



# Plant-Powered Politics

Europe's shift towards  
a plant-based system

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# Summary

This document contains a comprehensive overview of the reasons why Europe needs a food system transition and highlights the wide range of benefits linked to reducing the consumption of animal-based proteins. These benefits include public health, environmental conservation, biodiversity, food security, and animal welfare. By recognising these advantages, policymakers can lay the foundation for a more sustainable food system in Europe.

**To facilitate this transformation, the document sets forth a collection of policies for a plant-based food system, aimed at fostering sustainability for the future:**



### Redirect EU funding:

Shift EU subsidies to support sustainable farming for plant-based protein production.



### Promote sustainable protein research:

Provide funding for research on plant-based foods and create an accessible database of related studies.



### Rethink EU Protein Strategy:

Review and adapt the EU's approach to protein consumption in light of environmental and health concerns.



### Implement Farm to Fork Strategy:

Effectively execute the Farm to Fork Strategy, considering trade, and sustainable development and dietary guidelines.



### Introduce more labelling:

Require clear labels indicating the sustainability and animal welfare aspects of food products.



### Implement health taxes:

Levy taxes on red and processed meat to encourage healthier choices and reduce environmental impact.



### Price greenhouse gas emissions:

Employ mechanisms like Emission Trading Systems (ETS) and higher VAT rates with excise levies on meat to account for environmental costs (complemented with lower or zero VAT rates on fruits, vegetables, and legumes)

The European Commission, as a governing body, plays a crucial role in achieving this transformation. For instance, the Sustainable Food Systems Law, initiated by the European Commission, offers a comprehensive opportunity that encompasses all sectors and stakeholders within the food system, from production to consumption. However, the need for action is paramount.

To establish a sustainable food system in Europe, the framework laws must address the challenges arising from the current system's unsustainable practices. As so, this document emphasises

es the importance of shifting towards plant-based protein production and consumption in Europe. The European Commission must ensure alignment and collaboration among different policies across the European Union (EU) and its Member States, enabling them to work together towards this common goal. By adopting a coordinated approach, Europe can effectively tackle the challenges posed by the current food system and establish a more sustainable, plant-based, and equitable model that benefits all.

# Introduction

In recent years, there's been a growing recognition of the numerous advantages associated with reducing the consumption of animal-based proteins and transitioning towards plant-based alternatives. This shift holds immense potential for promoting public health and has far-reaching implications for mitigating climate change, preserving ecosystems, and addressing various social concerns.

As such, there's a need to explore the production and consumption of plant-based protein in Europe, advocate for the adoption of plant-based protein as the primary source of protein in society, and enforce strong political strategies and policies that contribute to a more sustainable food system.

## Europe needs a food system transition for several reasons, including:



**Planetary health and climate impact:** Animal-based foods have a larger carbon and water footprint and require more land to be produced compared to plant-based alternatives.



**Human health:** Overconsumption of animal products, particularly red and processed meats, has been linked to various adverse health effects.



**Food security and resilience:** Animal agriculture competes with crop production for resources, increasing food prices and contributing to food insecurity.



**Economic growth:** The European plant-based food market is experiencing significant growth, providing economic opportunities.



**Factory farms and workers' safety:** Workers in factory farms face health risks and poor working conditions.

**Other drivers:** The animal agriculture system has indirect victims.

Plant-based protein sources include legumes, soy products (such as tofu and tempeh), quinoa, nuts and seeds, whole grains, seitan, and plant-based dairy alternatives. These can serve as a foundation for policy discussions and initiatives to increase their availability and accessibility in the market.

Ultimately, political decisions regarding the promotion of plant-based protein consumption and production should be based on a careful analysis of multiple factors, expert advice, and consideration of the unique circumstances and needs of the communities affected.



# Why Does Europe Need a Food System Transition?

## 1.1. Planetary Health: Climate and Environmental Impact

**A dietary transition that allows for greater consumption of plant-based protein sources would have multiple benefits, including mitigating climate change, conserving natural habitats, promoting sustainable food production, ensuring food security, and preserving a stable climate system.<sup>1</sup>**

Such a change must focus on improving the efficiency of plant-based protein production systems and replacing the consumption of animal-origin foods, particularly meat and dairy products associated with farmed animals, with plant-based foods.

### 1.1.1 Global Greenhouse Gas Emissions

Farmed animals' production is a significant contributor to the current climate crisis, responsible for at least 14.5% of global greenhouse gas emissions.<sup>2</sup> Some more recent studies even indicate that this percentage is approximately 19%.<sup>3</sup>

**Food production is responsible for 26% of global greenhouse gas emissions, with agriculture accounting for the bulk of the emissions. Agriculture is responsible for 10.3% of the EU's greenhouse gas emissions, and almost 70% of these come from the animal sector.<sup>4</sup>**

Even if total fossil fuel emissions were immediately stopped, global emissions from production of meat for human consumption by the agricultural industry alone would make it impossible to achieve the much-desired 1.5°C goal of the Paris Agreement.<sup>5</sup>

To significantly reduce greenhouse gas emissions and the amount of land needed for animal production, limiting ruminant meat consumption to 52 calories per person per day (equivalent to about 1.5 hamburgers per week) by 2050 could cut the greenhouse gas mitigation gap in half and almost completely close the land gap.<sup>6</sup>

A transition to a food system with a plant-based protein base, especially in high-income countries, may be enough to prevent a climate disaster by reducing greenhouse gas emissions directly from agricultural production and increasing carbon sequestration. A 2022 study concluded that adopting the EAT-Lancet planetary diet in the 54 highest-income nations can reduce annual emissions from agricultural production by 61% and sequester up to 98.3 GtCO<sub>2</sub> eq., highlighting the importance of agricultural, food, climate, and public health policies in

<sup>1</sup> <https://www.agriculturefairnessalliance.org/docs/research/Hayek-et-al-2020-Nature-Sustainability-Carbon-Cost.pdf>

<sup>2</sup> <http://www.fao.org/news/story/en/item/197623/icode>

<sup>3</sup> <https://www.nature.com/articles/s43016-021-00358-x>

<sup>4</sup> [https://www.eca.europa.eu/Lists/ECADocuments/SR21\\_16/SR\\_CAP-and-Climate\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR21_16/SR_CAP-and-Climate_EN.pdf)

<sup>5</sup> <https://www.oxfordmartin.ox.ac.uk/news/change-what-we-eat-to-solve-the-climate-crisis/>

<sup>6</sup> <https://www.wri.org/insights/how-sustainably-feed-10-billion-people-2050-21-charts>

achieving climate mitigation.<sup>7</sup>

Additionally, a 2022 study presented a scenario where the gradual phase-out of animal agriculture over the next 15 years would yield a remarkable 68% reduction in carbon dioxide (CO<sub>2</sub>) emissions by 2100.<sup>8</sup>

