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# EASME

Executive Agency for Small and Medium-sized Enterprises

## **LIFE Environment Water**

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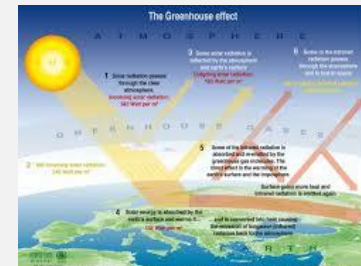
December 2016 Brussels

# LIFE for the Environment

- **Programme for the Environment and Climate Action**
- Since 1992 **to improve the state of the environment**
- Budget 2014-2020: **€3,456.7 million**
- Key documents: **The LIFE Regulation 2014-2020** and the **LIFE Multiannual Work Programme 2014-2017**



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# LIFE 2014-2020 – Objectives

- contributing towards a **resource-efficient, low-carbon and climate-resilient economy**; protecting and improving the **environment**; maintaining and improving **biodiversity**, ecosystems and, in particular, the **Natura 2000 network**
- improving the development, implementation and enforcement of **Union environmental and climate policy and legislation**
- **integrating and mainstreaming** of environmental and climate objectives into other Union policies
- improving environmental and climate **governance**
- Implementing the **7th Environment Action Programme**



# LIFE 2014-2020 – Priority Areas

- **Environment** sub-programme (**2,592.5 Million euros**)
  - Includes: Environment & Resource Efficiency
- **Climate Action** sub-programme (**864.2 Million euros**)
- Priorities for **Water** area of sub-programme for Environment
  - Supporting the implementation of relevant Directives (e.g. WFD, MSFD)
  - Roadmap for a Resource-Efficient Europe and the 7th Environment Action Programme
  - Activities to ensure **safe and efficient use of water resources**, improving quantitative **water management**, preserving a high level of **water quality** and **avoiding misuse and deterioration of water resources**.

# Environment **WATER** topics

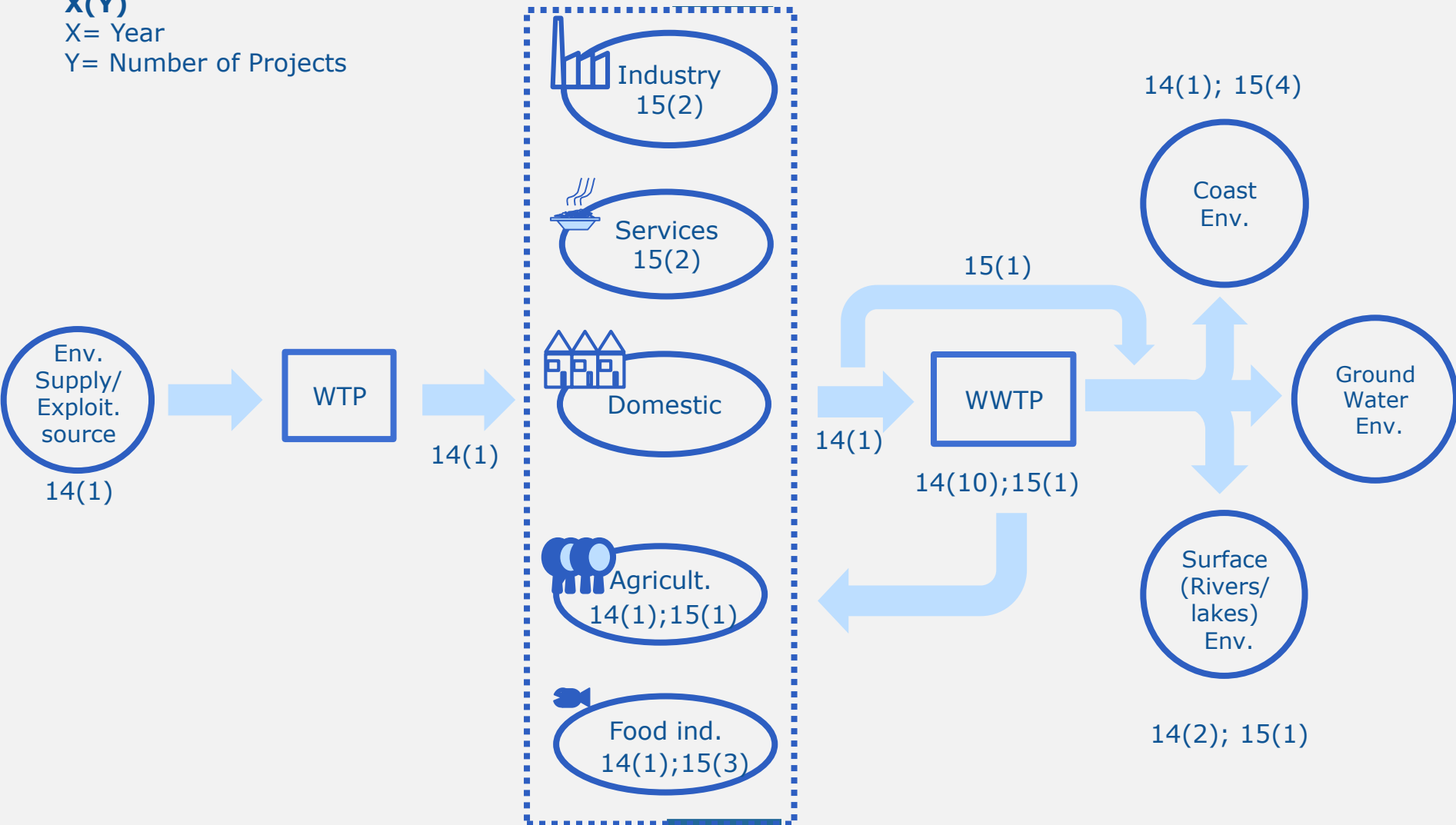
- **Water, floods and drought**
  - **Management of nutrients**, organic pollution (human/ agricultural origin) and chemicals
  - Re-naturalising water env (river, lake, coastal)
- **Marine and coastal management**
  - pressure of activities on marine environment
- **Water Industry**
  - technologies for drinking water and urban WWT
  - innovative solutions and/or treatment options regarding recycled/reclaimed water/water supply/reuse and **recovery of resources**

