



DEVELOPING AND DEMONSTRATING THE PRODUCTION OF MULTIPLE, HIGH-VALUE PRODUCTS FROM CROP AND FOOD-PROCESSING WASTE FOR A SUSTAINABLE EUROPE.



Tackling Europe's food waste problem

Agrimax is an EU-funded project that is developing and demonstrating the production of multiple, high-value products from crop and food-processing waste. The project is also developing economically competitive routes to the commercialisation of these products, using flexible, and possibly cooperatively run, processing facilities.

Around one third of all food produced each year is wasted and a significant proportion of this is at the field and food processing levels. Globally, food and crop waste adds up to economic losses of around \$936 billion and is responsible for 8% of all global greenhouse gas emissions*. In Europe alone, around 90 million tonnes of food and 700 million tonnes of crop are wasted every year**.

Agrimax is a major EU-funded project aimed at addressing this problem by finding value in crop and food processing waste. The project will maximise the EU's sustainability, while providing new biobased compounds for the chemical, food, food-packaging and agricultural sectors.

Source:

* FAO, (2015). Food Wastage Footprint & Climate Change, UN FAO, Rome.

** Pawwelczyk, A. (2005). EU Policy and Legislation on recycling of organic wastes to agriculture, International Society for Animal Hygiene, Vol1.



Agrimax involves 28 partners from 11 European countries: Austria, Belgium, Germany, Hungary, Ireland, Italy, the Netherlands, Norway, Slovenia, Spain and the United Kingdom.

Building flexible, multi-feedstock pilot plants

Agrimax will take the residues and by-products from agricultural crops and process them in two, flexible, multi-feedstock pilot biorefineries, purpose-built for the project.

A refinery in Italy will process waste from tomatoes and cereals to produce lycopene, ferulic acid, cutin and hydrocompost. In Spain another biorefinery will do the same for olive and potato waste to produce polyphenols, fibres, proteins and aromas. An online joint stakeholder platform that coordinates the provision of waste will help maximise the use of the pilot plants throughout the year and address seasonal and regional fluctuations, thereby maximising efficiency and profitability.

Agrimax has funding of 15 million euros.





Developing innovative processes and technologies for the bioeconomy

Agrimax is driving forward new biorefining processes and technologies.

The residues created along the food chain will be broken down, first using ultrasound and heat, and then using a range of enzymes and chemical reactions. From this process, a cascade of high-value products will be extracted. Any remaining biomass will be used for biogas or returned to the land for soil enrichment.



Agrimax will run for four years, from 2016-2020.

Developing innovative, biobased products

Agrimax's pilot biorefineries will produce a cascade of innovative, waste-based products with superior 'green' credentials, including:

- Biobased packaging (biobased coatings, biocomposites, 'active' packaging and ferulic acids as a monomer for plastic alternatives)
- Food ingredients (natural additives and functional food products with health benefits)
- Biobased agricultural products (fertilisers and biodegradable mulching films and pots).

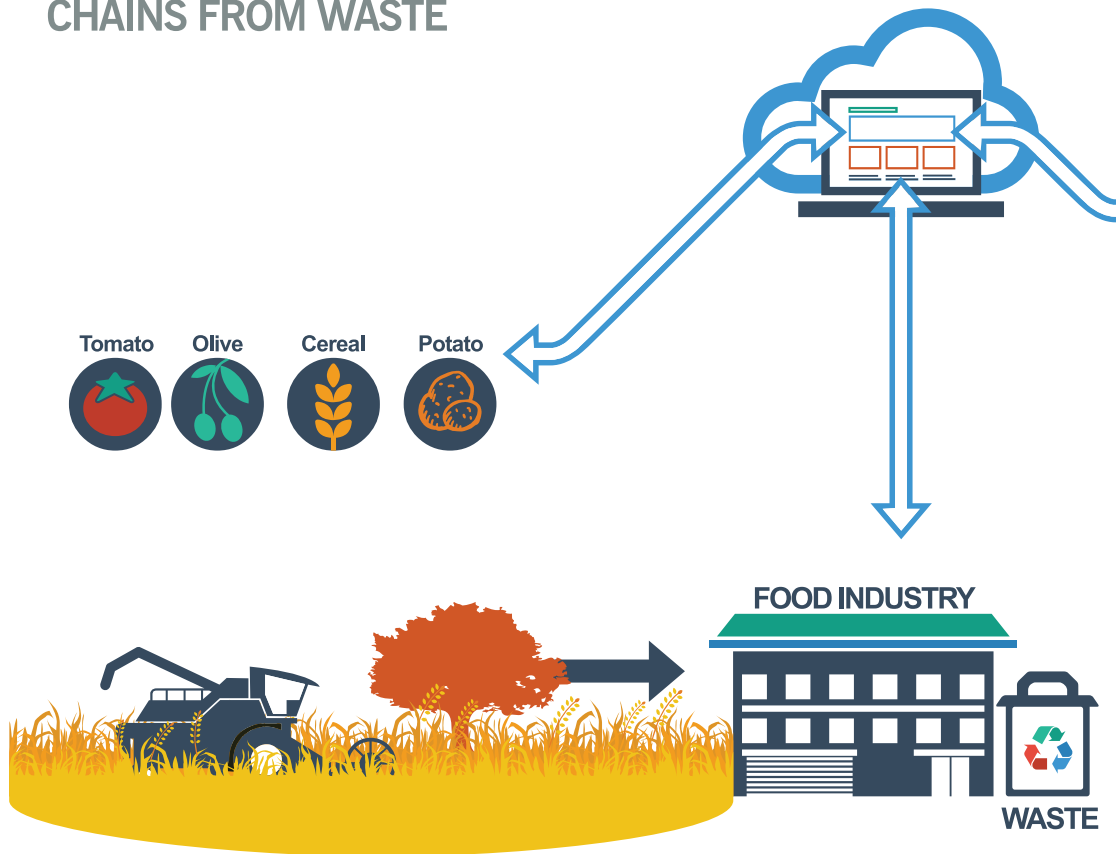
Agrimax will work with end users from the chemical, food, food-packaging and agricultural sectors to test the quality and performance of these new products.

