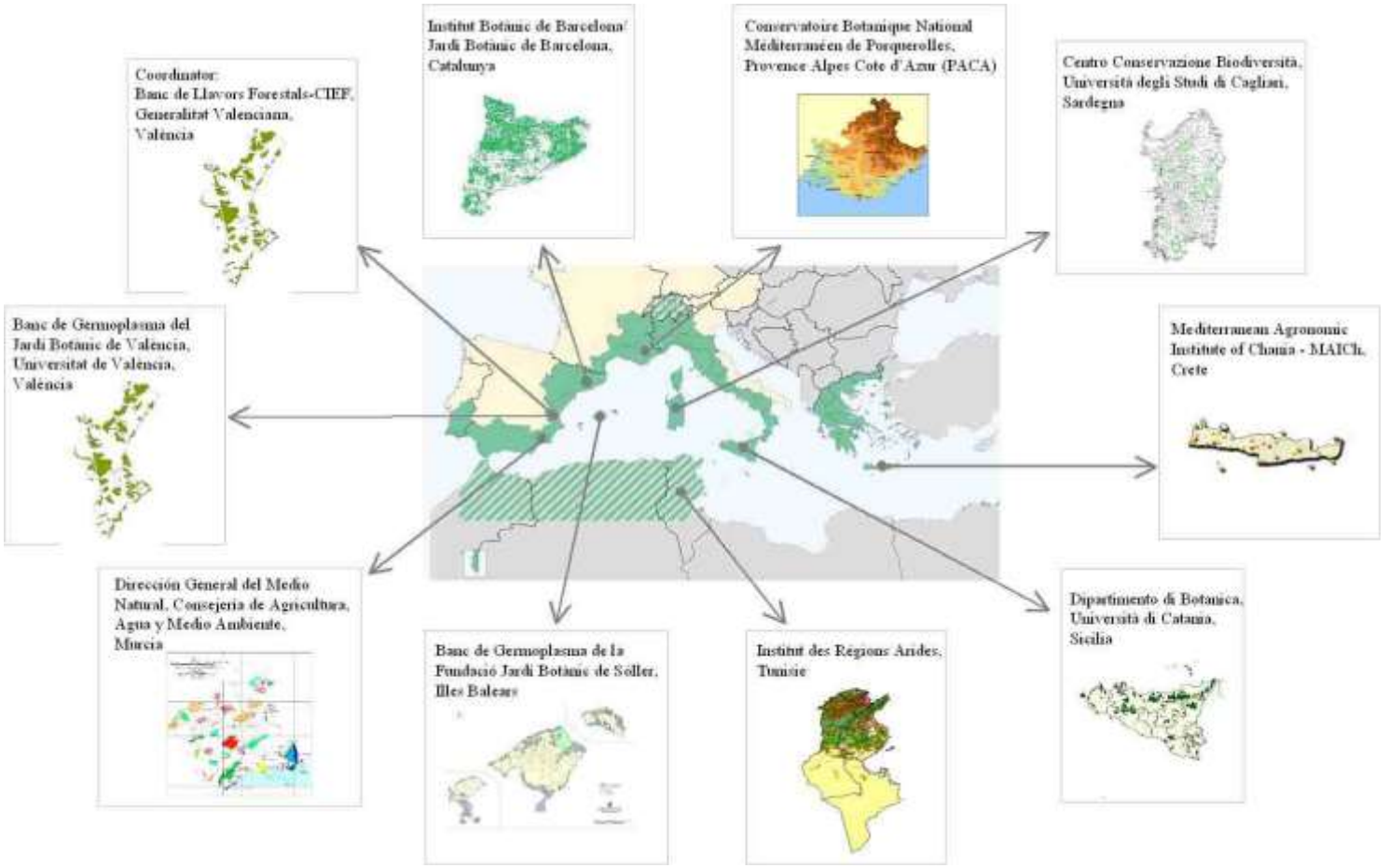
The **GENMEDA Network of Mediterranean Plant Conservation Centres** is a community of seed banks, gene banks, botanical gardens and other conservation centres of plant genetic resources, including local/regional authorities, national bodies, national/regional networks and international experts' groups and associations, all dealing with the conservation of Mediterranean plants

GENMEDOC project

'INTER-REGIONAL NETWORK OF MEDITERRANEAN SEED BANKS'

