

Building scientific capacity in Cape Verde Islands: Integrating different approaches to study the evolution of the endemic flora

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INTRODUCTION. The Macaronesian region, comprising the archipelagos of the Azores, Madeira, Selvages, Canary, and Cape Verde Islands, is part of the Mediterranean hotspot, one of the 34 world biodiversity hotspots. The region is one of the most important floristic areas in terms of conservation within the Mediterranean and its flora exhibits many distinctive characteristics including a high degree of endemism (ca. 900 species) and a distinctive growth form spectrum with a high incidence of woodiness, particularly in the endemic floras of the Canary Islands (ca. 72%) and the Cape Verde (ca. 63%). The Macaronesian flora also includes several spectacular examples of evolutionary radiations that have long attracted attention. The Cape Verde archipelago encompasses the southernmost islands of Macaronesia, and is located ca. 1500 km south of the Canary Islands. This archipelago has nine main islands: Santo Antão, São Vicente, São Nicolau, Santiago, Fogo, Brava, Sal, Boavista, and Maio.



Little is known about the evolution of the endemic flora within the Cape Verde and in order to fully understand the origin plant diversity in these islands two projects were recently funded: 1) Mohamed Bin Zayed Species Conservation Fund, that support several field missions done in Cape Verde during 2013; 2) FCT project (BIA-BIC/4113/2012), involving several national and international institutions (left Fig.).

AIMS Understanding the origin and evolution of the Cape Verde endemic flora is essential for the conservation in this Biodiversity Hotspot. In the two recent funding projects, one of this entitled "Conservation of plant biodiversity in the Macaronesian Hotspot: Integrating phylogenetic, taxonomic, and ecological approaches to study the Cape Verde endemic flora" different questions will be address during the fieldwork in Cape Verde Islands, namely:

How does an extraordinarily rich endemic flora evolved?

Why is the flora so threatened and how might its conservation be secured?



How the fieldwork activity can play an important role to help graduated students understanding and learning plant evolution?



At the end of each botanical expedition, students must be able to understand the scientific methods used for the study evolutionary processes in this archipelago., and:

collect specimens, that will be preserved in Herbarium, for morphological studies



make observations on ecology, get data on species distribution

collect fresh leaves and preserved in silica for molecular studies

Build scientific capacity in developing countries in the field of Ecology, Phylogenetic, Taxonomy, Conservation

CONCLUSION. We advocate that international collaborations can build scientific capacity in developing countries and will contribute to influence in a positive way students' attitudes about biodiversity, as well as, to encourage further studies in this insular ecosystem. Moreover, by stimulating a positive attitude and providing knowledge about biodiversity and the consequences of its loss, students realize why scientists are concerned about the extinction of insular species. Finally, links with local research institutions will be strengthened, as well as with other institutions devoted with Macaronesian flora, namely with Madeira and Azores Universities.

Acknowledgements

▪ Mohamed Bin Zayed Species Conservation Fund - MBZ n° 12255026
▪ This work was partially funded by FEDER funds through the Operational Programme for Competitiveness Factors - COMPETE and Portuguese National Funds through FCT - Foundation for Science and Technology under the project PTDC/BIA-BIC/4113/2012 Conservation of plant biodiversity in the Macaronesian Hotspot: Integrating phylogenetic, taxonomic, and ecological approaches to study the Cape Verde endemic flora