

ADVANCES IN >> HYDROTHERMAL CONVERSION OF INDUSTRIAL BIOGENIC RESIDUES INTO INTERMEDIATE BIOENERGY CARRIERS

RESULTS FROM THE **F-CUBED PROJECT**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 884226.

The background features a large green arrow pointing right, composed of several overlapping, semi-transparent chevron shapes. Two thin black diagonal lines cross the green arrow from the top-left to the bottom-right.

 GaiaTech : ON A QUEST FOR HIDDEN
TREASURES...IN AGRO-WASTE

GaiaTech as a spin-off of *Phenoliva* (2019 – 2022)

ETH zürich



Funded by the
European Union



Olive oil: 98% of antioxidants lost in waste



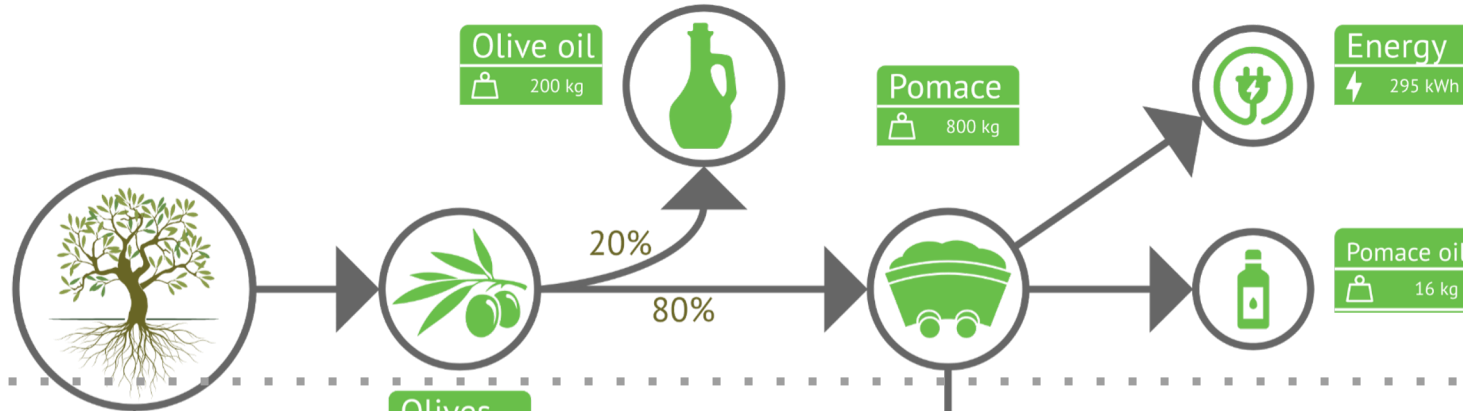
80%
Pomace

20%
Olive Oil

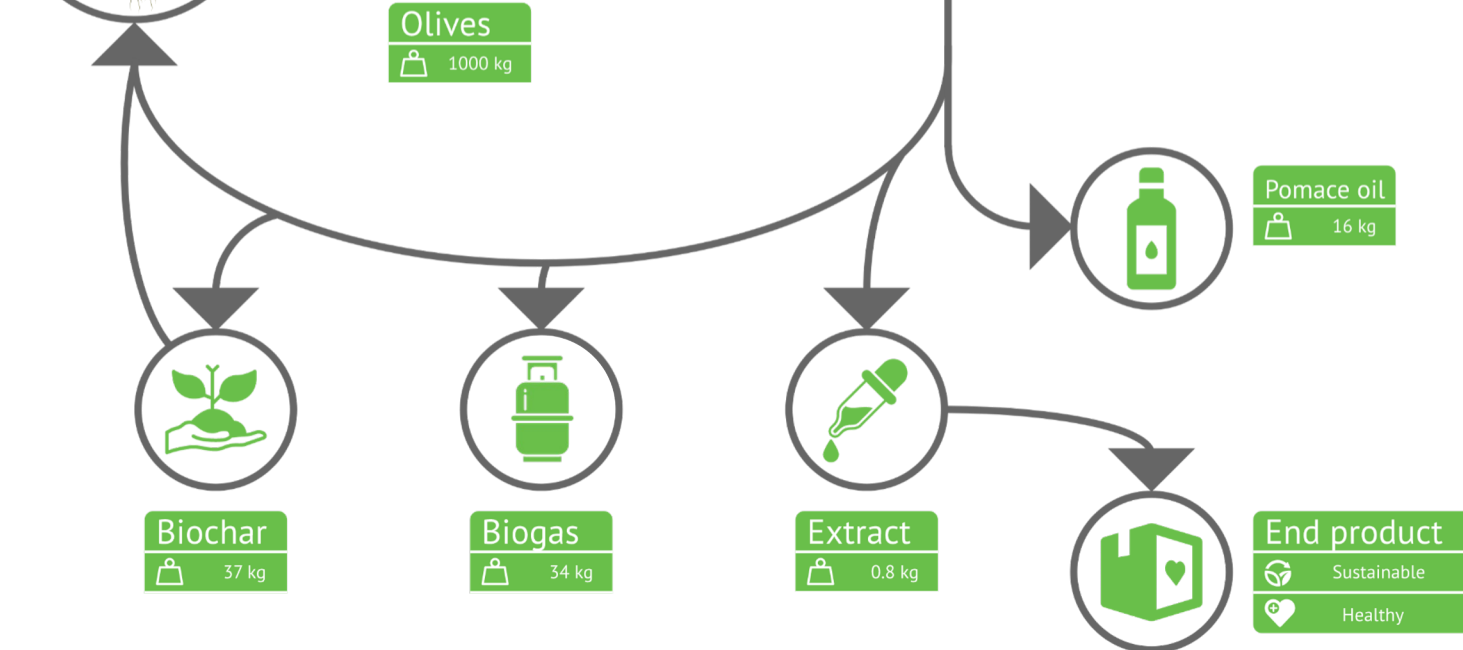


Full circularity for the olive oil industry

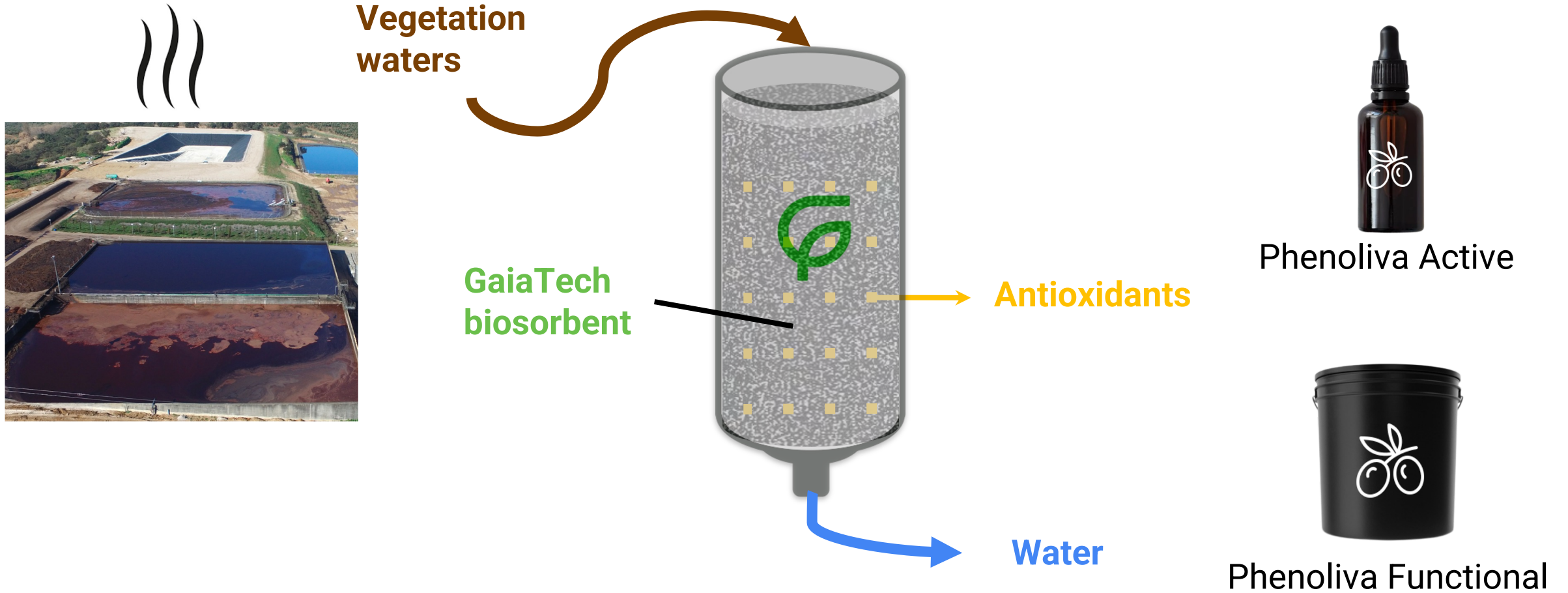
Traditional



Hidden value potential



Gaia Tech's upcycling solution



Biomass

+

Extraction and purification

=

Products

Responding to consumer and regulatory demands



EU unveils plan for 'largest ever ban' on dangerous chemicals

Up to 12,000 substances could fall within the scope of the new 'restrictions roadmap'

'People really need to know': can we trust beauty products to be safe?

