Aligning the post-2020 CAP with the Green Deal

The European Green Deal, sustainable agri-food systems, and the Common Agricultural Policy

This paper examines the role that the post-2020 version of the Common Agricultural Policy (CAP) could play in stimulating a transformation towards more sustainable and resilient agri-food systems, in line with the green growth ambition of the European Green Deal.

Publication date:
September 2020

Authors:
Anne Maréchal, Kaley Hart, David Baldock, Stephanie Wunder (Ecologic Institute) and Pierre-Marie Aubert (IDDRI)

The urgency of aligning the CAP with the European Green Deal

Many events have changed the world and the political landscape since the publication of the 2018 Common Agricultural Policy (CAP) legislative proposals.

A new European Commission has come into place, adopting a fresh vision and giving a central role to the European Green Deal, which sets out a green growth strategy for the EU with climate and the environment at its centre. As a first step towards achieving this, a suite of new policies, including notably the Farm to Fork Strategy and the Biodiversity Strategy, is envisaged.

Agri-food systems are absolutely key sectors for the delivery of the objectives now on the table (see page 6) and the CAP is the most important EU policy mechanism with the capacity to have significant European-wide impact on the agricultural dimension of these systems in particular.

Meanwhile, the COVID-19 pandemic has placed even more emphasis on the need to rebuild better and underlined the relevance of the European Green Deal's objectives.

It is a key moment – in the best case, the CAP could be used to drive major changes to the direction in which EU agri-food systems develop and to help operationalise the vision and objectives of the European Green Deal.

However, despite the urgency and the unprecedented political momentum, the agricultural policy response remains very much in question. It is far from clear whether the 27 Member States will align their CAP strategies (in their own different flavours) to deliver on the objectives of the Green Deal for the 7-year period to come, or whether more embedded preferences in agricultural policy will prevail.

Exactly what Member States will choose to support through their CAP interventions under their CAP Strategic Plans (CSPs) is not yet known as the CSPs are still under development. To foster alignment with the Green Deal, the European Commission has committed to a rigorous assessment of CSPs and has set up a new process to this end, based on dialogue and regular exchange with Member States. In a first step, the Commission will provide national-level recommendations about the priority areas which it expects the CSPs to tackle, anticipated before December 2020. There is then an (informal) agreement that Member States will share draft versions of their CSPs allowing for a longer exchange period and dialogue than has previously taken place. It is hoped this will allow sufficient time for comments to be discussed and taken on board and for CSPs to be adjusted if necessary. Throughout this process, a particular emphasis can be expected on how the CSPs respond to the climate and environmental objectives of CAP and the recovery from the COVID-19 pandemic. But how far do Member States feel obligated to move in this direction? The recent statement from Agriculture Commissioner Wojciechowski that there is no legal link between the CAP and the Green Deal will have comforted the laggards.

Meanwhile, the CAP legislative proposals are still under negotiation. The delays in the MFF negotiations had a knock-on effect on the original timetable for the reform of the CAP[1] . It also provided an opportunity to scrutinise the policy under a new light and examine the ways of aligning its architecture, objectives, interventions and accompanying indicators with the objectives of the Green Deal and the Farm to Fork Strategy. This sparked debate around both the retention of the positive environmental elements of the current CAP proposals and the need to introduce new

[1] A one-year extension to the current CAP period has been agreed and may be extended further. The start of the next funding period will not be before January 2022.

and potentially more targeted elements. Environmental lawyers at Client Earth warned the Commission over the summer 2020 that pursuing the negotiations with the 2018 CAP legislative proposals on the table, given its lack of binding targets, could be legally challenged and considered a conscious "failure to act" to align the CAP with the Green Deal[2]. Recent developments under the German Presidency (Matthews A., 2020b; ARC2020, Sept 2020) suggest that not only the alignment with the European Green Deal targets but also the increased level of environmental and climate ambition promised in 2018 are currently looking to be at risk, rather than being strengthened.

This is an extremely worrying sign given the continued climate and biodiversity challenges that will impact not only society as a whole but also agricultural production if urgent action is not taken. Added to these concerns is the fact that the impetus for change discussed during CAP reforms tends to have less impact on the ground than expected, with Member States often reluctant to depart from the status quo (see for example, Erjavec et al, 2018).

As many of the European Green Deal targets are not yet enshrined in legislation, the onus is on Member States to acknowledge the need for transformative change in agri-food systems and to develop their CSPs and other policies accordingly. The agri-food sectors are central to a greener growth strategy because they are exceptional for the breadth of effects they have on society – from environmental and climate impacts to food waste, bioenergy, health and dietary composition. While food production is essential, the scale of the current food-footprint is causing increasing concern and is in tension with achieving higher levels of environmental and climate delivery in the EU. Member States must be forward thinking and proactive in taking action to stimulate a transition towards more sustainable agri-food systems, without waiting for this to be required through law. They must seize the momentum around the Green Deal and the post-COVID-19 recovery and use the CAP to instil a new and coherent direction of travel. Failure to do so will leave the agri-food sectors exposed to future crises, with reduced means to adapt - and undermine the success of the European Green Deal at large.

[2] https://www.clientearth.org/press/lawyers-warn-commission-over-illegal-and-conscious-failure-to-align-cap-reform-proposal-with-green-deal/

Where could the CAP help to deliver the European Green Deal and implications for agri-food systems?

The European Green Deal

The Communication on the 'European Green Deal', published on 11 December 2019 (EC, 2019), defines the Commission's key political objectives for the next five years. It sets a new growth strategy for the EU, centred on sustainability and an ambition for Europe to become 'the world's first climate-neutral continent by 2050'. On 15 January 2020 the European Parliament adopted a Resolution[3] welcoming the initiative.

The Green Deal responds to growing challenges and concerns from Europeans about the environmental and climate situation (and other factors) in which the agriculture and food sectors have their role to play. The advice from Hans Bruyninckx, the Executive Director of the European Environment Agency (EEA) is that: "Europe's environment is at a tipping point. We have a narrow window of opportunity in the next decade to scale up measures to protect nature, lessen the impacts of climate change and radically reduce our consumption of natural resources"[4]. The EEA (2020) argues for systemic changes to take place to respond to "urgent sustainability challenges".

