

Leveraging public procurement to promote sustainable diets

Opportunities within the European Union

KEY RECOMMENDATIONS

Putting sustainable food procurement policies into practice across the European Union and its Member States has the potential to tackle environmental and health challenges, support local production, shorten supply chains and give farmers the market signals they need to invest in improved production methods. Facilitating this shift will require action at different governance levels.

At the EU level

- Make Green Public Procurement (GPP) criteria for food mandatory
- Increase ambition of GPP criteria to better promote foods that align with climate, health and animal welfare goals
- Establish a network of best practices to encourage innovation

At the Member State level

- Develop and adopt national GPP criteria
- Support the implementation of adopted GPP criteria by providing training to procurement officers, and caterers; and engaging chefs and nutritionists in menu design
- Facilitate performance monitoring and budget tracking, including digitalization of procurement processes
- Set timebound targets to keep institutions accountable and measure progress

At the subnational level

- Improve access to tenders for small and local businesses
- Promote a positive food culture in public institutions, and directly engage with consumers
- Participate in and contribute to best-practice sharing, peer learning and being open to trying innovative approaches to shifting diets in public institutions

1. The case for change

Our food systems are a significant source of greenhouse gas emissions. If we continue producing and eating food the way we do, emissions from agriculture and land use will make up 70 percent of the emissions budget available by 2050 to limit global warming to 2°C.¹ However, if we are able improve how we produce our food and use our land, the agriculture and land use sector has the potential to deliver almost a third of the mitigation potential needed to stay within the 1.5°C warming limit.² This presents an enormous opportunity to tackle climate change.

Over 80% of farmland is used for animals and their feed

A first step in this direction is to recognize the impact of our food consumption behavior. Livestock farming generates close to 60% of GHG emissions from the food industry, while providing only 18% of calories consumed globally.³

Approximately 83 percent of farmland globally is used for animals and their feed.⁴ The European Union (EU) is among the world's top five meat producers and exports a considerable share of its production.⁵ At the same time, the region is also a key importer of beef and soy (used mostly as animal feed), both of which contribute significantly to the deforestation of tropical rainforests. The EU is one of the world's top-ten importers of beef – a meat that is especially resource-intensive to produce. It sources a large share of this from Brazil, where cattle farming is a primary driver of deforestation.⁷ Between 2000–12, imports of palm oil, beef and soy to the EU is estimated to have driven the illegal clearing of up to 2.4 million hectares of tropical forest – an area more than half the size of The Netherlands – endangering biodiversity and the functioning of critical carbon sinks.⁸

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Each year, the average European consumes nearly 70 kg of meat, about double the world average.⁹ The EU is also the world's second largest dairy consumer.¹⁰ By 2030, meat consumption is projected to decline by a mere 1.1 kg per person, driven by factors such as changing dietary habits, convenience trends and health considerations.¹¹ This, however, means that Europeans will remain significant meat consumers. In addition, continued high intake of processed and red meats aggravate health risks, including obesity, heart disease, stroke, and cancer; increasing healthcare-related expenditures.¹²

Animal production is also a major contributor to poor air quality. Ammonia – which is released from manure and the nitrogen fertilizers used to grow fodder crops – reacts with other pollutants to form PM2.5; a fine particulate matter that increases the risk of heart disease, cancer and stroke following prolonged exposure.¹³



In addition to non-communicable diseases, factory farming – where animals are farmed in confined and overcrowded conditions – increases the risk of zoonotic disease outbreaks, such as Swine Flu or Q-fever, risking the outbreak of potential future pandemics.^{14,15} To prevent the spread of disease in such farming conditions, animals are often prescribed high antibiotic dosages, leading to resistant bacteria that threaten human health.¹⁶ Most of the world's antibiotics are, in fact, used on farm animals rather than on the human population. In the EU, an estimated 70 percent of antibiotics are used on farm animals.¹⁷

Most of the EU's antibiotics are used on farm animals, rather than the human population

Public leadership in facilitating the shift to healthier, more sustainable diets holds significant potential to move towards tackling these paramount issues. The purchasing power of public institutions, in particular, is an important – and often overlooked – tool to facilitate this shift. Governments at all levels, be it national, provincial, or municipal, make decisions about how public funds are spent on the provision of food, and therefore have the power to determine which food products are provided and promoted. This policy lever falls directly within their jurisdictional control, can drive local and global food economies towards greater sustainability, and directly influences public health.

