The Farm to Fork Directive and the 2030 UN Agenda: An Analytical Perspective on EU Food Policy Effectiveness

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ABSTRACT

The 2030 Agenda for Sustainable Development represents a comprehensive global framework, encompassing 17 Sustainable Development Goals (SDGs). Adopted unanimously by all 193 United Nations member states through Resolution 70/1 on September 15, 2015, it aims to address pressing global challenges. Among these, SDG 2 is particularly pivotal, targeting the eradication of hunger, universal access to safe and nutritious food, the elimination of malnutrition, and a substantial increase in agricultural productivity. As a unified political and economic entity, the European Union (EU) has pledged to align its policies with these objectives. This study employs a qualitative methodology to examine EU agricultural policies in relation to SDG 2, assessing their effectiveness in advancing its targets. A key focus is the Farm to Fork (F2F) Directive, which governs agricultural practices across the 27 EU member states. Through a systematic review of recent press articles, televised debates, and secondary accounts of interviews with EU policymakers and representatives of farmers' unions, this research evaluates the prospective trajectory of EU agri-food production and its capacity to support global efforts to combat malnutrition. The findings suggest that the EU agricultural sector may undergo significant contraction, with many small and medium-sized enterprises facing closure and a potential decline in food quality. Consequently, the study concludes that current EU policies are unlikely to increase agricultural productivity sufficiently, thereby compromising the EU's ability to achieve the third objective of SDG 2. The study further highlights broader implications for food security, socio-economic stability, and policy coherence within the EU. The findings underscore the need for pragmatic, well-supported policies that balance environmental objectives with the sustainability and resilience of the EU's agricultural sector.

Keywords: EU Policy; F2F Directive; Policy Effectiveness; Sustainable Agriculture; UN 2030 Agenda

INTRODUCTION

World hunger remains one of the most critical global challenges of our time. Although global food production is sufficient to sustain the entire population, over 733 million people - equivalent to one in eleven individuals worldwide - continue to suffer from hunger (Improta, 2024). Data from the Food and Agriculture Organization (FAO), the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD), and the United Nations Children's Fund (UNICEF) reveal stark regional inequalities in food security. In Africa, hunger is intensifying, affecting approximately one in five people, while the incidence of moderate to severe food insecurity remains nearly twice the global rate. In contrast, the Caribbean and Latin American regions have progressed, while Asia's hunger levels have remained relatively stable (Garroni, 2024). These figures underscore a critical failure of the international community to achieve the Zero Hunger target by 2030. The global number of undernourished individuals has yet to resume the downward trend observed between 1990 and 2015, highlighting a significant setback in efforts to eradicate hunger (Alfieri, 2025). The following graph illustrates the estimated number of undernourished people worldwide from 2005 to 2023.

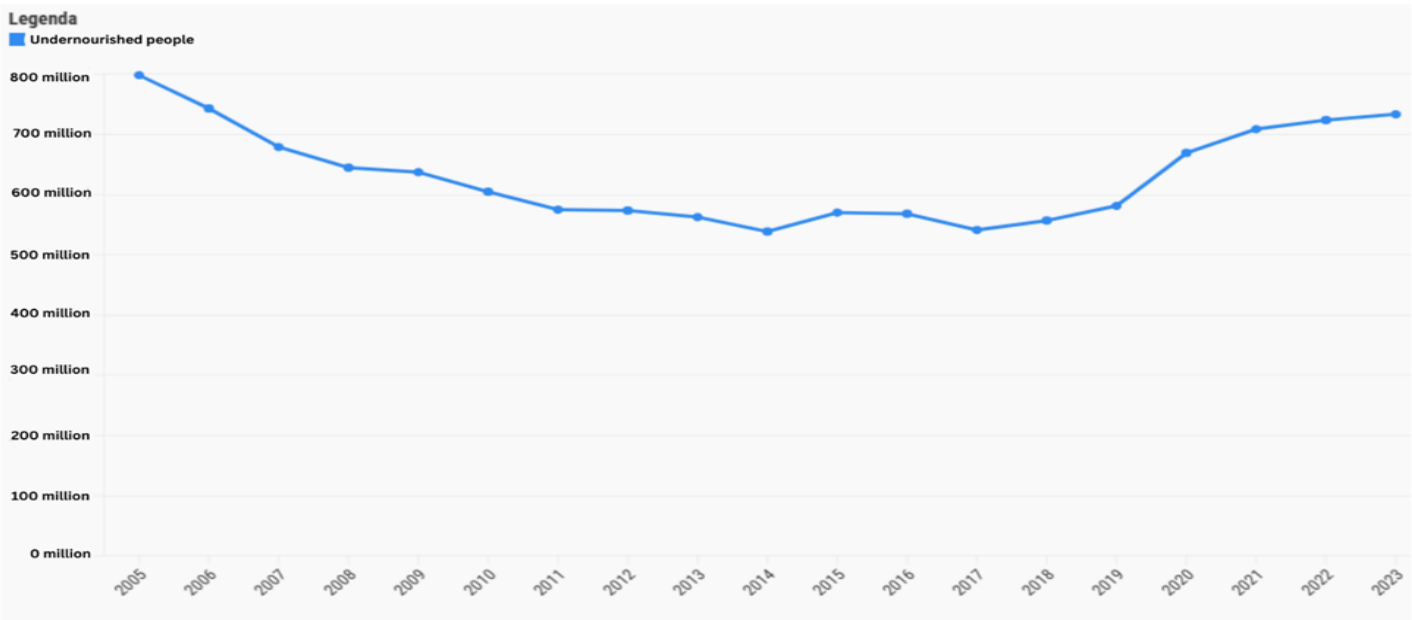

Figure 1. Trends in global undernourishment: estimated affected population, 2005–2023. (Source: The State of Food Security and Nutrition in the World 2024, https://www.openpolis.it/continua-a-crescere-il-numero-di-persone-che-soffrono-la-fame/)

Despite international efforts to ensure adequate diets and eliminate chronic undernourishment, the financial resources allocated by the international community remain gravely insufficient. Between 2017 and 2023, an average of $76 billion per year was invested to address this crisis. However, access to these funds is often hindered by bureaucratic obstacles, particularly for the world's poorest nations, which face significant challenges in securing the necessary financial support (Capuzzi, 2024). The latest report by the Oxford Committee for Famine Relief (OXFAM) - a worldwide alliance of charitable groups focused on alleviating poverty through aid programs and sustainable development efforts - underscores the stark disparity between military expenditures and funding for food security. According to OXFAM, reallocating just 2.9% of the annual military budget of the G7 countries (equivalent to $35.7 billion out of a total of $1.2 trillion) would be sufficient to eliminate food crises and alleviate the foreign debt burden of developing nations. An additional $4 billion could further reduce debt levels in the Global South, unlocking essential public resources for critical sectors such as education and healthcare in the most vulnerable and highly indebted regions (Moriero, 2025). These figures highlight not only the financial feasibility of addressing world hunger but also the urgent need for a paradigm shift in global priorities. Redirecting even a fraction of military spending toward sustainable development could yield profound humanitarian benefits, fostering long-term food security and economic stability in impoverished regions.

The OXFAM report, published on January 20, 2025, coincided with the commencement of the World Economic Forum in Davos, Switzerland, and the inauguration of billionaire Donald Trump as the 47th president of the United States, supported by the world's wealthiest individual, Elon Musk. This timing underscores a critical point: the achievement of the global goals outlined in the 2030 Agenda, particularly the objective to eliminate hunger, remains deeply compromised by persistent and growing economic inequality. Currently, the richest 1% of the global population controls more financial assets than the remaining 95%, with the concentration of wealth continuing to rise. The number of billionaires worldwide reached 3,028 in 2024, an increase of 247 compared to the previous year. This marks the first time the global billionaire count has exceeded three thousand (Parente, 2025). Such disparities in wealth perpetuate an ever-widening gap between a minuscule fraction of individuals and the vast majority of the world's population. If this trend continues, it is increasingly clear that global hunger will remain an intractable issue (Di Stefano, 2025). While the redistribution of wealth remains an enduring challenge due to its complex philosophical, legal, moral, and political dimensions, it is imperative that the signatories of the 2030 Agenda - including the EU - intensify their efforts to boost agricultural production. This is crucial to meet the needs of the vast segments of the population still suffering from hunger and severe malnutrition. In light of these inequalities, implementing an all-encompassing strategy aimed at addressing not only the immediate challenges of food security but also the underlying structural factors contributing to global

hunger, is essential. Absent such coordinated efforts, the international community's objective of eliminating hunger by 2030 will remain an unattainable goal (Santelli, 2025).