(Interreg IIIB MEDOCC) Coord.: CIEF

2004-2006



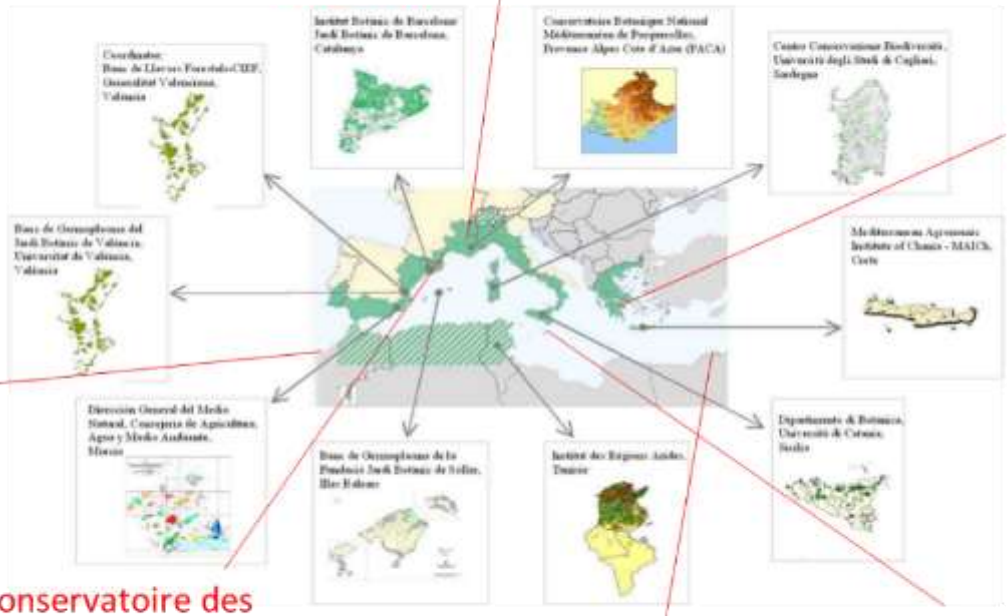
2006-2008

SEMCLIMED PROJECT

Coord.: CIEF

'IMPACT OF THE CLIMATIC CHANGE ON THE MEDITERRANEAN FLORA AND CONSERVATION ACTIONS'

Conservatoire Etudes des Ecosystemes de Provence/Alpes du Sud-CEEP



National and Kapodistrian University of Athens (UNKA)

Institut Scientifique de Rabat-Département de Botanique et Ecologie Végétale, Morocco

Conservatoire des Espaces Naturels du Languedoc-Roussillon (CENLR)

Mansoura University, Sciences Faculty, Egypt

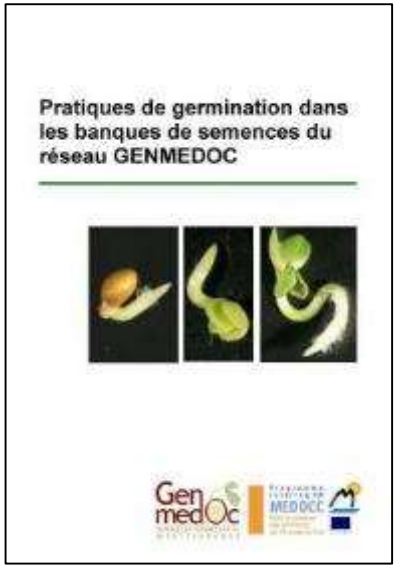
Argotti Herbarium and Botanic Gardens, University of Malta

GENMEDOC & SEMCLIMED

OUTPUTS (2004-2006, 2006-2008)

Genmeda
NETWORK OF MEDITERRANEAN PLANT CONSERVATION CENTRES

4th Mediterranean Plant Conservation Week
VALÈNCIA | 23-27 OCTOBER | 2023



ELABORATION & VALIDATION OF GERMINATION PROTOCOLS (in FR, ES, GR)

COMMON METHODOLOGY – MANUAL for the COLLECTION, STUDY, CONSERVATION AND MANAGEMENT OF PLANT GERMPLASM (in IT, EN, FR)

EDITION FOR THE STRUCTURAL BASE OF A HABITAT (in ES)

Editions to free download at:
http://genmeda.net/en/resources

GENMEDOC & SEMCLIMED

OUTPUTS (2004-2006, 2006-2008)

- **2 new seedbanks created (Morocco, Malta)**
- **rock botanical gardens created by several partners**
- pilot projects with demonstration actions on **habitat restoration** (PACA, Valencia)
- **seed germination experiments** of various species in order to evaluate the impact of climate change


L'établissement d'une banque de semences aux Jardins d'Argotti, Université de Malte


Une nouvelle banque de germoplasmes à l'Institut Scientifique (Rabat) : contribution à la conservation de la Flore Vasculaire du Maroc


Impacts du Changement Climatique sur la Biodiversite Vegetale et la Germination des Semences


La restauration d'habitat comme stratégie de conservation d'espèces végétales rares : deux exemples du Languedoc-Roussillon (France)

GENMEDOC & SEMCLIMED

OUTPUTS (2004-2006, 2006-2008)

SEMCLIMED: **Newsletter 'Odissea Semina'**
Editor: Universitat de València-Jardí Botànic
(edit.in chief: Elena Estrelles)

4 issues: July 2007 – July 2008

See and download at genmeda.net/

GENMEDA est.2010

In 2010, Signature of the **Agreement** / **Statute** and **Internal Rules of Function** of the ‘GENMEDA network’ among the 13 founding members

(see at ‘genmeda.net/’ ‘members’ and ‘newsletter’)


GENMEDA Network

GENMEDA NETWORK

GENMEDA Network
Internal functioning rules

INTERNAL FUNCTIONING RULES

PRELIMINARY TITLE

Toni Marzo (CIEF), GENMEDA leader

2010, Barcelona meeting after signing

GENMEDA mission (art.2)

to contribute to the conservation of Mediterranean flora genetic resources, through the following objectives:

- share information and equipment among members
- promote the exchange of training and know - how
- adopt common work methodologies
- harvest genetic material of the most threatened species
- exchange duplicated seed lots/batches of threatened species
- create living plant collections and promote *ex situ* cultivation for the more threatened species in order to dispose material for reinforcement of natural populations
- create a virtual common collection of plant genetic and reproduction materials
- plan joint initiatives and projects concerning flora conservation and/or management
- support decision-making processes of flora conservation public policies
- support environmental education and public awareness for biodiversity conservation

Photos: JBS Spain

INRGREF, Tunisia

CIHEAM – MAICH, Greece

CIEF, Spain

Tuscia SB, Italy

Deuxième réunion GENMEDA

Barcelone, 10 juin 2010

Un an après la première réunion du réseau à Cagliari, les membres GENMEDA ont organisé une autre rencontre à Barcelone afin de finaliser les dernières questions nécessaires pour la mise en place effective du réseau.