According to another study by the University of Oxford comparing various scenarios of changes in eating habits and their effects on health and greenhouse gas emissions, the following conclusions were reached:<sup>9</sup>

- ✓ Under a reference scenario - based on projections by the Food and Agriculture Organization of the United Nations (FAO)<sup>10</sup> -, greenhouse gas emissions from food are expected to increase by 51% by 2050 (compared to 2005/2007).
- ✓ In a scenario where the followed diet is based on global dietary recommendations by the World Cancer Research Fund and WHO/FAO Expert Consultations on diet and nutrition and human energy requirements, which includes foods of animal origin, albeit in smaller quantities, greenhouse gas emissions would increase by 7% by 2050 (compared to 2005/2007).
- ✓ In a scenario of a vegan diet (which excludes the consumption of products of animal origin), greenhouse gas emissions could be reduced by 55% by 2050 (compared to 2005/2007).

The fact is that there are significant variations in the greenhouse gas emissions of different food types, and, in general, animal-based foods exhibit a larger environmental footprint compared to plant-based alternatives. For instance, the production of one kilogram of beef (beef herd) results in the emission of as much as 99 kilograms of greenhouse gases (CO<sub>2</sub> eq.), whereas peas emit merely 1 kilogram per kilogram.<sup>11</sup>



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<sup>7</sup> <https://www.nature.com/articles/s43016-021-00431-5>

<sup>8</sup> <https://journals.plos.org/climate/article?id=10.1371/journal.pclm.0000010>

<sup>9</sup> <https://www.pnas.org/doi/full/10.1073/pnas.1523119113>

<sup>10</sup> <https://www.fao.org/global-perspectives-studies/resources/detail/en/c/411108/>

<sup>11</sup> <https://ourworldindata.org/environmental-impacts-of-food>

### 1.1.2. Water Footprint

**Approximately 30% of the overall water footprint associated with global agriculture is attributed to the production of animal-based products.**<sup>12</sup>

The water footprint of any meat is primarily influenced by the food consumed by the animals. Two main factors significantly impact the water footprints of poultry, pork, and beef: food conversion efficiency and feed composition.<sup>13</sup>

**a)** Food conversion efficiency refers to the feed dry mass required to produce meat.

**b)** Feed composition refers to what the animals eat.

The relatively large water footprint of animal products, compared to crop products, can be attributed mainly to the food conversion efficiency. This means that more feed and water is needed to produce a unit of meat.<sup>14</sup> For instance, it takes 15,415 litres of water to produce 1 kilogram of bovine meat, while 1 kilogram of pulses only takes 4,055 litres of water to be produced.<sup>15</sup>

In light of this, managing the demand for animal products by promoting a shift away from meat-rich diets will inevitably become an integral part of governments' environmental policies.<sup>16</sup>

### 1.1.3. Land Use

Farmed animal production, in addition to other human activities, impacts the quality and biodiversity of the soil. This causes changes to the biogeochemical cycles of nitrogen, phosphorus, and carbon. The farmed animals' sector is responsible for 78% of biodiversity loss.<sup>17</sup>

The land needed for raising animals farmed for food differs from the land used for cultivating crops: around two-thirds of pastures are unsuitable for growing crops. However, if these lands were allowed to revert to their natural state, fostering vegetation growth and ecosystem restoration will lead to significant advantages for biodiversity.

A legitimate concern arises regarding our ability to sustainably produce enough food to feed the global population with the remaining cropland. However, research suggests that providing a nourishing diet for everyone worldwide using the existing croplands is feasible, provided there is a widespread transition towards plant-based diets.<sup>18 19</sup>

**Most cereals produced in the EU are used as animal feed, accounting for almost two-thirds of the total. Around one-third is allocated for human consumption, with a mere 3% for biofuels.**<sup>20</sup>

<sup>12</sup> [https://www.waterfootprint.org/resources/Mekonnen-Hoekstra-2012-WaterFootprintFarmAnimalProducts\\_1.pdf](https://www.waterfootprint.org/resources/Mekonnen-Hoekstra-2012-WaterFootprintFarmAnimalProducts_1.pdf)

<sup>13</sup> <https://www.waterfootprint.org/resources/Report55.pdf>

<sup>14</sup> <https://link.springer.com/article/10.1007/s10021-011-9517-8>

<sup>15</sup> <https://www.waterfootprint.org/resources/Report-48-WaterFootprint-AnimalProducts-Voll1.pdf>

<sup>16</sup> <https://link.springer.com/article/10.1007/s10021-011-9517-8>

<sup>17</sup> <https://iopscience.iop.org/article/10.1088/1748-9326/10/11/115004>

<sup>18</sup> <https://ourworldindata.org/land-use-diets> <https://ourworldindata.org/land-use-diets>

<sup>19</sup> <https://www.nature.com/articles/s41893-020-00603-4>

<sup>20</sup> [https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/cereals\\_en](https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/cereals_en)



On the other hand, the EU depends on importing raw materials for animal feed and biofuel production, with the production of some of these commodities – such as soybeans, corn, and palm oil – directly linked to deforestation, ecosystem destruction, and human rights violations. In several countries, agricultural expansion is the leading cause of deforestation, and meat consumption is one of the main drivers.<sup>21 22 23</sup>

Industrial farming systems that rely on high stocking densities and confining animals to cages tend to generate more manure and other waste than the available land can handle. Consequently, this leads to pollution of both soil and water. Moreover, the pollution stemming from animal waste poses additional risks to human and environmental well-being, as it can contain pathogens, heavy metals, and veterinary drugs.<sup>24</sup>



## 1.2. Human Health

Over the past decade, the consumption pattern of EU citizens has remained consistent, with 58% of their protein intake coming from animal-based sources and 42% from plant-based sources. The majority of animal-based protein intake is from dairy products (40%), followed by pork (21%), poultry meat (16%), bovine meat (10%), and eggs (7%).<sup>25</sup>

To address the increasing obesity rates in the EU, adopting a more plant-based diet is crucial, as red and processed meat intake seems to be directly associated with the risk of obesity and higher body mass index and waist circumference.<sup>26</sup>

Red and processed meat consumption surpasses the recommended levels in most high and middle-income countries.<sup>27</sup> It is linked to various adverse health effects, such as a higher risk of total

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<sup>21</sup> [https://wwfeu.awsassets.panda.org/downloads/stepping\\_up\\_\\_\\_the\\_continuing\\_impact\\_of\\_eu\\_consumption\\_on\\_nature\\_worldwide\\_fullreport\\_low\\_res.pdf](https://wwfeu.awsassets.panda.org/downloads/stepping_up___the_continuing_impact_of_eu_consumption_on_nature_worldwide_fullreport_low_res.pdf)