Public food procurement involves the use of public funds to buy and provide the food served at public institutions such as schools, universities, hospitals, food banks, prisons, and military bases.

Each year, over 250,000 public authorities in the EU together spend around 14 percent of GDP on public procurement (including but not limited to food); part of which flows into the EU's EUR 82 billion food services market.¹⁸ National public sector expenditures on food are hard to come by, and figures that do exist are dated.¹⁹ Few Member States report the size of public food-related expenditures in their country, due in part to the fragmented nature of procurement processes and lack of digitalization making oversight challenging (for example, in 2016 only four Member States had fully digitalized their procurement process). This hampers the ability of states to have better budgetary control, and means that public scrutiny of spending on food is largely absent in most EU countries.²⁰

Public leadership is needed to facilitate the shift to healthier, more sustainable diets

But this lack of oversight does not undermine the importance of the public sector in making better buying choices. In addition to having the potential to tackle the environmental and health challenges outlined above, sustainability-oriented food procurement strategies can support local production, shorten supply chains and give farmers the market signals they need to invest in improved production methods.

Currently, more than half of Member States' procurement – not limited to only food – employs the lowest price as the only award criterion.²¹ By basing purchasing decisions on lowest cost only, key environmental and other qualitative aspects accompanying a product are overlooked.²²



In the absence of any requirements to account for the environmental externalities of production – such as greenhouse gas emissions, water consumption and air or soil pollution – procurement officers will continue to buy cheap agricultural products that are produced unsustainably by degrading soils, driving deforestation and land conversion, and harming biodiversity; to name but a few of the impacts.

Procurement standards should be expressly designed to catalyse the transition to sustainable and healthy diets

Such status quo behavior is further strengthened through the continued deployment of agricultural subsidies that incentivize farmers to bring land into production, produce resource-intensive meat products, and fails to sufficiently reward farmers for better managing their land and farming practices.²³ All this public money needs to be directed to incentivizing the establishment of a food system that is able to continue to provide for the needs

of future generations while protecting and restoring the land on which we depend for a stable food supply.

To effectively align food procurement with other EU efforts to transition to a more sustainable food system – such as that outlined in the EU’s Farm to Fork Strategy – the EU and its Member States need to design procurement standards expressly designed to catalyze the transition to sustainable and healthy food.

2. Policy context

First steps in the right direction are already being taken in the EU. In 2020, the European Commission released the Farm to Fork Strategy (Box 1) as part of the European Green Deal. The Farm to Fork strategy sets out the EU’s approach to making food systems fair, healthy, and environmentally friendly through a diverse set of policy interventions. One of these is to “determine the best way of setting minimum mandatory criteria for sustainable food procurement.”; and this looks set to remain firmly on the agenda.²⁴

Box 1: The EU Green Deal and Farm to Fork Strategy

In 2019, the European Commission launched the European Green Deal, a strategy for becoming the first climate neutral continent by 2050. This policy framework touches virtually every part of the EU’s society and economy, including food. The Farm to Fork strategy, a core part of the Green Deal, sets out how the EU aims to transform food systems to become fair, healthy, and environmentally friendly. It includes policies on food production, consumption, food security, and the reduction of food waste.

The overall aim of the Farm to Fork Strategy is to “transition the EU to a sustainable food system that:

- has a neutral or positive environmental impact;
- helps to mitigate climate change and adapt to its impacts
- reverses the loss of biodiversity
- ensures food security, nutrition and public health; and ensures that all have access to sufficient, safe, nutritious and sustainable food
- preserve affordability of food while generating fairer economic returns, fostering competitiveness of the EU supply sector and promoting fair trade.”

