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SEA2LAND



#2 NEWSLETTER - JANUARY 2022

Stay up to date on the latest news about the SEA2LAND project, a 4-year collaborative Innovation Action (IA) funded by the EU in the frame of the Horizon 2020 programme.

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European nutrient imbalance update

3- Data depuration and estimations

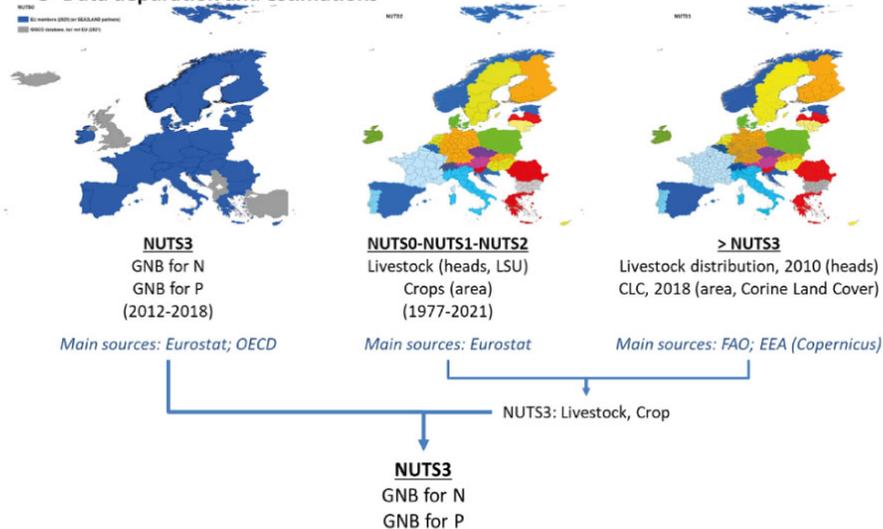


Photo credit_NEIKER

agricultural practices and needs.

This objective includes the identification of mismatches between the nutrients needed for a given crop and the nutrients available in the area where the crop is grown including side streams of industry and livestock excreta. The identification of these mismatches will allow us to identify areas where it is necessary to provide new fertilizers and others where the existence of nutrients is sufficient or even excessive.

[More info about the nutrient imbalance update](#)

End users' requirements

A market acceptance study of new fertilizers obtained from by-products from the fishing industry