<sup>22</sup> <https://publications.jrc.ec.europa.eu/repository/handle/JRC83819>

<sup>23</sup> <https://www.fao.org/newsroom/detail/cop26-agricultural-expansion-drives-almost-90-percent-of-global-deforestation/en>

<sup>24</sup> <https://wfa.org/wp-content/uploads/2023/03/Unveiling-the-Nexus-The-Interdependence-of-Animal-Welfare-Environment-Sustainable-Development.pdf>

<sup>25</sup> [https://futurefood4climate.eu/wp-content/uploads/2023/01/ui883g-SWD\\_2023\\_4\\_1\\_EN\\_document\\_travail\\_service\\_part1\\_v2.pdf](https://futurefood4climate.eu/wp-content/uploads/2023/01/ui883g-SWD_2023_4_1_EN_document_travail_service_part1_v2.pdf)

<sup>26</sup> <https://pubmed.ncbi.nlm.nih.gov/24815945/>

<sup>27</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6219766/>

mortality, cardiovascular disease, colorectal cancer, and type 2 diabetes.<sup>28</sup>

**Given the current overconsumption of animal products, it is expected that public policies will focus on promoting increased consumption of legumes and other plant-based protein sources.** To support this behaviour, the consumption of red and processed meat must be discouraged. The World Health Organization (WHO) considers processed meat as carcinogenic or potentially carcinogenic and is associated with, for example, colorectal cancer.<sup>29</sup>

Also, the overuse of antibiotics in animals raised for food production can be harmful to human health and increase antimicrobial consumption and contribute to antimicrobial resistance (AMR), resulting in decreased effectiveness of medications used to treat bacterial infections. A report produced by the European Center for Disease Prevention and Control (ECDC), the European Food Safety Authority (EFSA), and the European Medicines Agency (EMA) noted that the resistance in bacteria found in food-producing animals was linked to resistance in bacteria in humans for specific combinations of bacteria and antimicrobials. This was also associated with the use of antimicrobials in animals.<sup>30</sup>

**It was estimated that, in 2017, 73% of antimicrobials worldwide were used in farmed animals.<sup>31</sup> The United Nations estimates that by 2050 up to 10 million people will die because antibiotics simply won't work.**<sup>32</sup>

The EU adopted key regulations on the use of antibiotics in the farmed animals' sector concerning animal feed, veterinary medicinal products, and EU actions to address antimicrobial resistance.<sup>33 34 35</sup> However, it is important to ensure the applicability of legislation and transformation of the food system towards a plant-based system, which can prevent the presence of antibiotics, including antifungals, in crop production and food products.

### 1.3. Food Security and Resilience

**Only 37% of global human protein intake comes from animal products, although they are responsible for occupying 77% of the land area. Also, 63% of protein comes from the direct consumption of plant foods, for which only 23% of the global land area needs to be cultivated.**<sup>36</sup>

There's a substantial loss of both land and protein globally, all because we do not prioritise direct consumption of plant-based foods from the start. In particular, allocating most soy resources to animal feed rather than human consumption results in a phenomenon known as "opportunity food loss." Essentially, when soybeans are given to cows, an overwhelming percentage of the protein (up to 96%) is effectively squandered as the cow digests and eliminates it through waste. Put simply, most of the protein is lost before it ever reaches our plates.<sup>37</sup>

<sup>28</sup> <https://econtent.hogrefe.com/doi/10.1024/0300-9831/a000224>

<sup>29</sup> [https://www.iarc.who.int/wp-content/uploads/2018/07/pr240\\_E.pdf](https://www.iarc.who.int/wp-content/uploads/2018/07/pr240_E.pdf)

<sup>30</sup> <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2021.6712>

<sup>31</sup> <https://pubmed.ncbi.nlm.nih.gov/33348801/>

<sup>32</sup> <https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0001305>

<sup>33</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1687411391815&uri=CELEX%3A32019R0004>

<sup>34</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0006>

<sup>35</sup> [https://www.europarl.europa.eu/doceo/document/TA-9-2023-0220\\_EN.html](https://www.europarl.europa.eu/doceo/document/TA-9-2023-0220_EN.html)

<sup>36</sup> <https://ourworldindata.org/land-use>

<sup>37</sup> <https://www.pnas.org/doi/10.1073/pnas.1713820115>

**Animal agriculture's inefficiency exacerbates food insecurity in multiple ways:**<sup>38</sup>

It competes with the production of crops that could be consumed directly by humans. The resources that go into growing feed crops for farmed animals could instead be used to grow crops for human consumption. This competition drives up the prices of such crops, making them less accessible to low-income individuals and contributing to food insecurity.



Animal agriculture renders the food system more vulnerable to shocks, such as disease outbreaks among farmed animals or natural disasters that disrupt the supply chain. These shocks can lead to significant disruptions in the food system, resulting in food shortages and increased prices.



Animal agriculture contributes significantly to climate change through greenhouse gas emissions, further exacerbating food insecurity.



The inefficiency of animal agriculture leads to lower yields of calories from the animals compared to the amount of food invested in raising them, thus reducing the amount of food available for human consumption.

Legumes (or pulses), in particular, could contribute to more food security. Due to their sustainability and minimal environmental impact, the Food and Agriculture Organization (FAO) has promoted legumes as a protein source to improve food security. They require significantly less water and fertiliser input and produce fewer greenhouse gases when compared to animal protein sources.<sup>39</sup> This makes them an attractive alternative for individuals and communities seeking sustainable protein sources. Also, legumes can reduce the need to use soil or nitrogen fertilisers, and they can grow in poor soil by converting nitrogen gas for their own needs. This occurs as a result of symbiotic relationships with the helpful bacteria rhizobia.<sup>40</sup>

In sum, adopting a comprehensive approach that addresses all factors contributing to a sustainable and equitable food system is essential. By doing so, it is possible to create a food system that meets the needs of consumers, farmers, and the environment, while also contributing to global food security.

## 1.4. Economic Growth

According to a report from the Good Food Institute Europe, **sales of plant-based foods in 13 European countries reached a record high of €5.8 billion in 2022, exhibiting a growth rate of 21% since 2020. The report revealed that unit sales of conventional meat fell by 8% in the same period.** Plant-based meat prices saw a moderate increase of 1% in 2022, compared to a significant increase of 11% for meat prices due to inflation.<sup>41</sup>

The report also showed that plant-based milk is the most developed category among plant-based foods, accounting for 11% of the total milk market, with sales increasing by 19% from 2020 to 2022 to reach €2.2 billion last year. Unit sales of plant-based milk rose by 20% in the same period, while unit sales of conventional milk declined by 9%.

