ECO-READY policy recommendations for a food security model grounded in an ecologically resilient food system



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Executive summary

This report presents ECO-READY's consolidated interpretation of the project's policy findings and final set of policy conclusions and recommendations.

The analysis concludes that climate change threatens all four pillars of food security, while biodiversity is a key factor in resilience. However, current EU policies remain fragmented, with weak integration between agricultural, climate, and biodiversity legislation, incomplete policy narratives, and insufficient multi stakeholders' governance. Enhancing food systems sustainability and Europe's food security would require more support for sustainable agricultural practices, better data interoperability and use of agricultural data for policymaking and improved advisory services. In addition, food affordability remains a key challenge that should be addressed by consumers-oriented public policies.

In light of these conclusions, ECO-READY puts forward a set of policy recommendations organised into five clusters: Integrating agriculture, biodiversity and climate policies for food security, Strengthening data interoperability and governance, Empowering farmers in the transition, Supporting consumers in the transition to resilient and sustainable food systems and Improving food systems governance to achieve food security. In total, 22 policy recommendations are formulated across these clusters, targeting key policy frameworks, from the Common Agriculture Policy, Nature Restoration Regulation, and the European Climate Resilience Framework to further national and regional legislations.

The evidence-based policy recommendations set out in this deliverable intend to inform policy discussions at European, national and regional levels with the aim of achieving ecological resilience in the European food system and contributing to Europe's food security.

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Disclaimer

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List of abbreviations and acronyms

AECA	Agri-Environmental and Climate Actions
AI	Artificial Intelligence
CoP	Committee of Platforms
CAP	Common Agricultural Policy
CMO	Common Market Organisation
DNSH	Do No Significant Harm
EEA	European Environment Agency
EU	European Union
EFSCM	European Food Security Crisis preparedness and response Mechanism
GAEC	Good Agricultural and Environmental Condition
GHGs	Greenhouse Gases
IoT	Internet of Things
LCA	Life Cycle Assessment
LLs	Living Labs
MFF	Multiannual Financial Framework
MSA	Mean-of-Species-Abundance
NRPP(s)	National Regional Partnership Plan(s)
NRP(s)	Nature Restoration Plan(s)
PPPs	Plant Protection Products
SSPs	Shared Socio-Economic Pathways
SMR	Statutory Management Requirements
WP(s)	Work Package(s)

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Introduction

ECO-READY is a European research project aiming to achieve Ecological Resilient Dynamism for the European food system through consumer-driven policies, socio-ecological challenges, biodiversity, data-driven policy, and sustainable futures. The project recognises the profound impacts of climate change and biodiversity on food systems and consequently on food security at both regional and European levels.

To address these challenges, the project seeks to inform policymaking through insights from scientific research and practical experience, drawing particularly on a network of ten Living Labs across Europe. Over the past four years, partners have produced a wide range of research results, practical findings, and scenario-building exercises across various Work Packages of the project. Each of these outputs contains policy-relevant insights that contribute to the policy conclusions and recommendations formulation process.

The objective of Deliverable 5.5 is to provide the final integrated interpretation of these findings as well as the associated set of policy recommendations for Europe's food security. Situated at the intersection of food security, climate change and biodiversity, it aims to translate the project's findings into evidence-based policy conclusions and recommendations that can contribute to the EU's broader ambition of building more resilient and sustainable food systems.

To this end, **the deliverable builds on the analytical framework and preliminary policy conclusions established in Deliverable 5.1**, while incorporating the latest results generated across the Work Packages during the final year of ECO-READY. These include, among others, the MAGNET biodiversity module, the Life Cycle Assessment, the outcomes of Living Lab activities and the final Delphi study.

By bringing together this diverse set of evidence, building on the preliminary conclusions developed in D5.1 and considering the evolving policy context, **Deliverable 5.5 identifies cross-cutting patterns and develops a consolidated set of policy recommendations.** Together, these conclusions and recommendations constitute ECO-READY's final policy outputs.

The document is structured as follows. It first provides the methodological framework for the formulation of ECO-READY's conclusions and recommendations within the evolving European policy landscape. It then consolidates policy-related findings from the project's final activities and provides a consolidated thematic analysis to formulate the ECO-READY policy conclusions. Finally, the deliverable presents the full set of policy recommendations developed on the basis on the conclusions and outlines the key communication, dissemination and integration efforts undertaken to maximise their uptake.

ECO-READY Deliverable 5.5 was produced thanks to the participation of the ECO-READY Living Labs AIDEMEC, CONCAT, EcoReadyMasuria, EcoVita, ESAPPIN, LivOrganic, LOFS, Probio, SECO Collab and THALLA, whose contributions were facilitated by Alkis Kyriakou (Reframe Food). We also thank the following individuals and organisations for their valuable contributions and thorough proofreading: Nils Bunnefeld (Alternet), Foivos Anastasiadis and Tsolakis Naoum (Aristotle University of Thessaloniki), Jana Poláková (Czech University of Life Sciences Prague), Annamaria Bevivino (ENEA), Boglarka Bozsogi (IFOAM Europe), Blandine Camus and Elodie Champseix (IUCN), Annamaria Bevivino (ENEA), Saeed Moghayer, Jason Levin-Koopman, Branwen Ap Dafydd Tomos, Annabel Oosterwijk, and Sophie Galema (Wageningen University & Research).

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1. Methodological framework towards robust policy recommendations for resilient food systems

1.1. Translating evidence-based policy conclusions into actionable policy recommendations

The ECO-READY policy recommendations were progressively formulated, validated, and refined throughout 2026 based on both the policy conclusions drawn and the process defined in Deliverable 5.1.

This process followed a multi-stakeholder and transdisciplinary approach, as described in detail in D5.1. It involved researchers from all Work Packages (WPs), representing a wide range of disciplines and methodological approaches, in the co-development and co-validation of policy recommendations. Beyond academia, ECO-READY also involved practitioners through a network of ten Living Labs (LLs), ensuring a balanced representation both geographically across four major European bioclimatic regions and agronomically across a diversity of production systems (conventional, organic, and vertical farming), thereby capturing the heterogeneity of European agriculture. Furthermore, the contribution of policymakers and policy experts was institutionalised through the Committee of Platforms (CoP), complemented by recurrent consultations with key European policy experts, as illustrated by the involvement of Brussels-based policy experts in the policy workshop held in January 2026. Building on the policy conclusions, the development of policy recommendations proceeded as follows (see Figure 1).

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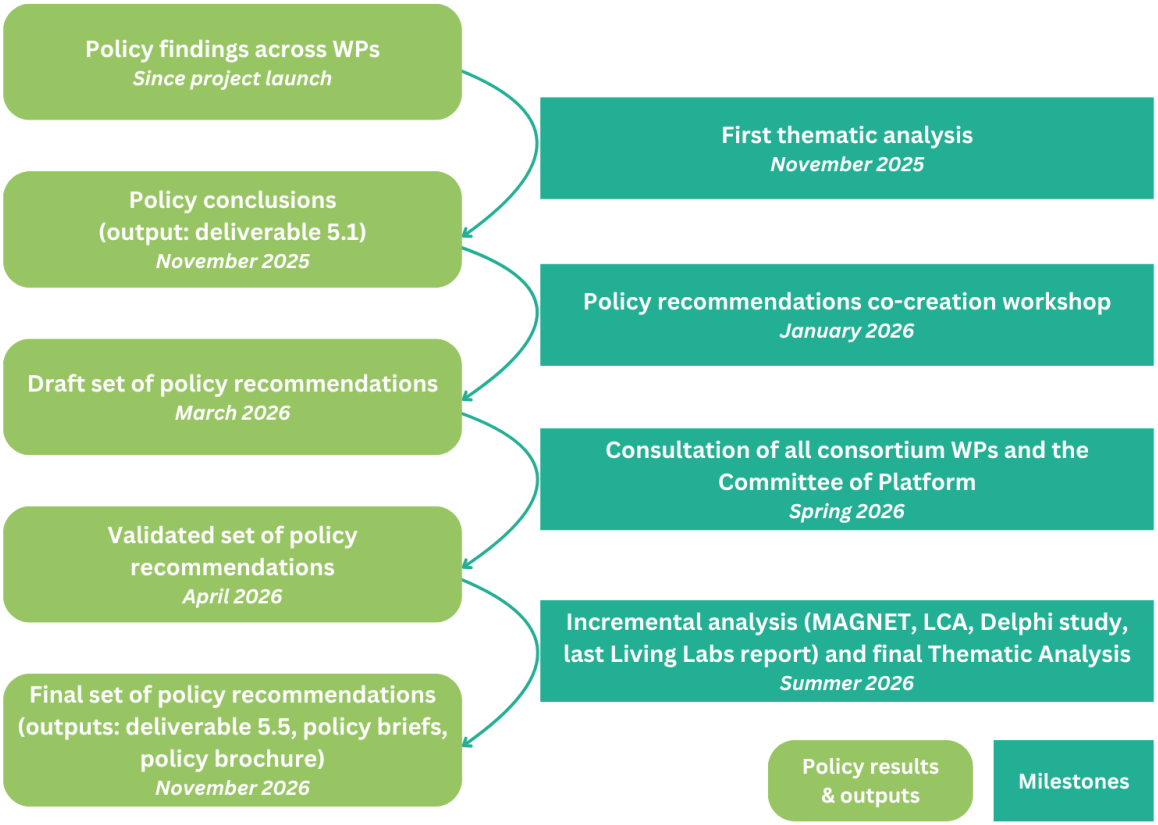

Figure 1: Overview of the process co-creation, co-validation, and publication of the policy recommendations.

