

A bird's eye view: EU project to map the area for drone use in farms, forests and rural areas.

ICAERUS was launched with the aim of assessing the risks and impacts of drone use. The project will explore the application and promote the safe and efficient use of drones to support agriculture, forestry and rural communities in the EU.

In order to use drones safely and efficiently as multi-purpose vehicles, the technology needs to be sufficiently tested and evaluated. The vision of ICAERUS is to explore the economic benefits of drones while weighing the negative risk factors and environmental impacts. The project has two open calls to extend financial support to industry and academia to accelerate research and the deployment of drones in the EU. ICAERUS is funded by Horizon Europe and launched in July 2022 with a budget of €6 million.

Drones are no longer futuristic toys - they can deliver medicines to remote areas, monitor soil for farmers, map inaccessible terrain and even track extreme weather events such as hurricanes, storms and tornadoes.

In fact, drones have the potential to transform a number of European Commission programmes, including the Farm-to-Fork Strategy, the EU Biodiversity Strategy and the Digital Strategy, while helping to achieve the goals of the Green Deal 2030 and an economy that works for all.

But even though these unmanned vehicles are becoming more popular and affordable, there are still limitations - they are still seen as an expensive investment in rural communities. Socio-economic and privacy concerns, such as data protection and misuse, play a role. In addition, regulations on drone ownership and safety are still limited.

Aid and accelerate

Without sufficient testing and data collection, the potential risk factors of drones may outweigh the benefits. The aim of ICAERUS is to change this. The acronym stands for Innovations and Capacity Building in Agricultural Environmental and Rural Uav Services. The project was launched with a two-pronged strategy: first, to close knowledge gaps and reduce risk factors, and second, to help promote the use of drones in remote areas.

The project's multi-actor approach brings together stakeholders from the agricultural/agribusiness sector, academic research and the drone industry. The consortium consists of 13 partners from eight different EU countries.

To catalyse this work, ICAERUS's larger goal is to bring together industry, researchers and end users. In order to mobilise existing knowledge and data for demand, the project will fund third parties. It has two main mandates for Open Call trials: 1) The Push call will support projects in innovation development - this could include all entities, from research institutes to drone manufacturers and IoT companies to start-ups working with drone data. 2) The pull call will target and fund end-users of this technology - projects from rural communities, agribusinesses, farmers, actors in disaster management, wildlife conservation and environmental monitoring will be supported by ICAERUS.

"This is a game-changing project for European rural areas," said Dr Spyros Fountas, Professor at the Agricultural University of Athens. "ICAERUS aims to harness the breakthrough potential of drone technologies and deliver significant impacts for farmers and rural communities. Our 4-year action plan combines R&D with demonstration and training, coupled with targeted financial support through open calls (grants) for technology developers and rural communities," says Prof. Fountas.



This concerted and comprehensive effort to accelerate drone research for sustainability and the common good is in line with the project's slogan: Improving the quality of life in rural areas, one drone at a time!

Diverse zones, diverse drones.

In order to better explore the possibilities and understand the potential and impact of drones in agriculture, forestry and rural areas, the project will deploy drones in different geographical zones that serve different functions.

In Tarragona, Spain, drones will be used to monitor crops. ICAERUS will demonstrate the ability of drones to identify diseases and plant stressors and detect weeds in vineyards.

In the Greek regions of Attica and Viotia, drones will replace traditional spraying methods to protect crops. This use case will also highlight the risks associated with using drones for this purpose.

In the French regions of Alpes-de-Haute Provence and Saône-et-Loire, ICAERUS will test whether drones can reduce the labour required to monitor grazing cattle and sheep.

In Scots Pine Forest in Lithuania, drones will monitor the forests and the wildlife populations living in them. These drones will also be tested to identify and inspect areas of high fire risk.

And in the Vevchani region of northern Macedonia, the project will design and develop a fleet management system for drone deliveries.

These test applications are strategically selected to represent a whole range of use cases in the many biodiverse regions of Europe. This showcases ICAERUS' goals to demonstrate the use of drones in two ways: The "eye in the sky" for visual observation and recording, and the "hand in the sky" for spraying and delivering goods.

"Drones have the potential to make a significant contribution to a range of strategies at the forefront of the European Commission's coordinated efforts to ensure food security, address climate and environmental challenges and reverse biodiversity loss," said Aikaterini Kasimati, project manager at ICAERUS. "The ICAERUS project proposes an application-oriented approach to explore the multiple uses in agricultural production, forests and rural communities."

Drones, a farmer's toolkit?

One of the main objectives of ICAERUS is to develop and make accessible inclusive business and governance models that help farmers and other actors in their decision-making process towards adopting drones.

In addition, the project will establish an academy to provide free, open-access online training and on-site learning workshops that will benefit all stakeholders involved.



Notes to editors:

At a glance - Key facts and figures

- Instrument: Horizon Europe
- Total costs: € 5,914,703.00
- Duration: 4 years, 2022-2026
- Consortium: A total of 13 partners from 8 European countries

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