THINK 2030

Policy paper

European food and agriculture in a new paradigm

Can global challenges like climate change be addressed through a farm to fork approach?

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CONTENTS

SUMMARY

In 2018, in the context of the first Think2030 conference, we recognised that "*A major transformation of the EU food and agriculture sector is necessary and involves the development of coherent and synergistic policies; a new contract between farmers and society; appropriate governance; alongside new approaches to addressing consumption as well as production*".

This statement was made in a different political and global landscape than we find ourselves in 2020. The European Green Deal (EGD) has been published, including its component strategies linked to the EU agri-food system, such as the Farm to Fork (F2F) and Biodiversity strategies, and in a context of necessary economic recovery following the COVID-19 pandemic. The impacts of the pandemic itself are far reaching, beyond the direct impact on health, society and the economy. There has been a renewed interest in a reconnection with local and domestic suppliers and markets, and correlations between human wellbeing and health, with resilience to disease and infection.

All of these factors have put the EU's agri-food system, the way we produce and consume, at the forefront of discussions around ensuring long-term economic, social and environmental resilience. But has this changed the response in policy and will it change implementation on the ground?

This updated Think2030 paper looks back at the recommendations made in 2018, to see whether they are still relevant today, if they have been addressed, and where greater coherence in policy development is still needed.

TRANSFORMATION OF THE EU FOOD AND AGRICULTURE SECTOR

There has been a welcome move to greater coherence in policy development under the EGD and F2F strategies, yet the governance mechanism to ensure such an approach works in practice remains lacking. Similarly, there is little to ensure or require Member States to programme environment and climate delivery into their CAP strategic plans (CSPs). **Our 2018 recommendations** are still important, specifically that:

- agriculture policy is used as a tool to achieve Europe's ambitions and is not seen as an end in itself. Therefore ***alignment of agriculture plans to the EU's long-term strategies is essential*** and ***strong accountability and robust monitoring*** *need to be put in place in addition to effective transparency rules around national CSP; and*

- **a *transition away from CAP direct support towards multi-annual and results-based payments*** combined with knowledge transfer, advice and innovation is possible, but relies on strong ambition from Member States, which remains a concern, as does ***removing all environmental harmful subsidies under the future CAP***.

The greatest challenge on production is not understanding necessarily what to do (although there are some research gaps), but on encouraging and supporting Member States to internalise that sustainable food production and consumption are both essential components of food system resilience. Taking such an approach has economic, social and environmental benefits that far outstrip those of the status quo.

TOWARDS A LEGAL FRAMEWORK FOR SUSTAINABLE FOOD SYSTEMS

The F2F Strategy foresees a new legal framework for sustainable food systems as an overarching policy, with European Commission proposals due in 2023. This has the potential to support both the demand for and supply of agricultural commodities and to provide signals for more sustainable production. Yet the details of how this would work in practice are vague. Again, **our 2018 recommendations** should remain key considerations including:

- a ***high-level food sustainability advisory board*** *to assess the coherence of new or amended EU law that affect our food system*;
- the role of ***citizens being actively involved in future policy making and monitoring***;
- the use of available (and new) tools to address consumption and measures to ***rebalance the cost of food where sustainable products become cheaper and more convenient, compared to unsustainable ones***; and
- fiscal measures being allied with ***greater education about our food and farming*** decisions at all ages and in all sectors of society particularly through school curricula.

In particular, the new legal framework should initiate the development of Food Policy Strategic Plans that bring together different instruments backed by clear common objectives agreed at EU level, but driven by policymakers, food chain actors, civil society and citizens at regional level. These plans should work alongside the CAP to address consumption issues ***ensuring a just transition in the agri-food sector, and specifically for consumers***, which is essential to the COVID-19 recovery response. Effective stakeholder and citizen engagement throughout the policy cycle is essential to give all interests a voice in how best to improve the availability, accessibility and affordability of healthy diets in their communities, and thus ensure political legitimacy and buy-in for change. Strong accountability and robust monitoring will also need to be put in place around all agriculture and food related spending under the EU Multi-annual Financial Framework 2021-2027 and Recovery Plan.

ADDRESSING CONSUMPTION LINKED TO PRODUCTION

The EGD and F2F Strategy have huge potential to enable EU policymakers and food chain actors to address the links between consumption and production in an integrated way. In particular there is a welcome recognition of the need for a protein transition, specifically the reduction in consumption of livestock products, but this requires accompanying actions. This includes:

- securing clarity and agreement on the ***safe operating space for livestock*** (as we recommended in 2018); and

- additional measures that ***support an attractive variety of sustainable protein and aid the further market uptake of existing plant-based alternatives.***

Strategic research and knowledge access are also essential ingredients in facilitating the transition towards sustainable food production and consumption. In particular:

- ***Strategic research agendas should be developed to support technical, socio-economic, policy and governance solutions that contribute to food system transformation***. These will need to support farmers in addressing the impacts on the environment and climate, as well as benefiting productivity and farm economics; and

Bottom-up, participatory and systems-focused research should encourage buy-in, as well as connect different parts of the agri-food system, across production and consumption spheres. ***This will require significant resourcing and coordination at the EU and Member State level and should be seen as a key investment in the green recovery mechanism.***

1 INTRODUCTION

"The strategic importance of the agriculture sector in the EU and its potential to provide services to society is starkly contrasted by the impact that many current agricultural practices have on the environment, health and climate, as well as on the long-term resilience and competitiveness of the sector itself. This sector can and must contribute positively to the future of Europe. Achieving this requires a major transformation of the EU food and agriculture sector, particularly livestock, with efforts needed to bring about changes in both production and consumption of agricultural commodities. It equally requires the political will and courage to enable rapid and sustained change."[1]

Whilst the above message remains as true today as it did in 2018 during the first Think2030 conference,[2] the global and political landscape surrounding EU agriculture has changed markedly. This Think2030 paper sets out the new landscape in which the EU agri-food system now operates, identifies the opportunities and gaps in the current EU policy responses to these changes, and makes recommendations for improved delivery. Our focus is specifically on the agri-food system – which is of course only one part of a much larger and interconnected rural land-use system and connected policies.

1.1 CONTEXT

EU agri-food systems, from production all the way through to consumption, are influenced by and respond to a range of drivers, market-related and policy-related. Environmental and climate considerations are also starting to play a greater role in decisions about what is produced where, how it is processed and marketed, and what we consume. Current estimates suggest that, in order to reach sustainable levels, the average annual per capita material footprint of Europeans needs to dramatically reduce from 27-40 tonnes to 8 tonnes per capital per annum by 2050. Under these reductions estimates our material footprint of nutrition alone would need to reduce from 5.9 to 3 tonnes (per capita per annum).[3] This illustrates that the current ways we produce and consume food are no longer tenable and require an urgent change.

