



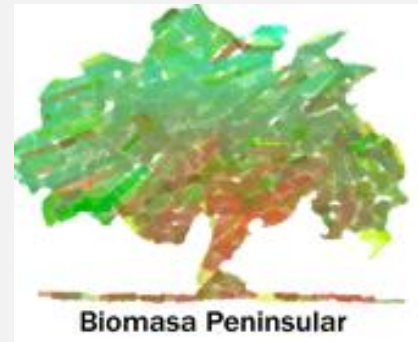
Fecha:
26 junio 2018

Lugar:
Salón de actos
CDTI
C/ Cid, 4,
28001, Madrid

Herramientas europeas de financiación de la I+D+i en Economía Circular



LIFE13 ENV/ES/000800 (TL BIOFER)





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www.tl-biofer.eu

TL-BIOFER

“RECICLADO de NUTRIENTES y AGUAS DEPURADAS mediante un SISTEMA de CULTIVO DE MICROALGAS Twin Layer con PRODUCCIÓN de BIO-BASED FERTILISER”



The TL-BIOFER Project is co-funded by the European Union, LIFE+2013 Programme

1. Actividad **BIOMASA PENINSULAR**

- Centros de Reciclado
- Centro Algodor I+D+i y Producción Experimental
- Plataformas Tecnológicas y Asociaciones
- Proyectos I+D+i
- Instalaciones en Proyecto

2. LIFE + 2013 **TL BIOFER**

- Resumen del Proyecto, Objetivos, Actividades
- Experiencia en la preparación, negociación, desarrollo
- Desarrollo y problemas
- Conclusiones y oportunidades

BIOMASA operates 5 Recycling Centres with 170.000 m² total installations surface with a treatment capacity of 140.000 t/year:

-  El Salao" Composting Plant. Vegas del Genil (Granada)
-  "Els Ramblars" Municipal Recycling Center. Xabia (Alicante)
-  "Montes Orientales" Composting Plant. Darro (Granada)
-  "El Raigal" Composting Plant. Almonte (Huelva)
-  "Algodor" R&D&i Experimental Production Centre.
Toledo

Organic fraction processing



Anaerobic digestion



Auxiliary equipment and installations



Current INSTALLATIONS

European Sustainable Phosphorus Platform (ESPP).
<http://www.phosphorusplatform.eu/> from 2014



Spanish Technology Platform of Plant Biotechnology
 "BIOVEGEN" www.biovegen.org from December 2014



Member of Spanish Water Technology Platform PTEA"
www.plataformaagua.org from March 2015



Member of Scientific - Technological Park of Córdoba
www.rabanales21.com

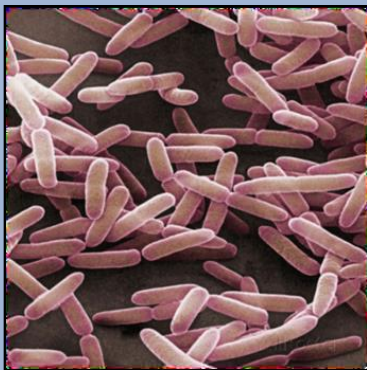


URBIOFIN: BIC 2016 – H2020 Demonstration of an integrated innovative biorefinery for the transformation of M.S.W. into new BioBased products.	2021	
RETOS 2016 LIGNOXBIO: Obtención de bio-productos hipocarbónicos avanzados por transformación de residuos y sub-productos biomásicos.	2019	
CDTI CIEN 3R2020+: Del residuo al recurso mediante el reciclaje	2019	
LIFE ENV ES00800 TL BIOFER: Nutrients and regenerated water recycling in WWTPs through Twin Layer microalgae culture for biofertilizers production.	2018	
CLAMBER L2 No Agroaliment: Valorización integral de la fracción orgánica de r.s.u.	2015	
REFERTIL VII FP: Improvement of bio-waste transformation / nutrient recovery processes for production of combined natural products.	2014	
CDTI NNTT ABIOAGRIN: Nuevas Tecnologías para la Aplicación de Bio-Agro-Insumos en la Producción Agrícola Sostenible en Andalucía.	2014	

Pilot Line Solid coated micro-granulated bio-based fertilisers



Small Industrial Line Formulation liquid biofertilisers





LIFE + 2013 TL BIOFER

Associated Beneficiaries:

EMPRESA PROVINCIAL DE AGUAS DE CORDOBA

www.emproacsa.es

UNIVERSIDAD DE COLONIA

www.melkonian.uni-koeln.de

Coordinating Beneficiary

BIOMASA PENINSULAR S.A.

