

# Green Finance Meets Green Food: ESG Investment Opportunities in the Healthy Fast-Food Industry

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## Abstract:

In the context of global sustainability challenges, Green Finance started to turn capital toward eco-friendly sectors. At the same time, consumer demand for sustainable lifestyles pushes the rise of the Healthy Fast-Food Industry. By discussing the intersection of these trends, this paper indicates and evaluates the investment opportunity of Environmental, Social, and Governance (ESG) within the healthy fast-food sector. Using the methodology combining literature review and case analysis, this paper first explores the current state of ESG practices, pointing out the progress in sustainable sourcing, green operational management, and supply chain's transparency. Then, it shows the investment opportunities across the ingredient layer, including regenerative agriculture and supply chain traceability; the operations layer, including green stores transformation and sustainable packaging; and the product layer, including functional menu innovation and carbon labeling. While presenting this potential, this paper also illustrates the risks of the investment like the "greenwashing" phenomenon, cost-benefit imbalances from high upfront investment, and market volatility. Finally, the research offers practical recommendations for healthy fast-food firms to raise their ESG advantage and for investors to make data-driven, impactful decisions in the green market.

**Keywords:** Green finance; ESG investment; healthy fast-food; sustainable investment.

## 1. Introduction

Nowadays, the global economy is facing many environmental challenges, including climate change, resource depletion, and social inequality, making sustainability a crucial concept. Against this backdrop,

the role of financial capital started to alternate and transform. Green finance, which leads capital directly to eco-friendly industries, has expanded globally and drives low-carbon transitions and sustainable growth. Governments and international organizations leverage tools such as green credits, bonds, and ESG

integration to motivate businesses to prioritize sustainability. This kind of capital reallocation has had a huge impact on traditional sectors while creating significant investment opportunities in nascent green industries. [1]

Meanwhile, consumers' growing demand for healthy, sustainable lifestyles is causing the rise of the healthy fast-food industry. Moving beyond speed and price, healthy fast-food prioritizes organic ingredients, nutritional transparency, and eco-friendly operations [2]. This industry satisfies urban consumers' needs for convenient, nutritious meals and adds concepts for environmental sustainability at the same time. Such trends correspond with green finance's sustainable investment ethos, providing the core context of this study. Therefore, it's important and meaningful to discuss how healthy fast-food can use Green Finance to increase its ESG performance as well as attract sustainable capital.

Some academic discussions of finance and sustainability focus on the relationship between climate change and financial stability, alongside the development of sustainable financial instruments [3]. Other research systematically considered the correlation between ESG integration and corporate financial performance, suggesting that integrating these factors really improves portfolio resilience and generate superior long-term returns [4]. In the context of the broader food industry, most scholarly literatures focus on inherent ESG issues in traditional fast-food chains, including labor rights, waste management, and animal welfare concerns [5].

However, a clear gap remains in current research: most studies treat the food industry as a single category and overlook the emerging „healthy fast-food“ sector. Few have examined its ESG investment potential across the value chain—from sourcing to operations—within the framework of Green Finance. This study aims to fill that gap.

This paper addresses ESG investment opportunities in the healthy fast-food industry, with its main purpose to identify and evaluate ESG investment potential across the ingredient layer, operations layer, and product layer. As ESG is now becoming a driver for long-term value in global finance, the analysis of ESG performance shows investors the opportunities for value discovery, channeling capital into areas that yield economic gains alongside social impact.

This research has threefold significance: First, it provides an interdisciplinary view between finance, food science, and sustainability, offering a theoretical framework for understanding sustainable financing in emerging industries. Second, it provides healthy fast-food firms with ESG optimization strategies to strengthen financing, decrease risks, and build distinctive brands. Third, it supports policymakers with practical insights for enhancing Green Finance tools to accelerate the food industry's green transition.

This paper uses a literature review combined with case analysis. First, this paper will discuss the current performance of the healthy fast-food industry across the environmental, social, and governance dimensions, providing a basis for investment assessment. Second, this paper will analyze the three core investment opportunities (ingredient sourcing, operational efficiency, and product innovation) across three layers (the ingredient layer, the operational layer, and the product layer), supporting the feasibility and potential returns with relevant case studies. Finally, this paper indicates the key risks in ESG investment in the healthy fast-food industry, including information asymmetry and cost-benefit imbalance, and propose targeted risk mitigation strategies.