While the Common Agricultural Policy (CAP) is rightly the focus of much attention given its central role in influencing the way agricultural land is managed in the EU, other policy areas are also key in shaping the way agri-food systems develop in the future. These include the regulatory framework and the way it is enforced, cohesion policy, trade policy, policies relating to resource management and minimisation, including energy and waste, those that influence consumer choices, including education, taxation and procurement policies and last but not

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[1] 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: https://ieep.eu/uploads/articles/attachments/64e06bc1-6c2e-4b94-bc93-9150725093ac/Think%202030%20Feeding%20Europe.pdf?v=63710011359

[2] Think2030 conference 2018: https://think2030.eu/2018-conference/

[3] IEEP (2018), Backgrounder on sustainable consumption: http://minisites.ieep.eu/assets/2353/Backgrounder_Sustainable_Consumption.pdf

least, the resourcing and focus of research and innovation. The recent Covid-19 pandemic has shone a spotlight on the sustainability of current supply chain models, including agri-food systems, showing areas of vulnerability and the importance of their resilience to respond to shocks.[4] The economic consequences of a global pandemic are also relevant, echoing the impact of the 2008 financial crisis on production as well as consumption and access to food. Planning for greater sustainability and resilience in agri-food systems is therefore bound to be an even greater priority going forward than it has been in the past.

The European Green Deal (EGD),[5] published in December 2019, puts down some important markers for the future of the EU in general, but also for agri-food systems more specifically. It sets out the key political objectives for the EU focusing on economic growth and recovery but importantly, underpinned by principles of sustainability and a just transition, leaving no-one behind. This green transformation of the economy has taken on new urgency given the effects of the Covid-19 pandemic.

The EGD outlines a range of policy initiatives and actions for achieving its objectives, amongst which the Farm to Fork (F2F) Strategy[6], launched in May 2020, is most directly focused on transforming agri-food systems to become more sustainable. However, other EGD elements are also relevant here, not least the Biodiversity Strategy[7], whose success is dependent on action in the agriculture and forest sectors, as well as actions relating to climate, circular economy, waste and trade. In some areas, funding will be necessary to incentivise action. The budget for the 2021-27 period (still awaiting agreement at the time of writing) includes an additional funding package, "Next Generation EU", an emergency temporary recovery instrument, "*to help repair the immediate economic and social damage brought by the coronavirus pandemic, kick-start the recovery and prepare for a better future for the next generation*"[8]. Together these amount to a total budget of €1,824 billion for the seven-year period[9].

In 2018 Think2030 recommended that the EU needed much greater coherence in strategy and implementation to address the systemic changes in the agri-food system. This would enable it to respond to, support, and benefit from the delivery of wider environmental and other sustainability objectives. It is therefore welcome to see the bringing together of these different policies and objectives in the context of the EGD. This should allow for a more consistent approach in both strategy and implementation that is desperately needed. Nature-based-solutions, for example, allow for progress on resilience and recovery in agriculture whilst giving

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[4] IPES-Food (2018), COVID-19 and the crisis in food systems: Symptoms, causes, and potential solutions: http://www.ipes-food.org/_img/upload/files/COVID-19_CommuniqueEN.pdf

[5] European Commission (2018), The European Green Deal: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596443911913&uri=CELEX:52019DC0640#document2

[6] European Commission (2020), Farm to Fork Strategy: For a fair, healthy, environmentally-friendly food system: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0381

[7]European Commission (2020), EU Biodiversity Strategy for 2030 Bringing nature back into our lives: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX%3A52020DC0380

[8] European Commission (2018), 2021-2027 long-term EU budget & Next Generation EU: https://ec.europa.eu/info/strategy/eu-budget/eu-long-term-budget/2021-2027_en

[9] Constant 2018 prices, see European Council conclusions (2020) : https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf

equal prominence to the environment and economics, the latter of which have traditionally driven responses to crises. The next steps in design and implementation are, however, crucial, and whilst the EGD talks of integration, the emerging strategies and responses of Member States highlight that Europe is still at the very beginning of this journey. While this paper focuses primarily on the food and farming policies that are largely internal to the EU, we recognise that environmental and climate issues remain global challenges and that the EU also has an important role to play in supporting a wider transition towards sustainable food and farming systems.

2 WILL THE CAP DELIVER IN THE NEW PROPOSED POLICY FRAMEWORK?

The EGD signals the intention, and to some extent the commitment, to align and interconnect in a more strategic way those policies that are interdependent but have not always optimised those interactions in an effective way. Greater policy coherence is established as a goal of the F2F strategy, and it recognises that its implementation must be in line with other parts of the EGD with the Biodiversity Strategy for 2030 and Action Plans for Circular Economy and Zero Pollution ambition specifically signposted. These links are evident in the allied strategies. For example, the Biodiversity Strategy recognises that farmers play a "*...vital role in preserving biodiversity*" and that "*they are among the first to feel the consequences when biodiversity is lost but also among the first to reap the benefits when it is restored*." It also recognises that "*certain agricultural practices are a key driver of biodiversity decline*", and goes on to highlight the importance of the Biodiversity Strategy working in tandem with the F2F strategy and the new CAP. Yet neither the F2F nor Biodiversity strategies indicate how an overarching governance mechanism for implementation of the EGD across the different parts of the food chain will work in practice. There is also no mention of how the F2F will ensure that the different EU policies contribute and are coherent with specific EU sustainability goals and international commitments, such as the UN Sustainable Development Goals, the Paris Agreement on climate change and the Convention on Biological Diversity.

