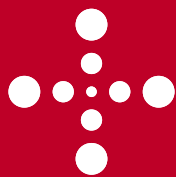
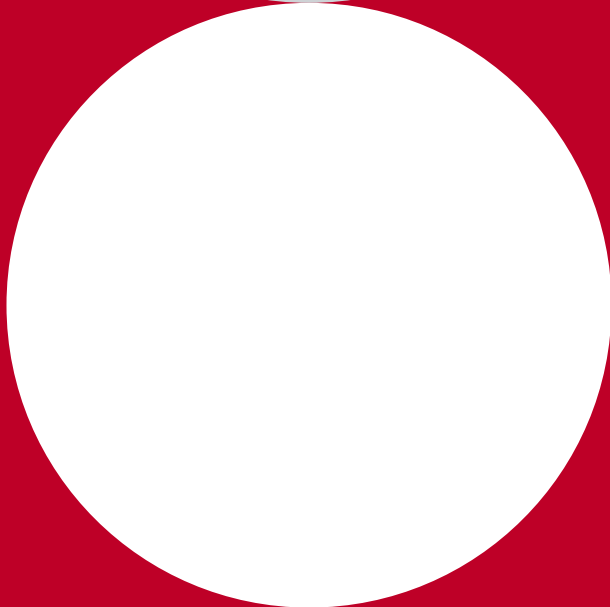
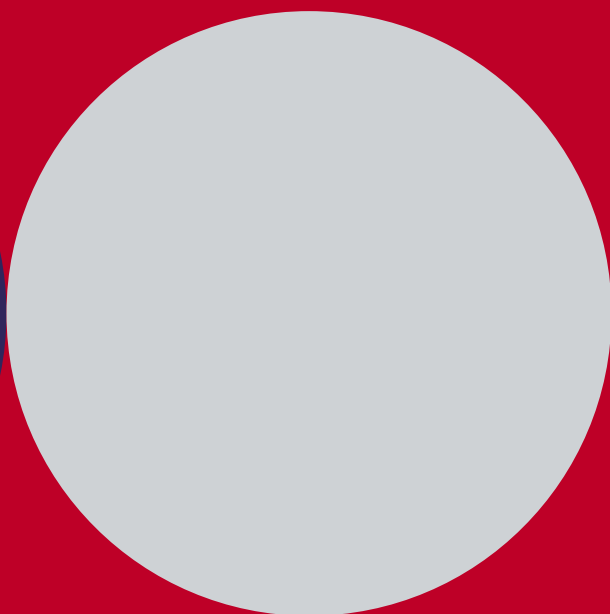
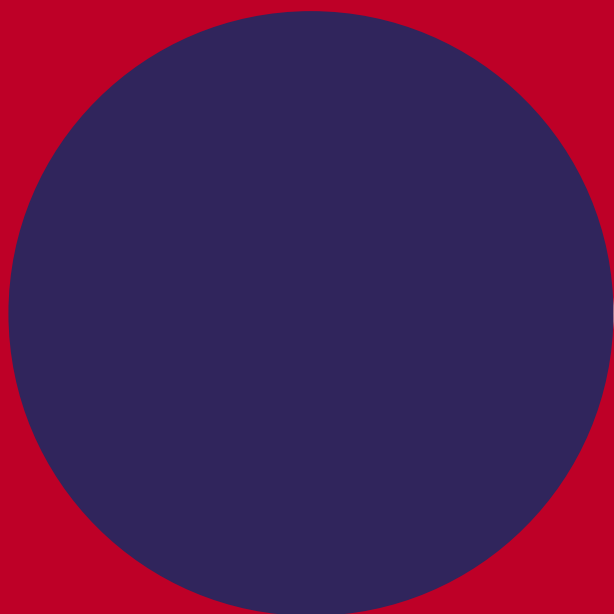
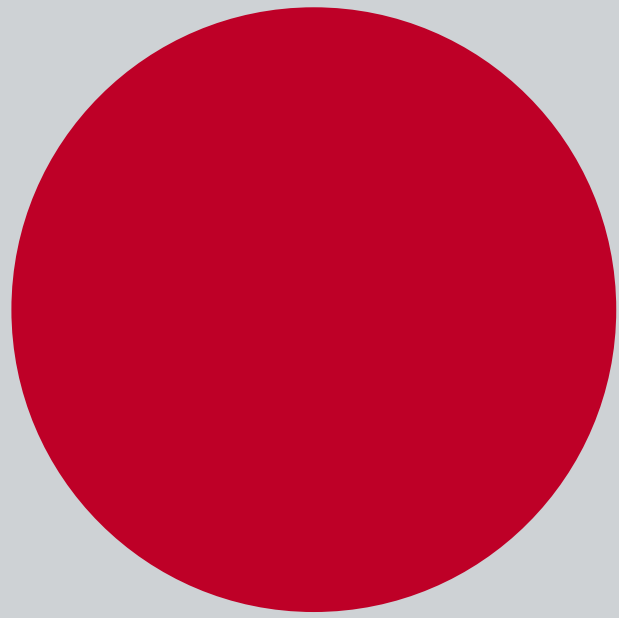


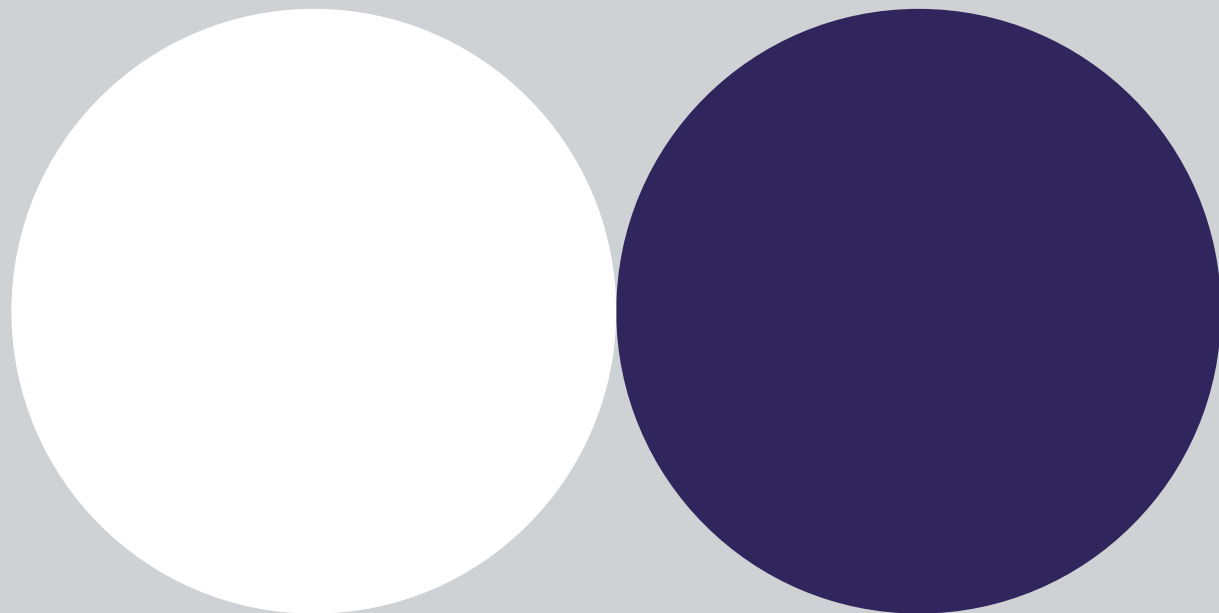
# 2022 Impact Report



**Brightlands  
Venture  
Partners**



# 2022 Impact Report





# Meaningful Impact

## Introduction

Brightlands Venture Partners (BVP) is an independent venture capital fund manager located in the Netherlands. We focus on investing in startups and scaleups that develop breakthrough technology and have global potential. While we may invest as early as the seed stage, our commitment extends throughout a company's growth until exit. We currently manage four funds: BVP Fund IV, which started in 2021, Brightlands Agrifood Fund established in 2017, Chemelot Ventures founded in 2014, and Limburg Ventures, which dates back to 2004. BVP has been actively involved in the impact investment landscape since 2004, originally established to provide financing to startups within the Brightlands ecosystem.

With the most recent Fund IV, we invest throughout the Netherlands, Belgium and Germany. DSM, LIOF, the Province of Limburg and Rabobank are our most loyal cornerstone investors, all of whom continue to be limited partners in the most recent Fund IV.

The transition to a more sustainable and healthier world is a massive challenge and is right at the heart of the Brightlands Venture Partners investment thesis. We finance, support, and accelerate the growth of companies that address this transition. We have chosen to focus on the following key areas: Renewable Chemistry, Agrifood, and Health.

