



Degree Program in Economics and Business

Course of Microeconomics

The New Needs of Consumers in the Food Sector: The Adaptations of Italian Industries

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1 Introduction

Wellness economy is defined as “*industries that enable consumers to incorporate wellness activities and lifestyles into their daily lives*”, according to the Global Wellness Institute (GWI). The wellness economy has globally experienced a rapid growth in the last years, especially post-Covid. Between 2019 and 2023, the market size of the global wellness economy related to the sectors of healthy eating, nutrition, and weight loss experienced an average annual growth rate of 4.7%. Between 2022 and 2023 the growth rate reached 3.1%¹. Another source estimated the value of the health and wellness market worldwide to be USD 6.87 trillion in 2025, projected to reach USD 11 trillion in 2034².

According to the Euromonitor International’s Health and Nutrition Survey 2022, health and fitness concerns are creating a new protein need. Respondents to the survey considered that a diet rich in protein improves fitness, makes them healthier, supports the immune system, manages weight loss and fits in their day-to-day lifestyle³. Protein is a macronutrient fundamental for different functions of the human body. It is made by twenty amino acids, nine of which are ‘essential’ to our organism and can be easily assumed through animal-based products. Globally, on average 37% of proteins are consumed via animal products⁴. Meat consumption quadrupled in the last six decades, reaching a production volume in 2024, of 379 million tonnes according to the FAO⁵.

The Wealth and Health Organization (WHO) has expressed concerns on excess consumption of red and processed meat as associated with an increased risk of diseases, as cancer and cardiovascular disease⁶. Along the UN agency, in 2025 a meta-analysis of prospective

¹ “Global Wellness Institute. Global Wellness Economy Monitor 2024, November 2024.”

² Precedence Research. Health and Wellness Market Size USD 7,656.7 Billion by 2030. Precedence Research. Published Update May 2025.

³ Anje du Plessis. Changing Consumer Lifestyles Create New Protein Needs. Euromonitor. Published February 20, 2023.

⁴ Merlo M, Hennessy T, Buckley C, O’Mahony J. A comparison of animal and plant-based proteins from an economic, environmental, and nutritional perspective in the Republic of Ireland. *Agricultural Systems*. 2024.

⁵ FAO. 2025. Meat Market Review: Overview of global market developments in 2024. Rome.

⁶ Red and processed meat in the context of health and the environment: many shades of red and green. Information brief. Geneva: World Health Organization; 2023.

studies, which analysed 148 published articles, found that 18% of people who consume high quantity of processed meat have a higher risk of colorectal cancer, compared to those who consume less. Red meat also turns out to increase the risk of colorectal cancer by 10%⁷. Furthermore, a study of the University of Oxford connected heavy meat consumption with the risk of severe health problems, such as gastrointestinal cancers and some types of cardiovascular diseases⁸.

Alongside the negative effects that the consumption of meat has on the human body, its production causes environmental damages to our ecosystems, such as greenhouse gas emissions (GHG), biodiversity loss and high water use⁹.

At the same time, the plant-based food sector has recently taken position in the market. The global demand has experienced an important growth, which is expected to further rise in future years¹⁰. According to a report, in 2023 the market for plant-based product was valued USD 44.4 billion, and by 2031 it is expected to reach USD 113 billion¹¹.

According to Statista, Italy broadly reflects the global market evolution in terms of consumption of meat¹² which quadrupled in the last six decades¹³. Moreover, while Italian consumers increased meat consumption, they also increased the consumption for alternatives to meat. Based on another report of Statista, between 2021 and 2022, the sales of total plant-based products experienced a growth of 10.4% in volume. Between 2022 and

⁷ Farvid MS, Sidahmed E, Spence ND, Mante Angua K, Rosner BA, Barnett JB. Consumption of red meat and processed meat and cancer incidence: a systematic review and meta-analysis of prospective studies. *European Journal of Epidemiology*, 2021.

⁸ University Of Oxford. "Red and Processed Meat Linked to Increased Risk of Heart Disease, Oxford Study Shows | University of Oxford." *Www.ox.ac.uk*, 21 July 2021.

⁹ WHO, *supra* note 6.

¹⁰ Wheeler K. Global Plant-based Food Market "Set for Substantial Growth." *Fooddigital.com*. Published September 5, 2024.

¹¹ *Id.*

¹² Meat: market data & analysis. In *Statista*.

¹³ FAO, *supra* note 5.

2023 the sales of total plant-based products experienced a further growth of 4% in volume¹⁴.

The research question that will guide this thesis is: "How are Italian food industries adapting to the high-protein demand in an era of increased self-awareness of health and environmental issues?"

The question stems from the increasing demand of consumers for food options that, are healthier and more sustainable. This creates both challenges and opportunities for producers. On the one hand, the adaptation towards new products risks to face an insufficient acceptance from the market. On the other hand, producers can catch the wave and move away from a possible static situation.

In Italy, a country known for its culinary tradition, some food industries are currently reshaping due to the change in the behaviour of Italian consumers. The examples of two producers, which differ in terms of size and food sectors, are emblematic to show these developments. The first example is the Tonazzo Group, a Veneto-based group that has been a giant producer in the meat sector for 136 years. In January 2025, the Tonazzo brothers, Stefano (director of the group) and Albino (director of the brand Kioene), announced to officially abandon the meat business and focus exclusively on the plant-based protein sector. The latter has experienced a growth of approximately 20% from 2021 onwards. The Kioene brand offers around 100 products, such as vegetarian burgers and vegetarian cutlet, and is enjoyed by 2.3 million Italian households. In 2023, vegetarian business counted for 65% of the entire business and achieved €53 million in revenues (out of €80 million turnover of the group)¹⁵.