<sup>38</sup> [https://gfi.org/wp-content/uploads/2022/10/Climate-Advisers-GFI\\_Alternative-Proteins-Food-and-National-Security.pdf](https://gfi.org/wp-content/uploads/2022/10/Climate-Advisers-GFI_Alternative-Proteins-Food-and-National-Security.pdf)

<sup>39</sup> <https://www.un.org/en/observances/world-pulses-day>

<sup>40</sup> <https://www.frontiersin.org/articles/10.3389/fsufs.2021.767998/full>

<sup>41</sup> <https://gfieurope.org/market-insights-on-european-plant-based-sales-2020-2022/>

The market for plant-based food in Europe is projected to experience a compound annual growth rate of 10.1% between 2022 and 2029, with a value of \$16.7 billion anticipated by 2029. The driving factors behind this growth include<sup>42</sup>:

- ✓ The increasing popularity of vegetarianism.
- ✓ A decline in meat consumption.
- ✓ A growing preference for plant-based foods.
- ✓ An increase in venture capital investments in animal alternatives.

However, the relatively higher price range of plant-based food products and a preference for animal-based products may obstruct the market's expansion.

Due to the influential nature of marketing strategies in creating and sustaining markets, particularly within the food industry<sup>43</sup>, the substantial expenditure by the EU on promoting European meat and dairy products<sup>44</sup> may contribute to consumer preferences towards animal-based products. Thus, investment in marketing should be directed towards sustainable consumption favouring plant-based products.

Some interest groups are also reported to employ strategies to promote animal-based products, including direct engagement with policymakers, sponsoring research papers that support their views, and utilising targeted social media campaigns. Influential agri-food lobbies have been pressuring to undermine sustainable food strategies, including opposing the EU's Farm to Fork Strategy.<sup>45</sup>

Nevertheless, according to the WWF Food Habits Survey, a majority of respondents in EU countries agree with supportive policies, such as reducing the prices of sustainable food (76%) and informing consumers of the environmental impact of food products (71%).<sup>46</sup>

## 1.5. Factory Farms and Workers' Safety

**Workers in factory farms (and sheds) are exposed to various health hazards as they inhale harmful gases and faecal particles emitted from waste. This repeated exposure can lead to serious health complications such as respiratory issues, cardiovascular problems, and premature death.**<sup>47</sup>

Moreover, research shows that the psychological well-being of farmers is often negatively impacted by pesticide exposure, financial difficulties, and poor physical health.<sup>48</sup> It also shows that raising animals for food, rather than growing plants, is strongly associated with poor mental health among farmers.<sup>49</sup>

Also, the animal industry typically relies on thousands of migrant workers who are at a higher risk of being exploited due to their employment through subcontractors and agencies offering subpar wages and working conditions.<sup>50</sup>

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<sup>42</sup> <https://www.meticulousresearch.com/product/europe-plant-based-food-market-5260>

<sup>43</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7698179/>

<sup>44</sup> <https://www.greenpeace.org/static/planet4-eu-unit-stateless/2021/04/20210408-Greenpeace-report-Marketing-Meat.pdf>

<sup>45</sup> <https://www.slowfood.com/the-farm-to-fork-strategy-is-the-future-of-the-eu-food-system/>

<sup>46</sup> [https://wwf.fi/app/uploads/c/b/0/cb550mgevcd4jwppq8s8ah/2022-09-16\\_wwf\\_eu-food-habits-wave-2\\_report-v2.pdf](https://wwf.fi/app/uploads/c/b/0/cb550mgevcd4jwppq8s8ah/2022-09-16_wwf_eu-food-habits-wave-2_report-v2.pdf)

<sup>47</sup> <https://foodispower.org/human-labor-slavery/animal-agriculture-workers/>

<sup>48</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6926562/>

<sup>49</sup> <https://www.fwi.co.uk/farm-life/health-and-wellbeing/analysis-the-grim-state-of-mental-health-in-agriculture>

<sup>50</sup> <https://www.worldanimalprotection.org/sites/default/files/2022-04/HealthImpactsofIndustrialLivestockSystemsFINALWEB.pdf>



While most occupations carry some degree of risk, the specific hazards present in factory farms, combined with the challenges faced by workers in this industry, contribute to an increased level of risk compared to many other types of jobs.



## 1.6. Other Drivers

**It is important to consider all actors in the animal agriculture system, along with the well-being of animals.**

Current discussions are underway to determine the best strategy for meeting consumer demands for higher animal welfare standards. The EU has made the first steps on the road to increasing the welfare of animals farmed for food through the European Citizens' Initiative (ECI) 'End the Cage Age,' which aims to end the use of cages for all species farmed for food – from poultry (including parent stocks) and sows to calves and rabbits. Improving conditions for animals used for food, including a ban on cages, and all systems relying on confinement and high stocking density, is a precondition for more sustainable and higher welfare food systems.<sup>51</sup>

There are also indirect victims of the animal agriculture system, such as wild animals displaced or killed due to habitat destruction and deforestation to make way for farmland.<sup>52</sup> Climate change, which is influenced by animal agriculture, has a wide range of victims, including vulnerable populations disproportionately affected by extreme weather events, droughts, and food insecurity.

Additionally, in addition to factory farms workers being impacted by industrial food animal production, people living near these places are also affected. Four health outcomes are linked to living near industrial food animal productions: respiratory issues, methicillin-resistant *Staphylococcus aureus* (MRSA), Q fever, and stress/mood disorders. There is also moderate evidence of the connection between industrial food animal production and a decline in quality of life.<sup>53</sup>

By considering all victims of the animal agriculture system, we can develop more holistic and ethical solutions to address these harms. This includes increasing the intake of plant-based protein, supporting sustainable farming practices, investing in alternative protein sources, and working towards a food system that respects animal and human welfare.

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<sup>51</sup> [https://food.ec.europa.eu/animals/animal-welfare/eci-end-cage-age\\_en](https://food.ec.europa.eu/animals/animal-welfare/eci-end-cage-age_en)

<sup>52</sup> <https://academic.oup.com/af/article/11/5/8/6404338>

<sup>53</sup> <https://clf.jhsph.edu/publications/industrial-food-animal-production-and-community-health>

## 2

## Toolkit

This chapter unveils a range of strategic tools that could drive the EU's mission for a more sustainable and equitable food system. With initiatives and strategies like the Framework for a Sustainable Food System (FSFS), Biodiversity Strategy, FOOD2030, and Farm to Fork, the EU should resolutely steer towards a future where health, environment, animals and society intertwine harmoniously. These strategies have the potential to reshape consumption patterns, enhance innovation, and forge a healthier relationship with our planet.