Alongside the flagship ambition for climate neutrality in the EU, the European Green Deal establishes a roadmap for actions to boost the efficient use of resources by moving to a clean, circular economy, whose growth will be decoupled from resource use, and to restore biodiversity and cut pollution. Equally, it aims to ensure to leave no one or no place behind by providing a Just Transition Mechanism providing financial support and technical assistance in this transition.

These strategic developments have intersected with the unprecedented sanitary crisis the EU and the world are facing with COVID-19. This broadens the agenda and casts a new light on the sustainability of current supply chain models (including agri-food systems), underlining elements of vulnerability and the importance of their resilience to respond to shocks. Their interlinked, global nature make them increasingly vulnerable to a range of risks, with more potential points of failure and less margin of error for absorbing any disruptions.

In light of this, planning for even greater resilience in our economic, social and health systems in the future is likely to become a greater priority. Rethinking food supply chains to make them more robust and resilient to

[3] https://www.europarl.europa.eu/doceo/document/TA-9-2020-0005_EN.html

[4] Abstract of the EEA's State of the Environment Report 2020 (EEA, 2020)

shocks and reducing the environmental and climate impacts of food production and consumption will be an important element of this, as will a shift to more sustainable and healthy diets.

Relevance of the European Green Deal to agri-food systems

The agri-food system is complex, made up of a range of businesses covering activities as diverse as, for example, mountain livestock keeping, biogas production, food marketing and a great variety of restaurants, cafes and canteens. It has a major influence on the natural environment and has a special role to play when it comes to climate action. As such, the policy ambition of the European Green Deal will affect many dimensions of both agriculture and wider food systems in the EU which will be central to delivering environmental and climate goals.

The European Green Deal outlines a range of policy initiatives/actions for achieving its objectives, many of which are relevant to agri-food systems (Table 1). The Farm to Fork Strategy, with the objective of making the EU food system a 'gold standard of sustainability' (EC, 2020a) is clearly the policy of most direct importance but many others also have implications for the agriculture and food sector, not least those relating to the circular bio-economy, climate and biodiversity. Those of most relevance are summarised in the table below.

The Farm to Fork Strategy highlights that the Green Deal is an 'opportunity to reconcile our food system with the needs of the planet and to respond positively to Europeans' aspirations for healthy, equitable and environmentally-friendly food' (EC, 2020a). The Strategy complements and supports the Green Deal's efforts to move towards more sustainable food systems and contribute to the United Nations Sustainable Development Goals (EC, 2020a). It covers every step in the food supply chain from production to consumption and feeds into the European Commission's circular economy objectives. Published on 20 May 2020, it sets out the objectives and actions considered necessary to secure a fair, healthy and environmentally friendly food system, combining both regulatory and non-regulatory initiatives, as well as including targets in a number of spheres (e.g. organic farming, pesticide risk and use, mineral fertiliser use, antimicrobial use and food waste).

The European Green Deal and the Farm to Fork Strategy (together with the other relevant Green Deal actions) therefore provide both a strategic opportunity and a pressing need to rethink farming and food related policies and to strengthen their contribution to achieve a fair, healthy and environmentally-friendly agri-food system. Clearly, many elements are likely to be contentious, with the debate on the production effects of requirements to

use less pesticides being one that has received considerable attention[5]. The future policy direction will therefore have to confront the scientific evidence more robustly than in the past while also taking account of economic and political dynamics. What seem like bold decisions will have to be taken given the sustainability and climate challenges that Europe faces but adapting to this new trajectory will not be without its challenges for many in the agri-food sector. Resistance is likely and some of the initial intentions may be modified.

Table 1: The European Green Deal and relevance to agri-food systems - Indicative policy roadmap

Green Deal Actions	Timing	Relevance to agri-food systems
Designing a fair, healthy, and environmentally friendly food system		
Communication on the Farm to Fork Strategy	Published on 20 May 2020	The Farm to Fork Strategy sets out regulatory and non-regulatory policy objectives and actions to secure a fair, healthy and environmentally friendly food system. Its requirements cover all actors along food chains, from agricultural production to food retailing and consumers. The Farm to Fork Strategy notably includes a set of quantified, but non-legally binding, targets to reduce the use of fertilisers and nutrient losses, of antibiotics and the use and risk of chemical pesticides, all of which are very relevant to the agricultural sector. It also sets a target to achieving at least 25% of agricultural land under organic farming by 2030. It includes actions to stimulate a more sustainable practices by food chain actors including food consumers. It also includes commitments to review farm animal welfare legislation to achieve higher welfare standards than existing measures.
Long-term vision (2040) for rural areas	Mid-2021	Very high relevance to the agri-food sector, as one of the main sectors operating in rural areas, certainly in terms of area coverage but also in terms of employment opportunities and value added. A public consultation (7 September 2020-30 November 2020) has been launched by the European Commission to seek inputs from all stakeholders concerned with rural areas.
Examination of the draft CAP Strategic Plans	2021	Expected under the current timetable to be drafted by Member States in the course of 2021, the CAP Strategic Plans will be reviewed and approved by the European Commission which has committed to seeking alignment with Green Deal's objectives. The CAP very directly concerns and influences the agricultural (and forestry)

[5] See for example contributions from Copa Cogeca and the European Landowners Organisation to the Commission prior to the launch of the Farm to Fork strategy and responses since its publication of various farming stakeholders (Agra-Facts 40-20).