## 2. ESG Current Development in the Healthy Fast-Food Industry

### 2.1 Environmental

The environmental dimension is most visible in the healthy fast-food sector, reflected in how companies manage resources, carbon emissions, and waste across multiple layers.

At the ingredient layer, firms emphasize sustainable agriculture and plant-based sourcing under environmental policies and public awareness. For instance, Sweetgreen's "plant-forward" menu emitted 30% less carbon than the average American diet. It purchased 690,000 pounds of regeneratively grown food in 2023 [6,7].

At the operations layer, environmental performance depends on energy, water, and waste efficiency. Restaurants move toward "green stores" by adopting renewable energy and waste diversion. Sweetgreen, powered by 100% renewable energy, cut emissions intensity by 23% from 2019 to 2023 and aims for 50% by 2027 [7]. Its Infinite Kitchen improves energy efficiency and diverts 79% of waste through composting and recycling partnerships like Rubicon [6]. This action reduces emissions and saves long-term costs. The process shows ESG's economic value.

At the product layer, brands consider environmental impact in menu design and customer experience. "Carbon-labeled meals," such as Sweetgreen's Carbon Menu Labeling Methodology, quantify the footprint of each dish [7]. Portion control and zero-carbon meals combine plant-based ingredients with carbon offsets. These actions can minimize waste and emissions, reinforcing sustainability throughout the value chain.

### 2.2 Social

Social factors in the healthy fast-food sector span the upstream supply chain, midstream operations, and down-

stream community engagement. They contribute to identifying where ESG investment is most needed.

Upstream, companies integrate social standards into supplier selection and management. Brands enforce fair labor through audits and certifications, requiring no child labor, safe conditions, fair wages, and health benefits. Animal welfare is also important. By adopting the Better Chicken Commitment in 2018, 40% of Sweetgreen's purchases were Global Animal Partnership Step 2 certified in 2023 [7].

Midstream, fair employee treatment, DEI policies, and transparent health information are important for trust. Companies should ensure fairness in any aspect of welfare. Sweetgreen highlights employees as its "best ingredient for success." Consequently, the company improved internal promotion, reducing turnover and achieving near gender parity [7].

Downstream, brands promote "healthy eating" through public outreach, such as nutrition lectures, online guides, and community recipes. Sweetgreen's "School Lunch Program" and nutrition education courses expand food access and awareness. It donated over 100,000 fresh meals and recorded 5,000 volunteer hours supporting local causes [7]. Through these efforts, social responsibility is present in every stage of business, reinforcing ESG's broader community and ethical impact.

### 2.3 Governance

The governance pillar in the healthy fast-food industry centers on policies and oversight mechanisms to ensure effective ESG risk management.

Disclosure and transparency are the foundation of good governance. Nowadays, many brands release annual ESG or impact reports to demonstrate their sustainability commitment. However, challenges still appear in standardization and data completeness. Companies often highlight favorable outcomes while omitting Scope 3 emissions or supply-chain noncompliance, limiting investors' ability to assess true ESG performance. For instance, though Sweetgreen discloses its results through its Impact Summary and investor portal, a unified framework for cross-company comparability is still lacking.

Third-party verification further strengthens credibility. Firms use external audits to validate claims on food safety, sourcing ethics, and labor practices. Sweetgreen, for example, completed 823 third-party food safety audits in 2023, ensuring all restaurants met compliance standards [7]. Such independent validation enhances investor trust and supports regulatory compliance amid growing ESG scrutiny.

## 3. ESG Investment Opportunities in

## the Healthy Fast-Food Industry

Based on the current ESG analysis, this paper now delineates where ESG-oriented capital can be funneled across the 3 layers: ingredient, operation, and product. In later discussion, in order to make it more practical, the well-known „From Farm to Table“ fast food brand Dig Inn in the United States will be taken as an example to illustrate how these investment opportunities are manifest in practice.

### 3.1 Ingredient Layer

On the ingredient layer, capital can support upstream agricultural transformation and supply chain transparency.

