



Integrated pig manure digestate processing for direct injection of organic fertiliser into irrigation systems

ANNEX E4.1. After LIFE+ communication plan



***Integrated pig manure
digestate processing
for direct injection of
organic liquid fertiliser
into irrigation systems***



**LIFE Smart
Fertirrigation**

AFTER-LIFE COMMUNICATION PLAN

LIFE SMART FERTIRRIGATION aims to demonstrate a more resource efficient and sustainable method of treating pig manure. The manure can reach full potential of nutrient recovery by creating two biofertiliser end-products: a solid fraction (transformed by low-cost drying technologies) to use in pelletized fertilisers, and a liquid fraction (transformed by secondary separation and filtration technologies) to use in irrigation systems.



The project aimed to:

- ❖ *Increase the recycling of natural resources in digestate and pig manure*
- ❖ *Reduce phosphorous levels in pig manure by testing innovative enzymes in feed*
- ❖ *Maximize agricultural production in a sustainable way*
- ❖ *Substitute mineral fertilisers, lowering their negative impact on the environment*



Through the AFTER-LIFE Communication Plan, project partners will disseminate the results of the **Smart Fertirrigation** project during at least the following 5 years with their own resources. To this purpose, several actions are expected to be carried out at regional, national and European levels following three pillars: **Inform, Involve & Inspire**

Information on-field seminars and talks



Local community



Inform

- *Disseminate the projects' purpose, aims and outputs to reach a broader audience, outside the project boundaries, using the material compiled during the project.*
- *Maintain and update the project's online channels (website, facebook, YouTube)*

Involve

- *Contribute to policy in order to continue considering exploiting the potential of digestate and pig manure a top priority.*
- *Keep key stakeholders updated via active communication events such as technical seminars, workshops & training.*

Inspire

- *Convince important market actors, farmers, ranchers and biogas producers to innovate and start exploiting the full potential of pig manure and digestate, in an increasingly aware society where unsustainable practices are held accountable.*
- *Engage interested parties in committing to reducing pig manure and digestate environmental footprint by "leading by example".*



***Replicability of SMART FERTIRRIGATON method
beyond the boundaries of the project***

In the long term, the economic and environmental sustainability of pig farming will be based on its complete integration with agricultural activity, in such a way that the pig farmers will develop economic activities focused on the cultivation not only of the cereals and oilseeds necessary to feed their pigs, but also for the production of other crops that help to diversify their business. Fertirrigation with transformed slurry contributes to this circular economy strategy, and we will try to replicate the present project considering different circular economy scenarios. Each of the identified scenarios for replication is detailed below:

Scenaios	Environmental sustainability	Economic sustainability	Job creation and professionalization	Potential replication
Pig Producer - Biogas Plant – Crop Farm	****	**	**	*
Pig Producer – Crop Farm	**	***	****	****
Pig Producer with its own agricultural area	***	****	***	***
Pig producer with anaerobic digestion of slurry and its own agricultural area	*****	*****	****	**

*Additionally, conclusions from the **socioeconomic impact assessment** and the **Technical Evaluation** report show **positive interest** from potential end-users and the presence of a **market gap** for future up-take of this technology.*

Concrete After-LIFE steps taken and foreseen by the different partners

In response to the **excellent results** during the project and **positive feedback from stakeholders**, partners will use their own resources and seek other funds to offer a more competitive technology.

COPISO

- COPISO is one of the main economic and social drivers in the area with 1,200 farmers. COPISO is compromise in sharing their knowledge to its members to inform and train people in innovation agro-technologies. They will continue disseminating and training the features of the achievements of this project in their annual meetings, field workshop and technical seminars as the means to improve pig feed and manure management.

Technical seminars

Transfer of knowledge & training on field



- The transformation system of the liquid fraction of the slurry in the farm was considered economically viable, and **the priorities for replication** were focused on this approach to the existing problem in pig farms. In fact, it has been decided to implement the new solution in a new pig farm of COPISO. During the execution of the project we identified a member of the cooperative interested in replicate the project in his pig farm. It is a new farm that will be built during 2020, with capacity for 2,500 sows and a slurry production of 25,000 m³. **The pig farm is located in Berlanga de Duero (Soria), with 300 ha for applying the liquid biofertilisers in different types of crops.** For the implementation of the tested technology, it must be considered that in this case the slurry comes from sows, not from fattening pigs, and therefore it is expected that the chemical and separation treatment will have to be modified.

Transfer Consultancy

- As dissemination manager Transfer will held active the project's website and social media for at least 5 years.
- Through **ESPP (European Sustainable Phosphorus Platform)** Transfer Consultancy remains in touch with companies and stakeholders involved in the challenges that sustainable management of Phosphorus has to deal with.
- The **CIRCABC (Communication and Information Resource Centre for Administrations, Businesses and Citizens)** application will allow Transfer Consultancy to create collaborative workspaces where information and documents are shared with a multilingual and international community.
- During the execution of the project we worked for the replication of the project in other organizations different from the partners. In this sense, we organized interviews with a total of **13 private companies** to evaluate the cooperation and the interest in integrating the new solution in their production processes (www.amda.es, www.coren.es, www.friselva.com, www.kendensha.com, www.catpinsos.com, www.calafconstructora.com, www.sgrsl.es, www.geniaqglobal.com, www.aperqas.cat, www.jisap.com, www.htnbiogas.com, www.bonarea.com, www.icpor.com).