LITERATURE REVIEW

The FAO Statistical Yearbook 2024 provides essential insights into the sustainability of global agriculture, food security, and the role of agri-food systems in employment. The publication from the Food and Agriculture Organization of the United Nations (FAO) underscores several pressing challenges, including rising land temperatures, the ongoing global food insecurity crisis, and the environmental pressures confronting agricultural production. Drawing on extensive data compiled by FAO statisticians, this edition presents a comprehensive analysis of the key elements shaping global agri-food systems.

The 2024 edition is divided into four thematic areas: agricultural economics, commodity markets and pricing, food availability and nutritional outcomes, and environmentally sustainable farming. Over the past twenty years, the global agricultural sector's real value has climbed by 89 percent, reaching $3.8 trillion in 2022. Despite this increase, its overall contribution to the world economy has stayed largely constant, while the share of the global labor force working in agriculture dropped from 40 percent in 2000 to 26 percent in 2022. Food production continues to expand, yet hunger remains a widespread challenge. In 2023, between 713 and 757 million people were estimated to be undernourished, an increase of about 152 million since 2019. While most undernourished individuals live in Asia, Africa experiences the highest prevalence of food scarcity. Total primary crop output reached 9.6 billion tonnes in 2022, a 56 percent rise since 2000, with staple crops such as maize, wheat, rice, and sugarcane accounting for roughly half of global production.

Meat production has also risen significantly, with a 55 percent increase between 2000 and 2022, particularly driven by the production of chicken, which has surpassed pork as the most produced type of meat. In 2022, global meat production reached 361 million tonnes. The use of pesticides has seen a 70 percent rise over the same period, with the Americas accounting for half of the global pesticide consumption in 2022. Additionally, inorganic fertilizer use has reached 185 million tonnes of nutrients in 2022, with nitrogen comprising 58 percent of this total. This marks a 37 percent increase from 2000. The production of vegetable oils has also surged, growing by 133 percent between 2000 and 2021, largely driven by the expansion of palm oil production.

Greenhouse gas emissions from agri-food systems have risen by 10 percent between 2000 and 2022, with farm-gate emissions increasing by 15 percent during this period. Livestock production is responsible for approximately 54 percent of these emissions. The FAO Statistical Yearbook remains a critical tool for policymakers, researchers, and analysts, offering invaluable data on the current state of global food systems and the challenges ahead in shaping the future of food and agriculture.

The EU Commission, through its Green Deal, has outlined a comprehensive strategy aimed at achieving climate neutrality across Europe by 2050. A key component of this initiative is the F2F Directive, which holds particular significance for the agricultural sector due to its substantial implications. Recently, two technical reports have been published, evaluating the potential impacts of the EU's policy directions on agricultural production, the environment, producer incomes, and trade flows. These reports were developed by the EU Commission's Joint Research Centre (JRC) (Barreiro-Hurle et al., 2021) and the United States Department of Agriculture (USDA) (Beckman et al., 2020).

The research conducted by Barreiro-Hurle et al. in 2021, titled "Modelling Transitions to Sustainable Food Systems: Are We Missing the Point?", highlights concerns raised by industry stakeholders regarding the potential adverse effects of the F2F strategy on the farming sector. The findings of the study reveal the following negative outcomes for EU farmers under the F2F framework:

- A 4% reduction in cultivated land and a 15% decline in cereal production.
- A 4% reduction in land area and a 16% drop in oilseed production.
- A decrease in horticultural and permanent crop production.

- A 10% reduction in dairy cattle numbers and milk production.
- An 18% decrease in beef cattle numbers and a 14% reduction in beef production.
- A 14% reduction in pig production and a 16% drop in pig numbers.
- A 9% decrease in sheep and goat populations and a 10% decline in production.
- A 17% reduction in poultry numbers and a 16% drop in poultry production.

The F2F Directive mandates a shift away from conventional farming practices in favor of organic production, yet this transition raises environmental concerns. Compared to traditional methods, organic cultivation is often considered less sustainable, as it typically requires 20 to 40% more land to yield the same amount of product, depending on the crop. Thus, the environmental benefits of increasing organic production remain debatable, especially in terms of land use efficiency.

An analysis by the United States Department of Agriculture (USDA) (Beckman et al., 2020) indicates that the implementation of the F2F strategy will reduce agricultural production within the EU while diminishing its competitiveness in both domestic and export markets. If applied globally, its impact would be significantly amplified, with potential repercussions for global welfare and food security. The regulatory constraints imposed by EU authorities - such as targeted reductions in land use, fertilizers, and plant protection products - are likely to have profound effects on the structure and productivity of the EU agri-food sector. Given the EU's prominent role in global agricultural production and trade, these policy measures could also exert substantial influence on international agricultural commodity markets and the broader agri-food system. To assess the implications for market dynamics and food security, the USDA report primarily examines the reductions mandated by the F2F strategy, including a 50% decrease in plant protection product usage, a 20% reduction in fertilizer application, a 50% reduction in antimicrobial use in livestock farming and aquaculture, and the withdrawal of 10% of agricultural land from production.

Furthermore, the implementation of the F2F strategy is anticipated to generate several key effects:

- Rising production costs and consumer prices, leading to reduced profitability within the farming sector.
- Declining output, resulting in a loss of market share for EU producers, to the advantage of non-EU competitors.
- Lower greenhouse gas (GHG) emissions and pollutant levels as part of the EU's broader ambition to achieve climate neutrality by 2050. However, this environmental benefit could be offset on a global scale due to carbon leakage - wherein production shifts to regions with less stringent environmental regulations, leading to increased emissions elsewhere. This phenomenon mirrors past trends in the EU industrial sector, where the relocation of industries such as chemicals and steel manufacturing outside the EU ultimately undermined the intended environmental gains.

Given the conditions outlined and the inelastic nature of food product demand within the EU, international analysts have expressed growing concern that the adoption of the F2F strategy could shift the environmental burden of agricultural production to other countries (e.g., the USA, Indonesia, Malaysia, Brazil, and Argentina). These are nations with which the EU has recently established significant import agreements (Cantarini, 2025).

The EU's green policies, often championed and advanced ideologically by left-wing political forces, are likely to yield a range of negative economic and social consequences, as evidenced by the farmers' protests in Brussels (De Luca, 2024). Sustainability, however, extends beyond environmental considerations - it encompasses economic and social dimensions as well. The reduction in agricultural output, driven by the EU's ideological and top-down policies, threatens to elevate food costs without yielding substantial environmental benefits at either the local or global level (Latini, 2025). These EU policies are poised to significantly increase the Union's reliance on external sources for agricultural products, thereby exporting the unsustainable practices that the EU

aims to mitigate domestically. This situation mirrors the earlier experiences with energy resources, where the EU's energy independence has been compromised (Di Marco, 2025).

The vision of agri-food and energy self-sufficiency, once central to the founding fathers' conception of EU security and development, now appears to be fading. A parallel can be drawn between agriculture and the energy sector, the latter of which highlights the EU's critical dependency on external energy sources such as oil and natural gas. In its efforts to reduce reliance on coal and nuclear energy, the EU has sought to promote global adherence to similar goals. However, this has led to paradoxical outcomes, such as the importation of photovoltaic panels from China, where they are produced using energy derived from coal-fired power plants. This illustrates the unintended consequences of well-meaning environmental policies and highlights the complexity of achieving genuine sustainability (Braghini, 2024).

Research Aims and Questions

This study examines how the EU Commission and Parliament regulate the agricultural sector and its production. Specifically, it seeks to:

1) Assess the impact of the F2F Directive on EU farmers and their activity.

2) Analyze the operational conditions imposed on EU farmers under the F2F framework.

3) Investigate the restrictions and burdens introduced by the F2F Directive and the resulting imbalance between EU farmers and their non-EU counterparts.

To achieve these objectives, the study addresses the following research questions:

1) Does the F2F benefit EU farmers and the agriculture sector?

2) What are the reasons behind the strong opposition and protests by EU farmers against the EU institutions?

3) Does the F2F Directive help boost EU food production in line with the third target of the 2030 global development framework?

By answering these questions, this study aims to provide a critical and in-depth analysis of the F2F Directive, which has been widely regarded as harmful and burdensome by EU farmers and conservative political groups within the EU Parliament.