The second example is the one of Barilla, a 145-year-old pasta producer, leader in the food market. The firm responded to the increase in demand of healthier and more sustainable products by diversifying its portfolio and innovating. In 2010, it started to improve its portfolio by reformulating 497 products, giving big attention to the so called "better-for-you" products, that are products which aim to have healthier nutritional values. The

¹⁴ Percentage change in sales value and volume of plant-based meats in Italy from 2021/2022 to 2022/2023* [Graph]. In *Statista*.

¹⁵ Orlandotti E. La storica macelleria Tonazzo dice addio alla carne: focus sul plant based di Kioene. Il Sole 24 ORE.

company also introduced 16 new products, such as whole-grain, organic, and legume-based types of pasta. In 2023, Barilla achieved €4.869 billion in revenue, with a 7% increase compared to the previous year¹⁶.

The objective of this thesis is to provide the reader with a comprehensive analysis of the consumers' behaviour towards healthier and more sustainable eating habits, and of the way Italian food industries are responding to the shifts in demand.

¹⁶ Barilla. *THE JOY of FOOD for a BETTER LIFE*. May 2023. Barilla. *THE JOY of FOOD for a BETTER LIFE*. May 2023.

2 Literature Review

2.1 Emergence of High-Protein Diet Trends

Health and wellness awareness, weight management, fitness, promotional campaigns, social media content, ingredients consciousness, and ageing populations are the key market drivers of new high-protein diet trends that have recently gained the attention of consumers worldwide¹⁷.

Historically, food scarcity and malnutrition were major global health concerns. However, with increasing urbanization, the rising incomes and availability of processed foods, obesity and related diseases have become increasingly prevalent, outpacing the prevalence of hunger. More than one in eight people in the world are clinically obese, as the number has passed one billion for the first time in human history¹⁸. The increased awareness of this concern has stimulated people to eat the right nutrients. The wellness economy, defined as “*industries that enable consumers to incorporate wellness activities and lifestyles into their daily lives*” according to the Global Wellness Institute (GWI), has globally experienced a rapid growth in the last years, especially after the years of pandemic. The wellness economy related to the healthy eating, nutrition, and weight loss sectors encountered, between 2019 and 2023, a global average annual growth rate of 4.7%. The growth rate was 3.1% between 2022 and 2023. This reflects the motivation to get in shape and become healthier¹⁹. A research estimated the value of the health and wellness market worldwide to be USD 6.87 trillion in 2025, projected to reach USD 11 trillion in 2034²⁰. Amongst the approaches people have tried to lose weight, one is protein-rich diets. Respondents to a survey considered that a diet rich in protein improves physical fitness,

¹⁷ See du Plessis, *supra* note 3.

¹⁸ World Health Organization. Obesity and Overweight. World Health Organization. Published May 7, 2025.

¹⁹ See Global Wellness Institute, *supra* note 1.

²⁰ Precedence Research, *supra* note 2.

makes them healthier, supports the immune system, manages weight loss and adapts to their daily lifestyle²¹.

Furthermore, big sports brands, such as Nike, Adidas, Puma, and Under Armour, through creative promotional campaigns, have sustained the new trend, driving the market of high-protein-based food to grow even more. Celebrities like Michael Jordan and Zlatan Ibrahimovic, who are after all “influencers” in social media, have encouraged people to follow the “wave of wellness”, generating significant interest. Endorsements from sports personalities on social media have further boosted the expansion of this market²².

Google Trends shows internet searches of people worldwide. It does so by analysing the popularity of top searches and using graphs to show the output. The time range goes from 2004 to the present day. The figures below show the evolution of the searches for “high-protein diet” and for “high-protein foods for weight loss”. The first one evidences a growing interest in high-protein diet already around 2010, with the highest point reached in February 2025. The second one highlights the fact that consumers are increasingly emphasizing health, fitness, and weight management goals. It reached its highest point ever in May 2020, while before searches were non-existent²³.

²¹ See du Plessis, *supra* note 3.

²² Technavio. “High Protein-Based Food Market to Grow by USD 50.2 Billion from 2024-2028, Driven by Preference for Natural and Herbal Products and AI’s Impact on Market Trends - Technavio.” *Prnews-wire.com*, 2 Oct. 2024.

²³Google Trends. “Google Trends.” *Google Trends*, 2015; Google Trends. “Google Trends.” *Google Trends*.

