**Expression of Interest - HORIZON-MISS-2023-SOIL-01-08**

**Express Innovation Agency (XIA)**

**Soil erosion control in Tokaj-Hegyalja wine region, Hungary.**

**Organisation**

The **Express Innovation Agency (XIA)** is an innovation service subsidiary of the National Research, Development and Innovation Office, supporting the Hungarian innovation ecosystem from youth education to the gateway of the international markets. In addition, the International Division of the Agency offers services to research-innovation actors to better reply to the call for proposals of Horizon Europe framework programme. In that context, we have expertise in project development and management activities.

The **Centre for Agricultural Research (ATK)**, the largest agricultural research complex in Hungary, carries out basic and applied research and development in the field of agricultural sciences, participates in the dissemination of professional and scientific knowledge, and works in cooperation with organisations involved in agriculture, the food industry, rural development, environment protection and sustainable development, at both national and international levels. The **Institute for Soil Sciences (TAKI),** operates as part of the Centre and has around 80 employees, where about half of them are scientists. **ATK TAKI** has been conducting soil exploration and applied research for more than 70 years, in which (i) the need to establish rational soil use for the improvement of human quality of life, (ii) the protection of soil "quality" and the maintenance of its multifunctional capacity, and (iii) the assessment, modelling and mapping of soil-environment interactions have always played an important role. TAKI is a multi- and interdisciplinary research institute, open to environmental and earth sciences as well as to more general agricultural disciplines (rural development, spatial planning, agricultural water management, etc.) and to environmental and nature conservation. The Institute carries out basic and applied research and development and contributes to the transfer of scientific and technical knowledge to society. ATK TAKI recently finished and ongoing EU-Projects, LIFE, REMIX, EJP SOIL (climate-smart, sustainable soil use and management), SMS (Soil Mission Support), OPTAIN, TUDI.

**Project idea and contribution**

**We are** looking for an international consortium that can be joined by Hungarian partners with the following project idea. **Tokaj-Hegyalja** is part of the world heritage, with unique conditions, the place where "the wine of kings, the king of wines" is grown. Climate change, and its intensifying effects on soils, combined with improper production technology, endangers even special production areas like Tokaj-Hegyalja. A key goal is to be able to preserve its characteristics despite climate change, and the most important part of this is protecting the soil. The region has a strong terroir character, which is contributed by Society, History, Environment and Soil (in Hungary we just call it as "4T parameters"). Therefore, it is especially important that we examine this question in a complex way, reviewing the applied cultivation technologies and the soil data in order to strengthen, understand, and maintain the stability of the terroir. With this in mind, the following actions are necessary:

* preserving and increasing the soil's organic matter and carbon content;
* increasing the water retention capacity of the soil;
* comparative evaluation of row and inter-row cultivation technologies (e.g. cover crops);
* biotechnological development of protection against erosion;
* suppression of pathogenic microbes appearing as a result of climate change;
* increasing soil biodiversity.

In the framework of the living lab, we will start a series of on-farm experiments in 15-20 farms. At each location, we examine complex cultivation technology, taking into account the conditions (e.g. the available organic matter replenishment options).

The use of microbiological biostimulants will also be an integral part of this:

* in order to preserve and increase the soil's organic matter content;
* for biological solutions for plant protection of grapes,
* retention and enhancement of valuable content parameters (polyphenols, sugar content...)..

In order to support the construction of the soil structure and increase the water retention capacity, due to the uniqueness and terroir character of Tokaj-Hegyalja, we consider it necessary to join European research projects, comparative analyses, and Living Lab initiatives with a similar purpose.

**Call**

Research and Innovation Action: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-miss-2023-soil-01-08>

**Contact details**

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