## Our approach to Impact measuring and reporting

For us the most meaningful way to report on impact is by doing it in a systematic manner and to quantify it. In 2022, BVP made a significant step towards this by using the Upright methodology [www.uprightproject.com](http://www.uprightproject.com), which quantifies impact in an automated, objective and independent manner. The Upright impact model is a mathematical model which continuously produces updated estimates of the impact of companies. The model achieves this by using AI to consolidate data from scientific knowledge and public statistical databases. This results in an overview of what resources companies use and what they achieve by using them and provides a so-called Net Impact Ratio. Upright's full approach can be viewed in their Knowledge Base [docs.uprightplatform.com](https://docs.uprightplatform.com).

BVP uses the Net Impact Ratio of individual companies to make informed investment decisions and, once an investment in a company has been made, to have a transparent dialogue about how to further enhance the impact of portfolio companies. In this Impact Report we report the Net Impact Ratios on a fund level. This allows us to demonstrate the overall impact that BVP creates while meeting our confidentiality obligations towards BVP's portfolio companies.

## Snapshot of BVP's achievements

The report provides a robust snapshot of what has been achieved in BVP's latest three funds, highlighting the specific impact in Renewable Chemistry, Agrifood, and Health. It serves to showcase the tangible contributions made by BVP and its portfolio companies towards building a more sustainable and healthier future.

# 2022 Snapshot

## New investments

Since our latest impact report, Qorium and Circularise were added to the Renewable Chemistry investments. Our Agrifood investments expanded significantly with investments in Kipster, Verdify, Pectcof, S&dB, and Greencoverly. PL Bioscience and Niostem were added to the Health portfolio.

## Portfolio highlights

### RENEWABLE CHEMISTRY

**Ioniqa Technologies** partnered with Koch Technology Solutions to scale up and commercialize Ioniqa's advanced PET plastics recycling technology, providing significant validation of Ioniqa's unique offering in the circular economy.

**Qorium**, a company with the ambition to complete change the leather industry, achieved a pivotal milestone and successfully tanned the first piece of lab-cultured leather. The company is preparing for Series A fundraising towards the end of 2023.

**Circularise**, developing block-chain based solutions for supply chain traceability and transparency, closed its Series A investment round led by BVP, with 4impact VC, Neste and Asahi Kasei as co-investors.

### AGRIFOOD

**Kipster**, a highly innovative and sustainable animal protein production company, agreed with US supermarket chain Kroger and egg producer Midwest Poultry Systems to build four Kipster farms in the US and to sell Kipster's eggs at Kroger. The first two farms started in 2022, the other two will follow in 2023. Kipster pioneers sustainable egg farming by harmonizing innovative barn designs, circular practices, and the welfare of hens.

**Pectcof** raised new funds to further develop their innovative coffee pulp-based specialty food ingredients. The company cuts CO<sub>2</sub>-emissions and pollution by recognizing coffee pulp as a valuable resource, while also creating an additional revenue stream for coffee farmers.

### HEALTH

**Neuroplast**, a clinical stage biotech that develops stem cell treatments to combat neurodegenerative diseases, was granted an orphan medicinal product designation by the EU for the applicability of its stem cell technology platform to frontotemporal dementia (FTD), following a positive opinion from the European Medicines Agency (EMA).

**Cristal Therapeutics**, developer of metal-free click chemistry technology for the life science industry, signed a licensing agreement with Synaffix, combining Synaffix's antibody-drug conjugates platform technology with Cristal's CliCr<sup>®</sup> metal-free click chemistry. This supports further expansion into antibody-based targeted gene therapy and immune cell engager applications.

**Niostem** was able to speed up its market entry. The full launch of its solution against hair loss has occurred in the first half of 2023. The company prepared an extensive pre-sales campaign and generated over 1,000 subscribers to its newsletter in doing so.

# Impact Reporting

## Approach to Impact Reporting

Quantifying and reporting impact is a complex task, particularly for early-stage companies that are often pre-revenue. To make impact tangible and measurable, BVP has collaborated with the Finnish company Upright. As a result we can provide a snapshot of the impact generated by BVP's portfolio companies. It is crucial to recognize that the Upright Project considers not only the positive but also any negative impacts of the entire value chain, upstream and downstream. Even when this may sometimes feel counterintuitive. An example, and food for thought: for a company recycling plastics, Upright will include the negative impact of the original production of the plastics from fossil fuels, but will attribute a positive score to waste reduction.

In addition to Upright's scoring methodology, we also incorporate renowned qualitative frameworks into our assessment process such as the Theory of Change and the Sustainable Development Goals.

## Differentiating ESG and Impact

BVP distinguishes between two important definitions when it comes to impact reporting: Environmental, Social, and Governance (ESG) factors, and impact. ESG focuses on the operational "hygiene" of a company, while impact describes the effects a product or service has on people and the planet. In this report, BVP separates ESG considerations from impact results. More information regarding ESG can be found in the appendix.

## Utilizing Theory of Change

To assess impact, BVP employs the Theory of Change (ToC) as a tool. The ToC evaluates the potential impact of a product by considering the inputs used in its development, the manufacturing process, and the output (the final product). Additionally, it takes into account the short-term and long-term outcomes resulting from the application of the product on a large scale. We report a short version of the ToC per investee in the portfolio overviews.

## Alignment with Sustainable Development Goals (SDGs)

The UN Sustainable Development Goals (SDGs) serve as a framework for addressing prominent global challenges and creating a sustainable future. At BVP, we strive to align our investments with these goals, and we identified the SDG's that are principally relevant for our investment focus:

- Zero Hunger (SDG 2)
- Ensure healthy lives and promote well-being for all (SDG 3)
- Ensure access to affordable, reliable, sustainable and modern energy (SDG 7)
- Promote inclusive and sustainable economic growth, employment and decent work (SDG 8)
- Build resilient infrastructure, promote sustainable industrialization and foster innovation (SDG 9)
- Ensure sustainable consumption and production patterns (SDG 12)
- Take urgent action to combat climate change and its impacts (SDG 13)

## SFDR Compliance

BVP Fund IV operates as an Article 9 fund under the Sustainable Finance Disclosure Regulation (SFDR). As an Article 9 fund, BVP focuses on investments that have sustainable objectives as their primary goal. BVP's investment strategy aligns with the SFDR requirements, demonstrating a clear commitment to sustainable finance and the integration of ESG factors.

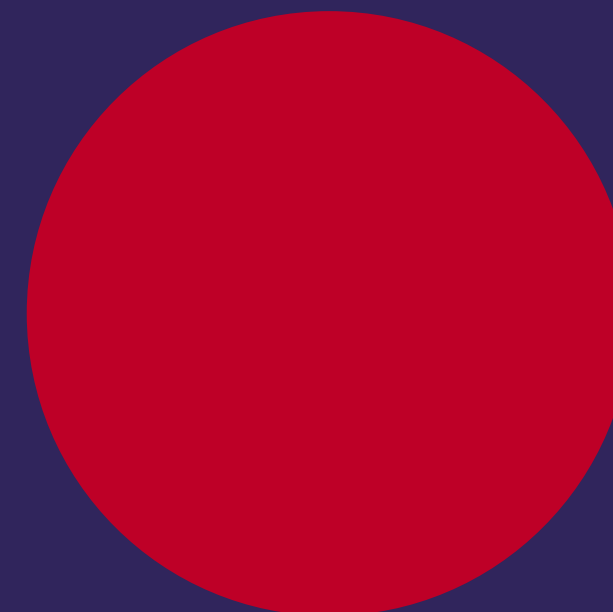
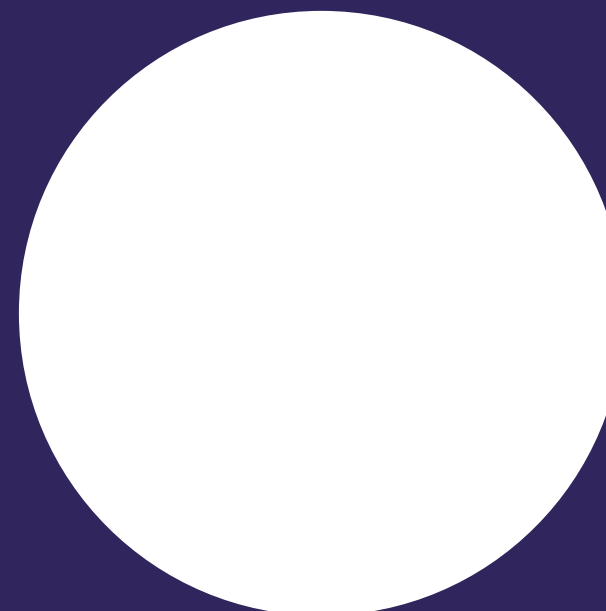
The SFDR sets standards for transparency and disclosure regarding the integration of sustainability risks and the consideration of adverse sustainability impacts in investment decision-making processes. BVP is dedicated to adhering to these regulations and ensuring clear and comprehensive reporting of its sustainability efforts and impacts. By embracing SFDR, BVP aims to enhance transparency, accountability, and trust in its sustainable investment practices.