Firstly, a co-creation workshop was organised by WP5 and WP6 on 28-29 January 2026. A full day was dedicated to policy activities, particularly the presentation of the policy conclusions from D5.1 and the development of policy recommendations through a co-creation workshop with project partners and European Union (EU)policy experts. The workshop brought together more than 50 participants, including 24 partner organisations and 8 Living Labs, as well as policymakers from participating territories. In addition, a dozen of Brussels-based experts external to the project were invited to contribute to the discussions (see Annex 1). At the policy workshop, participants joined thematic group discussions around 5 topics emerging from previous policy conclusions:

- climate change;
- biodiversity;
- sustainable consumption;
- data and indicators;
- advisory services.

Within each group, WP5 partners presented the policy conclusions drawn in D5.1, which then served as basis for co-developing the policy recommendations (see Figure 2). The discussions enabled participants to refine the preliminary findings, assess them against real world constraints identify policy levers, and formulate concrete, actionable recommendations.

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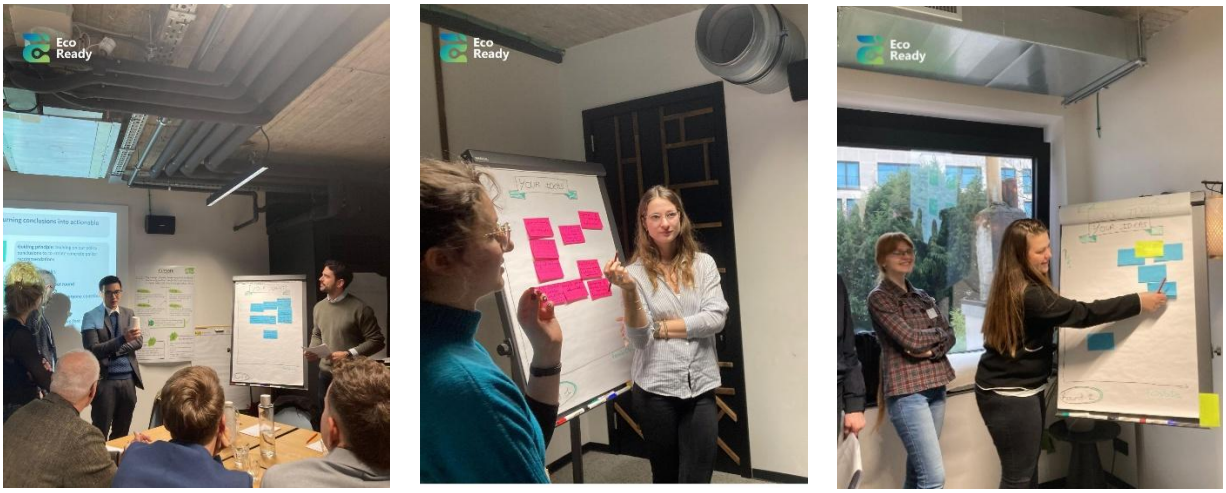

Figure 2: photos from the policy recommendations co-creation workshop, Brussels, 28 January 2026.

Then, drawing on all the input gathered during the thematic group discussions, a set of preliminary recommendations was drawn up in March 2026. In the interests of co-validation with peers and experts, the recommendations were subsequently circulated to all Work Packages and members of the Committee of Platforms.

Finally, the process creating the project's final policy recommendations was designed to allow for the incremental integration of the latest project results. Several project activities contributed to ECO-READY's policy recommendations throughout the final year of the project. Specifically, the Life Cycle Assessment, the extension of the MAGNET model with a biodiversity module, the Delphi study, and the final Living Labs reporting were expected to provide further findings informing policy recommendations. These project results are summarised in this deliverable under section 2.1 and integrated into the Reflexive Thematic Analysis of policy findings in section 2.2 used as baseline for the formulation of final policy recommendations in section 3.1..

This deliverable, as D5.1, uses the Reflexive Thematic Analysis methodology (Braun & Clarke, 2006; 2021) to carry out a comprehensive new analysis of all the ECO-READY policy findings and ensure comparability with the results obtained in November 2025.

The final policy recommendations are presented in section 3, which also outlines the associated outputs, their integration into the Observatory, as well as the relevant communication and dissemination efforts.

1.2. Incorporating recent EU policy developments on food security and food system resilience

Translating policy conclusions into recommendations must also take stock of the relevant policies developments that occurred in the interim. In the context of preparations ahead of the post-2027 programming period, negotiations of the new Common Agricultural Policy, the implementation of Commissioner Hansen's Vision for Agriculture and the European Commission's simplification agenda, as well as the implementation of certain relevant sectoral policies, both changes in policy orientation and technical changes are observed. These developments reflect an evolving policy context and should inform the formulation of the ECO-READY policy recommendations to ensure their relevance. These policy

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developments span across agriculture, climate, biodiversity, food security, and consumption.

1. Agriculture

Recent policy developments in the European agricultural sector focus on the key file of the post-2027 CAP reform.

The Common Agricultural Policy (CAP)

On 16 July 2025, the European Commission issued its proposal for the 2028-2034 Multiannual Financial Framework (MFF) (COM (2025) 570, 2025) including the next CAP(COM (2025) 565, 2025). Overall, the proposal grants more flexibility to Member States, abolishes the two-pillar system, and moves towards a more incentive-based approach. Good Agricultural and Environmental Condition (GAEC) standards and socioeconomic conditionality would be replaced by protective practices designed by Member States based on their needs and specific contexts. Environmental conditionality would become "farm stewardship" (article 3), enforcing Statutory Management Requirements (SMR) and compliance with the Do No Significant Harm (DNSH) principle. Since farm stewardship is vaguely defined, the DNSH principle could provide a common baseline to prevent harmful measures for the environment. Further, it is likely that some practices now being required by GAECs will be reclassified into agri-environmental and climate actions, so farmers can receive a premium for practices that were previously part of the mandatory baseline.

Agri-Environmental and Climate Actions (AECA) (Article 10) would replace and merge current eco-schemes and agri-environmental and climate measures. Member States must include them in their plans but there is no mandatory minimum budget allocation, and they will have to be 30% co-financed by national budgets. Governments might be more likely to funnel more money into 100% EU-funded interventions and have less incentives to prioritise co-financed measures, such as AECA. These measures may run the risk of being cut in competition for funds at national level. In April, the European Commission published guidance for Member States on developing AECA that deliver environmental results and are accessible to farmers based on analysing effective past practices (European Commission, 2026a).

Member States' position on the CAP files

On 27 October 2026, the Agriculture and Fisheries Council adopted its partial general approach as the Council's negotiating position on the post-2027 CAP. Agriculture ministers moved towards greater yet flexibility for Member States to address different national circumstances (Council of the European Union, 2026a). In addition, organic farming would be removed from Article 10 on Agri-Environmental and Climate Actions; this would render support for organic optional and dependent on political priorities in each Member State. This increased flexibility for Member States may shift discussions on measures for sustainability transitions that underpin future food security at national levels rather that at European one.

Since the partial approach does not cover financial and horizontal issues, it does not cover mandatory degressivity and capping of area-based income support (Article 6); these are discussed as part of the negotiations on the 2028-2034 MFF (Council of the European Union, 2026b).

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The Council also agreed on its position on the Common Market Organisation (CMO) for agricultural products on 20 October 2026. The proposal makes food security a more explicit CAP objective than in previous reforms. Member States are being given a larger role in crisis preparedness, contingency planning, and implementation through the new partnership-plan architecture. In a similar vein to the CAP positions, the Presidency's amendments reinforce national responsibility: Member States would have to establish national food security preparedness and response plans for the availability and security of agricultural supplies and preventing or mitigating supply chain disruption during emergencies and severe crises, including through monitoring, early warning, and risk scenario assessments (Council of the European Union, 2026c). The debates are running about the autonomy of Member States to secure food supply while preserving an EU agricultural single market.

In the next steps, heads of state and government will decide on the National Regional Partnership Plans (NRPPs) budget, while the rules of allocation, how the CAP and NRPP budgets are spent will go through the co-decision process. Member States must draft their NRPP, to be approved by the Commission, before the new CAP is planned to enter into force on 1 January 2028.

Food and Feed Safety Omnibus

The Food and Feed Safety Omnibus (COM (2025) 1030, 2025), presented by the European Commission on 16 December 2025, proposes amendments to ten major pieces of EU legislation, including that on the placing of Plant Protection Products (PPPs) on the market (Regulation (EC) No 1107/2009, 2009).

While the amendments include improvements to the regulatory framework for biocontrol substances and products, facilitating their approval process, they also attempt to weaken rules for synthetic pesticides. This would, for instance, include granting unlimited approval to most active substances, extending the grace period of banned pesticides without alternatives to three years, broadening criteria allowing the authorisation of synthetic pesticides that do not meet safety standards, and granting derogations to drone spraying.

The Council adopted its position on 30 September 2026 as slightly more cautious about keeping high-risk synthetic pesticides on the market. The position of the European Parliament is still under negotiation—discussions point towards further flexibility on pesticide approval processes and bans on toxic pesticides.

2. Climate

The summer of 2026 has been marked by droughts, heatwaves and wildfires, greatly affecting European agricultural production. As emphasised in the 2026 State of the Union address, "12 million tonnes of crops" have been lost in just a few months (European Commission, 2026b). To address such issues, President Von der Leyen introduced four climate and resilience priorities including the Framework for Climate Resilience, the Climate Insurance Alliance, a European Heatwave Plan, and a European Water Initiative.

