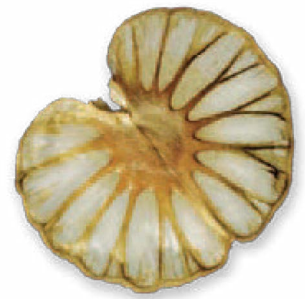


Samara



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MSB team members from Zambia, Mozambique and South Africa share best practice in herbarium voucher preparation as part of the regional Seed Conservation Techniques course in Zambia.



Photo: Roberta Hope, RBG Kew

Building the National Seed Collection in Zambia: Three years of partnership

Zambia is rich in plant diversity, with over 6,000 plant species and endemism at 5.3% (Phiri, 2005; Golding, 2002). Sadly, it is also cited as recording one of the highest deforestation rates across the continent.

Mpande Sichamba (Research Scientist – Forestry Research Division)

We are currently experiencing annual forest loss of between 300,000 and 400,000 ha (ILUA, 2008). Strengthening our national capacity and building a national collection of seeds from our indigenous flora is of utmost importance.

In 2018, Zambia's Ministry of Lands and Natural Resources – Division of Forestry Research (MLNR–DFR), with RBG Kew, developed an initial project, 'Developing a National Seed Collection Programme for

Zambia'. With modest investment into existing infrastructure we have made significant progress and can boast that Zambia now hosts a National Seed Collection of indigenous flora, held to internationally recognised standards.

We set a three-year target to make 540 seed collections from at least 450 priority species. During this initial project period (2018–2020/21), thanks to the commitment and enthusiasm of our small project team at MLNR–DFR, we have exceeded all expectations. We are so grateful for the financial support from players of People's Postcode Lottery; I hope you can share our pride in what we have achieved to date. Today, our National Seed Collection holds 653 collections from 572 species. Most of these collections are duplicated in the Millennium Seed Bank as part of our collection management strategy and are viewable on the Millennium Seed Bank Partnership (MSBP) Data Warehouse.

We've made some exciting and important collections, including securing seed from 41 species recorded by the IUCN as CR, EN or VU (IUCN, 2016), 27 CITES-listed species (including many orchids and euphorbias) and 14 commercially important timber species, such as *Pterocarpus tinctorius* (mukula) and *Guibortia coleospermum* (muzauli or rosewood). Nearly half (40%) of all our collections are useful herbal and medicinal plants, such as *Cassia abbreviata* (munsokansoka or long-pod cassia) and *Harpagophytum procumbens* (devil's claw).

Story continues on page 2



Conserving the native plants of Greece

Costas A. Thanos (National and Kapodistrian University of Athens Seed Bank) & Aisyah Faruk (RBG Kew)

Greece contains one of the richest and most diverse floras in Europe and the Mediterranean Rim. Nearly 5,900 plant species and 7,000 taxa (species and subspecies) grow here, and around one quarter of them are endemic.

Threats to Greek phytodiversity are greater than ever, with land use changes (agriculture, urbanisation, tourism), overgrazing, deforestation, soil degradation and climate change affecting many parts of the country. The ongoing assessment of the conservation status of all Greek plants estimates that up to 2,000 taxa fall within an IUCN risk category. To combat impending biodiversity loss, numerous *in situ* and *ex situ* conservation initiatives are currently being undertaken.

It is estimated that only 30% of the Greek flora is currently conserved in the form of seed accessions, both in-country and abroad. In 2022, a collaborative project between the National and Kapodistrian University of Athens (NKUA) and the Millennium Seed Bank Partnership plans to collect, bank and conduct research on seeds of native plant species from mainland Greece. The NKUA Seed Bank was established in 1991 and is the oldest seed bank of native plants in Greece. Today, it holds 727 seed accessions from 403 plants native to Greece and Cyprus, most of them rare and threatened. In addition to *ex situ* conservation, the NKUA Seed Bank is also involved in several *in situ* conservation projects, conducts research on germination, and runs education and training events for students and staff related to various aspects of plant conservation.

In the first year, the project will aim to collect and conserve 160 taxa, focusing on key areas across Greece, such as Sterea Ellas (Central Greece) and the Peloponnese. These areas are well known for being some of the richest floristic regions in Greece for local and national endemics, alongside Crete. However, in contrast to Crete, they are both relatively under-represented within seed bank collections. We will prioritise species based on their threatened status and/or those missing from existing *ex situ* collections (e.g. *Veronica oetaea*). In addition to seed collecting, the project also aims to increase overall capacity of seed conservation through the delivery of an in-country training course in 2022. Finally, the project will initiate research on seed germination ecophysiology of orchids found within the country. The project is graciously funded by the A. G. Leventis Foundation, players of People's Postcode Lottery and The Steel Charitable Trust.



Seeds of *Biebersteinia orphanidis*; the inset (top left) shows a just-germinated seed after its seed coat was nicked at the region opposite to the micropyle. Previously thought to be extinct in Greece, this plant was rediscovered in the 1990s and is currently threatened by grazing and land-clearing.

Photo: C. A. Thanos



Reseeding *Veronica oetaea*, a critically endangered annual, growing only in a few temporary ponds on Mount Oeta (Central Greece).

Photo: S. Oikonomidis



Collecting seeds of *Campanula merxmuellieri*, a vulnerable, strict endemic chasmophyte of the Aegean (July, Skyros Island); bottom right: the plant in flower (late May).

Photo: A. Kaltsis