CAP strategic plans (CSPs) offer a unique opportunity to bridge different strategic objectives and goals together and support their implementation through one of the largest funding and delivery mechanisms available in the EU. The legislative proposals for the CAP post 2020, published in June 2018, were intended to modernise and simplify the CAP and to increase the level of environmental and climate ambition of the policy. They were presented as a tool to support the transition towards a fully sustainable agricultural sector through a new delivery model focused on results. This new model for the CAP gives Member States much greater flexibility and subsidiarity in how they plan to use the CAP funds in their specific national contexts. Their intervention strategy needs to be set out in national CSPs. One major change compared to previous periods is the requirement to set out how interventions under both Pillar 1 and Pillar 2 will contribute to the nine CAP objectives which address different economic, environmental and social concerns. Policy choices must be justified according to a full assessment of needs and priorities, and should make an active contribution to the EU's wider environmental and other sustainability objectives. 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.[10]

[10] Hart K and Bas-Defossez F (2018), CAP 2021-27: Proposals for increasing its environmental and climate ambition, report for NABU by IEEP: https://ieep.eu/uploads/articles/attachments/63db952e-0825-4eb8-80fe-f88708cfd62f/NABU%20CAP%20Report%20-%20FINAL%20.pdf?v=63710723894

Yet while the F2F and the Biodiversity Strategies send the right signals about the need and urgency to transform EU agri-food systems, the best-placed policy tool, the rules around the CAP provide little if any requirement to obligate Member States to make it happen. The increased environmental and climate ambition expressed in the EGD seems at risk as "*it is far from clear whether the 27 Member States will align their CSPs (in their own different flavours) to deliver on the objectives of the EGD for the 7-year period to come, or whether more embedded preferences in agricultural policy will prevail*"[11], as evidenced by the current CAP (Box 1). This risk is enhanced by the fact that the budgetary decisions have maintained the lion's share for the 1st pillar of the CAP where environmental and sustainability objectives have not been a major driver of Member States' policy choices in the past. Indeed certain simulation studies have shown that those direct payments create substantial goal conflicts, avoiding marginal land abandonment on one hand, but at the cost of slowing structural change, and on the other stimulating farm intensification and associated negative impacts on environment and climate.[12]

Box 1: Lessons from the attempted greening of the 2014-2020 CAP

The focus on climate and environment is not new for the CAP. The 2013 CAP reform proposal made environment and climate issues central with a view to justify the high share of agriculture in the EU budget (38%). Greening the 1st pillar was the main new instrument for fostering better farming practices through direct support beyond the existing conditionality[13], introducing requirements for crop diversification, maintaining ecologically rich landscape features and a minimum area of permanent grassland. In the 2nd pillar the agri-environmental and climate measures (AECM) and the organic farming measure continued to offer compensation for income foregone and increased production costs to farmers opting for environmentally sound agricultural practices.

Results fell far below expectations. Not only was the environmental ambition watered down during the legislative process of agreeing the CAP (2014-2020), but implementation on the ground by the national authorities led close to negligible impacts. Only 5% of EU farmland out of the 83.5% of utilised agricultural area (UAA) subject to cross-compliance has seen changed farming practices due to greening, according to the European Court of Auditors[14] who concluded that greening, as currently implemented, is unlikely to significantly enhance the CAP's environmental and climate performance. Despite 47% of the budget of the 2nd pillar going to AECM, agricultural intensification is still today one of the main causes of decline in biodiversity in Europe, primarily due

[11] IEEP (2018), Aligning the post-2020 Common Agricultural Policy with the European Green Deal: https://ieep.eu/publications/aligning-the-post-2020-common-agricultural-policy-with-the-european-green-deal

[12] AgriFood economics centre (2017), Impacts of Direct Payments: https://www.agrifood.se/Files/AgriFood_Rapport_20172.pdf

[13] Conditionality or cross-compliance was introduced in 2003.

[14] ECA (2017), Greening: a more complex income support scheme, not yet environmentally effective: https://www.eca.europa.eu/Lists/ECADocuments/SR17_21/SR_GREENING_EN.pdf

to the loss, fragmentation and degradation of natural and semi-natural ecosystems.[15] The main reason for this lies with Member States' CAP implementation choices. They have primarily been driven by socio-economic, financial and administrative factors, with biodiversity and other environmental objectives being often a secondary concern. The 2014 CAP could have delivered better on environment and climate, had Member States made different implementation choices and had they always used the most effective and efficient measures, states the evaluation report published by the Commission.[16]

[15] SOER (2020), The European environment — state and outlook 2020: knowledge for transition to a sustainable Europe: https://www.eea.europa.eu/soer/intro.

[16] For example see Alliance Environnement (2020), Impact of the CAP on habitats, landscapes, biodiversity: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cmef/sustainability/impact-cap-habitats-landscapes-biodiversity_en; and Alliance Environnement (2019), Evaluation study of the impact of the CAP on climate change and greenhouse gas emissions: https://op.europa.eu/en/publication-detail/-/publication/29eee93e-9ed0-11e9-9d01-01aa75ed71a1;


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3 POLICY NEEDS TO ENABLE A GREEN, CLIMATE NEUTRAL AND RESILIENT FUTURE?

In 2018 we recognised that "*A major transformation of the EU food and agriculture sector is necessary and involves the development of coherent and synergistic policies; a new contract between farmers and society; appropriate governance; alongside new approaches to addressing consumption as well as production*". Figure 1 provides a qualitative review of whether the actions proposed in 2018 to transform the EU food and agriculture sector have been taken up in the F2F and EGD responses.

Figure 1: Review of actions needed and those taken to transform the EU food and agriculture sector

Action Needed (IEEP, 2018)	EU Action Taken
High-level food sustainability advisory board to assess the coherence of new or amended EU law that affect our food system.	
Agriculture policy is a tool to achieve Europe's ambitions not an end in and of itself therefore **alignment of agriculture plans to the EU's long-term strategies is essential.**	 EGD brings together EU goals and policies to deliver on sustainability.  CSPs must demonstrate contributions to EU environment and climate objectives, but integration is yet to be seen in practice.
Strong accountability and robust monitoring need to be put in place in addition to effective transparency rules around national CSPs.	 Robust procedures are not in place or remain unclear.
A transition away from CAP direct support towards multi-annual and results-based payments combined with knowledge transfer, advice and innovation.	 Mandatory eco-schemes must be programmed by Member States using a certain proportion of CAP direct support.

Removing all environmental harmful subsidies under the future CAP.	 Negative environmental impacts could occur without safeguards.
Allow citizens interests to be actively reflected in future policy making and monitoring.	 No mechanism beyond initial public consultations on policy options is foreseen.
Strategic planning to tackle both food production and consumption in a sustainable way is a prerequisite. This would serve to **rebalance the cost of food where sustainable products become cheaper and more convenient to consumers whilst unsustainable ones more expensive.**	 Some proposals set out in the F2F Strategy, but not always accompanied by concrete actions.
Determining the **safe operating space for livestock production** and consumption is also a priority.	
Fiscal measures need to be allied with **greater education about our food and farming** decisions at all ages and in all sectors of society particularly through school curricula.	 Mentioned as possible solutions, but no specific action has been taken to date.