www.bpeninsular.com



Biomasa Peninsular

Duration of the Project and Budget:

48 month: 1st of July, 2014 - 30th of June, 2018

Total Budget: 1.097.092 €

EC Co-funding: 548.546 €

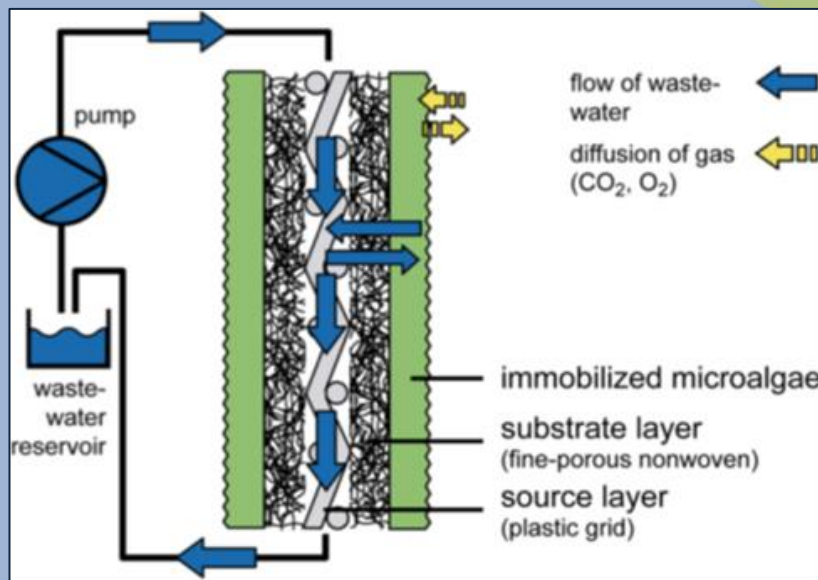
LIFE+2013 Environmental Policy & Governance

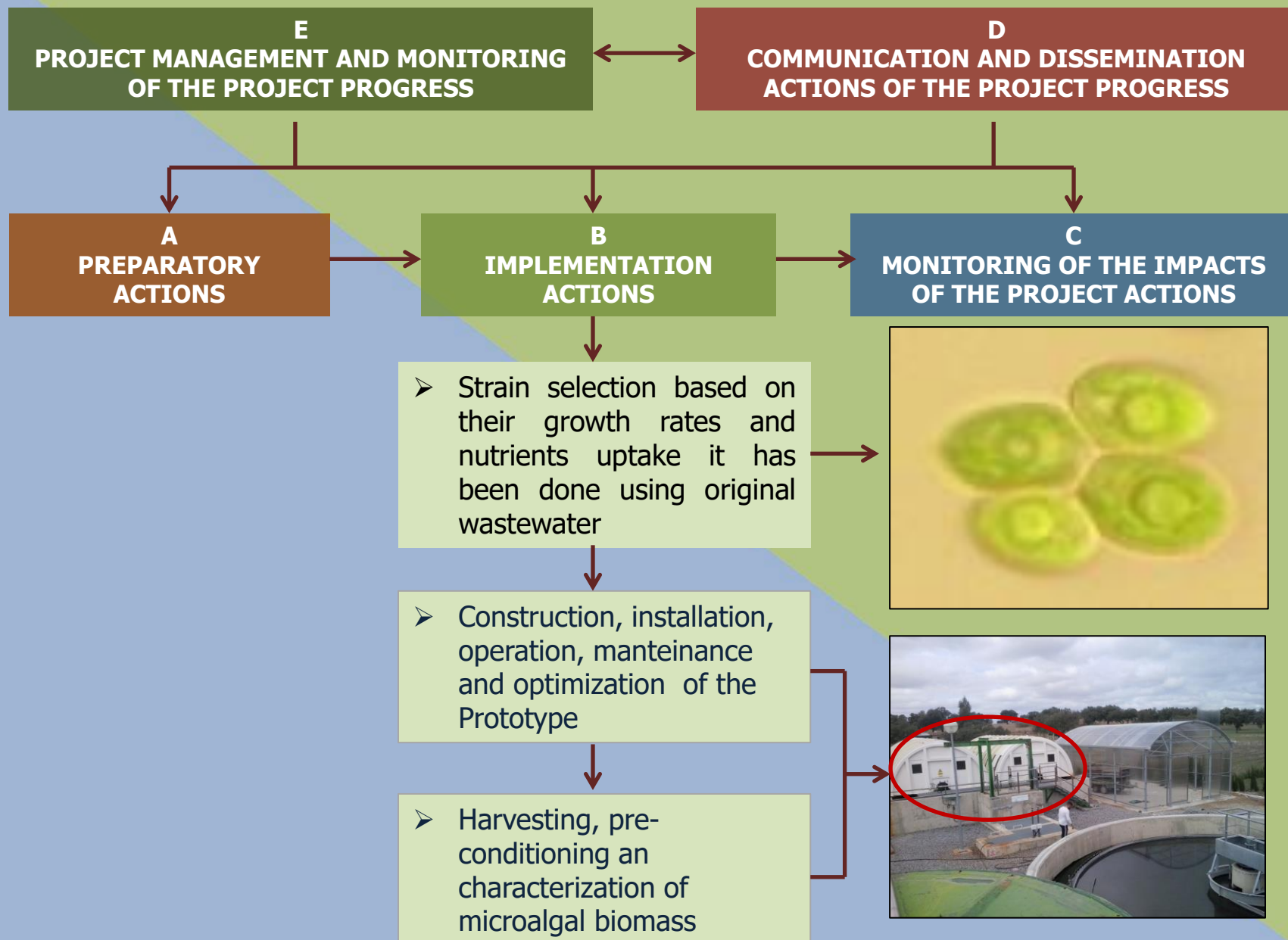
1. To demonstrate the feasibility of an advanced nutrient removal technology by using microalgae immobilized culture in a Twin-Layer system, to address the environmental problem of pollution from small and medium size urban agglomerations.