METHODOLOGY

This research draws on several investigative tools to assess the F2F Directive, focusing on its scientific foundations, the practical challenges it may present, its potential effects on agricultural output, and its broader significance for culinary and cultural practices within the EU. The methodological design integrates four elements—review of key documents, in-depth interviews, examination of media portrayals, and consolidation of relevant data—within a case-study structure, which is appropriate for exploring multifaceted issues situated in real-world settings (Yin, 2018).

1. Document Analysis

This research analyzes EU Commission documents governing the agricultural sector and outlining sustainability-driven, environmentally oriented reforms. The analysis seeks to:

- Map the evolution of the F2F Directive,
- Evaluate the evidence base underpinning its regulatory proposals,
- Analyze how openly decisions are made within its policy process, and

- Explore external actors that may influence its formulation and execution.

This research reviews EU Commission materials designed to steer the agricultural sector toward environmentally oriented and sustainability-focused practices. It also seeks to chart the evolution of the policy, examine the evidence that underpins the Directive's technical provisions, and analyze how decisions are made.

2. Interpretive Review of Interview Findings

To capture a broad spectrum of perspectives, the study analyzes interviews with policymakers, EU farmers, scientists, and politicians from opposing viewpoints, sourced from reputable media outlets. A thematic analysis is applied to:

- Investigate the motivations behind the adoption of the F2F Directive,
- Evaluate the extent of scientific agreement on the evidence underpinning the Directive's feasibility, environmental impact, and effects on food production.
- Explore the political factors that have influenced both the formulation of the Directive and its reception.

This approach highlights both dominant narratives and dissenting viewpoints, allowing for a nuanced understanding of the policy's impact and contested nature.

3. Analysis of Media Coverage

A structured review of prominent Western news sources was carried out to examine how the F2F Directive is represented, interpreted, and debated in public forums. Relevant articles were identified through targeted keyword searches (e.g., "EU agriculture", "food production", "laboratory-grown food", "health issues") and subsequently analyzed for:

- Content (factual reporting vs. opinion-driven narratives),
- Tone (supportive, neutral, or critical stances toward F2F),
- Bias (ideological leanings and editorial positioning).

4. Integration of Evidence

Insights gathered from the review of documents, interviews, and media coverage are combined to produce an in-depth evaluation of ongoing discussions surrounding food production and security in the EU. A triangulation strategy is employed to strengthen the validity of the conclusions by drawing on multiple sources of information.

5. Limitations

Despite the strengths of this multi-method approach, several constraints need to be recognized:

 Limited availability of sensitive policy materials, which may constrain a complete understanding of internal EU decision-making processes.

 Reliance on interviews in the public domain, which might not capture the views of experts or stakeholders who choose not to participate in media discussions.

 Possible bias in the selection of media outlets, since more prominent or politically influential perspectives may be disproportionately represented.

 Inherent biases in media content, given that mainstream outlets often frame EU policies through ideological or political lenses, shaping public perception in specific ways.

To address these challenges, this study employs methodological triangulation, comparing findings across multiple sources to confirm conclusions. A critical analytical stance is maintained throughout, accounting for possible distortions and discrepancies to provide a fair and thoroughly supported evaluation.

RESULTS AND DISCUSSION

The F2F strategy aligns with the key conclusions of the IPCC's Sixth Assessment Report, which underscores the urgency of bringing agricultural greenhouse gas emissions into closer alignment with those produced by the industrial sector (IPCC, 2023). Across the EU, agriculture currently accounts for more than one-tenth of total emissions. This level of contribution has intensified policy pressure to scale down the size and density of livestock operations—particularly cattle, pig, and poultry farms—that are among the leading sources of agricultural methane and nitrous oxide (Colombo, 2024). By curbing these emission-intensive activities, the F2F initiative seeks to mitigate agriculture's environmental footprint and move the EU toward a more sustainable production model.

Greenhouse gases act by trapping heat within the Earth's atmosphere, functioning in a manner comparable to the insulating effect of a greenhouse. They absorb incoming solar radiation and retain heat reflected from the planet's surface, preventing it from dissipating into space. This natural greenhouse effect is essential for maintaining temperatures that support life. However, human activity has markedly intensified this process. Although gases such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) occur naturally, their atmospheric concentrations have risen sharply due to fossil-fuel combustion, large-scale deforestation, industrial production, and the expansion of modern agricultural systems (Lasorella & Falconi, 2022). The result is an amplified greenhouse effect widely linked to contemporary climate change.

These scientific assessments, particularly those advanced by the IPCC—whose members are appointed by national environmental authorities—have been forcefully challenged by a group of prominent scientists, including Nobel Prize laureate Ivar Giaever, Guus Berkhout, Fritz Vahrenholt, and Alberto Prestininzi. They maintain that the environmental transformations commonly attributed to human activity are, in fact, not anthropogenic (Scopece, 2023). Despite the relevance of their critiques, EU institutions have consistently dismissed these alternative interpretations in the development of the F2F Directive and other environmental legislation. Policymakers have tended to exclude research arguing that there is no climate emergency or that global warming is not driven by human behavior (Mengarelli, 2024).

Within the EU Parliament, these dissenting scientists are often characterized in pejorative terms—such as "deniers" or promoters of destabilizing narratives. Their studies are routinely sidelined, and they are rarely invited to participate in high-level international scientific discussions on climate change. This pattern of exclusion narrows the range of voices present in policymaking forums and restricts opportunities for an open, democratic exchange among competing scientific perspectives (Feltri, 2024).

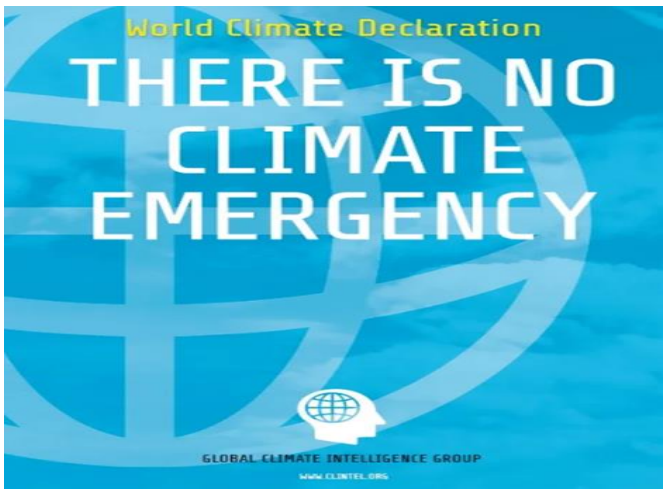

Figure 2. CLINTEL Group World Climate Declaration excerpt. (Source: https://clintel.org/world-climate-declaration/)

The F2F Directive articulates a broad reform agenda composed of thirteen strategic priorities. Its overarching aim is to reshape EU food production in ways that promote environmental stewardship, public health, and long-term sustainability.

Figure 3. Key objectives of the EU F2F Directive (EU Commission). Source: https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en)

These priorities include:

1. Guaranteeing equitable access to nutritious food, including the possible integration of novel or cultured food products.

2. Advancing environmentally sustainable farming, with particular emphasis on biodiversity protection, reduced ecological pressure, and climate-mitigation practices such as decreased pesticide dependence and expanded renewable-energy use.

3. Achieving a substantial reduction in chemical pesticides by 2030, encouraging the uptake of biopesticides and other ecologically responsible crop-protection methods.

4. Completing the shift from fossil fuels to renewable energy in agriculture by 2033, thereby lowering the sector's carbon intensity.

5. Lowering greenhouse gas emissions from livestock systems by 2035, targeting the substantial contributions of methane and nitrous oxide from animal agriculture.

6. Supporting biogas generation, particularly through the installation of anaerobic digesters capable of converting agricultural residues into sustainable energy.

7. Encouraging a major reduction—potentially up to 40%—in both meat production and consumption by 2030, as part of broader climate and health objectives.

8. Creating a unified EU-wide labeling and packaging framework that provides consumers with clear, standardized information about product composition and production methods.

9. Establishing comprehensive monitoring of farm resource use, requiring farms of all sizes to document their consumption of water, energy, and fuel.

10. Promoting full digitalization of farm operations, using data-driven systems to improve management precision and overall efficiency.

11. Addressing antimicrobial resistance, including a 50% reduction in the sale of antimicrobials for livestock and aquaculture by 2028.

12. Expanding organic agriculture, to dedicate 25% of EU agricultural land to certified organic production.

13. Introducing electronic food certificates to allow traceability and clear monitoring of individual products across the supply chain.

