Investing in food and agriculture for health and planetary resilience

Summa report in the food system transformation series

Investing to solve global challenges

SUMMAEQUITY

About this report

Thank you for reading Summa's report on investing in food and agriculture for health and planetary resilience. This report aims to provide a comprehensive overview of the current state and prospects of the global food system. It places particular focus on overcoming challenges in the food and agriculture value chain and connecting these challenges to the investment opportunities we see within this space. We hope that this report not only serves as an informative resource but also encourages further discussion and collaboration among stakeholders.

Thanks to

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Images

Unsplash, Shutterstock

Disclaimer

The content draws on and references the latest insights in sustainability science with a focus on research on sustainable food and agriculture. This includes scientific work published by researchers at the Stockholm Resilience Centre, Stockholm University, but not exclusively. Planethon and Bloom provided support as knowledge partners on the writing of this report. Researchers in the food and agriculture industry were also interviewed during the preparation phase.

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Executive summary

Transforming food and agriculture for a sustainable future.

The global food and agriculture system, while historically successful in increasing food availability, now faces critical environmental and social challenges. Intensive production methods have led to environmental degradation, social inequities, and declining nutritional value, causing societal harm estimated at over USD 15 trillion[1] —surpassing the sector's contribution to global GDP. Recognizing the critical need for food system transformation, this report explores sustainable food and agriculture solutions to achieve a resilient and nutritious food system, while generating financial returns for our investors.

Transitioning to sustainable food and agriculture is essential for building a resilient food system that addresses food insecurity, the true cost of food, human health impacts, food waste, environmental degradation and climate change. Yet, this transition requires overcoming challenges such as developing new production methods, ensuring fair compensation for farmers and promoting healthier and more nutritious consumption.

Innovative solutions and technologies are emerging that not only address environmental concerns but also offer compelling investment opportunities to drive the necessary transformation.

Summa's investment strategy aligns with these opportunities, targeting areas including alternative proteins, NextGen agriculture, food waste reduction and the organic foods market. Investments in companies such as Nutris, Holdbart and Oda exemplify commitment to supporting practices that enhance both industry sustainability and environmental resilience. As the food and agriculture industry evolves, a system-based approach that anticipates and adapts to emerging challenges will be essential. Summa is well-positioned to lead in this transformation, ensuring that food and agriculture contributes to a more resilient and nutritious global food system.

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[1] Food System Economics Commission. (2024).

Building a resilient and nutritious global food system

Industrial agriculture propelled food security but must now also deliver more nutritious food within planetary boundaries.

The imperative to build a resilient and nutritious food system has never been greater, making strategic investment in sustainable food and agriculture a core priority for Summa. Over the past century, while the global food and agriculture sector has achieved transformative milestones in production and distribution, new challenges demand a renewed focus on long-term resilience.

Innovation, particularly technological advancements, innovative farming practices, and increased agricultural productivity, has been pivotal in ensuring food security for a growing global population. As the 20th century witnessed these transformative developments, they dramatically expanded our capacity to produce food, thereby laying the groundwork for the intricate global food system we rely on today.

To ensure that this system not only endures but flourishes, our collective efforts must now prioritize the development and implementation of solutions that guarantee nutritious food for all.

While the global food and agriculture sector has made substantial progress in addressing food-related challenges, it now faces a new set of 21st-century challenges, including climate change, resource depletion, and access to nutritious food. By advancing sustainable practices and innovative solutions, we aim to overcome these challenges to unlock the full potential of the food and agriculture sector. This will help ensure the sector meets global food demands in a sustainable manner, while also generating attractive returns.

Figure 01
The path to a resilient global food system: Historical gains and future demands

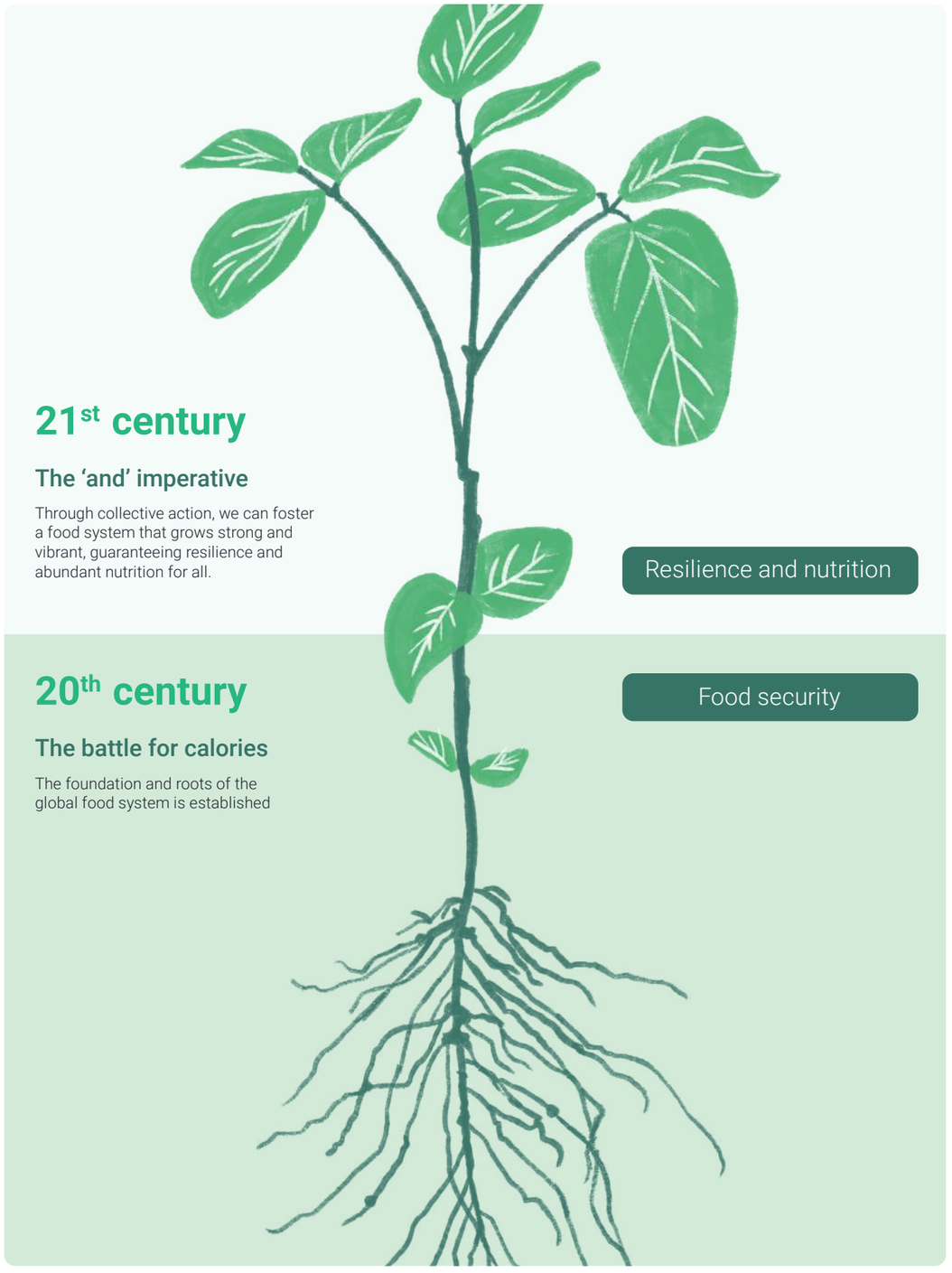


Figure 02
Investable market – Summa

Source: McKinsey & Company and Summa estimates. Alternative proteins includes processing, manufacturing and distribution stages. NextGen agriculture includes product from greenhouses, vertical farms and technology. Food waste includes parts of food spoilage and optimization through supply chain, packaging, harvesting, etc., but excludes consumer behavior.

Sustainable food and agriculture – an investment opportunity

The future state of the food and agriculture sector could result in ~2.5 bn saved lives, ~75% GHG emission reduction, and USD ~600 bn savings in societal costs and food waste.[2]

We estimate that the respective markets behind this transition could increase 1.5x by 2035 given the significant investments and advancements it would require. However, the current food and agriculture system faces numerous challenges. Recognizing these challenges and the scale of change necessary for a more sustainable and healthier future, Summa has identified areas across the food and agriculture value chain that informs our strategies within four investment areas: alternative proteins, NextGen agriculture, food waste, and the organic foods market. These themes are designed to generate attractive returns while maximizing impact within a 2035 horizon and are explored further in the following section.