Importantly in the context of this paper, the Farm to Fork Strategy recognizes that “moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables will reduce not only risks of life-threatening diseases, but also the environmental impact of the food system”.³³ In an effort to promote healthy and sustainable diets in institutional settings, the Strategy also states that the European Commission will “set minimum mandatory criteria for sustainable food procurement. This will help cities, regions and public institutions to play their part by sourcing sustainable foods for schools, hospitals and public institutions and it will also boost sustainable farming systems, such as organic farming.”

The EU's main directive on public procurement (Directive 2014/24/EU) stipulates that public procurement decisions should be made based on tenders that are "most economically advantageous". At the same time, the directive states that Member States "may provide that contracting authorities may not use price only or cost only as the sole award criterion."²⁵ In an effort to recognize the importance of public procurement in directing public funds to support sustainable production and consumption, the European Commission has also introduced Green Public Procurement (GPP)²⁶ criteria for a number of sectors. These serve as voluntary guidelines, and Member States are encouraged to translate them into National Action Plans (NAPs) outlining planned measures for greening their public procurement. As of April 2021, 23 countries had developed NAPs. However, less than half of these address procurement in the food sector.²⁷

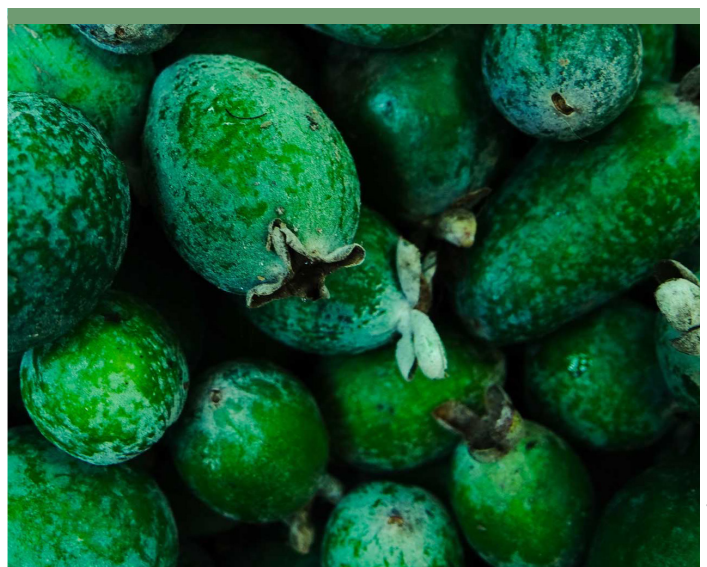
In 2019, the EU published its GPP criteria for food and catering services, which include award criteria promoting plant-based menus and waste prevention.^{29,30} The GPP criteria remain voluntary, and – similar to the broader GPP – are intended to facilitate the design of national GPP criteria for the food sector but require Member States to render these into national guidelines before they can be optimally employed. To date, the translation of the GPP criteria into national guidelines has been sparse, with only ten Member States having developed national GPP criteria for food and catering.^a Three additional Member States – Cyprus, Denmark, and Slovakia – officially recommend the use of the EU's GPP criteria for food and catering.⁴⁵

^aThe member states that include food and catering services in a national GPP action plan are: Austria, Belgium, Finland, France, Italy, Latvia, Lithuania, Netherlands, Slovenia, and Sweden. In addition, Ireland, Latvia, and Portugal are currently developing national GPP criteria for food and catering services.

Despite the recognition by the EU of the potential role public procurement can play in supporting the shift to healthier, more sustainable diets, existing guidelines have not been effective at facilitating a systematic shift to better buying that truly internalizes the social and environmental costs associated with the consumption of unsustainable foods, meat in particular. Uptake of progressive procurement strategies by Member States has been slow, partly due to the need for training of procurement officials and high legal uncertainty and complexity as to permitted regulator changes.³¹ This short briefing paper outlines the opportunities available to the European Commission, Member States and subnational governments in redirecting public funds to support the transition to sustainable food systems.

3. What would it entail?

Putting sustainable food procurement policies into practice across the EU and its Member States will require coordinated action at different governance levels. Decisions made at the EU-level need to be translated into actionable policies by Member States, who in turn also need to coordinate the implementation of these policies at subnational level, including in cities, rural areas, and different economic sectors. The following section outlines the key actions that the European Commission, Member States and regional governments can take to roll out effective procurement policies for food served in public institutions.



