

Una manera de hacer Europa



BUENAS PRÁCTICAS Actuaciones Cofinanciadas

Pre-commercial public procurement project INNOLIVAR
University of Córdoba

**Programa Operativo
Plurirregional de España**

Año 2022

Fondo Europeo de Desarrollo Regional

PRE-COMMERCIAL PUBLIC PROCUREMENT PROJECT INNOLIVAR

PRESENTATION

The pre-commercial public procurement project INNOLIVAR is an innovative action carried out by the University of Córdoba to accomplish a double objective: first, improving the public service of higher education offered by the University to its students through teaching and research and, secondly, transferring knowledge and increasing the competitiveness and international positioning of companies in the agri-food sector of olive oil and table olives. The achievement of this dual objective has improved the technological capacity and profitability of the participating companies and has strengthened the R,D&I capacity of the University of Córdoba.

Innolivar materialized when an agreement between the former Ministry of Economy, Industry and Competitiveness (now the Ministry of Science and Innovation) and the University of Córdoba was signed in 2017. It had a budget of **13.098.734€ and is co-financed 80% by ERDF funds, within the Multiregional Operational Programme of Spain (POPE) 2014-2020, that is, 10.478.987,20€.**

The project has been developed through 12 lines of action, grouped into 5 thematic blocks, that have addressed different fields as agricultural mechanization, environment, biotechnology, industry, and traceability. It has been a project developed through public-private collaboration, between the University of Córdoba and companies in the olive sector, obtaining innovative prototypes and services, which do not exist already in the market. In its execution, a total of twenty-four companies (two for each of the twelve lines) have been selected through a competitive bidding process, to develop in a collaborative way, innovative prototypes of machines, equipment, organisms, olive varieties and traceability. Once the agreement concludes, the prototypes obtained may become marketable by the winning companies that have worked on their development.

Below are the arguments that make this action a Good Practice according to the criteria defined:

1.- The action has been appropriately disseminated among beneficiaries, potential beneficiaries, and the public.

Information and communication have been key elements in the development and implementation of the project in order to meet the objectives of the Communication Strategy of the Multiregional Operational Programme of Spain 2014-2020 and ERDF funds, ensuring transparency and transparency of the intervention.

Through various tools and actions, which will be defined below, attempts have been made to raise public awareness about the added value of Community co-financing in this kind of project.

Firstly, information concerning the European aid received has been provided via the University's website: <https://www.uco.es/>



This page has been prepared to include information on the grants the University has received from the different Structural Funds and the ERDF:

[Co-financed projects FEDER | University of Córdoba \(uco.es\)](https://www.uco.es/)



Also, an external website for the INNOLIVAR project was developed.



A YouTube channel has also been created, presenting the evolution of the project in general and its lines.



Both printed and digital media have been published and disseminated in specialized newsletters. For example, in the digital bulletin nº 28 of diffusion of the Transfer of knowledge of the University of Córdoba was given diffusion for the entire university community (Professors and Researchers, Students and Administration Personnel) know the scale of the project and its co-financing.

Número 28 • Edición Trimestral • Febrero 2018

TRUCO

Convenio de Compra Pública Innovadora promovido por la Universidad de Córdoba

INNOLIVAR invertirá 13 millones de euros en proyectos de innovación para el olivar en mecanización, sostenibilidad, calidad o biotecnología

- En el Convenio participan la Universidad de Córdoba y el Ministerio de Economía, Industria y Competitividad.
- Las empresas podrán presentar proyectos en 12 líneas de innovación en cuatro áreas: mecanización, sostenibilidad, calidad y biotecnología.
- En la actualidad se encuentra abierta la Fase de Consulta Previa al Mercado y está previsto que el periodo de licitaciones comience a principios de marzo, para que el sector empresarial pueda presentar sus proyectos.

El pasado día 30 de enero se ha puesto en marcha el Convenio de Compra Pública Precomercial INNOLIVAR, "Innovación y tecnología para un olivar sostenible", tras la firma oficial del Convenio por parte del Ministerio de Economía, Industria y Competitividad y la Universidad de Córdoba (UCO), promotora de esta iniciativa para la modernización del sector de olivar español.

Este convenio de Compra Pública Innovadora fue solicitado por la UCO a demanda del sector, representado por las Interprofesionales del Acrite de Oliva Español (IAOE) y por la Interprofesional de la Acreditación de Mesa (Interacrituna).

El presupuesto total del convenio es de 13,1 millones de euros, la mayoría de ellos destinados a la licitación para empresas que contarán con 9,1 millones de euros sin incluir el IVA. Esta importante inversión será cofinanciada en un 80% por el Ministerio de Economía, Industria y Competitividad con fondos FEDER de innovación y el 20% restante por la UCO con el soporte de las dos Interprofesionales.

El convenio se desarrollará mediante colaboración público-privada entre la UCO y las empresas del sector, para obtener productos y servicios innovadores. En total se van a seleccionar veinticuatro empresas, dos por línea de actuación, mediante un proceso de licitación competitiva, con el fin de desarrollar conjuntamente prototipos innovadores de máquinas, equipos, organismos, nuevas variedades y sistemas de trazabilidad, etc. Al final del convenio los prototipos pre-comerciales obtenidos podrán pasar a ser comerciales.