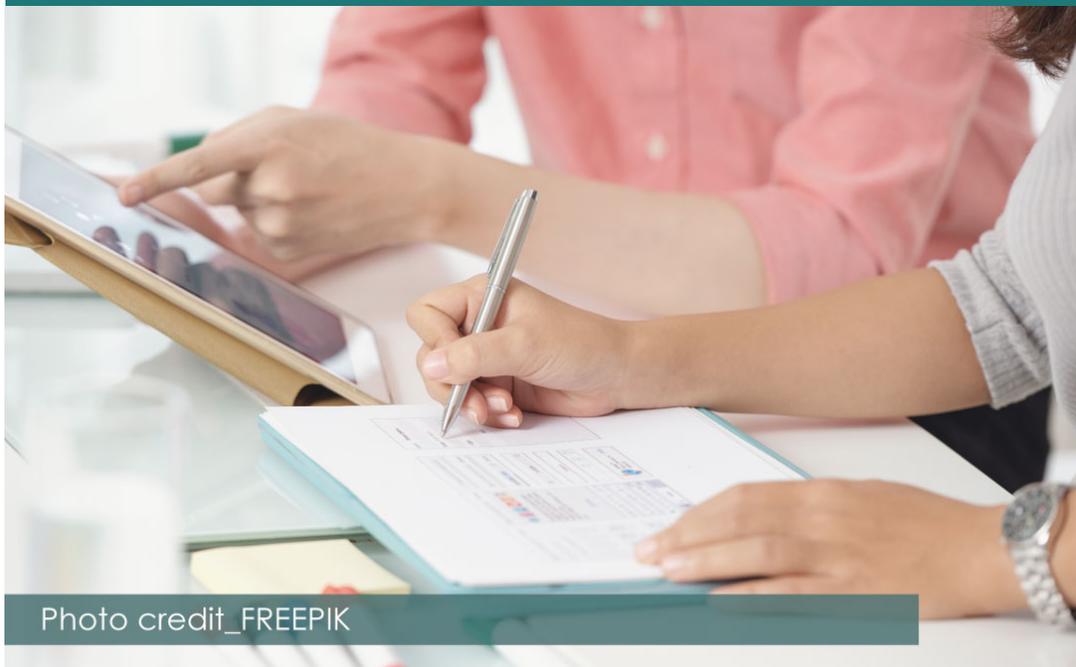


Photo credit_FREEPIK

In the current situation of **lack of raw materials**, it is important to know that by-products from different industries can be used as raw materials for the manufacture of fertilizers for agriculture, thus favoring the circular bioeconomy. This aspect of acceptance of **fertilizers with raw materials** different from those used so far, by the end users of fertilizers is important, since this market, although it is in the primary sector, has also been carried out and changes are being made in the purchase of more specialized and specific products for each crop and crop growth stage.

The **specialization of agriculture** is leading to that depending on the physical-chemical characteristics the fertilizer could have greater or lesser acceptance, therefore the knowledge of what the market is willing to buy, allows a better design and in many cases a lower price of fertilizer since research is reduced. The use of raw materials from the fishing industry is a new way to obtain the main **macronutrients** as well as **biostimulants** to improve health and thus crop production.

Regulatory assessment

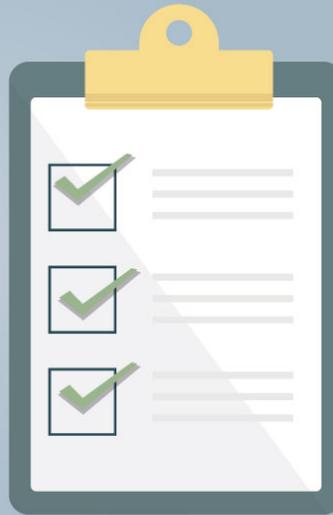


Photo credit_FREEPIK

The SEA2LAND project aims to produce bio-based fertilizers (BBFs) from fish processing and aquaculture by-products. It will promote the production of large-scale fertilizers in the EU from own **raw materials**, based on the **circular economy model**, transforming by-products into nutrients for crops. This procedure is typically hampered by legislative hurdles that make the product's transformation difficult to implement. In this context, the most relevant regulations that apply to the SEA2LAND project's objectives in both the European (EU countries and Norway), and Chilean contexts were compiled and analysed.

[More info about the regulatory assessment](#)

Mapping of fisheries and aquaculture side-streams and existing management schemes



Photo credit_AZTI

Along the first months of the project, the involved partners will actualise the information on the provided side-streams for the project: volume produced, tendency, current management scheme, costs of treatment/disposal and geographical distribution. They will search information and identify other similar side-streams in their own and the other participant Regions with similar or complementary characteristics. Current projects and national or regional existing initiatives for valorising these side-streams will also be identified.

The regions subject of study for **mapping the aquaculture and fisheries processing side-streams** are those where the pilot case studies are planned: Atlantic, Cantabrian, Mediterranean, Adriatic, North Sea and Baltic.