Although presented as measures to improve agricultural practices and address climate change, these regulations impose substantial financial and operational burdens on farmers, who often lack the resources to implement them without significant public support. The Plastic and Packaging Waste Regulation (PPWR), incorporated within the F2F strategy, exemplifies this challenge. It bans the production and use of single-use plastic packaging, affecting items such as salad bags, mesh citrus nets, cherry tomato containers, and packaging for products weighing less than 1.5 kg. In the hospitality sector, it also prohibits disposable containers under 50 ml for liquids like shampoo and creams, and items under 100 g for solid products. The PPWR is expected to influence a wide range of stakeholders, from restaurants and hotels to supermarkets, farms, and beverage distributors, potentially increasing both food waste and solid waste generation. Such outcomes appear to conflict with the EU Commission's stated objective of alleviating hunger (Lupoli, 2025). Compliance will likely require businesses to invest heavily in new machinery and restructured operational processes, with economists predicting that many small and medium-sized enterprises may close, while larger firms transfer increased costs to consumers, contributing to inflationary pressures (Sorbi, 2024). The regulation sets ambitious targets for phased reductions in disposable packaging: 10% by 2030, 15% by 2035, and 20% by 2040. Of particular concern is the potential impact on food safety and quality, as reduced packaging may accelerate spoilage and elevate waste levels (Solenne, 2025).

The optimistic projections highlighted by President Ursula Von Der Leyen in 2019, when the F2F Directive was first announced—promising enhanced environmental performance and innovative solutions for farmers—have largely failed to materialize. Many EU farmers, feeling abandoned and misled, have organized protests in Brussels, stressing that the costs and practical obligations associated with environmental transformation should not fall solely on private individuals (Fasanella 2024).

The EU Parliament's revision of the F2F initiative on 24 April 2024, through Directive 2024/1785, known as the Industrial Emission Directive (IED), further escalates tensions. Under this amendment, both intensive and smaller-scale livestock farms—including pig, sheep, and cattle operations—are classified as industrial activities contributing to greenhouse gas emissions. Farmers' unions have criticized this designation as inaccurate and unfair, noting that livestock farming in the EU collectively accounts for only 5% of total CO_2 emissions, compared to a global average of 14.5%, with emissions declining by 19% over the past three decades (Vega, 2024).

Agriculture, while a recognized source of climate-affecting gases, primarily emits methane (CH_4) and nitrous oxide (N_2O), with comparatively lower CO_2 output. Livestock representatives contend that methane emissions differ fundamentally from industrial emissions, as methane released by animals is reabsorbed by vegetation and decomposes into water (H_2O) and CO_2 within roughly ten years, subsequently incorporated into plant biomass used as animal feed. In contrast, industrial CO_2 can remain in the atmosphere for up to a millennium. Farmers support their position using Global Warming Potential (GWP) measurements, highlighting the transient nature of methane relative to persistent industrial emissions (Dema, 2024).

Farmers' unions have labeled Directive 2024/1785 the "stables killer", arguing that its underlying impact assessment relies on outdated data and ideologically driven assumptions. They further assert that it may harm the environment by reducing grazing areas, thereby threatening biodiversity, rural livelihoods, and landscape integrity. This approach fails to recognize ongoing efforts by EU breeders to enhance sustainability, efforts that already place EU livestock production among the most environmentally efficient worldwide. Additionally, the Directive could undermine food sovereignty, increasing reliance on imports from countries with lower environmental, safety, and animal welfare standards than those enforced in the EU (Consoli, 2024).

The F2F Directive targets livestock farming for reductions due to its perceived environmental impact, particularly greenhouse gas emissions associated with animal husbandry. This approach has encountered significant resistance from agricultural organizations in countries with large livestock sectors, including Italy, Spain, and the Netherlands. In Italy alone, estimates suggest that roughly 200,000 cows may need to be removed from production over the next three years to meet methane reduction targets. Meanwhile, in the Netherlands, authorities indicate that a one-third decrease in cattle, pig, and poultry numbers may be necessary. Opponents of the Directive warn that such measures could destabilize the livestock industry—a cornerstone of EU agriculture—resulting in substantial job losses, declines in meat production, and potential economic displacement to regions outside the EU where regulatory standards are less rigorous (Conti, 2024).

The F2F Directive is underpinned by two principal objectives: ensuring affordable access to food and addressing global hunger, aligning with the third Sustainable Development Goal (SDG) of the UN 2030 Agenda. In pursuit of these aims, the Directive encourages the development and consumption of synthetic or lab-grown foods, even when such alternatives diverge from traditional Western European diets. Artificial meat and other bioengineered food products are promoted as potential solutions for ecological preservation and sustainability. Biotechnology firms and agribusiness conglomerates are investing heavily in refining production methods for a wide array of synthetic items, ranging from dairy and meat to fish, eggs, tomatoes, honey, salads, and milk.

However, these innovations have sparked concerns among farmers, consumer advocacy groups, national policymakers, and nutrition experts, who emphasize the need for careful evaluation of these novel foods (Ciprì, 2024; Masumarra, 2024). Central to the F2F Directive is the protection of the end consumer, ensuring access to safe and nutritious food. Given the novelty of lab-grown and synthetic products, it is both appropriate and necessary to rigorously assess their safety, nutritional content, and potential long-term health implications. As with any emerging technology, systematic scientific evaluation and regulatory oversight are essential to maintain public trust and ensure compliance with established safety standards.

The ultimate acceptance and success of synthetic foods will depend on the strength of scientific evidence, transparent communication, and demonstrable benefits in sustainability and public health, all while respecting consumer preferences and culinary traditions. The complex interplay of ecological objectives, technological innovation, and consumer protection underscores the need for ongoing research, which will remain a focal point of future investigations in this field (Finotto, 2024).

As noted in point four, the F2F strategy promotes a rapid shift from fossil fuels toward renewable energy sources. In practice, the Directive grants substantial power to wealthy private corporations, enabling them to acquire agricultural land from farmers for the installation of wind and solar energy facilities. This development reduces the amount of land available for food production. Initially, in 2019, the establishment of such energy infrastructures was confined to uncultivated or degraded sites, including abandoned industrial areas. However, beginning in 2021, private enterprises gained the authority to appropriate privately owned farmland, as priority is increasingly given to the production of renewable energy (Regoli, 2024).

This raises critical questions for farmers and small landholders who may refuse to sell or lease their property. Under the Directive, expropriation is permitted, effectively transferring control of the land to the acquiring company. The policy reflects a broader EU shift from a territorial economic model, characterized by employment-intensive, high-quality agriculture, to an industrial paradigm emphasizing renewable energy production, often at the expense of local employment opportunities but with enhanced productivity (Becchi, 2024).

The legal implications of this Directive are complex and remain largely unresolved. While affected landowners can pursue remedies through national courts and EU judicial mechanisms, several pressing issues persist. For instance, if the expropriation proceeds and the company constructs photovoltaic or wind energy installations, does it acquire full legal ownership of the property? Furthermore, if the company abandons the project or becomes insolvent, which party bears responsibility for dismantling the infrastructure? These questions are critical for safeguarding the economic and legal interests of farmers and will require urgent attention by individual member states seeking to protect their agricultural sectors (Cossu, 2024).

Figure 4. Photovoltaic installations occupying agricultural land in EU countries. Source: https://www.ekomobil.it/fotovoltaico-terra/)

Officials from EU farmers' unions contend that the F2F Directive fails to reconcile environmental goals with the necessity of maintaining stable agricultural production. The legislation, burdened by complex bureaucratic requirements, is anticipated to reduce output, effectively placing environmental objectives in tension with the farmers themselves, who act as the primary stewards of the land (Zanon, 2024). A reduction in food production is likely to elevate prices, contributing to inflation, as noted by Christine Lagarde, President of the European Central Bank (ECB). In the current economic climate, farmers should focus on sustaining or increasing production to help stabilize markets rather than curtail output (Kaldor, 2024).