The European Scientific Advisory Board on Climate Change, stemming from the 2021 European Climate Law, provides independent scientific and non-binding advice to inform EU climate policy. Their flagship report on agriculture (European Scientific Advisory Board on Climate Change, 2026) highlights the substantial short-term climate risks facing the

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agricultural sector, which are set to become critical by the end of the century. It also notes that current policy frameworks are inadequate for ensuring the resilience of European agriculture. These findings echo the policy conclusions set out in ECO-READY Deliverable 5.1 (Anastasiadis et al., 2025), emphasising insufficient ambition and fragmentation of policies, and the need for a coherent policy mix to address the interconnected issues of climate change, agriculture, biodiversity, and consumption. The report also highlights the significant opportunity offered by the ongoing design of the post-2027 programming period for EU policies and funds to enhance coherence and complementarity. The report calls for CAP support to be redesigned to focus on transition and climate resilience targets, paying attention to the co-benefits between climate and biodiversity. Experts also emphasise the need for a comprehensive food policy that addresses consumption and all pillars of food security.

On 27 October 2026, the EU Framework for Climate Resilience (COM(2026) 720, 2026) was published by the European Commission. The proposal aims to support Member States in stepping up preparedness and resilience against climate impacts. Although it does not explicitly mention agriculture, it does specify measures to enhance climate resilience with regards to safeguarding food security. European and national climate risk assessments are to be expected from the European Environment Agency (EEA) by 30 June 2028, and from Member States by 30 June 2029. Subsequently, a Union strategic plan on climate resilience shall be adopted by the Commission by 30 September 2028, whereas national strategic plans on climate resilience are expected to be submitted by 31 December 2030. Both assessments and plans should be renewed every five years and address food security, alongside other policy areas including water security, ecosystems and biodiversity. The plans should also promote Nature-based Solutions and ecosystem-based climate adaptation. However, the law does not specify any funding mechanism or specific target to achieve such priorities.

3. Biodiversity

2026 was a rich year for EU environmental policy and legislation, with specific targeted initiatives being crucial in the agricultural context. Increasing attention has been paid not only to the conservation of above-ground biodiversity, but also to the protection and restoration of soil biodiversity, which underpins ecosystem functioning, soil health, and the long-term sustainability of agricultural production.

Launched in the spring of 2025, EU implementation dialogues provide a consultation tool to discuss how policy objectives can be achieved while identifying opportunities to simplify implementation. These are organised by the European Commission and bring together stakeholders from industries, businesses, and civil society to gather feedback on existing legislation or legislative proposals. An implementation dialogue on environmental legislation was organised on 18 February 2026, hosted by EU Commissioner for the Environment Jessika Roswall and Commissioner for Agriculture and Food Christophe Hansen. The dialogue examined the progress and obstacles linked to the implementation of key EU environmental legislations, including the Water Framework Directive, the Nitrates Directive, and the Birds and Habitats Directives. During the dialogue, participants broadly recognised that food production and biodiversity can, and must, go hand in hand, and practical cooperation, clear guidance, and consistent implementation were identified as ways to help ensure both environmental protection and a competitive, future-proof

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agriculture sector. In this context, sustainable agricultural practices play a key role in reconciling food production with biodiversity conservation.

As part of this broader simplification process and announced within the environmental omnibus, the stress test of the Birds and Habitats Directives was launched by the European Commission in spring 2026. This process included a review of the findings of the 2016 Fitness check, targeted consultations with Member States and key stakeholders, an open public consultation, as well as reality-check workshops and a final implementation dialogue. The stress test focuses on three main topics: (1) the application of Article 6 of the Habitats Directive with a focus on Natura 2000 sites, (2) policy coherence, stakeholder participation, funding support and governance, and (3) species protection and derogations, and procedures for adapting the annexes to scientific and technical progress.

The public consultation, which remained open until mid-August, received a record 8,518 responses, reflecting a high level of public engagement on the topic. Of the submissions, 80.5% were from EU citizens, 3.8% from Non-Governmental Organisations, 3.7% from environmental organisations, 3.0% from public authorities, and 2.9% from companies and businesses (European Commission, 2026c). Following these consultations, reality check events were held on 21 and 23 September 2026, with practitioners and stakeholders and Member States respectively, to discuss the preliminary findings of the study. On 23 October 2026, an implementation dialogue with Commissioner Roswall provided further opportunity for key stakeholders to discuss ways to improve implementation and front solutions to barriers, while maintaining the Directives' high standards of nature protection. The outcomes of these consultations and dialogues are expected to feed directly into the final stress test report, due by the end of 2026, which will outline which actions and solutions the European Commission has identified to address the barriers identified in implementing the Directives.

Finally, Member States also faced a major milestone under the EU Nature Restoration Regulation (Regulation (EU) 2024/1991), as they were required to submit their first draft National Restoration Plans (NRPs) by the 1st of September 2026. These plans outline the concrete measures that Member States intend to take to achieve the restoration targets set for 2030 and beyond. In terms of agricultural ecosystems, under Article 11, Member States are required to improve the condition of agricultural habitats by increasing grassland butterflies and farmland birds, the stock of organic carbon in cropland mineral soils, and/ or the share of agricultural land with high-diversity landscape features. For now, ten countries have submitted their national plans, with most Member States expected to submit by the end of 2026. Looking ahead, the European Commission has six months to review the draft plans, after which Member States must submit their final versions by September 2027.

4. Food security

The implementation of the 2021 Contingency plan for ensuring food supply and food security in times of crisis remains a priority for the EU.

In May 2026, the 6th report on the State of Food Security in the EU (European Commission, 2026d) was published. The report highlights fertiliser price volatility and extreme weather events as the two main factors posing the greatest risk to food security in the EU. Furthermore, the report emphasises that access to food is the greatest perceived risk to food security, particularly for the most vulnerable households. Respondents to the report's survey did not consider physical access to food to be an issue, but rather its economic accessibility, especially for low-income households. Additionally, risks to food utilisation have been identified, with price pressures leading to the consumption of cheaper, lower-

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quality food. In October 2026, the 7th report (European Commission, 2026e) evidenced similar challenges, referring to the increased climate shocks of summer 2026, and associated risks for food prices.

In September 2026, the European Commission extended until 2031 the mandate of the European Food Security Crisis preparedness and response Mechanism (EFSCM), which facilitates dialogue between Member States and key stakeholders in the agri-food sector (COM Decision C/2026/4900). In future months, the EFSCM will explore new thematic areas of work, notably emphasising the importance of climate change and water resilience for food security.

5. Consumption

With regards to food and consumption policy, three major policy changes have occurred at EU level in recent months. Despite the publication of the Vision on Agriculture and Food in February 2025, these developments illustrate a shift in policy consideration to food consumption.

First, the Sustainable EU Food System Initiative, announced by the European Commission in October 2022 as part of its work programme for 2023, was officially dropped. Stemming from the EU Farm to Fork Strategy, published in 2020, the initiative aimed to establish a policy framework for food and integrate sustainability into all EU food-related policies, thereby supporting a more systemic approach to food systems in Europe. The intention was to set out general principles and the associated requirements and responsibilities of all actors in the EU food system through a regulation. More specifically, the expected regulation was intended to establish rules for the sustainability labelling of food products and minimum criteria for the sustainable public procurement of food, as well as setting out governance and monitoring at EU level. In this context, the European Commission provided an inception impact assessment, and a public consultation was open from April to July 2022, receiving more than 2,600 responses. The majority of respondents (92%) agreed that EU food systems should become more sustainable, believing that public authorities should take the lead in this regard. Although the proposal was expected in the fourth quarter of 2023 and had been pending since then, it was announced on 26 March 2026 that it had been abandoned by the European Commission.

Another key European food policy that has seen changes to its plans this year is the EU promotion policy. Through yearly calls for funding, it co-finances and directly organises campaigns and events to promote EU farm products in Europe and worldwide, under the slogan “Enjoy, it’s from Europe”. By defining the food categories to be promoted and their associated budgets, the promotion policy reflects the EU’s objectives in terms of market penetration for farmers and increased consumption from consumers. These categories, which include, for example, quality schemes, organic products or fruit and vegetables, have already been revised in the past, notably with the introduction of the ‘sustainable products’ category in 2022. Since 2021, the European Commission had undertaken a review process of the promotion policy, with a view to enhancing its contribution to sustainable production and consumption, and in line with the shift to a more plant-based diet, with less red and processed meat and more fruits and vegetables. A public consultation held between March and June 2021. On 11 June 2026, the European Commission announced the review to be suspended, and it was thereafter officially dropped on 10 September 2026.

Finally, in September 2026, the European Commission published a proposal for a new Public Procurement Act (COM (2026) 590, 2026), with the overarching objective of promoting a buy European approach in the context of complex geopolitics. While maintaining the

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primacy of the best price selection method, the proposal introduces the possibility of better accounting for product sustainability in public procurement. It entails incorporating a quality criterion into the methodology, accounting for at least 30% of the selection process. In this context, quality encompasses, but is not limited to, environmental sustainability. In the context of food procurement, this criterion could be based on operating conditions in the value chain, as well as on the selection of products certified for their environmental benefits, such as organic products, or for their socio-economic impact on a specific territory, such as Geographical Indications. Public authorities would be responsible for determining which quality criterion to apply. Thus, this new proposal would enable public authorities to source products more locally or sustainably. It would however not introduce a minimum threshold for sustainable food procurement by public authorities nor set out a common standard for defining sustainable food products.

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2. Synthesis and interpretation of ECO-READY policy-relevant findings

2.1 Consolidating the latest ECO-READY policy findings

1. Policy evidence from the Life Cycle Assessment

We conducted environmental and social life cycle assessments (LCAs) of ten products, across the ten ECO-READY Living Labs. LCA is an established and globally recognised method to evaluates the social and environmental impacts of a product or service across its whole life cycle, including extraction of raw materials, transportation, and intermediate processing. In this work we conducted a baseline LCA of 10 products, as well as a prospective analysis that investigates the potential future impact of these production systems under three different socio-economic scenarios. The methodology, which combines environmental and social LCA with a prospective analysis based on outputs from the MAGNET model, is described in detail in the LCA report's chapter 2 (Ap Dafydd Tomos et al., 2026).