		sector but also wider rural businesses including food businesses, renewable energy producers, etc.
Action Plan for the development of EU organic production	2021-Q1	Through the Farm to Fork and the Biodiversity strategies, the Commission has committed to reach at least 25% of the EU's agricultural land under organic farming by 2030. This Action Plan is therefore of high relevance to agriculture but also to the food sectors of the EU. A public consultation has been launched by the European Commission (04 September 2020 - 23 October 2020) to seek feedback ahead of the publication of the Action Plan, planned for early 2021.
Resource-efficient, circular, and low-carbon economy		
European Climate Pact	Mid-November 2020	The agricultural sector will need to intensify efforts to mitigating its emissions and increasing carbon stored in soils. It can also help other sectors of the economy by producing renewable energy.
European 'Climate Law' COM(2020) 80 final Amendments to the proposal to increase 2030 target to at least 55% of GHG reduction	Published on 4 March 2020 September 2020	
EU Industrial Strategy for a clean and circular economy COM(2020) 102 final	Published on 10 March 2020	Agri-food systems have their role to play to achieve the objectives of a circular economy, especially with respect to reducing food waste but also in the promotion of a more sustainable food consumption, through the eco-design of packaging, etc.
Circular Economy Action Plan	Published on 11 March 2020	Agri-food systems should play their part in reducing the negative impacts of resource extraction on the environment and ensure the sustainability of renewable bio-based materials. The plan highlights the need for waste reduction in the food value chain, to increase the sustainability of food distribution and consumption, to encourage circular approaches to water re-use in agriculture and the more sustainable application of nutrients.
Legislative waste reforms	From 2020	Waste reduction in the food value chain is a priority in shifting towards a more circular economy – although whether food waste will be included in these reforms is unclear as yet.
New EU Strategy on Adaptation to Climate Change	2021 – Q1	Agri-food systems are exposed to the consequences of climate change, which they need to adapt to. This includes both the gradual changes of the climate and extreme weather events.
Revision of Emissions Trading System Directive*, Effort Sharing Regulation and LULUCF Regulation as well as	By June 2021	Agriculture 'non-CO_2' emissions such as methane emissions from livestock or nitrous oxide emissions from agricultural soils fall in the scope of the Effort Sharing Regulation. The LULUCF Regulation covers emissions and removals from agriculture (and forest) land. The

the Renewable Energy Directive		Renewable Energy Directive covers the production of biomass for renewable energy purposes.
Protecting, conserving, and enhancing natural capital		
EU Biodiversity Strategy for 2030	Published on 20 May 2020	The Biodiversity Strategy includes targets which have a high relevance to agri-food systems, notably a 10% target for high-diversity landscape features in agricultural areas, planting 3 billion trees and reducing the use and harmfulness of pesticides by 50% by 2030 (some of which overall with the Farm to Fork strategy). Agricultural pressures drive declines in biodiversity and many agricultural habitats and species exhibit unfavourable conservation status across the EU.
New EU Forest Strategy	2021-Q1	Changes affecting forests and the forestry sector are relevant to the agricultural sector with which it shares rural land and many business linkages. The EU Forest Strategy will aim to increase the quantity, quality and resilience of EU forests, whilst ensuring the protection of EU primary and old-growth forests. It will include a roadmap for planting at least 3 billion additional trees in the EU by 2030.
8th Environmental Action Plan	2020-Q4	The 8th EAP is likely to rely on significant action to be taken by EU agri-food systems to achieve its objectives.
Measures to support deforestation-free value chains	2020	High relevance. All EU actors along agri-food value chains will need to understand the consequences of importing commodities and/or products causing deforestation in third countries.
Safeguarding from environmental risks to health and well-being		
Chemicals strategy for sustainability	2020-Q3	The scope is unclear but it may include relevant requirements relating to chemical fertilisers and plant protection products.
Zero pollution action plan for water, air, and soil	2021	Agriculture production is a major driver contributing to air, soil and water pollution.
Trade policy concerns: strengthening sustainable development commitments and compliance with EU food standards		
Trade negotiations	As and when trade agreements are negotiated	Trade agreements (e.g. FTAs) can incentivise or hinder the sustainable use of natural resources and climate impact of food products traded.
Renewed sustainable finance pact	2020-Q4	Provides guidance on types of investments that can be considered sustainable

The role of the CAP in delivering the Green Deal's ambition

The CAP proposals for beyond 2021

The legislative proposals for the CAP post 2020, published in June 2018, and not subsequently modified by the Commission (see section 1), are intended to increase the level of environmental and climate ambition of the policy. They are presented as a tool to support the transition towards a fully sustainable agricultural sector through a new delivery model focused on results. The Commission's proposals simplify the EU legislation, revising the overall legal framework and objectives. Member States have greater flexibility and subsidiarity but are required to draft national CAP Strategic Plans (CSPs) to set out what interventions they plan for both Pillar 1 and Pillar 2, to meet the nine CAP objectives, justified according to their assessment of needs and priorities.

The legislative proposals set out four general and one cross-cutting objective for the new CAP:

1. To foster a smart, resilient and diversified agricultural sector ensuring food security;

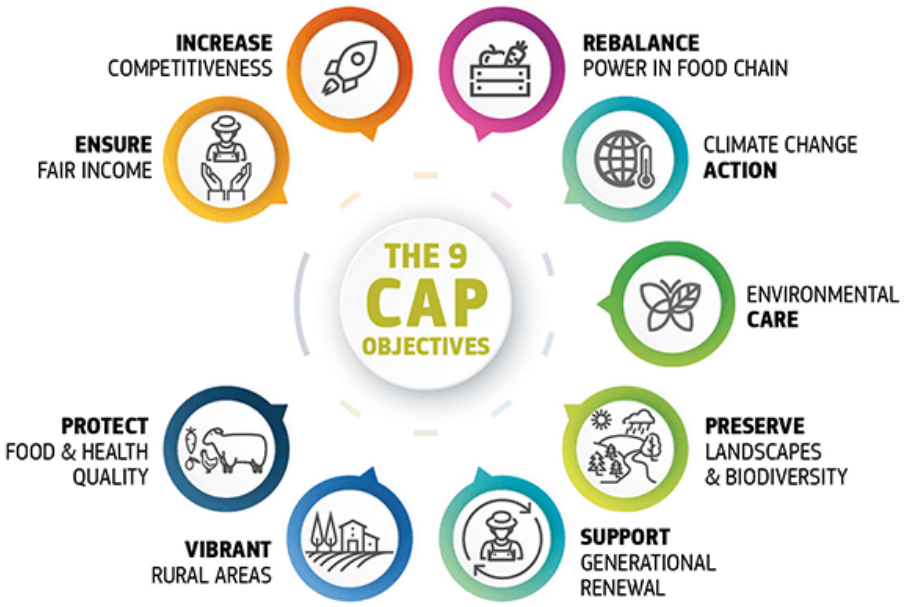
2. To bolster environmental care and climate action and to contribute to the environmental-and climate-related objectives of the Union;

3. To strengthen the socio-economic fabric of rural areas;

4. To modernise the sector by fostering and sharing knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging uptake (cross-cutting).

