

Una manera de hacer Europa



BUENAS PRÁCTICAS

Actuaciones Cofinanciadas

"Primare - Advanced Intelligent Inspections"
Agency for Technological Modernization of Galicia

**Programa Operativo
Plurirregional de España**

Año 2022

Fondo Europeo de Desarrollo Regional

PROJECT “PRIMARE – ADVANCED INTELLIGENT INSPECTIONS ”

DESCRIPTIVE REPORT OF GOOD PRACTICE

The "Primare - Advanced Intelligent Inspections" project, carried out by the Agency for Technological Modernization of Galicia, comes to meet a need in its Autonomous Community, that of improving the development of field inspections that take place as part of the process of management of aid from the Common Agricultural Policy (CAP).



Thus, the objective of the project is for control inspections in the field to be carried out automatically through technological means, particularly through the use of unmanned aerial means and other innovative technological systems such as video analysis and intelligent imaging technologies embarked on drones, as well as the planning of the routes that these aircraft will follow. This is the great innovation for the Galician countryside. In this sense, “PRIMARE” allows us to increase the number of controls and their efficiency, while at the same time reducing the complexity, subjectivity and costs of their implementation.

This action, carried out by the Agency for the Technological Modernization of Galicia helped by the Galician Agrarian Guarantee Fund of the Department of Rural Affairs of Galicia, is part of a complex project called "Civil UAV's Initiative" promoted by the Xunta of Galicia through the Galician Innovation Agency and has materialized within an agreement signed between the current Ministry of Science and Innovation, the Galician Innovation Agency (GAIN) and the Technological Modernization Agency of Galicia (AMTEGA) for the development of innovative initiatives for civil use that require the use of unmanned aerial vehicles, with a total budget of €24,000,000, which is distributed as follows: €20,000,000 for GAIN, and €4,000,000 for AMTEGA. The project is 80% co-financed by the European Regional Development Fund (ERDF), within the Plurirregional Operational Program of Spain 2014-2020, so the ERDF co-financing amounts to a total of €19,200,000 (€16,000,000 for GAIN and €3,200,000 for AMTEGA).

With this European aid, the Agency has managed to improve its service by incorporating technological innovation in the inspection process of agricultural plots within the process of control of aids from the Common Agrarian Policy in Galicia which, given the particularities of its land, characterized by a significant demographic dispersion, makes it a referential project for other European regions with similar situations and that at a national level can also be the basis for collaborative projects between autonomous communities.

It is considered a Good Practice because it meets the criteria designed for this purpose:

1. THE ROLE IN THE INTERVENTION HAS BEEN PROPERLY PUBLICISED AMONG BENEFICIARIES, POTENTIAL RECIPIENTS AND PUBLIC AT LARGE

In compliance with the obligations in terms of communication, all the elements acquired for the development of this action have been duly labeled and their acquisition and financing with ERDF funds, Multiregional Operational Program of Spain 2014-2020, has been disseminated on the AMTEGA Agency website.

The European aid received has been highlighted through the placement of permanent plaques located in a highly visible location in our facilities:

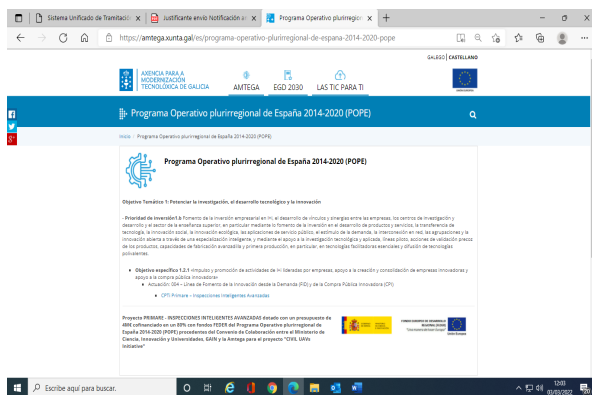


The European aid policies have also been publicised on the agency's website

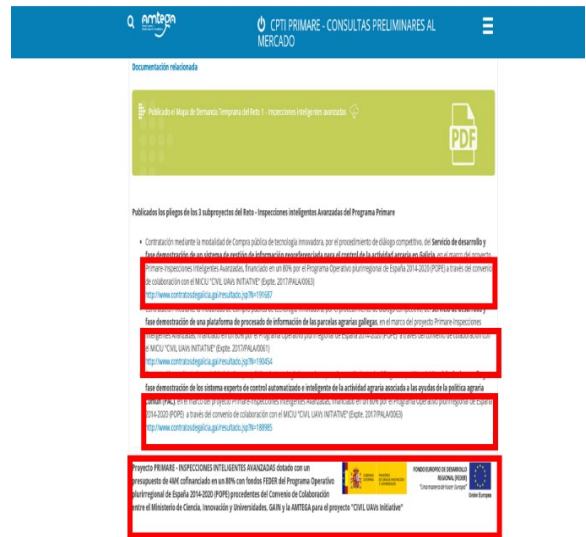
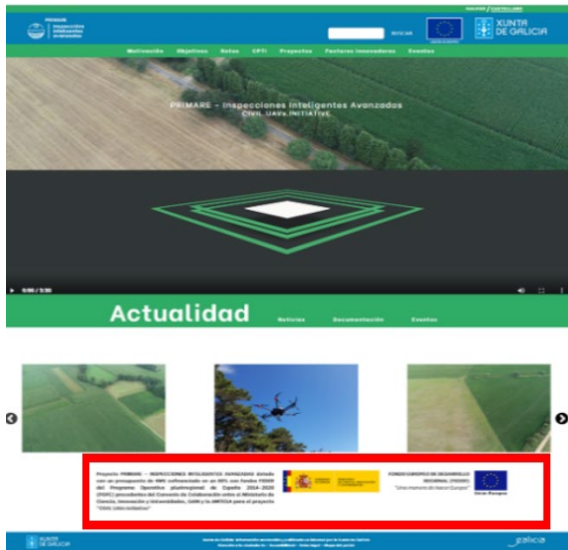


<https://amtega.xunta.gal/es>

As well as the ERDF co-financing of this action on said page:

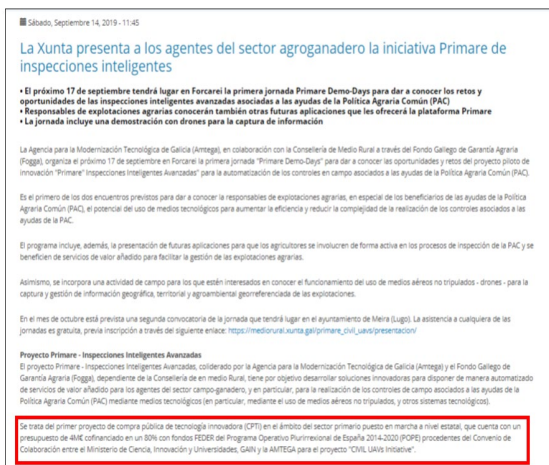


In addition, a Web page of the Primare project has been created, disseminating the European aid received: <https://amtega.xunta.gal/cpti>



Several public events were organized, such as the "Primare Demo-Days" dissemination day that was held on September 17, 2019 in Forcarei (Pontevedra), with the presence of 95 attendees including ranchers, farmers and public and private companies in the sector and another one on October 22, 2019 in Meira (Lugo), with 92 attendees; The ERDF contribution was also disseminated at the Presentation Day of the "Primare Project-Advanced Intelligent Inspections" held on December 16, 2019 in Auditorium 1 - CINC Building, Ciudad de la Cultura, Santiago de Compostela, with 112 attendees.