The quantitative environmental and social LCA results are presented chapters 3 of the LCA report (Ap Dafydd Tomos et al., 2026) the ECO-READY Observatory. A detailed description and analysis of the findings are provided in (Ap Dafydd Tomos et al., 2026).

For the social assessment, the quantitative upstream hotspot results were combined with farm level primary data on social impacts (Chapter 3 of report Ap Dafydd Tomos et al., 2026). In addition, a participatory workshop was conducted (Chapter 4 of the LCA report) to explore how future farming systems may evolve towards 2050, focusing on the potential (social) implications of artificial intelligence (AI), automation, and broader socio environmental changes for labour, farming systems, and rural communities. This section synthesizes the findings across the LCA work with the findings of the participatory workshop, to highlight the main conclusions and findings from this work. Figure 3 displays how the work conducted in ECO-READY was combined in this section for the final policy findings of the work.

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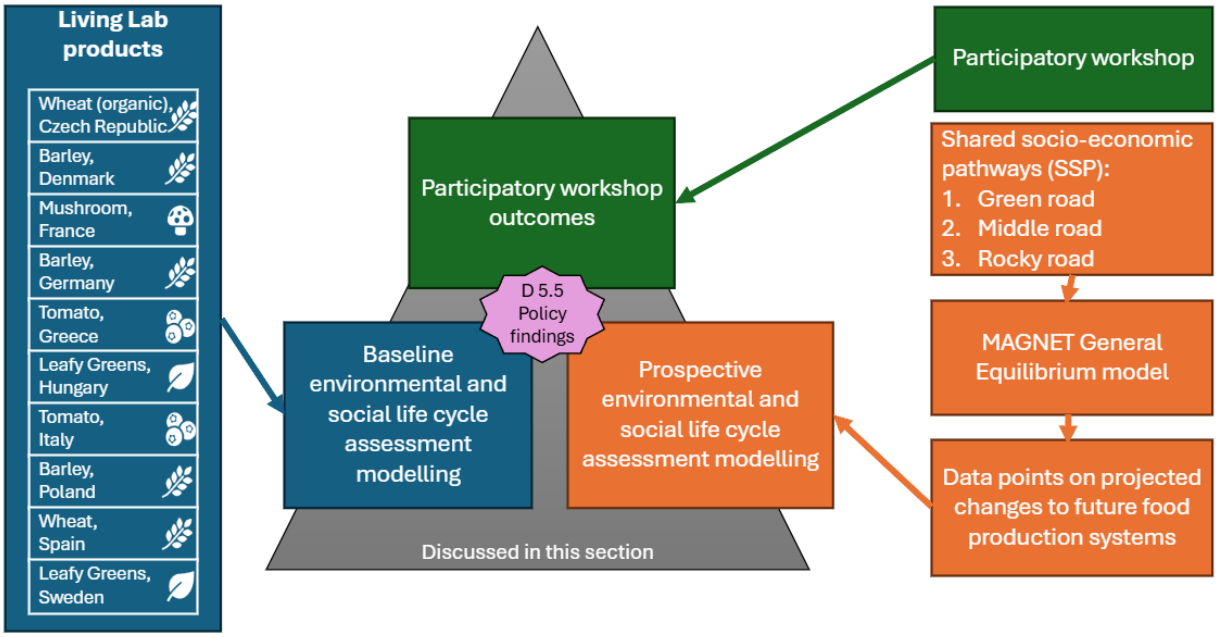

Figure 3: Schematic diagram of how the work conducted in ECO-READY was combined to derive policy relevant outcomes.

N.B. The comparisons found across the Living Lab products are specific to the ECO-READY case studies, and not directly applicable to all farming systems and food products.

Baseline environmental and social impacts

Results per product cluster

For many environmental impact categories, including climate change potential, the burdens per kg of production are inversely proportional to yield produced, with high yield systems showing reduced impacts (examples shown in Figure 4 and 5). This was observed in the Barley, Tomato, and Leafy Green clusters.

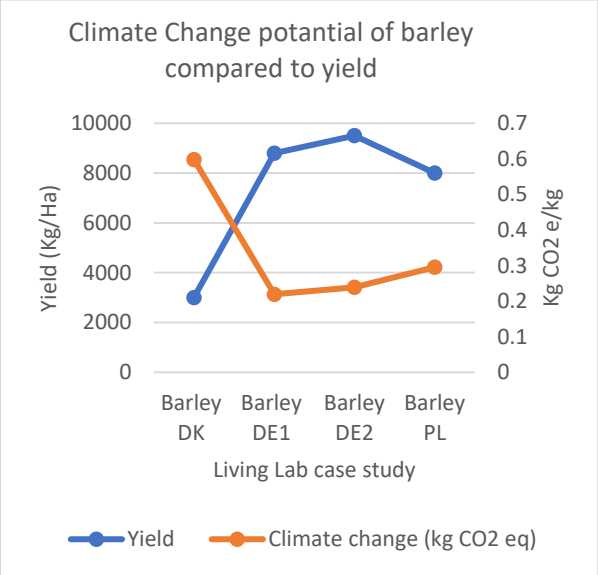

Figure 4: Yield vs. GHG Potential - Barley

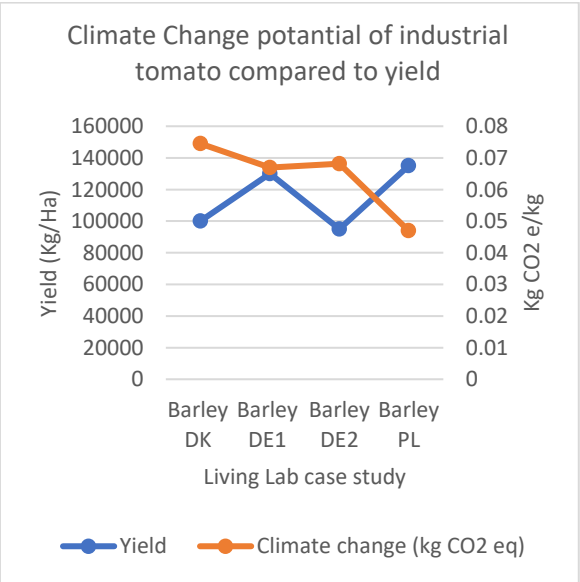

Figure 5: Yield vs. GHG Potential - Tomato

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An exception to this main finding is the effect of the use of pesticides on freshwater ecotoxicity impacts, as scenarios with high yields did not have lowest contribution to ecotoxicity, with this impact linked instead with the type of pesticide applied (example shown in Figure 6 and 7). Therefore, whilst good production efficiency is important for keeping the environmental burdens per unit of food production low, consideration should be given to potential ecotoxic impact and any other potential environmental trade-offs that could occur from system inputs.

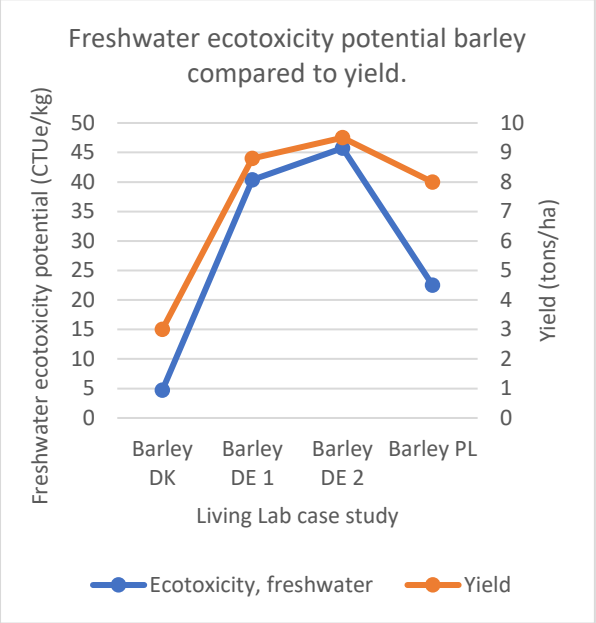

Figure 6: Yield vs. FW Ecotoxicity potential - Barley

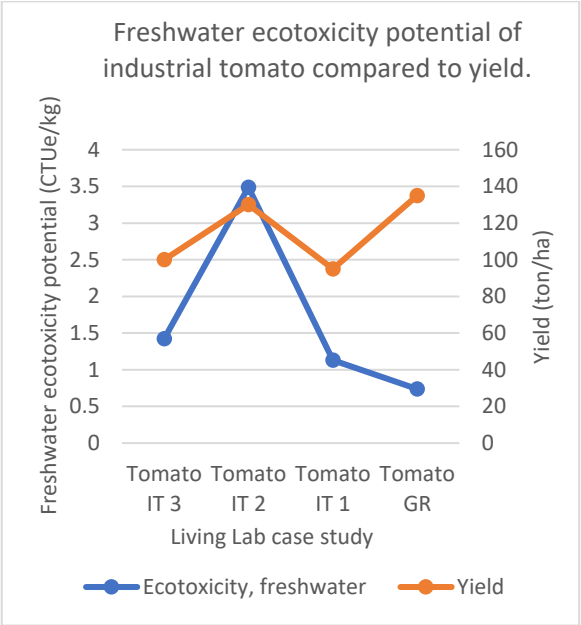

Figure 7: Yield vs. FW Ecotoxicity potential - Tomato

The quantitative Social LCA results capture upstream supply chain risks associated with the selected products, while Chapter 3 of the LCA report includes a qualitative farm level assessment with primary data from the Living Labs. These findings provide a complementary rather than directly comparable perspective. Quantitative social impacts are influenced by both the amount and type of inputs used, and the sector and country specific risk profiles embedded in their supply chains. As a result, systems with lower resource use efficiency and greater dependence on inputs associated with higher social risks generally exhibit higher upstream impacts. The highest impacts are consistently linked to health and safety, governance, and labour rights and decent work, particularly through chemicals, diesel, electricity, and transport. For example, workers involved in the extraction, manufacturing, and transport of these inputs may face hazardous working conditions, workplace injuries, low wages, excessive working hours, or limited labour protections, while governance risks may relate to corruption or weak legal enforcement. In contrast, the qualitative farm level assessment with primary data (Chapter 3 of LCA report), focusing on six impact subcategories, captures direct social conditions and shows generally strong occupational health and safety practices, active engagement in technology development, and relatively stable employment structures across all Living Labs. Taken together, the results suggest that different social issues become visible at different levels of analysis, highlighting the importance of assessing both upstream supply chain risks and farm level conditions when evaluating the social sustainability of agricultural systems.

