



Scientific Advice Mechanism

Scoping paper: Towards an EU Sustainable Food System

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Research and
Innovation

1. ISSUE AT STAKE

Although availability of food is not perceived as an immediate, major concern in Europe, the need to ensure a secure, safe, nutritious and affordable supply of food, from both land and the oceans, remains. Despite the overall level of economic prosperity in Europe, access to safe and nutritious food is still problematic for parts of the population, and food poverty is a concern in many European countries. Furthermore, obesity and diabetes, often related to poor dietary choices have become a major public health issue in the EU, with additional negative effects on economic productivity. Moreover, the global food system on which Europe relies faces a number of challenges concerning ecological sustainability, and robustness in the face of shocks and global change.¹

Worldwide, demand for food is changing as a result of demographic trends, urbanisation, economic prosperity, and changing consumer preferences. Demographic growth means more mouths to be fed, and richer consumers demand a wider range of products including more animal proteins, driving up the demand for crops for animal feed. Population shifts from the countryside to cities, and the desire to preserve rural communities, require new models of food production and supply. Moreover, food production is increasingly in competition with alternative purposes for crops such as the production of biofuels and plant-based chemicals. Whilst a further intensification of food production like in the past will be part of solution, satisfying these demands will require a portfolio of coordinated strategies addressing the following aspects.²

Food waste is increasingly recognised as key challenge, both in the developing world where most food is wasted before it reaches consumers because of spoilage, pests, and poor storage and handling, and in the developed countries where structural oversupply leads to wastage. The FAO³ estimates that a third of food produced for human consumption is currently lost or wasted.

Food systems are heavily globalised and interdependent, and the EU imports large quantities of food and feed from third countries, while also being a major exporter of food products. Europe as a whole, and the EU in particular, are predicted to remain net food importers in the period to 2050.⁴ This means that a global outlook is needed when considering the sustainable supply of food to the EU from both land and the oceans, as changes in demand and supply across the world have global repercussions. For example, agricultural production for export to the EU can create economic opportunities abroad and contribute to reducing poverty. Moreover, food insecurity is a key factor in global geopolitics, driving instability in neighbouring regions such as North Africa and contributing to the migratory crisis facing Europe today.

¹ WRR 2014, *Towards a Food Policy*. <https://english.wrr.nl/publications/reports/2016/12/13/towards-a-food-policy>

² GO Science 2011, *The Future of Food and Farming*. <https://www.gov.uk/government/publications/future-of-food-and-farming>

³ FAO 2013, *Food wastage footprint: Impacts on natural resources*. <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>

⁴ FAO 2012, *European and Central Asian Agriculture Towards 2030 and 2050*. <http://www.fao.org/3/a-aq341e.pdf>

Beyond production, processing, distribution and access to food are key parts of food systems. Europeans increasingly source their food from supermarkets and large retailers, and consume a large proportion of meals prepared outside their home.⁵ Packaged products (processed food and beverages) now account for approximately half of all consumer spending in the West.⁶ These trends make food distributors, processors and services preparing meals increasingly important actors in shaping the food system.

Food production is also a resource-intensive activity with profound impacts on the environment.⁷ Water is a key resource for the production of food, and according to the FAO in 2000 agriculture was responsible for 70% of worldwide water consumption and 93% of water depletion.⁸ Modern food production and processing are energy-intensive activities, with the industrial activities related to food systems requiring an estimated 26% of the EU's energy consumption.⁹ Food systems are also one of the leading causes of climate change, and one of the areas most affected by it.¹⁰ Up to 70% of the EU's food imports come from developing world areas that will be particularly vulnerable to climate change.¹¹ Food plays a crucial role in human health, and a comprehensive approach to food policy should consider issues of food safety, health and nutrition – including food choices by consumers and the role of education and information therein.¹²

At the same time, EU agriculture has an important potential as a steward of the natural environment, as it has a duty of care for the natural resources of soil, water, air and biodiversity on 48% of the EU's land. In addition, the wider food sector contributes with 44 million jobs and exports worth € 131 billion (2016) to the economic viability of the EU.

2. EU POLICY BACKGROUND

Within the EU, production and consumption of food, and their impacts, fall under a wide range of policy areas and instruments. A number of calls for a more integrated and holistic EU food policy have been made in recent years.^{e.g. 13,14}

⁵ WRR 2014, *Towards a Food Policy*. <https://english.wrr.nl/publications/reports/2016/12/13/towards-a-food-policy>

⁶ Gehlhar and Regmi 2005: 6) cited in WRR 2014, *Towards a Food Policy*. <https://english.wrr.nl/publications/reports/2016/12/13/towards-a-food-policy>

⁷ EEA 2015, *The European environment — state and outlook 2015 — synthesis report*. <https://www.eea.europa.eu/soer-2015/synthesis/report/0c-executivesummary>

⁸ FAO 2006, *Livestock's long shadow. Environmental issues and options*. <http://www.fao.org/docrep/010/a0701e/a0701e00.HTM>

⁹ JRC 2015, *Energy use in the EU food sector: State of play and opportunities for improvement*. <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/energy-use-eu-food-sector-state-play-and-opportunities-improvement>

¹⁰ GO Science 2011, *The Future of Food and Farming*. <https://www.gov.uk/government/publications/future-of-food-and-farming>

¹¹ Oxfam, cited in EASAC 2017, *Opportunities and challenges for research on food and nutrition security and agriculture in Europe*. https://easac.eu/fileadmin/PDF_s/reports_statements/Food_Security/EASAC_FNSA_Report_Complete.pdf

¹² EUROSTAT 2016. <http://ec.europa.eu/eurostat/documents/2995521/7700898/3-20102016-BP-EN.pdf/c26b037b-d5f3-4c05-89e1-00bf0b98d646>