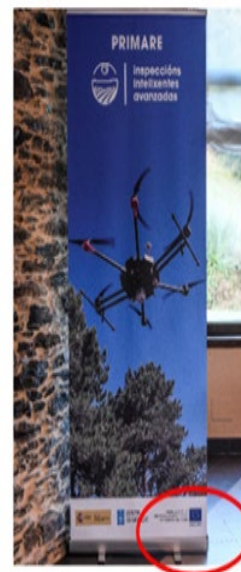
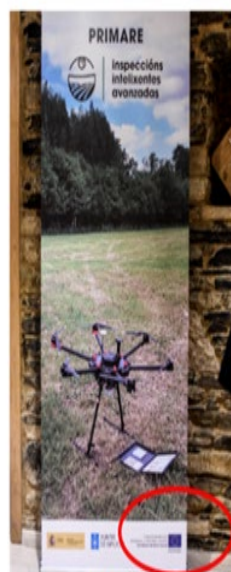
In addition, when press releases have been published in relation to the operation, ERDF financing has been emphasized, both in the news on the agency's institutional website and in the scientific journals where the results obtained have been published.



Also, a video presentation of the project has been made that summarizes its objective and scope, making explicit mention of the ERDF co-financing:



Likewise, the ERDF co-financing has been clearly stated in the announcements of the tenders and awards published in Official Gazettes, and dissemination has been carried out through Posters and Triptychs:



2. THE INTERVENTION BRINGS IN INNOVATIVE FEATURES.

The existing field inspection tools at the beginning of the project meant that a large part of the work was carried out through the manual recording of information and the completion of documentation. In order to improve this process and obtain greater efficiency and effectiveness in the inspection, innovative solutions have been developed to have adapted technological systems and equipment, which automatically allows a wide variety of complex controls to be carried out: surface measurement, unit counting crop, crop height, soil quality, type of crop, etc.

In addition to the improvement in the quality of the inspection control process associated with CAP aid derived from its automation, the solution includes other innovative technology and technical applications: mission systems that do not exist on the market adapted to the service needs of the Xunta de Galicia and the particularities of its territory, which make it possible to reduce deployment and intervention times and increase the geographical coverage of the missions with the use of the minimum human and material resources.

Techniques have been achieved that improve the execution of unmanned aerial vehicle flights, managing to reduce flight times on the generated routes and allowing a larger surface coverage, increasing efficiency and increasing safety in operations.

A very high resolution image capture system has also been achieved to obtain frames, oblique image, 360° image, ortho image, etc.

We must also highlight the integration of different technologies in data capture: through the integration of sensors or multi-platform systems equipped with the capacity to achieve data acquisition for a given area at the same time with all types of associated platforms and sensors.

3. COMPLIANCE OF THE RESULTS WITH THE SET OBJECTIVES

There are currently remote sensing systems on the market used by other Autonomous Communities, but in the case of Galicia, due to the edaphoclimatic conditions, as well as the characteristics of the parcel division existing in its community, with a territory of 29,874 square km,

divided into micro-plots, very fast vegetation growth, and with climatic conditions that make controls difficult outside of summer season, the application of said technologies becomes impossible.

The innovation provided consists of the adaptation of unmanned vehicle solutions to the orography and particularities of the plots and controls carried out in Galicia, the development of expert systems for the interpretation and cataloging of the information collected, as well as the articulation of the actions carried out by said devices, together with the on-the-spot checks carried out by teams of two mixed controllers who proceed to measure the plots, and verify the admissibility and conditionality requirements of the inspections.

4. CONTRIBUTION TO THE RESOLUTION OF A PROBLEM OR WEAKNESS DETECTED WITHIN THE SCOPE OF EXECUTION

The Galician Agrarian Guarantee Fund, in the process of processing and managing aid from the Common Agrarian Policy (CAP), dedicates a significant amount of effort, resources and time to carrying out on-the-spot controls of the parcels receiving said help.

Inspections of CAP aid in Galicia entail a cost of no less than €500,000/year in mandatory field controls in a sample of more than 100,000 plots and said control campaign allows the management and payment to the beneficiaries of aid that exceed €200M per year.

The use of unmanned aircraft for the automation of the controls associated with the aid of the CAP allows the improvement of efficiency in the inspection task, ensures the quality in the process, increases the number of inspected enclosures and reduces the time dedicated to said process.