Pendant ce temps, des débats et des pluies d'idées ont été menés sur toutes questions clés du réseau. Notamment en ce qui est la mission et les objectifs du réseau, l'organisation, la composition, le financement, les lignes de travail et les outils de communication. Tous ces aspects ont été formalisés dans le texte fondateur et les normes de fonctionnement interne du réseau qui ont été signés par les représentants de chaque membre.

Concernant la mission et les objectifs du réseau, l'idée principale a été celle de ne pas restreindre l'éventail de possibles actions, sans le limiter à un certain type de flore ou à un cadre strictement méditerranéen au sens géographique du terme. C'est ainsi que la mission globale du réseau est la conservation de ressources génétiques de flore méditerranéenne et que ses objectifs portent sur des actions de conservation in situ et *ex situ* ou des actions de communication et éducation environnemental, mais aussi sur des projets et initiatives conjointes dans le cadre de l'UE et au-delà et sur des actions de support aux décideurs des politiques de conservation de la biodiversité végétale.

La structure en charge de porter à terme cette mission a été définie de façon classique, avec trois postes principaux - président, secrétaire et trésorier - et deux organes, le Comité de pilotage et l'Assemblée nérale. Afin de compléter c structure et de rendre performantes les activités réseau, des groups de tr thématiques ont été égalen prévus et leur implémenta sera effective dans les r suivants.

Ensuite, en ce qui concern outils de communication, efforts ont été focalisés su logo du réseau, le bull Odissea Seminum et le site

Genmeda
NETWORK OF MEDITERRANEAN PLANT CONSERVATION CENTRES

4th Mediterranean Plant Conservation Week
VALENCIA | 22-27 OCTOBER | 2012

2011

2010

GENMEDA members on the map until the GA on 23rd October 2023:
25 numerary and 2 associate members that became numerary too: International Association of Mediterranean Forests (AIFM) and the Sicilian Plant Germplasm Repository of the University of Palermo (SPGR/PA)

GENMEDA 27+ four (4) new associate members NOT yet on the map after the GA on 23rd October 2023:

- BIOPOLIS association (linked to the CIBIO Research Centre in Biodiversity and Genetic Resources, Lisbon, Portugal
- the Forest Research Centre (CEF) of the School of Agriculture (ISA) of the University of Lisbon, Portugal
- The Marimurtra Botanical Gar2den in Blanes, Costa Brava (Girona), Spain
- The Botanical Garden of Castilla-la Mancha, Albacete, Spain

GENMEDA representatives

2021 - 2025

President

Gianluigi BACCHETTA (HBK, Universita' degli Studi di Cagliari, Italy)

Secretary/Treasurer

Adamantia KOKKINAKI (CIHEAM MAICh, Greece)

Steering Committee coordinator

Emilio LAGUNA (Centre for Forest Applied Research, Valencia, Spain)

Steering Committee members

- Lara DIXON (Conservatoire Botanique National Méditerranéen de Porquerolles, France)
- Sara MAGRINI (Rete Italiana Banche del Germoplasma - RIBES, Italy)
- Joseph BUHAGIAR (Department of Biology, University of Malta)
- Boštjan SURINA (Natural History Museum Rijeka, Croatia)
- Evangelia DASKALAKOU (Institute of Mediterranean & Forest Ecosystems-Hellenic Agricultural Organization "DEMETER", Greece)

Photo: Acis_nicaeensis, IUCN EN, Katia DIADEMA, CBNMed Porquerolles

GENMEDA working groups

WG1 – Communication

(lead by Adamantia Kokkinaki, CIHEAM-MAICH)

Newsletter Odissea

Seminum - Editor-in-chief: Issam Touhami, INRGREF

WG2 - Database

(lead by Lara Dixon, CBNM Porquerolles)

WG3 - Orchids and microbiota

(lead by Sara Magrini, RIBES & Tuscia Germplasm bank)

WG4 - Seed Force International

(lead by Vito Emanuele CAMBRIA, Botanical Garden 'La Sapienza', Rome)

Photo: CIEF- Generalitat Valenciana

GENMEDA figures

- **A total of 27 actual members from 12 different countries of the Mediterranean**

- **24 possess germplasm/ seedbank**
  - ✓**Total number of accessions / seed lots** preserved in active and base collections: **65,066** (with only RIBES included for Italy)
  - ✓**Total number of taxa** preserved: **12,300** (with only RIBES included for Italy)

Photo: CCB

Photo: Palermo seedbank

Collaborative Projects among GENMEDA members

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2011-2013 GARDMED Interreg IV Italia Malta

Project on twinning botanic, public and private gardens in Malta and Sicily as tourist, education and conservation venues

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2011-2014 'Ensuring the survival of endangered plants in the Mediterranean' (some GENMEDA members (islands) participating (JBS, DBUC, CCB, MAICH) (coord.KEW) MAVA co-funded project

Focus on the 'ex situ' conservation (seed banking) of the most endangered plants in the Mediterranean islands-more than 900 seed accessions collected and duplicated in total