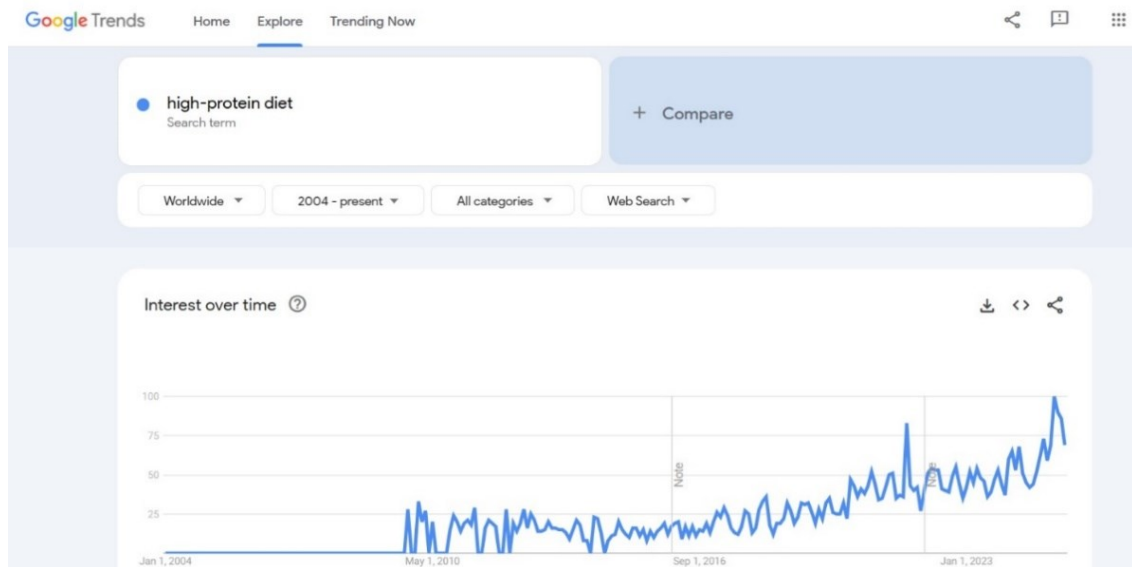


Figure 1. Google Trends, High-protein diet

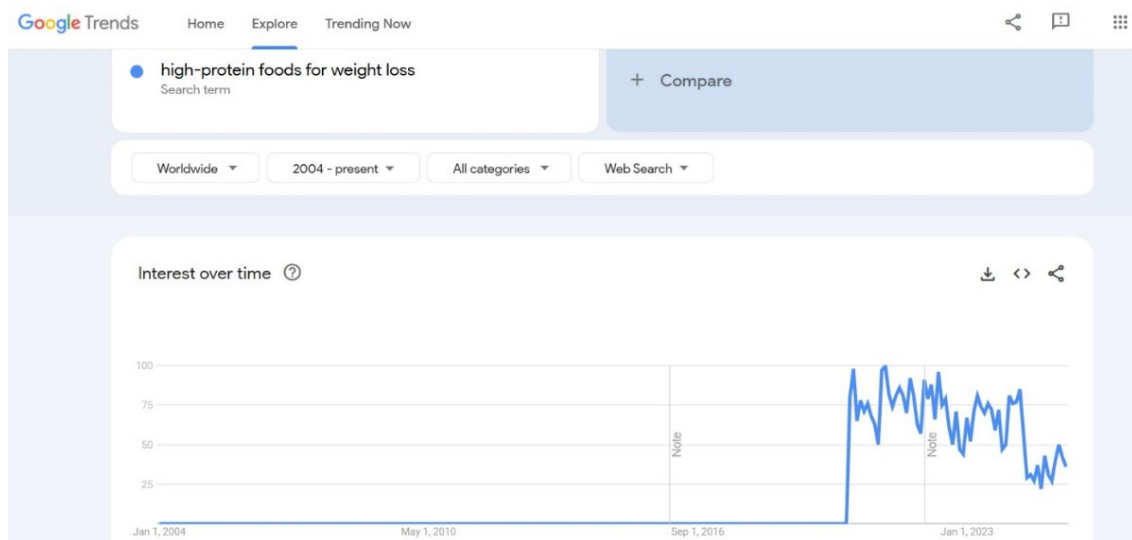


Figure 2. Google Trends, high-protein foods for weight loss

2.2 Health Implications of Increased Meat Intake

Diets rich in protein are not always synonymous of a healthy diet, yet, this axiom is a common belief among consumers, which explains the increasing consumption²⁴.

²⁴ Bruk D. What happens when you eat too much protein and how to figure out the healthiest amount for you. New York Post. Published May 28, 2025.

In 2025 a meta-analysis of prospective studies, which analysed 148 published articles, found that 18% of people who consume high quantity of processed meat have a higher risk of colorectal cancer, compared to those who consume less. Similar evidence was found in the same survey, with a 21% higher risk for colon cancer, and 22% for rectal cancer. Red meat also turns out to increase the risk of colorectal cancer by 10%. In fact, the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research concluded that there is “convincing” evidence that processed meat increases colorectal cancer risk, and “probable” evidence that high red meat intake also increases risk²⁵.

Furthermore, there is also evidence that links heavy consumption of red and processed meat to cardiovascular diseases. The University of Oxford made a study based on 1.4 million people across 13 cohorts. The study found that there is an 18% increase of the risk to contract a coronary heart disease for every additional 50 g of red and processed meat consumed per day. Even unprocessed red meat showed an increase of 9% for every additional 50 g per day. Contrary to red and processed meat, poultry intake was not associated with an increase of risk²⁶.

Yet, the circle is not complete; some questions may arise. What is meant by heavy consumption? Is there a right quantity to consume?

For example, an online newspaper stated that in Italy consumers are estimated to eat 110 g of meat per day on average. This corresponds to roughly 770 g per week²⁷. The Italian Council for Agricultural Research (CREA) made a detailed analysis of consumption of meat in Italy. The analysis found that in Italy out of 770 g consumed per week, 420 g are of red meat and the remaining 190 g are of processed meat. The World Health Organization (WHO) indicates that should consume maximum 500 g of red meat per week²⁸. Epidemiologists said that in Italy, one out of five colorectal cancers is likely to be caused by red and processed meat. Nonetheless, with the increased meat consumption, high meat intake has been associated with increased cardiovascular risk in Italian cohorts as well.

²⁵ Farvid MS, Sidahmed E, Spence ND, Mante Angua K, Rosner BA, Barnett JB, *supra* note 7.

²⁶ University Of Oxford, *supra* note 8.

²⁷ Balboni, Valeria. “Carne: Sulla Tavola Degli Italiani Se Ne Mangia Troppa, 110 G al Giorno.” *Il Fatto Alimentare*, 4 Oct. 2017.

²⁸ *Red and Processed Meat in the Context of Health and the Environment*.

In summary, Italy reflects the spectrum of the globe, which reinforces the need for moderation of the new trend, high animal-based intake for high protein-intake²⁹.

FAO's statistics on the consumption of animal protein worldwide in 2023 indicate that 140 million tons of poultry, 122 million tons of pork, and 72 million tons of beef were consumed³⁰.