5. HIGH DEGREE OF COVERAGE OF TARGET POPULATION

Galicia annually manages around €300M in CAP grants that benefit 41,981 professionals in the primary sector. The agri-food and forestry sectors represent, as a whole, 5.95% of the Gross Value Added in Galicia and 10.89% of employment. Primary production represents 60% of total economic activity and 62% of employment, with livestock as the main economic and social reference. For its part, industry yields 40% of Gross Value Added and offers 38% of employment, maintaining a balance between food and forestry activities.

In addition to the agents of the primary sector, the different actors involved in the field control process of CAP aid, such as inspectors, supervisors and instructors are also considered potential beneficiaries of the project.

It is important to highlight that the project was aimed at evaluating the potential that the tools to be developed should have for the managers who deal with the control of certain aids from the Common Agricultural Policy: Develop a technological solution so that the field controls associated with the aids of the Common Agricultural Policy (CAP) could be carried out automatically through technological means (particularly through the use of unmanned aerial means, and other technological systems), in order to increase the number of controls and their efficiency, reducing in turn the complexity and costs of implementation.

This future implementation of the results of the project - beyond the correct execution and evaluation already carried out of the finished project - if followed through, would have a potential impact on the different groups and/or sectors named above.

Therefore, the results of the project have covered the expected objectives of its validation, with the participation of a sample of field controls and associated plots, determined by FOGGA technicians. On the other hand, the results obtained show potential in terms of their application in an eventual future implementation, being potential beneficiaries in that case the group of applicants for CAP aid -single application- in Galicia (more than 22,000 in the last campaigns), as well as the technicians and inspectors of said aids; and possibly another broader public related to the agroforestry sector that could use the subsystems developed under the project as a base.

6. OBSERVANCE OF HORIZONTAL CRITERIA OF EQUALITY OF OPPORTUNITIES AND NON-DISCRIMINATION, AS WELL AS SOCIAL RESPONSIBILITY AND ENVIRONMENTAL SUSTAINABILITY

Care has been taken to guarantee exhaustive compliance with the recommendations at the state and Galician level for the development of these types of innovative projects, respecting at all times the principles of equal treatment and non-discrimination, transparency and competition for all the companies that participated.

To this end, the advertising mechanisms have been strengthened, placing special emphasis on the publication of prior announcements, the implementation of dissemination sessions and the recruitment of participants in the process, and the holding of meetings to ensure fluid communication between the contracting entity and the participants.

This operation has also been developed to carry out verifications related to the environment, for example, for the control of standards for the conservation of wild birds, protection of groundwater against contamination and conservation of natural habitats; and, in the field of good agricultural and environmental conditions, the corresponding elements related to minimum soil cover, minimum land management that respects the specific conditions of the place, retention terraces, stubble management, use of machinery maintenance and protection of permanent pastures, maintenance of structural elements, prevention of invasion of agricultural land by spontaneous vegetation, maintenance of olive trees and vineyards in good vegetative condition, maintenance of habitats and use of water and irrigation.

7. SYNERGIES WITH OTHER POLICIES OR INSTRUMENTS OF PUBLIC INTERVENTION

On May 22, 2018, Regulation (EU) No. 2018/746 was approved, which allows both the use of new technologies and unmanned aircraft, in the context of current controls, as well as the voluntary replacement of the latter by the new controls by monitoring.

In this context, the Spanish Agrarian Guarantee Fund promoted in the 2019 campaign a pilot of a monitoring solution based on Sentinel data (a multi-satellite unmanned aircraft project developed by the European Space Agency). In this case, given the low resolution provided by the Sentinel satellite images, the existence of extensive indeterminate results is expected where expert judgment must act, and especially in small plots, as is the case of Galician farms.

In this regard, the solution provided by the Primare project – Advanced Intelligent Inspections based on very high resolution images, as is the case of the images captured by drones, would provide a magnificent complementary solution to the monitoring solution provided by the Spanish Agrarian Guarantee Fund.



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