Under these sit nine specific objectives, presented in the diagram on the following page, a number of which are relevant for improving the sustainability of agri-food systems.

Figure 1: The 9 specific objectives for the CAP post-2020



Source: European Commission, 2018

In principle, the proposed new delivery model has the potential to deliver better targeted, more coherent, creative and innovative approaches to enhance the sustainability of agri-food systems (Bas-Defossez et al, 2018). However, criticisms remain about the extent to which this will be realised in practice given the continued dominance of direct payments in the policy menu presented to Member States as well as questions over the capacity within Member States to develop more ambitious CSPs and the European Commission's capacity to assess and approve them, especially in a tight timetable (see for example Erjavec et al, 2018; Hart and Bas-Defossez, 2018; Pe'er et al, 2019). Critics point to "a gap between the green aspirations of [CAP] payments and reality of the CAP" and believe the proposals offer "an inadequate response to environmental and sustainability challenges, and makes a business-as-usual scenario very likely" (Pe'er et al, 2019). In 2018, the European Court of Auditors critically reviewed the proposed CAP Regulations and found that its nine objectives were "not clearly defined, neither specific nor translated into quantified targets," therefore "lacking the elements of an effective performance-based system" (ECA, 2018). On the other side there remains some reluctance by Member States to embrace a performance-based approach.

Using CAP interventions to deliver against the Green Deal's objectives – examples

Since the publication of the 2018 proposals, a new Commission has come into place, adopting a fresh vision for the next 5 years with a central role for the European Green Deal, the umbrella for a suite of new policies including the Farm to Fork Strategy, which commits to mainstreaming the relevant Green Deal targets within the CAP and will require Member States to set explicit values for these targets and identify appropriate interventions within their CSPs (EC, 2020a).

If designed and implemented in ways that address the new European agenda, the CAP could play an important role in helping deliver the Green Deal's objectives as an essential policy lever and source of funding. In the next period, the CAP will provide €343.9 billion[6] of funding over the period 2021-2027 to agriculture and rural development. Split between Pillar 1 with €258.6 billion and Pillar 2 with €85.3 billion over the period, the majority of the CAP budget goes to the agricultural sector, with a small proportion also available to fund activities and projects with actors along the agri-food supply chain, in the forest sector and in rural areas more generally. As such, the CAP, if designed and implemented accordingly, can be a central policy tool to deliver the Green Deal's objectives. The Farm to Fork Strategy was accompanied by a Staff Working Paper on the links between CAP reform and the Green Deal (EC, 2020c), showing how the CAP proposals addressed the priorities set out in the Green Deal, including areas which could be strengthened.

The new flexibility proposed for the next CAP means that Member States will have far greater freedom to use the full suite of the CAP's interventions (both in Pillar 1 and Pillar 2) to deliver against their priorities in line with EU objectives, which should also cover the objectives within the Green Deal. They will also have to demonstrate in their CAP Strategic Plans (CSPs) how unsustainable practices are avoided (e.g. from the use of coupled income support).

The matrix below maps the potential for CAP interventions to be used to deliver against a selection of the Green Deal's actions and objectives. We limited these to those set out in the Farm to Fork and Biodiversity Strategies as they are of most relevance to agri-food systems, but the matrix is certainly not comprehensive.

[6] In constant 2018 prices, source: Matthews A. (2020a) based on EuCo MFF conclusions of July 2020. http://capreform.eu/when-the-cap-budget-pendulum-finally-stopped-swinging/. The figure includes €7.5 billion allocated to rural development from the Next Generation EU recovery instrument.

Table 2: Mapping of the post-2020 CAP interventions against selected objectives of the European Green Deal

		Hori-zontal	Pillar 1					Pillar 2								
Strategies and main headings	**Headline targets / objectives**	Condi-tionality	Basic income support for sus-taina-bility	Redis-tri-bu-tive in-come support	Sup-port for young farmers	Eco-schemes	Cou-pled in-come support	Environmen-tal, climate and other manage-ment com-mitments	Natural or other area-specific constraints	Area-specific disad-vantages re-sulting from certain man-datory re-quirements	Invest-ments	Installation of young farmers and rural business start-up	Risk manage-ment	Coop-eration	Knowledge and infor-mation	Leader
Farm to Fork																
Ensuring sustain-able food pro-duction	*Reduce by 50% the overall use and risk of synthetic chemical pesticides & the use of more hazardous pesticides by 50% by 2030*	X				X		X			X			X	X	
	Reduce nutrient losses by at least 50%, while ensuring that there is no deterio-ration in soil fertility. This will reduce the use of fertilisers by at least 20% by 2030.	X				X		X			X			X	X	
	Reduce by 50% *sales of antimicrobials for farmed animals and in aquaculture by 2030*															
	at least 25% of the EU's agricultural land under organic farming by 2030					X		X	X		X	X		X	X	
	Promote sustainable agricultural prac-tices including through improved sus-tainability accounting	X				X		X		X	X			X	X	
	Promote diversity in seed varieties					X		X						X	X	
	Improved animal welfare	X									X			X	X	
	Addressing emerging plant health issues	X									X		X	X	X	
Ensuring food se-curity	*Increase the sustainability of food pro-ducers to increase their resilience*	X				X		X			X			X	X	

Stimulate sustainable food processing, wholesale, retail, hospitality and food services practices	*Improve the marketing of sustainable food and drink products*									X			X	X	
	Promote sustainable and socially responsible production methods and circular business models in food processing									X			X	X	
Promote sustainable food consumption, facilitating the shift towards healthy, sustainable diets	*Reverse the rise in overweight and obesity rates across the EU by 2030*													X	X
	Improve nutritional and sustainability labelling														X
	Improve the role for sustainable public food public procurement, including catering														X
Reducing food loss and waste	*Halving per capita food waste at retail and consumer levels by 2030 (SDG Target 12.3).*												X	X	
Enabling the transition	*Research, innovation, technology and investments*												X		
	Advisory services, data and knowledge-sharing, and skills												X	X	
Promoting the global transition															
Biodiversity Strategy 2030															
A coherent network of protected areas	*Strictly protect at least a third of the EU's protected areas, including all remaining EU primary and old-growth forests.*	X				X		X		X				X	
	Legally protect a minimum of 30% of the EU's land area and integrate ecological corridors, as part of a true Trans-European Nature Network	X				X		X		X				X	

	Effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately.	X				X		X		X	X			X	X	
Strengthening the EU legal framework for nature restoration	*Legally binding EU nature restoration targets to be in place - By 2030, significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trends and status; and at least 30% reach favourable conservation status or at least show a positive trend.*	X				X		X		X	X				X	
Bringing nature back to agricultural land	*Support and incentivise the transition to full sustainable agricultural practices*	X				X		X			X			X	X	
	Reduce by 50% the overall use of – and risk from – chemical pesticides by 2030 and reduce by 50% the use of more hazardous pesticides by 2030	*as under the F2F strategy*														
	At least 25% of the EU's agricultural land must be organically farmed by 2030.	*as under the F2F strategy*														
	Consider an increased uptake of agro-forestry practices					X		X			X			X	X	
	Reverse the decline of genetic diversity							X						X	X	
	Reverse the decline in pollinators					X		X						X	X	
	At least 10% of agricultural area is under high-diversity landscape features.	X				X		X						X	X	
Increasing the quantity of forests and improving their health and resilience	*Three billion new trees are planted in the EU, in full respect of ecological principles*							X			X			X	X	

Addressing land take and restoring soil ecosystems	*Step up efforts to protect soil fertility, reduce soil erosion and increase soil organic matter*	X				X		X								
Addressing invasive alien species	*There is a 50% reduction in the number of Red List species threatened by invasive alien species.*	X														
Win-win solutions for energy generation	*Ensure forest biomass is sustainably used for energy generation*										X			X	X	
Restoring freshwater ecosystems	*Restore at least 25,000 km of rivers into free-flowing rivers by 2030*							X			X			X	X	
Reducing pollution	*Reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility. This will reduce the use of fertilisers by at least 20% by 2030.*	*as under the F2F strategy*														
Measuring and integrating the value of nature	*Robust measurement of essential features of biodiversity, its services, values, and sustainable use*															
Improving knowledge, education and skills															X	

Along the agri-food supply chain, the interventions available to Member States under both Pillar 1 and Pillar 2 of the future CAP could for example promote and support:

- a change in farming practices which will be critical to reach the targets of the Farm to Fork Strategy, including a reduced use of pesticides, mineral fertilisers and use of antimicrobials for farmed livestock;
- the maintenance and conversion to organic farming;
- the Natura 2000 network to respond to urgent biodiversity challenges;
- multi-actor cooperation along the food supply chain to deliver integrated, shorter supply chain initiatives;
- investments to promote, for example, climate mitigation and renewable energy production;
- stronger conditionality measures to secure a basic level of environmental and climate management, e.g. to preserve and enhance carbon stocks in agricultural soils, to ensure a minimum percentage of land under non-productive features;
- the set up and development of deforestation-free food supply chains and certification/labels for consumers;
- innovative approaches to reducing food waste;
- better quality, nutritious food and the sustainable consumption of animal protein, which will improve health and diets and contribute to the objectives of the circular economy;
- existing and new rural enterprises to adopt more circular approaches and business models.

Why are agri-food systems so important in delivering the Green Deal?

The impacts of EU agri-food systems on the environment and climate

Agri-food systems encompass the production, processing, distribution and consumption of food, its disposal or recycling (using waste as a resource, recycling nutrients etc) alongside other activities taking place along the food value chain. It includes agricultural production and the way land is managed as well as a range of businesses and operations upstream (inputs) and downstream (markets and consumers).

Food production is essential and some impacts on the environment and climate are unavoidable. However, the scale of the footprint is causing increasing concern and is in tension with growing levels of environmental and climate ambition in the EU. There are pressures for a step change in the system

and an accompanying shift in consumption patterns in parallel. The recent Commission proposals are an expression of this.

EU agri-food systems are exceptional for the breadth of the types of impacts they have on society. Increasingly they are understood as complex socio-ecological systems (SAPEA, 2020). They are not only an important economic sector and source of employment, they also affect the diets and health of consumers and have profound impacts on the environment and climate, both through the way in which food is produced, but also in the way it is processed, packaged and distributed, including issues of food waste, water and energy usage along the food chain. Given this, there are many ways in which the agriculture and food sectors exercise a positive or negative influence on these parameters, ultimately determining whether it is sustainable in its present form.

Agri-food systems vary considerably in the EU and there have been improvements in their sustainability over time. However, certain broad technical and structural developments in the sector have put pressure on the natural environment and climate, increasing the footprint of production and contributing to agri-food systems exceeding planetary boundaries (Rockström et al.; 2009, Steffen et al. 2015; EEA and FOEN, 2020). The EEA (2020) establishes a causal link between the operations of EU agri-food systems and the deterioration of the state of the environment and climate in Europe, stating that they result in "air, water and soil pollution, contribute to the loss of biodiversity, climate change and resource depletion" both inside and outside the EU (see Box 1).

Box 1: Key environmental and climate impacts of agri-food systems

Air pollution from the agricultural sector is caused by ammonia emissions or from an excessive use of nutrients, especially nitrogen, on agricultural land. In recent years, EU emissions of NH_3 have increased due to a lack of reductions in the agriculture sector (EEA, 2019[7]). Ammonia and the nitrogen deposition that follows in turn leads to **pollution of soils and water courses** (EEA, 2019a). Pressures on water bodies result from different anthropogenic activities but the EEA (2018) reports that the main driver for failing to achieve good quality status of water bodies is pressure from agriculture. The main pollutants from agriculture include nutrients, pesticides and sediments from soil erosion (Alliance Environnement, 2020). Air, water and soil quality are therefore highly interlinked and are currently negatively affected by agricultural operations in the EU, with considerable regional variations.

[7] Between 2014-2017 (latest figures available)

In terms of **biodiversity,** Member State monitoring[8] and other scientific studies provide very strong evidence of severe and widespread declines in the extent and condition of agricultural habitats and species populations in the EU over recent decades (EEA, 2020; Heldbjerg, Sunde and Fox, 2018; Szép *et al*, 2012; Reif and Vermouzek, 2019). Common farmland birds and insects such as grassland butterflies are amongst the species clearly negatively affected by current farming practices and the inputs used (including chemical pesticides and fertilisers) in the EU and for which a causal link can be established (EEA, 2020).