3.1 STRATEGIC PLANNING FOR PRODUCTION AND CONSUMPTION

Since the release of the F2F and other strategies, we have begun to see some of our recommendations being acknowledged and in a few cases developed into policy proposals. Notably the F2F Strategy announced European Commission proposals in 2023 for a new legal framework for sustainable food systems as an overarching policy of the Strategy. This has the potential to support both the demand for and supply of agricultural commodities and provide signals for more sustainable production.

Nevertheless, the F2F Strategy still misses many of our recommendations – particularly the understanding of tools needed to address the consumptive side of our agri-food system. This is evident in the strong emphasis placed on sustainable food production with specific targets related to reducing farm inputs and developing sustainable farm system approaches. However, goals and targets in other areas, such as consumption, are more abstract.

The Strategy highlights that change is needed, but these observations are not translated into concrete actions. For example, tax incentives e.g., lower VAT rates for organic fruits and vegetables are mentioned as a means to encourage more sustainable consumption choices, but no specific action is assigned to this proposal in the F2F Action Plan.

Instead, the F2F Strategy largely focuses on green labelling and increasing consumer awareness to empower EU consumers to make informed choices. The result is that the Strategy pays limited attention to how the EU can support Member States to tackle the underlying physical, economic, political, and socio-cultural dimensions of the 'food environment' which exacerbate poor food choices (Box 2).

Box 2: Example of limited actions addressing consumption

Key actions focused on consumption include mandatory front-of-pack nutrition labelling, the expansion of mandatory origin or provenance indications for certain products, and the harmonisation of voluntary green labels and claims. The Strategy also proposes to introduce minimum mandatory criteria for sustainable food procurement and commits to enhancing the sustainable production and consumption focus of the EU School Scheme and the EU promotion programme for agricultural products.

However, not all relevant food-related instruments in the EU's policy arsenal are signposted. For instance, there is no mention of the role of the EU's Fund for European Aid to the Most Deprived (FEAD) to support people living in poverty and at risk of social exclusion in making food choices, or the role of rural development programmes or other EU Structural Funds in supporting EU micro-businesses and SMEs to develop alternative business models for sustainable processing, distribution and consumption.

There is no specific commitment to ensure that all food-related actions, from sustainable sourcing and labelling to consumption and education are in line with clear and objective food-based dietary guidelines relevant to the European context.

Nevertheless, despite its limitations it is important to acknowledge that the F2F Strategy is just the start of the EU's journey towards a more comprehensive sustainable food and farming policy framework. In particular, the new legal framework could help to address agriculture and food policy in a more holistic way by bringing all food and farming policies under one roof.

In order to achieve that, at a minimum this new framework must establish common working definitions and general food sustainability principles to set the direction of travel of both EU agriculture and food policy and ensure the long-term legitimacy of the framework amongst key food chain actors, civil society and EU citizens. At present the structure of the legal framework is not clear, in particular whether an oversight body, such as a high-level food sustainability advisory board would be there to guide and vet the coherence of new EU law in this area. A proposal of a broad structure of such a framework (Figure 2).

Figure 2: Potential structure of the EU Legal Framework for Sustainable Food Systems including the CAP

EU Legal Framework for Sustainable Food Systems

Common working definitions and general food sustainability principles established with specific links to key EU goals and objectives incl. EGD/F2F targets (Steered by high-level food sustainability advisory board),

	Production	Consumption
Basic rules	• Conditionality (also including basic environmental, animal health and welfare, labour laws etc.)	• Conditionality (e.g. fulfilling relevant aspects of EU General Food law, Unfair trading practices, labour laws etc.)
Policy incentives	• Land management payments for eco-system services • Knowledge transfer and information actions • Infrastructural Investments • Rural-related Cooperation/CLLD (excluding food)[17]	• EU School Scheme • EU promotion programme for agricultural products • European Aid to the Most Deprived (FEAD) • Food-related Cooperation/CLLD funding through other European Structural and Investment Funds • Food-related Interreg projects • Food-related LIFE projects • EU Quality schemes
	CAP Strategic Plans	**Food Policy Strategic Plans**

Supported by cross-cutting research and innovation programmes

Designed, implemented, and monitored by national and regional policymakers, food chain actors and civil society based on the partnership principle and citizens-based deliberative processes

Through a combination of basic rules and policy incentives the framework would assist Member States in addressing common production and consumption challenges in a coordinated and collaborative way. A key component of the new legal framework would be the development of Food Policy Strategic Plans backed by clear common objectives agreed at EU level, but driven by policymakers, food chain actors, civil society and citizens at regional level. These Plans should serve to facilitate, stimulate and upscale new and existing national, regional, and local food policies, whilst working alongside production side measures, such as those in the CSPs. Although the CAP objectives would remain largely valid, interventions and accompanying

[17] Community-Led Local Development. CLLD is a bottom-up approach to territorial development, such as LEADER for rural areas.

spending which have a focus on food e.g. the CAP School Schemes and relevant support offered through the Cooperation/CLLD interventions could be under the remit of a new fund established over a 5-year period (e.g. 2025-2030) to support the establishment of the Food Policy Strategic Plans. As well as relevant CAP spending this could be complemented by the ring-fencing of additional funds from other relevant food-related EU programmes and project spending modulated to the new fund over the same period. Strong accountability and robust monitoring will also need to be put in place around all agriculture and food related spending under the EU Multi-annual Financial Framework 2021-2027 and Recovery Plan.

Involving stakeholders in all the main stages of the policy formulation will be essential to include a broad variety of perspectives that can propose potential solutions, and to ensure a legitimate process that secures buy-in from all relevant interests who will be affected by policy changes. To be fit for purpose the framework will also require a new cross-cutting approach to governance to ensure coherence between EU food and farming policies and those that influence them such as trade, energy, competition and climate policies to increase synergies and avoid trade-offs. New mechanisms addressing different levels (e.g. global, EU, national, regional) will also be needed to ensure appropriate consultation and co-creation between policymakers, food chain actors, civil society and citizens. This is necessary to support the implementation of locally adapted and socially just food and farming strategies in the Member States.