## EU Taxonomy for sustainable activities

The EU Taxonomy for Sustainable Activities, commonly known as the EU Taxonomy, is an EU-developed classification system that identifies environmentally sustainable economic activities. Its primary objectives are to provide clear definitions of environmentally sustainable activities for the benefit of companies, investors, and policymakers. The EU Taxonomy classifies environmentally sustainable activities based on six core objectives:

1. Climate Change Mitigation
2. Climate Change Adaptation
3. Sustainable Use and Protection of Water and Marine Resources
4. Transition to a Circular Economy
5. Pollution Prevention and Control
6. Protection and Restoration of Biodiversity and Ecosystems

We monitor and report the eligibility and alignment of all our funds with the sustainable objectives outlined in the EU Taxonomy.

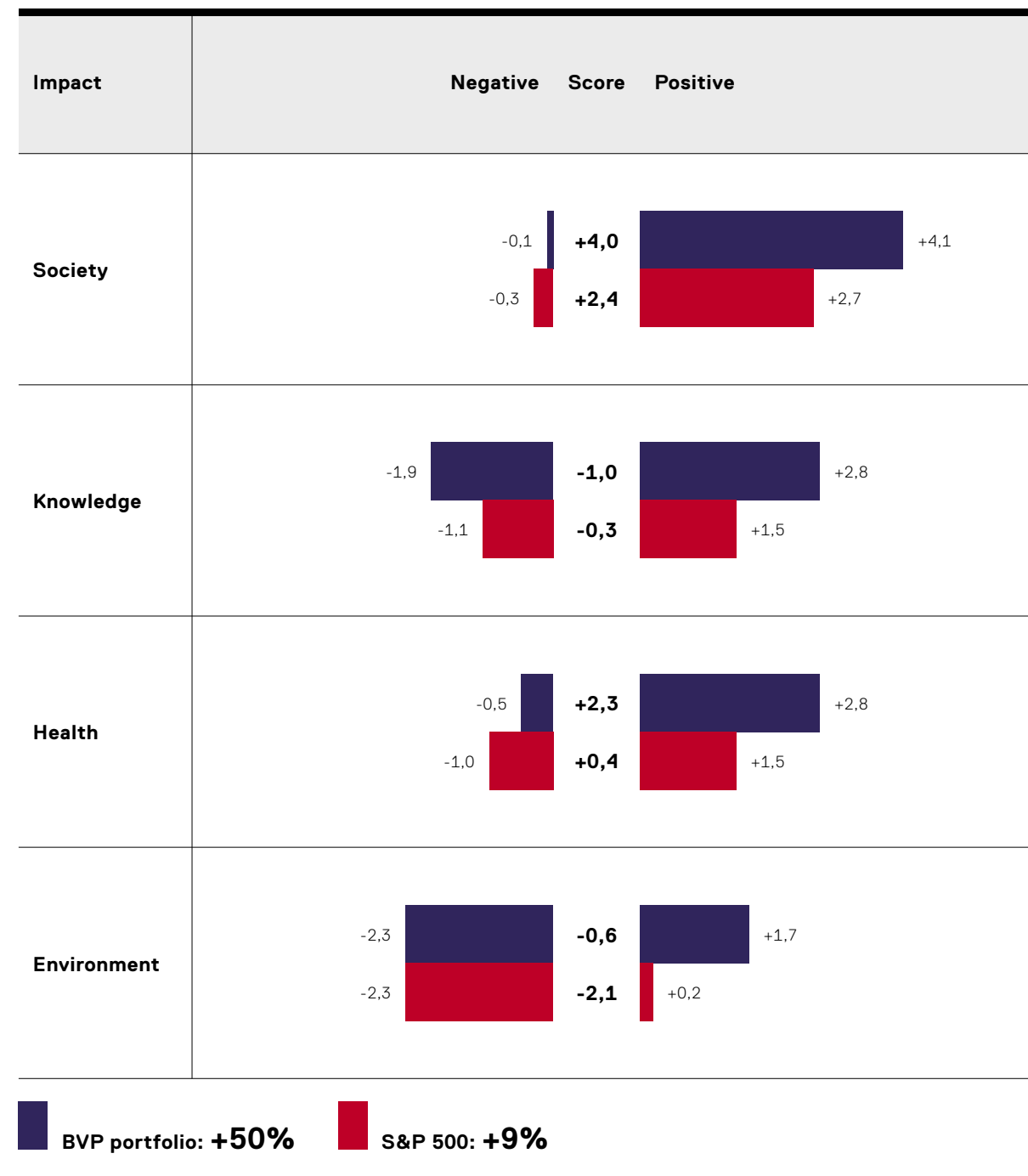


# Overall Impact BVP

BVP's portfolio overall shows a high net positive impact (Net Impact Ratio of 50%), especially in society and health. Compared to the S&P 500 (Net Impact Ratio of 9%), a stock market index of 500 US companies serving as a benchmark of the overall market, BVP scores significantly higher on society, health, and environment. Our score for knowledge is negative in comparison, which is mainly due to the use of highly educated people (i.e. scarce human capital), typically employed at innovative startups. Furthermore, it is crucial to understand that both upstream and downstream negative impacts are accounted for in this assessments, as Upright incorporates these factors into their modeling process. BVP actively evaluates and analyzes the development of the impact of its portfolio companies to see how it can further increase. It will help portfolio companies to steer to even higher scores and will use impact data to select and/or refocus new investment targets. In line with SFDR transparency obligations for sustainable investments, BVP is pioneering with regards to benchmarking, as we are already able to provide benchmarks for our portfolio.

## Net impact ratio

Upright model version 1.1.0



# Fields of Impact

The need for sustainable materials, nutritious food, and future-proof healthcare is increasing. This necessitates innovations in BVP's three key investment areas: Renewable Chemistry, Agrifood, and Health. By supporting innovation in these sectors, BVP aims to contribute to a more sustainable and healthier world for present and future generations.

## IMPACT 1: RENEWABLE CHEMISTRY

The European Union has made a political and legal commitment that, by 2050, the EU should be climate neutral. Sustainable solutions should enable the reduction of emissions, energy consumption and facilitate the transition from a linear towards a circular economy.

### Investment focus areas:

- Circular materials and bio-based chemicals
- Feedstock & energy efficiency
- Smart materials

### Impact indicators:

- Greenhouse gas emissions (GHG)
- Waste reduction

Fund IV, Chemelot Ventures

## IMPACT 2: AGRIFOOD

Agrifood is at the cross-over of sustainability and health. The growing demand for food and agricultural land calls for innovations in agrifood that focus on creating nutritious and sustainably produced food, with the intention of combatting deficiencies and inefficiencies in global food systems.

### Investment focus areas:

- Healthy (personalized) nutrition
- Smart farming
- Alternative / circular proteins
- Regenerative agriculture

### Impact indicators:

- Harmful substance reduction
- Land use efficiency
- Labor shortage reduction

Brightlands Agrifood Fund

## IMPACT 3: HEALTH

The growing and aging world population is becoming increasingly challenging for healthcare systems. To make healthcare future-proof, innovations in the existing systems are needed that allow for more effective healthcare, cost control, using new methods and techniques, from cure & care to prevention.

### Investment focus areas:

- Biomedical materials
- Regenerative medicine
- Personalized medicine & MedTech

### Impact indicators:

- Intermediate effect on health
- Long-term effect on health
- Health Economic Benefits (HEBs)

Fund IV, Chemelot Ventures



# Impact: Renewable Chemistry

The following overview describe the estimated impact our renewable chemistry investees. This is done quantitatively by potential GHG reduction and qualitatively by the long-term effects of their product or methodology. The overview depicts the expected cumulative savings per year in tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>-eq) per level of business plan achievement for the whole renewable chemistry portfolio. It should be noted that the metrics used below were chosen because of their perceived relevance and do not represent the investees' total impact.