CODEREG

- The irrigation community of the Almazán channel defends the interests and rights of water for its members which cover an area of 5,000 ha. The organization is committed to more sustainable water management systems and they will continue to spread the project aims and purposes through its annual meeting and technical seminars.

Participation at international events



TEQBIO

- TEQBIO as the technical coordinator and supervisor of the assembly of the digestate and slurry treatment plant, will continue providing solutions based on its wide knowledge in biological treatment systems to farmers or companies that willing to invest and adopt many of the project practices at their facilities.
- TEQBIO will technically coordinate **a pilot project** that has been planned with an execution period between 2020 and 2022 as new solution to **the JISAP company** (www.jisap.com). It is one of the main pig producers in Spain and Europe, located in the Southeast of the Iberian Peninsula. Specifically, in the Region of Murcia there is a significant concentration of pig producers and the management of slurry is a key problem, considering the important development of irrigated agriculture in the area in recent years.
- TEQBIO and the technology-based **company Depuracio I Tecnologia De L'aigua S.L.** (www.depurtech.com), specialized in water purification. Trade missions led by the project partner TEQBIO are being planned in 2020 to promote in the Spanish Catalonia and Aragon regions the separator and chemical treatment technology tested during execution of LIFE SMART FERTIRRIGATION project. Both regions have a high concentration of pig producers, and there are a lot of farmers demanding solutions to reduce the N content of slurry.
- TEQBIO will continue participating at international fairs such as **FIGAN** (Animal production), **SMAGUA** (the great technological showcase for the water and irrigation industry) and **IFAT** (water, sewage, waste and raw materials).





DORSET

- *Being the supplier of the solid fraction drying technology, DORSET will continue to offer its innovative, eco-friendly and energetically convenient technology. They will also continue participating at international congresses and fairs.*

BOSMAN

- *As the supplier of the liquid fraction filtering technology, the company will keep its crucial role in the managing of residual waters, using a variety of filters, including the innovative deep-filtration system Fuzzy. They will also continue participating at international fairs such as **SMAGUA**.*
- **Other immediate replication actions** are related to the promotion in the national and international market for prototypes of filtration and drying led by BOSMAN and DORSET, respectively. In the Spanish market, the most immediate action is promoting their technologies in the **biogas plant HTN** (htnbiogas.blogspot.com), located in Caparroso (Navarra, Spain). This company currently uses centrifugation technology to separate the liquid and solid fraction from the digestate. Therefore, in this case, there is no interest in pretreatment technology, but there is directly an interest in filtration technology to improve the quality of the liquid biofertilisers and in drying technology to improve the quality of the solid biofertilisers taking advantage of the residual heat or biogas. New work meetings will be organized by TEQBIO, BOSMAN and DORSET to replicate the project in 2020.
- Finally, in 2020 we will contact the company **Bigadan A/S** (www.bigadan.com). It is a Danish multinational specialized in the construction of biogas plant (it has been involved in more than 40 large scale biogas plants worldwide), with a delegation in Spain (Bigadan Spain S.L.U.). We will promote our filtration and dryer prototypes into the biogas plants constructed by this company.

Resource commitments foreseen by the different partners

COPISO, TRANSFER Consultancy, CODEREG, TEQBIO, DORSET & BOSMAN will use their own resources and those of its network to further develop the project. COPISO and TEQBIO will scale up the project to other parts of Spain and DORSET and BOSMAN will promote their technologies in all Europe starting with contacts in Denmark, Germany, The Netherlands and Spain where they have contacted with biogas plants and pig breeders. Transfer and all other partners will continue to disseminate the results of the project which have confirmed the participation in different national and international events for the next five year.

Budget commitments for 2020-2025 period by partners:

- *Participation to National & International congresses and organization of technical seminars (5*5 in total) € 50.000*
 - *Reprint of Layman's reports for dissemination (500 extra) € 1.500*
 - *Assistance to sector trade fairs with booth (3*5 in total) € 35.500*
 - *Online campaigns of fertirrigation use in agriculture € 10.000*
 - *Online Social Media promotion campaigns (at least 5 channels) € 5.000*
 - *Technical assistance to support replicator agents €190.000*
- Total budget commitment € 291.500*

Coordinating beneficiary:

COPISO

Beneficiaries:

TRANSFER Consultancy

CODEREG

TEQBIO

DORSET

BOSMAN

Total Budget: €2.628.126

EC financial contribution: €1.491.973

Project duration: 4 years (01/09/2015–31/12/2019)

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