2.3 Environmental Impact of Rising Meat Consumption

The meat production has increased dramatically over the past six decades. Back in 1960, the population was calculated to be 3 billion people, compared to 8.2 billion today. The global meat production was estimated to be 70 billion tons, compared to 373 billion tons today. This massive increase reflects not only a rise in population, but also the change in dietary habits. Especially in developed countries, protein-rich food is a priority. For example, in Italy, per capita meat consumption has nearly quadrupled since six decades ago, growing from the 21 kg per person per year in 1960 to 79 kg today. Worldwide, the average meat consumption per person per year today is around 45 kg. Additionally, the consumption of other products that derive from animals have increased substantially. Since 1960, eggs consumption, in fact, have increased by 340%, while milk consumption has grown by 90%. Animal-based protein food was once seen as both normal and, in some contexts, a luxury. The situation has changed as people have higher incomes, particularly in developed and emerging economies³¹.

In the 21st century, environmental concerns have become key factors in the behaviour of consumers towards food. Animal-based food production is characterized by negative externalities, such as biodiversity loss. A big share of land is used for the production of animal feed. As shown in the figure below, 50% of the world's land is used for agriculture, with 78% of it, devoted to livestock, while the remaining 22% is devoted to direct consumption³².

²⁹ “Le Carni Rosse Fanno Male Alla Salute?” *Www.airc.it*, 29 Jan. 2025.

³⁰ Mowi. (July 1, 2024). Estimated animal protein consumption worldwide in 2023, by source (in million metric tons) [Graph]. In *Statista*.

³¹ FAO, *supra* note 5.

³² Ritchie, H. and Roser, M. (2019), ‘Land Use’, *Our World in Data*, September 2019.

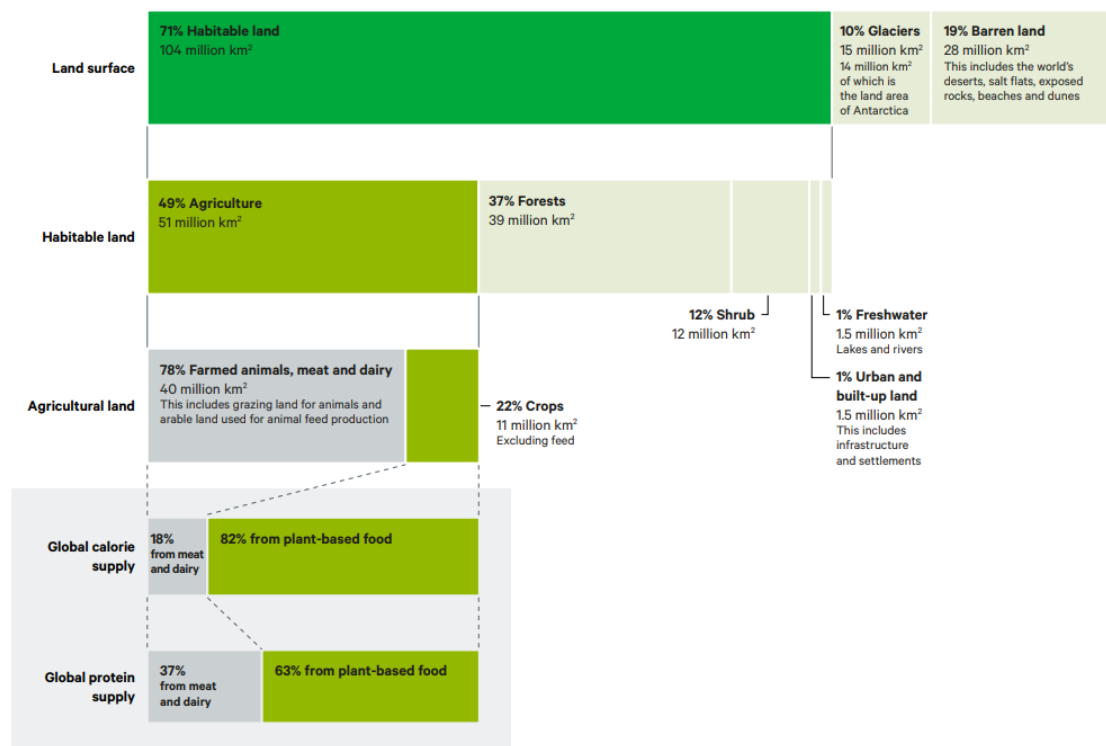


Figure 3. Land surface

Additionally, the expansion of pasture and soy feed crops is one of the leading drivers that contribute to deforestation. In fact, livestock raising is the primary cause of Amazon deforestation, accounting for 80% of the entire deforestation, and 36% of the overall agriculture-linked loss worldwide³³.

In Italy, 44% of the land is used for agriculture. Deforestation is not a big concern as Italy does not experience large-scale land clearing. However, the production of meat still affects land use³⁴.

Tropical deforestation not only destroys biodiversity, but it also releases billions of tons of CO₂, thus indirectly contributing to the climate change. The food system is responsible for greenhouse gas (GHG) emissions, which are emitted in large quantities from the

³³ Benton, Tim, et al. *Food System Impacts on Biodiversity Loss Three Levers for Food System Transformation in Support of Nature Energy, Environment and Resources Programme*. Chatham House, 202.

³⁴ *Id.*

livestock sector. This constitutes one-third of all emissions from the agricultural system, accounting for approximately 26% of the world's GHG emissions. Six decades ago, consumption of meat was a quarter of today, the positive correlation between the quantity of livestock and GHG emissions is obvious³⁵. 60% of GHG emissions comes from animal farming; mainly methane from ruminants and manure management. Italy's emissions are similar to the global spectrum, with a heavy emphasis in methane³⁶.

The chart below compares the environmental impact of different protein sources by evaluating two key metrics per 100 g of protein. As the chart shows, beef and lamb are the protein sources with the highest environmental impact, while plant-based proteins have significantly lower GHG emissions and land use, making them the most sustainable options.

