

**Host organization: Center of Plant Systems Biology and Biotechnology**

**Country: Bulgaria**

**Organization role: Coordinator/ WP leader/ Task leader**

**Project Acronym: RESIST**

**Project start and end date: 1<sup>st</sup> March 2019 – 28<sup>th</sup> February 2023**

**Type of MSC action, H2020: RISE**

### **Your story:**

#### **Project objectives and research field:**

The goal of this project is to unravel genetic determinants of desiccation tolerance in resurrection plants and to identify similarities and differences with model and crop species. This fundamental knowledge will be translated to economically important plants. A secondary objective is to explore the possibilities of integrating seaweed based stress mitigation to improve crop tolerance to drought.

#### **Tell us why the topic is important and/ or how it brings to advancement in your research field:**

Water availability is the most limiting climatic parameter for plant growth on over 40% of earth's vegetated surface. Drought severely limits the growth and development of plants, causing considerable reduction of crop yield. Resurrection species are a group that exhibits extreme drought tolerance: they are able to survive desiccation and regain normal appearance after rehydration. Moreover, some of them are shown to tolerate other stresses, including low temperature/freezing, oxidative stress, long-term darkness. Therefore, research on resurrection plants has not only fundamental scientific importance, it has also immediate practical application, especially in the context of the changing climatic conditions, growing population and the increasing demand for higher quality and sustainably produced foods. The interest in these plants is additionally fueled by the identification of secondary metabolites from resurrection species with medicinal (anticancer and antiviral) activities.

#### **What are the benefits of participating in a MSC action?**

Our project has not started yet, but the seconded fellows in the project will be provided access to the facilities and state-of-the-art equipment of the hosts and will thus be able to adopt a multitude of practical methods, novel approaches and cutting-edge technologies. Moreover, the opportunity for intersectoral specializations will teach them valuable transferrable and entrepreneurial skills. The scientific output of RESIST will enhance our understanding of the intimate mechanisms governing plant tolerance to extreme conditions. When this knowledge is transferred to crop species it will exert profound influence on current agricultural practices and will overall stimulate significant advancements in the field. In addition, some resurrection plants

may contain biologically active metabolites with possible uses in industry. **Did you encounter any challenges during application/ implementation and did you get any help?**

During the application and post-approval phases, we had questions concerning the eligibility of the Consortium, the eligibility of secondments, the distribution of funds between the beneficiaries and third country partners, the part of Unit costs B normally retained by the Coordinator for management/networking purpose, etc. After contacting the Bulgarian NCPs by phone, we were provided useful and detailed information that helped us clarify all issues. **What strategies did your organization use to attract the fellow/s? Are they in line with national strategies supporting the widening EC policy?**

Our consortium has 6 partners – 5 research institutions and 1 SME. We have worked on other projects with all partners before so we know each other and it wasn't difficult to convince them to take part. It was our initiative with condition that our Centre is coordinator of the project.