The unions have called on the EU Parliament to adopt a framework of reciprocal obligations, so that regulatory standards for EU producers are applied equally to imported products. For instance, through trade deals with Canada, the EU brings in wheat exposed to glyphosate, a chemical prohibited within its own borders. while fruit and vegetable imports from Turkey may involve agrochemicals prohibited within the EU (Mineo, 2024). In 2023, agri-food imports reached a record €1.9 trillion, intensifying concerns over unfair competition from countries with lower production standards. Policies that encourage domestic output reductions risk increasing reliance on foreign products with lower quality and less stringent regulatory oversight (Borriello, 2024). A clear illustration of these dynamics is the continued deterioration of the EU wheat market. Prices have fallen sharply due to a combination of rising production costs and sustained pressure from imports. Farmers' unions report that durum wheat prices have declined by 30–35 percent over the past two years, rendering the sector increasingly unsustainable. As a result, the viability of approximately 800,000 agricultural enterprises—and the management of 7.2 million hectares of land at risk of abandonment and desertification—is now in jeopardy. Current stock-exchange quotations place durum wheat at €277–282 per ton, down from €310–340 just one year earlier, despite yields being lower than industry forecasts. Agricultural consortia argue that massive import flows are the primary driver of this downturn. During the first five months of 2025, wheat imports rose by 18 percent compared to the previous year, with Canadian wheat showing the most dramatic increase—up 119 percent from 2024. These inflows are facilitated by lower prices (approximately €240 per ton), the absence of tariffs under the 2017 EU–Canada Comprehensive Economic and Trade Agreement, and the depreciation of the U.S. dollar, the currency in which transactions are conducted (Lorusso, 2025).

Several members of the EU Parliament have criticized the legislation, arguing that it jeopardizes farmers' livelihoods. During a period of economic and political uncertainty, supporting agricultural producers is essential, given their central role in safeguarding food security and sustaining the social and economic well-being of EU society (Malamocco, 2024). The EU agricultural sector is currently facing profound challenges. Between 2010

and 2020, the 27 member states lost approximately three million agricultural holdings, averaging nearly 800 closures per day. Compounding this decline is a pronounced lack of generational renewal, with the average EU farmer now aged 57. Unlike industries such as pharmaceuticals or firearms, which benefit from substantial lobbying power, the majority of EU agricultural enterprises are family-owned and lack similar influence (Bompian, 2024). Data from Eurostat, the EU's official statistical agency based in Luxembourg, which compiles and analyzes comprehensive economic and sectoral information across member states, reveal that in 2022, approximately two-thirds (63.8%) of the 9.1 million agricultural holdings encompassed less than five hectares, while only 6% exceeded 50,000 hectares. Consequently, only this small fraction of large-scale producers is positioned to navigate the stringent environmental regulations imposed by the EU, whereas smaller farms may be forced to sell or cease operations (Barozzi & Mariani, 2024).

The mounting pressures on EU farmers have prompted large-scale demonstrations in Brussels, known as the "tractors' protest", targeting EU policies perceived as placing excessive burdens on agricultural livelihoods. Protesters have converged from major agricultural nations, including Germany, Italy, the Netherlands, Spain, France, Poland, Romania, Portugal, and Greece, where farming constitutes a significant component of national GDP. The demonstrators aim to compel the EU Commission to reconsider the stringent regulatory framework affecting the sector (Henley, 2024; Riccio, 2024).

Farmers' grievances encompass multiple dimensions. Central concerns include the reduction of diesel fuel prices, which have dramatically increased operational costs, and the reform of bureaucratic regulations applied uniformly, regardless of farm size or output. Farmers contend that a one-size-fits-all approach disproportionately disadvantages smaller enterprises. Access to essential crop protection tools remains a critical point, with calls for sustainable yet practical pesticide regulations. Livestock producers specifically contest the equivalence drawn between animal husbandry and industrial carbon-intensive activities, emphasizing that emissions from farming differ in nature and scale from those of factories. Additionally, EU farmers advocate for stricter oversight of imported food products from countries such as Ukraine, Mexico, China, Vietnam, India, and the United States, where environmental and production standards are less stringent. Other demands include financial compensation for fallow land and assurances against eviction or loss of livestock, thereby creating a secure and sustainable operational environment (Apelblat, 2024).

This mobilization has generated a complex political dynamic. Although EU member states have shown support for their domestic farming communities, frictions have emerged with EU authorities. National governments have engaged directly with farmers through meetings and consultations, while the EU Commission has not yet initiated formal discussions with demonstrators. Despite the limited authority of member states over agricultural policy—a competence largely held at the EU level—governments have implemented mitigating measures such as income tax reductions for agricultural workers, lowered VAT on diesel fuel for farming, streamlined access to bank loans, and temporary debt relief (Cappellini, 2024). The situation in Brussels has escalated into confrontations with law enforcement, including the use of water cannons and riot control measures. The protests have disrupted agricultural production across multiple EU countries, delayed the delivery of local food products from small and medium-sized enterprises to retail outlets, and caused significant traffic disturbances due to the presence of tractors on major roads. Nevertheless, a broad segment of the population has expressed solidarity with the farmers, perceiving the protests as a struggle against a supranational authority—the EU Commission—seen as insufficiently responsive to the sector's needs and concerns (Garancini, 2024).

Although EU farmers are frequently identified as significant contributors to greenhouse gas emissions, the regulatory restrictions introduced under the F2F Directive have not produced measurable environmental improvements. The Copernicus Climate Change Service report for 2025 indicates that the global environmental crisis continues to intensify. Over the past three years, the Earth's average temperature has exceeded the 1.5°C threshold, while carbon dioxide emissions from fossil fuel consumption increased by 1.1 percent compared to 2024, thereby underscoring the limited effectiveness of current EU agricultural policy interventions in mitigating climate change (Dusi, 2025). Environmental sustainability should constitute a shared and globally coordinated objective. Nevertheless, recent international developments reveal persistent divergences in national policy approaches. As demonstrated during the COP 30 conference in Brazil, several countries continue to sustain—and in some cases expand—their economic growth through a heavy reliance on highly polluting energy sources, particularly petroleum and coal (Ocone, 2025). In contrast, through its Green Deal (EGD), which encompasses

the F2F Directive, the EU has adopted regulatory targets that raise significant concerns regarding their economic and social feasibility. A growing body of evidence suggests that these policy choices have adversely affected the competitiveness of firms across multiple strategic sectors, contributing to reduced productivity, constrained economic growth, and employment losses (Belladonna, 2025).

Whereas EU policymakers continue to implement policies that constrain farmers and reduce domestic agricultural output in order to meet greenhouse gas reduction targets established by the EGD (Muratore, 2024), other nations, such as China, are actively pursuing strategies to revitalize rural areas. China's agricultural sector is undergoing a systematic transformation toward sustainable growth and comprehensive rural rejuvenation. A prominent example is the National Green Rural Revival Program in Zhejiang Province, which has emerged as a central initiative to promote the development of countryside communities. Since its inception at the end of the 20th century, the program has set clear objectives and gradually produced tangible improvements in infrastructure and social well-being in regions distant from major urban centers. The program focuses on three key dimensions. The first emphasizes enhancing the aesthetic and functional quality of villages, combining infrastructure upgrades with environmental conservation measures to create more livable spaces conducive to both residence and local economic activity. The second targets the modernization of agricultural production, encouraging the adoption of technological innovations and strengthening the sector's capacity for sustainable development. The third dimension addresses rural social governance, aiming to foster cohesive communities and elevate residents' quality of life (Yang, 2025; Romano, 2025). Taken together, these policy orientations are also reflected in comparative levels of agricultural output. China's overall agricultural production now substantially exceeds that of the EU, with current estimates indicating that China produces approximately 70 percent more in aggregate terms than the EU. This quantitative advantage consolidates China's position as a global leader across a wide range of agricultural commodities. It ranks first worldwide in the production of apples, pears, walnuts, rice, tea, and numerous other products, significantly outperforming even the United States, which occupies second place in total agricultural output. Such disparities are not solely attributable to differences in scale, but rather to fundamentally divergent regulatory and policy frameworks. In particular, China's agricultural production system is not subject to the extensive environmental and regulatory constraints imposed on EU farmers under the F2F Directive—constraints that have increasingly been perceived within the EU agricultural sector as limiting productivity and economic viability (Miele, 2025).