Agriculture is also one of the main sectors contributing to global **GHG emissions**[9] accounting for 10.3% of all EU GHG emissions of which nearly 70% come from the livestock sector (EEA, 2019b). This excludes emissions from land use and land use change. Estimates for the UK suggest that other elements of agri-food systems contribute a further 10% of GHG emissions (Garnett, 2011). Agricultural GHG emissions arise mainly from enteric fermentation in ruminant livestock (44.4%), from the management of agricultural soils (37.4%) and the management of livestock manure (14.7%). In the EU, agricultural emissions are lower than they were in 1990, but have varied over time and been increasing since 2012. In the food sector, emissions mostly arise from the use of energy in food processing industries as well as from cooling and transport of food products (e.g. for France 19% for transportation and less than 6% for the processing industry - see Barbier, 2019), and for food systems more broadly. Consumption patterns also play a role, particularly in relation to the emissions associated with the consumption of animal products and food loss and waste (see below).

The agriculture sector also contributes to **removing carbon** from the atmosphere, through photosynthesis into living biomass (crops, grass, other trees and plants on farmland) and through carbon sequestration into agricultural soils. Agriculture and other natural land using sectors (e.g. forestry) are the only sectors of the economy currently able to remove CO_2 from the atmosphere.

Agriculture can further aid climate mitigation through the production of **renewable energy** (Hart *et al*, 2017). It can contribute by producing biomass (e.g. wood, energy crops, crop residues, manure, etc.) which can be used as fuel, or it can host renewable energy producing infrastructure such as solar panels or wind turbines. Renewable energy production is a potentially important contribution the agri-food sector can

[8] Summarised for the period 2007-2012 in the EEA 2015 State of Nature report (EEA, 2015)

[9] 439.0 million tonnes of CO_2 equivalent ($MtCO_2e$) in 2017. EEA figures for the year 2017 (latest available data) as reported by Eurostat in [env-air-gge].

offer to the bioeconomy through substitution effects with fossil-fuel based energy, although care is required to ensure that the environmental/climate footprint of the production of these energy crops does not outweigh the emissions reductions achieved through substituting fossil fuels.

Food is lost and wasted at different stages along the supply chain in the EU, as elsewhere. The EEA (2020) estimates that about 20% of the food produced in the EU is lost or wasted. Using 2012 figures, a study (FUSION project, 2016) estimated that approximately 88 million tonnes of food are wasted every year in the EU, causing emissions of 186 metric tons (Mt) carbon dioxide equivalent (CO_2-eq). This same study calculated that the impact of food waste on the climate, acidification and eutrophication is around 15–16% of the environmental impact of the entire food chain. Reducing **food waste** not only makes sense in economic terms, it is also an important means of reducing the rate of natural resource depletion arising from agri-food consumption.

Natural resources are being used beyond the rate at which ecosystems can self-regenerate in the EU. The production and consumption of food represents a significant slice of the EU's overall global footprint, its contribution to the **depletion of world-wide natural resources**, such as water, land, deforestation as well as other materials. As a result, many of the environmental impacts associated with EU production and consumption occur outside Europe (EEA, 2020; Pendrill *et al.*, 2019; IEEP, 2020).

At the same time, agriculture, forestry and some other parts of the food system are particularly exposed to the consequences of climate change. Farming takes place in the natural environment and depends on biological processes influenced by the climate (amongst other factors). The combined effects of changes in temperatures, rainfall and atmospheric CO_2 concentration are already observed and affecting productivity and yields in Europe (EEA, 2019c). The **adaptation** of agri-food sectors to become more resilient to a changing climate is and will continue to be critical to their long-term viability.

As the key but not sole supplier, EU agri-food systems have an important role to play in enabling consumers to have **healthy, sustainable and affordable diets**. Half of the EU's adult population is currently overweight (EEA, 2020). This contributes to diet-related diseases and related healthcare costs. Agri-food systems have a part to play in supplying healthier and more sustainable diets and reducing overconsumption, from a public health perspective. "Sustainable" diets are those which have a relatively low environmental

impact as well as being consistent with good health (Fischer and Garnett, 2016). Studies estimate that livestock consumption should reduce by about 50% in the EU to align current intake of animal protein and fats with WHO recommended dietary guidelines (RISE Foundation, 2018; EAT, 2019; The Lancet Commissions, 2019). Such dietary and consumption changes would have significant impacts on production especially on livestock farms, primary processors such as abattoirs and secondary processors of animal products (Bas-Defossez *et al*, 2019).

The connection between agriculture, related agri-food systems and **human health** have received greater attention in recent years, not least in light of the current coronavirus pandemic. The risk of food borne and zoonotic diseases as well as diseases directly affecting humans are one major aspect. Other concerns include notably the increase in antimicrobial resistance due to an excessive use in the livestock sector, the impact of which is estimated to cause at least 25,000 deaths in the EU each year (Cassini *et al*, 2019; Harvey, 2016; ECDC *et al,* 2017). As seen above, negative impacts on human health also include unhealthy diets and poor nutrition, exposure to harmful chemicals notably certain pesticides, and from the emissions of pollutants in air, soil and water.

What has the CAP done so far to improve the sustainability of agri-food systems

The experience and the way the CAP has been used in the period 2014-2020 provide useful insights in that the new CAP interventions are not too different from the current ones and could well be used by Member States in similar ways.

The CAP remains a large fund (38% of the EU budget in 2018[10]) and provides the principal source of funding for agriculture and land management. Its objectives are economic, environmental and social. The CAP is usually the only EU level financial tool of any size available to deliver on a range of EU environment, climate and related policies, which themselves have only limited or no dedicated funding. Nonetheless, the bulk of CAP funding remains focused on direct payments to farmers and other land managers as income support, with a far smaller proportion targeted at actions to address sustainability issues in both agricultural production and the agri-food supply chain.

Through its rules and incentives, it influences how individual farmers choose to manage their land, crops and livestock and how they use inputs, including energy, fertilisers, pesticides and water. The CAP exerts a substantial influence over 150 million ha of farmed land in the EU11. Under its rural

[10] https://www.europarl.europa.eu/factsheets/en/sheet/106/financing-of-the-cap

[11] Area receiving direct payments under Pillar 1, out of a total Utilised Agricultural Area (UAA) of nearly 179 million ha. DG AGRI Data portal, 2017 data

development policy (Pillar 2), the CAP can also be used to support agri-food businesses in rural areas in a range of ways, including to transition towards more sustainable models, if Member States so decide. It can also support the development of producer groups and cooperatives to enable farmers to exert greater power within supply chains than they can do alone as well as cooperation between actors to aid the development of shorter supply chains and local markets to bring the farmers closer to the consumer.

