



IMPACT

REPORT



Introduction

Food is the single strongest lever to optimise human health and environmental sustainability, but the production thereof is currently threatening people and planet.

Agrifood systems are a major driver of, but also a critical solution to, the multiple interconnected crises facing humankind: climate change, biodiversity loss and food insecurity.

Threatened by supply chain disruption, and pushed by regulation, agrifood companies, whose value chains are responsible for 75% of agrifood GhG, are driving the adoption of agrifood technologies at scale, promoting efficient and sustainable production.

Yield Lab Europe invests in the best of these solutions to produce more with fewer resources.

About us

Yield Lab Europe (YLE) is a specialist venture capital fund that invests in early-stage companies that positively impact the food and agriculture value chain. Our mission is to help disruptive, impact-driven innovations go to market and help shape a sustainable and healthy agrifood system for all.

Yield Lab Europe is part of the Yield Lab global network of funds with more than 100 early stage AgriFoodTech investments globally.

Yield Lab Europe is truly a European fund, with a diverse team across 5 countries.

We identify promising technologies from leading university spin offs (Cambridge, UCD, Wageningen, Inrae, ETH Zurich) and early-stage startups. With 30 European companies in the Yield Lab Europe portfolio to date, spread across the whole value chain (except B2C), we have built a strong network of experts and partners. Our knowledge of the ecosystem has no equivalent. We lead investments in early-stage rounds (Seed, Series A and B). In supporting visionary entrepreneurs, we share a deep vision for sustainable solutions to overcome the challenges of the climate changes and offer better and healthier food while regenerating the planet.





OUR IMPACT PHILOSOPHY

We aim to deliver **environmental and financial returns in equal measure** and believe that financial returns are strongly correlated with sustainable management of environmental, social and governance risks (ESG). Sustainability and impact have been integral to YLE from the beginning and are deeply embedded in our investment process. **All our investments work towards improving the environmental sustainability of the global agrifood supply chain** (e.g., reduction in GHG emissions, increase in biodiversity, reduced water usage etc.).

As early-stage investors, many of our investments are pre-revenue as they have not yet brought their product to market. Our additionality as an impact investor in early-stage companies is two-fold:

- Putting together the pieces of the puzzle (e.g., regulatory approval, trials, commercial agreements etc.) that will **unlock a company's impact potential**
- Establishing a company's **process to measure their environmental and social impact**

Onboarding our portfolio companies to their impact journey begins at the time of investment when we define with them their **impact metric**. We also guide them in putting their first **ESG reporting systems** in place: thinking about their carbon footprint, team diversity, compensation, and being able to communicate these to investors and other stakeholders, which is important for their future fundraising efforts. We dig deeper into this below, in our impact methodology.

Investment process

Screening

- In the last 9 months we've screened well over 2,000 companies
- Our first step in screening is to determine whether the investment opportunity is aligned with Yield Lab's investment themes, i.e.
 - a. Sustainable food production
 - b. Climate change mitigations and adaptations
 - c. Nutritious, healthy and safe food

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Due Diligence

- In our analysis we look for any potential impact risks related to the company's direct and indirect activities
- We work with companies to define an impact metric specific to that company that will be monitored over the lifetime of the investment. We follow the Impact Management Project (IMP) framework, which provides qualitative colour to the numerical impact metrics. Impact KPIs should:
 - Be output, outcome or impact indicators from the investee's Theory of Change and therefore closely tied to their activities
 - Be easily quantifiable and measurable by the company
- Our term sheet requires companies to commit to regular impact reporting

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Portfolio Management

- We offer regular “Accelerator Sessions” bringing in external experts to go deeper into impact measurement and ESG reporting
- We review impact performance on a bi-annual basis. We look at:
 - a. Performance of an individual company per its ex-ante impact metric with regards to its ex-ante target on a quarterly basis
 - b. The portfolio level impact multiple (a weighted average of company level impact based on the percentage of the total amount invested)
- We report on the portfolio’s impact performance to our Limited Partners, and adjust our carry according to performance

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Follow-on investments

- Before each follow-on round of funding, we re-assess impact metric performance

04

Exit

- Support the company in demonstrating to potential investors how the company has delivered financial and environmental returns and the intrinsic link between these
- Ensure that the company has a robust, self-sustaining impact measurement system in place

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OUR IMPACT METHODOLOGY

Measuring impact is messy.