## 2.1. Sustainable Food System Framework Initiative

The European Commission plans to introduce a new law for sustainable food systems by the end of 2023. The new FSFS will try to make sure that all food-related rules consider the environment, animals and people's health together and it wants to show how these things are connected. Also, FSFS wants to make sure that the rules make sense across the whole EU and each country.<sup>54</sup>

It represents a key component of the Farm to Fork Strategy and it is a significant opportunity to initiate a groundbreaking transition towards a sustainable food system in Europe, which emphasises health and social equality.

A comprehensive approach to food-related policy-making is essential for a fair transition to more sustainable diets. The FSFS can play a vital role in driving change by introducing robust measures at the EU level to regulate public and private procurement and marketing, which are essential catalysts for change.

However, since many aspects of policies regarding consumption fall under the jurisdiction of national governments, the EU Sustainable Food Systems Law **must also mandate action at the local and national levels through the establishment of National Sustainable Food Plans**. These plans can help ensure that food systems are sustainable and equitable, meeting the needs of consumers and farmers. Adopting this approach can lead to a more just and sustainable food system that benefits all.

To achieve a plant-based food system, the FSFS can provide financial incentives to farmers who grow plant-based crops for human consumption. These incentives can be subsidies, tax breaks, or other regulatory measures that reward sustainable production practices. By providing these incentives, FSFS can encourage farmers to shift towards plant-based production methods, increasing the availability of plant-based foods for consumption.<sup>55</sup>

Moreover, FSFS can support **research and development of plant-based food alternatives**, such as plant-based meat or dairy substitutes, to provide more choices for consumers. This can be achieved by funding research and development projects or providing support for start-ups and small businesses in the plant-based food industry. By supporting innovation in plant-based food

<sup>54</sup> [https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/legislative-framework\\_en](https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/legislative-framework_en)

<sup>55</sup> <https://www.nature.com/articles/s44168-023-00034-9>

alternatives, FSFS can create new market opportunities for producers and increase the availability of sustainable, plant-based food options for consumers.

It is also important to consider **food environments** that encompass the physical, economic, political, and socio-cultural contexts in which individuals engage with the food system<sup>56</sup>, influencing their decisions and behaviours regarding obtaining, preparing, and consuming food. These environments are shaped by factors such as the availability, information, price, and advertising of food. By redesigning the food environments, we can foster a transition toward greater consumption of plant-based foods.

Also, research indicates that **health professionals** can play a crucial role in changing the relationship between food and health. Unfortunately, their influence and potential impact are currently undervalued within healthcare systems.<sup>57</sup> Therefore, implementing the FSFS could promote education campaigns for health professionals about sustainable and healthy diets and how they can benefit human health and the environment.



## 2.2. Biodiversity Strategy for 2030 and Soil Strategy 2030

**Approximately 60% to 70% of soils in the EU are in an unhealthy state.** Soil erosion in the EU washes away about 1 billion tons of soil yearly, leading to a loss of agricultural production estimated at €1.25 billion annually. Soil degradation is caused by a decline in organic matter, pollution, loss of biodiversity, salinisation, and sealing due to unsustainable land use, management, overexploitation, and pollutant emissions.<sup>58</sup>

**We can no longer ignore the risks posed by the worsening condition of European soils.**

A transformation integrating the safeguarding, sustainable handling, and revitalisation of soils should be incorporated into the socio-economic framework. To make European soils healthy again and strive for land degradation neutrality by 2030 – one of the Sustainable Development Goals that the EU has committed to – the Biodiversity Strategy for 2030 has announced a new Soil Strategy.<sup>59</sup>

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<sup>56</sup> <https://epha.org/what-are-food-environments>

<sup>57</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7996772/>

<sup>58</sup> [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_5917](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5917)

<sup>59</sup> [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_5917](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5917)



## 2.3. Food2030

Regarding FOOD2030, European policymakers can play a vital role in promoting a sustainable and secure food system by providing financial assistance for research and innovation in the plant-based food industry. To ensure the European plant-based food industry's competitiveness and rapid success, it is crucial to have a long-term vision, particularly for funding research. The revised FOOD2030 Strategy must recognise the importance of public research and innovation in driving the adoption of plant-based foods for human consumption. Horizon Europe must allocate sufficient funds to support this sector.<sup>60</sup>

## 2.4. Farm to Fork Strategy

The European Commission introduced the Farm to Fork Strategy<sup>61</sup> in 2020, which is a holistic plan and roadmap aimed at establishing a food system in Europe that is both healthier and more sustainable. The strategy has a range of important goals, including:

- ✓ reducing the utilisation of pesticides
- ✓ promoting sustainable farming methods
- ✓ reducing food waste
- ✓ enhancing food labelling and information
- ✓ encouraging healthier eating habits.

Additionally, the strategy supports the establishment of shorter food supply chains, advocates for better animal welfare, and urges the usage of eco-friendly packaging for food products.

## 2.5. Protein Policy

The Commission has announced its intention to conduct a thorough review of its protein policy, which was declared in the Commission's food security communication for 2022. The review will build upon the 2018 protein crops report,<sup>62</sup> incorporating current market dynamics and policy developments under the Green Deal.

It will have an extensive scope, examining import dependencies, stimulating the production of plant-based and alternative proteins within the EU, evaluating protein demand, and exploring ways to raise plant-based protein consumption in human diets.

The primary goal of the review is to **enhance food security while decreasing the environmental and climate impact in the EU and globally**. As a result, the review will go beyond the Common Agricultural Policy and will examine the complete range of feed and food production in a structured manner, identifying drivers, levers, and policy pathways.

The Commission will engage in a dialogue with stakeholders and Member States throughout the review process and aims to deliver the review during the first quarter of 2024.<sup>63</sup>

<sup>60</sup> [https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030\\_en](https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030_en)

<sup>61</sup> [https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy\\_en](https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en)

<sup>62</sup> [https://www.europarl.europa.eu/doceo/document/A-8-2018-0121\\_EN.html](https://www.europarl.europa.eu/doceo/document/A-8-2018-0121_EN.html)

<sup>63</sup> [https://www.europarl.europa.eu/doceo/document/P-9-2023-000044-ASW\\_EN.html](https://www.europarl.europa.eu/doceo/document/P-9-2023-000044-ASW_EN.html)



# 3

## Plant-based Food System Policies for a Sustainable Future

### 3.1. Redirect EU Funding (such as subsidies) Towards Sustainable Farming to Produce Plant-based Proteins for Human Consumption

**Redirecting European financial incentives towards sustainable farms that focus on producing plant-based proteins for human consumption, and providing incentives for innovation in alternative proteins and smart farming technologies, is crucial for economic opportunities and has significant implications for public health and the environment.**

Promoting the cultivation of plant crops for human consumption and reducing reliance on animal agriculture can positively affect public health, mitigate the environmental impact of agriculture, conserve natural resources, and promote biodiversity. Therefore, redirecting incentives and supporting farmers in transitioning to plant-based farming not only addresses economic opportunities, aiding farmers in adapting to changing consumer dietary preferences, but also aligns with the goals of improving public health and protecting the environment.