CONCLUSION

EU agricultural policies have drawn considerable criticism for their limited attention to socio-economic impacts on key sectors and the broader workforce. Analysis of the F2F Directive within this study highlights its potentially detrimental effects on both agricultural productivity and labor conditions. Empirical evidence, including reports from the United States Department of Agriculture and Wageningen University in 2022, underscores the profound risks associated with the EU's F2F strategy (Carè, 2024; Van der Vorst, 2022). The studies, titled *Economic and Food Security Impacts of Agricultural Input Reduction Under the European Union Green Deal's Farm to Fork and Biodiversity Strategies* (Beckman et al., 2020) and *Impact Assessment of EU Green Deal Targets for Sustainable Crop Production* (Bremmer et al., 2022), suggest that the pursuit of environmental sustainability may inadvertently destabilize Europe's economic framework. Declines in food production, trade, and exports are projected, posing risks to GDP, market competitiveness, and overall societal welfare. The potential outcomes include rising food insecurity, increased consumer prices, and heightened social tensions, collectively undermining prosperity and quality of life. ECB's technical analyses further highlight that stringent ecological regulations implemented over short timeframes could reduce business productivity, with estimates suggesting that the shift to green energy may diminish EU enterprises' output by up to one-third within the next five years (Oreggia, 2024). These findings indicate that, to date, EU measures have struggled to reconcile environmental objectives with economic performance and business viability. Current strategies, while aimed at ecological protection, appear to penalize domestic food production without delivering commensurate benefits in global sustainability outcomes. Without a substantive recalibration of policies that alleviates excessive regulatory burdens on farmers, the EU risks falling short of its commitments under the United Nations 2030 Agenda. Enabling agricultural actors to operate under more stable and predictable conditions is essential to preserving food security and supporting socio-economic resilience. These conclusions are reinforced by the EU's April 2023 report, which acknowledges the Union's central role in promoting and implementing the 2030

Agenda, including support for non-EU countries, particularly those in greatest need. Nevertheless, the report concedes that declining agricultural output across the 27 member states has limited the EU's capacity to contribute effectively to global hunger alleviation (Gozzi, 2025).

Limitations And Future Research

This study, while examining the F2F Directive in the context of the third Sustainable Development Goal (SDG) of the 2030 United Nations Agenda, is subject to several limitations. With five years remaining until 2030, the EU still retains the potential to make meaningful progress toward achieving the objectives outlined in the Agenda. Monitoring forthcoming policies and legislative actions of the newly elected EU Commission, which assumed office in November 2024 under a different political majority, will be critical (Negri, 2024). The current EU Commission, aligned with President Ursula Von Der Leyen, may steer EU institutions toward a more pragmatic and less ideologically driven approach. Following shifts in policy regarding internal combustion engines, migration, and defense spending, the EU appears poised to introduce a more innovative strategy concerning agricultural productivity (Ventimiglia, 2025). On March 13, 2025, EU Commissioner for Agriculture Christophe Hansen presented a new "Vision for the Agri-Food Market" in Strasbourg, outlining simplification initiatives aimed at reducing the bureaucratic burden on farmers. He acknowledged the sector's profound crisis and pledged significant economic support. This initiative represents a clear departure from the policies of previous years, which had inadvertently triggered widespread agricultural protests across EU member states. To remain globally competitive, Europe's agri-food sector requires streamlined administration and robust institutional backing to navigate increasingly complex market dynamics (Giubilei, 2025). Future research should not only assess whether these political promises materialize into concrete outcomes but also examine inconsistencies and abrupt policy shifts within EU decision-making. For instance, Commissioner Hansen's announcements appear at odds with measures embedded in the EU multiannual budget for 2028–2034, which proposes a substantial reduction in Common Agricultural Policy (CAP) funding from €386.6 billion to €300 billion—a decrease exceeding 20%, excluding inflation adjustments. Following this decision, major EU agricultural associations from France, Spain, Italy, the Netherlands, and Germany criticized the budget, labeling it a severe setback and alleging that it undermines dialogue with farmers (Carrazza, 2025). In this context, renewed waves of protest have once again mobilized EU farmers in Brussels, reflecting growing dissatisfaction with the existing policy framework. Agricultural stakeholders have increasingly denounced what they perceive as a progressive weakening of the agri-food sector, driven by an expanding regulatory burden, rising production costs, and a persistent sense of insufficient institutional protection at the EU level. In particular, the CAP is widely criticized for being structurally inadequate and underfunded, while the proposed multiannual financial framework is regarded as incapable of ensuring the long-term economic sustainability of agricultural enterprises, especially small and medium-sized farms. Recent policy decisions are increasingly viewed as eroding the competitiveness of EU agri-food products and placing a substantial number of enterprises at risk, particularly in rural areas. The demonstrations in Brussels follow months of national and regional protests across several member states—including France, Italy, Germany, Belgium, the Netherlands, Portugal, and Spain—signaling a broad, cross-national pattern of discontent within the EU agricultural community (Salvatore, 2025; Di Vito, 2025).

Continued scholarly scrutiny will therefore be critical to assess the evolving political landscape, the implementation of proposed reforms, and their tangible effects on agricultural productivity, food security, and the EU's capacity to meet international sustainability commitments.

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Conflicts Of Interest

The authors affirm that no financial, professional, or personal considerations—whether real or potential—played any role in shaping the research process or the presentation of its findings.

REFERENCES

1. Alfieri, P. (2025, July 28). Lo studio. Non solo Gaza: nel mondo 673 milioni di persone soffrono la fame. Avvenire. https://www.avvenire.it/attualita/pagine/la-fame-arretra-ma-troppo-poco-nel-mondo-673-milioni-di-affamati
2. Apelblat, M. (2024, February 3). EU agriculture: Is the Commission giving in to farmer protests? The Brussels Times. https://www.brusselstimes.com/908534/eu-agriculture-is-the-commission-giving-in-to-farmer-protests
3. Barozzi, F. & Mariani, L. (2024, January 31). Il Green Deal europeo uccide l'agricoltura e minaccia l'ambiente. La Nuova Bussola Quotidiana. https://lanuovabq.it/it/il-green-deal-europeo-uccide-lagricoltura-e-minaccia-lambiente
4. Barreiro-Hurle, J et al. (2022). Modelling Transitions to Sustainable Food Systems: Are We Missing the Point? EuroChoices 20(3):12-20. DOI: https://doi.org/10.1111/1746-692X.12339
5. Becchi, E. (2024, October 24). Energia eolica: vantaggi, svantaggi e alternative. Bosco di Ogigia. https://www.boscodiogigia.it/ambiente/energia-eolica
6. Beckman, J et al. (2020). Economic and Food Security Impacts of Agricultural Input Reduction Under the European Union Green Deal's Farm to Fork and Biodiversity Strategies. Economic Research Service. https://www.ers.usda.gov/publications/pub-details?pubid=99740
7. Belladonna, F. (2025, October 30). Il Green Deal è morto? L'Europa non può permettersi di abbassare l'ambizione climatica. ASVIS. https://asvis.it/editoriali/3257-24310/il-green-deal-e-morto-leuropa-non-puo-permettersi-di-abbassare-lambizione-climatica
8. Bompian, E. (2024, February 7). Dalla parte degli agricoltori (e non dell'agrobusiness). Una questione sistemica. MR. Materia Rinnovabile. https://www.renewablematter.eu/dalla-parte-degli-agricoltori-non-dell-agrobusiness-una-questione-sistemica
9. Borriello, D. (2024, February 27). Sull'agricoltura l'Italia vuole prendersi la scena europea. Dalla Pac alla concorrenza sleale. Eu News. https://www.eunews.it/2024/02/27/italia-agricoltura-proposte-ue/
10. Braghini, F. (2024, June 21). Dispute commerciali Ue- Cina sulle auto elettriche e dintorni. Affari internazionali. Analisi Cina Europa. https://www.affarinternazionali.it/dispute-commerciali-ue-cina-sulle-auto-elettriche-e-dintorni/
11. Bremmer, J et al. (2022, February 4). Impact Assessment of EU Green Deal Targets for Sustainable Crop Production. Wageningen Economic Research University. https://agricolae.eu/farm-to-fork-e-green-ecco-lo-studio-wageningen-reddito-agricolo-e-qualita-calano-addio-export-ue-aumenta-import-bio-non-sostenibile/
12. Cantarini, F. (2025, January 20). UE e MERCOSUR: l'intesa che riprogetta il mercato globale. Geopolitica. https://www.geopolitica.info/ue-mercosur-mercato-globale/
13. Cappellini, M. (2024, February 6). Von der Leyen apre agli agricoltori: sussidi e stop alla legge sui pesticidi. La Lega si intesta la vittoria. Il Sole 24 ore. https://www.ilsole24ore.com/art/von-der-leyen-apre-agricoltori-piu-sussidi-e-stop-legge-pesticidi-AFzukccC
14. Capuzzi, L. (2024, July 24). Onu. La "fame zero" resta un miraggio: una persona su 11 nel mondo non ha da mangiare. Avvenire. https://www.avvenire.it/mondo/pagine/fao-la-fame-nel-2023
15. Carè, V. (2024, September 20). Agricoltura globale: USA e UE a confronto. Creafuturo. Le sfide della ricerca agroalimentare. https://creafuturo.crea.gov.it/13471/
16. Carrazza, A. (2025, July 17). Tagli all'agricoltura, esplode la rabbia: "È guerra". Lollobrigida a Von der Leyen: "Un piano non all'altezza". Secolo d'Italia. https://www.secoloditalia.it/2025/07/tagli-allagricoltura-esplode-la-rabbia-e-guerra-lollobrigida-a-von-der-leyen-un-piano-non-allaltezza/
17. Ciprì, A. (2024, January 26). La carne sintentica. Il Sicilia. https://ilsicilia.it/la-carne-sintetica-non-sara-nel-piatto-degli-italiani-il-divieto-adesso-e-legge/
18. Colombo, L. (2024, July 11). L'allevamento incide sul riscaldamento globale? CHPDB. https://www.chpdb.it/2024/07/11/allevamento-e-riscaldamento-globale/
19. Consoli, A. (2024, March 12). Coldiretti sulla direttiva Ue ammazza stalle: "Una batosta per gli allevatori italiani ed europei". Secolo d'Italia. https://www.secoloditalia.it/2024/03/coldiretti-sulla-direttiva-ue-ammazza-stalle-una-batosta-per-gli-allevatori-italiani-ed-europei/
20. Conti, C. (2024, January 30). La grande crisi della piccola impresa agricola. Contropiano. https://contropiano.org/editoriale/2024/01/30/la-grande-crisi-della-piccola-impresa-agricola-0168897