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

Genmeda
NETWORK OF MEDITERRANEAN PLANT CONSERVATION CENTRES

4th Mediterranean Plant Conservation Week
VALENCIA | 22-27 OCTOBER | 2023

2014-2015 **ECOPLANTMED project (coord. MAICH)**
Participating GENMEDA members: CIEF, CCB, MAICH;
the other two partners, INRGREF-Tunisia & USJ- Lebanon,
became later members of GENMEDA, until today

EcoplantMed

Project funded by the EUROPEAN UNION

ENPI CBCMED

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

ECOPLANTMED OBJECTIVE

enhance the conservation of native plants and promote their use in habitat restoration and the plant production sector

- ✓ **A new seed bank** (with a cold room for seed storage and dry room) was set up at INRGREF facilities (Tunisia)
- ✓ **Training on seed bank functioning** among partners

CCB, BG-SAR

INRGREF

CIHEAM- MAICH

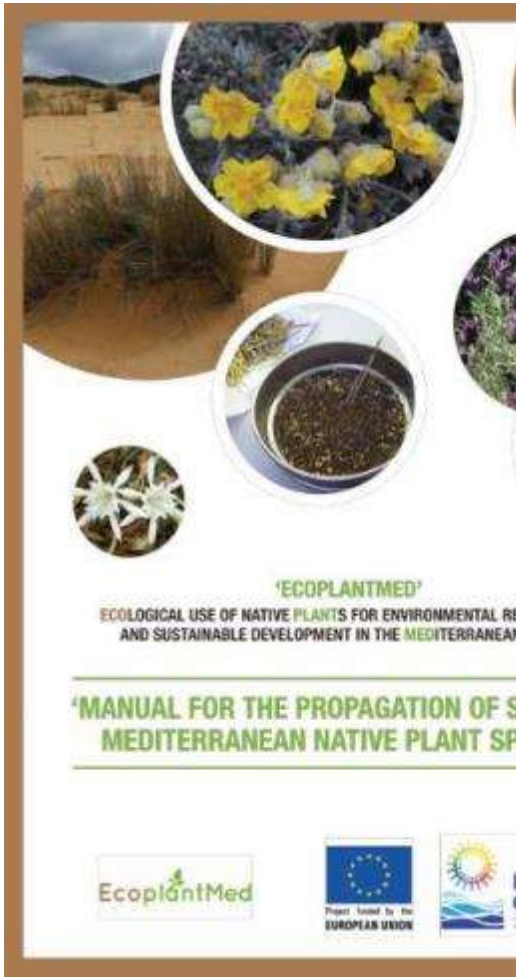
COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

Genmeda
NETWORK OF MEDITERRANEAN PLANT CONSERVATION CENTRES

4th Mediterranean Plant Conservation Week
VALENCIA | 22-27 OCTOBER | 2023

ECOPLANTMED

Edition of a "**Manual For The Propagation of Selected Mediterranean Native Plant Species**" in English and partners' local languages (available for downloading at www.ecoplantmed.eu) (CCB coord.)

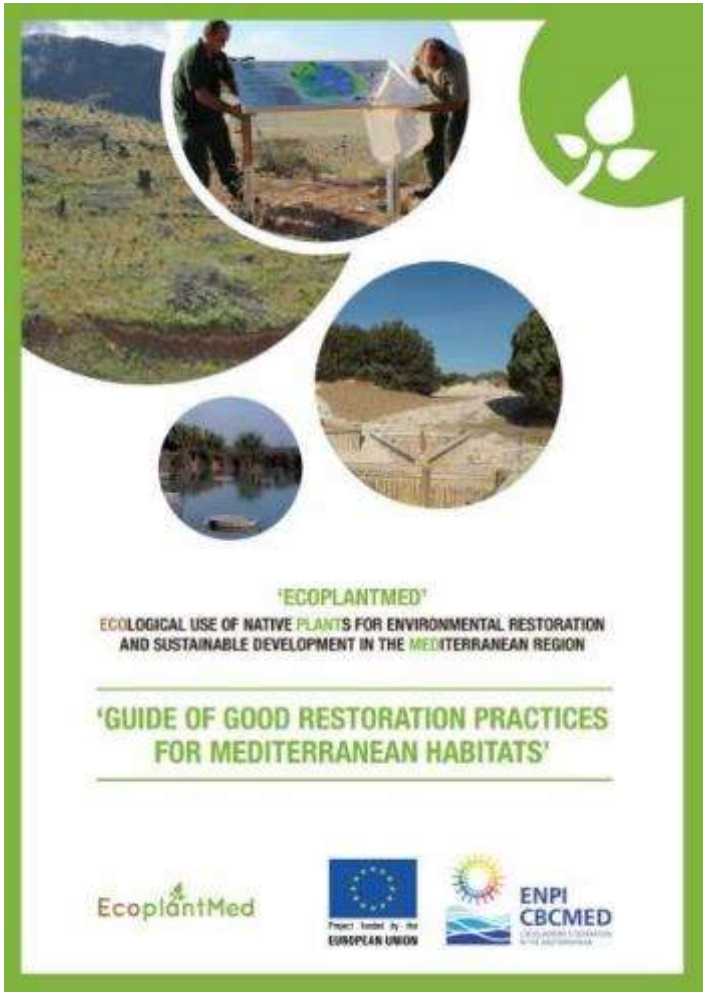


EcoplantMed
EUROPEAN UNION
ENPI CBCMED

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

ECOPLANTMED

Edition of a 'Guide of Good restoration Practices for Mediterranean habitats' in English and partners'local languages (available for downloading at www.ecoplantmed.eu) (CIEF coord.)