COMPANY	ACTIVITY	GHG / RESOURCE REDUCTION	LONG-TERM EFFECTS
 ioniq	Recycle (colored) PET by depolymerization to enable production of virgin quality PET	75% lower CO <sub>2</sub> emission compared to oil-based PET resin production	Create a circular system, reduce plastics sent to landfill, incinerators and nature
 Black Bear CARBON BLACK	Recycle end-of-life-tires into high quality, safe, and sustainable Carbon Blacks	86% lower CO <sub>2</sub> emissions compared to furnace carbon black production	Create a continuous cycle of Carbon Black re-use in tires, reduce the amount of solid tire waste
 fuenix Let no plastic go to waste	Recycle plastic waste into raw materials that can be used to create brand new plastic	Reducing CO <sub>2</sub> emissions by 65% compared to traditional plastic manufacturing using non-circular feedstock	Create a circular system, reduce plastics sent to landfill, incinerators and nature
 ertoro	Replacement for fossil crude oil as a platform product for materials, chemicals and fuels	The Goldilocks® technology has a potential to save more than 65 and up to 95% of GHG compared to fossil fuels	Replace fossil fuels, improve carbon efficiency and contribute to circular solutions by using waste streams
 KRIYA MATERIALS	Performance enhancing coatings for solar panels, solar heat blocking systems and display materials	Reducing the equivalent of ± 8,000 kg of CO <sub>2</sub> per applied kg of coating per year	Higher output of clean energy; conserve energy by heat blocking in buildings or (electric) cars
 QORIUM LEATHER	Manufacturing of cultivated leather as a sustainable replacement for traditional high-quality leather	Saving 99% water, 80% energy and 36% chemicals per kg cultivated leather versus traditional leather	Create a bio- circular system that is independent of meat, reduce environmental impact of traditional leather manufacturing
 CIRCULARISE	Providing end-to-end traceability & transparency, proving sustainability and enabling a circular economy	Potential to enable a reduction of 551Kt CO <sub>2</sub> eq per year*	Increase sustainable and circular materials with evidence of reduced impact, increased recovery of waste materials and product lifetime extension

\* verifiable at [www.impact-forecast.com](http://www.impact-forecast.com) (use validation ID CDA023)

## Case study: Qorium



**Rutger Ploem**  
Co-founder & CEO



**Stef Kranendijk**  
Co-founder & CEO



**Mark Post**  
Co-founder & Chief  
Scientific Officer

***“It is exciting to combine cell culture and tissue engineering, originally proven medical technology, to produce very large, structured collagen tissues ready to be tanned and finished into full thickness beautiful leather to make high-end products.”***

Professor Mark Post

Qorium is developing and working towards manufacturing, selling and distribution of cultivated leather. Successful samples of lab grown collagen have been tanned into real finished leather that are currently being tested and used for presentation purposes.

Qorium will create enormous impact in terms of sustainability and potentially in terms of animal welfare, well away from the current industrial bioindustry practices. One kilogram of cultivated leather produced with Qorium technology will save 99% water, 66% energy and 36% chemicals compared to traditional leather.

Currently, livestock for the meat and leather industry produces vast amounts of methane and uses lots of water, energy, and chemicals. Using Qorium's technology, methane emissions are almost fully eliminated, as only a tiny biopsy of a cow's skin is needed to isolate and grow the skin cells. In addition, Qorium's cultivated leather entirely omits the two most polluting phases of the tanning process in the beam-house.






In traditional leather manufacturing, almost 50-60% of the cow's skin is not used and thrown away. Given an average cow's hide of 5.5 m<sup>2</sup>, this implies that Qorium has the potential to replace 20 million m<sup>2</sup> of cow's hides per year. Considering the production of 10 million m<sup>2</sup> per year of Qorium-cultivated leather, this will save around 3.6 million cows on an annual basis.

### SDG Alignment



# Impact: Agrifood

The estimated impact of portfolio companies in the agrifood sector is described by three factors; efficiency increase (describes how the product or technology increases crop yield or facilitates efficient land use), harmful substance reduction (delineates how the product or technology reduces the emission of harmful substances such as CO<sub>2</sub> or methane), and labour shortage reduction (describes how the product or technology reduces the need for labour and thereby solves shortages in labourers). It should be noted that the metrics used below were chosen because of their perceived relevance and do not represent the investees' total impact.

COMPANY	ACTIVITY	EFFICIENCY INCREASE	HARMFUL SUBSTANCE REDUCTION
 <b>Grassa</b> GREEN REFINED SOLUTIONS	Biorefinery technology to extract surplus nutrients (i.a., protein) from grass	Extraction makes grass protein available for human and animal consumption, which results in up to 250% food production per hectare grass, with no additional land use needed	Up to 30% less nitrogen emissions in cattle and by substitution of import of nitrogen with local production. Grass protein replacing soy substantially reduces CO <sub>2</sub> -footprint for milk and meat production
 <b>AVL</b> Motion	Development of autonomous, selective harvesting machines	> 5% increase in asparagus yield because of minimal plant damage	1 AVL harvesting machine can replace 18 Full-time-equivalents (FTEs), thereby decreasing dependency on labourers
 <b>SOILWISE.</b>	Bio-based solutions for restoring and strengthening soils	5% - 15% increase in crop yield compared to other methods and no use of chemicals or energy intensive steam	100% reduction in use of chemicals for soil disinfection. 84% reduction in CO <sub>2</sub> emission when compared with steaming method
 <b>KIPSTER</b>	Innovative animal protein production concept offering animal-, environmental- and people-friendly eggs	Kipster chickens are fed using food waste streams, significantly reducing amount of land needed for producing eggs and meat	Kipster eggs are climate neutral. > 40% reduction of fine dust from indoor farms
 <b>PECTCOF</b>	Upcycling coffee pulp biomass into valuable food ingredients	Considerably more efficient than Arabic Gum in confectionary and locust bean gum in ice cream	11M tonnes CO <sub>2</sub> -equivalent reduction per year if all coffee pulp would be converted into valuable ingredients
 <b>S&amp;B</b> Seed Embedding Technology	Plant seed enhancement technology to deliver optimal environment for seeds	Increase in crop yield per hectare land and reduction of operating costs	Reduction in use of agrochemicals (pesticides, herbicides, insecticides and fertilizers), growth media (peat, stonewool), and CO <sub>2</sub>
 <b>Greencover</b> UPGRADING RESOURCES	Upcycling valuable ingredients from food production side-streams	17.1 m <sup>2</sup> /kg land save by fully utilizing cheese rinds	Reutilization of cheese rinds leads to saving 9,000 tonnes CO <sub>2</sub> -equivalent per year in demo facility
COMPANY	ACTIVITY	LONG TERM EFFECTS	STATISTIC
 <b>VERDIFY</b>	AI-based software for tailoring meal inspiration to drive better food choices (for personal & planetary health)	Increased adoption of healthy and more sustainable diets	> 25% reduction in disability-adjusted life years due to poor diet in general population

## Case study: Greencovery



Dr. Carlos Cabrera  
Director and founder

Every year, a staggering 30–40 percent of our global food supply goes to waste, a concerning statistic exacerbated by the immense water, energy, and land resources invested in producing unconsumed food. Greencovery embarked on a transformative journey to combat this issue.

Their pioneering solution empowers food companies to significantly curtail their food losses by harnessing the potential of side-streams and turning them into invaluable functional ingredients. Through the art of upcycling, a visionary zero-waste philosophy, Greencovery ingeniously repurposes byproducts from agriculture and food manufacturing. This not only unlocks their utmost potential but also revolutionizes the way people perceive and utilize resources.

Greencovery's mission is resolute: they create impact by minimizing food waste and firmly establish upcycled ingredients as the standard in the food industry. Fueled by cutting-edge technology, the company creates premium ingredients that retain their essential functionality while championing positive environmental impact. What sets Greencovery apart is that their ingredients do not just match up to conventional counterparts; they exceed them in flavor, quality, and sustainability.

The company is paving the way for a greener, more efficient food ecosystem, in which they strive to let food waste become a relic of the past. Greencovery is not just reimagining ingredients – they are reimagining possibilities.

***“Greencovery is on a mission to shape the future of food. We’re turning leftover ingredients into delicious options that will soon become the new standard!”***













# Impact: Health

As most of the products and therapies of our health portfolio are still in development or undergoing clinical trials, the following data are estimates of future impact and should therefore be interpreted with caution. Quality-Adjusted Life Years (QALYs) and Health Economic Benefits (HEBs) for the healthcare system are the most ideal indicators for expected impact. However, in early clinical phases evidence is scarce and QALYs or HEBs are hard or even impossible to determine. For this reason, we have chosen intermediate and long-term effects as a more qualitative substitute for QALYs and decided that the HEBs will be based on future estimates.

The scope of the problem that our portfolio companies try to mitigate is described by a relevant statistic. It should be noted that the metrics used below were chosen because of their perceived relevance and do not represent the investees' total impact.