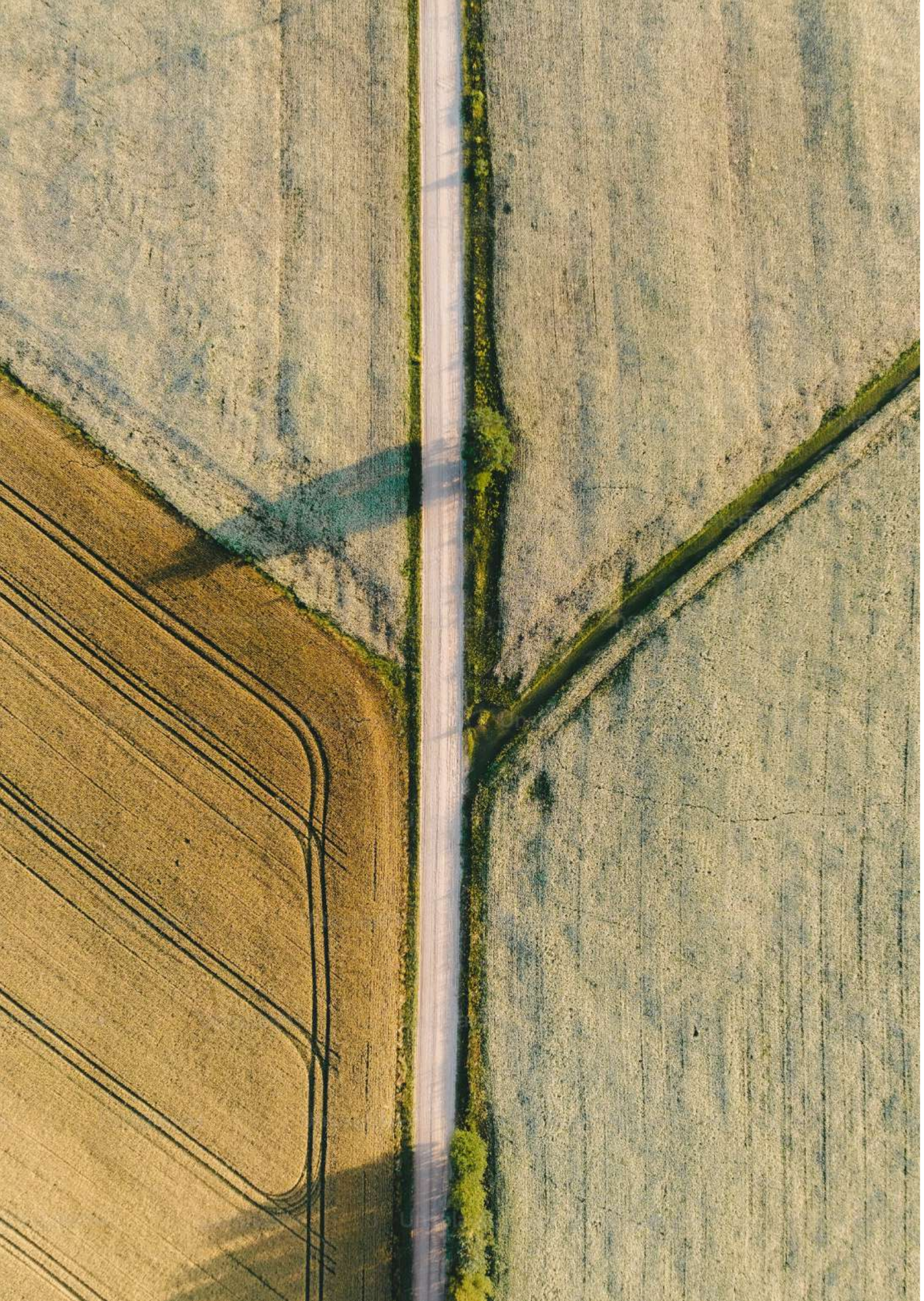
To realize this vision, we are committed to driving innovation in solutions that address critical food system challenges, such as reducing food waste and improving nutrition. We prioritize nutritious food production, environmental sustainability through regenerative agriculture, and farmer-centric solutions to foster a resilient food system.

The projected growth from 2025 to 2035 highlights a strong investment opportunity within the food and agriculture sector. It underscores its promising future driven by technological innovations and a heightened focus on resilience and sustainability. New production methods, particularly NextGen agriculture including controlled environment agriculture indicates a move towards more efficient production techniques that minimize waste and pesticide use while optimizing resource utilization. Additionally, significant investments in organic foods and alternative proteins to address emissions and nutritional deficiencies reflect the industry's commitment to sustainability and healthier diets, as well as improving productivity and farming practices.

Understanding the drivers behind these estimates and the changes needed requires a system-based approach. Summa is committed to driving systems change for long-term positive impact. Many global issues such as climate change, biodiversity loss, inequality, and civil unrest stem from systems that are functioning as they were designed to. To achieve different outcomes, these systems must be fundamentally transformed. The theory of change framework helps to conceptualize the systems we aim to change, define an improved future state, and take a structured approach to addressing key challenges.

With the right incentives, we can strive towards an ideal future state. This includes a more sustainable and resilient food and agriculture industry where resources are used more efficiently and more people have access to healthier, more nutritious food. Furthermore, we must reduce emissions and pressures on the terrestrial environment while actively restoring and regenerating the terrestrial environment.

2. McKinsey & Company analysis based on sources from United Nations, World Health Organization, Food and Agriculture Organization, The Rockefeller Foundation, World Economic Forum



A food system at a crossroad

Our food systems are fundamental to our way of life and the quality of our lives.

As global networks that produce and transform food, the food system influences every aspect of society, including our economy, environment, culture, and politics. These systems have contributed to the degradation of the very natural systems they rely on, creating a deeply interconnected problem of impacts and dependencies. To ensure the food system can continue to provide the food we all need, these issues must be addressed. The concept of planetary boundaries defines a safe operating space for humanity, including the planet's ability to produce food. Currently, our food systems are pushing these boundaries in the wrong direction. Summa aims to identify investments that contribute to shifting these boundaries towards a safe operating space, as illustrated in Figure 08 on planetary boundaries.

Figure 03
Food system challenges

Households

Almost half of the world's population lives in households linked to agrifood systems.[4]

Food waste

Food waste generates 8 – 10% of annual emissions.[5]

Planetary boundaries

Six out of the nine planetary boundaries have been transgressed; the global food system is the driver of five of these six breaches.[6]

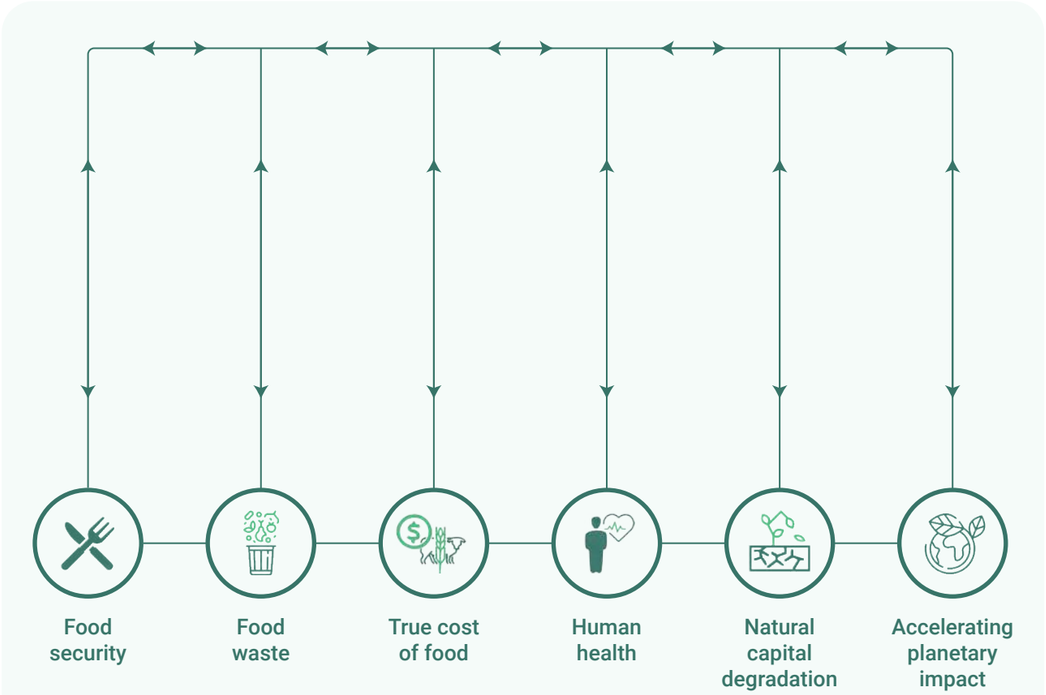
Biodiversity

The food system is the primary driver of biodiversity loss, with 86% of species at risk of extinction.[7]

3. World Food Programme. (n.d.). Food systems.
4. UN Framework Convention on Climate Change. (2024).
5. FAO of the UN. (2023).
6. Stockholm Resilience Centre. (n.d.).
7. UN Environment Programme. (2021). Our global food system is the primary driver of biodiversity loss.

Understanding the interconnected challenges in the global food and agriculture system

Figure 04
Six dimensions embody the scale of the "wicked problem" in the food and agriculture system, characterized by multiple interwoven complexities.



The need for food and agriculture companies and investors to adopt a "net positive" strategy is more urgent than ever, given the scale of the industry's challenges and the near-term consequences of inaction. These challenges include widespread soil degradation, significant biodiversity loss due to monoculture farming, the overuse of chemical fertilizers and pesticides leading to water pollution, and the contribution of livestock farming to emissions.

Addressing the challenges created by current practices within this system presents a unique opportunity for net positive societal impact and significant value creation. Summa envisions a future where every player in the food and agriculture system strives to jointly improve lives through effective partnerships that take full ownership of the sector's environmental and social externalities.

Under Summa's Sustainable Food investment theme, there are strong investment opportunities that go beyond optimizing the current broken system and instead drive transformational change by completely disrupting and rebuilding the food system into one that is more resilient. By investing in innovative sustainable food solutions, we can capture opportunities from growing market demand and regulatory shifts, creating a pathway for both impactful change and substantial financial value.

Six challenges demonstrate the scale and interconnectedness of the problems faced by the global food and agriculture system. The following section sheds light on these challenges and how they are connected.

Food insecurity and food waste

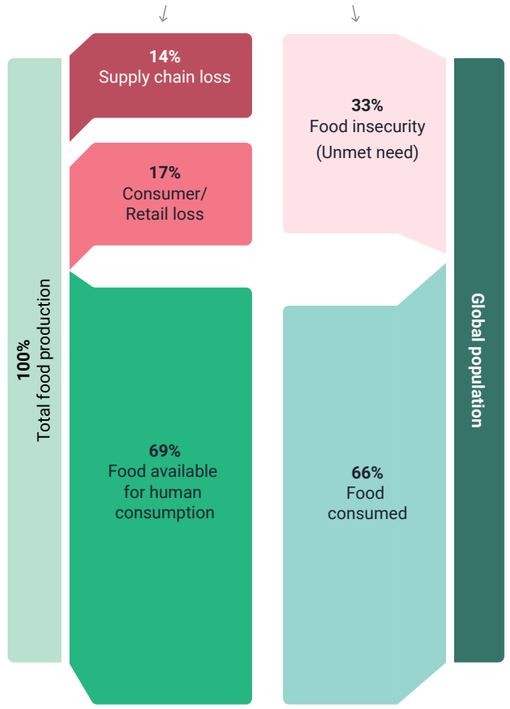
The intertwined crises of food insecurity and food waste represent a pressing global challenge with widespread environmental and societal implications. As a significant portion of the world's population grapples with insufficient access to nutritious food, the paradox of substantial food loss and waste across the supply chain is more evident.