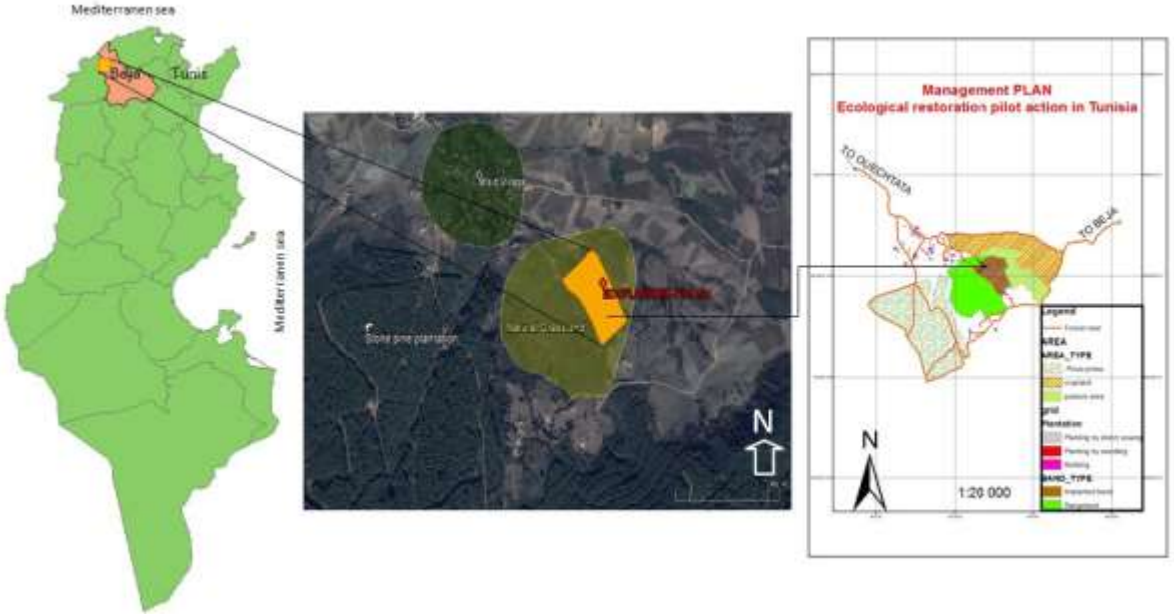


COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

ECOPLANTMED – pilot restoration action in Tunisia

- **Location: Nefza region • Area: 7 ha • Annual rainfall: 922 mm/year**
- commonly developed **management plan** for restoration & monitoring
- integrated approach to reduce degradation and to promote land rehabilitation using native plants of local origin (INRGREF in collaboration with the local Forest Authorities)

INRGREF



COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

ECOPLANTMED – pilot restoration action in Lebanon

- **Location: Kfardebian (Mt Lebanon) • Area: 7 ha (8 plots) • Annual rainfall: 1720 mm/year**
- Commonly developed **management plan** for restoration & monitoring
- promote land restoration using native plants of local origin (USJ in collaboration with the local NGO, Jouzour Loubnan)

USJ

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2015 – 2018 HEI PLADI Erasmus +

e-learning platform for teaching of plant biology & ecology

Participating GENMEDA members: CCB, UoM, CIHEAM-MAICH

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2016 -2019 **CARE-MEDIFLORA project -coord.by IUCN/ SSC/ MPSG (Bertrand de Montmollin) & MAICH (MAVA co-funded project)**

Same partners as in 'MAVA-1 project'- different coordintation

Participating GENMEDA members (islands): JBS, DBUC, CCB, MAICH– two other partners, ARI-Cyprus & CBN Corse-France, became later members of GENMEDA, until today

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

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2016 -2019 CARE-MEDIFLORA project (http://www.care-mediflora.eu/)

- ✓ *in situ* conservation of 51 of the most endangered plant species of the Mediterranean islands through *in situ* translocations and other management measures
- ✓ *ex situ* conservation of 429 of the most endangered plant species through the collection, seed banking and duplication of accessions representative of the overall diversity of the species
- ✓ dissemination and awareness raising of the local and institutional stakeholders
- ✓ sharing good conservation practises among the partners
- ✓ **reinforcement and enlargement of GENMEDA - Network of Mediterranean Plant Conservation Centres**

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

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4th Mediterranean Plant Conservation Week
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2016 -2019 **CARE-MEDIFLORA project**

CARE MEDIFLORA

Conservation Actions for Threatened Mediterranean Island Flora: *ex situ* and *in situ* joint actions

HOME ABOUT NEWS PUBLICATIONS PARTNERS OUTPUTS CONTACT

In situ conservation actions by island / by taxon

By island

Balearic Islands

actions implemented by Sóller Botanic Garden Foundation

In situ conservation actions
BY ISLAND
BY TAXON

Taxon	Locality
Dorycnium fulgurans (Porta) Lassen	Punta Prima, Calvià
	Cap Negret, Calvià
Myosurus minimus L.	Son Mut Nou, Llucmajor

Anchusa crispa flowers (left) & General aspect of *A. crispa* (right)