COMPANY	CORE PRODUCT	INTERMEDIATE EFFECT	LONG-TERM EFFECTS	HEALTH ECONOMIC BENEFITS (HEBS) (PER PATIENT)	STATISTIC
 neuroplast STEM CELL TECHNOLOGY	Stem-cell therapy (Neuro-Cells) to treat Traumatic Spinal Cord Injury	Regain control of muscles, improve perception of life control and increase in amount of daily activities	More control over body and less infections of urinary track	Direct lifetime savings for the health system ranging from \$200k to \$1.5mln. Indirect lifetime savings due to more independence ranging from \$100k to \$500k	Currently no therapy available. Care costs for a paralyzed patient range between \$50k and \$1 mln per year
 Corporis Medical	Disposable medical devices for minimally invasive surgery (Mediclose, Laprixa)	Safer laparoscopic procedure, more cost efficient in time and better procedure outcome	Less post operative complications, less herniating of trocar wounds (Mediclose) and less bowel leakages (Laprixa)	Laprixa is estimated to reduce the occurrence and the average costs of bowel leakages by 89%. Mediclose is estimated to reduce occurrence of trocar wound herniation by 2-6%	Post-operative treatment for bowel leakages in the EU and US is estimated to cost \$1.5 bln - \$3.0 bln per year. In US, costs for treatment of incisional hernia amount to \$3.1 bln per year
 Hy2Care	Injectable implant for cartilage repair	Pain relief and return of mobility and daily activities for patients	Long lasting cartilage defect repair, allowing patients to maintain an active and healthy life. Potentially also preventing onset of osteoarthritis as well as reduction of future follow-on surgeries.	Long lasting cartilage repair will reduce future healthcare costs related to the cartilage defect (i.e. future surgical procedures, physical therapy, pain medication, etc.)	Annually, 600,000 patients (EU and US) with cartilage defects are treated with microfracture or debridement, giving only temporary relief, resulting in repeat treatment and associated costs
 TRIPLEMED® Aortic Aneurysm Solutions	Disposable medical devices (Aneufix, Aneufill, Embofix) for the treatment of aortic aneurysms (Endoleaks type II)	Reduce chances of vessel rupture	Reduce rate of reinterventions to treat leaks and number of control CT scans	Aneufix: cost reduction of 33-66% per treatment and more successful in closing leak in single treatment when compared to market standard. Aneufill: prevents occurrence and associated costs of endoleaks, endograft migration, and endograft occlusion	Globally, 120k people diagnosed with an aortic aneurysm receive EndoVascular Aortic Repair (EVAR) surgery every year. Type II endoleaks have an occurrence rate of 10.2% after EVAR
 VACIS	In situ tissue engineered blood vessels (synthetic rod)	Reduce chances of access infection and low blood flow due to blood clotting in the access	Reduce need of further treatment or surgery, no sacrificing of veins, accelerated access time. Effective treatment of patients with access problems, leading to a decrease in mortality risk	On average, the Vacis device is expected to reduce costs with 14% per year in comparison with the Arteriovenous Graft (AVG) device and with 33% per year when applied to patients with access problems	35%-40% of arteriovenous fistulas (AVFs) require intervention to remain functional within 12 months, globally 3.3 mln people require hemodialysis

COMPANY	CORE PRODUCT	INTERMEDIATE EFFECT	LONG-TERM EFFECTS	HEALTH ECONOMIC BENEFITS (HEBS) (PER PATIENT)	STATISTIC
	Heparin technology (M6229) that neutralizes the harmful effect of histones in case of sepsis	Ability to treat patients suffering from severe sepsis or septic shock. Prolongation of timeframe during which other medication can be given	Reduce long-term treatments and readmissions to hospital. Reduce chances of mortality and reduce long-term morbidity	Currently no similar treatment in market. Costs of treatment are estimated to be similar to withdrawn competitor Xigris. Technology can reduce long-term morbidity and increase chance of survival	In the USA alone sepsis is the most common cause of in hospital deaths costing more than \$24 bln annually
	Surgical device that allows single-port minimally invasive (endoluminal) surgery, handheld or as tools for robotic surgery	Reduce infection risk, scarring and recovery time	Reduce rate of reinterventions to treat leaks and number of control CT scans	Increase in satisfaction, decrease in OR time, decrease in required training time, less scars, shorter recovery time and therefore lower hospital costs.	Nearly 15 mln laparoscopic procedures are performed every year, globally
	Enzymatic synthesis of peptide and protein pharmaceuticals for treatment of chronic diseases (f.e. cancer, diabetes)	Higher yields than industry standard (>2x), can reduce peptide synthesis costs by 50%. Ability to produce a variety of products with unique features (e.g., improved stability, solubility, ..)	Reduced ecological footprint through less organic solvent consumption and less energy consumption leading to more affordable drugs	EnzyTag enables cost reduction of 50% on active ingredient levels and faster development and production of more complex products at higher purity in comparison to most pharmaceutical peptide and protein producers	The peptide market is estimated at \$25 bln (2018). The biopharmaceutical market is valued at \$215 bln (2017). Both markets have a variety of new entities in development.
	Human Platelet Lysate as a superior alternative to Fetal Bovine Serum (FBS)	Higher performance, efficiency, safety and reproducibility in experimental and clinical cell culture	Reduced need for animal derived FBS. Decrease in animal cruelty as well as methane emissions. Increased availability of safe regenerative medicine approaches	2.5 to 10% of ELAREM™ Human Platelet Lysate can replace 10% of FBS	The worldwide annual demand for FBS amounts over 800,000 liters, resulting in over 2 million calves and cows being killed for FBS production purposes
	Wearable medical device for hair regrowth	Effective hair regrowth in people suffering from androgenetic alopecia (common hair loss) without side-effects	Decreasing prevalence of depression, anxiety, and other mental disorders that are currently overrepresented in balding patients	Niostem has the potential to significantly increase the quality of life for people who are mentally suffering from hair loss	Around 4 billion people world-wide are suffering from hair loss and thinning

## Case study: PL Bioscience



**Dr. Hatim Hemeda**  
CEO and founder of PL BioScience

***“How we conduct our research is often just as important as the results of our research”***

Located in Aachen in Germany, PL BioScience GmbH is a life science company specializing in the production and development of Human Platelet Lysate (HPL) cell culture media supplements, offering a complete portfolio of HPL products tailored for various use cases. From academic research, pre-clinical research, and cell therapy, the high quality GMP compliant standards of ELAREM™ ensures seamless transitions of regenerative medicine breakthroughs – from the lab to patients in need.

In 2017, an estimated demand of 800,000 litres of Fetal Bovine Serum (FBS) was forecasted, costing the equivalent of 1 million calves to satisfy. The global demand has since increased exponentially with the continued growth of emerging markets, as well as continued developments in the fields of Cell and Gene Therapy. A recent estimation as of 2022 puts that number of calves needed for FBS production at 1.8 million.

PL BioScience creates impact by promoting sustainability in life sciences research. To achieve this, the company aims to champion Human Platelet Lysate (HPL) as the ethical and sustainable alternative cell culture media supplement, replacing the need for animal-derived supplements such as FBS, while upcycling what would be otherwise discarded human thrombocytes.

### SDG Alignment





# Impact per fund

In this chapter, we present a quantitative analysis of the impact generated by our investment funds:

**BVP Fund IV** Established in April 2021, BVP Fund IV operates with a fund size of €45 million. Supported by key partners including DSM Nederland, NV LIOF, Limburg Province, RvO, and Coöperatieve Rabobank U.A., this fund has a 12-year lifespan and a 6-year investment period. BVP Fund IV specializes in early and later-stage investments, focusing on innovative areas like renewable chemistry, circularity, regenerative medicine, biomedical materials, agrifood, and supportive digital technologies.

**Brightlands Agrifood Fund** Launched in 2017 with a fund size of €20.1 million, the Brightlands Agrifood Fund concentrates on early-stage investments in agriculture (seed & grow) and food (harvest & formulate) sectors. Its partners include Coöperatieve Rabobank U.A., Province of Limburg, NV LIOF, LLTB (Limburgse Land- en Tuinbouwbond), Van Herk Ventures, and a private individual, collectively contributing to its impactful initiatives in the agrifood industry.

**Chemelot Ventures** Established in 2014, Chemelot Ventures manages a fund size of €40 million, with each of its partners—DSM Nederland, NV LIOF, Limburg Province, and Coöperatieve Rabobank U.A.—committing €10 million. This fund specializes in sustainable chemicals & materials, regenerative medicine & biomedical materials, and diagnostics & analytics, making strategic investments in both early and later-stage ventures.