Without getting too philosophical, determining the true causes and effects of a technology, especially in complex natural ecosystems is very difficult. The “right” way to measure impact is the subject of countless discussions in the impact investing community.

There is a limit to how accurate these calculations can really be as they are so reliant on assumptions. We think it is important to share all of these assumptions..

Add to this the tremendous uncertainty of the early-stage startup. There are often many important milestones for a startup to reach before it can even enact its Theory of Change: complete field trials, earn regulatory approval, sign first commercial agreements, etc.

When we decide on an impact metric for a given investee, we are supporting a startup in laying the foundations for a successful business and outstanding impact.

The impact aspect of any project is analysed from the first contact we have with the company, through the due diligence phase, and the drafting of our investment agreements, up to the way we incentive the management to deliver the impact targets. **We simply do not invest in promising projects if the positive impact is not obvious.**

In determining sustainability indicators, we use the Impact Management Platform (<https://impactmanagementplatform.org/>) framework, which provides qualitative color to the numerical impact metrics. In this framework, impact is defined through **five dimensions of impact (What, How much, Who, Contribution, Risk)**. Through this, a company's **Theory of Change** emerges, which we use to inform the choice of an Impact KPI specific to each investee.



GhG

CarbonSpace, Skytree, Collie, Glaia,
Pure Ocean Algae, Marama Labs
e.g., tonnes of CO2 eq saved



Land Use

Auravant, Botalys
e.g., hectares of land sustainably managed



Biodiversity

Oligofeed, Spotta, Solasta Bio
e.g., pollinators protected, toxic pesticides displaced



Water

Bioceanor, CE Line, Sundew, Nanobox
e.g., volume of water cleaned or saved



Animal Health

Equimetrics, NoBacz, MicronAgritech
e.g., number of animals treated



Waste

Kaffe Bueno, MyGug
*e.g., tonnes of waste upcycled/
composted*



Gender Diversity

>50% of our portfolio companies
have female cofounders

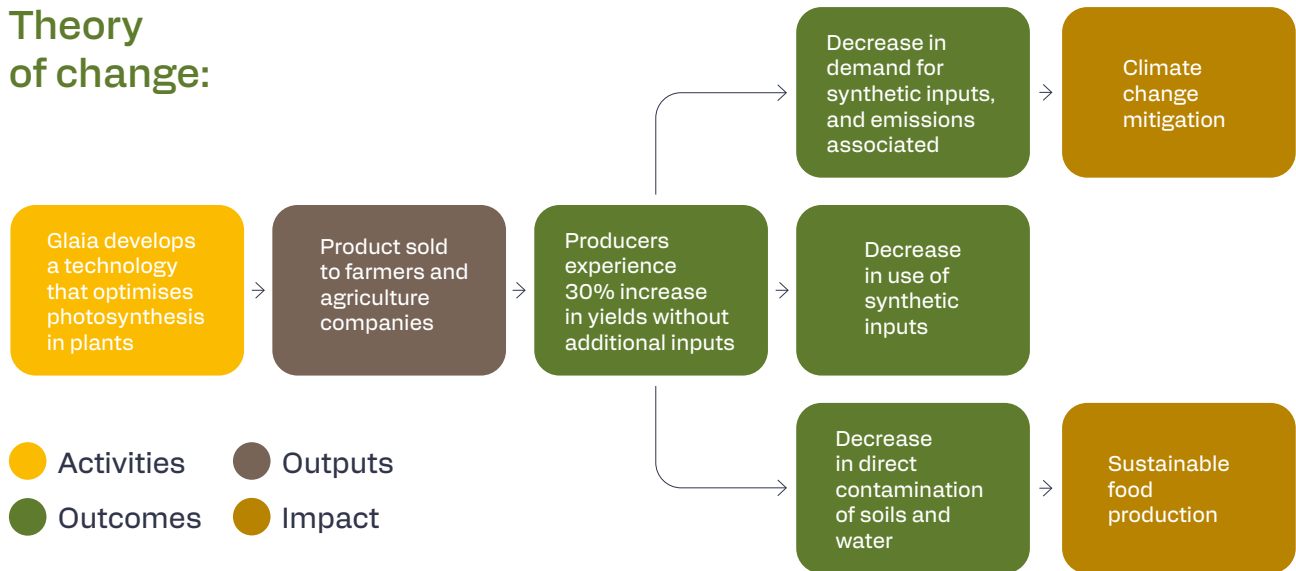
Impact case:



About

Glaia enables photosynthetic optimisation. Their product increases the photosynthetic limit to plant growth, allowing plants to use CO₂ more efficiently and increase yields without additional inputs. This sugar-dot technology interacts directly with the photosynthetic process inside the plant, enhancing its efficiency, which translates into increased crop yields by up to 30% without adding further fertilisers or other inputs. Increased photosynthetic efficiency can help achieve food security for a growing population without increasing the CO₂ footprint of agriculture further. Thus, Glaia can effectively reduce the amount of GHGs per tonne of crops produced.

Theory of change:



Problem

Light fluctuations pose a challenge for leaves to use light efficiently. When light increases above saturation, the level of which can decrease due to additional stresses, leaves employ the photoprotective mechanism NPQ (non-photochemical quenching) to dissipate excess light as heat to prevent damage to photosynthetic machinery. During this time after a high to low light transition, light that could be used for photosynthesis is instead dissipated as heat, which has been estimated to limit daily canopy carbon assimilation of crops in the field by as much as 30% or more.

Additionality

Glaia's product acts in a way which biostimulants can't, but which can be complementary and additional. Glaia increases yields by optimising photosynthesis whereas biostimulants alleviate stress.

Impact target

Reduction of carbon dioxide per tonne of strawberries produced

Systemic potential

Glaia's solution can be used on a variety of crops. Next in their pipeline after strawberries are tomatoes, leafy greens, cucumbers, peppers, vineyards, fruit orchards, and cereal crops.

Crop production accounts for ~7.5% (4.1 Gt) of the total global emissions CO₂e (54.6 Gt).

Glaia estimates a 15% decrease in GHG emissions from not using further inputs other than their product, which itself has minimal climate impact, to increase yields. Based on these results, we could save globally up to 0.6Gt of CO₂e every year from all crop production.





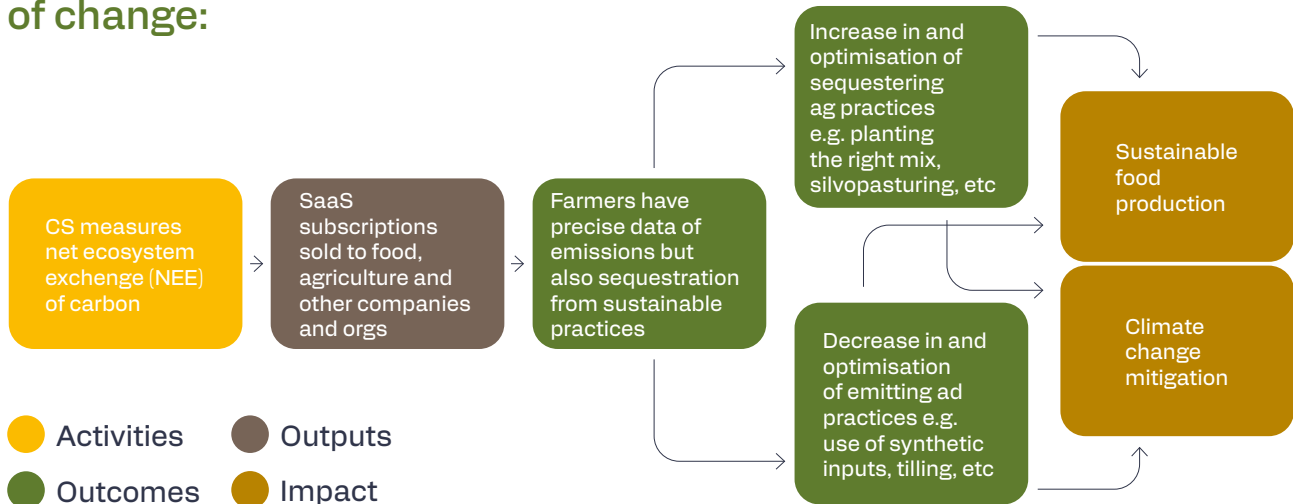
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About