Despite the CAP being in effect until 2027, the FSFS has the potential to establish a separate subsidy system that exists outside of the current CAP (until the new incentive program is eventually incorporated into the CAP during its next revision).<sup>64</sup> The FSFS could set the incentives for producing plant-based food for human consumption.

### 3.2. Provide Sustainable Protein Research Funding and an Open-access Database of Studies on Plant-based Food's Potential

**To increase the consumption of legumes and other plant-based sources of protein, it is crucial to promote partnerships between small businesses and public research.**

Particularly regarding legumes, this will help to spread knowledge about their cultivation and processing. Additionally, businesses should maintain close relationships with their agricultural growers or cooperatives to ensure a reliable supply of locally produced legumes instead of relying heavily on imports. Research institutions can also play a valuable role in this transformation by promoting research and providing technical assistance.

The FSFS could also support the development, processing, sale, and export of EU plant-based food for human consumption and the advancement of innovative technologies in the field of alternative proteins.

### 3.3. Rethink EU protein strategy<sup>65</sup>

The European Parliament's Committee on Agriculture and Rural Development has issued a prelim-

<sup>64</sup> <https://www.nature.com/articles/s44168-023-00034-9>

<sup>65</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0757>

inary report titled the European Protein Strategy (2023/2015(INI)).<sup>66</sup>

**European Protein Strategy should prioritise plant-based protein production for human consumption over feed protein production, as it is crucial for establishing more sustainable and climate-friendly food systems.**

### The European Protein Strategy should focus on the following:



Recognising that leguminous crops can contribute to soil quality improvement, biodiversity increase, and carbon and nitrogen fixation. They release fewer greenhouse gases (like carbon dioxide and nitrous oxide) into the atmosphere when compared to other crops that are fertilised with nitrogen. These crops enhance the storage of carbon in the soil and decrease the demand for fossil fuels within the agricultural system by lowering the necessity for nitrogen-based fertilisers.<sup>67</sup>



Creating a commission to supervise the EU protein strategy and acknowledge the achievements of other member states.



Encouraging member states to develop their own national plant protein strategies and establish KPIs for assessing their effectiveness.



Promoting the market for plant-based and alternative protein sources, incentivising its growth due to consumer demand.



Scaling up research and innovation in the field of plant proteins.

Additionally, the European Protein Strategy should not promote insect factory farming rather than fostering a sustainable food system, without following a precautionary principle. Engaging in insect farming may not lead to a more sustainable food system. Rather than constraining intensive animal farming and its negative ecological and health implications linked to excessive animal product consumption, insect farming may end up supporting such practices and their consequences.<sup>68</sup>

<sup>66</sup> [https://www.europarl.europa.eu/doceo/document/AGRI-PR-742624\\_EN.pdf](https://www.europarl.europa.eu/doceo/document/AGRI-PR-742624_EN.pdf)

<sup>67</sup> <https://chembioagro.springeropen.com/articles/10.1186/s40538-016-0085-1>

<sup>68</sup> <https://www.eurogroupforanimals.org/library/insect-farming-and-sustainable-food-systems-precautionary-principle>

### 3.4. Proceed With Effective Implementation of the Farm to Fork Strategy <sup>69</sup>

**Recognise its importance for the EU's international commitments and turn several of the political initiatives that were introduced in the significant Farm to Fork Strategy<sup>70</sup> by the European Commission into enforceable legislation.**

The funding provided through the Common Agricultural Policy (CAP) must not hinder or work against the Farm to Fork and Biodiversity Strategies. Instead, both should be implemented in the best way possible within the national implementation of the CAP.

#### 3.4.1. Trade and Sustainable Development

The key positive aspects of the European Commission's new approach to Trade and Sustainable Development (TSD)<sup>71</sup> Chapters have been pointed out as being the heightened emphasis on monitoring and enforcing the TSD provisions. But efforts are still needed to ensure that sustainability remains a central focus within trade agreements.<sup>72 73</sup>

TSD should acknowledge the correlation between sustainable development and animal welfare, further strengthening its harmony with the Farm to Fork Strategy. It must avoid endorsing unsustainable production methods, such as those observed in intensive animal farming.

#### 3.4.2. The Role of FSFS in Dietary Guidelines

The FSFS, as a flagship initiative of the Farm to Fork Strategy, plays a pivotal role in guiding national efforts toward sustainability. With the guidance of the FSFS, food-based dietary guidelines (FBDGs) can be developed with sustainability considerations woven into their recommendations. This ensures that dietary guidelines are not only health-focused but also reflect the broader goals of the Farm to Fork Strategy.



<sup>69</sup> [https://food.ec.europa.eu/system/files/2020-05/f2f\\_action-plan\\_2020\\_strategy-info\\_en.pdf](https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf)

<sup>70</sup> [https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy\\_en](https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en)

<sup>71</sup> From 2011 onwards, the free trade agreements (FTAs) of the European Union (EU) have featured a Trade and Sustainable Development (TSD) chapter, which outlines commitments pertaining to both the environment and labour standards.

<sup>72</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_22\\_3921](https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3921)

<sup>73</sup> <https://ieep.eu/publications/reflections-on-the-new-approach-to-the-tsd-chapters-for-greener-trade/>

## 3.5. Set Sustainability and Animal Welfare Labelling of Food Products and Make It Clear

**To ensure an effective labelling framework, it is important to establish an inclusive and transparent process involving all relevant stakeholders.** The development should be based on a well-defined, scientifically grounded approach. To achieve this, companies should have access to the indicators, methodologies, and outcomes derived from the labelling system. Most importantly, the labelling scheme should be easy to understand, ensuring simplicity for both businesses and consumers.<sup>74</sup>

### 3.5.1. Sustainability Labelling

Carbon Trust surveyed more than 10,000 individuals across France, Germany, Italy, the Netherlands, Spain, Sweden, the UK, and the US, revealing that more than two-thirds of respondents supported carbon labelling on products. According to consumers, a brand that could demonstrate a reduction in the carbon footprint of its products would be viewed in a more positive light.<sup>75</sup>

**Along with the importance of sustainability labelling, Europe must have a consistent and universally applicable ecological footprint labelling framework specific to food products and with a simple and clear design (with friendly symbols such as traffic light colours)<sup>76</sup>. Preferably, this labelling framework would be global, but at the very least, European and national initiatives should be taken.**

If certain food groups or subgroups are exempted from sustainability labelling, it could result in unintended negative consequences. For instance, exempting certain types of meat from labelling may encourage people to consume more of those meats, ultimately not reducing the environmental harm caused by meat production. Therefore, it's crucial to ensure that sustainability labels cover various food types and factors to achieve the desired environmental, social, and economic outcomes.