Food insecurity: Although not a direct focus of our investments, Summa recognizes that food insecurity is a critical global challenge closely linked to other systemic challenges such as food waste, soil degradation, and climate impact. Currently, one third of the world's population struggles to access sufficient food.[8] This situation is expected to worsen due to inflationary pressures. By 2050, the world will need 60% more food, while protein demand may double as a result of dietary trends.[9]

Food waste: Globally, approximately a third of all food produced for human consumption is lost or wasted.[10] This global figure includes 14% of food lost between harvest and retail, and an estimated 17% wasted in households, food service, and grocery retail, highlighting critical inefficiencies in our current supply chain.[11] This level of wastage is particularly concerning, as it could feed 2 billion people.[12] While consumers are the primary source of food waste in developed nations, their expectations for sustainable products are rapidly increasing, with 73% of global consumers altering buying habits with the environment in mind.

As the diagram illustrates, there's a critical connection: while food insecurity affects one-third of the world's population, a staggering amount of food is lost or wasted. This discrepancy underscores the potential to alleviate food insecurity by addressing food waste.

Figure 05
The discrepancy between food insecurity and food waste.[13]



Understanding the food system's inefficiency: A visual breakdown
The diagram illustrates the critical outcomes of food loss and waste within our global food system. It shows the journey of food from total production, through various stages of loss, to the final amount available for human consumption.

The challenge of unmet need: The 33% food insecurity (unmet need), highlights a significant issue: the food available after losses and waste is simply not enough to meet the nutritional requirements of the entire global population. This deficit directly contributes to a substantial portion of people experiencing food insecurity. It's crucial to understand that this isn't a physical loss of food, but rather a representation of the widespread unmet demand for food.

The potential of reducing waste: A stark contrast is drawn between the immense volume of food wasted and the number of people who could be fed if this waste was minimized. The diagram implicitly demonstrates that the food currently lost or wasted could bridge the nutritional gap for the food-insecure population, directly correlating to the estimate that wasted food could feed 2 billion people.

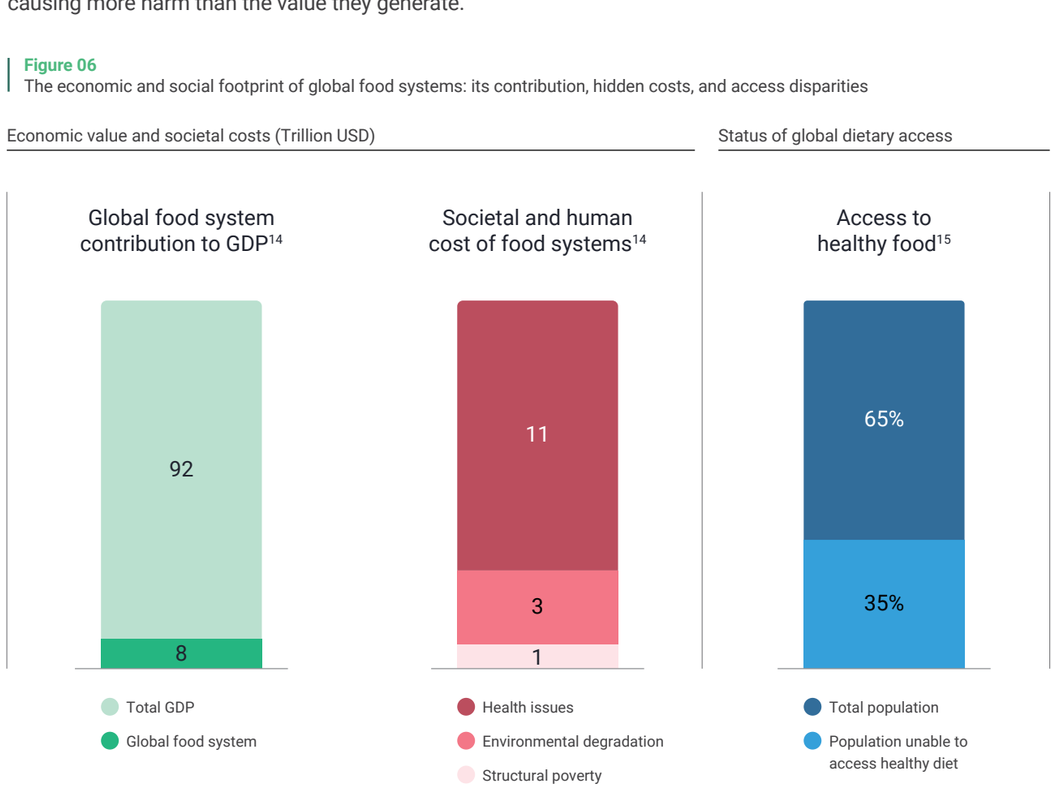
8. World Bank. (n.d.). Food Prices for Nutrition DataHub
9. United Nations. (2018). Feeding the world sustainably.
10. European Commission. (n.d.). Food safety: Food waste.
11. Food and Agriculture Organization of the United Nations. (n.d.). Capacity development for food loss and waste reduction.
12. Fair Share. (n.d.). End Food Waste.
13. FAO (2024). Food Loss and Food Waste Database. UN Environment Programme (UNEP). (2024). Food Waste Index Report 2024. FAO, IFAD, UNICEF, WFP, & WHO. (2024). The State of Food Security and Nutrition in the World 2024.

The true cost of food and human health

While food systems have helped meet the needs of a growing population, it has come at a significant cost. Environmental and social damages such as biodiversity loss, climate change and health-related challenges, has a societal cost of USD 15 trillion per year, which is about 12 percent of GDP in 2020.[14] This amount surpasses the entire sector's USD 8 trillion contribution of to the global Gross Domestic Product (GDP), meaning that in essence, our food systems are causing more harm than the value they generate.

The societal costs break down into three main categories: health-related impacts constitute the largest portion at USD 11 trillion, while environmental degradation accounts for USD 3 trillion, which includes the costs of biodiversity loss as well as land, water, and air pollution. The remaining costs stem from structural poverty linked to food accessibility and affordability, highlighting the deep interconnections between environmental sustainability and social equity in our food system.

Figure 06
The economic and social footprint of global food systems: its contribution, hidden costs, and access disparities



True cost of food: The true cost of food goes beyond market prices, including negative externalities that impact human health, the environment, and livelihoods. For example, production of cheap, processed foods often prioritizes quantity over quality, leading to diets high in sugars, unhealthy fats, and processed ingredients. This production, which can involve intensive resource utilization and contribute to significant environmental degradation through practices like excessive water usage, soil depletion, and increased emissions, often yields nutritionally deficient products. These nutritionally deficient products, in turn, contribute to the increased prevalence of chronic diseases such as obesity, type 2 diabetes, and cardiovascular disease.

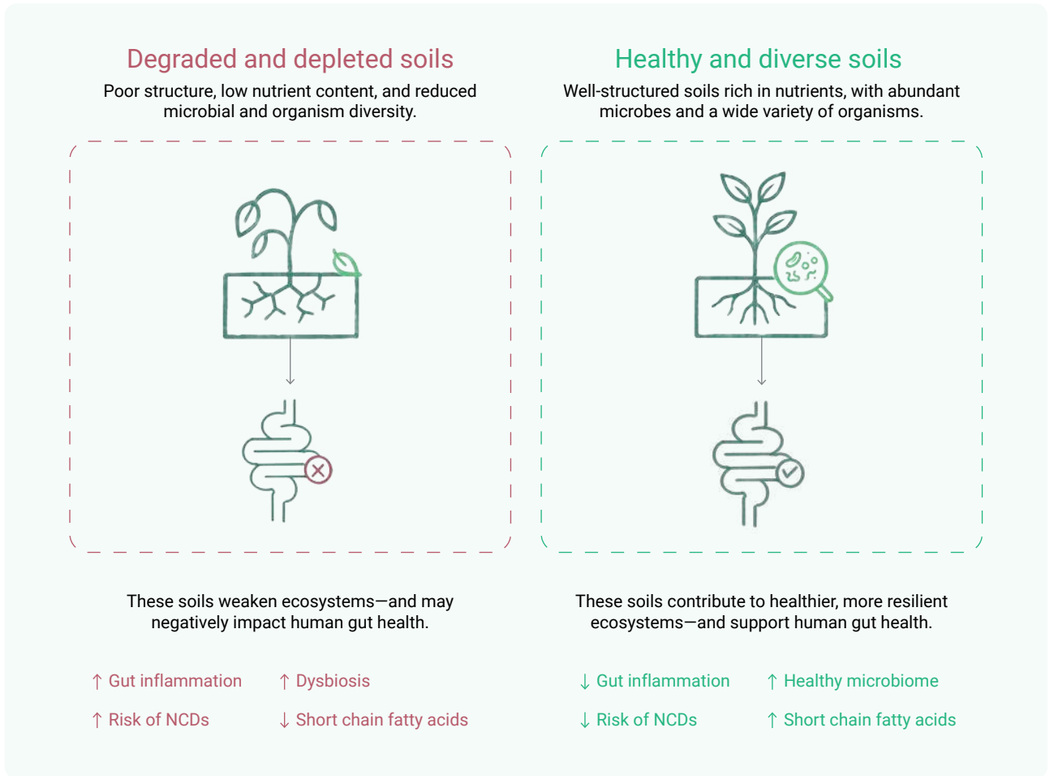
The resulting negative externalities cost the US economy around USD 2 trillion per year (related to the impact on human health, environment, biodiversity, livelihoods, and subsidies) in addition to the actual USD 1 trillion in food expenditure.[16] From creation to consumption, this price includes the cost of production, processing, wholesale, and retail. For the world's millions of farmers, particularly smallholders, the true cost often translates to inadequate compensation for their labor and investments, leading to financial instability and preventing their ability to adopt sustainable practices. Fair market access and pricing are crucial for their economic viability.

14. Food System Economics Commission. (2024). The economics of the food system transformation.
15. FAO, IFAD, UNICEF, WFP, & WHO. (2024). The State of Food Security and Nutrition in the World 2024.
16. The Rockefeller Foundation. (2024). Financing for regenerative agriculture.