21. Cossu, C. (2024, August 31). L'eolico agita la Sardegna, due atti di sabotaggio alle pale in pochi giorni. Il Manifesto. https://ilmanifesto.it/leolico-agita-la-sardegna-due-atti-di-sabotaggio-alle-pale-in-pochi-giorni
22. De Luca, A. (2024, February 2). Europa: la protesta degli agricoltori. La protesta degli agricoltori europei arriva a Bruxelles. ISPI. Istituto per gli studi di politica internazionale. https://www.ispionline.it/it/pubblicazione/europa-la-protesta-degli-agricoltori-162534
23. Dema, I. (2024, July 8). El ciclo del carbono: qué es, cómo funciona y su importancia. Ecologia verde.https://www.ecologiaverde.com/el-ciclo-del-carbono-que-es-como-funciona-y-su-importancia-2999.html
24. Di Marco, L. (2025, May 13). Tabella di marcia per porre fine alla dipendenza energetica dalla Russia. Il 6 maggio la Commissione europea ha adottato la tabella di marcia per porre fine all'importazione di energia dalla Russia entro il 2027. Rubrica: Europa e Agenda 2030. ASVIS. https://asvis.it/rubrica-europa-e-agenda-2030/1339-23387/tabella-di-marcia-per-porre-fine-alla-dipendenza-energetica-dalla-russia
25. Di Stefano, D. (2025, January 24). A Davos sta nascendo una nuova fase del multilateralismo climatico? Economia Circolare. https://economiacircolare.com/davos-multilateralismo-clima-europa-usa-cina/
26. Di Vito, M. (2025, December 18). "Questa non è l'Europa che vogliamo": protesta degli agricoltori Coldiretti a Bruxelles. Secolo d'Italia. https://www.secoloditalia.it/2025/12/questa-non-e-leuropa-che-vogliamo-protesta-degli-agricoltori-coldiretti-a-bruxelles/
27. Dusi, E. (2025, December 9). Clima, la pagella del 2025. Superati ancora gli 1,5 gradi. Il rapporto Copernicus conferma che la crisi ambientale continua ad accelerare. La Repubblica. https://www.repubblica.it/cronaca/2025/12/09/news/clima_2025_anno_caldo_copernicus-425030258/?ref=RHLM-BG-P2-S1-T1-fdg1
28. Eurostat (2023). Agriculture statistics - family farming in the EU. Statistic Explained. Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agriculture_statistics_-_family_farming_in_the_EU
29. FAO Statistical Yearbook 2024 - World Food and Agriculture (2024, November 18). ISSN 2225-7373. FAO. https://oikosnomos.world/downloads/fao_cd2971en.pdf
30. Fasanella, F. (2024, April 22). Paraocchi fossile. La crisi climatica ci sta rendendo tutti più poveri, ma continuiamo a far finta di nulla. Linkiesta. https://www.linkiesta.it/2024/04/crisi-climatica-costi-danni-economia-inflazione-giornata-della-terra/
31. Feltri, S. (2024, September 23). Perché i negazionisti climatici insistono: il caso Porro. SETTIMANA News. https://www.settimananews.it/societa/perche-i-negazionisti-climatici-insistono-il-caso-porro/
32. Ferri, M. (2025, April 28). Carne coltivata e la mobilitazione della Coldiretti: l'appello di scienziati ed esperti. SIMeVeP. https://www.veterinariapreventiva.it/simevep/sicurezza-alimentare/carne-coltivata-la-mobilitazione-della-coldiretti-lappello-scienziati-ed-esperti
33. Finotto, A. (2024, June 10). La carne sintetica fa male? Facciamo chiarezza. Gensan. https://www.gensan.com/mag/carne-sintetica-fa-male/
34. Fortuna, G. (2024, November 19). Proteine animali, vegetali o carne coltivata in laboratorio? I Paesi dell'Ue in disaccordo. Euro News. https://it.euronews.com/my-europe/2024/11/19/proteine-animali-vegetali-o-carne-coltivata-in-laboratorio-i-paesi-dellue-in-disaccordo
35. Garancini, C. (2024, January 26). Perché in Europa dilagano le proteste degli agricoltori e cosa c'entra il Green deal. Life gate. https://www.lifegate.it/proteste-agricoltori-europa-green-deal
36. Garroni, S. (2024, July 24). Rapporto Sofi 2024. 733 milioni di persone soffrono ancora la fame. Azione contro la fame. https://azionecontrolafame.it/news/rapporto-sofi-2024/
37. Giubilei, F. (2025, March 14). Bruxelles si ricrede: "Un taglio agli oneri per l'agricoltura". Dopo le follie del Green Deal via alla revisione della politica agricola. Il Giornale. https://www.ilgiornale.it/news/politica/bruxelles-si-ricrede-taglio-agli-oneri-lagricoltura-2451532.html
38. Gozzi, A. (2025, September 25). Bisogna dire chiaramente che il Green Deal europeo è stato un errore e va profondamente rivisto. Vi spieghiamo il perché. Piazza Levante. https://piazzalevante.it/bisogna-dire-chiaramente-che-il-green-deal-europeo-e-stato-un-errore-e-va-profondamente-rivisto-vi-spieghiamo-il-perche/