En la actualidad se encuentra abierta la Fase de Consulta Previa al Mercado que se cerrará el próximo día 23 de febrero, paso anterior a la publicación de los Pliegos de las licitaciones, lo que está previsto que se

innolivar COMPRA PÚBLICA PRECOMERCIAL
INNOVACIÓN Y TECNIFICACIÓN DEL OLIVAR

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Bolero de difusión de la Transferencia del Conocimiento de la Universidad de Córdoba

Finally, it should be highlighted the correctly disclosing of the beneficiary status and the support received by the ERDF and the Ministry of Science and Innovation by placing posters and a plaque in the facilities of the Campus of Rabanales and the Rectorate of the University of Cordoba, as well as in test camps.



2. The action incorporates innovative elements

The project "Innolivar" aims to improve the Public Service provided by the University of Córdoba, the business activity in its environment and the internationalization of Andalusian companies.

It has meant the creation of a new organizational structure based on knowledge that has consolidated the University of Córdoba as a world reference centre in the olive grove, for a smart growth in which innovative ideas are turned into new products, jobs and services to cope with social and economic changes.

Regarding the innovative elements incorporated into the University's own public service, thanks to the ERDF, the innovation project management model has been reoriented with the launch of the Strategic Projects Office, which achieves greater efficiency in the management of its innovation projects.

The innovation incorporated in the companies awarded the project lines is undoubted. Thanks to the project, all of them have introduced innovations in their manufacturing system, in their assembly lines and in the products they manufacture. In addition, they have drawn up a digital action plan with which they have implemented promotional campaigns through the internet increasing their visibility and getting an increase in visits to their websites.

3. Alignment of results with established objectives

The main objectives of the project were basically two, on one hand, to improve the public service provided by the UCO in the field of teaching, research, and knowledge transfer, as well as promoting the internationalisation of UCO and olive sector companies linked to public R&D&I activities.

On the other hand and in order to achieve the main objective, prototypes of machinery and technology linked to the olive sector had to be designed and developed, which would not only improve the public service provided by the University but would be able to respond to market needs and make olive sector companies more competitive to develop such solutions.

Among the global objectives aimed at improving the public service provided by the University and **achieved through the implementation of the project can be found**: improvement of the score that students give teachers for their knowledge, increase in the number of students in subjects based on the number of public collaboration agreements between UCO and other bodies, number of patents, number of projects, increase in the number of students doing business placements, number of theses, TFM and TFG, graduates employed in companies in the sector, number of days and courses carried out and number of companies requesting accompaniment in innovation.

As for the technologies to be developed, the predesigned objectives have been met and **2 prototypes have been accomplished for each line of research**, as detailed below:

1. Self-propelled harvesters for intensive olive oil mill based on vibration and simultaneous shaking.
2. Vehicle for olive groves in slope and difficult mechanization.
3. Application equipment for spraying traditional and intensive olive trees.
4. Integral equipment for grouping, mincing and management of the remains of pruning for intensive and traditional olive trees.
5. Fight against erosion, including correction of gullies.
6. Systems and technologies to improve the processing process of olive oils.
7. Analytical instruments allowing the correct assignment to an AOVE.
8. Formulated fungi for the control of olive verticilliosis.
9. Formulated of entomopathogenic fungi for the control of the olive fly *Bactrocera oleae* (Gmelin).
10. New olive varieties adapted to the olive grove in hedge.
11. Integral collection systems based on cup shakers for the collection of table olives.

12. Integrated systems for real-time traceability in mechanized harvesting of the table olive grove.

4. Contributing to the resolution of a regional problem or weakness

In the agri-food sector it is justified to contribute to the resolution of the problems that exist because of the economic importance of the production of olive oils and table olives in Spain, which represent 8.7% of the value of plant production, generating 55 million wages each year and thus making a decisive contribution to territorial cohesion. This is reinforced by an industrial sector that, in 2015, was represented, approximately, by 1,761 oil extraction industries (oil mills) and 485 plants for table olives.

Globally, the data confirm the need to create an innovation system that accompanies the olive sector. Spain is the first country producing olive oil, with 1,165,700 tons on average in the period 2004 - 2015, which represents 40% of the total, and the first exporter, with 30% of the total (IOC, 2015), also leading table olive production with, approximately 500,000 tons, or 24 per cent of the total.

In this sense, the innovation program "Innolivar" has developed thanks to its 12 lines of R,D&I, different types of machinery, management systems, plant protection products and methods of analysis that address the main deficiencies identified in this sector, thanks to the continuous communication between the project management and the actors involved in the project, inter-branch machinery manufacturers' associations and farmers' associations.

As a result of these 4 years of work, two "prototypes" have been developed for each of the lines of work mentioned above, which are intended to solve the specific problems identified by the olive sector.

If we will need to summarize what are the main weaknesses of the olive sector in Spain, we could say that currently the problems of the sector are related to the lack of mechanization of certain usual tasks and certain working conditions, with pests and diseases, with soil protection and with the transformation towards more profitable production systems such as the super-intensive olive grove.