Human health: The current food system contributes to the global health crisis. A 30% increase in daily caloric intake coupled with a rise in unhealthy food consumption, has led to higher rates of obesity and diseases such as cardiovascular disease, cancer, and diabetes. These conditions now account for more than one in five adult deaths globally.[17] Underlying this crisis is the often-overlooked foundation of our food system: soil health. The intricate relationship between soil quality and the nutritional value of our food is critical. Degradation of the soil microbiome, the vital community of microbes that support plant nutrient uptake, ultimately impacts crop health and the nutritional quality of our food.[18] This disruption not only leads to nutritional deficiencies but also affects our gut health, as the quality of our food directly influences our microbiome.

The result is a significant decline in the nutritional density of foods; for example, fruits and vegetables like apples and tomatoes have lost 25-50% or more of their nutritional value over the past 70 years, with substantial decreases in essential minerals like iron and magnesium.[19] With over two billion people globally suffering from micronutrient deficiencies and ~35% of the population cannot afford a healthy diet[20], the connection between depleted soils, compromised food quality, and human health is undeniable.

Figure 07
Healthier soils lead to healthier guts



Together, these challenges create a vicious cycle. As the global population grows by another 2 billion over the next 30 years, the already carbon-intensive food and agriculture sector will face rising pressure to increase yield unsustainably, further driving environmental degradation. Current efforts to meet growing demand exacerbate the environmental and social challenges that will make feeding the global population even more difficult in the future. Building a sustainable and resilient food future will therefore rely on responsible practices that ensure the long-term health of ecosystems and the communities that depend on them, while also providing worldwide access to nutritious and balanced diets.

17. GBD 2017 Diet Collaborators. (2019). Health effects of dietary risks in 195 countries, 1990–2017
18. Pozza, L. E., & Field, D. J. (2020). The science of soil security and food security.
19. Bhardwaj, R. L., et al. (2024). An alarming decline in the nutritional quality of foods: The biggest challenge for future generations' health.
20. World Bank. (n.d.). Food Prices for Nutrition DataHub: Global statistics on the cost and affordability of healthy diets.

Natural capital degradation and accelerating planetary boundaries

The increasing strain on our planet's natural resources and the transgression of critical environmental limits poses significant threats to global food security and overall societal well-being. Understanding these intertwined issues is crucial for addressing the current global crises, particularly within the context of our food systems.

Natural capital degradation: Agricultural activities occupy roughly 50% of habitable land, leading to natural capital degradation, including ecosystem destruction, soil nutrient depletion and biodiversity loss.[21,22]As with the connection between soil and gut health, the relationship between land-system changes and agricultural practices are undeniable - and central to agricultural production is the health of our soils. In fact, soil is fundamental to agriculture, providing the necessary nutrients and water for crop production. An overwhelming 98.8% of our food depends on the health of our soils.[23] In the European Union, only 30-40% of soils remain healthy due to the widespread impact of unsustainable land management practices.[24] While yields have increased with the use of artificial pesticides, fertilizers, and other chemicals, these substances are disrupting the delicate balance of soil life. For farmers, maintaining soil health and biodiversity is essential for long-term productivity and yield stability. Increasing yield per hectare through sustainable methods is crucial for meeting growing food demand while minimizing environmental impact.

Accelerating planetary impact: The food system plays a major role in pushing the Earth beyond its planetary boundaries. These boundaries define the safe operating space for human activities, ensuring the stability and resilience of Earth's systems.[25] The overreach of the planetary boundaries is not just an environmental concern but also a socio-economic one. Global climate, economic, and political crises have exacerbated food insecurity, making it increasingly difficult for many people to afford basic nutrition.[26] One of these boundaries include climate change, where food and agriculture accounts for approximately 34% of global greenhouse gas (GHG) emissions.[27] This, in turn, threatens agricultural productivity through rising temperatures and extreme weather events. Climate change poses a significant threat to yield stability, especially for smallholder farmers who are often most vulnerable to extreme weather events. In addition, the planetary boundary for freshwater use has already been crossed, with over 70% of freshwater use going to agriculture.[28] Investing in climate change adaptation strategies, such as drought-resistant crops and improved water management, is essential for ensuring their livelihoods and food security.

The intricate connections between these areas reveal a system where challenges amplify one another. However, this interconnectedness also presents a significant opportunity: addressing one problem can create cascading positive effects across the entire system. By strategically intervening in key areas, such as reducing food waste or improving soil health, we can simultaneously reduce healthcare burdens or mitigate environmental damage. We will now explore how that can be achieved.

Summa's commitment to the planetary boundaries

As six of nine planetary boundaries have been breached, we are quickly approaching irreversible tipping points.

At Summa, we view planetary boundaries as a guiding framework for sustainable growth. In our latest planetary boundaries report, we showcase how a systemic approach to targeted investments and portfolio management can push the boundaries back into safe operating spaces.

Read the report here

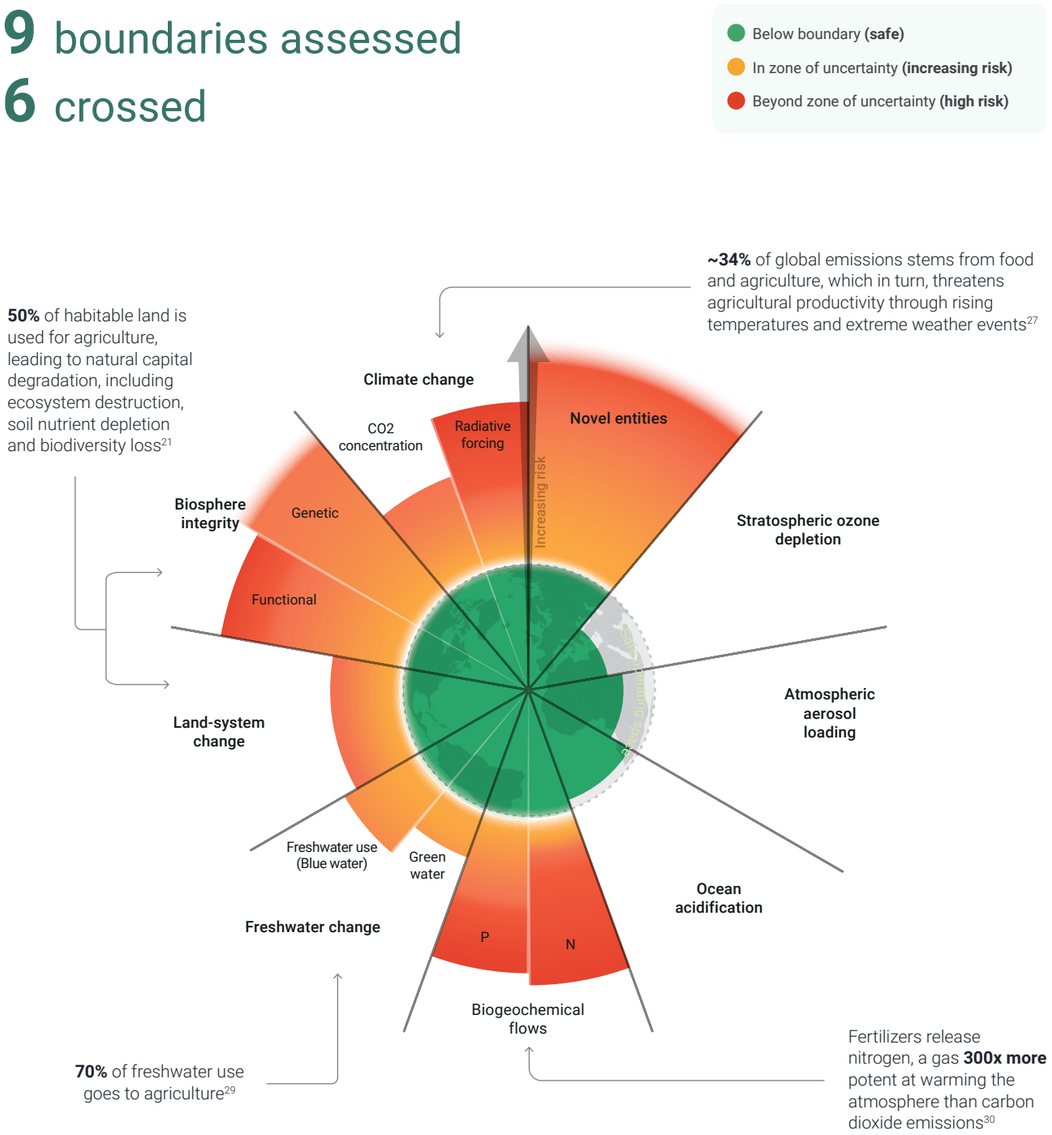
1. Investing to solve global challenges

2. Future-proofing companies

3. Advancing knowledge

21. Ritchie, H., & Roser, M. (2019). Land use. Our World in Data
22. IPBES (2019) Summary for policymakers of the global assessment report on biodiversity and ecosystem services.
23. Kopittke, P. M., et al. (2019). Soil and the intensification of agriculture for global food security.
24. Ferreira, C. S. S., et al. (2022). Soil degradation in the European Mediterranean region: Processes, status and consequences.

Figure 08
Food system impacts on the planetary boundaries



Source: Stockholm Resilience Centre.

25. Stockholm Resilience Centre. (n.d.). Planetary boundaries.
26. World Food Programme. (n.d.). Global hunger crisis.
27. Crippa, M., et al. (2021). Food systems are responsible for a third of global anthropogenic GHG emissions.
28. Wang-Erlandsson, L., et al. (2022). A planetary boundary for green water.
29. Ritchie, H., & Roser, M. (n.d.). Water Use and Stress. Our World in Data.
30. Environmental Protection Agency. (2023). Understanding Global Warming Potentials.

System change: Summa's vision for an ideal food and agriculture system is one that transforms critical challenges

Summa applies systems thinking to solve global challenges while identifying opportunities that deliver strong financial returns and long-term positive impact.

The systems change approach addresses the complex, interdependent challenges embedded within the entire food and agriculture system—recognizing that reducing carbon emissions and negative effects on nature systems requires coordinated transformation across production, distribution, consumption, and policy structures. It recognizes the need to shift from current practices to ensure that yield increases are sustainable, and that growth does not come at the cost of farmers, ecosystems, or the natural capital essential for ongoing food production.