ACTIONS AT EU LEVEL

At the EU-level, the European Commission proposes new EU laws and policies, monitors their implementation, and manages the EU budget. As such, it has the authority to make (elements of) the existing GPP guidelines for food and catering services mandatory across Member States. The voluntary nature of the GPP guidelines for food and catering has proven insufficient in shifting public food procurement practices at scale. This is in contrast to, for example, the effectiveness of mandatory energy efficiency guidelines for public procurement of IT equipment, vehicles, and buildings.³⁵

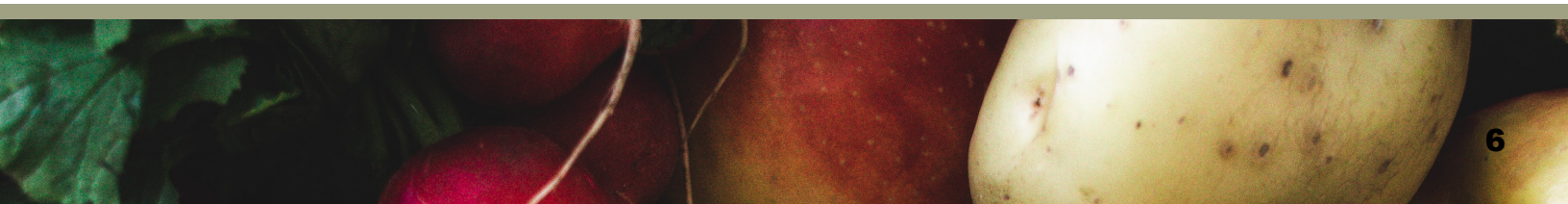
Making GPP guidelines for food mandatory across the EU would effectively prohibit public institutions from making purchasing decisions solely based on cost, and stimulate the uptake of environmental and other qualitative criteria as part of the evaluation process to ensure that buying decisions made align with the broader environmental, economic and social goals of the EU. This is especially relevant in the context of the Farm to Fork strategy, and includes considering what types of food are promoted, from where they are sourced, how they are produced and whom is impacted by any change in procurement behavior.

To serve as inspiration, some subnational authorities in EU Member States have already voluntarily introduced stricter tender procedures for food sourcing programs, including Rome (Italy), Lens (France), and Tukums (Latvia). In these jurisdictions, award criteria are based on minimum organic proportions, seasonality in menu design, compliance with nutritional recommendations, shorter supply chains, and reduced packaging and waste, among other things. Points are proportionally allocated to each award criterion to evaluate bids.³⁶

Policy makers should consider the type of food promoted, from where it is sourced, how it is produced and who is impacted by any change

Next, **the GPP criteria can be made more ambitious** by better promoting foods that align with climate and health goals. This includes consideration of both the health impacts of diets, and the wider secondary impacts of food production on air quality, water pollution and antimicrobial resistance; and would naturally lead to the promotion of plant-based foods, and less and better-quality meat. The current GPP criteria allow for public authorities to offer a vegetarian meal on only select days of the week, or even offer none at all if a certain amount of plant-based sources of protein or pulses are served per week or used to 'bulk up' non-vegetarian dishes to reduce the proportion of meat served in a single meal. While these options are all beneficial, they could be made more ambitious by providing one of these options in addition to requiring public institutions to offer at least one vegetarian dish daily next to other options.³⁷

When updating the GPP criteria, the European Commission should also consider explicitly **addressing how served animal products are produced**. The GPP criteria for food and catering currently focus primarily on egg production, meaning that public authorities can decide what portion (if any) of the meat and dairy products they provide have been "produced in accordance with the requirements of a certification scheme for animal welfare".³⁹ This leaves the door wide open for public institutions to be actively supporting factory farming and the associated poor animal welfare, while still being in compliance with GPP guidelines.