While broad Commission consultations with stakeholders to ensure the EU's actions are coherent and transparent are enshrined in the Lisbon Treaty, greater efforts are needed at EU and national level so that key stakeholders are fully involved throughout the policy cycle (e.g. agenda setting, policy formulation, legitimisation, implementation and evaluation [18]). Meaningful stakeholder engagement must be an integral part of the development and implementation of the new legal framework throughout the policy cycle based on the *partnership principle.* [19] A renewed focus on effective stakeholder engagement at Member State level is essential to ensure that all competent authorities, including environmental and climate officials, as well as civil society are part of the preparation and implementation of relevant aspects of the CAP Strategic Plans and the prospective Food Strategic Plans. Effective stakeholder engagement will also require recognition of the needs and concerns of different farming and food business interests in order to ensure a just transition. This includes farmers, SMEs and food industry workers who may be winners or losers in the shift towards a paradigm change in food and farming policy.

In addition, to ensure the political legitimacy of the future direction of EU food and farming policy and its transposition into national and regional policy, individual citizens, including non-experts, should play a more active role in the policy cycle in order to tackle complex policy

[18] Cairney, P. (2012). Understanding Public Policy. Basingstoke: Palgrave

[19] The EU's "Code of Conduct on Partnership" for the EU Structural and Investment Funds provides a basis for putting stakeholder engagement at the heart of the new legal framework from inception to implementation.

problems associated with the food system in a more transparent and inclusive way. Such initiatives are needed to put citizens at the heart of EU policy-making agenda.[20] This could be realised via citizen's assemblies, juries, panels, food policy councils and other representative deliberative processes many of which of have already occurred in different forms at Member State level.[21] With clear goals and objectives and sufficient resources these deliberative processes can give decision makers the mandate and confidence to drive the new legal framework in an ambitious and progressive direction.

Some of the key consumption components of the new legal framework are explored further below.

3.1.1 Expanding food policy and legislation

To stimulate healthier and more sustainable diets it is important to develop legal and policy frameworks for food systems that move beyond the narrow confines of food safety law towards more holistic and integrated approaches. These would, in particular, need to address issues such as availability and access to sustainable and healthy foods, guidelines and regulation for nutritional quality and marketing of foods (labelling claims), social inequalities related to food access, prevention of food waste, short and regional supply chains, as well as minimum mandatory criteria for public procurement, and education and awareness-raising. In turn, solving these issues requires cooperation across disciplines and policy areas. While this is a complex task, there are grassroots initiatives that could be built on for creating such partnerships and legislative frameworks. For example, food policy councils such as in Germany[22] are public-private initiatives that have been emerging across Europe to facilitate coordinated action in cities and their regional contexts through both strategy development and concrete innovative projects (see, for example, German network of food policy councils).

3.1.2 Role of fiscal measures for consumption

Strengthened fiscal instruments beyond green agricultural subsidies play an important role in scaling up sustainable and climate friendly food production and consumption. These can take different forms and channel both public and private investments along the whole food system. The EU Taxonomy Regulation, and the resulting sustainable finance taxonomy[23] already sets a framework in which substantial contribution to climate change mitigation is beginning to be defined for production, processing, retail and consumption, and in the coming years this will also include criteria for assessing substantial contributions to biodiversity and water protection,

[20] European Committee of the Regions (2019). Putting citizens at the centre of the EU agenda: https://cor.europa.eu/en/engage/brochures/Documents/From%20local%20to%20European/4082_Citizens%20Consult_brochure_N_FINAL.pdf

[21] OECD (2020), Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave, OECD Publishing, Paris

[22] Ernaehrungsraete (2020): http://ernaehrungsraete.de/

[23] European Commission (2018), EU taxonomy for sustainable activities: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

amongst other objectives. The taxonomy can also be used as a model and inspiration for defining sustainability criteria for public financing and procurement. Moreover, fiscal instruments can include taxation on specific inputs or commodities in such a way as to internalize the costs of these in terms of emissions, health, or other environmental impacts. For example, taxation on nutrients or pesticides, or sugar taxes, increases the costs of these inputs while also gathering revenue that can fund awareness-raising and implementation of sustainable alternatives. Taxes on sugar content in sweetened beverages, which are already in place in several EU countries, can be effective in reducing sugar content in drinks[24]. Meat taxation, while still largely a political taboo, should be fully explored, with research already suggesting that it could be legally feasible[25].

Overall, these approaches need to address market failure, notably the fact that the price of food does not include the different positive and negative externalities which are directly and indirectly associated with food production (environmental, economic and social). In particular, EU policymakers need to address the counterproductive trends in moving towards a more sustainable food system; for example, the growing concentration of market power within the global food supply chains[26], and the fact that the overall expenditure on 'food and non-alcoholic beverages' is comparatively low as a share of total consumption spending in EU (12.2 % per capita in 2017)[27] which can effectively devalue the true cost of food. This requires greater efforts to ensure that the price reflects the true cost of food and that the value generated from producing food is more fairly and equitably distributed, whilst ensuring access to healthy and sustainable food for all sections of society.

3.1.3 Greater education around consumption

Over the years the EU has developed a wide portfolio of rules and regulations pertaining to food law, including food safety, plant and animal health and information and some areas of human health policy such as food health claims. In contrast, sustainable consumption has not been a traditional legal competency of the EU with initiatives largely playing an agenda-setting, coordination or advisory function. Examples include the 2007 strategy on nutrition, overweight, and obesity-related health issues[28], the 2014 EU action plan on childhood obesity[29], and the

[24] Scarborough et al. (2020), Impact of the announcement and implementation of the UK Soft Drinks Industry Levy on sugar content, price, product size and number of available soft drinks in the UK, 2015-19: A controlled interrupted time series analysis.
[25] Bähr (2015). Greenhouse Gas Taxes on Meat Products: A Legal Perspective.
[26] IPES-Food (2017). Too big to feed: Exploring the impacts of mega-mergers, consolidation and concentration of power in the agri-food sectorwww.ipes-food.org/_img/upload/files/Concentration_FullReport.pdf
[27] Eurostat (2017), How much are households spending on food?: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20181204-1
[28] European Commission (2017), Strategy on nutrition, overweight and obesity-related health issues: https://ec.europa.eu/health/nutrition_physical_activity/policy/strategy_en#:~:text=In%20May%202007%2C%20The%20Commission,local%2C%20regional%2C%20national%20and%20European
[29] European Commission (2014), EU Action Plan on Childhood Obesity 2014-2020: https://ec.europa.eu/health/sites/health/files/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf

2019 voluntary green public procurement guidelines for food, catering services, and vending machines[30].