³⁵ Ritchie, *supra* note 32.

³⁶ Simone, Anna. "ISPRA, Emissioni: Calano in Agricoltura - Carni Sostenibili." *Carni Sostenibili*, 8 July 2024.

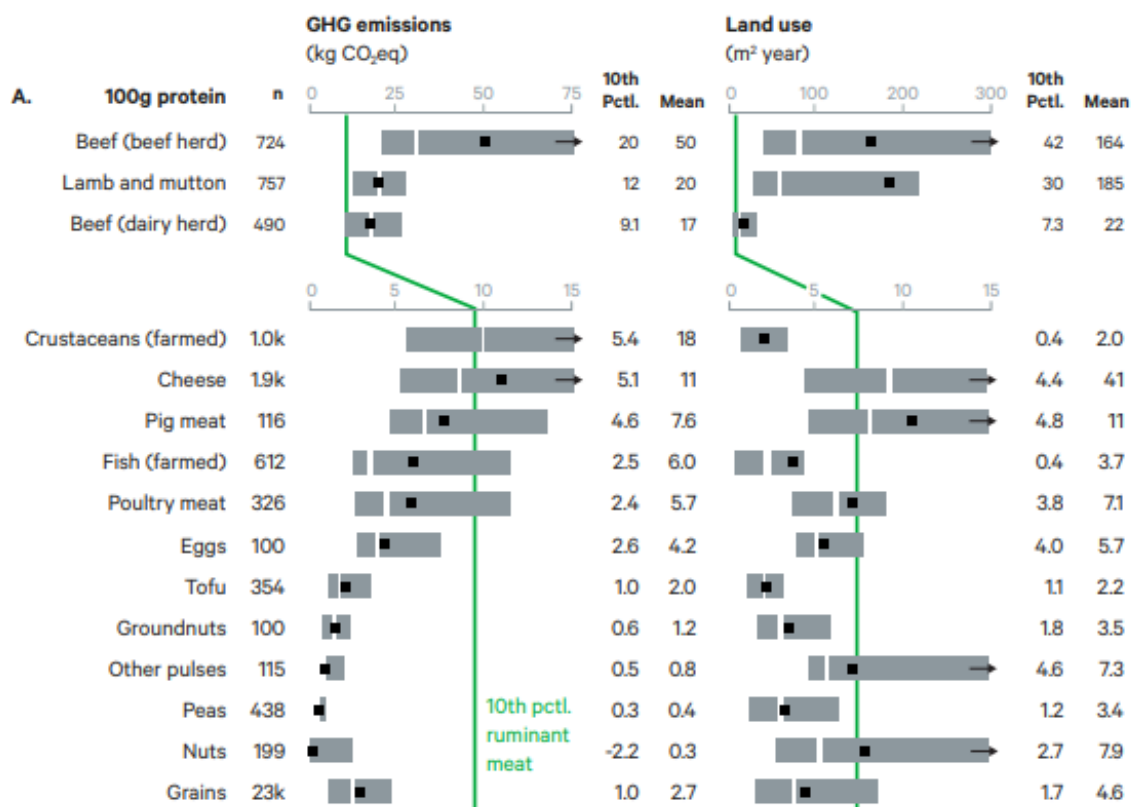


Figure 4. Environmental impact per 100 grams of protein

As stated above, the quantity of meat consumed worldwide today is approximately 373 billion tons. Consequently, the global emissions in one year of CO₂ can be estimated as follows:

$$373 \text{ billions tons of meat} \times 15 \text{ tons of CO}_2 = 5.6 \text{ trillion tons CO}_2$$

As to Italy, considering that there are roughly 58 million inhabitants, total emissions of CO₂ in one year can be estimated as follows:

$$79 \text{ kg/person} \times 58 \text{ millions of people} = 4.582 \text{ million tons of CO}_2$$

$$4.582 \text{ million tons of CO}_2 \times 1,000 \text{ kg/ton} \times 15 \text{ kgCO}_2/\text{kg} = 68.7 \text{ million tons of CO}_2^{37}$$

³⁷ *Food System Impacts on Biodiversity Loss Three Levers for Food System Transformation in Support of Nature Energy, Environment and Resources Programme*. Chatham House, 2021.

Furthermore, meat production requires a high use of water to raise livestock and crops. Agriculture uses 70% of the global freshwater³⁸.

According to the figure, 15,000 litres of water are needed for one kilo of beef, which in proportion is vastly more than the amount used for grains or vegetables.

Today, are needed: $373,000\text{kg} \times 15,000\text{liters/kg} = 5,595,000,000$ litres of water for global production of beef.

Italy suffers from nutrient runoff. In fact, its dense farming area generates approximately 95% of Italy's ammonia (NH_3) emissions and about 82% of Italy's NH_3 , which specifically comes from livestock operations. However, Italy has taken steps to improve the situation by improving measures of storage and promoting organic farming with lower synthetic fertilizers.

Today, are needed $79\text{ kg of meat} \times 15,000\text{ litres/kg} = 1,185,000$ litres of water for Italy's production of meat³⁹.

2.4 Plant-Based Diet as Substitute

Health and environmental concerns have induced consumers to move towards more sustainable and healthier diets. In response, a shift driven by the promise of better health outcomes and a lower environmental footprint led to the introduction of a plant-based diet⁴⁰. Some questions may arise:

Firstly, is a plant-based diet optimal for weight loss? According to ScienceDirect, a plant-based diet, which can be seen as a vegetarian diet, is positively correlated with body weight loss. These diets contain high fiber, which is an essential nutrient that helps to increase satiety and decrease total caloric intake. A meta-analysis indicated that vegetarian diets can be at least as effective as omnivorous diets for weight loss. In fact, they

³⁸ "Environmental Impacts of Food Production." *Our World in Data*, Our World in Data, 2022; Federico, Daniele. "Visita All'azienda Sperimentale IRRILAB: Il 9 Maggio per I Consulenti Agricoli Sul Tema Irrigazione - Ersaf." *Ersaf*, 6 May 2025.