Results related to the farming systems

The Wheat cluster compared conventional and organic production in Spain and Czech Republic, respectively. Fertilizer requirement became a hotspot in both scenarios; for

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Spain via chemical fertilizer application and field emissions, and for the Czech Republic via the agricultural activities required to produce the alfalfa that is used as green manure. For these two systems, climate change potential per kg of Wheat were similar, however, there were trade-offs in different categories. Whilst the Czech system saw higher impacts from diesel consumption in impact categories such as acidification, resource use, and human toxicity, the Spanish case study saw higher impacts in ecotoxicity, water use, and eutrophication. Comparisons between these two farming systems also showed that the sampled organic system (Wheat, CZ) generally have lower social impacts than the sampled conventional system (Wheat, ES) due to reduced input intensity and lower exposure to upstream risks.

Furthermore, the LCA analysis compared different production system case studies, including open field cultivation, vertical farms, and substrate cultivation. The two vertical farming systems showed higher social and environmental impacts per kg because of energy intensive production and specialized inputs. Differences in social impact are also shaped by regional and economic contexts, such as electricity prices, water availability, and the monetary value of agricultural inputs. The environmental LCA also showed that the vertical farms (Leafy greens, HU & SE) have relatively high environmental impacts per kg of product compared to all other case studies investigated, due to the upstream environmental impacts associated with electricity generation. Consistent and reliable low-carbon energy, and high production efficiencies are therefore needed if these systems are to meaningfully contribute to sustainable food production. The direct farm-level social assessment additionally highlights substantial variation in workforce organization, working hours, and technology development between systems and countries. Vertical farms in Sweden and Hungary, for example, are characterized by more specialized and technical job profiles compared to conventional systems.

Results related to life cycle stages

Environmental impact hotspots for food production are fuel use, fertilizers, and pesticides. Therefore, to reduce burdens of production per kg of product, these inputs should be optimized, so yields are maintained, but fuel, fertilizer and pesticide use minimized if possible. This can be achieved with investments into precision farming approaches, which can optimise fertilizer application based on soil properties and nutritional needs, increase fuel efficiency during field activities with farm mapping and GPS data, and achieve more efficient irrigation with Internet of Things (IoT) sensors. Fertilizer and pesticide use could also be reduced with increased uptake of organic farming practices; such as using green manure and crop rotation to provide nutrients and reducing use of pesticides in favour of biological and mechanical methods where possible. These mitigation measures were all identified during the Living Lab workshop as potential future scenarios for food production, so are also aligned with the Living Lab's own visions for the future, as well as with the conclusions found from the environmental and social LCAs. Depending on specific farm geographies, cultivation methods, conditions, and priorities, approaches and methods should be tailored so that trade-offs are limited and social and environmental impact minimized. Life cycle thinking should also be applied to new interventions, to assess whether their uptake would meaningfully reduce environmental and social burdens on a case-by-case basis.

The main upstream social hotspots across systems are chemical inputs, diesel, electricity, transport, and starting materials, reflecting risks embedded in upstream sectors such as chemical manufacturing, fuel supply, mining, and agriculture. The direct farm-level assessment identified fewer hotspots overall, but highlighted weaknesses in occupational

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health and safety in the Living Labs in Greece and Poland, where no accidents were reported but formal preventive measures, safety protocols, certifications, and training were limited or absent. In the Italian Living Lab, accidents were reported despite preventive measures and first aid training being in place. Greece and Spain Living Labs also showed lower performance in technology development and contribution to economic development due to limited innovation involvement, training activities, and broader community benefits.

Future scenarios & environmental and social impacts

The scenario analysis explored how different future development pathways could influence the environmental and social impact of food production systems in the future. The scenario analysis used MAGNET, a macroeconomic model with global coverage and country level detail, to project how different future development pathways namely SSPs (Shared Socio-Economic Pathways) affect future agricultural production systems under varying socioeconomic assumptions (Moghayer et al., 2024). Three SSPs are compared; green road, middle road, and rocky road, referred to as SSP1, SSP2, and SSP3, respectively. These projected changes in input demand and production efficiency were then used to adjust the life cycle inventory data, showing clear differences between the SSPs in terms of future resource use and production efficiency in food systems. In this assessment, we saw minimal changes in the SSP2 (middle road) scenario compared to the current baseline scenario, with bigger differences observed for SSP 1 (green road) and SSP3 (rocky road), which are the focus of the discussion here.

Under SSP1 (green road), inputs per kg of food produced consistently decrease, resulting in lower environmental burdens and reduced social risks, while SSP3 (rocky road) shows only limited improvements, with some inputs remaining stable or even increasing. Across all scenarios, the use of petroleum products, electricity, chemicals, and transport decreases, although reductions are consistently strongest under SSP1 and weakest under SSP3. These changes are driven by general efficiency increases over time, which vary by country and scenario. Greece and Spain generally show the largest decreases in energy related inputs and transport demand, while Denmark and the Czech Republic show the smallest changes. Fertilizer use shows the largest overall response to the scenarios, with nitrogen, phosphorus, and potassium fertilizer demand decreasing substantially under SSP1, particularly in Greece, Italy, and Sweden, whereas SSP3 shows minimal change or even increases, especially in Denmark, Sweden, and France. In the MAGNET model, the SSP1 scenario projects that producers would substitute chemical fertilizers for organic fertilizers, or with land extensification, due to increased chemical costs incurred by carbon taxes. Alternatively, in SSP3, there is no increase in chemical costs, and therefore no incentive for producers to reduce usage.

Similar trends are observed for agricultural start materials such as wheat, cereals, vegetables, and fruit, which decrease under SSP1, remain relatively stable under SSP2, and increase under SSP3. These trends are mainly driven by efficiency gains linked to assumptions of larger investments in innovation SSP1, combined with GHG emission taxes as mentioned above, that increase fossil fuel prices and encourage more efficient resource use. Overall, the results indicate that aligning future food systems with SSP1 type developments could reduce the environmental and social impacts of food production. Therefore, we see a combined benefit of the more secure food scenario (SSP1); as food security improves as environmental and social impact decreases.

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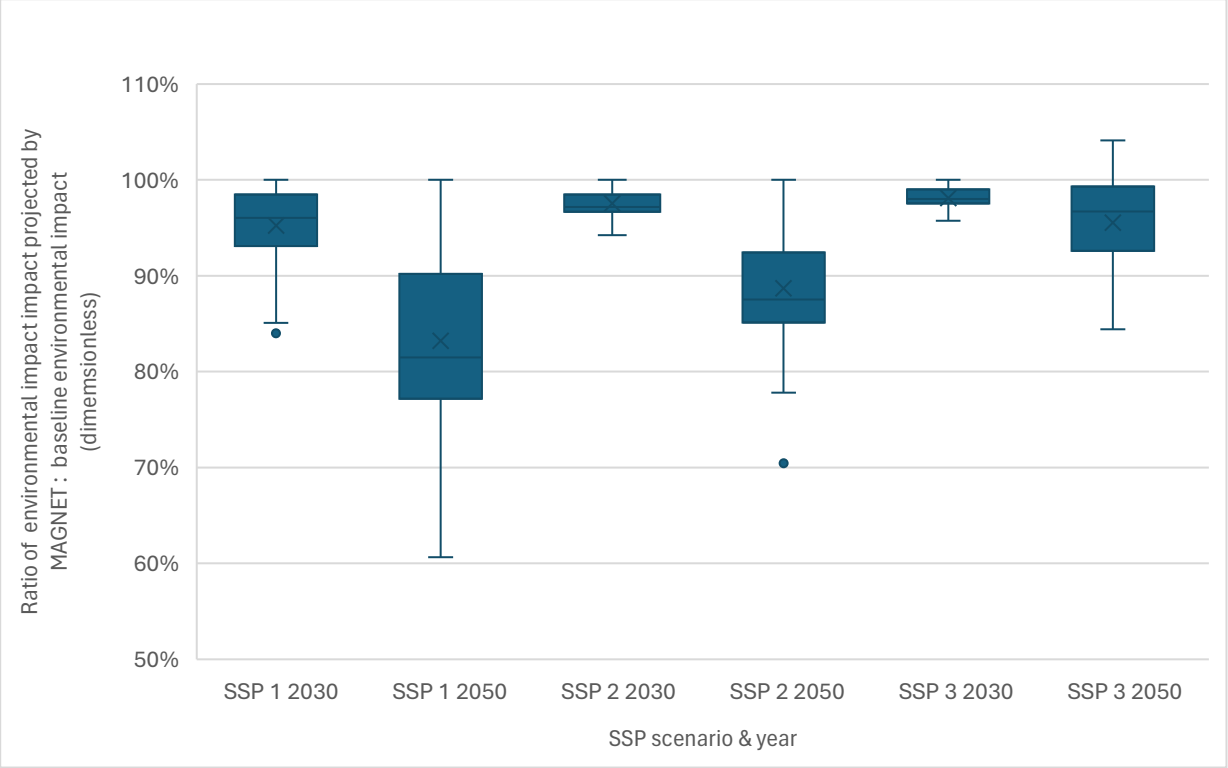

Figure 8: Ratio of environmental impacts projected by MAGNET: baseline environmental impacts, combined for all LCA impact categories and all products.