# Full Picture 2014-2015

## LIFE Env. WATER



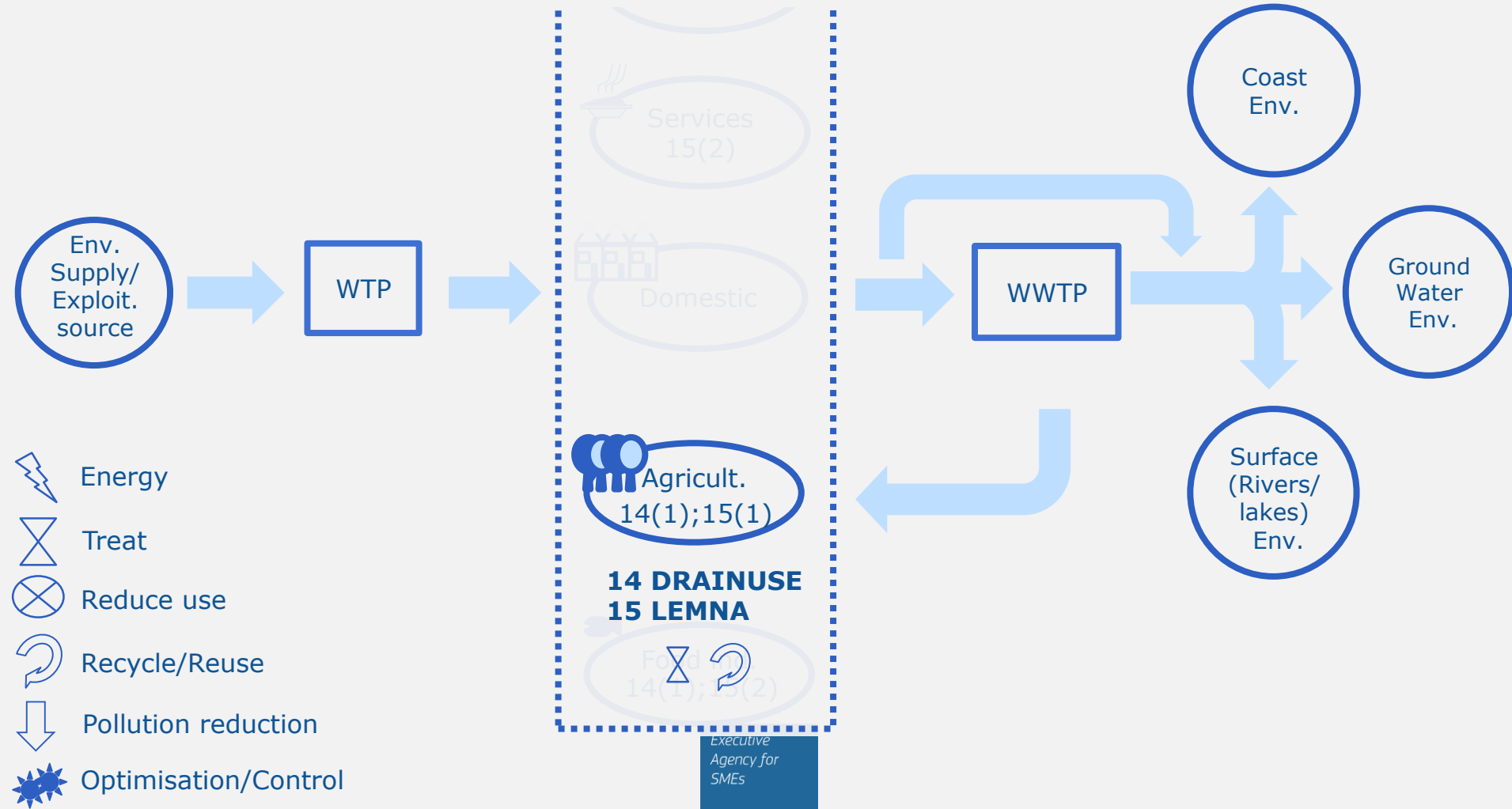
**X(Y)**  
 X= Year  
 Y= Number of Projects