CarbonSpace offers a unique carbon measurement solution, using Net Ecosystem Exchange (NEE), or the net of result of plants' sequestration or release of CO₂ through photosynthesis and respiration. They train machine-learning models with direct measurements from a globally distributed network of eddy covariance ground stations, which measure the exchange of CO₂ between the land and the atmosphere. By correlating this data with satellite imagery, CarbonSpace provides field-level carbon footprint estimates remotely for nearly any area and ecosystem on the globe.

Theory of change:



Problem

With traditional tools, it is difficult to get regular, reliable and cost-effective carbon footprint estimations related to a specific land asset. Calculators provide highly uncertain estimations, while soil sampling and subsequent testing is costly and hard to scale. This leaves farmers, agricultural and food companies, and policy-makers without dynamic data on the real carbon performance of lands and results in flawed data being used to drive decisions which is slowing down the sector's transition towards net-zero. The inability to track changes in GHG emissions on farm is resulting in a hesitation amongst farmers and landowners to engage with carbon accounting schemes and carbon markets, slowing the adoption of practices and technologies that reduce GHG emissions and/or increase sequestration.

Outcome

- Facilitate effective carbon management and climate change mitigation strategies by companies and governments so they can more accurately track their carbon footprint over time and perform fact-based climate actions
- Enable the agricultural (and forestry/land management) sector to accelerate its understanding of the impact of different agronomic practices on emissions in real time, and thus increase the efficacy of sustainable precision ag solutions
- Verify and quantify the impact of land management practice changes and nature-based solutions on GHG emissions
- Play a major role in the development of international carbon standards and functional carbon markets which are widely acknowledged to have a key role to play in the transition towards net-zero.¹

Additionality

Although other companies are also working on carbon measurement, CarbonSpace is one of only a few using NEE. CarbonSpace's impact is multiplied by its role in the agri-carbon ecosystem: partnering with companies that offer complementary services

Impact target

Hectares of land monitored for CO₂ (millions)

Systemic potential

High-accuracy and high-resolution MRV solutions, of which CarbonSpace is one of the best, are critical to testing the efficacy of all the other climate-smart agriculture practices and ensure success for nature-based CO₂ removal solutions. At COP28, land-based mitigation strategies were recognised as critical for achieving the 1.5°C Paris target, with recent studies estimating that they have the potential to mitigate 20%–30% of the GHG reduction needed.