**The four funds  
under management  
(Fund size/ x million)**

**15**

Limburg Ventures  
(2004)

**40**

Chemelot Ventures  
(2014)

**20**

Brightlands Agrifood Fund  
(2017)

**45**

BVP Fund IV  
(started in 2021)

# Impact Fund IV

PORTFOLIO COMPANY	IMPACT THEME
Circularise	Renewable Chemistry
Niostem	Health
PL Bioscience	Health
Gorium	Renewable Chemistry

Upright model  
version 1.1.0

Impact	Negative	Score	Positive
<b>Society</b>	-0,0	+3,9	+3,9
Jobs		+2,3	+2,3
Taxes		+1,4	+1,4
Societal infrastructure		+0,2	+0,2
Societal stability		0	
Equality & human rights		0	
<b>Knowledge</b>	-1,4	-0,4	+1,0
Knowledge infrastructure		0	
Creating knowledge		+1,0	+1,0
Distributing knowledge		+0,0	
Scarce human capital	-1,4	-1,4	
<b>Health</b>	-0,4	+1,2	+1,5
Physical diseases	-0,4	+0,5	+0,9
Mental diseases		0	
Nutrition		0	
Relationships		0	
Meaning & joy		+0,6	+0,6
<b>Environment</b>	-1,3	-0,5	+1,8
GHG emissions	-0,6	-0,3	+0,3
Non-GHG emissions	-0,1	+0,1	+0,2
Scarce natural resources	-0,0	+0,0	+0,1
Biodiversity	-0,1	+0,1	+0,2
Waste	-0,5	-0,4	+0,1
<b>Net impact ratio:</b>			<b>+58%</b>
<b>Value set: Equal weights</b>			

No misalignment with any of the UN Sustainable Development Goals was found.



Number of items:

4

Total employees:

62

**EU taxonomy eligibility**

<b>Climate mitigation</b>	26,2% eligibilty 23,6% alignment
<b>Climate adaption</b>	0,0% eligibilty 0,0% alignment
<b>Water adaption</b>	0,0% eligibilty 0,0% alignment
<b>Circular economy</b>	0,0% eligibilty 0,0% alignment
<b>Pollution</b>	28,7% eligibilty 0,0% alignment
<b>Biodiversity</b>	0,0% eligibilty 0,0% alignment
<b>Mitigation or adaption</b>	26,2% eligibilty 23,6% alignment
<b>Total</b>	<b>54,9%</b> eligibilty <b>23,6%</b> alignment

**Observations and remarks:**

The overall impact of Fund IV can be deemed highly positive (Net Impact Ratio of 58%). Fund IV demonstrates high performance on societal and health indicators. We expect environmental indicators to improve even more in coming years by optimizing impact in the existing portfolio and adding more investments in the bio-circular space to the Fund IV portfolio. The negative score on “scarce human capital” suggests that there is potential to allocate such scarce resources to economic activities that provide a more immediate and positive impact. However, after conducting further comparative analysis, we have determined that this score is still relatively modest when compared to, for example, tech start-ups and other benchmarks.

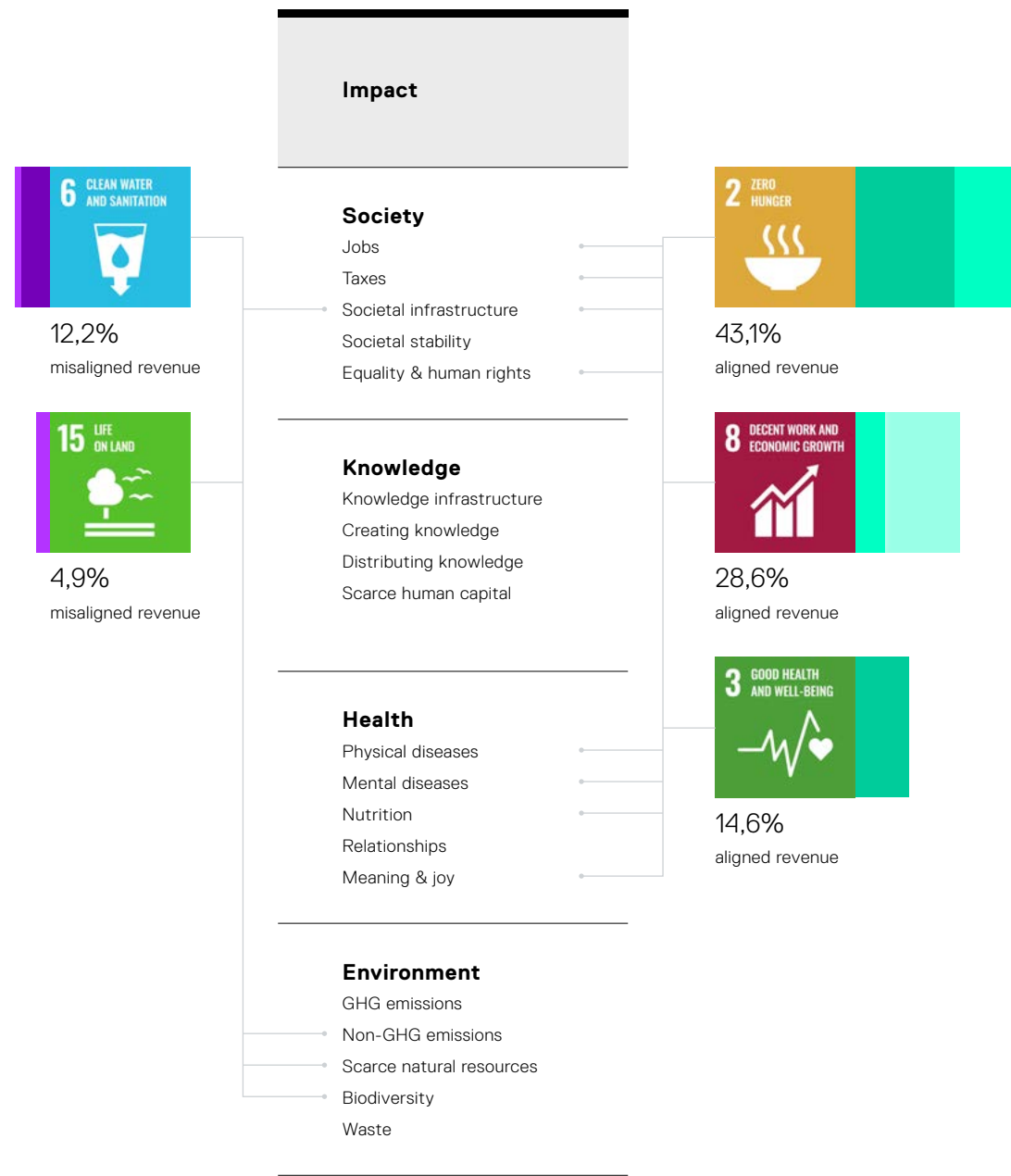
# Impact Brightlands Agrifood Fund

Upright model

version 1.1.0

PORTFOLIO COMPANY	IMPACT THEME
Grassa	Agrifood
AVL Motion	Agrifood
Soilwise	Agrifood
Kipster	Agrifood
Verdify	Agrifood
Pectcof	Agrifood
S&dB	Agrifood
Greencovery	Agrifood

Impact	Negative	Score	Positive
<b>Society</b>	<b>-0,1</b>	<b>+3,8</b>	<b>+3,9</b>
Jobs		+2,5	+2,5
Taxes		+1,3	+1,3
Societal infrastructure		+0,0	+0,0
Societal stability	-0,0	-0,0	+0,0
Equality & human rights	-0,0	-0,0	+0,0
<b>Knowledge</b>	<b>-2,0</b>	<b>-1,7</b>	<b>+0,2</b>
Knowledge infrastructure		+0,0	
Creating knowledge		+0,0	
Distributing knowledge		+0,2	+0,2
Scarce human capital	-2,0	-2,0	
<b>Health</b>	<b>-0,8</b>	<b>+3,8</b>	<b>+4,5</b>
Physical diseases	-0,7	+0,3	+0,4
Mental diseases	-0,0	+0,0	+0,0
Nutrition		+3,7	+3,7
Relationships		+0,1	+0,1
Meaning & joy	-0,0	+0,3	+0,3
<b>Environment</b>	<b>-3,6</b>	<b>-2,3</b>	<b>+1,3</b>
GHG emissions	-1,5	-1,0	+0,5
Non-GHG emissions	-0,3	+0,1	+0,2
Scarce natural resources	-0,3	+0,2	+0,1
Biodiversity	-1,2	+0,9	+0,3
Waste	-0,4	-0,1	+0,3
<b>Net impact ratio:</b>			<b>+36%</b>
<b>Value set: Equal weights</b>			



- Strongly misaligned
- Moderately misaligned
- Weakly misaligned
- Strongly aligned
- Moderately aligned
- Weakly aligned

Number of items:

**8**

Total employees:

**68**

**EU taxonomy eligibility**

<b>Climate mitigation</b>	12,6% eligibilty 2,5% alignment
<b>Climate adaption</b>	0,0% eligibilty 0,0% alignment
<b>Water adaption</b>	0,0% eligibilty 0,0% alignment
<b>Circular economy</b>	29,8% eligibilty 0,3% alignment
<b>Pollution</b>	6,6% eligibilty 0,0% alignment
<b>Biodiversity</b>	29,8% eligibilty 0,0% alignment
<b>Mitigation or adaption</b>	12,6% eligibilty 2,5% alignment

**Total** **36,5%** eligibilty  
**2,7%** alignment

**Observations and remarks:**

Overall, the Brightlands Agrifood Fund exhibits a positive impact, demonstrating strong performance in society and health. The environmental score is adversely affected by the pollution associated with both upstream and downstream processing and consumption along the value chain. It is important to note that the majority of these negative environmental values can be attributed to a limited number of portfolio companies, primarily engaged in the up- and downstream processing stages.