Agrimax is a demonstration project; building two, flexible multi-feedstock pilot biorefineries.

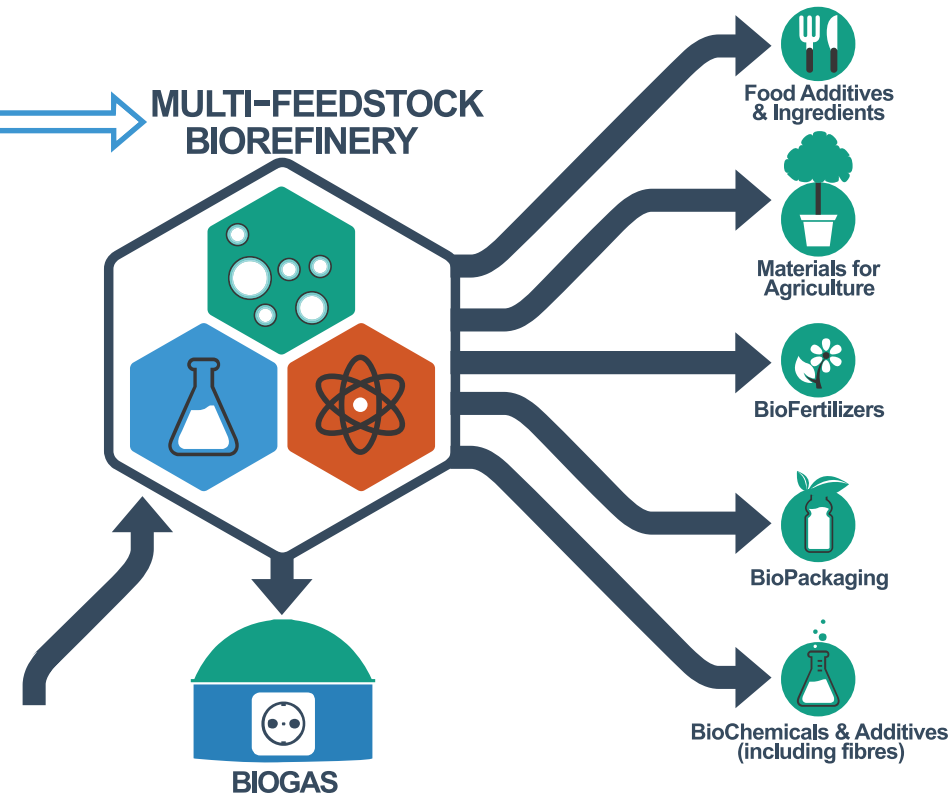


FOUR NEW AGRI-VALUE CHAINS FROM WASTE

ONLINE PLATFORM



CASCADE OF HIGH-VALUE BIO-BASED PRODUCTS



CO-OPERATIVE COMMERCIALISATION



New, sustainable business models

Agrimax is developing economically competitive routes to the commercialisation of its multiple, high-value biobased products.

Agrimax is working with partners and wider stakeholders to define sustainable value chains and propose suitable business models for the new, biobased supply chains the project is creating. Agrimax is investigating whether the biorefineries could be run cooperatively.



Agrimax's partners include research and technical organisations, 12 small-to-medium size companies and 6 large enterprises.

Creating environmental, societal and economic impacts

Agrimax is expected to bring significant sustainability benefits. Life cycle analysis is being used to assess the total environmental impact of the new production pathways.

The effect of the new farming practices and new fertilisers on soil health will also be assessed. Agrimax's new approach to biorefining is expected to bring a range of other benefits including;

- Opening new markets and building demand for sustainable, biobased products
- Connecting organisations and sectors that have not previously worked together
- Increasing the value of crop and food residues
- Reducing Europe's dependence on fossil-fuels and improving its sustainability
- Helping to create sustainable economic growth and rural jobs.



Agrimax has extensive participation from Italy and Spain as they are the main agricultural producers of our chosen feedstocks across Europe and also the selected locations for the pilot plants.



PARTNERS



IN EUROPE, AROUND 90 MILLION TONNES OF
FOOD AND 700 MILLION TONNES OF CROP
ARE WASTED EVERY YEAR.



Visit the Agrimax website to read our publicly available resources which includes a short animation to easily explain the aims of the project.



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GRANT AGREEMENT NUMBER

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Bio-based Industries
Consortium

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