Workshop discussions on future farming scenarios (Chapter 4 of LCA report) highlighted that future social impacts are likely to remain highly context dependent. Participants identified sector specific challenges, including resource efficiency and yield stability in cereal systems, drought and water scarcity in horticultural systems, and animal welfare, infrastructure, and feed management issues in livestock systems. Discussions further suggested that AI, automation, and digitalization may improve efficiency and resilience while increasing the importance of technical skills and data management. However, unequal access to technology, knowledge, and capital could widen inequalities between farming systems and regions.

These changes could also influence the environmental and social impacts of food production in the future. For example, overcoming drought with additional irrigation could increase water consumption and energy demand for water pumping. Flooding impacts could result in the need to re-plant start materials and require additional on field activities leading to more fuel consumption. Reduced yields caused by more extreme weather conditions could proportionally increase the impacts of food production per kg, as the same resources are needed to produce lower quantities of food, leading to land expansion and more extensive, high impact production. Therefore, minimising climate impact, and early investment into mitigation methods are needed.

The prospective analysis using MAGNET also does not consider any profound technological changes but works with small changes over time adjusting the efficiency of production inputs or substitution between various inputs e.g. fertilizer and land or labour and capital in response to price changes. Therefore, additional reduction in the environmental and social impacts of food production is possible with the introduction of more novel methods and technologies related to automation and precision agriculture, as identified by workshop participants.

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Mitigation opportunities

Mitigation opportunities across the farming systems mainly relate to reducing dependency on input intensive production and strengthening resilience, working conditions, and resource efficiency. Lower use of chemicals, fossil fuels, and other external inputs through precision agriculture, circular approaches, organic practices, and nature-based solutions can reduce both environmental burdens and social risks linked to sectors such as mining, fuel extraction, and chemical production. The workshop discussions further highlighted that future technologies such as AI driven management tools, autonomous machinery, and drought resilient crops may improve both resilience and working conditions if implemented inclusively. At the same time, unequal access to technology, knowledge, and financial resources could reinforce inequalities between farming systems and regions. Ensuring equitable access to innovation, alongside investments in occupational health and safety measures, employee training, and stronger supply chain standards, will therefore be essential to reduce negative impacts while increasing the environmental and social benefits of future farming systems. Farmers should be supported in the uptake of any measures that can contribute to the mitigation of environmental and social impacts by policy levers and funding opportunities. Support should be given in both achieving mitigation, and building up resilience to projected future economic and environmental changes.

Limitations and other considerations

The comparisons found across the Living Lab products are specific to these case studies and primary data collected, and therefore, whilst the observed trends can give some insights into the food production sector, any conclusions cannot be directly translated to differences in farming systems, or applied generally to products, countries, or cultivation methods.

Second, LCA is not an exhaustive method to quantify all sustainability metrics, and therefore, consideration should also be given to other factors such as biodiversity, soil quality and health, nutritional value, and social impacts not captured in social LCA. These dimensions are all important considerations of a resilient food system that are not included in traditional LCA studies but are integral to consider when taking a holistic view on sustainable food production. LCA also considers impacts relative to a product unit, and therefore, these results do not compare the total global impact of these production systems, or their impacts per area of land. For example, a product with lower impacts per kg could have higher land demands, resulting in other consequences. Therefore, these conclusions should be combined with other ECO-READY findings for a complete picture, as undertaken in section 2.2.

2. New policy findings from the MAGNET model

The simulation set-up

The findings reported here are based on the MAGNET-MSA framework developed during the last operating year of ECO-READY. The biodiversity module converts the economic and land-use output of MAGNET into Mean Species Abundance (MSA) loss, expressed in square kilometres of pristine equivalent area lost, using the country-level impact factors of Schipper et al. (2025). Country factors are aggregated to MAGNET regions with weights based on absolute pressure loads, so that countries with large pressures carry more weight in the regional factor.

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Six pressures are tracked: cropland, pastureland, forest plantation and built-up land on the land side, and CO2, CH4, N2O and F-gases together with the air pollutants NH3 and NOx on the emission side. Roads and mines are excluded because MAGNET does not model them, which makes the estimate conservative. Results are reported for vascular plants and for birds and mammals separately, and as a combined aggregate. Three scenarios run to 2050: Green Transition (SSP1), Middle Road (SSP2, business as usual) and Rocky Road (SSP3), quantified as described in D1.5 (Moghayer et al., 2024). All values in this section are MSA loss, so a higher number means a worse biodiversity outcome.

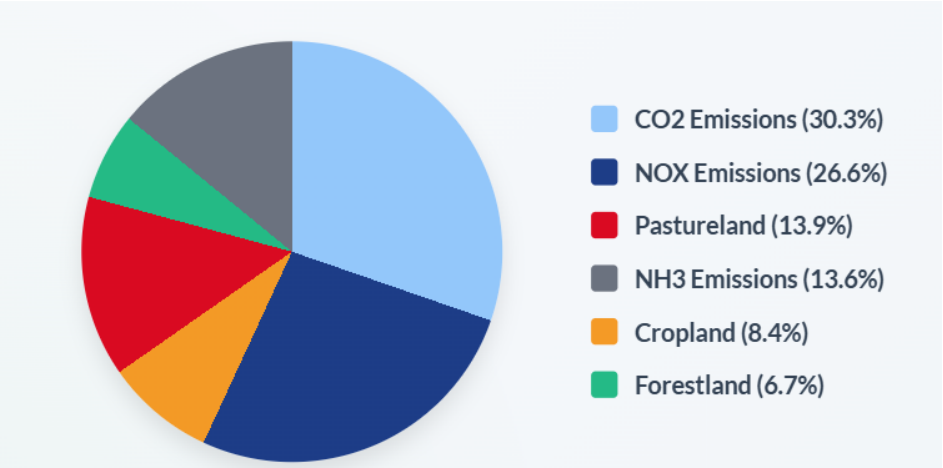

Figure 9: Global MSA loss by pressure in 2050, Middle Road. Atmospheric pressures, CO2 and NOx together, account for more than half of global loss. Source: MAGNET-MSA model, ECO-READY project.

The main results

MSA loss rises in all three scenarios, and none of them meets the EU Biodiversity Strategy 2030 objective of halting and reversing loss. For the EU27 the Middle Road, our business-as-usual case, gives the largest increase in MSA loss, above the Rocky Road. This is due to the larger CO2 emissions from outside of agriculture as the Middle Road scenario has a larger population and economy than the Rocky Road scenario in Europe. The biodiversity loss from agricultural activities is highest in the Rocky Road scenario as expected. At the global scale the agricultural impacts on biodiversity dominate, and the Rocky Road has the largest overall biodiversity loss.

Scenario	EU27, all taxa	Global, all taxa	EU27, birds and mammals
Green Transition (SSP1)	+7.0%	+8.9%	+13.6%
Middle Road (SSP2, BAU)	+17.3%	+15.0%	+34.3%
Rocky Road (SSP3)	+12.8%	+16.6%	+25.4%

Table 1: Total MSA loss in 2050, percentage change relative to 2020. Source: MAGNET-MSA model, ECO-READY project.

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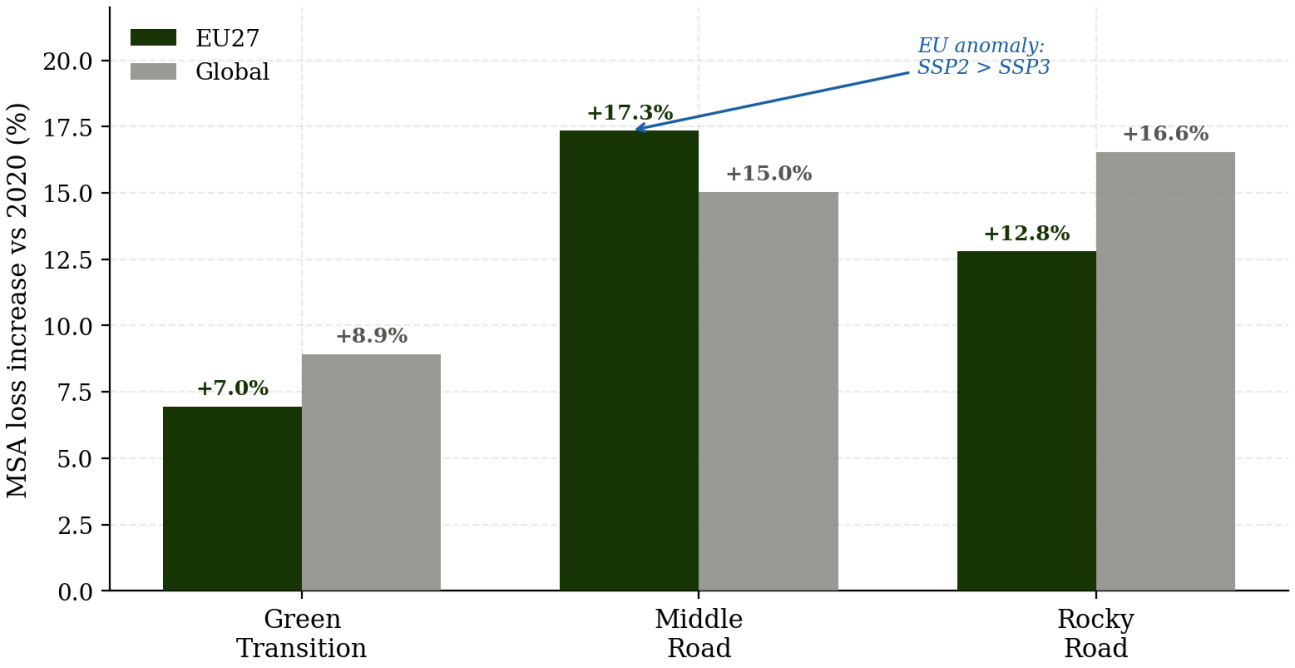
Figure A. Total MSA loss (all taxa) by scenario: EU27 versus global, 2020–2050 (%)



Source: MAGNET-MSA model, EcoReady project.
Note: EU27 shows a non-monotonic ordering (Middle Road > Rocky Road) absent at global scale.