Translocation action

CBNCorsica

D. cannabina in flowering; *D. cannabina* habitat; Seedlings of *D. cannabina* ready to be planted

care-mediflora.eu/en/outputs/in_situ#by_taxon

In situ conservation actions BY TAXON

Taxon	Locality
Allium marathasicum Brullo, Pavone & Salmeri	Troodos mountain, Cyprus
Anchusa crispa Viv. subsp. *crispa*	Del Sale (Aleria), Corsica
Anchusa crispa Viv. subsp. *crispa*	Gradugine (Prunelli di Fiumorbu), Corsica
Anchusa crispa Viv. subsp. *crispa*	Favona (Sari-Solinzara), Corsica
Anchusa undulata subsp. *hybrida* (Ten.) Cout.	Elafonisi (Kantanos-Selino), Creta
Anthemis tomentosa L.	Akamas (Pafos), Cyprus
Anthemis tomentosa L.	Yialia (Pafos), Cyprus
Anthemis tomentosa L.	Timi (Pafos), Cyprus
Arum italicum Miller subsp. *italicum*	Akamas (Pafos), Cyprus
Astragalus alopecurus Pall.	Punta Alta (Foghjichja), Corsica
Astragalus gennarii Bacch. & Brullo	Monte Albo (Lula), Sardinia
Astragalus raphaelis G. Ferro	N.R. "Vallone Piano della Corte" (Enna), Sicily

Removal of ornamental species; Light fencing and planting of *D.ca cannabina* seedlings

CIHEAM-MAICH

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

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4th Mediterranean Plant Conservation Week
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2016 -2019 **CARE-MEDIFLORA project**

MDPI

Article

A Common Approach to the Conservation of Threatened Island Vascular Plants: First Results in the Mediterranean Basin

Giuseppe Fenu [1], Gianluigi Bacchetta [1,2], Charalambos S. Christodoulou [3], Donatella Cogoni [1,*], Christini Fournaraki [4], Giusso del Galdo Gian Pietro [5], Panagiota Gotsiou [4], Angelos Kyratzis [6], Carole Piazza [7], Magdalena Vicens [8] and Bertrand de Montmollin [9]

The CARE-MEDIFLORA final publication "*Common Approach to the Conservation of Threatened Island Vascular Plants: First Results in the Mediterranean Basin*." published in the *Diversity* journal Volume 12 (2020), Issue 4 **was announced winner of the 2022 Diversity Best Paper Award.**

Available online also at http://www.care-mediflora.eu/

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2016 -2019 CARE-MEDIFLORA project (http://www.care-mediflora.eu/)

- ✓ **reinforcement and enlargement of GENMEDA - Network of Mediterranean Plant Conservation Centres**

Supporting creation of new GENMEDA website (http://genmeda.net/) at CIHEAM- MAICH server and several communication & networking activities

Genmeda
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Supporting GENMEDA meetings

2017, BG Sapienza, Rome

2018, Malta

2019, BG Sapienza, Rome

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

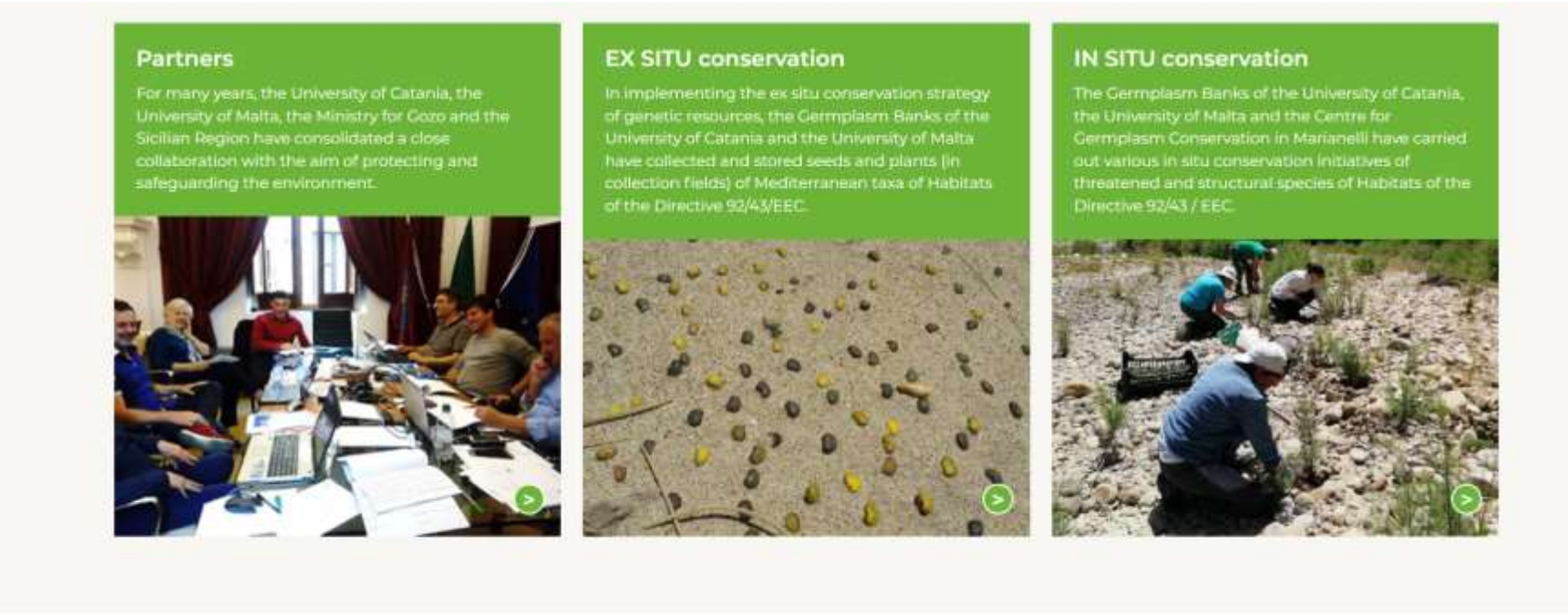
SIMASeed Project (2018-2021)