The EU does have some tools that have the potential to better support citizen education and awareness of food sustainability issues particularly the EU's promotion programmes for agricultural and food products and CAP School Schemes. To make these fit-for-purpose for building up awareness and education in relation to consumption would require a significant re-orientation of their objectives. In particular, the EU Promotional Programmes chiefly aim to maintain and increase both the competitiveness and market share of EU agricultural products in both the internal and export markets accounting for 47% and 53% of the total budget by 2018 respectively. Moreover, not only is a small amount of the budget dedicated to sustainability topics (1.3-11.3% of the total budget between 2017 and 2019), but there is limited evidence to demonstrate that these programmes are fully aligned and coherent with EU environmental and climate objectives.[31] At the same time there are more positive examples, in particular the CAP School Schemes, which have introduced a greater focus on sustainable consumption in recent years, including educational measures to some extent. The forthcoming reviews of these polices therefore has the potential to better and further align their objectives to the EU's sustainability needs.

Awareness-raising around consumption must take into account the demographic and cultural differences apparent in Europe, addressing particularly food poverty. Food poverty significantly increased following the 2008 financial crisis (Box 3) and it is reasonable to assume that this pattern will be seen in response to the economic implications of the COVID-19 pandemic. Whilst an overarching EU framework would be necessary to address the impacts of food poverty, Member State and regional responses to that framework would be essential.

Box 3: Food poverty patterns in the EU

About 8% of the population in Northern America and Europe is estimated to suffer from moderate to serve levels of food insecurity.[32] In 2016, it was estimated that more than 1 in 5 people in the EU-28 were not able to access and afford a meal with meat, fish or a vegetarian equivalent every second day.[33] This reflects the fact that EU's global food security rankings often only tell part of the story and say nothing about whether households have sufficient access to food.

After the 2008 financial crisis, there was a dramatic rise in the demand for food aid in high-income countries. The highest overall rates of food insecurity were recorded in Eastern European with Ireland and the UK having the largest post-crisis increases.[34] Between 2014 and 2017 the EU's Fund for European Aid to the Most Deprived (FEAD) supported 12.7 million people each year with more than 1.3 million tonnes of food in 22 Member States.[35] A 2015 assessment of trends showed that a decline in food insecurity was recorded between 2004 and 2008, this trend reversed in 2009 coinciding

with the austerity crisis. Since 2012 it started to go down,[36] but may rise again as result of the economic impacts of COVID.

3.1.4 Investing in new business models

The EU food policy must go well beyond green labelling and increasing consumer awareness to support structural change within the food system. EU funding particularly rural development funds and other EU Structural and Investment Funds play a role in supporting micro-businesses and SMEs in developing alternative business models. For instance, rural development measures are currently available to support the restructuring, modernisation or development of farm and food businesses as well as community-led local development initiatives through LEADER. Under the CAP 2014-2020 the development of short supply chains have also been given greater prominence[37] with some evidence that Member States are using these measures to support food supply initiatives at regional and local level.[38] However, there is no CAP objective or rural development priority that is explicitly aimed at promoting sustainable food production or consumption across the supply chain or designed to influence sustainable dietary patterns specifically. This lack of political prioritisation is also exacerbated by the fact that they are seen as secondary to economic concerns.[39] In contrast, the post-2020 CAP does place more emphasis on these issues including a specific objective on the role of EU agriculture in addressing societal demands for more sustainable food production and reducing food waste. However, there are no targets designed to monitor or measure the delivery of more sustainable diets under the CAP proposal or the F2F Strategy. As a result, it remains unclear how Member States will ensure greater coherence between agriculture and health and nutrition policies.

Supporting this necessary shift will require policymakers to not only maximise the opportunities available under the CAP, but also to take advantage of other EU policies and instruments

[30]European Commission (2019), EU green public procurement criteria for food, catering services and vending machines: https://ec.europa.eu/environment/gpp/pdf/190927_EU_GPP_criteria_for_food_and_catering_services_SWD_(2019)_366_final.pdf

[31] Tetratech International Development, Deloitte, Ipsos (2020), Evaluation support study of the EU agricultural promotion policy -internal and third country markets. Brussels: European Commission

[32] FAO, IFAD, UNICEF, WFP and WHO (2019), The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns. Rome, FAO

[33] Eurostat (2018), Living conditions in Europe

[34] Davis, Owen, & Baumberg Geiger, Ben, (2016): Did Food Insecurity rise across Europe after the 2008 Crisis? An analysis across welfare regimes. Did Food Insecurity Rise Across Europe After the 2008 Crisis?

[35] European Commission (2019), Commission Staff Working on the Mid-term Evaluation of the Fund for European Aid to the Most Deprived: https://ec.europa.eu/social/BlobServlet?docId=20911&langId=en

[36] Loopstra et al., (2015), Rising food insecurity in Europe.

[37] Kneafsey et al., (2013): Short food supply chains and local food systems in the EU: A state of play of their socio-economic characteristics. Seville: European Commission Joint Research Centre

[38] ECORYS., IEEP., Wageningen University and Research (2016), Mapping and analysis of the implementation of the CAP. Brussels: European Commission

[39] Walls et al., (2016), How much priority is given to nutrition and health in the EU Common Agricultural Policy?

related to food and farming, including where relevant other funds such as the LIFE programme, and those available through the EU Structural and Investments Funds. Further clarity is needed on the extent to which existing EU funds may be already contributing to food sustainability goals and could be better targeted or re-deployed to address the objectives of the F2F and other EGD objectives and accompanying Strategies relevant to food systems.

4 ADRESSING PRODUCTION LINKED TO CONSUMPTION

In our 2018 paper we emphasised that a major transformation of the EU and Farming sector cannot occur without addressing production and consumption challenges simultaneously. Some key considerations that illustrate the interplay between these two areas are explored in the following sections.

4.1 MOVING AWAY FROM DIRECT SUPPORT AND HARMFUL SUBSIDIES

Effective responses to the negative impacts of intensive agricultural practices have been a major concern in the development of agriculture policy in the EU since the 1980s and 1990s and can directly and indirectly affect consumption choices. For example, environmentally and climate damaging production practices may deliver food that appears to be cheaper than more sustainably produced alternatives.[40] To date, successive reforms of the CAP have only resulted in incremental changes. The result is that the policy is not only ill-equipped to tackle the scale of the challenges the EU agri-food sector faces now, but in some cases the current subsidy system may lead to further environmental declines. Therefore, identifying and phasing out environmentally harmful subsidies will be key as well as ensuring any remaining subsidies are in line with reaching carbon neutrality.