Sustainable food and agriculture, as highlighted at the outset, plays an important role in reducing pressure on the food system and finding new pathways for sustainable growth. It has the potential to meet humanity's needs without undermining the functioning and wellbeing of the biosphere. Achieving this kind of transformative change is about achieving net positive societal impact while driving value creation. Ultimately, the aim of Summa's investments in Sustainable Food is to pursue solutions that go beyond optimizing current challenges, aiming instead for transformational outcomes by disrupting and reinventing parts of the food system to make it more resilient and nutritious.

The food future we want for farmers, the planet, and consumers:

1. **A sustainable and resilient food production:** A world where responsible practices protect the long-term health of ecosystems and the communities that depend on them, enabling farmers to produce food in a more sustainable and profitable way.
2. **A food system that regenerates and operates within planetary boundaries:** This system transcends mere sustainability to become a regenerative force for the planet. Every actor and activity throughout the entire food value chain will function to actively restore and enhance ecological health.
3. **To provide more nutritious food with no waste:** Ultimately, consumers can access more nutritious, lower-carbon food that meet global food needs.

By integrating this systems-based approach, Summa is well-positioned to drive meaningful change and support a sustainable future for the food and agriculture sectors. Sustainable practices contribute to specific investment themes where Summa aims to generate significant impact in line with EU commitments, including the principles of the Common Agricultural Policy (CAP).[31] This includes investments that support farmers, improve agricultural productivity, and address climate change while promoting the sustainable management of natural resources.

To reach this ambition, the proposed systems change for the food and agriculture sector indicates a focus to develop investment understanding and opportunities within identified priorities. Specifically, Summa's investment strategy focusses on profitable opportunities within alternative proteins, NextGen agriculture, food waste and the organic foods market. The solutions demonstrate contributions across one or more of the six critical investment challenges in the food and agriculture value chain, addressing specific challenges inherent in the transition towards sustainable food and agriculture systems.

31. European Commission. (n.d.). The common agricultural policy at a glance.

76%

Of diet-related land-use can be reduced by transitioning to plant-based diets[32]

50%

Increase in microbial biomass through regenerative practices, boosting soil biodiversity[33]

Figure 09
Theory of change – a framework to conceptualize the systems we aim to transform, envision their future state, and adopt a structured approach to tackling challenges.

32. Doughty, R. et al. (2022). How do dietary shifts affect land use and biodiversity? A systematic review.
33. Basche, A. et al. (2023). Soil health metrics and their relationship to soil microbial community in a long-term agricultural experiment in the US Midwest.

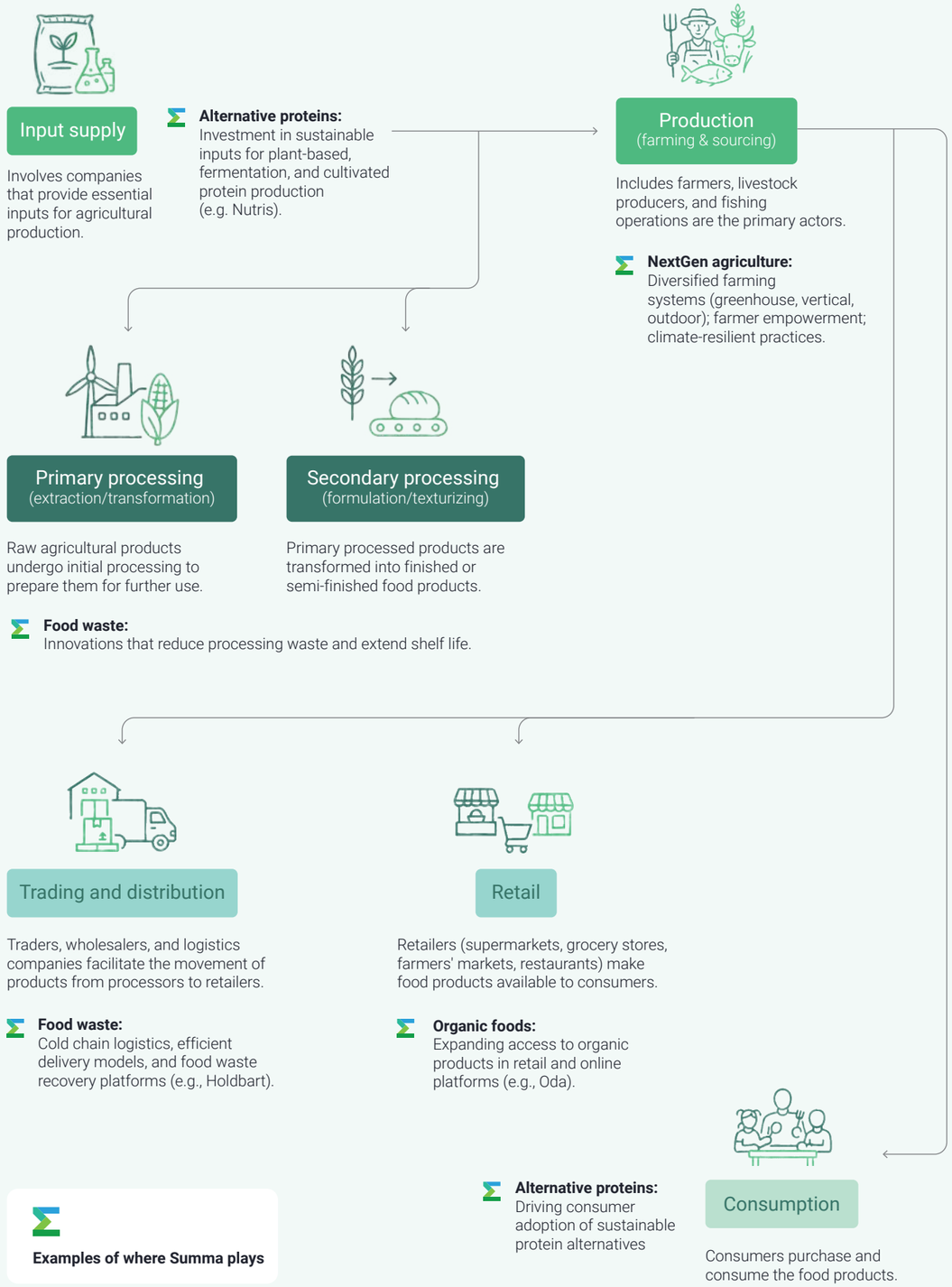
Reimagining the food system: the path that brought here, is not the one to lead us forward

As food systems continue to push the limits of planetary boundaries, it's essential to examine the structure of the food and agriculture value chain. This chain connects input supply to consumer consumption through a series of interconnected stages: production, processing, distribution, and retail. Each stage involves a dynamic flow of information and products, forming a complex network that shapes food availability and access. While the current value chain plays a critical role in feeding the global population, it often operates in a linear way that contributes to resource depletion and environmental degradation. Therefore, interventions aimed at shifting towards a sustainable, circular model within this value chain are vital for creating safe operating space for humanity.

At Summa, we see investment opportunities across all stages of the food and agriculture value chain. Since production forms the foundation for all other activities, we will focus on solutions within this key area. To address the interconnected challenges of the current food and agriculture system, it is crucial to change to more resilient and sustainable agricultural methods that can bring agriculture back within planetary boundaries. This section explores potential solutions, with a focus on regenerative agriculture as a way to improve production practices, and the role of collaboration across the value chain in accelerating this transition.

The combination of regenerative and plant-based food systems offers significant transformative potential. The value lies in their synergistic, mutually reinforcing effects. Regenerative agriculture refers to a system of farming principles and practices that aims to reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity. This approach to agriculture presents a promising approach to many of the many of the system's interlinked issues, structured around nine core principles that restore ecosystem health while maintaining agricultural productivity.

Figure 10
The food and agriculture value chain connect input supply to consumer consumption. Each stage — production, processing, distribution, and retail — is interconnected with information and product flow driving the system



The new system envisioned

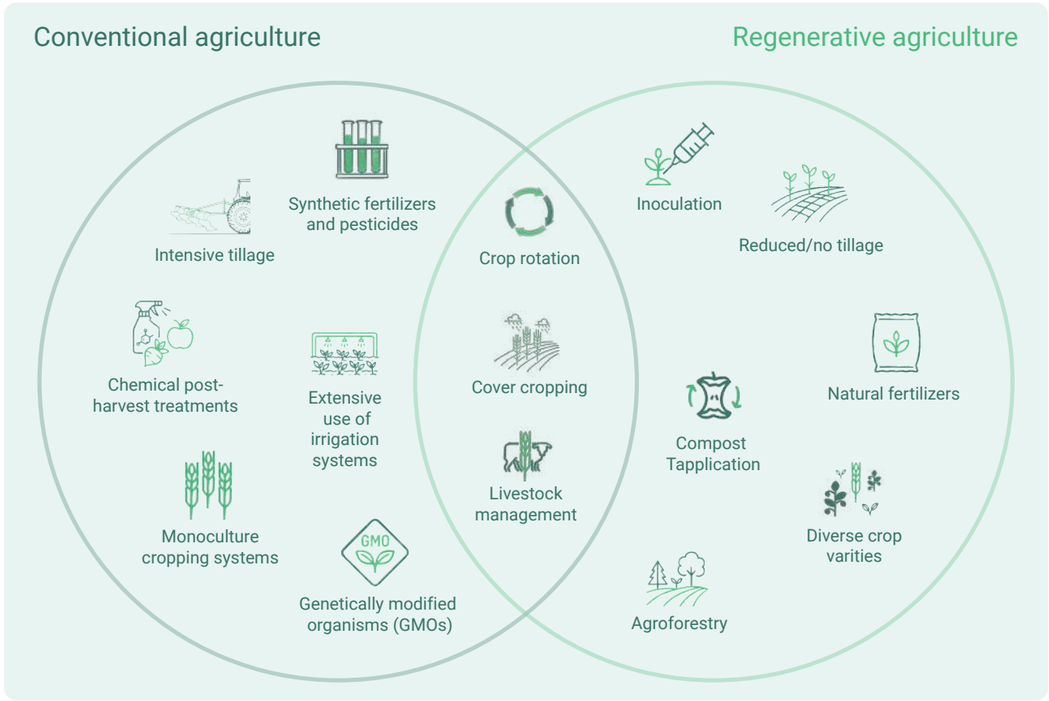
Although there is no single, universally accepted definition regenerative agriculture, most interpretations emphasize farming practices that restore and maintains ecosystem health, especially soil health.

