Tangible and measurable social, economic and environmental benefits

Main outcome

ENRICH business model
determining the best strategy to follow for a profitable production and commercialization of the products made from recovered nutrients

Other outputs and achievements

Operation of a treatment train
which will enable to recover
40% of P (50% as struvite)
15% of N from wastewater

10% reduction of the total OPEX
of the WWTPs:
-15% in aeration requirements
-15% in sludge disposal
-50% in maintainance costs related to uncontrolled struvite precipitation

Increased crop productivity
staying above 110% of the Spanish average

Guidelines for successful replication
of the value chain in other countries

25% **reduction of the N2O emissions**
by an efficient management of fertilizers

80% - 90%
reduction of
of the emissions associated to the conventional N-fertilizers production

Name Enhanced Nitrogen and phosphorus Recovery from wastewater and Integration in the value Chain
Acronym ENRICH
Funding EU LIFE Programme
Budget 2,770,781 €
EU contribution 1,662,467 €
Duration 42 months (September 2017 – February 2021)
Coordinator Cetaqua, Water Technology Center
Demonstration sites 2 pilot plants and 1 process implemented at full-scale

For more information, visit the LIFE ENRICH website:
www.life-enrich.eu

Project partners

CETAQUA WATER TECHNOLOGY CENTRE
suez
UPC
IRTA RESEARCH & TECHNOLOGY FOOD & AGRICULTURE
AGUAS DE MURCIA
UNIVERSITAT POLITÈCNICA DE VALÈNCIA
AIGÜES DEL SEGARRA GARRIGUES, SA ASG

Project stakeholders

esamur
European Sustainable Phosphorus Platform
GOBIERNO DE ESPAÑA MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE
WssTP

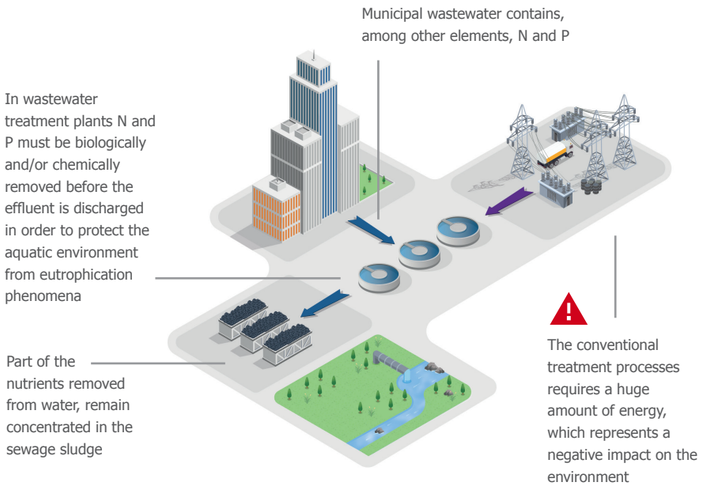
LIFE16 ENV/ES/000375

Boosting synergies between water and agriculture

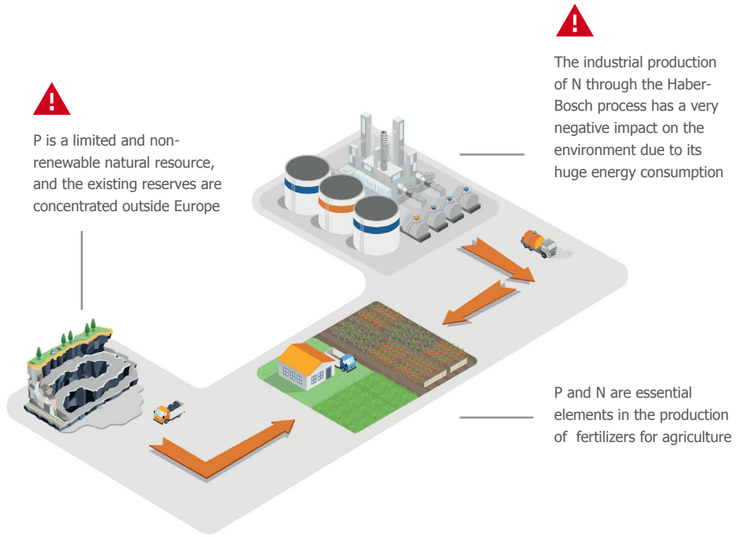
Towards a circular resources management: nutrient recovery and reuse is a double win

LIFE ENRICH is an European project aiming to contribute to the circular economy through the recovery of nutrients from wastewater and their use in the fertilizer industry. The project will bring this objective to the practise by developing an innovative treatment train integrating leading-edge technologies that will enable an efficient recovery of both Nitrogen (N) and Phosphorus (P) contained in the wastewater, as ammonium salts and struvite, respectively. The products obtained will be blended in order to obtain suitable fertilizers for the target crops. In parallel to the technical development, a business model for the entire nutrient recycling value chain will be defined.

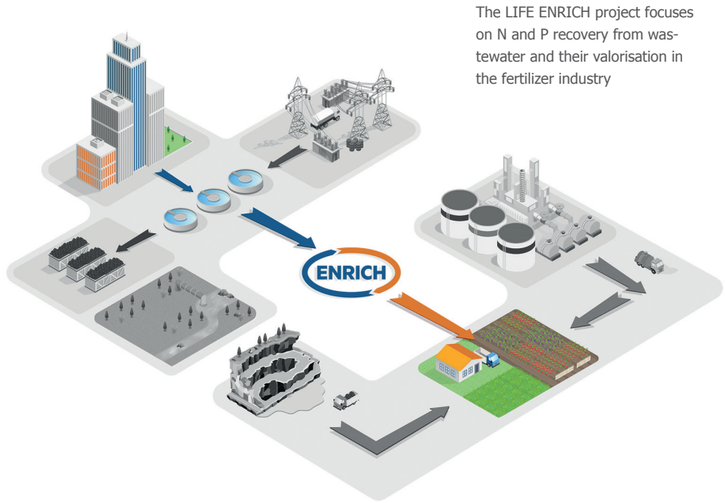
Conventional flow of N and P in Wastewater Treatment Plants (WWTP)

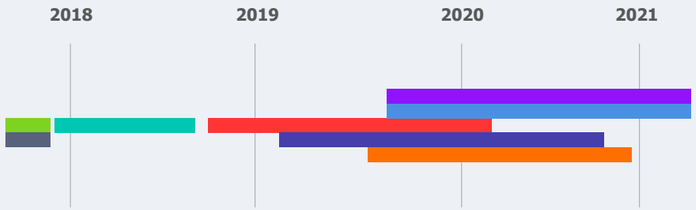


Conventional flow of N and P in Agriculture



The LIFE ENRICH approach: towards a circular flow of N and P





- **Murcia Este municipal WWTP characterization**
- **Definition of field tests: crops selection, methodology, timings**
- **Design and construction of the prototype**
- **Prototype operation and integration of results**
- **Definition of optimal mixtures and evaluation of the agronomic value through field tests**
- **Business model and business plan for Spain**
- **Technical, environmental and economic assesment**
- **Geographical replicability and transferability of the whole value chain**