More info about mapping and existing management schemes

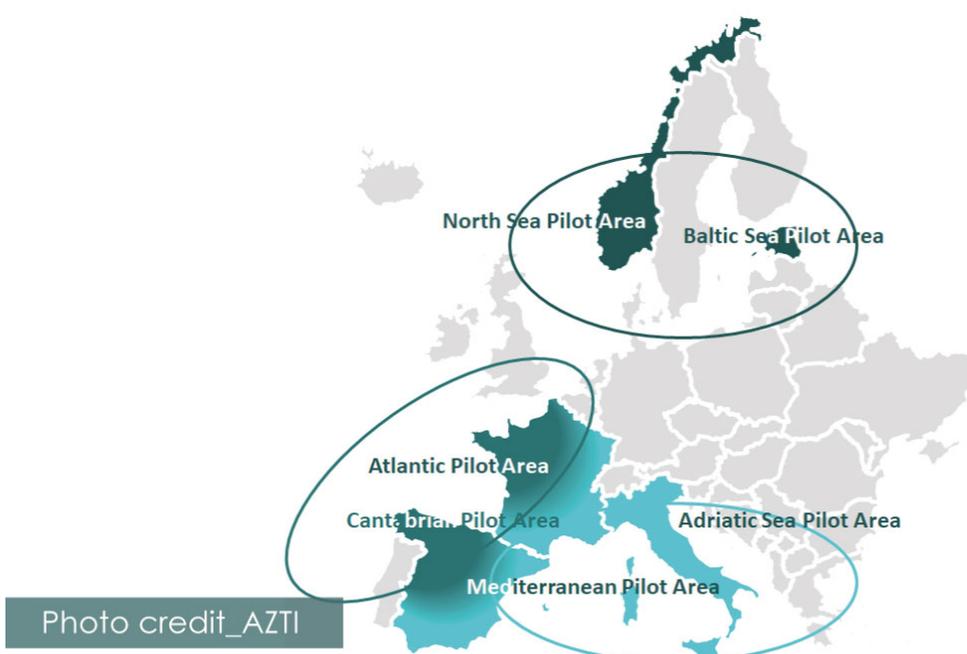


Photo credit_AZTI

Geographical pedoclimatic zones subject of the study where the project pilot case studies are planned.

The Baltic Sea Area case



Photo credit_NUTRILOOP OU



Photo credit_NUTRILOOP OU



Photo credit_NUTRILOOP OU

The **Baltic Sea pilot** develops technology for industrial scale biowaste fermentation unit, led by Nutriloop OÜ, and studies the end products' potential in agriculture, led by Estonian Crop Research institution (ECRI). The aim is to create an end-to-end **solution for a local biowaste valorization**. The main focus of this case study is on the valorization of the fish waste, such as particles of flesh, skin, bones, entrails, viscera etc.

[More info about the Baltic Sea case](#)

The Cantabrian Sea Area case



Photo credit_MIQUEL FABRE (FREEPIK)

In relation to the pilot to be carried out in the **Cantabrian Sea**, work is being carried out on different strategies for taking advantage of different by-products or side-streams generated by the fish industry located in the area near the Cantabrian Sea, in Spain. The final objective is to **generate potentially interesting products in the agricultural industry** through different technologies of transformation and fractionation of these by-products.

[More info about the Cantabrian Sea Area case](#)

The Adriatic Sea Area case



Photo credit_Università Politecnica delle Marche

The **Adriatic Sea case** will develop a biorefinery fed by wastes from mollusk and fish industries. The goal of this refinery is to **obtain protein hydrolysates** for plant biostimulation, nitrogenous fertiliser (chitin), biochar-compost composite, and soil liming agent. To this aim, enzymatic hydrolysis, chitin extraction, composting and pyrolysis will be investigated at lab- and pilot-scale.

The North Sea Area case



Photo credit_GRONN GJØDSEL AS

In relation to the **North Sea Area case**, Grønn Gjødssel has taken over the task of **fermenting fish sludge** with bokashi method in large volume. To collect sludge has been difficult, both in terms of finding a relevant source and the practical sides of it. Today most fish sludge is dried immediately without storage and either sent to cement furnaces or to agricultural use.

[More info about the North Sea Area case](#)

The Atlantic Area case



Photo credit_CRT CATAR CRITT Agroressources

For the **Atlantic area**, the Sea2Land project aims at producing biobased fertilizers (BBF's) from by-products of the aquaculture domain using

provide a solid and a liquid fraction.

[More info about the Atlantic Area case](#)

The Mediterranean Sea Area case



Photo credit_BETA TECHNOLOGICAL CENTRE (UVIC-UCC)

The pilot plant located in the installations of the BETA Technological Center (University of Vic- Central University of Catalonia) (Catalonia, Spain) will be evaluated to recover nutrients from sludge produced in aquaculture industries operating in the **Mediterranean area** in order to obtain products with agronomic value. Two types of aquaculture sludge will be valorized through the innovative technological system proposed by BETA TC.

[More info about the Mediterranean Sea Area case](#)

The next SEA2LAND newsletter will be available in **June 2022**. In the meantime, we will keep informing about the project development through our **social media** accounts and through the **project website**.

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Project consortium



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