The F2F Strategy sees the CAP as a key tool of meeting the ambitions of the EGD with a key aim of the current reform to help farmers improve their environmental and climate performance. This will be achieved through a combination of mandatory environmental standards and voluntary incentive-based measures. A key part of the policy's incentivise-based portfolio of measures is the eco-scheme.[41] The intervention which forms part of the CAP direct payments in the 1st pillar can be seen as the first step in the transition away from direct support towards public goods payments focused on results. Essentially the eco-scheme extends the principles of agri-environment-climate payments (historically supported through rural development programmes in the 2nd pillar) to direct support whereby the EU will support farmers to take up environmental and climate friendly practices and/or engage in system re-design by applying approaches such as the enhanced management of permanent pastures and landscape features, and organic farming. Eco-schemes can also act as 'entry-level schemes' before a farmer takes up a more ambitious agri-environment-climate commitments (under rural development development). Key elements of the eco-scheme include the fact that they must demonstrate that

[40] FAO (2015). Natural Capital Impacts in Agriculture: Supporting better business decision-making: http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Natural_Capital_Impacts_in_Agriculture_final.pdf

[41] Meredith S and Hart K (2019), CAP 2021-27: Using the eco-scheme to maximise environmental and climate benefits, report for IFOAM EU by IEEP: https://ieep.eu/uploads/articles/attachments/4791a221-8525-4410-848f-8fb84f5a621a/IFOAM%20EU_Eco-scheme_Report_Final.pdf?v=63718564537

they are making an active contribution to a Member States' national planning tools which are designed to support the implementation of EU environmental and climate objectives e.g. emanating from the EU's Birds and Habitats Directives or the 2030 Climate and Energy Framework. The success of the eco-schemes will be highly dependent on the decisions taken in Member States and scrutiny of these choices both at national, regional and EU level. The level of spending allocated to the eco-schemes over the coming years as well as the extent to which eco-schemes support a transition from conventional farming to input substitution to system redesign will be sure to play a decisive role in shifting the agriculture sector towards a more sustainable future.

Eco-schemes and agri-environment-climate schemes form only part of the CAP architecture. As a result, other safeguards are still needed to ensure that Member States' CSPs are fully in line with EU environmental and climate objectives and other international commitments. This includes for instance, eligibility criteria that fully recognise farmland features of environmental and climate value, strong conditionality that ensures the fulfilment of basic standards and conditions, and relevant environmental and climate criteria being attached to potentially environmentally harmful subsidies (e.g. coupled support, infrastructural investments, risk management tools). Such safeguards must be backed with rigorous approval and monitoring procedures for the implementation of the CSPs.[42]

4.2 ADDRESSING THE LIVESTOCK ISSUE

Support for sustainable production and consumption also means addressing at a strategic level those elements of food production and consumption that are impacting our environment and health. Livestock production and the issue of where EU citizens source the protein necessary for sustainable and healthy diets is a key example. Livestock production is responsible for around 70% of EU agricultural land use,[43] whether for grazing or growing of crops for livestock feed, and therefore as a driver significant of environmental degradation. The most pressing challenges include the sector's contribution to climate change, outbalanced bio-geo-chemical cycles, and competition for land between feed and food production as well as the EU's high dependency on imported animal feed, particularly soy and the resulting land use change and global footprint. Currently, European consumption of animal products is twice as high as the global average, and accounts for nearly 60% of daily overall protein intake.[44] With increasing wealth standards of living in the global south, the demand levels for animal products are moving closer to the EU average, which is globally unsustainable in the long-term.

The F2F strategy recognises the need of moving to consumption patterns that are based on a more plant-based diet with less red and processed meat, as a means to reduce the risk of life-threatening diseases as well as the environmental impact of the current EU food system. It also

[42] Hart K and Bas-Defossez F (2018)' CAP 2021-27: Proposals for increasing its environmental and climate ambition
[43] Greenpeace (2019), Feeding the Problem: the dangerous intensification of animal farming in Europe: https://www.greenpeace.org/eu-unit/issues/nature-food/1803/feeding-problem-dangerous-intensification-animal-farming/
[44] INRA (2016), Role, Impacts and Services Provided by European Livestock production: http://pure.iiasa.ac.at/id/eprint/14060/2/esco-elevage-eu-resume-anglais.doc.pdf

alludes to welcome initiatives to support a protein transition both on the production and consumption side. However, it does not fully deliver on the need to address the consumption-production nexus in a target-driven approach, which could lead to the sector operating in a more scientifically defined safe operating space within a clearly defined time frame. It also does not acknowledge the similarly problematic health and environmental impacts of other sources of industrially-produced meat and animal products (dairy, eggs and meat from monogastric animals). It is therefore critical to address the livestock question in the broader scope of an EU protein transition, and where clearly evidenced, recognise the role of some forms of livestock farming, particularly where they support or enable the management of important ecotypes, such as highly biodiverse grasslands.

The F2F Strategy aims to support increased availability of alternative proteins, and to encourage private-sector commitments in the area of health and sustainability. These are helpful demand-side measures - however, quantitative targets are missing and the risk of maintaining the status quo is extremely high as the Strategy does not translate these aims into concrete legislative proposals. Assessing the conditions for coupled support under CSPs and reviewing the EU promotion programme are welcome, but need to be aligned with science-based targets for a safe operating space for livestock. Determining the sustainability boundaries for EU livestock production and consumption must be a key priority for EU and Member State decision makers (Box 4).

Box 4: Protein transition pathways and allied measures

How do we avoid promoting a different version of the same system?

As part of a new contract between farmers and society, a full transition towards compensating farmers for the delivery of public goods is necessary. For example, coupled support as part of the Common Agriculture Policy (CAP) for livestock should exclude payments to the most environmentally harmful ways of farming which are not in tune with the ecological carrying capacity of land, such as through stocking density limits to prevent over-grazing or by excluding public support for livestock enterprises that have no connection to land and bio-geochemical cycles. From a consumption perspective, measures must support an attractive variety of available protein and aid the further market uptake of existing plant-based alternatives. Production side measures need to support circular livestock systems which convert by-products from the food system that are inedible for humans, minimise the input of finite resources, prevent waste and nutrient leakage, minimise food losses or waste and recycle the remaining waste or by-products to fertilise crops or feed animals.[45]

What policy tools are needed on production and demand sides?

[45] Van, Zanten et al (2018): Defining a land boundary for sustainable livestock consumption. Global Change Biology, 24, 9, 4185-4194.

A protein transition and dietary shift towards more plant-based needs both production and demand side instruments. It also needs a consistent approach that finds solutions that combine requirements for a healthy, fair, economically viable and environmentally friendly food production and consumption.