¹³ WRR 2014, *Towards a Food Policy*. <https://english.wrr.nl/publications/reports/2016/12/13/towards-a-food-policy>

The Common Agricultural Policy (CAP) is one key policy framework, addressing the production of food from the land. The Common Fisheries Policy is another key policy area concerning food production, and as previously recommended by the SAM, fisheries and mariculture development “also must be afforded full consideration in broader “food system”, “ocean system” and “bioeconomy” contexts. This means, inter alia, joint system-level treatment of several sectors and policy objectives in conjunction with drivers of change such as climate and other such influences on sustainable development”.¹⁵

Other relevant EU policies include the 2011 European Commission communication on “A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy.” The impact of food production and consumption on natural resources and biodiversity is also addressed in the European 7th Environment Action Programme, which sets a number of target to protect, conserve and enhance European natural capital.¹⁶

Research and innovation play a key role in helping to ensure sustainable food and nutritional security. This is acknowledged in the European Commission “FOOD 2030” strategy, which has been embedded in relevant European and international policies¹⁷, and in a number of the societal challenges within Horizon 2020, mainly societal challenge No2 ‘Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy’. The importance of synergies between the CAP and Framework Programmes is also recognised as is the need to consider policies in the wider context of the EU’s commitments towards the UNs sustainable development goals.

3. Request to Scientific Advice Mechanism

From preliminary investigations into this topic, the SAM finds that there is already an established, large body of high quality scientific evidence and advice that both describes the challenge and recommended actions that can be taken towards achieving an EU

¹⁴ EESC 2017, *Civil society's contribution to the development of a comprehensive food policy in the EU*. <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/civil-societys-contribution-development-comprehensive-food-policy-eu>

¹⁵ SAM Scientific Opinion on Food from the Oceans (page 53, extract from recommendation 1).

¹⁶ EEA 2015, *The European environment — state and outlook 2015 — synthesis report*. <https://www.eea.europa.eu/soer-2015/synthesis/report/0e-executivesummary>

¹⁷ *FOOD 2030 High-level Conference background document* (doi: 10.2777/2065) identifies the UN Sustainable Development Goals, COP21 Climate Change, WHO Health policies, and the EU's Blue Growth Strategy, Common Agricultural Policy, Common Fisheries Policy, Conservation policies, Development Cooperation, Environment Policies (Marine Strategy Framework Directive, Water Framework Directive, Circular Economy Package), European Fund for Strategic Investment, European Structural and Investment Funds, Food Safety Policy, Global Food Security Policy, Health Policy, and Rural Development Fund.

sustainable food system. This includes the recent EEA report ‘Food in a Green Light’¹⁸, EASAC ‘Policy Report 34’¹⁹, and the European Commission’s on-going “FOOD 2030” strategy, the latter of which includes a series of policy relevant recommendations with associated R&I requirements.

From this body of literature, a range of recommended actions to support the development of a sustainable food system is apparent. These can be grouped and summarised as follows: **promote sustainable intensification; reduce food loss and waste; stimulate dietary changes towards more plant-based diets; improve the resilience and robustness of the food system; and increase the awareness, accountability and stewardship of producers and consumers.** These recommended actions might involve a wide range of actors operating at different scales – from communities and cities schemes to Member State, EU and Global initiatives.

There is also growing evidence that multiple ‘co-benefits’ can arise from some of the main recommendations, most notably a change in diet – which could deliver improvements in food security, health, and the environment (including ‘green-house gasses’) and local incomes/livelihoods.

Whilst there is a rich body of evidence supporting the above recommendations that can be actioned at a variety of scales by citizens and leaders, there **remains gaps in scientific advice** on ‘how’ best to ensure the transformation to a sustainable food system occurs in a ‘just’ (fair) manner and at the pace that is required. Thus, scientific advice seems lacking with respect to the specific actions (at the various scales) that can facilitate the expansion, uptake, replication and/or implementation of these recommendations. Such advice is expected to be predominantly informed by evidence from the social sciences.

Consequently, the main question to be answered by the Scientific Advice Mechanism is:

From a scientific point-of-view, what are workable paths to deliver an inclusive, ‘just’ and timely transition to an EU sustainable food system, where possible delivering ‘co-benefits’ for health, the environment, and socio-economic aspects?

This should be informed by the existing recommendations summarised above, be based on scientific evidence, and will benefit from addressing:

A) How to best define and describe a sustainable food system for the EU?

¹⁸ EEA 2017, *Food in a green light – A systems approach to sustainable food*. <https://www.eea.europa.eu/publications/food-in-a-green-light>

¹⁹ EASAC 2017, *Policy Report 34 - Opportunities and challenges for research on food and nutrition security and agriculture in Europe*. <https://easac.eu/publications/details/opportunities-and-challenges-for-research-on-food-and-nutrition-security-and-agriculture-in-europe/> – This is the Europe-focused part of the worldwide ‘Food and Nutrition Security and Agriculture’ project of the InterAcademy Partnership (IAP), the global network of science academies.

B) How to achieve uptake, replication, implementation and impact of the recommended actions to support the development of a sustainable food system (mentioned above) at various scales, specifically:

- i) EU and Globally – how policies can be applied or modified to achieve the required transition;*
- ii) Member States – how to enable, support, synergise, replicate and/or scale up successful (pan-)Member State policies and initiatives; and*
- iii) Community/Business/Regional/Cities and Rural Areas – what can be learned from good examples of initiatives at a sub-state level and how can these be stimulated, supported and spread?*

The analysis should focus on what is within the sphere of influence of the European Commission.