This approach naturally complements plant-based diets. Healthy, regeneratively farmed soils can produce more nutrient-dense crops, enhancing the nutritional value and appeal of plant-based foods. In turn, growing consumer demand for sustainably produced plant-based options can create economic incentives for farmers to adopt regenerative practices. As plant-based diets become more prevalent, the demand for land and resources to grow animal feed (often produced using conventional, resource-intensive methods) declines. This opens the door to transitioning that land towards regenerative practices for human food production or ecological restoration, thereby fostering a more sustainable and resilient food system. This contrasts sharply with conventional agriculture's reliance on intensive tillage, monoculture, synthetic inputs, and extensive irrigation, which often prioritize immediate yields over long-term ecological health, making the shift towards regenerative practices even more critical.

While the principles of regenerative agriculture can influence the entire food and agriculture value chain, their most direct and measurable impacts are currently seen in the production phase. Farmers adopt regenerative practices such as cover cropping and rotational grazing, while input companies provide seeds, biofertilizers, and animal nutrition tailored to these systems. The transformation from traditional farming to regenerative farming requires sequencing where these practices are introduced.

Traders help ensure market access and fair pricing for regeneratively produced goods, while food companies and retailers source and promote these products to consumers. While consumers don't directly implement these agricultural practices, their role is crucial in driving demand. By choosing products from regenerative agriculture, consumers indirectly influence the entire system, incentivizing farmers and companies to adopt more sustainable methods. This highlights the interconnectedness of all stages, ensuring that regenerative agriculture contributes to sustainability from soil to plate.

Figure 11
Where conventional and regenerative agriculture meet and diverge



Nutris

CASE STUDY

Transformation from conventional to regenerative farming

Nutris demonstrates how regenerative agriculture can be implemented on a large scale, offering a cost-neutral transition for farmers. Their approach begins with treating seeds with beneficial microorganisms and nutrients to promote healthy growth from the start. Throughout the growing season, they use precisely timed applications of biostimulants and micronutrients, working alongside existing farming practices to gradually reduce reliance on synthetic inputs. Importantly, Nutris recognizes that changing farming practices takes time, so they offer equipment modifications to help farmers slowly reduce tillage.

In a 1,000-hectare project in Croatia involving 67 farmers, Nutris showcased the effectiveness of their methods. Each farm received a tailored plan, considering their specific soil conditions and equipment. After just one year, the results were significant: a 30% reduction in synthetic fertilizer use while maintaining crop yields. Soil health improved, with increased organic matter and water retention. This project proves that regenerative agriculture can be adopted at a commercial scale, benefiting both the environment and farm profitability.

Farming for the future: Solving challenges in the value chain through regenerative farming

= How the challenges can be addressed using regenerative agriculture as a practical example

Investment opportunities in food and agriculture are assessed not only for their potential to deliver competitive financial returns, but also for their ability to address key food system challenges. The challenges within the food and agriculture system also serve as a guide to where the best investment opportunities lie across the value chain. To illustrate how these challenges can be approached holistically, the next section will explore these challenges using regenerative agriculture as a practical example. This approach highlights the interconnectedness of ecological and economic systems.

Addressing food waste by optimizing supply chain efficiency and minimizing food loss
Minimizing the staggering 30 - 40% food loss across the supply chain requires a multifaceted approach.[34] Disruptive business models are emerging to address food loss and waste, including innovations in sourcing, alternative uses, packaging, technological intervention, and responsible elimination. Improved post-harvest technologies, including advanced packaging and cold chain logistics, are crucial for preserving food quality during transportation and storage. Supporting innovative food waste reduction solutions, such as food recovery and redistribution platforms, can divert edible food from landfills. Holdbart, a Summa portfolio company, exemplifies this approach as Norway's leading retailer of surplus food. It saves products that suppliers cannot sell through conventional channels, such as discontinued, overstocked, near-expiry, or mislabeled items, and sells them through physical stores and online. Advanced forecasting of supply and demand, powered by AI, can also help better match production with consumption, optimizing resource use and minimizing waste.

Addressing food waste, healthy soils, enhanced through regenerative practices, lead to more robust crops that are less susceptible to spoilage during transport and storage. Improved water regulation and nutrient cycling reduce crop vulnerability to stress, minimizing pre-harvest losses. While not directly related to waste in the supply chain itself, the increased resilience of produce due to regenerative practices can reduce losses during transport and storage.

Addressing the true cost of food by internalizing negative externalities and ensuring a fair, sustainable value chain
The true cost of food, encompassing environmental and social externalities, demands a shift towards sustainable value chains. Investments should focus on technologies that quantify these impacts, enabling informed decision-making and accountability. Supporting certification and labeling systems that reflect the true cost will empower consumers to make responsible choices. By promoting transparent supply chains and fair pricing mechanisms, we can ensure that farmers, particularly smallholders, receive adequate compensation, fostering economic viability and sustainable practices.

Regenerative agriculture addresses the negative externalities of conventional food production by prioritizing soil health, biodiversity, and ecosystem function. Through practices like cover cropping, reduced tillage, and diverse rotations, it minimizes environmental damage by decreasing chemical runoff, enhancing carbon sequestration, and promoting natural pest control. This leads to healthier food with reduced chemical exposure, benefiting human health. At the same time, it supports farmer livelihoods by lowering input costs, improving long-term soil fertility and creating access to premium markets that value sustainable practices. This helps build a more economically viable and environmentally sustainable food system. A projected 15-25% return on investment over ten years for scaled transitions from conventional agriculture highlights the significant long-term economic benefits.[35] While the transition to regenerative practices requires upfront financial

34. European Commission. (n.d.). Food waste.
35. BCG (2022). The untapped climate opportunity in alternative proteins.

and educational investments, a strategic approach can potentially make it a net-zero investment. The long-term rewards of this transformation include cost reductions and increased operational efficiency resulting in an expected 70 – 120% higher profitability,[36] as well as a more robust and healthier ecosystem.

Addressing human health by improving nutritional quality and soil health through more sustainable agricultural practices

Addressing the global health crisis linked to nutritional deficiencies requires a focus on improving soil health and the nutritional density of food. Investments in regenerative agriculture practices, such as cover cropping and reduced tillage, can restore soil microbiomes and enhance nutrient cycling. Developing innovative food processing techniques can also preserve and enhance nutritional value. By supporting organic agriculture and the use of biopesticides and biofertilizers, we can cultivate healthier food systems that combat diet-related diseases and improve overall human well-being. Consumer education on the critical link between soil health and human health is also vital as a healthy soil microbiome directly impacts the human gut microbiome. The diverse microbial communities in healthy soil contribute to a diverse and robust gut microbiome when we consume plants grown in that soil, leading to improved digestion, immune function, and overall health.

Regenerative agriculture improves nutritional quality by enhancing nutrient uptake by plants, leading to more nutritious food. Practices such as fostering healthy soil food web, increased soil microbial diversity, and organic matter content improve the bioavailability of essential minerals and vitamins. By focusing on practices that improve the soil microbiome, the soil is better able to provide plants with the required nutrients. Reducing the use of synthetic pesticides and fertilizers minimizes exposure to harmful chemicals, contributing to improved human health. Enhanced soil health supports the growth of diverse and resilient crops, which can improve dietary diversity and nutritional intake. This improved soil health also contributes to a healthier gut microbiome in humans, as plants grown in these soils contain more beneficial microbes and prebiotics that support gut health.

Addressing natural capital degradation by reversing soil depletion and enhancing resource and energy efficiency in crop production

To reverse the degradation of natural capital, particularly soil depletion and ecosystem destruction, investments must promote sustainable land management practices. Agroforestry, cover cropping, and other regenerative techniques can restore soil health and enhance biodiversity. Critically, enhancing resource- and energy efficiency in crop production is essential. This includes optimizing the use of water, fertilizers, and pesticides, which directly reduces the strain on natural capital and minimizes pollution. Implementing technologies for precision agriculture and soil health monitoring enables farmers to achieve this optimization, leading to a smaller environmental footprint per unit of food produced. Supporting the restoration of degraded lands and incentivizing farmers to adopt sustainable practices are crucial for long-term productivity and ecosystem resilience. By prioritizing investments in natural capital restoration and resource efficiency, we can contribute to more sustainable food systems.

Regenerative agriculture addresses natural capital degradation by focusing on rebuilding soil organic matter and biodiversity. For example, implementing agroforestry systems integrates trees and shrubs into farming landscapes, enhancing carbon sequestration, improving water infiltration, and providing habitat for diverse species. Practices such as no-till farming and cover cropping reduce soil disturbance, helping to prevent erosion and nutrient loss while increasing the soil's ability to retain water and nutrients. Regenerative agriculture also lowers reliance on synthetic fertilizers and pesticides, which reduces pollution and improves resource efficiency. Improved water regulation through enhanced soil structure and organic matter content also reduces the need for excessive irrigation, conserving vital water resources. Regenerative systems often rely on natural pest control and nutrient cycling, reducing the need for synthetic inputs and minimizing pollution. This restoration of natural capital not only improves ecosystem health but also enhances long-term productivity and resilience of agricultural systems, ensuring a more sustainable food supply.

Addressing planetary impact by building climate-resilient and water-conscious food systems

Addressing the impact the food system has on planetary boundaries, including climate change, requires a strategic shift towards low-emission and climate-resilient practices. Investing in low-emission protein sources such as plant-based and cultivated meat, can significantly reduce GHG emissions. Supporting the adoption of renewable energy and energy-efficient technologies in agriculture is also key to lowering the sector's carbon footprint. Promoting carbon sequestration in agricultural soils can further contribute to climate change mitigation. In addition, developing climate-resilient crop varieties and water-efficient irrigation systems will strengthen the sector's ability to withstand extreme weather events while reducing pressure on freshwater resources. By prioritizing investments in climate-smart agriculture and water-efficient practices, we can build food systems that are both sustainable and resilient.