So far, the relevant policies with significant impact on food systems, like agriculture, health, environment, energy and development have largely been developed in isolation, which leads to significant trade-offs and incoherence. A coherent policy approach, that develops national or even regional strategies for sustainable and healthy food in close collaboration with all relevant actors in a transparent process, would therefore be an important requirement for Member States in implementing the F2F Strategy. For the implementation of such strategies a variety of instruments exist.

Interventions, such as economic instruments (e.g. no/ lower taxes on fruits and vegetables and higher taxes on animal products) or legal requirements (fertilizer use, building law, animal welfare standards, land use planning etc.) are promising, but are hardly being used. Interestingly, politically popular instruments such as awareness raising and information provision campaigns, certifications/labels or voluntary initiatives are found to be the least effective compared to other instruments[46,47,48,49]. As a result the overall effectiveness of the EU's current school schemes and promotional programmes need to be rigorously assessed in terms of their food sustainability credentials in forthcoming reviews, with modified and/or alternative approaches carefully considered.

For production side interventions, the CSPs that will be set up by Member States will play an important role. For example, support requirements for animal husbandry and related infrastructure will have an impact on production capacities and market prices. Support for legumes will provide new incentives for new markets; that are needed to increase plant based proteins. Improved farm advisory services can help building regional supply chains that match supply and demand etc. In parallel, there is a range of demand side instruments: Adaptation of national dietary guidelines, that are often used as a standard for (public) procurement and by nutritionists, is much needed in almost all Member States[50] to include research insights that show how to align health and environmental requirements - as in the "planetary health diet". Similarly, nudging tools that influence the "choice environment" and influence consumer behaviour (like

[46] Rust et al., (2020): How to transition to reduced-meat diets that benefit people and the planet.
[47]Osbaldiston and Schott (2012), Environmental Sustainability and Behavioral Science: Meta-Analysis of Pro-environmental Behavior Experiments.
[48] Wunder et al., (2019): Policies against consumer food waste. Policy options for behavior change including public campaigns.
[49] Garnett et al., (2015): Policies and actions to shift eating patterns: What works? A review of the evidence of the effectiveness of interventions aimed at shifting diets in more sustainable and healthy directions.
[50] Loken et al., (2020), Diets for a Better Future: Rebooting and Reimagining Healthy and Sustainable Food Systems in the G20, EAT Report.

the increased provision of meat free dishes) are shown to have a significant impact on consumer behaviour.

However, there are also still considerable research needs to assess the likely impact of different policies – ranging from the effectiveness of education efforts and behaviour change interventions, to the impacts of taxes on imports and trade or to the likely impacts on food habits and meat markets through the future introduction of in-vitro meat and insect based protein alternatives.

4.3 RESEARCH AND INNOVATION TO BRIDGE GAPS AND DEVELOP SOLUTIONS

Strategic research and knowledge access are essential ingredients in facilitating transition towards sustainable food production and consumption. Strategic research and innovation agendas should be developed to support technical, socio-economic, policy and governance solutions that contribute to food system transformation. Several considerations are important in developing such agendas. First, research needs to deliver agronomic and technical solutions that enable agricultural systems to address the multiple challenges of climate impacts, biodiversity loss, and soil and water degradation. To support farmers in transitioning, it is especially important that research demonstrates not only ecosystem benefits but also productivity and economic benefits for farmers, and that farmers receive ongoing advisory and investment support in transitioning towards improved sustainability. Applied and bottom-up participatory research and innovation, where farmers are integrated in the development and testing of solutions, can facilitate farmers' buy-in and learning as the experience of the EIP-AGRI demonstrates. Availability of independent advisory systems is a key element too. These should be extended beyond the farm level, also reaching food businesses and other actors across the value chain. This implies that more funding must be allocated to advice, supporting the development and implementation of multi-actor initiatives and sustainable food and farming practices.

Research is also required to develop solutions for consumption challenges, understanding structural and behavioural drivers and effectiveness of measures to stimulate sustainable consumer choices. A recent assessment of research and innovation on food systems in EU Member States indicates that food innovation and nutritional/food security aspects are particularly insufficiently addressed.[51] Finally, given the complexity and specificity of transformational challenges, new and existing research should enable innovation and testing of systemic approaches in specific geographic and socio-economic contexts.[52] This should take account of the different

[51] SCAR (2018), Assessment of Research and Innovation on Food Systems by European Member States.
[52] For example Mistra (2020): https://www.mistra.org/en/news/sek-64m-for-research-on-sustainable-food-system/

variables that may trigger major changes amongst food chain actors and recognise that the process of deciding to change can be long and complex.[53]

The substantial impact of food production, processing and consumption patterns, on environment, climate and well-being is now undisputed and "there is broad scientific consensus on *what* is needed to achieve a sustainable food system".[54] High expectations are put on Research and Innovation (R&I) to enable a swift transition towards sustainability. Horizon Europe provides a good framework to invest in agricultural R&I with strong assets building on farmers involvement, multi-disciplinary approaches and alignment to the Sustainable Development Goals. There are however still gaps on how to walk the talk of sustainable farming in the EU and Horizon Europe should tackle a range of sensitive issues, notably pesticide reduction[55] and how to allow for increased returns on investment[56]. Making good R&I choices are even more crucial since the Heads of State and Government have reduced the budget for Horizon Europe, cutting mechanically the €10bn ring-fenced for "Food, agriculture, rural development and bioeconomy" to €8.9 bn[57].

[53] Sutherland et al., (2012), Triggering change: Towards a conceptualisation of major change processes in farm decision-making: https://www.sciencedirect.com/science/article/pii/S0301479712001326

[54] European Commission (2020), Towards a sustainable food system: https://ec.europa.eu/info/research-and-innovation/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors/towards-sustainable-food-system_en

[55] IEEP (2020), How to align the Green Deal's pesticide and fertiliser reduction targets with Europe's R&I needs: https://ieep.eu/publications/agriculture-and-land-management/how-to-align-the-green-deal-s-pesticide-and-fertiliser-reduction-targets-with-europe-s-randi-needs

[56] IEEP (2020), What are the economic and societal benefits of investing in agricultural research and innovation?: https://ieep.eu/publications/agriculture-and-land-management/what-are-the-economic-and-societal-benefits-of-investing-in-agricultural-research-and-innovation

[57] Council of the EU (2020), Council finalises its position on the Horizon Europe package: https://www.consilium.europa.eu/en/press/press-releases/2020/09/29/council-finalises-its-position-on-the-horizon-europe-package/


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