It is lack WWTPs in order to serve SMALL AND MEDIUM POPULATIONS and the adaptation to the fulfillment of greater demands on the quality of the discharges to the "SENSITIVE ZONES" (additional removal of N and P).

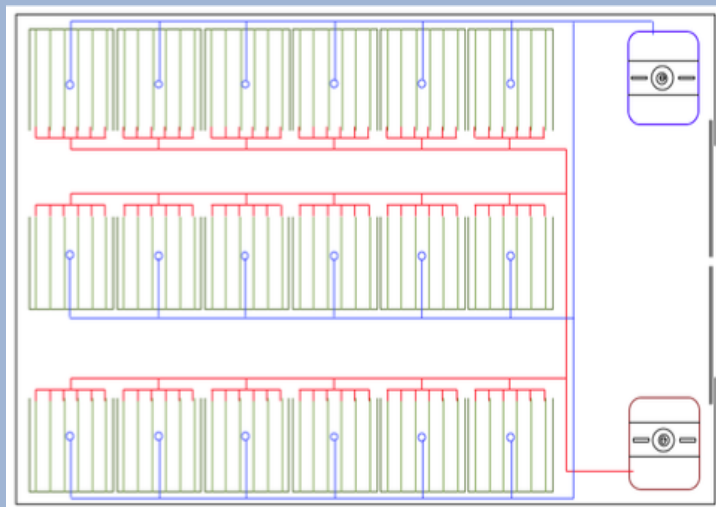
2. Close the biogeochemical cycle of N and P, affected by anthropogenic activities, simultaneously addressing contamination and substitution of mineral fertilizers:
 - Protection of natural water against eutrophication, reducing N and P discharges
 - Promoting compliance with Directive 91/271 / EEC to the treatment of wastewater
 - Facilitate the reuse of treated wastewater and the recovery of nutrients through biofertilizers from microalgae.
3. Serve as a model of tertiary treatment (elimination N and P) in EDARs of medium and small populations.

- Development and operation of a PROTOTYPE of wastewater treatment (tertiary treatment), using a "TWIN LAYER SYSTEM" based on microalgae cultivation.
- Development of BIOFERTILIZERS from microalgae to address the shortage of P, meeting agronomic standards of sustainable agriculture, and current and future EU regulations.





- Corrección de errores en el presupuesto de la Propuesta.
- Responsabilidad económica / jurídica del Coordinador ante la Comisión (modificación en nuevos ciclos LIFE).
- Fluidez y apoyo por parte del officer de apoyo: NEEMO
- Cumplimiento de los plazos de pago por la Comisión y las justificaciones por el Coordinador.
- Necesidad de terminación de un socio.
- Participación en Plataforma de proyectos LIFE AGUA en Manchester Mayo 2016.
- Colaboración con otros proyectos LIFE relacionados.
- Necesidad de solicitud (y concesión) de prórroga (1 año) por problemas sobrevenidos, modificación de reparto de tareas.
- Cambios en el “Consortium Agreement”.
- Utilización del AFTER-LIFE para completar objetivos y tareas
- Continuidad de la línea de trabajo