36. BCG (2022). The untapped climate opportunity in alternative proteins.

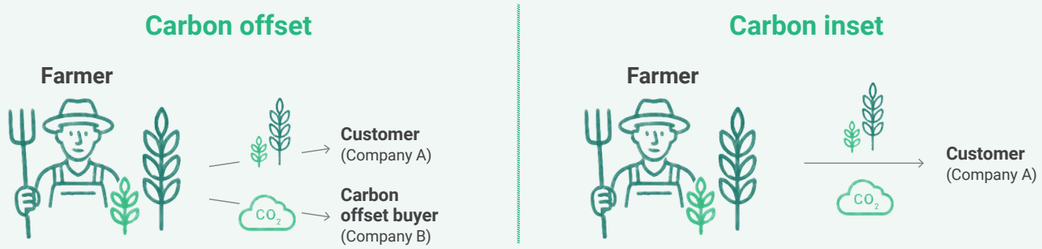
A key benefit of regenerative agriculture is its potential to strengthen climate resilience. As extreme weather events and increased volatility become more common, it's essential that agricultural systems can withstand these shocks. Specifically, regenerative practices play a crucial role in mitigating climate change by sequestering carbon directly within the soil, significantly reducing GHG emissions. These practices have the potential to sequester 2-5 tonnes of carbon per hectare annually, while also enhancing long-term soil fertility.[37] The increased soil organic matter also improves water retention and reduces the risk of soil erosion, which can otherwise release stored carbon back into the atmosphere. This approach aligns with carbon insetting, a strategy in which companies reduce their carbon emissions and biodiversity impact within their operations and supply chains, rather than offsetting them through external projects.[38] This critical distinction means that companies are directly addressing the climate and biodiversity challenges within their own value chains.

In the agricultural sector, farmers can effectively leverage carbon insetting by adopting regenerative practices that directly reduce emissions or sequester carbon. The EU recognizes several farming methods, including organic farming and integrated pest management, as viable pathways toward a sustainable and resilient agricultural sector.[39] Among these, regenerative agriculture stands out as a holistic approach that supports biodiversity, soil health, and climate resilience, while providing economic benefits for farmers. Critically, regenerative practices align with the principles of carbon insetting, allowing companies to directly reduce their carbon footprint within their agricultural supply chains by supporting farmers in sequestering carbon in soils and reducing on-farm emissions. This approach ensures that climate action is embedded within the value chain, rather than relying on external offsets.

Navigate to the next page to discover the planetary opportunity offered by regenerative agriculture and sustainable food systems.

DEEP DIVE

Figure 12
Carbon offsetting vs. insetting



With carbon offsetting, farmers deliver wheat to one party (Company A) then deliver the quantified emissions reduction to another entity (Company B). But under carbon inset, farmers deliver both the wheat and the emissions reduction to the same party (Company A).

Carbon insetting represents a strategic shift from traditional carbon offsetting, focusing on reducing emissions directly within a company's own supply chain, rather than investing in external projects. In the context of regenerative agriculture, this means empowering farmers to adopt practices that sequester carbon and reduce emissions at the source.

Imagine a food company sourcing wheat. Instead of buying carbon credits from a distant forest preservation project, they collaborate with their wheat farmers to implement regenerative practices like cover cropping, reduced tillage, or rotational grazing. These methods enhance soil health, increase carbon storage, and improve water retention, directly mitigating the company's environmental impact where it matters most: within its own agricultural supply chain.

This approach offers several advantages. It provides greater transparency, as the company has direct oversight of the emission reduction efforts. It also fosters stronger relationships with farmers, promoting long-term sustainability and resilience in the agricultural sector. Insetting aligns with the holistic goals of regenerative agriculture, addressing climate change as well as biodiversity loss and soil degradation. By integrating carbon reduction into the core of agricultural production, companies can cultivate a more sustainable and resilient food system from the ground up.

37. ECAF. (2021). Conservation Agriculture: Making Climate Change Mitigation and Adaptation Real in Europe.
38. Ebersold, F., et al. (2023). Carbon insetting as a measure to raise supply chain energy efficiency potentials: Opportunities and challenges.
39. European Commission. (n.d.). Sustainable agricultural practices and methods.

Regenerative agriculture and sustainable food systems: The planetary opportunity

Regenerative agriculture offers a holistic framework for building a healthier and more sustainable future for farming, while also generating significant long-term financial value. By adopting practices such as cover cropping, reduced tillage, and diverse crop rotations, farmers can improve soil health, water management, and sequester carbon. These practices also support biodiversity, promote natural pest control, and reduce reliance on synthetic inputs, contributing to cleaner water and air and a more resilient agricultural landscape. In addition, there is a vital link between soil and human health, in particular gut health. Regenerative practices that enhance soil biodiversity directly contribute to healthier gut microbiomes in humans, as plants grown in these soils are richer in beneficial microbes and prebiotics. However, realizing the full potential of these benefits requires substantial investment and a coordinated effort across sectors.

The interconnectedness of Earth's systems means that positive action in one planetary boundary can create a ripple effect, contributing to the health of others, turning challenges into opportunities. The planetary boundaries are intricately linked, forming a complex web where stress on one boundary intensifies pressure on others. This transformative approach to food systems aligns perfectly with the vision of a food future that not only respects but actively restores planetary boundaries. It envisions a global food value chain where every participant contributes to enhancing ecological health, moving beyond simple sustainability to become a powerful regenerative force for the planet.

The global transition to regenerative agriculture presents a significant investment opportunity. Estimates suggest that the markets supporting this transition could see substantial growth, potentially increasing by threefold by 2035. Underpinning this market opportunity is the significant estimated annual investment of USD 200-450 billion required for at least the next decade to achieve widespread regenerative agriculture. With current funding levels only meeting approximately 10% of this demand, a substantial gap exists, representing a compelling opportunity for both public and private sector investors.[40] The scale of investment will therefore require a concerted effort from both public and private sectors. Governments will need to create enabling policy environments, repurpose agricultural subsidies, and invest in research and infrastructure. Private sector investment will be crucial in scaling up sustainable technologies, developing new business models, and financing the transition in agricultural practices.

Although the transition to regenerative practices will require initial financial and educational investments in the first few years before productivity and profitability are fully realized, it's important to note that a well-executed shift can potentially be achieved with no net investment. The cost reductions from eliminating chemical inputs can cover the expenses of enhancing organic matter, and staged implementation can ease the emotional concerns of farmers. The transformation to regenerative farming is expected to yield substantial long-term cost savings, increased operational efficiencies, and improved ecosystem health and resilience. Specifically, long-term benefits include reduced dependency on chemical fertilizers, improvements in soil restoration, carbon sequestration, and enhanced water retention. These improvements lead to a more self-sufficient and resilient farming system, less vulnerable to external shocks and price fluctuations. These benefits also translate into tangible financial gains through reduced input costs, increased yields, and access to markets that value sustainably produced goods.

Crucially, these practices also make farmland better positioned to cope with the effects of climate change, such as droughts and floodings. Improved soil structure and water retention capacity enhance the land's ability to withstand prolonged dry periods and absorb excess rainfall, mitigating the impacts of extreme weather events. This reduced vulnerability minimizes financial risks associated with crop losses and infrastructure damage. Ultimately, investing in the transition to regenerative farming offers compelling environmental and economic returns. With the regenerative agriculture market valued at around USD 5 billion in 2025, significant growth is anticipated, with projections indicating a rise to USD 13-19 billion by 2035.[41] This substantial increase underscores the significant economic opportunities inherent in regenerative agriculture, alongside its long-term sustainability and profitability.

Furthermore, focusing on these regenerative solutions offers a clear path to environmental recovery and achieving a sustainable future. Summa's Planetary Boundaries Report 2025 highlights that despite the challenges of environmental disruption, progress is possible and already happening in various sectors. For example, the successful global effort to restore the ozone layer demonstrates humanity's capacity to reverse large-scale environmental damage through concerted action and innovation. Similarly, investments in sustainable food and agriculture, including regenerative practices, can lead to significant positive impacts, such as reducing GHG emissions by around 75% and delivering substantial societal savings. These efforts contribute to a more resilient food system and healthier people, directly supporting the goal of operating within planetary boundaries.

40. McKinsey & Company, Summa analysis
41. The Rockefeller Foundation. (2024). Financing for regenerative agriculture.

Summa believes that embracing regenerative agriculture practices can offer a powerful pathway to help move our planetary boundaries back towards a safe operating space.

This includes a range of activities, including cover cropping, reduced tillage (no-till/minimum-till), diverse crop rotations, integrated livestock grazing, agroforestry, and enhancing soil organic matter.

Theory of change: Connecting systems change to investment opportunities and measurable impact

To realize the food future we want, we recognize that the food and agriculture industry needs to continue to innovate and adapt to meet the growing demand for foods in a sustainable and nutritious way.

At Summa, our commitment to fostering a sustainable future is underpinned by a clear and robust framework. We believe that to truly drive meaningful change, it's essential to connect our actions to their ultimate impact. This is why Summa uses the theory of change framework to map out the road to realize our long-term vision: to contribute to a resilient and nutritious food system.

Our vision extends beyond efficiency; we envision a food and agriculture industry that operates sustainably and incorporates the farmer's perspective at its core. This means not only optimizing production but also ensuring the well-being and resilience of those who cultivate our food.

To achieve this ambitious yet crucial goal, the investments we make are strategically designed to contribute to tangible positive outcomes. These include critical advancements such as increased soil health, enhanced farmer productivity and yields, significant decreases in lifecycle emissions from farming, and overall improved biodiversity and ecosystem health.

Understanding how our investments translate into these desired outcomes, and ultimately, into broader societal and environmental impact, requires a structured approach. The following section will detail the components of our theory of change for food and agriculture.

Figure 13
Theory of change for food and agriculture – cultivating a sustainable food future

Input
Direct impact

Summa invests significantly in partnerships, industry and investment expertise, and collaboration within its portfolio community. Our team is supported by extensive industry and senior expertise, with thematic experts including Kees Kruythoff and Paul Polman. Their knowledge and experience in the field are instrumental in guiding our strategies and ensuring we stay at the forefront of industry developments. To ensure that our theory of change considers the latest scientific findings, we have partnered with leading research institutions such as the Stockholm Resilience Centre. Specifically, we are actively exploring how to contribute to collective thinking on Earth System Impact (ESI) metrics, which quantify the impact of human activities on critical planetary boundaries.