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# LIFE WATER projects in Agricultural



- Energy
- Treat
- Reduce use
- Recycle/Reuse
- Pollution reduction
- Optimisation/Control

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## LIFE WATER projects in Agricultural

### Water – Reuse Agriculture

#### **14 DRAINUSE**

A full re-circulation system for soilless culture in the Euro-Mediterranean region

A pilot system will be tested for in tomato plants for collecting drainages coming from the normal irrigation, disinfect them and **adjust nutrients**, pH and elec. conductivity with the purpose of making drainages re-usable for a new irrigation cycle.

### Water – Reduce pollution Agriculture

#### **15 LEMNA**

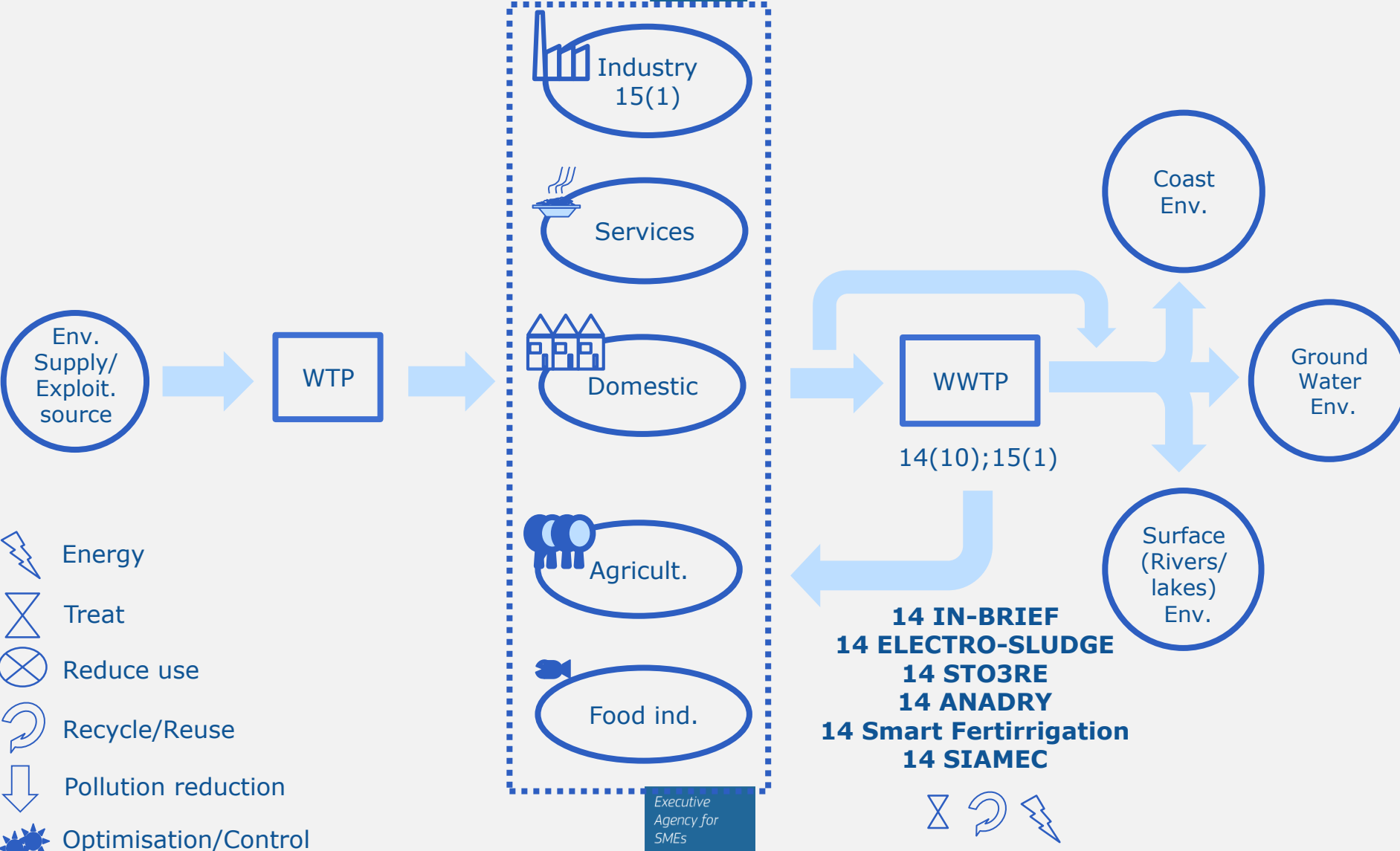
Reduce pollution of water bodies from agricultural and livestock manure by removing nutrients.