Figure 10: Total MSA loss, all taxa, percentage change relative to 2020, EU27 and global, 2050. The EU27 ordering is non-monotonic, with the Middle Road above the Rocky Road. This does not occur at global scale. Source: MAGNET-MSA model, ECO-READY project.

Green house gases drive the high biodiversity loss in the EU in SSP2. When MSA loss is split by pressure, the impact on land use is exactly as expected. For every region, including the EU27, MSA loss from cropland, pastureland and forestry is higher in the Rocky Road than in the Middle Road. The reversal comes entirely from greenhouse gases (GHGs). Total GHG emissions in our implementation are higher in SSP2 than in SSP3, for the EU, for many member states and also globally. Multiplied by the MSA impact factors, this is enough to push total EU MSA loss in the Middle Road above the Rocky Road. Globally it is not enough, because land-use loss in SSP3 is large enough to keep the Rocky Road at the top of biodiversity loss.

The reason for higher emissions under SSP2 is that the main sources of GHG emissions are electricity and heat production that power the whole economy, and GDP is higher in SSP2 than in SSP3. Our SSP implementation contains scenario-specific policies for agriculture, but non-agricultural industry is treated the same in SSP2 and in SSP3 (as opposed to a greenhouse gas emission tax in SSP1). Therefore, the larger economy in SSP2 leads to higher emissions.

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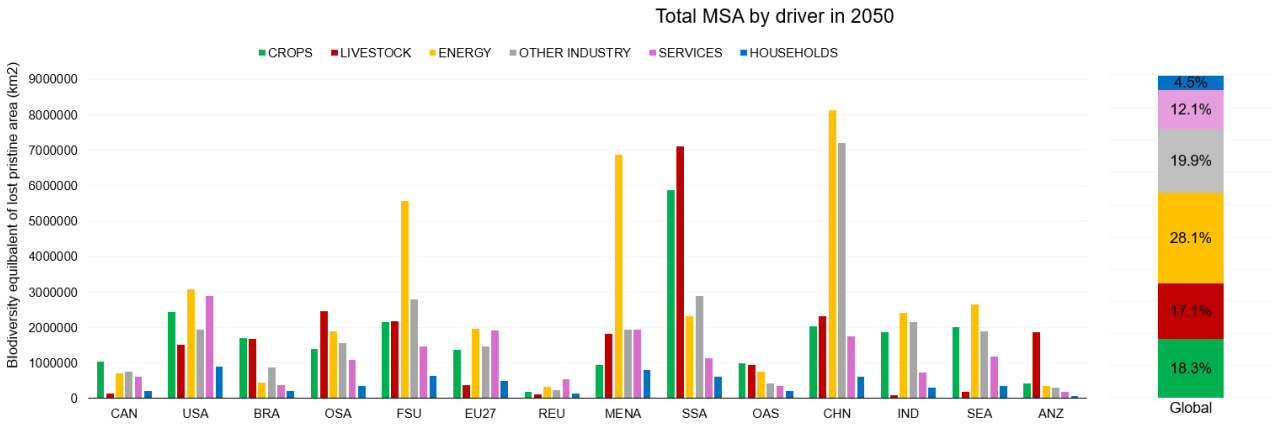

Figure 11: Total MSA loss by economic driver in 2050, Middle Road, by region and globally (right-hand bar). Energy is the largest single driver globally at 28.1 per cent, ahead of crops and livestock, and is also among the largest drivers in the EU27. Source: MAGNET-MSA model, ECO-READY project.

While this is a modelling finding as much as a policy finding, it points to the fact that even though the core focus of the eco-ready project is on agriculture, non-agricultural decarbonisation is also an important component in reducing biodiversity loss and further stresses the importance of an integrated policy approach.

What the indicator measures, and what it does not

The module is a global biodiversity footprint of economic activity located in a given region, not a measure of biodiversity inside that region. Land use and air pollution act where they occur, so their MSA loss can be read as territorial. GHGs act globally, and the impact factor applied to them is the same for every region, which means it captures the global impact of those emissions.

To obtain the loss of European biodiversity caused by greenhouse gases, one would have to take global emissions from all regions and multiply them by the share of global biodiversity located in Europe. That number is not available to us at present. Including GHG emissions in a global pressure decomposition, or in the total contribution of European economic activity to global MSA loss, is correct. Presenting the EU total as European biodiversity loss requires an explicit caveat, and the two components are better reported side by side than summed.

Once this distinction is applied, the EU picture has two layers. Habitat pressure inside the EU, from land use and air pollution, is worst in the Rocky Road, as the narratives suggest. The contribution of the EU economy to global biodiversity loss is worst in the Middle Road, because of the energy emissions of a larger economy that is not decarbonising.

Policy messages

Business-as-usual is not a neutral baseline for biodiversity. On the footprint measure it is the worst of the three pathways, above a scenario of fragmentation and weak environmental regulation. Continuing current trends is an active biodiversity risk and not a safe default.

If the EU result is driven by energy-related emissions, then energy and industrial decarbonisation policy is also biodiversity policy, and the CAP alone cannot deliver the

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difference between the pathways. Coherence between the climate policy and the biodiversity objectives is very important.

Within the EU, cropland, pasture and forestry pressures are highest in the Rocky Road, pastureland shows the largest single shift between Green Transition and Rocky Road (+16.8%, against +12.7% for CO2 and +10.8% for cropland), and birds and mammals respond much more strongly than plants in every scenario. Since the Birds and Habitats Directives are anchored in vertebrate species, the taxonomic difference matters for the way EU policy is monitored.

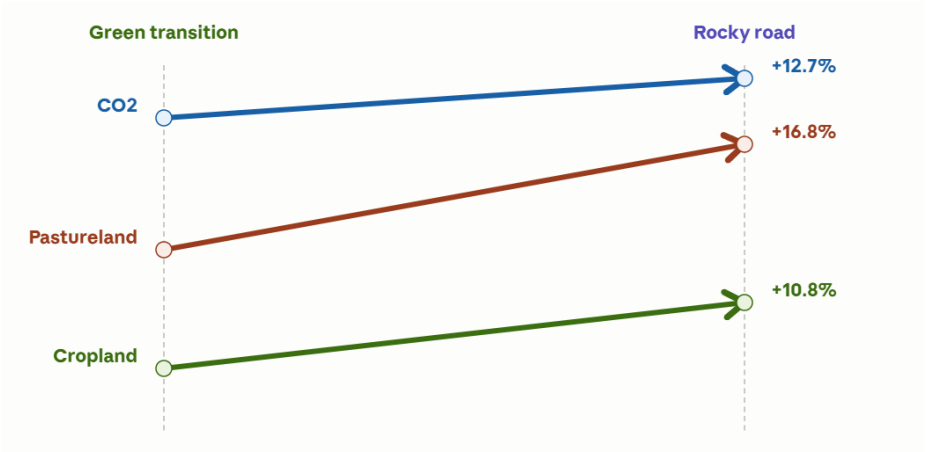

Figure 12: Shift in EU aggregate land-use and emission pressures from the Green Transition to the Rocky Road, 2050. Source: MAGNET-MSA model, ECO-READY project.

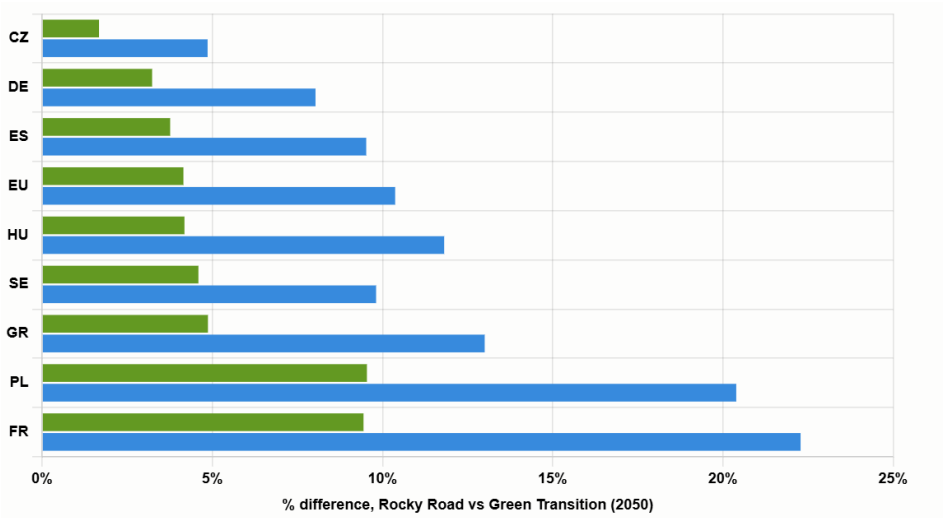

Figure 13: Percentage difference in MSA loss between the Rocky Road and the Green Transition by EU member state, 2050. Green bars are vascular plants, blue bars are birds and mammals. Denmark and Italy are excluded pending further checks. Source: MAGNET-MSA model, ECO-READY project.