To address these environmental challenges, substantial systemic changes are imperative, aiming to enhance the sustainability of the entire value chain. As the Brightlands Agrifood Fund invests in companies that provide solutions towards these systemic changes in the agrifood sector, the overall impact of the Brightlands Agrifood Fund is highly positive (Net Impact Ratio of 36%).

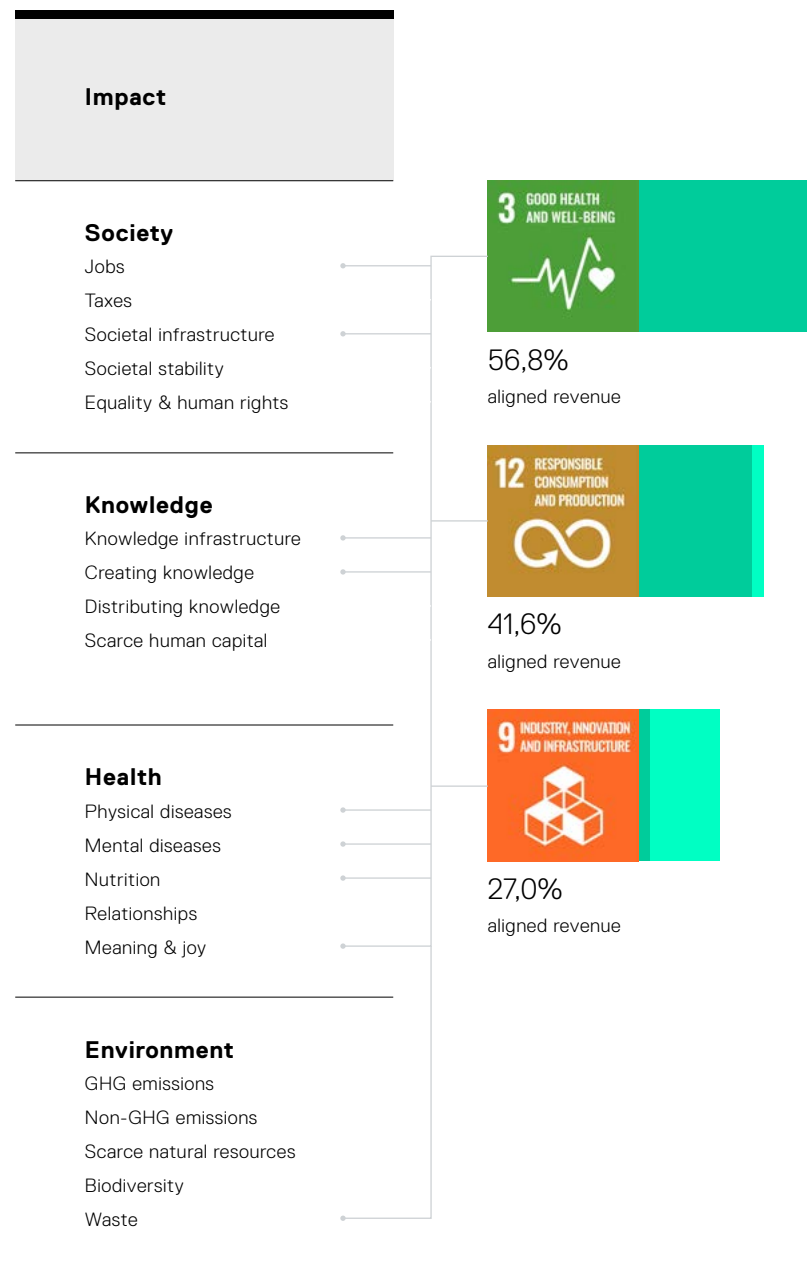
# Impact Chemelot Ventures

Upright model  
version 1.1.0

PORTFOLIO COMPANY	IMPACT THEME
Cristal Delivery	Health
Black Bear Carbon	Renewable Chemistry
Ioniqa Technologies	Renewable Chemistry
Fortimedix Surgical	Health
Matisse Pharmaceuticals	Health
TripleMed	Health
Health Value Creation	Health
Vertoro	Renewable Chemistry
Vacis	Health
EnzyTag	Health
Hy2Care	Health
Neuroplast	Health
Fuenix	Renewable Chemistry
Kriya	Renewable Chemistry

Impact	Negative	Score	Positive
<b>Society</b>	<b>-0,1</b>	<b>+4,1</b>	<b>+4,1</b>
Jobs		+2,2	+2,2
Taxes		+1,7	+1,7
Societal infrastructure		+0,2	+0,2
Societal stability	-0,0	-0,0	
Equality & human rights	-0,0	-0,0	+0,0
<b>Knowledge</b>	<b>-1,9</b>	<b>-0,9</b>	<b>+1,0</b>
Knowledge infrastructure		+0,0	
Creating knowledge		+1,0	+1,0
Distributing knowledge		+0,0	+0,0
Scarce human capital	-1,9	-1,9	
<b>Health</b>	<b>-0,4</b>	<b>+2,0</b>	<b>+2,5</b>
Physical diseases	-0,4	+1,6	+2,0
Mental diseases	-0,1	+0,1	+0,1
Nutrition		+0,0	+0,0
Relationships		+0,0	+0,0
Meaning & joy		+0,2	+0,2
<b>Environment</b>	<b>-2,0</b>	<b>-0,1</b>	<b>+1,9</b>
GHG emissions	-1,1	-0,4	+0,7
Non-GHG emissions	-0,3	+0,0	+0,3
Scarce natural resources	-0,1	-0,0	+0,0
Biodiversity	-0,2	-0,2	+0,0
Waste	-0,4	+0,4	+0,8
<b>Net impact ratio:</b>			<b>+53%</b>
<b>Value set: Equal weights</b>			

No misalignment with any of the UN Sustainable Development Goals was found.



- Strongly misaligned
- Moderately misaligned
- Weakly misaligned
- Strongly aligned
- Moderately aligned
- Weakly aligned

Number of items:

14

Total employees:

164

**EU taxonomy eligibility**

<b>Climate mitigation</b>	43,2% eligibility 38,1% alignment
<b>Climate adaption</b>	0,0% eligibility 0,0% alignment
<b>Water adaption</b>	0,0% eligibility 0,0% alignment
<b>Circular economy</b>	40,0% eligibility 40,0% alignment
<b>Pollution</b>	0,0% eligibility 0,0% alignment
<b>Biodiversity</b>	43,2% eligibility 38,1% alignment
<b>Mitigation or adaption</b>	43,2% eligibility 38,1% alignment
<b>Total</b>	<b>43,2% eligibility</b> <b>41,6% alignment</b>

**Observations and remarks:**

Chemelot Ventures creates a highly positive impact overall (Net Impact Ratio of 53%), showing high performance in society and health. With respect to knowledge, the fund's impact score is negative, which is mainly due to the use of highly educated people (i.e. scarce human capital) in elaborate clinical research activities. This is logical, as clinical research must be performed in order for the company to fully create its impact. Therefore, this negative score is expected to improve over time. Moreover, the relatively modest environmental scores can be attributed to the diverse nature of Chemelot Ventures portfolio, encompassing health and renewable chemistry startups. Consequently, some of the positive environmental impacts from, for instance, renewable chemistry investments may be offset by the minor positive impacts elsewhere. This effect is particularly pronounced because a company's contribution is evaluated in proportion to the invested capital. Additionally, it's important to consider the attribution of both upstream and downstream negative impacts in our assessments. When isolating the renewable chemistry startups within the Chemelot Venture portfolio, we observe highly positive environmental impact scores, scoring highest on reduction of (non)-GHG emissions and waste.

Chemelot Ventures has now entered its management phase, the companies are developing well, and it becomes evident that an increasing share of the business activities are aligned with the UN Sustainable Development Goals.



# Summary

We hope this impact report provided a deeper understanding of how our funds generate impact next to financial return. We hope you enjoyed the highlighted examples of our portfolio companies. BVP has unwavering commitment to create impact and is proud to work on a daily basis shoulder to shoulder with our portfolio companies towards a sustainable planet with healthy people.

We have listed some of the most important areas in which our investment sectors create tangible impact.