A handful of regional governments have introduced minimum organic requirements - which mandate a high standard of animal welfare and for farmers to meet the behavioral needs of animals – that move towards tackling this, including Copenhagen (Denmark), Kiuruvesi (Finland), Lens (France), Munich (Germany), Malmö (Sweden), Podravje (Slovenia), Rome (Italy), and Zagreb (Croatia). To address emissions further up the supply chain, public authorities could also set limits for the source of animal feed. Examples of the use of such standards can be found in Finland’s requirement on soy imports, which stipulate that soy used for animal feed must come from a traceable, certified source – thereby avoiding soy-driven deforestation – as well as the recommendation that other proteins than soy be used for feed.⁴⁰

Finally, the European Commission is well-positioned to **establish a network of best practices and support tools** among cities and towns (where nearly three-quarters of the EU’s population is concentrated), and institutions.⁴¹ Some municipal governments have already taken steps to make food procurement work for health, animal welfare, and the climate. Establishing a platform to share lessons learned, engage with industry and business associations to encourage their participation in procurement markets, and collaborate with urban decision-makers will help to foster an environment of peer-learning and innovation in sustainable food systems ([Box 2](#)).

In the EU context, such capacity building should be organized in a cross-country platform to encourage broad participation. A possible framework for knowledge exchange could be the emerging European Partnership for Safe and Sustainable Food System for People, Planet & Climate, which aims to support the implementation of the Farm to Fork strategy “by connect national, regional and European research and innovation programs and food system actors to deliver co-benefits for nutrition, climate, circularity and communities”.⁴²

ACTIONS AT MEMBER STATE LEVEL

Current recommendations offered by the GPP criteria offer voluntary guidance to Member States, leaving the design and implementation of greener procurement strategies in the hands of national governments. Member States should evaluate these guidelines and use them to **develop and adopt national GPP criteria for public food procurement**. National GPP criteria should explicitly acknowledge and encourage the need to move towards diets that align with climate and health goals; and can learn from existing experiences of doing so at national and sub-national level.

Next, national authorities need to **support the implementation of adopted GPP criteria** across all institutional levels of public procurement.

Box 2: Example good practices in public food procurement⁴³

The city of **Copenhagen** boasts the title as the most organic capital in the world. Today, all food served at public canteens across the city is organic, supplied by farmland located in the surrounding area.⁴⁴ The municipality has transitioned to using less processed foods, buying local and seasonal produce, and reducing food waste and meat servings to keep costs down. The city’s municipal government also offers extensive training to food professionals on how to cook with the local and seasonal products available.

In **Valencia** and **Rome**, city food policy is designed via consultative and collaborative processes. In Valencia, a municipal Food Council has been established to help shape the city’s food procurement policy. It includes representatives from local and regional government, NGOs, consumer groups, agricultural organizations, and academia. In Rome, public authorities and suppliers take part in regular roundtable discussions to evaluate the procurement of school food, which is becoming increasingly dependent on locally sourced, organic produce. A separate evaluation body, the Canteen Commission, has been set up for parents, teachers, and representatives of caterers and public authorities.

This involves providing training to public procurement officers to develop the skills, understanding and technical capacities needed to make better green purchasing decisions in the food sector. Specifically, these may include helping public officers to comprehensively understand the specific criteria defined for procurement of food, providing training on accounting for the social and environmental externalities of food options, supporting the digitization of procurement procedures to simplify tendering procedures and improve progress monitoring, and providing training on how to properly implement such digitized systems.⁴⁶ Caterers are also likely to require institutional training on adapting their food offerings and working with food suppliers to meet adopted GPP criteria.

To encourage greater consumption of the more sustainable menus recommended in the EU's GPP, tailored government-supported programs could engage local chefs and nutritionists to help with the design of desirable, nutritious and locally tailored plant-based menus that cater directly to local pallets. This reduces the burden of menu design on caterers and encourages eaters to choose the healthier and more sustainable options offered.

Training is needed to develop the skills, understanding and technical capacities to make better purchasing decisions in the food services sector

Member States need to ensure that adopted GPP guidelines are clearly formulated, practical in implementation, and tailored to national circumstances. They also need to be designed in a manner that facilitates transparent data exchange – such as employing a digital system for tracking and tracing procurement – to **ease performance monitoring and budget tracking**.