Demonstrating a duckweed plant technology for **nutrient (N and P)** recovery from manure streams thus improving nutrient management and reducing environmental impacts of animal farming on water bodies (e.g. eutrophication).





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# LIFE WATER projects WWTP & Agricultural

## Sludge treatment : Sludge dewatering

### **14 ELECTRO-SLUDGE**

Dewater urban sludge from WWTP (get DS>30%) and reduce incinerated/landfilled sludge.

Electro-osmosis to dewater urban sludge at DS>30% thus reducing volume (50%) incinerated/landfilled and transport weight. Also remove heavy metals and bacteria for **re-use of sludge in agriculture.**

## Sludge treatment : sludge digestion

### **14 Anadry**

Dry anaerobic digestion of sludge

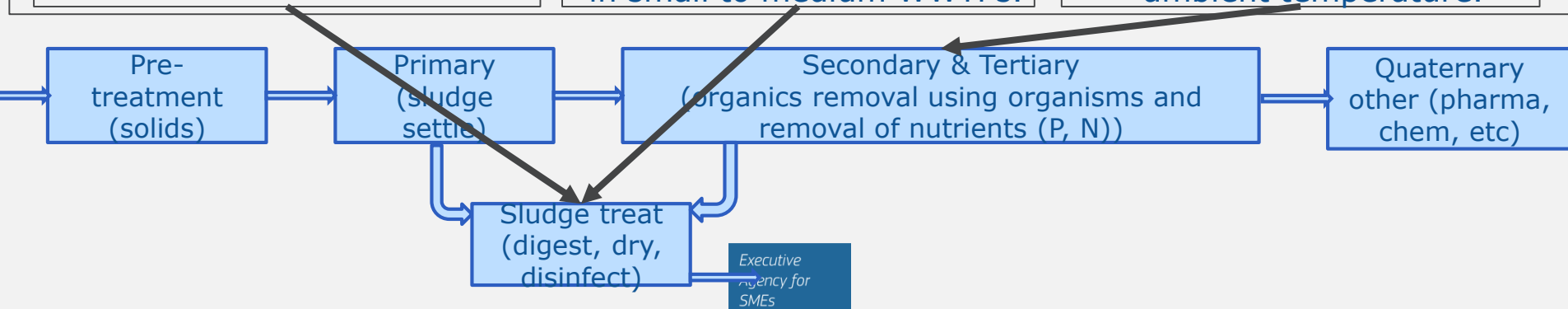
Demo that Dry anaerobic digestion technology offers improvement in cost-effectiveness, and sustainability over other methods for **sludge treatment** in small to medium WWTPs.