## IMPACT 1: RENEWABLE CHEMISTRY

**Creating circular systems** with sustainable materials, while providing more transparency

**Waste reduction** by recycling and re-using materials

**Fossil fuels replacement** through the creation of bio-based feedstocks

**Energy efficiency** by using waste streams and energy conserving solutions



## IMPACT 2: AGRIFOOD

**Reduction of harmful substances** such as pesticides, herbicides, chemicals for soil disinfection and greenhouse gases

**Efficient use of food production side-streams** by upcycling them into new ingredients or feeding them to livestock

**Crop yield increase through** seed enhancement, soil strengthening and minimal plant damage

**Adoption of healthy and more sustainable diets** by tailoring meal options for personal and planetary health



## IMPACT 3: HEALTH

**Healthcare cost reduction** due to more efficient treatments, lower production costs and reduced reinterventions

**Reduced ecological footprint** by reducing the need for (animal based-) resources and lowering greenhouse gas emissions

**Innovative treatment solutions** leading to new therapies for a variety of diseases and conditions

**Less post-operative complications** due to more effective treatments, reducing the need for readmissions



# Appendix

## ESG / Principle Adverse Indicators

The Principle Adverse Impact (PAI) indicators provide information about the adverse impacts of investment decisions on sustainability factors. These indicators cover a wide range of topics, including greenhouse gas emissions, resource use, biodiversity, employment, human rights, and anti-corruption efforts.

The PAI indicators relate to common ESG frameworks by complementing and expanding upon their existing reporting requirements. While common ESG frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), primarily focus on measuring and reporting positive sustainability practices, the PAI indicators under the SFDR require additional disclosure of potential negative impacts.

BVP tracks the PAI-indicators for potential investments and all portfolio companies to assess the potential adverse sustainability impact of its investment decisions. However, it is important to note that the PAI indicators are not reported publicly. Tracking of adverse impacts allows BVP to internally evaluate and manage the sustainability performance of its investments, ensuring alignment with its commitment to sustainability and responsible investing.

It is worth noting that BVP's commitment to transparency extends beyond the PAI indicators. BVP aims to provide clear and comprehensive reporting on its sustainability efforts and impacts, as required by the SFDR and other relevant regulations, enabling its stakeholders to make informed decisions based on reliable and relevant information.

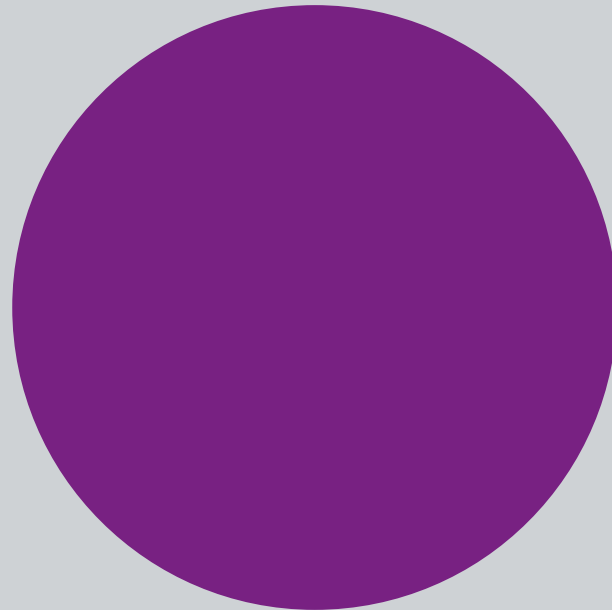
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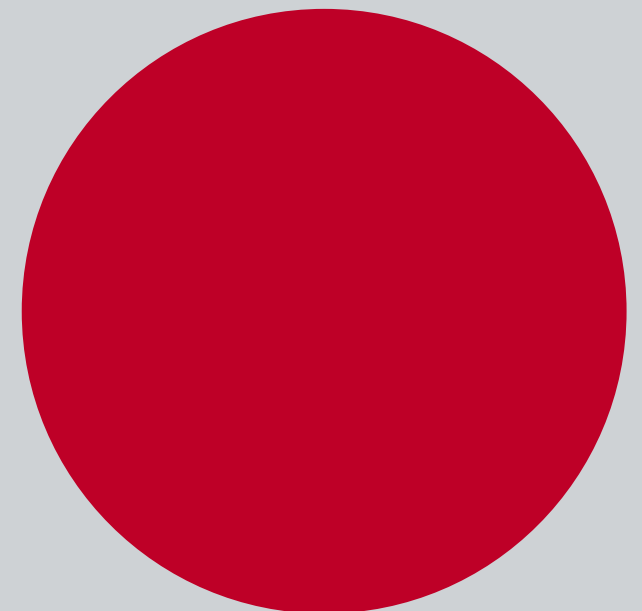
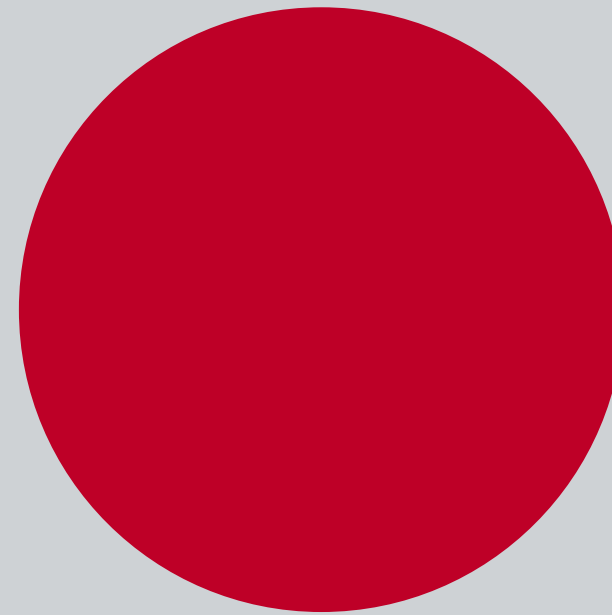
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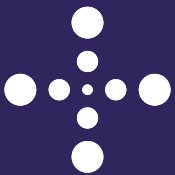
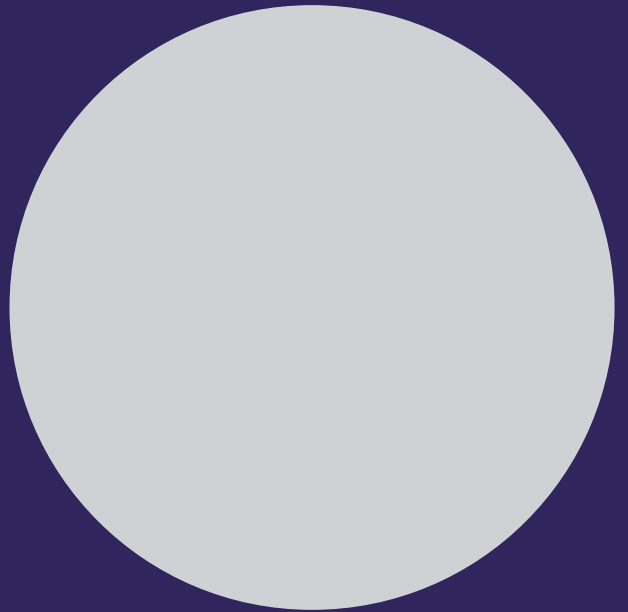
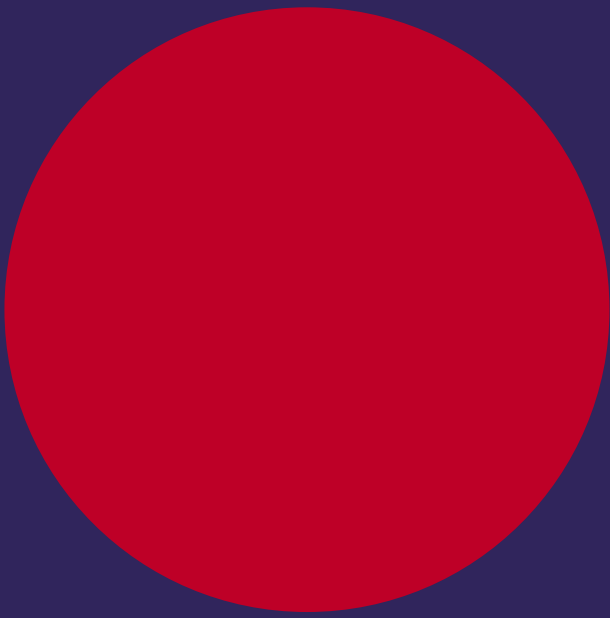
**Colophon**

*Editor:* Brightlands Venture Partners  
*Impact data:* The Upright Project  
*Design:* Zuiderlicht  
*Date:* October 2023

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