EU's 'great detox' could see up to 12,000 potentially dangerous chemicals banned

Cosmétiques: 226 substances nocives interdites en Suisse et en Europe

California legislation bans toxic chemicals in cosmetics

Health Oct 1, 2020 9:23 AM EST



An antioxidant extract with powerful properties



Phenoliva
Active



100% upcycled and natural

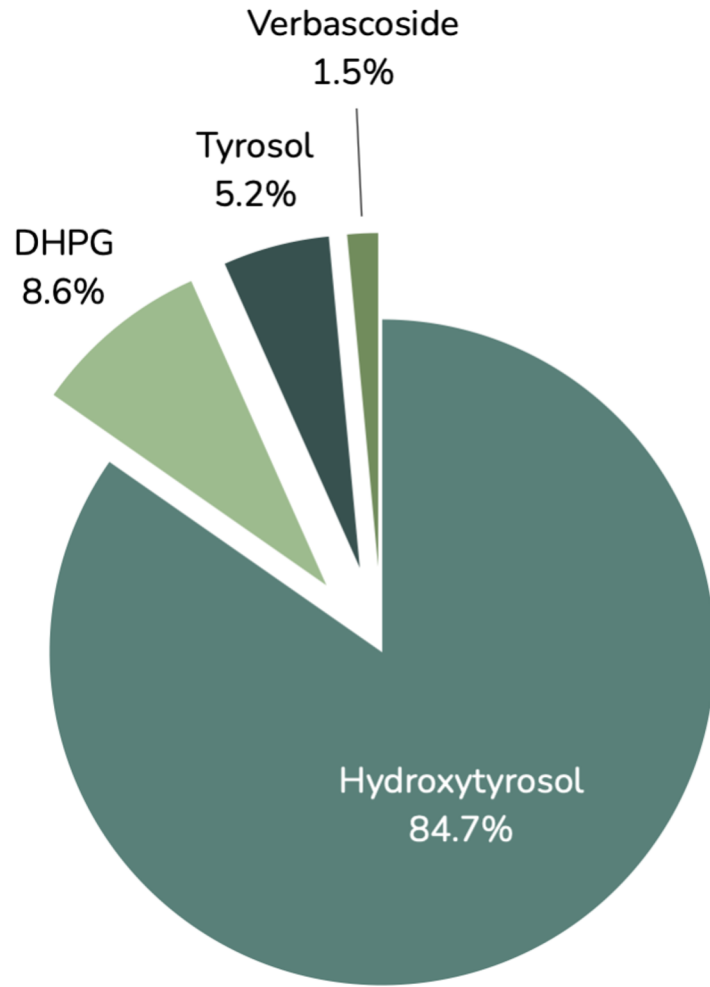


Active ingredient w. health benefit



~ 40% shelf life extension in food products

A top active ingredient for cosmetics



% phenolic profile (HPLC)







GaiaTech has ***“the best antioxidant technology we tested so far”***

Head of Biological Evaluation at a Partner in the Active Beauty Industry

In vitro testing results		
Soothing and Anti-inflammatory effect	Antioxidant effect (ROS production)	Anti-ageing effect
★	★	★

Food application in a range of categories



Product Category	Problem(s)	Solution & Phenoliva Features
Margarine 	Fat oxidation (rancidity) Crispiness	Prevention of rancidity Shelf-life extension by +40%
Sauces 		
Cereals 		
Fruit fillings 	Colour stability	Protection of anthocyanins
Juices 		
Deep fry oils 	Oxidation and polymerisation	>80 deep fry cycles (TPC <25%)