## Waste Water pre-treatment: Remove organic matter

### **14 SIAMEC**

Anaerobic SIAM technology for removing organic matter and N from WW, enabling effluent reuse and energy efficiency.

Use of Integrated System of anaerobic Methanogenic reactor and Membrane bioreactor (SIAM) for removal of organic matter and N from wastewaters at ambient temperature.





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# LIFE WATER projects WWTP & Agricultural

Sludge treatment:  
Improve sludge quality

## 14 In-brief

Better management of biodegradable waste from Agri-food sector

Will use bio-methanisation in Anaerobic Digestion (AD) process converting organic matter to biogas; & valorisation of the AD residual digestate as **valuable fertilizers**.

Sludge treatment :  
Sludge to fertiliser

## 14 Sto3Re

Energetically sustainable management of WWTP sludge and manure for high quality biofertilizer.

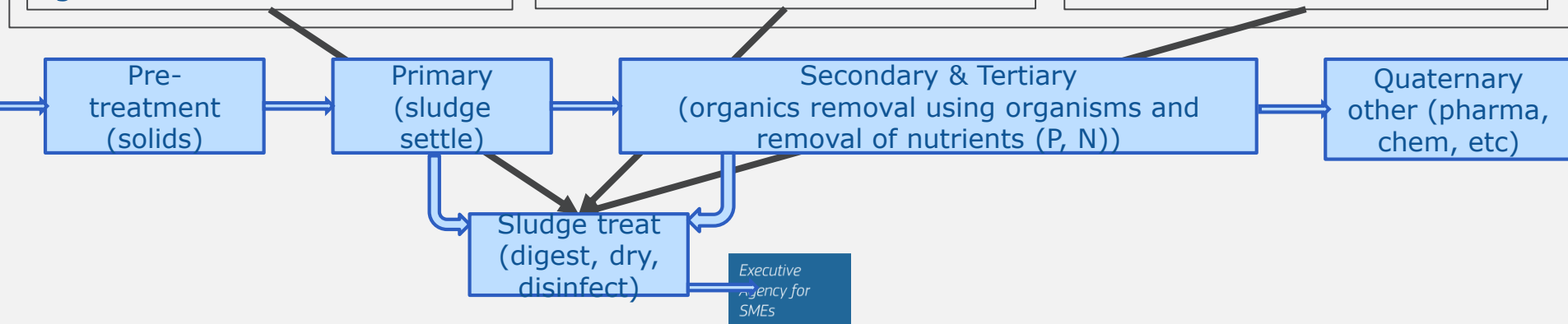
The project will centralize and **treat sludge and manure** using dual acid-gas temperature phased AD configuration coupled to ozone oxidation and hydrothermal cavitation.