First, investors can channel capital into the transition of traditional farms into organic and regenerative ones through dedicated investment vehicles or agricultural cooperatives. These practices will enhance soil carbon sequestration, biodiversity, and ecosystem resilience. Dig Inn, for example, has already raised funds for such investment. It not only cooperates with small and medium-sized upward farms but also operates its own regenerative farm, "Dig Acres," in 2018 [8]. Investing in projects like this directly pushes the sustainable transformation of agriculture. However, investors must be cautious about the high upfront costs and the delayed, uncertain returns brought by the multi-year regenerative farming transition.

Secondly, investing in sustainable protein and innovative plant-based raw materials is also an important direction. Many healthy fast-food brands are famous for their special menus, just like Dig Inn's vegetable-forward menu [9]. Though not fully vegetarian, Dig Inn greatly reduces the dependence on red meat and emphasizes the animal welfare standards of its suppliers. Thus, capital can directly flow to the companies developing "natural food" concepts like chickpea and mushroom-based proteins or the suppliers with high-quality and humane meat.

Another important investment area is technology-driven supply chain traceability. Platforms such as blockchain, Internet of Things (IoT), and Artificial Intelligence (AI) can trace or certify material origins, verify sustainability credentials, and prevent fraud. For example, Dig Inn has long committed to its transparency. Thus, it built an agricultural technology startup that allows consumers to trace its partner farms, growing practices, and even soil health data of their vegetables simply by scanning a QR code [9]. A key risk here is the technical complexity of integrating authenticity and diverse supply chain data into a single, verifiable platform.

### 3.2 Operation Layer

At the operational level, capital is mainly used to optimize physical and digital infrastructure to enhance the sustain-

ability and efficiency of the entire chain network. Investments can be focused on the following areas.

First is the renovation of green stores and installation of renewable energy devices, including rooftop solar panels, energy-efficient HVAC systems, and smart kitchen equipment. Investors can support chain brands by reducing operational energy intensity by establishing special funds, helping chain brands conduct energy audits and energy-saving renovations. Though these projects gain long-term cost savings, they require significant initial capital outlay, which poses a cost-benefit imbalance risk if stores don't meet expected energy efficiency targets.

Secondly, investors can focus on ESG digital management platforms and carbon accounting software. These systems are important for centralized waste tracking, emission monitoring, and real-time energy dashboards. Capital can introduce platforms like Watershed or Persefoni to precisely calculate carbon emissions across scopes one, two, and three, which can transform qualitative advantages like "local procurement" into quantifiable ESG data, improving disclosure credibility.

Lastly, capital can support sustainable packaging and recycled materials. Nowadays, with food delivery becoming popular, investing in biodegradable containers, compostable plates, and reusable packaging is essential. Dig Inn has already acted in this area—using compostable bowls and launching a reusable bowl program called "Canteen by Dig". These all encourage customers to reuse utensils and reduce waste [10]. Future investment can expand such programs and develop environmentally friendly packaging materials.

### 3.3 Product Layer

The investment at the product level aims to enhance brand value, consumer loyalty, and health positioning by directly influencing the menu and customer experience.

Firstly, investors can fund healthy and functional menu innovation and development. To move beyond being only famous for seasonal menus, healthy fast-food companies can use capital to establish food innovation laboratories. This funding lets canteens directly collaborate with nutrition scientists to create new dishes with specific health benefits. For example, based on nutritional science and medical input, companies could launch functional meal lines such as a "Diabetes-Friendly Bowl," "Healthy Intestine Package," or "Lipid-Lowering" option. This opportunity carries product development risk, where high investment in R&D may face regulatory scrutiny over health claims.

Secondly, capital can support carbon or ESG labeling, which enables companies to transparently display the carbon footprint or ESG rating on menus. Brands like Panera Bread and Chipotle have already experimented with carbon labels [11]. Investment can fund cooperation between

healthy food companies and third-party institutions, such as the World Resources Institute's "Cool Food" initiative, to conduct Life Cycle Assessments (LCAs) that translate sustainable sourcing into clear, marketable consumer information.

Finally, capital can support companies in implementing loyalty and incentive programs related to ESG behaviors. This kind of program can encourage green consumption through reward mechanisms. For example, Dig Inn's loyalty program can offer additional points or discounts to customers who choose low-carbon vegetarian dishes or bring their own "Canteen" for dining, effectively monetizing sustainable behaviors and enhancing user stickiness [12]. The success of these programs really relies on customer engagement, which can be volatile and easily disrupted by changes in consumer spending habits during business cycle.