Interreg V Italia Malta

seed banking, habitat restoration and plant conservation in Natura 2000 sites

Participating GENMEDA members: DBUC, UoM

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS



Jan. – Oct. 2023

Simaseed Plus Interreg V Italia Malta

Capitalisation fund for purchase of more equipment for the seedbank

Participating GENMEDA members: DBUC, UoM

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

BESTMEDGRAPE
2019-2023

New Business opportunities & Environmental suSTainability using MED GRAPE nanotechnological products

Priority: A.2.1 - Support technological transfer and commercialization of research results

Partners: 8 (Tunisia, Italy, France, Lebanon and Jordan)

University of Cagliari
ITALY

Institute for Food Production Sciences – National Research Council
ITALY

National Institute for Health and Medical Research
FRANCE

University of Carthage
TUNISIA

Saint Joseph University of Beirut
LEBANON

National Trade Union Chamber of wine, beer and spirits' producers
TUNISIA

Berytech Foundation
LEBANON

Jordan Society for Scientific Research
JORDAN

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

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2020-2022 MEDLENTISK ERASMUS+

"Partnership for an exchange of best practices on lentisk fixed oil, an emblematic non-timber forest product in the Mediterranean"

Participating GENMEDA members: AIFM (coord.), HBK (CCB), CIHEAM-MAICH, INRGREF

in EN, FR, GR, AR

MEDLENTISK: Second Joint Learning Event in Pula

MEDLENTISK: Second Joint Learning Event in Pula The second MEDLENTISK...

Read More

Gestion

MEDLENTISK

Presentations at the first MEDLENTISK joint learning event

Presentations at the first MEDLENTISK joint learning event The first...

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MEDLENTISK: first joint learning event in Chania

MEDLENTISK: First joint learning event in Chania From Tuesday 29...

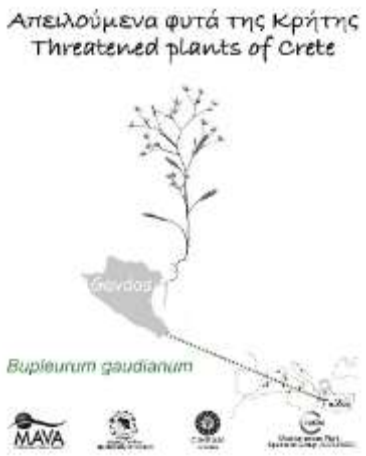
Read More

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2021-2022 The pilot project **"Gavdos Island - Crete - Endangered Plant Recovery Project"**

implemented in the context of the wider project "Mediterranean Islands Collective: Collaborating to protect Nature on Mediterranean Islands" (coord.PIM)

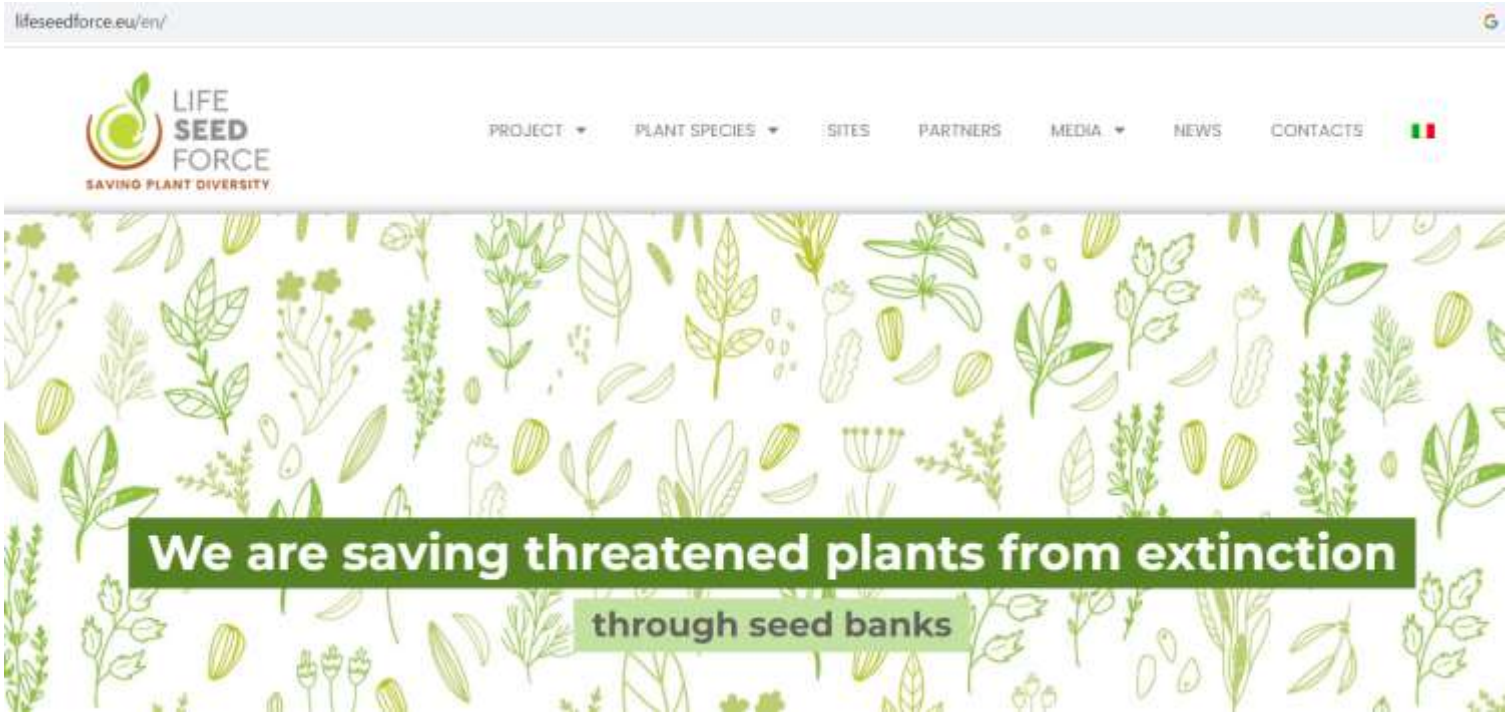
Participating GENMEDA members: CIHEAM – MAICH and IUCN/SSC/MPSG



