BAQUA SOLUTIONS THROUGH THE NEW USE FOR A WASTE OF BANANA CROP TO DEVELOP PRODUCTS IN AQUACULTURE AND PLASTICS SECTORS

CIRCULAR ECONOMY

The circular economy refers to an industrial economy that is restorative and regenerative by intention, designed for reducing the carbon footprint and employing a more sustainable and eco-friendly use of resources. In comparison with the traditional linear economy (make, use, dispose), the circular economy aims to keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

BAQUA aims at implementing the circular economy through spanning the value of the banana crop ensuring the use of wastes, by means of compounds extraction, in other industries.

MOTIVATION

Banana plant only bears fruit once, so after the bananas have been harvested the plant is cut and organic wastes (mainly banana pseudostem) are usually left in the plantation, producing a problem of waste accumulation for the forthcoming harvesting and having no nutritional value for the soil.





the 60% of funding.

¿WHAT IS LIFE-BAQUA?

the residual **pulp** on the other side.



The project LIFE BAQUA belongs to the **LIFE Programme** and its main objective is to establish a new circular economy

approach to take advantage of wastes from banana plantation (pseudostem of the plant). From this pseudostem, and

using mechanical processing, two different raw materials are obtained: high guality natural fibres from one side and

different products, such as bags for fish feed, agricultural films, or automotive plastic parts.

as a supplement in production of fish diets for aquaculture.

- Treated fibre will be mixed with plastic to obtain different **fibre-reinforced plastic parts** that may be applied to

- The residual pulp, as a great technological innovation, will be developed into antioxidant additives which serve

The project is carried out by a transnational partnership comprised of 6 partners and during three years (2016-

2019) they will work to achieve the target. The total budget arises 1.7 million Euros, and European Commission gives



Improvement of the nutritional quality in fishfeed, replacing synthetic antioxidants (carcinogenic substances) by other from natural resources (banana pseudostem).



OBJECTIVES & SCOPE

Optimization of waste management of banana production, using an innovative extraction process to turn a waste currently considered valueless (banana pseudostem) into a resource by means of a novel methodology for extracting natural fibres and pulp. This will reduce waste during harvesting and final consumption.

Environmental benefits derived from the improved agro-wastes management as a result of the project actions and monitoring activities in the pilot area (900 ha) regarding NO, and CO, emissions.

Development of a circular economy strategy between sectors involved in the project. Maximize the use of banana crop waste, demonstrating how natural fibres from pseudostems can be used as a cheap and natural additive for reinforcement for plastics and bioplastics, and also by using banana pseudostem pulp as natural antioxidants in fish feed, replacing synthetic materials.

EXPECTED IMPACT

Environmental impact

- Reduce negative impact of oilbased plastics and aditivies, carbon and nitrogen footprint.

- Affordable nutritional fish feed for aquaculture.

Agricultural waste valorization.

Economic Sustainability

New business opportunities in the aquaculture and banana sectors.

Plastic industry competitiveness: reduccion of dependence of fossil derivates.

Social Impact

Job creation.

Healthier consumers.

Local banana crop market profit.

THE LIFE PROGRAMME

The LIFE Programme is the EU's funding instrument for the environment and climate action. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value. Since 1992, LIFE has co-financed some 4,306 projects. For the 2014-2020 funding period, LIFE will contribute approximately €3.4 billion to the protection of the environment and climate.

For more information: http://ec.europa.eu/environment/life/









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COORDINATING BENEFICIARY

• ULPGC - Universidad de Las Palmas de Gran Canaria www.ulpgc.es

- * CFI The Research Group Integrated and Advanced Manufacturing
- * GIA The Aquaculture Research Group www.giaqua.org

ASSOCIATED BENEFICIARIES

• ADSA - Alevines y Doradas S.A. (Spain) www.tinamenor.es/adsa.html

• AMBI - AMBI Metalplast d.o.o. (Slovenia) www.metalplast.si

• DIBAQ - DIBAQ Diproteg S.A. (Spain) http://www.dibaq.com

• SPIF - Swedish Plastic Industry Association (Sweden)

• **TECNO** - Tecnopackaging (Spain) www.tecnopackaging.com