¹ Unlocking the potential of carbon markets to achieve global net zero, gfma.org

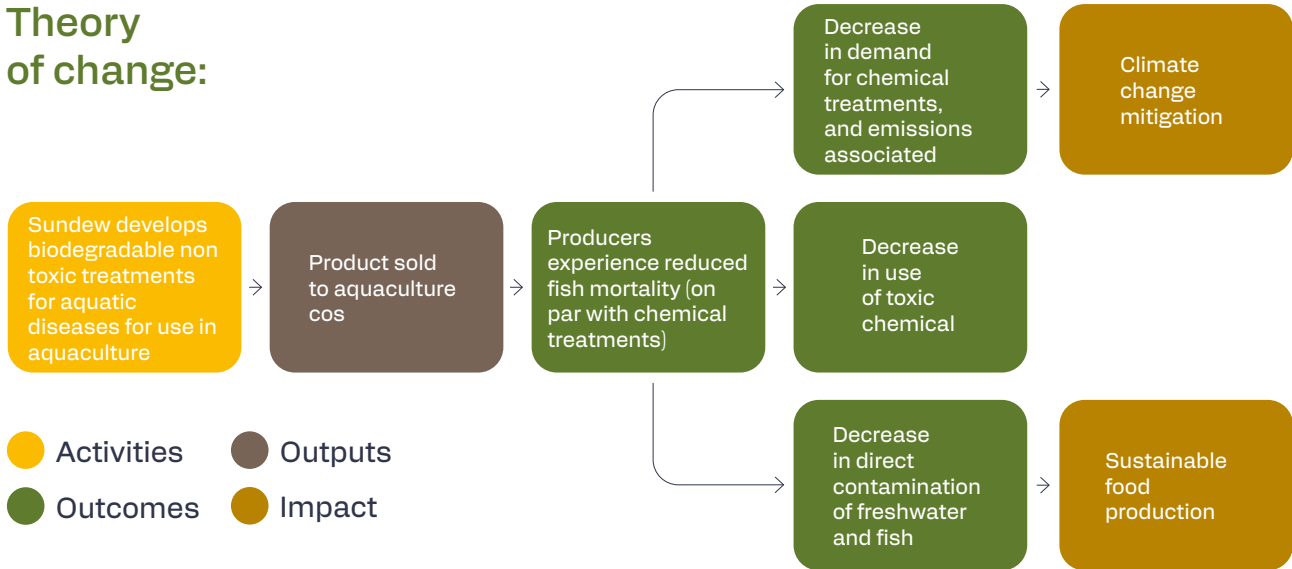


Impact case:

About

Sundew is a Danish biotech company formed in 2018 working on the next generation of solutions to combat aquatic diseases that are biodegradable, safe and non-toxic to human health, and are environmentally benign, as well as being effective and cost effective, and easy to use. It also acquired MicroSynbiotix (MSX), an Irish start-up focused on developing cost-effective oral vaccines to combat infections in aquaculture and improve global food security.

Theory of change:



Problem

Water borne pests and diseases pose a major problem for the aquaculture industry, consumers, and the environment. *Ichthyophthirius multifiliis* which causes the disease known as parasitic white spot or simply 'Ich' in freshwater fish. Ich affects freshwater fish, including seven of the 11 most important finfish aquaculture species – including carp, tilapia, and catfish.

Additionality

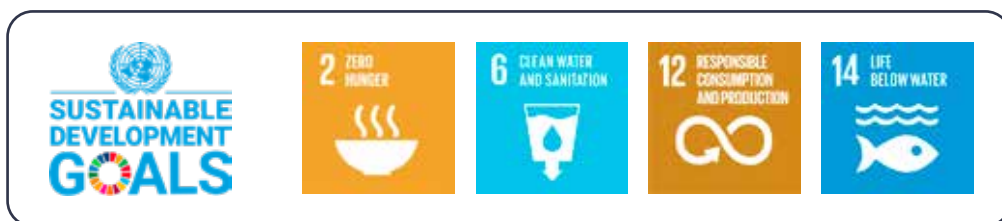
Without this technology, solutions involving toxic chemicals (formaldehyde, malachite green, etc.) are often used to combat these pests and diseases. However, these chemicals are carcinogenic and toxic to aquatic life, human health (both through handling and food consumption) and the environment, and are non-degradable, causing long term environmental issues. Many of these chemicals have already been banned but are used off-label due to the lack of alternative solutions.

Impact target

Cumulative quantity of chemical products displaced (kgs)

Systemic potential

Sundew's products can tackle numerous threats to marine ecosystems from pests to harmful algal blooms, many of which are exacerbated by warming and acidifying oceans from climate change. But at the same time the ocean is essential to making our planet liveable and is critical to managing the effects of climate change. The ocean produces half of the planet's oxygen, absorbs 93 percent of the world's anthropogenic heat, and moderates the earth's temperature by reducing the heat differential between the poles and the Equator.