39. Henley, J. (2024, February 26). Farmers clash with riot police in Brussels as EU agriculture leaders meet. The Guardian. https://www.theguardian.com/environment/2024/feb/26/farmers-protests-brussels-eu-agriculture-leaders-riot-police
40. Improta, MT. (2024, February 1). Basta un 1/4 del cibo che gettiamo per sfamare tutti i bisognosi. Il Bollettino. https://www.ilbollettino.eu/2024/02/01/cibo/
41. IPCC (2023, May 16). La Relazione di sintesi del Sesto Rapporto di Valutazione sui Cambiamenti Climatici dell'IPCC. CQY. https://www.certiquality.it/it/news/sesto-rapporto-valutazione-cambiamenti-climatici-ipcc-relazione-sintesi-invito-azione
42. Kaldor, G. (2025, February 18). Lo strano caso del consenso sul futuro dell'agricoltura europea. MR. Materia Rinnovabile. https://www.renewablematter.eu/strano-caso-consenso-futuro-agricoltura-europea
43. Lasorella, MV. & Falconi, I. (2022, January 9). Le strategie della UE e le implicazioni per il settore agricoltura e il sistema alimentare. Una panoramica degli scenari ed un'analisi degli studi. Pianeta PSR. https://www.pianetapsr.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/2661
44. Latini, L. (2025, February 19). Green Deal Europeo: Rischi Economici e Sociali se l'abbandoneremo. Icona Clima. https://www.iconaclima.it/estero/green-deal-europeo-rischi-economici-e-sociali-se-labbandoneremo/
45. Lorusso, R. (2025, September 26). È allarme per il grano prezzi giù causa import. La Repubblica. https://www.repubblica.it/economia/2025/09/26/news/e_allarme_per_il_grano_prezzi_giu_causa_import-424870836/?ref=RHLM-BG-P13-S1-T1-fdg8
46. Lupoli, R. (2025, February 15). Il Regolamento Imballaggi è in vigore: ecco cosa prevede. Economia Circolare. https://economiacircolare.com/regolamento-imballaggi-cosa-prevede/
47. Malamocco, S. (2024, February 7). Agricoltori europei in sofferenza – Ma è una protesta condivisibile? Geograficamente. https://geograficamente.wordpress.com/2024/02/07/agricoltori-europei-in-sofferenza-ma-e-una-protesta-condivisibile-visti-gli-aiuti-ue-e-la-assai-scarsa-propensione-alla-riconversione-ecologica-agricoltura-pulita-e-bio-e-allevamenti/
48. Masumarra, R. (2024, January 26). Carne artificiale, Coldiretti: maggioranza qualificata in Ue per lo stop. L'Unione Europea ha raggiunto la maggioranza qualificata di Paesi pronta a chiedere la moratoria sulla produzione e sul consumo di carne coltivata. I Grandi Vini. https://www.igrandivini.com/news/carne-artificiale-coldiretti-maggioranza-qualificata-in-ue-per-lo-stop/
49. Mengarelli, J. (2024, February 29). I negazionisti climatici cambiano tattica, ma sono sempre loro. Scienza in rete. https://www.scienzainrete.it/articolo/negazionisti-climatici-cambiano-tattica-ma-sono-sempre-loro/jacopo-mengarelli/2024-02-29
50. Miele, L. (2025, February 24). La Cina punta tutto sul grano. Redatto il "piano per lo sviluppo rurale". Avvenire. https://www.avvenire.it/mondo/la-cina-punta-tutto-sul-grano_85727
51. Mineo, G. (2024, February 27). La controversia su grano canadese: ennesimo fallimento delle politiche Ue. Terra. https://terra.regione.sicilia.it/la-controversia-sul-grano-canadese-lennesimo-fallimento-delle-politiche-agricole-dellue/
52. Moriero, F. (2025, January 20). Più di 3 miliardi di persone sono sotto la soglia di povertà: cresce il divario con i super ricchi. Fanpage. https://www.fanpage.it/politica/piu-di-3-miliardi-di-persone-sono-sotto-la-soglia-di-poverta-cresce-il-divario-con-i-super-ricchi/
53. Muratore, A. (2024, September 13). Green, tecnologia e non solo: troppe regole uccidono lo sviluppo europeo. Inside Over. https://it.insideover.com/economia/green-tecnologia-e-non-solo-troppe-regole-uccidono-lo-sviluppo-europeo.html
54. Negri, M. (2024, November 28). Come hanno votato i partiti sulla nuova Commissione europea. Pagella Politica. https://pagellapolitica.it/articoli/voto-partiti-italiani-commissione-europea
55. Ocone, C. (2025, November 24). La Cop30 certifica l'ennesimo fallimento ideologico climatista. Un esito facilmente prevedibile e non solo per l'assenza di tre grossi player mondiali come la Cina, l'India e, per la prima volta, gli Stati Uniti. Libero quotidiano. https://www.liberoquotidiano.it/news/esteri/45115297/cop30-certifica-ennesimo-fallimento-ideologico-climatista/
56. Oreggia, V. (2024, March 20). Bce contro il Green Deal: una eurograna per l'esecutivo che verrà. GEA. Green Economy Agency. https://geagency.it/editoriali/bce-contro-il-green-deal-una-eurograna-per-lesecutivo-che-verra/

57. Parente, M. (2025, April 1). Forbes, la classifica dei paperoni nel mondo: Elon Musk torna primo. Il Giornale. https://www.ilgiornale.it/news/cittadini/forbes-classifica-dei-paperoni-nel-mondo-elon-musk-torna-2459999.html
58. Regoli, R. (2024, September 18). La truffa verde. Affari sporchi sulla pelle dei contadini. Programma televisivo Fuori dal Coro, puntata del 18 settembre 2024. Mediaset Infinity. https://mediasetinfinity.mediaset.it/video/fuoridalcoro/puntata-del-18-settembre_F313480901000201
59. Riccio, I. (2024, February 26). Protesta agricoltori, bloccato l'accesso all'aeroporto di Bruxelles. Il Giornale. https://www.ilgiornale.it/news/cronaca-internazionale/protesta-agricoltori-bloccato-laccesso-allaeroporto-2289014.html
60. Romano, L. (2025, February 25). Modernizzazione e salvaguardia degli approvvigionamenti: i piani di Pechino per il settore agricolo cinese. Il governo della Repubblica popolare ha presentato il "Documento centrale n. 1" per il 2025, in cui sono state delineate le priorità per lo sviluppo delle zone rurali del Paese. Il Giornale. https://www.ilgiornale.it/news/economia-e-finanza/modernizzazione-e-salvaguardia-degli-approvvigionamenti-i-2443178.html
61. Salvatore, F. (2025, December 18). Le proteste degli agricoltori a Bruxelles e la linea di Italia e Francia: rinviata la firma del Mercosur. Il Giornale. https://www.ilgiornale.it/news/politica-estera/bruxelles-trattori-e-lacrimogeni-davanti-parlamento-ue-2585152.html
62. Santelli, F. (2025, January 20). Forum Davos 2025. Chi ci sarà, oltre al convitato di pietra Trump, e cosa aspettarsi. Il neo presidente giovedì interverrà in videoconferenza, dando una prima idea di come intenda declinare i rapporti tra America First e il resto del mondo. La Repubblica. https://www.repubblica.it/economia/2025/01/20/news/forum_davos_2025_chi_ci_sara_oltre_al_convitato_di_pietra_trump_e_cosa_aspettarsi-423949798/
63. Scopece, M. (2023, June 23). L'emergenza climatica non esiste. Parola di 1500 scienziati. Conversazione con il prof. Prestininzi. L'emergenza climatica non esiste. Questo è il titolo del manifesto firmato da più di 1500 scienziati provenienti da diverse nazioni che provano a contrastare, con studi scientifici, la teoria delle responsabilità umane sul cambiamento climatico. Start Magazine. https://www.startmag.it/energia/lemergenza-climatica-non-esiste-parola-di-1500-scienziati-conversazione-con-il-prof-prestininzi/
64. Solenne, V. (2025, February 1). Regolamento UE Imballaggi 2025: Cosa Cambia per Aziende e Ambiente. P&S Legal. https://www.pandslegal.it/ambientale/regolamento-ue-imballaggi-2025-cosa-cambia/
65. Sorbi, M. (2024, March 6). Morire di "green economy". Costi, burocrazia e tempi: con la transizione a rischio 5 milioni di posti di lavoro. La rivoluzione verde è insostenibile per 1,5 milioni di piccole imprese. Il Giornale. https://www.ilgiornale.it/news/politica/morire-green-economy-costi-burocrazia-e-tempi-transizione-2292709.html
66. Van der Vorst, J. (2022). Towards a Common Agricultural and Food Policy. Wageningen University and Research. https://www.wur.nl/upload_mm/6/b/c/11791580-8cfd-4f29-a8ad-2d9748c787d0_Towards_CAFP_LR.pdf
67. Vega, V. (2024, June 7). Tutte le direttive "green" da smantellare per voltare pagina dal 10 giugno. ATLANTICO. Rivista di analisi politica, economica e geopolitica. https://www.nicolaporro.it/atlanticoquotidiano/quotidiano/aq-economia/tutte-le-direttive-green-da-smantellare-per-voltare-pagina-dal-10-giugno/
68. Ventimiglia, M. (February 9). UE, salvi i motori termici dopo il 2035? Il clamoroso dietrofront. EM. Elettrico Magazine. https://elettricomagazine.it/emobility/auto-ibride-motori-termici-dopo-il-2035-dietrofront-ue/
69. Yang, L. (2025, January 23). China aims to achieve substantial progress in all-around rural revitalization by 2027. Global Times. https://www.globaltimes.cn/page/202501/1327417.shtml
70. Yin, R. (2018). Case Study Research and Applications: Design and Methods. Sage Publications. ISBN: 978-1506336169. https://www.akademika.no/studieteknikk/metode/case-study-research-and-applications/9781506336169
71. Zanon, M. (2024, January 30). Gli agricoltori francesi non si accontentano: "Bloccheremo il paese". Il Foglio. https://www.ilfoglio.it/esteri/2024/01/30/news/gli-agricoltori-francesi-non-si-accontentano-bloccheremo-il-paese--6156798/