Summa's investment, operational, and impact experience forms a cornerstone of our success. Through our investment and ownership strategy, Via Summa, we have implemented effective strategies that have yielded significant returns while also delivering positive societal impacts. This includes synergistic organic and inorganic investments, operational support and support from Summa's impact team from day one of the investment period. Our track record of successful investments underscores our commitment to creating long-term value through a unique ownership model.

The Summa community of portfolio companies is a vibrant network of knowledge sharing, events, and company collaborations, which is key to our ongoing success and impact. We regularly host events that bring together industry leaders, researchers and stakeholders to inspire, foster innovation and share best practices.

Activity
Direct impact

This theory of change guides all our activities and ensures that we remain focused on creating a positive, lasting impact on the global food system. We have therefore identified four main activities, or sectors we seek to invest in: alternative proteins, NextGen agriculture, food waste, and the organic foods market. These sectors are more than just avenues for social good; they represent the next frontier of high-impact, high-growth investment opportunities. We believe that by channeling resources into these areas, we can unlock both significant financial returns and systemic change.

Summa solutions
Navigate to the next page to learn more about the agricultural activities that we invest or seek to invest in, and their alignment with our theory of change.

Output
Direct impact

One of the first crucial steps in understanding the impact of any intervention, especially within a theory of change, is to clearly define and measure its outputs. Outputs are the direct and tangible products or services that result from an activity. They are the immediate results that can be directly attributed to the efforts undertaken. This starts with measuring outputs directly linked to their activities, while gradually moving towards measuring outcomes. Within Summa's Sustainable Food theme, our portfolio companies should measure outputs such as tons of food saved, hectares of regenerative farming practices, alternative protein products produced, and more. The KPIs selected by each company to measure its contribution to the theory of change should align with its core products and services.

Outcome
Indirect impact

The indirect effects or outcomes of our investments are not always easy to measure, however all our investments are in line with the trajectory laid out below. Outcomes represent the changes in behavior, conditions, or status that occur as a result of the outputs. While outputs are what we do, outcomes are what happens as a consequence of our actions. For Summa's Sustainable Food theme, examples of outcomes could include a reduction in food waste at the consumer level, improved soil health and biodiversity in agricultural lands, or a decrease in emissions from food production systems. These outcomes are often more complex to quantify than outputs but are critical for demonstrating true impact and progress towards our strategic goals. Companies are also expected to set ambitious targets to maintain a strategic focus on achieving the desired positive outcomes. In the case where this is not possible, companies should use customer case studies, surveys, and other stakeholder activities to assess their impact.

Impact
Indirect impact

Impact represents the long-term, systemic changes that occur as a result of sustained outcomes. While outcomes are the direct consequences of our activities, impact signifies the ultimate, broader societal or environmental benefits that contribute to our overarching mission. This is where the Summa Sustainable Food theme truly realizes its vision for a healthier planet and more resilient food systems.

Looking ahead, we appreciate that this long-term vision cannot be realized by Summa in isolation. It requires collaboration among multiple stakeholders, including industry experts, academia and regulators. For some of the challenges, regulatory changes are necessary to drive change. This theory of change guides all our activities and ensures that we remain focused on creating a positive, lasting impact on the global food system.

Activities we seek to invest in: Summa solutions

We envision a world where every part of the food system, from production to consumption, is aligned to reduce waste and emissions while improving nutrition. A world where nutritious, affordable, and ethically sourced food is accessible to all, and where the planet's resources are respected and renewed.

Guided by the outlined challenges, Summa's Sustainable Food investment strategy prioritizes four markets that reflect opportunities that are both profitable and solve the identified challenges: alternative proteins, NextGen agriculture, food waste, and the organic foods market. Our investments in these markets are designed to transform challenges into solutions, driving the necessary improvements for a resilient food system.

Figure 14
Rethinking the food system: Critical challenges and the power of change[42]

	Current challenge	Potential improvement
True cost of food	**3x** the dollar cost of food / the real societal cost	**~10-15%** lower true cost of food related to health and climate
Human health	**~50%** of deaths are related to obesity and other NCDs	**1/3 reduction** of obesity and NCD deaths with healthier diets
Food waste	**~30%** of food wasted after harvest annually	**~700 mn tons** of obesity and NCD deaths with healthier diets
Natural capital degradation	**~13%** of all terrestrial area protected	**~2-3 x** increase in terrestrial area being protected
Accelerating planetary impact	**~34%** of all GHG emissions coming from the food system	**~75% reduction** in food supply chain GHG emissions
Food security	**1/3** of global population struggle with food insecurity	**~2.5 bn** people brought out of food insecurity and hunger

42. McKinsey & Company and Summa analysis

Alternative proteins
We seek to invest in companies driving the shift from traditional, high-emission animal agriculture to sustainable alternative protein sources. This transition is crucial for mitigating climate risk and adapting to a changing environment. By supporting innovations in plant-based, cultivated, and fermentation-derived proteins, we aim to contribute to a food system where sustainable, organic, and environmentally responsible practices reduce agricultural emissions. Specifically, the total market for animal-based products is responsible for 15% of global GHG emissions.[43] A shift to alternative proteins could eliminate 11% of emissions currently projected for in 2030, highlighting the sector's significant climate impact.This includes investments in technologies that improve taste, texture, and scalability of alternative proteins, as well as those that enhance the sustainability of their supply chains.

NextGen agriculture
Our investment strategy in NextGen agriculture focuses on building resilient and efficient supply chains that support food security, affordability, transparency, and farmers empowerment. We recognize that a truly sustainable food system must address key challenges facing farmers, including market access, fair pricing, and climate vulnerability.

A core element of this strategy is optimizing the mix of outdoor, greenhouse, and vertical farming. This diversified approach supports year-round production, reduces reliance on weather-dependent outdoor farming, and strengthens the reliability and affordability of the value chain – an urgent need today and an even greater priority for the future. Therefore, we prioritize investments that promote full cost transparency, reflect the true environmental and social costs of food production, and ensure equitable compensation for farmers.

By enabling accurate cost accounting and supporting direct-to-consumer models, we aim to reduce food-related societal costs and improve farmer livelihoods. Key areas of focus include biologicals, AI in agriculture, regenerative practices, and controlled environment agriculture. We invest in solutions that enhance efficiency while empowering farmers to thrive in a more sustainable food ecosystem.

Within the Sustainable Foods theme, Summa also invests in aquaculture solutions that contribute to a more sustainable and resilient global food system.

Read the report here

Food waste
We are committed to investing in solutions that improve efficiency in the global food supply chain, reduce food waste, and support localized food production. By supporting innovations that minimize waste and shorten food miles, we aim to contribute directly to the EU Commission's 2030 food waste reduction targets: a 10% reduction in processing and manufacturing, and a 30% per capita reduction in retail and consumption (including restaurants, food services, and households).[44] Our investments will focus on technologies and business models that improve supply chain logistics, extend shelf life, and repurpose food waste. This includes investments in packaging technology, cold chain logistics, and platforms that connect surplus food with consumers or charitable organizations such as the investment in Holdbart. Another example is the investment in Oda. Oda is Norway's leading online grocery retail platform, offering fresh and dry food, and household products. Committed to efficiency and sustainability, Oda optimizes its supply chain through its digital platform to minimize delivery times, food waste, and environmental impact.

Organic foods market
Summa aims to support the shift towards nutritious and organic food, contributing to improved public health and environmental sustainability. We recognize organic agriculture as a one of the drivers of positive environmental impact, enhancing soil health, water quality, biodiversity, and carbon sequestration. Our focus is on transitioning from conventional, resource-intensive agriculture towards a system where sustainable production and organic practices are the norm, helping to restore ecosystems and build long-term resilience. In line with this vision, we see a future where organic food becomes the standard rather than a niche. Reaching a tipping point of approximately 25% market share is key to making this shift possible. To help achieve it, we will support stronger end-to-end integration between farmers and processors, reducing risk and encouraging long-term commitment to organic practices. We prioritize investments in companies that are improving organic farming techniques, increasing access to organic produce, and those that are creating sustainable packaging for organic products. With the global organic food market, valued at approximately USD 160 billion, projected to expand to USD 250 - 290 billion by 2035, substantial opportunities are emerging for farmers and businesses in the organic sector.

43. BCG. (2022). The untapped climate opportunity in alternative proteins.
44. European Commission. (n.d.). Food waste reduction targets.

End notes: How Summa seeds change in food and agriculture

Summa sees several new and compelling investment opportunities within the food and agriculture space.

The current trajectory of our global food and agriculture system presents unsustainable environmental and economic risks. Without decisive action, we face a future where resource depletion and environmental degradation undermine the long-term viability of our food system. This is not a distant threat, but a rapidly approaching reality.

Summa recognizes this critical juncture as both a challenge and a compelling investment opportunity. The need for transformative change creates strong conditions for innovation and competitive financial returns. We believe that by strategically investing in solutions that address the root causes of our broken food system, we can generate both positive impact and robust financial outcomes.

Our investment thesis is clear: inaction is not an option. We must shift towards regenerative, resilient, and nutritious food systems. This transition demands investments throughout the food and agriculture value chain, including alternative proteins, NextGen agriculture, food waste reduction, and organic food markets. With 1.5x growth potential from 2025 to 2035, these sectors represent not just ethical imperatives, but also significant market opportunities.

For example, our investment in Nutris demonstrates the commercial viability of regenerative agriculture. By reducing synthetic fertilizer use by 30% while maintaining yields and improving soil health, Nutris proved that sustainable practices can be both environmentally responsible and financially rewarding. This is not a unique case; it's a blueprint for scaling impact.

The transition will, however, require overcoming established practices, navigating regulatory hurdles, and scaling innovative technologies. As we acknowledge these inherent challenges, we are also committed to driving systemic change. We must act decisively to secure a sustainable and profitable future for the food and agriculture sectors. By aligning financial capital with impactful solutions, we can build a resilient system that generates both environmental and financial returns. This is not just about mitigating risk; it's about seizing the opportunity to create lasting value.

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