Since 1992, the CAP has been adapted progressively to improve the integration of environmental and climate objectives within the policy. Over a series of reforms, CAP support has shifted from price and production support to a policy of direct payments to farmers (decoupled from production) and of rural development measures (see for example OECD, 2011). The environment and climate objectives have become gradually more prominent within the CAP (Hart et al, 2017). In the current programming period (2014-2020), one of the three overarching objectives for the CAP (covering both Pillar 1 and Pillar 2) is to achieve the "sustainable management of natural resources and climate action" and these priorities remain central to the proposals for the next CAP (see below).

While the CAP has been reformed, designed and implemented to deliver more environmental and climate benefits than in past[12], with some success in some areas, evidence shows that this has not been sufficient to counter the negative trends (Alliance Environnement 2017, 2018, 2019a,b; Maréchal et al, 2018a,b; Mottershead et al, 2017; Pe'er et al 2017, 2020). For example, with respect to biodiversity protection, some CAP instruments and measures, notably the agri-environment-climate and the Natura 2000 measures, appear to be effective and are contributing significantly to biodiversity goals, particularly where they maintain semi-natural habitats and support High Nature Value (HNV) farming systems. Their impacts are however often constrained by whether the measures are made available by Member States[13], by limited budgets, and the extent of uptake by farmers (Alliance Environnement, 2019b). Biodiversity declines in the EU also show that the CAP does not provide enough safeguards against damaging farming practices. On climate change, the CAP includes measures that can effectively support farming and food businesses in mitigating their emissions, increasing carbon stored in soils and become more energy and emission efficient; at the same time, it also provides support coupled to certain emission intensive forms of production such as ruminant livestock, and does little to tackle emissions

[12] The CAP includes instruments and measures that are designed to contribute to these objectives such as: cross-compliance rules which are conditional to the receipt of direct payments, the greening payment under Pillar 1 and agri-environment-climate measures (AECM) under Pillar 2 (other rural development measures can be critically important too).

[13] AECM are a compulsory measure and have to be programmed by Member States, but this does not apply to other Pillar 2 measures, some of which can contribute positively to nature conservation.

from managed agricultural soils (Alliance Environnement, 2018). The CAP is also a key policy through which climate adaptation can be supported.

However, as shown above, EU agri-food systems still have a long way to go to become sustainable. Measures under the CAP could do far more to minimise the negative impacts of farming practices that still persist and could deliver a lot more environmental and climate benefits if their design, implementation and budget were better aligned towards these objectives.

Further references

Alliance Environnement (2017), *Literature reviews on the effects of farming practices associated with the CAP greening measures on climate and the environment*, carried out for the Evaluation study of the payment for agricultural practices beneficial for the climate and the environment ("greening" of direct payments), ISBN 978-92-79-73406-9.

Alliance Environnement (2018), *Evaluation study of the impact of the CAP on climate change and greenhouse gas emissions,* Final report for DG Agriculture and Rural Development.

Alliance Environnement (2019a) *Evaluation of the Impact of the CAP on Water,* Final report for DG Agriculture and Rural Development, ISBN 978-92-76-10939-6

Alliance Environnement (2019b) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Final Report for DG Agriculture and Rural Development, ISBN 978-92-76-11321-8

ARC2020 (2020). *Kloeckner Launches Direct Attack on GAEC 9, Eco-Schemes and Green Deal*. https://www.arc2020.eu/cap-kloeckner-launches-direct-attack-on-gaec-9-eco-schemes-and-green-deal/

Barbier C., Couturier C., Pourouchottamin P.*, et al.* (2019). *Energy and carbon footprint of food in France*. Paris, Club Ingénierie Prospective Energie et Environnement – IDDRI, 24 p.

Bas-Defossez F, Allen B, Weigelt J, Marechal A, Meredith S and Lorant A (2018) *Feeding Europe: Agriculture, and sustainable food systems,* Policy Paper produced for the IEEP Think2030 conference, Brussels, October 2018.

Bas-Defossez F, Allen B, Lorant A, Kollenda E (2019) *A Vision for the Future of the European Dairy Industry*, IEEP Brussels/London

Beretta, C. and Hellweg, S. (2019) Potential environmental benefits from food-waste prevention in the food service sector. *Resources, Conservation and Recycling*. 147: 169-178.

Cassini *et al*., (2019) 'Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis', in *Lancet Infect Dis*. Vol.19, issue 1, pp. 55-56.

EAT (2019) *Healthy Diets from Sustainable Food Systems: Food, Planet, Health,* Summary Report of the EAT-Lancet Commission.

ECA (2017) *Greening: a more complex income support scheme, not yet environmentally effective,* Special Report n°21/2017

EC (2019), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *The European Green Deal, COM/2019/640 final,* Brussels 11.12.2019

EC (2020a), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system,* COM(2020) 381 final, Brussels, 20.5.2020

EC (2020b), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *EU Biodiversity Strategy for 2030 Bringing nature back into our lives,* COM(2020) 380 final Brussels, 20.5.2020

EC (2020c), *Analysis of links between CAP Reform and Green Deal*, Commission Staff Working Document, SWD(2020) 93 final, Brussels, 20.5.2020

ECA (2018). Opinion No 7/2018: concerning Commission proposals for regulations relating to the Common Agricultural Policy for the post-2020 period

EEA (2015) *State of nature in the EU: Results from reporting under the nature directives 2007-2012,* Technical report No 2/2015, European Environment Agency, Copenhagen

EEA (2018) *European waters - Assessment of status and pressures 2018*. Available at: https://www.eea.europa.eu/publications/state-of-water

EEA (2019a) *NEC Directive reporting status 2019* https://www.eea.europa.eu/themes/air/air-pollution-sources-1/national-emission-ceilings/nec-directive-reporting-status-2019

EEA (2019b) *Annual European Union greenhouse gas inventory 1990-2017* and *Inventory report 2019*

EEA (2019c) *Climate change adaptation in the agriculture sector in Europe*.