## 4. Risks of ESG Investment in the Healthy Fast-Food Industry

In this part, this paper examines three key risk dimensions that investors must consider when engaging in healthy fast-food ESG investment: disclosure and information risk, cost-benefit imbalance risk, and policy & market volatility risk. For each dimension, there's an illustrative case to make the risk more tangible.

### 4.1 ESG Disclosure and Information Risk

One of the primary challenges of investing in ESG is incomplete, inconsistent or biased information. Due to the difficulties of comprehensively accounting for supply-chain emissions, healthy fast-food firms, especially private ones, may selectively report "good news" while omitting negative incidents, or use vague, non-comparable metrics. This "greenwashing" risk can undermine investors' ability to accurately evaluate companies' ESG real performance, leading to the wrong decision: mispricing of assets and misallocation of capital [13].

The Oatly company illustrates this information risk. Due to its compelling ESG narrative centered on low-carbon and sustainability, Oatly achieved a highly-valued IPO in 2021, with investors paying a significant premium. However, shortly after the IPO, the short-selling firm Spruce Point Capital released a report accusing Oatly of "greenwashing" in its sustainability and investor materials [14]. The report points out that Oatly selectively used data and adopted questionable calculation methods to exaggerate its environmental advantages compared to traditional dairy producers. As a result, Oatly met a sharp drop in stock price, and investors who relied on Oatly's self-reported ESG data suffered significant losses [15]. This case shows that in order to get more capital, companies may

make incomplete disclosures. Thus, over rely on unaudited sustainability reports or marketing narratives can place investors in risk situations when discrepancies are revealed.

#### 4.2 Cost–Benefit Imbalance Risk

ESG investments often require a large amount of upfront capital expenditure like sourcing organic inputs, retrofitting stores, and buying sustainable packaging, while the financial payback may be delayed or uncertain [16]. If the expected increase in revenue from customer loyalty or willingness to pay a premium is not realized, the investment may fail to generate sufficient returns, forcing firms to abandon ESG projects to preserve cash flow.

A representative case of ESG cost–benefit imbalance occurred between 2019 and 2021, the time that healthy fast-food chains such as Sweetgreen and Chipotle invested largely in “100% compostable” molded-fiber bowls to replace plastic packaging. At the beginning, such action was praised as a successful case in the ESG area, which strengthened their eco-friendly brand image. However, The Counter investigated and revealed that the bowls contained high levels of PFAS—persistent chemicals posing environmental and health risks that prevent true decomposition [17]. The discovery led to a strong negative reaction from the public, forcing the companies to abandon PFAS-containing packaging and turning the project from an asset into a liability. This case shows how hidden flaws can reverse the expected benefits of ESG practices, creating financial and reputational losses.

#### 4.3 Policy & Market Volatility Risk

Even a well-planned ESG investment can be undermined by shifting policy or volatile consumer preferences. Changes in green finance subsidies, new environmental regulations, or economic recessions that push consumers toward cheaper, less healthy options can all impact ESG investments.

The representative case is Sweetgreen. Its growth strategy and lofty IPO valuation in 2021 were based on the assumption that consumers would always pay a premium for “healthy and sustainable” food. However, the global inflation happened in 2022, which increased food, energy, and housing costs, decreasing disposable income and triggering a widespread “trade-down” among consumers [18]. Many people didn’t want to pay ESG premiums and started choosing cheaper things, such as Chipotle or traditional fast food. Since Sweetgreen’s own supply-chain costs were high, the company struggled to decrease prices to keep customers, which led to the loss of customers and profit. A detailed review of the company’s quarterly earnings reports from that period strongly indicates a slowdown in revenue growth and pressure on margins,

aligning with the observed market trade-down. To adapt, Sweetgreen has changed its strategy from premium sourcing to automation and loyalty programs to improve operational efficiency and customer retention [19]. This case illustrates the high sensitivity of ESG-driven business models to macroeconomic cycles.

### 5. Conclusion

This paper uses Literature Review and Case Analysis, providing a systematic discussion on ESG investment opportunities in the healthy fast-food sector under the Green Finance background.