³⁹ Carozzi, Marco, et al. "Inverse Dispersion Modelling Highlights the Efficiency of Slurry Injection to Reduce Ammonia Losses by Agriculture in the Po Valley (Italy)." *Agricultural and Forest Meteorology*.

⁴⁰ "Alternative Proteins for Human Consumption." 7 June 2022.

resulted in greater weight loss than non-vegetarian diets. Thus, success depends on each individual's effort on maintaining a caloric deficit.

Second, what are the health implications of a plant-based diet? Long-term adherence to a plant-based diet has several well-documented health benefits. A vegetarian diet benefits a healthy lifestyle. Consumers who follow a plant-based diet tend to have on average a lower body mass index (BMI) and a reduced probability of contracting chronic diseases. Vegetarians are, in fact associated with a lower rate of coronary hearth disease and a reduced risk of contracting type 2 diabetes and obesity. Compared to meat lovers, plant-based populations also show a lower overall cancer incidence⁴¹.

The bar chart below shows the factors that increase/decrease the percentage of mortality in relation to certain type consumption. Red meat clearly has a negative effect on health, while vegetarian products have a positive effect on health, actually improving it⁴².

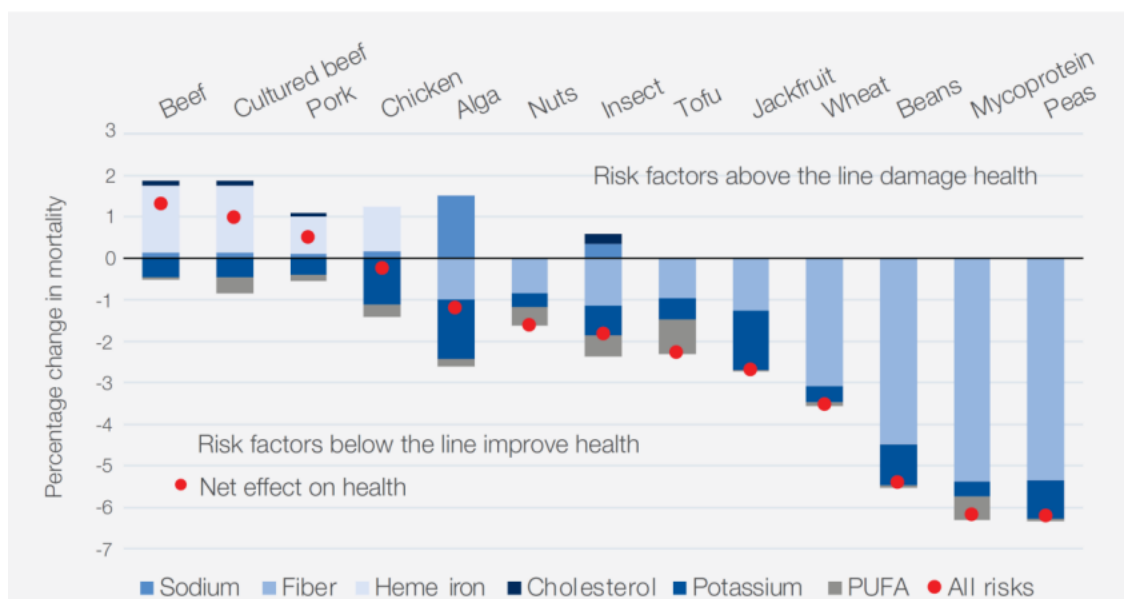


Figure 5. Percentage change in mortality of the main product

Third, is a plant-based diet a sustainable one? Vegetarian diets are much more sustainable as they utilize less water, reduce air pollution, and less land is used for livestock. The

⁴¹ "Plant-Based Diets and Their Impact on Health, Sustainability and the Environment - a Review of the Evidence." *Readkong.com*, 2021.

⁴² Barakat, Dr Shima, et al. *Alternative Proteins for Human Consumption*, 7 June 2022.

latter evidence the fact that fewer animals are used for farming, which in turn reduces the quantity of methane produced, one of the most impactful emissions. It can be further associated with a 70% reduction in (GHG) emissions⁴³. According to a study made by the University of Oxford, if the world adopted vegetarian or vegan diets, food-related GHG emissions could be cut by 63–70% by 2050⁴⁴. On the same way, the amount of land used to feed the global population could be reduced by nearly 75%. This reduction in agricultural land use would reduce the pressure on forests and wildlife habitats, helping combat deforestation and biodiversity loss⁴⁵. Many organizations and experts encourage plant-based diets, as they are seen as protective for the environment, and in consequence, for the population. A plant-based diet carries many health and environmental benefits, compared to animal-based diets. They ensure an adequate intake of protein, micronutrient supplementation, and consumption of various plant-based sources, along with being environmental-friendly⁴⁶.

⁴³ Craig, Winston John. “Nutrition Concerns and Health Effects of Vegetarian Diets.” *Nutrition in Clinical Practice*, vol. 25, no. 6, Dec. 2010, pp. 613–620; Lynch, Heidi, et al. “Plant-Based Diets: Considerations for Environmental Impact, Protein Quality, and Exercise Performance.”

⁴⁴ University of Oxford. “Veggie-Based Diets Could Save 8 Million Lives by 2050 and Cut Global Warming | University of Oxford.” *Www.ox.ac.uk*, 22 Mar. 2016.

⁴⁵ “If the World Adopted a Plant-Based Diet We Would Reduce Global Agricultural Land Use from 4 to 1 Billion Hectares.” *Our World in Data*, 4 Mar. 2021.

⁴⁶ FAO. “Dietary Guidelines and Sustainability.” *Food and Agriculture Organization of the United Nations*, 2024.