This will allow Member States to effectively track public spending on food procurement (which currently is largely lacking) and help to avoid fraud and corruption in tendering procedures.⁴⁷ Finally, it is important that Member States **set timebound targets** for rolling out GPP criteria. This could include, for example, setting targets that become increasingly ambitious over time, and will help to keep institutions accountable and provide a benchmark against which progress can be tracked.

ACTIONS AT SUBNATIONAL LEVEL

Sub-national actors include city municipalities, national health services, educational organizations, and any other public institution that provides catering services. These institutions make most of the food sourcing decisions, making these actors critical partners in the collaborative effort to transition to a sustainable food system. These entities are therefore also directly responsible for implementing available GPP criteria.

Redirecting money to support local farmers and businesses can help to increase public acceptability of any changes

To facilitate the shift to more sustainable food sourcing strategies, sub-national actors should **improve access to tenders to allow smaller businesses to compete** in public procurement markets.⁴⁸ Current tender procedures in most EU countries are now awarded to large suppliers that are able to deal with complex tendering procedures and supply large volumes of produce.⁴⁹ This results in restricted competition for contracts, limiting the choice for public procurement officers and reducing the need for innovation in tenders.

Local producers and suppliers can engage directly with consumers on food-related issues, fostering greater understanding of how food is produced, where it comes from and who is behind its production

Simplifying tender procedures, actively engaging small and medium enterprises (SMEs), and breaking large tenders up into smaller bids can all help to remove the barriers SMEs currently face to partaking in these tenders. Furthermore, splitting tenders into different products or smaller amounts will increase the possibilities for government funds to be spent on locally sourced products. Sourcing locally reduces emissions from transport of food due to shorter supply chains, and minimizes the import of products from tropical forest areas with high deforestation risks. At the same time, it means redirecting money to support local farmers and businesses can help to increase public acceptability of any changes.

An added benefit of stimulating the participation of local producers is their power to help shift diets. Local producers and suppliers can engage directly with consumers on food-related issues, fostering a greater understanding of how food is produced, where it comes from, and who is behind its production. As such, public procurement can be a tool to **promote a positive food culture** in and around public institutions, opening conversations about healthy and sustainable food and directly engaging consumers. School children, for example, consume as much as half of their daily food intake at school, providing a real opportunity to shape attitudes towards food in a learning environment.⁵⁰ For adults, building awareness of how food systems operate and the impacts of buying choices made – including in publicly catered institutions – can influence dietary choices and cultural norms beyond the meal itself, and reduce diet-related health risks.⁵¹

Finally, learning from local experiences is essential to further improving procurement practices and encouraging other municipalities to adapt their food sourcing strategies. Subnational authorities should actively **participate in, and contribute to, best-practice sharing**. This involves engaging in the network of best practices mentioned above, learning from the experience of peers and being open to trying new approaches. There is much to be learned from the wide range of innovative approaches that have already proven successful at shifting procurement practices and the food offered at public institutions. Together, the EU and its Member States can build upon these strengths.

There are ample opportunities for public procurement to catalyse the transition to healthier, more sustainable diets. This will, first and foremost, require the development of clear guidance as to what constitutes sustainable public procurement in the European context. Next, resources to implement these guidelines will need to be made available at all levels of governance, including support to track efforts and outcomes to enable the continued improvement of approaches. The EU Commission, Member States and local governments all have essential roles to play in facilitating this transition. By working together to build on the lessons learned from existing initiatives, policy makers can develop better buying approaches that support the environmental, social and economic changes needed to encourage the establishment of sustainable food systems within the EU.