A food additive to extend shelf-life



Margarine

+



Phenoliva Functional



=

+ 3 month

**Commercial standard shelf-life
Month**

9

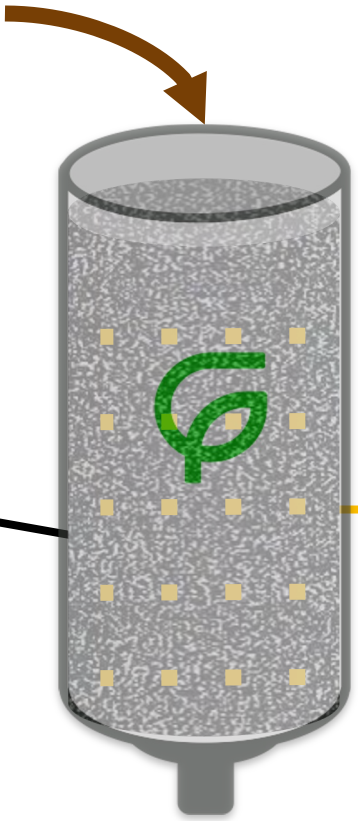
Improved shelf-life

> 1 year

Launching pilot production in San Marino in 2024



Vegetation waters

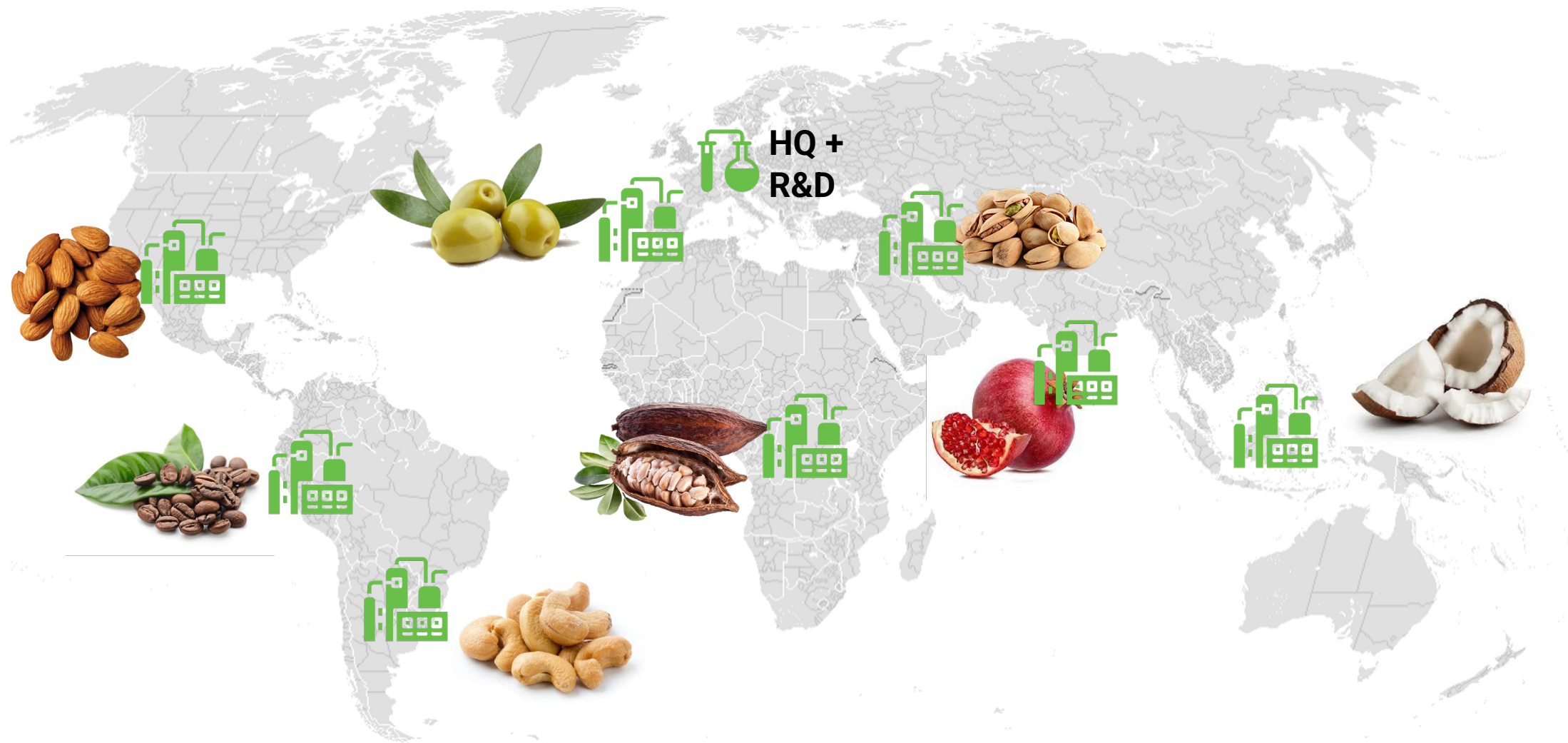


GaiaTech biosorbent

Antioxidants



From olive waste to...all the rest!



The team behind Gaia Tech



Core Team



Claudio Reinhard
CEO
Head of Engineering



Enrico Tenaglia PhD
Head of R&D and
Product Development



Samuel Bühlmann
Head of
Business Development

Advisors



Prof. Laura Nyström
Scientific Advisor



Dr. Cara Tobin
Environment & Engineering



Hans Jöhr
Agriculture & Production

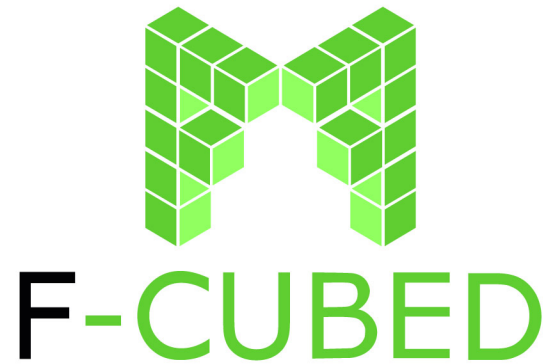


Daniel Brandenburger
Fundraising & Strategy



Pol Budmiger
Cleantech & Circularity

THANK YOU



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