The research first illustrates the current state of ESG development in this industry. The Environmental dimension focuses on sustainable ingredient sourcing and low-carbon operations; the social dimension emphasizes labor rights protection and animal welfare; and the Governance dimension underscores transparent ESG disclosure and follows relevant regulations.

Building on this, the paper analyzes ESG investment opportunities across ingredient sourcing, operations, and product innovation. These include investments in organic farming, energy-efficient facilities, and plant-based product development. Such investments follow global sustainability trends as well as reducing operational costs and enhancing brand value. Meanwhile, the study identifies three major risks: ESG disclosure risk, cost-benefit imbalance, and policy or market volatility.

Based on these findings, this paper proposes several recommendations. For healthy fast-food companies, they should pay more attention to the ESG strategy and turn it as a core competitive advantage. To achieve that, healthy fast-food companies can invest in ingredient traceability, strengthen supply chain transparency, and utilize green financial tools. For investors, data-driven, impact-oriented decision-making is essential. Investors should go beyond screening to engage in shareholder dialogue and promote standardized, quantifiable ESG metrics to improve disclosure quality. Future research can explore the establishment of a unified ESG rating and disclosure framework for the healthy fast-food sector and examine how green finance policies can better support SMEs in their ESG transition.

### References

- [1] LSEG. Investing in the green economy 2025. 2024. [https://www.lseg.com/content/dam/lseg/en\\_us/documents/sustainability/investing-in-green-economy-2025.pdf](https://www.lseg.com/content/dam/lseg/en_us/documents/sustainability/investing-in-green-economy-2025.pdf).
- [2] Wu Y. The Future of Food: Health-Focused Brands in the Fast-Food Industry Based on the Analysis of Chipotle. 2024.
- [3] Zhang D. and Wang X. Green Finance and Climate Change: A Literature Review. Financial Research Letters, 2023.
- [4] Tensie W. and Clark G. ESG and Financial Performance: A

Meta-Analysis. NYU Stern, 2021.

[5] Kumar A. et al. Food loss and waste management in the retail food supply chain: Methods and framework to achieve environmental sustainability. *Journal of Cleaner Production*, 2025.

[6] Sweetgreen. Our Mission. 2025. <https://www.sweetgreen.com/mission>.

[7] Sweetgreen. Sweetgreen Impact Report 2023. 2024. [https://s28.q4cdn.com/367108596/files/doc\\_downloads/esg/2024/Sweetgreen\\_2023-Impact-Summary.pdf](https://s28.q4cdn.com/367108596/files/doc_downloads/esg/2024/Sweetgreen_2023-Impact-Summary.pdf).

[8] Veer M. J. Dig Inn Launches A Farm To Train The Next Generation Of Farmers. *Forbes*, 2014.

[9] Dig Inn. Our Mission. 2021. <https://www.diginn.com/mission>.

[10] Lee J. A Sustainable To-go Food Storage Container System for Restaurants. *Cal Poly Digital Commons*, 2018.

[11] Mishan L. The Climate-Friendly Vegetable That's a Fast-Food Star. *The New York Times*, 2019. <https://www.nytimes.com/2019/04/30/dining/kelp-seaweed-recipes.html>.

[12] Kim J. and Kim S. Promoting the use of reusable coffee cups. *Sustainability*, 2018.

[13] Smith J. Research: How Some Companies Avoid Accusations of Greenwashing. *Harvard Business Review*, 2023.

[14] Spruce Point Capital Management. Oatly Group AB (OTLY): Report. 2021. <https://www.sprucepointcap.com/research/oatly-group-ab>.

[15] Reuters. Oatly shares fall after short-seller Spruce Point claims overstated revenue. 2021. <https://www.reuters.com/business/oatly-shares-fall-after-short-seller-spruce-point-claims-overstated-revenue-2021-07-14/>.

[16] White K. and Smith D. The Elusive Green Consumer. *Harvard Business Review*, 2019.

[17] The Counter. PFAS „forever chemicals“ found in compostable bowls at Sweetgreen, Chipotle. 2019.

[18] Deloitte. Consumer Behavior Trends: State of the Consumer Tracker. *Deloitte Insights*, 2023.

[19] Guskowski J. Sweetgreen to test fully automated restaurants next year. *Restaurant Business Online*, 2022.