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- ¹ Searchinger, T., Waite, R., Hanson, C., Ranganathan, J., Dumas, P., & Matthews, E. (2018). Creating a sustainable food future. Available at <https://bit.ly/2Y5cYEc>
- ² Roe, S., Streck, C., Obersteiner, M., Frank, S., Griscom, B., Drouet, L., et al. (2019). Contribution of the land sector to a 1.5 °C world. *Nature Climate Change*, 9(11), 817–828. Available at <https://doi.org/10.1038/s41558-019-0591-9>
- ³ Searchinger, et al. (2018)
- ⁴ Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987–992. Available at <https://doi.org/10.1126/science.aag0216>
- ⁵ OECD/FAO (2021), OECD-FAO Agricultural Outlook 2021-2030, OECD Publishing, Paris, <https://doi.org/10.1787/19428846-en>.
- ⁶ De Vries, M., & de Boer, I. (2010). Comparing environmental impacts for livestock products: A review of lifecycle assessments. *Livestock Science*, 128: 1-11
- ⁷ IDH (2020). The urgency of action to tackle tropical deforestation. Prepared for IDH by FACTS Consulting, COWI A/S and AlphaBeta Singapore. Available at <https://bit.ly/3mb7113>
- ⁸ European Parliament (2020). An EU legal framework to halt and reverse EU-driven global deforestation: European added value assessment. Available at <https://bit.ly/3mdvrak>
- ⁹ World average meat consumption is 33.7 kg/year. European Commission (2020), EU agricultural outlook for markets, income and environment, 2020-2030. Available at <https://bit.ly/3m6eZZk>; OECD (2021), Meat consumption (indicator). Available at <https://bit.ly/3AWI6Wo>
- ¹⁰ OECD/FAO (2020), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). Available at <https://bit.ly/2YczbAP>
- ¹¹ European Commission (2020a), EU agricultural outlook for markets, income and environment, 2020-2030. European Commission, DG Agriculture and Rural Development, Brussels. Available at <https://bit.ly/2Y4q1qd>
- ¹² Bouvard V, Loomis D, Guyton KZ, Grosse Y, Ghissassi FE, Benbrahim-Tallaa L, et al. (2015) Carcinogenicity of consumption of red and processed meat. *The Lancet Oncology*. 16(16):1599–600. Godfray HCJ, Aveyard P, Garnett T, Hall JW, Key TJ, Lorimer J, et al. (2018) Meat consumption, health, and the environment. *Science*. 361(6399). Cui K, Liu Y, Zhu L, Mei X, Jin P, Luo Y. (2019) Association between intake of red and processed meat and the risk of heart failure: a meta-analysis. *BMC Public Health*. 19(1):354–354.
- ¹³ Domingo, N.G.G., Balasubramanian, S., Thakrar, S.K., Clark, M. A., Adams, P.J., Marshall, J.D., Muller, N.Z., Pandis, S.N., Polasky, S., Robinson, A.L., Tessum, C.W., Tilman, D., Tschofen, P. and Hill, J.D. (2021) Air quality-related health damages of food. *PNAS*, DOI: 10.1073/pnas.2013637118
- ¹⁴ Espinosa R, Tago D, Treich N. (2020) Infectious Diseases and Meat Production. *Environ Resour Econ (Dordr)*; 76: 1–26. <https://doi.org/10.1007/s10640-020-00484-3>.
- ¹⁵ Henritzi D, Petric PP, Lewis NS, et al. (2020) Surveillance of European Domestic Pig Populations Identifies an Emerging Reservoir of Potentially Zoonotic Swine Influenza A Viruses. *Cell Host & Microbe*; 28: 614-627.e6. <https://doi.org/10.1016/j.chom.2020.07.006>.
- ¹⁶ Dijkstra F, van der Hoek W, Wijers N, et al. (2012) The 2007–2010 Q fever epidemic in The Netherlands: characteristics of notified acute Q fever patients and the association with dairy goat farming. *FEMS Immunol Med Microbiol*; 64: 3–12..
- ¹⁷ FAO (2016) Drivers, dynamics and epidemiology of antimicrobial resistance in animal production. Rome.
- ¹⁸ FAIRR (2017) Responding to Resistance. Available at <https://www.fairr.org/article/responding-to-resistance/>
- ¹⁹ European Commission. Joint Research Centre., European Commission. Directorate General for Health and Food Safety., & Maltese EU Presidency team. (2017). Public procurement of food for health: Technical report on the school setting. Publications Office. <https://data.europa.eu/doi/10.2760/269508>