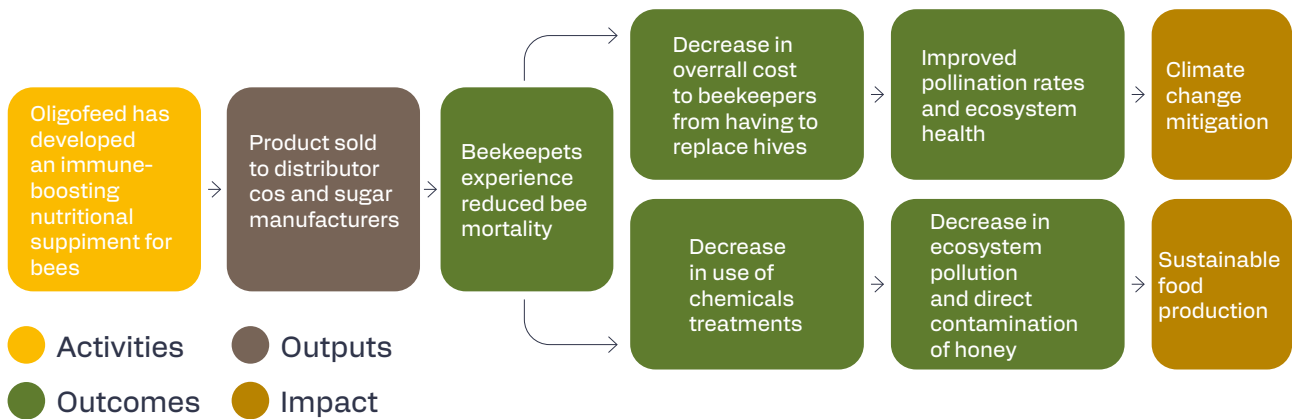
Impact case:



About

Oligofeed is a French company offering a unique bee food-supplement that strengthens bees' immune systems and helps them fight against external threats. It is a non-toxic, low-cost product.

Theory of change:



Problem

Three-fourths of the world's flowering plants and about 35 percent of the world's food crops depend on animal pollinators to reproduce. However, bee health is threatened by several factors and today there is no good solution. Treatments exist for some specific diseases, but they are currently based on acaricidal products, toxic and probably carcinogenic, which can themselves decimate the colonies and contaminate the honey, the wax and be harmful to human consumers. While scientists point to improved bee nutrition as a solution to high mortality rates, and beekeepers are aware of the need, there are few effective products available on the market.

Additionality

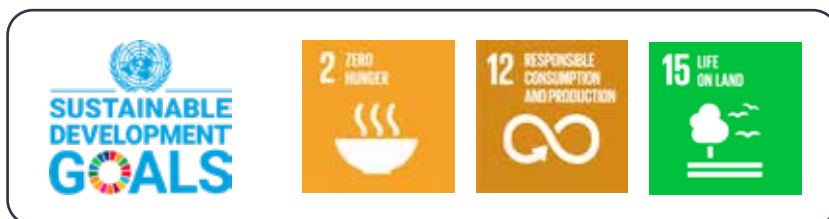
Without this technology, bee mortality continues unchecked, or medicines involving toxic chemicals are often used. However, these chemicals are carcinogenic and toxic to aquatic life, human health (both through handling and food consumption) and the environment, and are non-degradable, causing long term environmental issues.³ By pollinating food as they feed on pollen and nectar, honeybees pollinate about one-third of the food crops in the United States and help produce an estimated \$15 billion worth of crops in the United States each year. Many beekeepers lease their hives across the country to assist in pollination of almonds, pears, cherries, apples and other types of produce.

Impact target

Cumulative number of hives treated

Systemic potential

Can work well with other innovations looking to support pollinators in their vital role for our food system: hive monitors etc.



³<https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/animals/insects-pollinators>





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