Focus on the conservation of the two most endangered plants of the small Greek island of Gavdos,
the small annual endemic of Gavdos ***Bupleurum gaudianum*** and
the annual hygrophilous plant considered Critically Endangered ***Callitriche pulchra***

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2021-2026 SeedForce LIFE project
on conservation of rare and threatened plant species in Italy
Participating GENMEDA members: CCB/HBK, DBUC, SBTuscia, SBPalermo, BGRoma, (RIBES), CBNMPorquerolles, UoMalta



COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

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2021-2026 SeedForce LIFE project

Plant translocation cycle in 139 populations of 29 species in 76 SCI/SACs for a total surface of 450,250 ha

LIFE SEED FORCE
SAVING PLANT DIVERSITY

Conservation actions

C.1 Germplasm collection
C.2 Plant propagation
C.3 Site preparation
C.4 IAS eradication and mitigation
C.5 Plant translocation (population reinforcement/reintroduction/introduction)
C.6 Site protection

Monitoring of the impact of the project actions

Linaria pseudolaxiflora – Collecting

in 2022 in Linosa we had collected only 300 seeds of ***Linaria pseudolaxiflora***, while this year, thanks to the 40 plants grown

APPROFONDISCI

Adenophora liliifolia

White August memories... ***Adenophora liliifolia*** from our slovenian partner.

APPROFONDISCI

Kosteletzkya pentacarpos first reintroduction

Thanks to an interregional team coordinated by the University of Padua, our project partner, the first reintroductions of ***Kosteletzkya pentacarpos*** in the

APPROFONDISCI

Galium litorale Guss.

Linum muelleri in Sardinia

Terme in Fiore hosts

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2021- 2023 **Collaboration between CBNM Porquerolles and the Botanical Garden Hamma in Algiers,** financed by the PACA - SUD region
for common seed collections, germination experiments

Hamma Jardin

CBNMed

COLLABORATIVE PROJECTS OF GENMEDA MEMBERS

2021- 2023 **Collaboration between CBNM Porquerolles and the Botanical Garden Hamma in Algiers**

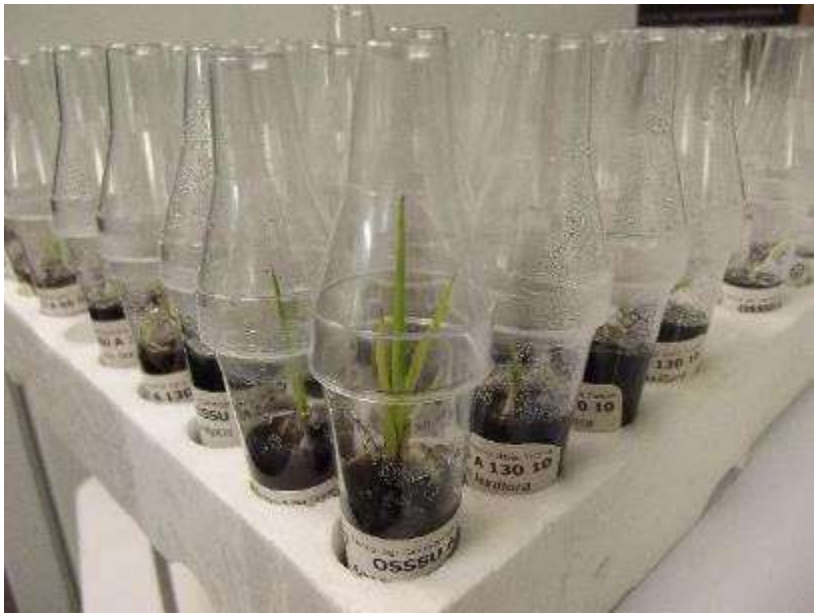
Hamma BG & SB

Future challenges

Challenges…

for Mediterranean Plant Conservation:

- Setting up common priorities & strategies for conservation with active involvement of local people
- Capitalizing experiences of on-going *in situ* and *ex situ* conservation actions
- Mitigation of threats and particularly of climate change, tourism, invasive species
- Other….?



Orchids in vitro (S. Magrini, Tuscia GB)

Hamma BG

for Mediterranean Networks:

- Socio-political conditions (demography, migration, wars…)
- Funding issues
- Remaining active…
- Other….?

Thank you!

Brassica villosa subsp. *drepanensis*
Germination after 26 years of conservation at -20°C (Sicilian Plant Germplasm Repository of the University of Palermo, C.Salmeri)