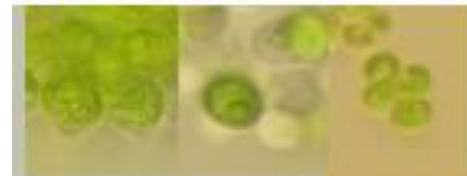


INOCULATION



3 WEEKS LATER

Colaboración con la UzK – Melkonian Laboratory



Colaboración con la UCO- Research Group RNM-271 Chemical Engineering Department



Colaboración con CEBAS-CSIC



- Desarrollo de un know-how técnico, creación de un equipo, lecciones de los errores.
- Dificultades de integración en una EDAR
- Mejoras en el medio y sistema de cultivo.
- Posibilidad de un demo: eliminación nutrientes / cultivo con fines biotecnológicos-productivos
- Potencial microalgas como bio-based fertiliser y bioestimulante





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"NUTRIENTS and REGENERATED WATER RECYCLING
in WWTPs THROUGH TWIN-LAYER MICROALGAE
CULTURE for BIOFERTILIZERS PRODUCTION"



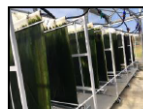
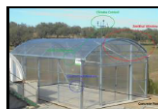
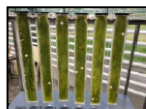
Technical Workshop on N and P REMOVAL in Wastewater Córdoba, 28th June, 2017.

Morning 28/06/2017: Technical session

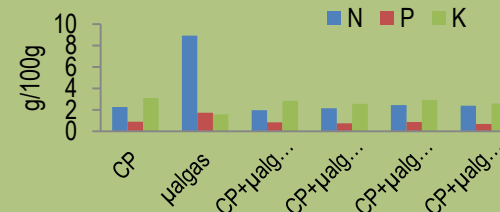
09.15 - 09.45	REGISTRATION
09.50 - 10.00	Welcome and intro to TL BIOFER EMPROACSA
10.00 - 11.00	Session 1. TL-BIOFER Project BIOMASA PENINSULAR
10.00 - 10.15	TL BIOFER Summary and objectives, video for understanding the project. BIOMASA PENINSULAR
10.15 - 10.30	Construction and operation of TL prototype. BIOMASA PENINSULAR
10.30 - 10.45	Microalgae cultivation for prototype seedling. University of CORDOBA
10.45 - 11.00	Future development microalgae cultivation /TL-BIOFER project by Twin Layer PHYCOFARM
11.00 - 11.40	Session 2. Other LIFE Projects related to wastewater treatment with microalgae
11.00 - 11.10	LIFE BioSolWaRe. BioSol Water Recycling (LIFE13 ENV/FR/000711). CENTA
11.10 - 11.20	LIFE ADNATURE (LIFE12 ENV/ES/00026). AGUAS de VALENCIA
11.20 - 11.30	LIFE+ Integral Carbon (LIFE13 ENV/ES/001251). Universidad de BURGOS
11.30 - 11.40	LIFE+ WOGAnMBR (LIFE13 ENV/ES/000779). FIAB
11.40 - 12.00	Coffee break
12.00 - 12.30	Session 3. Other Projects related with water treatment in small and medium WWTPs
12.00 - 12.10	SABANA - Sustainable Algae Biorefinery for Agriculture & Aquaculture. BIORIZON BIOTECH
12.10 - 12.20	WATINTECH. Smart Decentralized Water Management ... Catalan Institute for Water Research (ICRA)
12.20 - 12.30	ALL-GAS. XXXX XXXX
12.30 - 13.00	Other EU water and microalgae projects short presentations 2-4 min moderator ISLE UTILITIES
13.00 - 13.30	ROUNDTABLE: LIFE Water Projects focus and future prospects
13.30 - 14.30	Networking cocktail

Afternoon 28/06/2017: Field trip.