- ²⁰ Caldiera, S.; Storcksdieck genannt Bonsmann, S.; Bakogianni, I., Gauci, C. Calleja, A. and Furtado, A. (2017) Public procurement of food for health: Technical Report on the School Setting. Maltese Presidency and the European Union. Page 18, Table 3. Available at <https://bit.ly/3kUlWqx>
- ²¹ European Commission (2017) Making Public Procurement work in and for Europe. Strasbourg. Available at <https://ec.europa.eu/docsroom/documents/25612>
- ²² EPHA (2019). Public Procurement for Sustainable Food Environments: How Can the EU Farm to Fork Strategy Contribute? Available at <https://bit.ly/3AX8BKf>
- ²³ Galt, H.; Chagas, T.; Trouwloon, D.; Hermann, B., Bravo, F. and Streck, C. (2021) Shifting finance towards sustainable land use: Aligning public incentives with the goals of the Paris Agreement. Available at <https://feldactiontracker.org/green-finance>
- ²⁴ European Commission (2020b). A Farm To Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System. Available at <https://bit.ly/3kVL1lk>
- ²⁵ The GPP criteria provide guidelines for “procuring goods, services, and works with a reduced environmental impact throughout their life cycle when compared to goods, services, and works with the same primary function that would otherwise be procured”.
- ²⁶ European Commission (2021) GPP National Action Plans. Available at <https://bit.ly/3m6i8bA>
- ²⁷ European Commission (2019). Commission Staff Working Document: EU green public procurement criteria for food, catering services and vending machines. Available at <https://bit.ly/3F2HFv1>
- ²⁸ Suggested award criteria on animal welfare are as follows: “Points are to be proportionally awarded to tenders in which more than Y% of the total purchases of meat and dairy (excluding those that are organic) have been produced in accordance with the requirements of a certification scheme for animal welfare,” where Y lies between 0 and 25%.
- ²⁹ European Commission (2021).
- ³⁰ Melon, L. (2020)
- ³¹ European Commission (2020b)
- ³² Melon, L.: More than a nudge? Arguments and tools for mandating green public procurement in the EU. *Sustainability* 12, 1–24 (2020). Retrieved from <https://doi.org/10.3390/su12030988>
- ³³ Soldi, R. (2018). Sustainable Public Procurement of Food. doi:10.2863/1187
- ³⁴ European Commission (2019)
- ³⁵ European Commission (2019)
- ³⁶ Motiva (2020). Opas vastuullisiin elintarvikehankintoihin. Available at <https://bit.ly/2XVKZa9>
- ³⁷ PBL Netherlands Environmental Assessment Agency (2016) Cities in Europe. Available at <https://bit.ly/3zUBx4d>
- ³⁸ European Commission (2019). European Partnership for Safe and Sustainable Food System for People, Planet & Climate. Available at <https://bit.ly/3FfcigW>.
- ³⁹ European Commission (2021). New High Level Expert Group to assess need for an International Platform for Food Systems Science. Available at <https://bit.ly/3AWq2uo>
- ⁴⁰ FAO (2018). Copenhagen: Organic Conversion in Public Kitchens. Available at <https://bit.ly/3okGMYT>.
- ⁴¹ Soldi, R., Cavallini, S. (2020). The role of local and regional authorities in making food systems more sustainable. Available at <https://bit.ly/3D2uWq6>.
- ⁴² Soldi, R. (2018). Sustainable Public Procurement of Food. doi:10.2863/1187
- ⁴³ EU Monitor (2021) Annexes to COM(2021)141 – Action plan for the development of organic production. Available at <https://bit.ly/3F0SjCB>
- ⁴⁴ Nunez Ferrer, J. (2020).
- ⁴⁵ European Commission (2017).
- ⁴⁶ EPHA (2019).
- ⁴⁷ Nunez Ferrer, J. (2020).
- ⁴⁸ Royston, S. et al. (2012). Fair and square: a policy report on the future of free school meals. *The Children's Society*, p12.
- ⁴⁹ EPHA (2019).