3 Methodology

3.1 Research Design

"How are Italian food industries adapting to the high-protein demand in an era of increased self-awareness of health and environmental issues?"

In order to answer this question, this thesis adopts a comprehensive case study approach of the Tonazzo Group and the Barilla Group in order to answer the question. These two companies are strategically adapting to the growing demand for high-protein products, in the context of a sustainable era.

3.2 Case study: Group Tonazzo

The Tonazzo Group is a 136-year-old Italian meat producer that has achieved key milestones for a more sustainable environment. Founded in 1888, Tonazzo built its legacy over five generations in the traditional meat sector, offering a wide range of beef, pork and poultry products. A century after the foundation of the Venetian group, the company started experiencing meat substitutes, such as vegetarian burgers, launching the well-known Kioene brand. In the 1990s, Tonazzo revolutionized meat operations with new meat cuts for the Italian market. Simultaneously, the company expanded Kioene's plant-based line, marking the company's "second revolution" through early diversification. In September 2024, Tonazzo publicly declared a full exit from the meat business by the end of the year, framing it as a "third revolution." In January 2025 Tonazzo officially became a 100% plant-based company. This early move established Tonazzo as a pioneer in Italy's vegetarian protein sector in the early days. This underscores the deliberate and strategic nature of Tonazzo's transformation, which was driven by a confluence of sustainability goals, consumer trends, and ethical considerations. The entire shift towards Kioene aligns with consumer preferences and social priorities, which is a critical consideration in contemporary food industry management⁴⁷.

⁴⁷ Foreman, Polly. "Italian Meat Giant Gruppo Tonazzo Stops Selling Meat." *Plant Based News*, 24 Sept. 2024; Coyne, Andy. "Italy's Gruppo Tonazzo Abandons Meat for Plant-Based Future." *Just Food*, 18 Sept. 2024.

3.3 Case study: Barilla

Barilla is a 145-year-old pasta producer that led the market for more than a century. However, given the rise of high-protein and low-carb trends and the sustainability factors, Barilla started to diversify its product portfolio. In 2013, Barilla's strategic pivot began. It adopted a "Good for You, Good for the Planet" mission strategy, emphasizing healthy nutrition and sustainable practices across the company. Meanwhile, it started to promote healthy innovation with its gluten-free pasta⁴⁸. In 2016, Barilla initiated a product reformulation by launching 16 new whole grain products. This move was part of a strategic plan to improve the nutritional profile. In 2017, it accelerated its product reformulation by eliminating palm oil from its products. In 2018, it introduced one-ingredient legume pastas, along with organic pasta made from 100% Italian wheat. In 2019, Barilla signed a sustainable wheat contract with farmers to increase production. Lastly, in 2020, Barilla reformulated the Protein+ line to make it fully vegan. By diversifying its product portfolio, Barilla has essentially repositioned itself from being "just a pasta company" to being a provider of various modern meal solutions. Barilla's strategic shift in response to health, sustainability, and high-protein trends effectively realigned its value proposition with contemporary consumer utility functions⁴⁹.

3.4 Data Sources

Data on the microeconomic impact of sustainability trends were collected from Kioene's 2023 Sustainability Report and Barilla's 2023 Sustainability Report, along with external market databases, such as Statista.

The Tonazzo Group's Kioene brand offers a report with detailed data on the financial performance and sustainability metrics. Key quantitative indicators from this report include Kioene's annual revenues and profit growth. It is stated that the company achieved €52 million in revenues in 2023 (approximately +13% vs 2022) with a net profit of about €2.4 million (+43% compared to 2022). In 2022, the company achieved €46 million in revenues (approximately +17% compared to 2021) with a net profit of about €1.7 million

⁴⁸ "Chronology - Archivio Storico Barilla." *Archivio Storico Barilla*, 29 May 2024.

⁴⁹ *Id.*

(+91% compared to 2021). Kioene experienced a rapid growth in the plant-based segment.

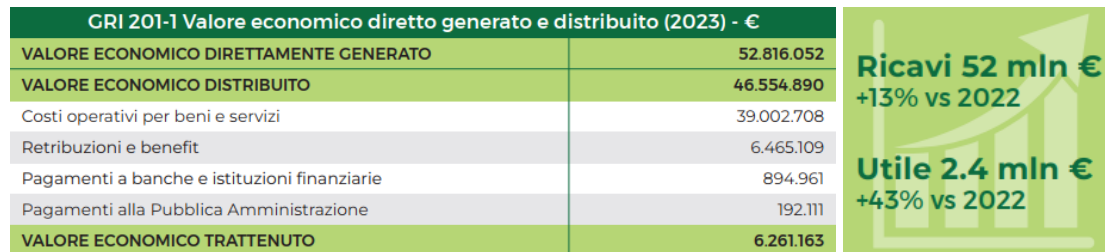


Figure 6. Kioene's annual revenues and profit growth in 2023

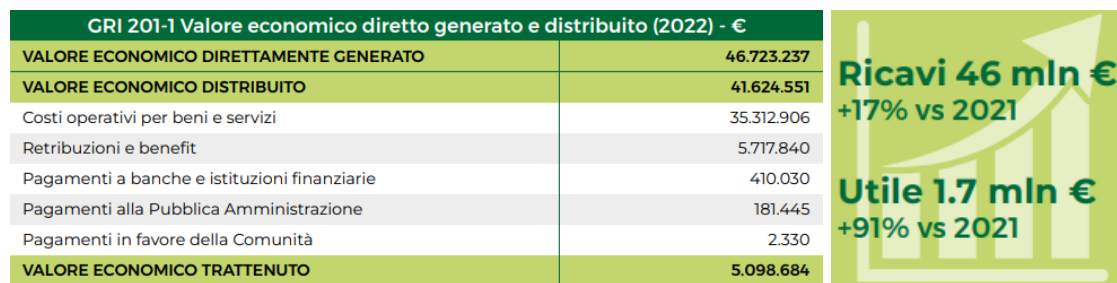


Figure 7. Kioene's annual revenues and profit growth in 2022

The report provides further data on the environmental performance. For example, performance on GHG emissions and waste reduction. In 2023, direct (emissions from sources that are owned or controlled by the company) and indirect (reflects the average emissions intensity of the electricity grid where the energy is consumed) CO₂ emissions were approximately 1.8 thousand tons each. GHG emissions from direct and indirect consumption decreased by approximately 8% and 4% respectively compared to 2022. Total CO₂ emissions per tonne of finished product have been gradually decreasing over the years, reaching a reduction of 28% since 2010. This evidence the positive progress on the reduction of emissions⁵⁰.