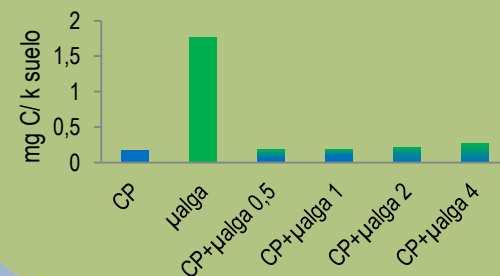
15.00 - 16.15	Departure and Travel from Hotel to TL-BIOFER PILOT PLANT "EI VISO WWTP plant"
16.15 - 17.00	Technical Visit to TL-BIOFER PILOT PLANT "EI VISO WWTP plant"
17.00 - 18.15	Return to Cordoba Train Station and Hotel



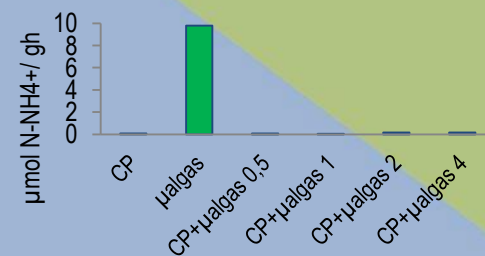
N, P, K



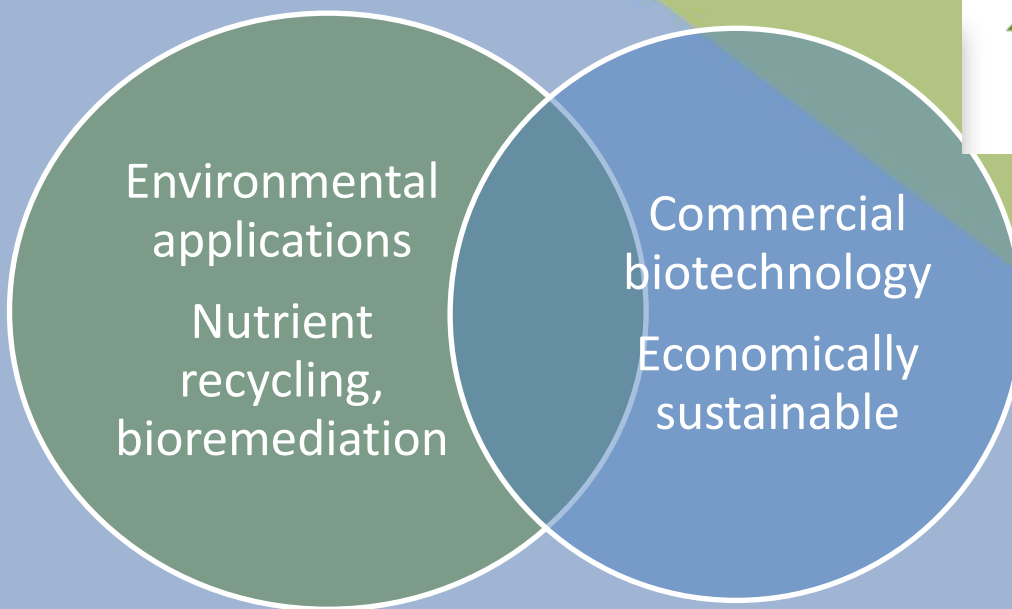
C HÚMIC SUBSTANCES



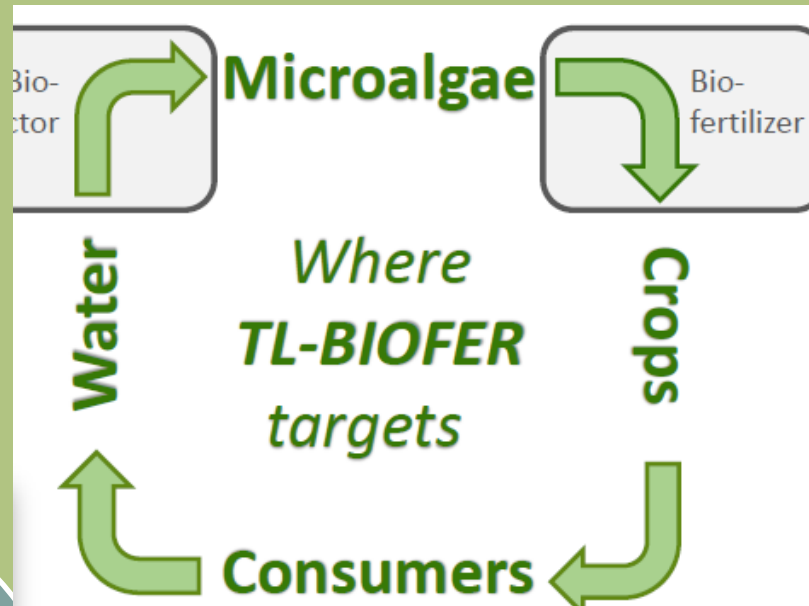
AE Ureasa



Wastewater treatment, nutrients recovery



Two focusses in biotechnology of microalgae



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Gracias por su atención