Taking all these aspects into account, the project has tried to strengthen each of these weaknesses, developing:

- Specific machinery for the harvesting of olive trees, for the application of plant protection products optimizing the use of pesticides, to work safely on land with high slopes, for the better management and use of by-products from pruning residues or for the management, characterization, and control (traceability) of the table olive, from the moment it is collected.
- Soil analysis and characterization systems for erosion control
- Sensorized systems to automate certain oil processing processes.
- Pre-commercial formulations for the control of pests and diseases that cause real havoc in olive production.
- New varieties of olive trees specially adapted for use in superintensive production systems.

As can be seen, the objectives of the project are broad, and attempts have been made to solve problems in the sector of a wide variety of kinds, touching on agronomic aspects, mechanization, biotics, erosion, or industry.

5. High level of coverage of target population

The coverage of the project covers almost the entire olive sector since, as we have described in the previous point, it addresses aspects as fundamental to its innovation as technical, materials or even in this context, the European Commission is working with the Member States to improve the quality of its work. Each of these

lines of work has been developed based on technological needs (technological demand) that have been raised by the interprofessional organizations themselves, together with the technicians of the University, experts in each subject.

This scope is achieved thanks to European funding and to the collaboration and co-financing of the olive sector through the Interprofessional Organization of Spanish Olive Oil (OIAOE) and the Interprofessional Organization of Table Olive (Interaceituna), since between both organizations represent almost 95% of the Spanish olive growers, which ensures their involvement and that the results (prototypes) reach olive growers and their industrial sector as well as students of the subject. Also, the project has different tools, such as the creation and implementation of the web and social networks, presentations at the most important fairs and congresses in the sector, presentations of results in situ and publications of articles in specialized magazines, which has allowed reaching both the Spanish national territory and some countries of the European Union.

6. Consideration of horizontal criteria of equal opportunities and non-discrimination, as well as social responsibility and environmental sustainability

The University of Córdoba has historically assumed an intellectual leadership in the promotion of knowledge and knowledge, at the same time as it has favoured human progress and the economic and sociocultural enrichment of its environment. It has promoted scientific and technological growth and has assumed among its functions the preservation and enhancement of culture. To the traditional functions of the university - teaching, research, transfer, and management- a new strategic dimension -called fourth helix- is added, as a transversal axis, permeates the different activities undertaken by the institution and refers to the social commitment it maintains with the development of the environment in which it is located.

One of the essential tasks of the so-called third generation universities is the transfer of knowledge, science, and technology from the university to society, to improve the living conditions of citizens and increase their social well-being, within a framework of sustainability and equity. This social commitment is identified with a principle that underlies any of the actions developed in the university, and whose purpose is to improve social responsibility and commitment, both internal activities and externally focused actions.

Specifically in the sector related to the project, innovation lines have been included to solve the main environmental problems that influence the sector and put at risk its sustainability such as: erosion, diffuse contamination with plant protection products and burning of pruning residues. Regarding the industrial sector of oil processing, it is considered the development of innovations in milling and smoothing to increase the quality, traceability and improvement of their processing processes. In the field of biotechnology, new lines of innovation are promoted for the control of the main diseases and pests, such as Verticilliosis and the olive fly, along with the development of new varieties for the olive grove in hedge.

Regarding the criteria of equal opportunities, although it is a sector in which the percentage of men is higher than that of women, researchers are given the same opportunity to participate, where the percentage of women employed is similar to the one of men and equal treatment is respected in both paternity and maternity leave (with some examples).

The implementation of the operation contributes to the promotion of equality between men and women and non-discrimination based on sex, race or ethnic origin, religion or belief, disability, age, or sexual orientation.

7. Sinergias con otras políticas o instrumentos de intervención pública

From the Department of Rural Engineering of the Higher Technical School of Agronomic and Forestry Engineers (E.T.S.I.A.M) of the UCO, synergies have been created that have enhanced and favored the associated entities and as the last step, the whole sector and society, mainly in rural areas.

In the specific case of the Department of Rural Engineering and the research group "Mechanization and Rural Technology" (<http://www.ceia3.es/es/lineas-y-grupos-de-investigacion/ingenieria-rural-y-agroalimentaria/mecanizacion-y-tecnologia-rural-agr-126-uco/>) , for more than 30 years we have been working on the development of new machinery and techniques to improve the mechanization of crops such as olive trees, citrus fruits and more recently nuts, safety research in agricultural machinery, or plant protection application teams, all with European, regional and private funding, with projects recognized for the objectives achieved at national and international level.

The main difference between previous and current projects is the overall nature of the project. Although the previous projects had been developed without external collaboration, only from the research group "AGR 126", this time has also addressed agronomy, biotechnology, construction, analytical chemistry, or agri-food industry.

For the development of this project has had the support of the Spanish Olive Oil Interprofessional (OIAOE) and Table Olive (Interaceituna), in addition to the work of 24 of the most important national and international companies in the sector, that thanks to the work done have managed to increase competitiveness, international positioning, technological capacity, and improvement of technification.

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