<sup>74</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022IE0878>

<sup>75</sup> <https://www.carbontrust.com/news-and-insights/news/2020-consumer-research-shows-sustained-support-for-carbon-labelling-on>

<sup>76</sup> <https://www.sciencedirect.com/journal/journal-of-cleaner-production>



### 3.5.2. Animal Welfare Labelling

The importance of protecting the welfare of farmed animals is widely recognised by EU citizens, with over 94% expressing this view, according to a Eurobarometer 2016 survey. A significant majority, accounting for 52% of Europeans, actively seek animal welfare-friendly identifying labels when making product purchases. However, despite the demand, EU respondents feel that an inadequate variety of animal welfare-friendly food products are available in stores and supermarkets.<sup>77</sup>

**Ongoing EU discussions are taking place to address consumer concerns and meet their expectations for higher animal welfare standards. As part of these efforts, there are proposals for a mandatory and comprehensive labelling system, such as the method-of-production labelling, as proposed by Compassion in World Farming, a farm animal welfare organisation.<sup>78</sup> This system would cover the entire life cycle of animals in products, providing consumers with transparent information about animal rearing conditions.**

The overarching objective is to bridge the gap between consumer expectations and the availability of animal welfare-friendly choices, foster fair competition in the common market, provide consumers with quality information, and promote more humane production methods.

## 3.6. Price Greenhouse Gas Emissions

**One efficient way to address the external costs linked to the consumption of animal products is by making consumers directly cover those expenses. This strategy can lead consumers to reduce their meat consumption, drive the industry to adopt more environmentally friendly production methods and consider substituting animal products.** As so, pricing instruments could be effective in dealing with the issue of unaddressed expenses within the animal products sector.

### 3.6.1. Emission Trading Systems (ETS)

The implementation of environmental taxes for high-pollution sectors of agriculture could be reinforced. Using carbon pricing instruments such as **emission trading systems (ETS) can be an effective way to encourage the adoption of sustainable practices** in the food system. These instruments have been successfully implemented in other sectors, leading to innovations without significant economic or social issues.<sup>79</sup>

As such, it is important to note that the food system should not be exempt from economy-wide measures such as carbon pricing. By implementing carbon pricing instruments, the food system can encourage sustainable practices, incentivise innovation, and contribute to the larger goal of reducing carbon emissions and mitigating climate change.<sup>80</sup>

<sup>77</sup> <https://europa.eu/eurobarometer/surveys/detail/2206>

<sup>78</sup> <https://www.ciwf.org.uk/our-campaigns/honest-labelling/our-solution/>

<sup>79</sup> <https://www.oecd.org/tax/tax-policy/pricing-greenhouse-gas-emissions-turning-climate-targets-into-climate-action.htm>

<sup>80</sup> <https://onlinelibrary.wiley.com/doi/full/10.1111/reel.12448>

### 3.6.2. Higher VAT rate coupled with an excise levy

As the objective here is to augment the cost of meat consumption to mirror its adverse external impacts, such as environmental deterioration, a **higher VAT rate for animal products, coupled with an excise levy on meat, should be considered.** Particularly in relation to the excise levy, the concept involves imposing a tax specifically on meat sold to consumers by retail enterprises (such as supermarkets) and food services (like restaurants and catering establishments). This tax would be applicable regardless of whether the meat is domestically produced or imported.

Both heightened VAT rates and the introduction of an excise levy could result in a higher cost of meat for consumers. This would probably increase the price of meat, leading consumers to either shorten their meat consumption or adjust their expenditure on other commodities and services. This adjustment has the potential to tackle the external costs associated with meat consumption.<sup>81</sup>

#### 3.6.2.1 Lower or Zero VAT Rates on Healthy Plant-Based Foods

Given the potential impact of a higher VAT rate coupled with an excise levy on individuals with varying incomes, this pricing strategy can be complemented by implementing lower or zero VAT rates on fruits, vegetables, and legumes. By reducing the VAT on these nutritious plant-based foods, the resulting affordability can counterbalance the potential cost increase on meat products. This well-rounded approach ensures that individuals have economical alternatives to meat consumption, which can significantly contribute to mitigating the adverse health and environmental effects associated with meat consumption.



<sup>81</sup> <https://cedelft.eu/publications/pay-as-you-eat-dairy-eggs-and-meat-internalising-external-costs-of-animal-food-products-in-france-germany-and-the-eu27/>

## Revenue from taxes and pricing instruments can be used for:



**Sustainable crop production:** To support farmers in transitioning towards sustainable crop production methods.



**Agroforestry and permaculture:** Investments can be made in agroforestry and permaculture systems, which incorporate various edible plants, including fruits, vegetables, and nuts, within agricultural landscapes.



**Marketing and consumer education:** A portion of the revenue can be allocated towards marketing campaigns promoting the benefits of plant-based diets and raising awareness about sustainable food choices.



**Product development and innovation:** Revenue can be used to support research and development initiatives focused on plant-based food innovation.



**Free or cheaper plant-based meals:** Governments can allocate tax revenue to provide subsidies or grants to schools or school districts that offer plant-based meals or make them cheaper.



**Education for health and food professionals:** Tax revenue can be used to provide educational programs and training opportunities for health professionals, nutritionists, dietitians, and food service staff. These programs can focus on the benefits of plant-based diets, nutrition guidelines, meal planning, and preparing plant-based meals.

### 3.7. Health Taxes on Red and Processed Meat

According to a study, in 2020, the worldwide costs associated with consuming red and processed meat were estimated at €260 billion, with three-quarters of this amount attributed to processed meat. With optimal taxation measures in place, prices of processed meat can increase by an average of 25% and prices of red meat by 4%, which leads to a 16% reduction in processed meat consumption. This may result in a 9% decrease in deaths attributable to red and processed meat consumption globally and a 14% reduction in associated health costs, with the most significant reductions happening in high and middle-income countries.<sup>82</sup>

Just as tobacco taxation (which is passed on to consumers in the form of higher cigarette prices) has been shown to be a highly effective technique in diminishing smoking prevalence, a comparable strategy can be extended to the domain of red and processed meat consumption.<sup>83</sup> **As such, incorporating the health cost of red and processed meat consumption into the price of these products could have significant health benefits, particularly in high and middle-income countries.**

<sup>82</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6219766/>

<sup>83</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3228562/>

# 4

## Successful Examples From European Countries

### 4.1. Denmark

As a political example in Europe, Denmark has announced a new “Plant-based Fund” as part of a broader agreement on Danish agriculture, which establishes investment in policies and public mechanisms that constitute the basis of a transition to a sustainable, plant-based food system with reduced climate impacts.<sup>84</sup>

A historically high amount of 675 million Danish kroner (DKK) – approximately €91 million – has been allocated to this unprecedented Plant-based Fund, to be distributed until 2030, aimed exclusively at promoting the transition to a plant-based food system, particularly to increase the production and transformation of plant protein for human consumption.