Sludge treatment :  
Sludge to fertiliser

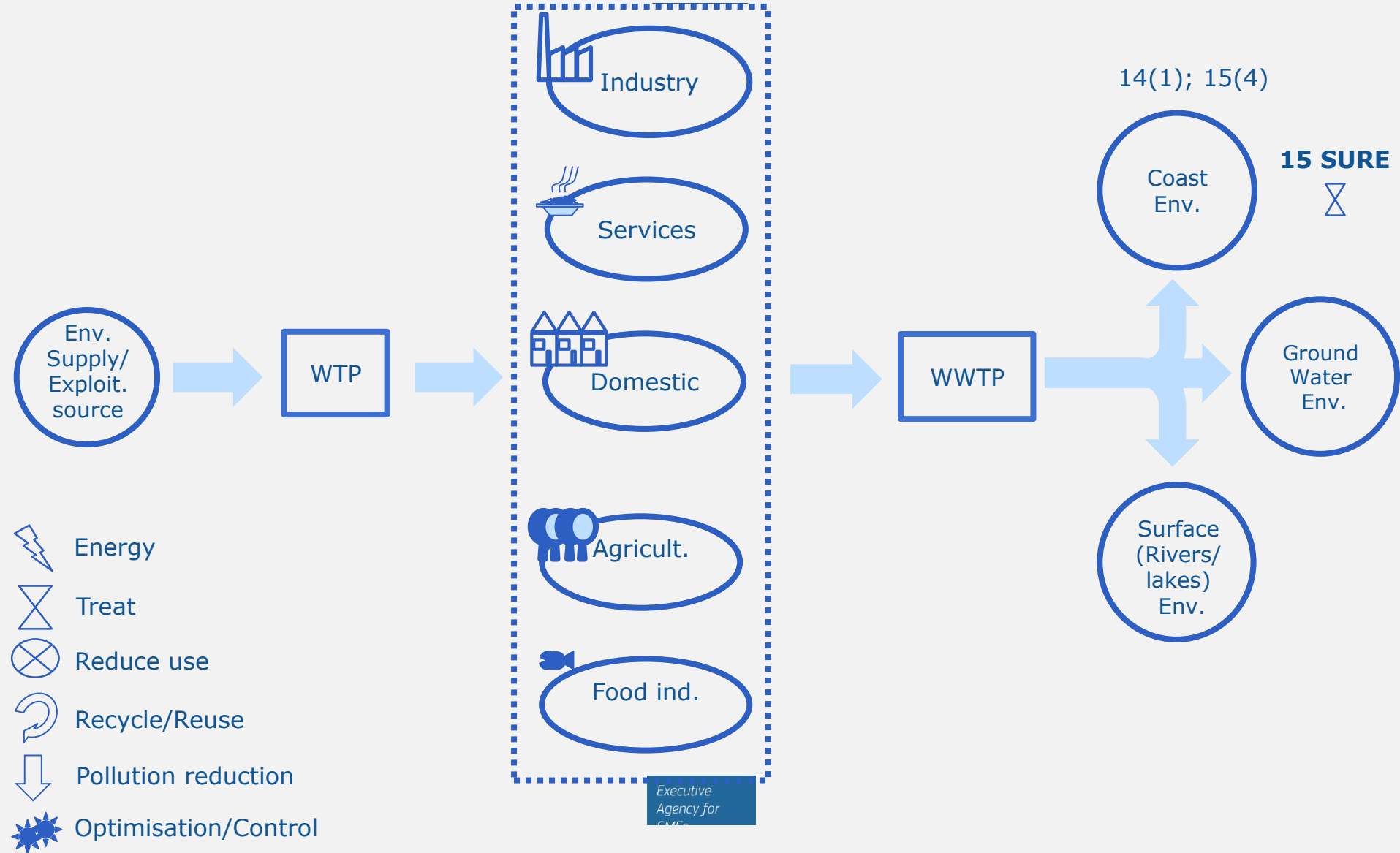
## 14 Smart Fertirrigation

Processing of digestate at to produce **liquid fertilizer for agricultural use.**

The project will process digestate, extracting the liquid part mechanically and removing large solids but also smaller particles using Fuzzy filters.



# Full Picture





## LIFE WATER projects – Coastal sediment

### Treatment:

Clean dredged sediments

### **15 SURE**

Clean and recycle  
dredged sediments and  
remove eutrophic and  
polluted sediments

Demo retrieving and  
recycling of sediments from  
shallow eutrophic waters (40k  
m<sup>3</sup> of sediments). Recycle 70%  
at 50% less cost. Valorise  
nutrients in agriculture.



## Other LIFE projects – TRIALKYL

### Optimise:

New production methods

#### **14 TRIALKYL**

More sustainable  
process for producing P  
based products.

Trimethylphosphite (TMPi) is a compound used in many products. Its production involves toxic chemicals.

The project aim is to improve production avoiding toxic chemicals and the production of contaminated WW.



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# Thank you for your attention!

<http://ec.europa.eu/environment/life>

## **LIFE Projects:**

<http://ec.europa.eu/environment/life/project/Projects/index.cfm>