EEA (2020) *European environment – State and outlook, 2020* https://www.eea.europa.eu/publications/soer-2020

EEA and FOEN (2020) *Is Europe living within the limits of our planet? An assessment of Europe's environmental footprints in relation to planetary boundaries*, EEA Special Report No 01/2020

ECDC (European Centre for Disease Prevention and Control), EFSA (European Food Safety Authority), and EMA (European Medicines Agency), (2017) *ECDC/EFSA/EMA second joint report on the integrated analysis of the consumption of antimicrobial agents and occurrence of antimicrobial resistance in bacteria from humans and food-producing animals* – Joint Interagency Antimicrobial Consumption and Resistance Analysis (JIACRA) Report. EFSA Journal 2017;15(7):4872, 135 pp. doi:10.2903/j.efsa.2017.4872

Erjavec, E, Lovec M, Juvančič, L, Šumrada T, Rac I. (2018) Research for AGRI Committee – *The CAP Strategic Plans beyond 2020: Assessing the architecture and governance issues in order to achieve the EU-wide objectives*, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

Fischer, C. Gonzalez, and T. Garnett (2016) "*Plates, pyramids, planet: Developments in national healthy and sustainable dietary guidelines: a state of play assessment*." Rome: Food and Agriculture Organization of the United Nations and The Food Climate Research Network at The University of Oxford.

FUSION EU project (2016). Estimates of European food waste levels. available at: http://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf

Hart, K, Allen, B, Keenleyside, C, Nanni, S, Maréchal, A, Paquel, K, Nesbit, M and Ziemann, J (2017) *The consequences of climate change for EU agriculture. Follow-up to the COP21 - UN Paris climate change conference*. European Parliament, Brussels

Hart K and Bas-Defossez F (2018) CAP 2021-27: *Proposals for increasing environmental and climate ambition*, report for NABU by IEEP

Harvey F (2016) *Use of strongest antibiotics rises to record levels on European farms,* The Guardian, 17 October 2016

Heldbjerg, H, Sunde, P and Fox, A D (2018) Continuous population declines for specialist farmland birds 1987-2014 in Denmark indicates no halt in biodiversity loss in agricultural habitats. *Bird Conservation International* No 28 (2), 278-292.

IEEP (2020) IEEP's response to the public consultation 'Deforestation and forest degradation – stepping up EU action'

Maréchal A, Baldock D, Hart K, Erjavec E, Rach I, Vanni F and Mantino F (2018a). *Policy lessons and recommendations from the PEGASUS project*. London : PEGASUS : Public Ecosystem Goods and Services from Land Managements – Unlocking the Synergies, Deliverable 5.4

Maréchal A, Baldock D, Erjavec E, Juvancic L, Rac I, Dwyer J, Hart K (2018b). Towards a Step Change for Enhanced Delivery of Environmental and Social Benefits from EU Farming and Forestry, *Eurochoices*, Volume 17, Issue 3, pp 11-15

Matthews A. (2020a). *When the CAP budget pendulum finally stopped swinging*. http://capreform.eu/when-the-cap-budget-pendulum-finally-stopped-swinging/

Matthews A (2020b). *German Presidency pursues lowest common denominator on future CAP green architecture*. http://capreform.eu/german-presidency-pursues-lowest-common-denominator-on-future-cap-green-architecture/

Mottershead D, Hart K, Maréchal A, Meredith S, Lorant A, Bas-Defossez F, Baldock D (IEEP), J.-C. Bureau, A. Matthews (2018), *Research for AGRI Committee – Towards the CAP post 2020 - Appraisal of the EC Communication on 'The Future of Food and Farming' of 29 November 2017*, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

OECD (2011), *Evaluation of Agricultural Policy Reforms in the European Union*, OECD Publishing. http://dx.doi.org/10.1787/9789264112124-en

OECD (2020) *COVID-19 and the Food and Agriculture Sector: Issues and Policy Responses*

Pe'er G, Lakner S, Müller R, Passoni G, Bontzorlos V, Clough D, Moreira F, Azam C, Berger J, Bezak P, Bonn A, Hansjürgens B, Hartmann L, Kleemann J, Lomba A, Sahrbacher A, Schindler S, Schleyer C, Schmidt J, Schüler S, Sirami C, von Meyer-Höfer M, and Zinngrebe Y (2017). *Is the CAP fit for purpose? An evidence-based fitness check assessment.* Leipzig, German Centre for Integrative Biodiversity Research (iDiv), Halle-Jena-Leipzig

Pe'er G, Zinngrebe Y, Moreira F, Sirami C, Schindler S, Müller R, Bontzorlos V, Clough D, Bezák P, Bonn A, Hansjürgens B, Lomba A; Möckel S, Passoni G, Schleyer C, Schmidt J, Lakner S (2019) A greener path for the EU Common Agricultural Policy, *Science* 365(6452):449-451

Pendrill F., Persson U.M., Godar J., *et al.* (2019). Agricultural and forestry trade drives large share of tropical deforestation emissions. *Global Environmental Change*, 56, 1-10.

RISE Foundation (2018) *What is the Safe Operating Space for EU Livestock*?, A report by Allan Buckwell.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472-475. doi:10.1038/461472a

Rockström, J., Stordalen, G. A., & Horton, R. (2016). Acting in the Anthropocene: The EAT-Lancet Commission. *The Lancet*, 387(10036), 2364-2365. doi:10.1016/ S0140-6736(16)30681-X

Reif, J and Vermouzek, Z (2019) Collapse of farmland bird populations in an Eastern European country following its EU accession. *Conservation Letters* No 12 (1), e12585.

SAPEA (2020) *A sustainable food system for the European Union,* Evidence Review Report No. 7, SAPEA, Germany ISBN 978-3-9820301-7-3

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., … Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), 1259855. doi:10.1126/science.1259855

Szép, T, Nagy, K, Nagy, Z and Halmos, G (2012) Population trends of common breeding and wintering birds in Hungary, decline of long-distance migrant and farmland birds during 1999–2012. *Ornis Hungarica* No 20 (2), 13-63.

The Lancet Commissions (2019) *Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems*, DOI:https://doi.org/10.1016/S0140-6736(18)31788-4