To date, this funding represents the most substantial investment in research and development focused on plant-based initiatives made by any EU country. The agreement, approved by all major parties in the Danish parliament, recognises that plant-based foods must be a “central element in the green transition” and commits the Danish government to create a national action plan for plant-based foods, with clear market objectives for production and sales.

### 4.2. Netherlands

The Dutch government has set a target to reduce greenhouse gas emissions in the Netherlands by 49% by 2030 (compared to 1990 levels) and 95% by 2050, and as a strategy to achieve this, it has established the need to decrease meat and dairy consumption and increase the intake of plant protein.

To significantly increase the production and consumption of protein-rich plant crops within a defined six-year period, a “master plan” was presented to the Dutch House of Representatives. The project, entitled “Economically-Powered Protein Transition through Innovation in Chains (EPPIC),”<sup>85</sup> was submitted to the Dutch National Growth Fund in March 2023 by the Ministry of Agriculture, Nature, and Food Quality on behalf of five initiators and 82 partners, requesting €96 million for this fund.

According to consultant Deloitte, the plan could, in turn, drive €2.6 billion in economic activity and make a significant contribution to achieving climate and nature preservation goals, including a reduction of 640 million kilograms in CO<sub>2</sub> emissions.

The Dutch initiators of the EPPIC project, which will begin in 2024 and run for six years, have noted a “willingness” among consumers in the Netherlands to change their dietary habits in the past five years to include more plant-based products. One question the EPPIC project will try to answer is whether eating processed plant-based alternatives to meat is an intermediate and necessary step that eventually leads to less processed legume consumption.

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<sup>84</sup> <https://fvm.dk/landbrug/aftale-om-groen-omstilling-af-landbruget/>

<sup>85</sup> <https://www.wur.nl/en/newsarticle/five-major-players-launch-masterplan-for-protein-transition-as-economic-engine-in-the-netherlands.htm>



**“In the past two years, we have seen a decline in meat consumption and an increase in direct legume consumption. And, of course, we see strong growth in plant-based alternatives, whether meat substitutes or dairy substitutes. Health aspects are also receiving attention in this research,” says Stacy Pyett, leader of the Proteins for Life program at Wageningen University in the Netherlands.**

Also, the EU has given the go-ahead to the Dutch government's plan to acquire farms from Dutch farmers. This scheme introduces the possibility of providing compensation to farmers in exchange for the cessation of their farmed animals' production. This aligns with the Netherlands' broader strategy to significantly reduce nitrogen emissions.

The two approved Dutch schemes amount to around €1.47 billion, in accordance with EU State aid rules. The proposals, named LBV and LBV plus, provide compensation to farmers who raise animals for food and are willing to close down breeding sites with significant nitrogen emissions. The financial assistance will be granted through direct subsidies, covering losses in production capacity and rights.

The schemes ensure a permanent closure of the sites and align with sustainable development goals, making them proportionate and in line with EU policy. They are set to continue until February 2028 and are accessible to small and medium-sized farmers in the Netherlands who choose to shut down their breeding sites voluntarily.<sup>86</sup>



## Conclusion

**Within the EU, the agricultural sector contributes to 10.3% of the total greenhouse gas emissions produced, and an overwhelming 70% of these emissions are generated by the farmed animals sector.<sup>87</sup> Other impacts of animal farming include water pollution, land degradation, biodiversity loss, food security, and public health concerns.**

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<sup>86</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_23\\_2507](https://ec.europa.eu/commission/presscorner/detail/en/IP_23_2507)

<sup>87</sup> [https://www.eca.europa.eu/Lists/ECADocuments/SR21\\_16/SR\\_CAP-and-ClimatE\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR21_16/SR_CAP-and-ClimatE_EN.pdf)

Europe urgently needs a food system transition to address multiple challenges and seize opportunities for a sustainable future. Therefore, an increase in plant-based protein sources is needed to build a more sustainable food system and for governments to meet their Paris climate agreement targets.

Shifting towards a diet with more plant-based foods can bring substantial advantages by reducing greenhouse gas emissions, improving food security, and promoting better human and ecosystem health. But, to tackle current food system issues, a comprehensive approach is required, encompassing policy frameworks, research funding, sustainable farming practices, market incentives, and addressing food environments, such as:

- ✓ Redirecting EU funding, such as subsidies, towards sustainable farming practices that produce plant-based proteins for human consumption. This addresses economic opportunities and improves public health and environmental sustainability.
- ✓ Supporting sustainable protein research and providing an open-access database of studies on plant-based food's potential. This can drive innovation and knowledge dissemination in the industry.
- ✓ Rethinking the EU protein strategy to prioritise plant-based protein production for human consumption and promote research and innovation.
- ✓ Reinforcing the Farm to Fork Strategy.
- ✓ Using FSFS to introduce robust measures to regulate public and private procurement and marketing, promote environmentally conscious FBDGs, incentivise farmers to shift towards plant-based production methods, and support research and development of plant-based food alternatives.
- ✓ Recognising food environments is crucial in shaping individuals' dietary choices and consumption patterns. By redesigning food environments, Europe can foster a transition toward greater consumption of plant-based foods.
- ✓ Establishing sustainability and animal welfare/mode of production labelling of food products consistently and clearly, allowing consumers to make informed choices.
- ✓ Implementing pricing instruments to encourage the adoption of sustainable practices in the food system through a) implementing carbon pricing instruments such as emission trading systems (ETS), and b) raising VAT rates on meat and introducing an excise levy on it (complemented with lower or zero VAT rates on fruits, vegetables, and legumes).
- ✓ Incorporating the health cost into the price of red and processed meat.

By implementing these policy measures and initiatives, Europe can pave the way for a more just, sustainable, and resilient food system that prioritises human and planetary health while creating economic opportunities and ensuring food security.

It's crucial for policymakers to recognise the urgency of the matter. Policy choices must consider the transformative impact that promoting plant-based foods can have on our planet and the well-being of all.

# green protein

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