Barilla's (Good for You, Good for the Planet) report provides data on its sustainability achievements and innovation in product offerings, which are relevant for Barilla's response to consumer trends. In terms of product innovation, Barilla documents hundreds

⁵⁰ Kioene. "Pubblicato Il Bilancio Di Sostenibilità 2023 Di Kioene." Kioene, 2023.

of product improvements aimed at healthier nutrition: 497 products have been reformulated since 2010 and 16 new products have been introduced to meet modern health demands. This strategy led the company to close 2023 with a group turnover of 4.87 billion euros, with a slight growth of 4% over 2022. Such data illustrate Barilla's strategy of aligning its product portfolio with sustainability and high-protein trends⁵¹.

Beyond company documents, external consumer and market data are utilized to capture demand-side trends in Italy. For example, Statista provides an overview of the plant-based segment in Italy, which has risen sharply in recent years, reflecting increasing consumer demand for meat alternatives. In Italy, retail sales of plant-based food between 2020 and 2022 experienced an increase in growth. According to Statista, in 2020 total plant-based products amounted to €565 million, while in 2022 it amounted to €681 million, with an approximate 20% increase in two years. For example, Kioene's share in the Italian plant-based meat segment was reported at 8.9% in 2022, marking it as a key player in that market⁵².

⁵¹ Barilla group bilancio economico 2023. Annual Report 2023.

⁵² "Italy: Plant-Based Products Sales Value 2022." In *Statista*.

4 Analysis

Italy broadly reflects the spectrum of the globe as concerns the dynamics in the food market. Both Italy and the global market experienced an increase in meat consumption between 2023 and 2025 of 2.4% and 3.2%, respectively. At the same time, among Italian consumers there is an increasing popularity for healthier and more sustainable food options that, at the same, offer products rich in protein.

Since 2021, the Tonazzo Group experienced a continued growth of the Kioene brand. In 2023, vegetarian business counted for 65% of its entire business, reflecting the positive performance of the eco-friendly Kioene brand. At the end of 2024, Tonazzo announced the exit from its traditional animal-based production, to concentrate 100% on its vegetarian business. This shift illustrates the adaptation of the Tonazzo Group to the change in behaviour among Italian consumers⁵³.

Barilla entered the segment with a diversification strategy that led the group to close the financial year 2023 with a turnover of 4.87 billion euros, corresponding to a growth of 4% over 2022. It repositioned itself from being a producer of traditional pasta to a supplier of “modern meal solutions”, aligned with health and sustainability trends in the market. Customers of Barilla now they get higher protein and healthier content with lower environmental cost. Barilla’s decision to diversify its production towards healthier alternatives reinforces the appeal of consumers to move towards healthier and greener products⁵⁴.

The success of both the Tonazzo’s Kioene brand and Barilla’s diversified product lines reflects the move of Italian consumer, not just away from meat, but towards healthier, and more sustainable protein-rich food. Tonazzo’s full transition to plant-based products and Barilla’s product lines evolution replies to the fact that Italian consumers are seeking innovative and nutrient alternatives. This further denotes the demand for healthier and

⁵³ Kioene, *supra* note 51.

⁵⁴ Barilla, *supra* note 16.

environmentally friendly options, which are reshaping the entire food landscape, not just the meat sector⁵⁵.

⁵⁵ Kioene, *supra* note 51; Barilla, *supra* note 16.

5 Conclusion

In conclusion, the food sector has undergone profound transformations in recent years. This thesis has analysed the evolution of the demand for high-protein products, globally and with a focus on the Italian market, which from animal-based products shifted towards more sustainable alternatives, as the plant-based ones. Health motivations and environmental concerns are the main drivers of the shift of demand from animal-based products towards more sustainable alternatives. The market is driven by demand. In the food sector analysed, the demand is driven by, among other factors, functional food that supports personal wellness and ecological responsibility. The demand of sustainable alternatives pushed producers to move from a potential static situation to join the market, taking the challenge of its transformation as an opportunity.

The analysis confirmed that consumer preferences are strongly interlinked with the new perceptions of utility. The examples of two Italian companies, the Tonazzo Group and the Barilla Group, are emblematic to show the ability of certain producers to adapt to these changes. The entire transition of Tonazzo to plant-based products under the Kioene brand demonstrated the strategic move to align with consumer needs, which has resulted in the revival of the company along with making a positive impact to the planet. The strategic and progressive reformulation of Barilla's product line, incorporating legume-based and Protein+ pasta, highlighted a more gradual but equally determined path towards innovation of the company in response to health and environmental priorities of consumers.

Functional food that supports high-protein and ecological responsibility is at the centre of the wellness economy, which post-Covid started to experience a continuous growth. Consumers are choosing alternatives that maximize both their personal health and are eco-friendly. The findings suggest that Italian food industries are reacting to the market shift and are actively participating in a systemic change. As demand continues to evolve, those firms most adjust to the health and ethical dimensions of consumers. Firms who successfully adapt will lead the future of food.

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