Member states differ in which pressure dominates. Sweden is forestry-driven, Denmark and Hungary are cropland-driven, Greece and Spain carry the largest pastureland shares, Germany the largest built-up share. A uniform instrument will not give the same biodiversity result across these systems, which is an argument for differentiation in the CAP National Strategic Plans.

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3. Final findings from the Living Labs engagement

This section presents the policy outcomes derived from Subtask 5.1.2, "Results of Living Lab Network activities", based on the analysis of Living Lab activities. It outlines the methodological approach used to collect policy recommendations from the 10 Living Labs.

The ECO-READY Living Labs offer a distinctive bottom-up contribution to policy development by anchoring recommendations in practical experiences and region-specific realities. The policy engagement activities with Living Labs were three-fold. First, a central component of the methodology was the co-development of future scenarios used for modelling through MAGNET and environmental and social assessments based on Life Cycle Assessment methodologies, as presented above. Second, the Living Labs took part in several policy workshops throughout the project, especially over the summer of 2025 to identify key relevant policy frameworks and the co-creation workshop held in Brussels in January 2026 (see section 1.1). This enabled the co-validation of the policy conclusions and the collection of insights on the policy recommendations. Third, the collection of final policy recommendations from the Living Labs has been integrated into their final reporting undertaken in May 2026 under WP3 to streamline the process. To this end, the policy recommendations reporting table used followed similar template as for previous exercises to facilitate data filling and ensure the comparability of results (see Table 2). This section presents the results from the recommendations harvested through the ten Living Labs' final reports.

Scenario *Region, Product Objectives, Challenges/Risks*	**Mitigation and adaptation intervention** *Activity, Results, Lessons learnt*	**Drivers and barriers** *Monitoring of results, Enablers, Stakeholders*	**Policy Objective** *Potential link with current policies, Target audience, Mitigation measures, Scalability* *(optional)* **Policy Recommendation** *Policy gaps, Policy challenges, Implementation measures, References and associated links*
1.			
2.			
3.			
4.			
5.			

Table 2: Table for the collection of Living Labs policy recommendation in WP3.

In formulating these recommendations, the Living Labs drew upon a range of complementary sources of evidence and experiences, including the prevailing conditions of agricultural production within their respective territories, the outcomes of regional scenario-development processes, the results of field experimentations, and co-creation workshops with their local and regional policymakers. They also incorporated lessons learned from the policy workshops and policy updates briefings undertaken within WP5. Furthermore, the recommendations were informed by the strong multi-stakeholder approaches of certain Living Labs as well as by specific initiatives undertaken by others; for instance, the Czech organic Living Lab PROBIO conducted a Delphi study to identify policy gaps and gather recommendations within its territorial context.

Each Living Lab report was systematically coded to classify the recommendations into a common set of thematic categories. For the analysis presented below, only the sections dedicated to policy recommendations in the final reports of the ten Living Labs were considered. The codes were developed through an inductive coding process and then quantified to assess the relative importance of different recommendations across the Living

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Labs network. The resulting coding framework is also used to undertake an inductive conceptual content analysis of the policy recommendations.

The content analysis addresses two main questions: Which policy recommendations are most frequently formulated by the Living Labs? And which recommendations emerge consistently across the Living Labs despite their diverse geographical, bioclimatic and agricultural contexts? The analysis therefore considers both the recurrence of recommendations within the corpus and their distribution across individual Living Labs.

The coding of the Living Lab reports resulted in the identification of 16 codes (see Table 3), representing the principal thematic areas addressed by the formulated policy recommendations.

Code clusters	Codes
Policy design and governance	Addressing the lack of crisis preparedness
	Using data to inform decision making
	Adopting a systemic approach VS fragmentation
Practices to encourage and how	Promoting water resilient agriculture
	Promoting organic farming
	Improving pest resilience strategies
	Promoting soil health oriented practices
	Promoting the use of climate resilient crops and races
	Promoting vertical farming
	Promoting agroecology as a Nature-based Solutions
	Promoting crop diversification (mixed and intercropping)
	Establishing payments for ecosystem services
	Improving access to knowledge and advisory services
Food consumption and awareness throughout the value chain	Strengthening education and awareness to food
	Streamlining action throughout the value-chain
	Leveraging public procurements

Table 3: Codes and code clusters identified in the policy recommendations sections of the ten Living Lab reports.

Several overarching themes can already be discerned from these codes, anticipating the thematic analysis presented in section 2.2. First, the design and governance of public policies emerge as a major thematic area of the Living Labs' policy recommendations. This encompasses codes relating to inadequate preparedness for crises, the need for a systemic approach to agri-food systems as opposed to fragmented policy approaches, and the use of data to inform public decision-making.

Second, a broad cluster concerns the practices that, according to the Living Labs, should be promoted and the policy mechanisms through which their uptake could be supported. These include a range of practices represented across the dataset with varying levels of frequency and prevalence, including organic farming, agroecology, crop diversification among others. The dataset also identifies several enabling conditions that could facilitate the adoption of such practices, notably improved access to knowledge and advisory services, as well as remuneration for ecosystem services.

Finally, a third group of codes relates to food consumption and food-related education. This encompasses consumer education and awareness-raising, public procurement, and the promotion of sustainability across the food value chain.

However, the identification of codes and overarching themes does not, in itself, capture the relative representation of policy recommendations within the qualitative dataset. Two indicators were therefore calculated for each of the 16 codes. First, code frequency,

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defined as the total number of occurrences of a given code across the dataset, in other words how many times a code appears in the dataset. Second, code prevalence, defined as the number of data sources in which a given code occurs, expressed relative to the total number of Living Lab reports (10). Prevalence therefore captures the breadth of distribution of a recommendation across the corpus, complementing frequency, which captures its overall recurrence.

To combine these two dimensions, frequency was multiplied by prevalence to generate a score for each code. This score provides a basis for ranking the policy recommendation categories according to both their recurrence and distribution within the qualitative dataset. The resulting ranking enables the identification of recommendations that are not only frequently mentioned, but also relatively widespread across the different Living Labs contexts. The ranking results are presented in Table 4.

Code	Frequency	Prevalence	Score
Promoting water resilient agriculture	16	0.7	11.2
Adopting a systemic approach VS fragmentation	13	0.8	10.4
Improving access to knowledge and advisory services	10	0.4	4
Promoting organic farming	12	0.3	3.6
Improving pest resilience strategies	6	0.4	2.4
Strengthening education and awareness to food	8	0.3	2.4
Using data to inform decision making	5	0.4	2
Streamlining action throughout the value-chain	5	0.4	2
Addressing the lack of crisis preparedness	5	0.3	1.5
Promoting soil health oriented practices	4	0.3	1.2
Establishing payments for ecosystem services	6	0.2	1.2
Promoting the use of climate resilient crops and races	3	0.3	0.9
Promoting vertical farming	4	0.2	0.8
Leveraging public procurements	4	0.2	0.8
Promoting agroecology as a Nature based Solutions	2	0.2	0.4
Promoting crop diversification (mixed and intercropping)	2	0.2	0.4

Table 4: Living Labs reports' code frequency, prevalence and scoring results.

The results indicate that two policy recommendations stand out clearly from the remainder of the dataset: promoting water-resilient agriculture and adopting a systemic approach to agri-food policies. These recommendations rank highest because they combine a relatively high frequency of occurrence, indicating that the topics are addressed repeatedly, with a high prevalence across the Living Lab reports. At the other end of the ranking, five recommendations obtain scores below 1. Between these two groups, a relatively large number of recommendations cluster within a comparatively narrow range of scores. Overall, the most notable finding is therefore the clear distinction between the two highest-ranking recommendations and the remaining recommendations, which display considerably more limited differentiation in their respective scores.

Several limitations of this analysis should nevertheless be acknowledged. First, the analysis does not account for the density of each code within its source data; in other words, it does not consider the relative volume of text devoted to a given policy recommendation within each report. This factor was deliberately excluded because the sections dedicated to policy recommendations vary substantially in length across the Living Lab reports, making comparisons based on textual volume potentially unreliable. Second, the analysis provides a quantitative and therefore necessarily partial representation of the policy

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recommendations most commonly shared across the ECO-READY Living Labs. The scoring approach captures the recurrence and distribution of recommendations, but does not assess their substantive significance, contextual relevance policy-wise, or the rationale underpinning their formulation.

The coding framework developed for this analysis will facilitate the integration of qualitative evidence from the Living Labs into the broader thematic analysis of ECO-READY's policy findings (see Section 2.2). This subsequent analysis will provide a more comprehensive interpretation of the policy recommendations by considering their substantive significance and contextual dimensions, rather than their quantitative representation alone. It will also enable the recommendations formulated by Living Labs to be examined alongside policy gaps and recommendations identified through other project outputs, including deliverables, scientific publications and relevant reports. The thematic analysis will therefore provide a basis for bringing together practice-based and research-based recommendations, highlighting areas of convergence as well as potentially complementary or divergent perspectives in the formulation of ECO-READY's policy conclusions.

4. Policy insights from the Delphi study

Purpose and scope

The ECO-READY Delphi study connects policy priorities with assessments of tools and mechanisms relevant to climate change, biodiversity and food security. To this end, ECO-READY (and in particular D6.3) uses this evidence to develop a policy guide aligned with European Commission tools and mechanisms. Specifically, findings from D6.3 can contribute evidence on farmer support, monitoring, coordinated governance and communication, together with questions about the conditions needed for implementation.

Questionnaire development

The first-round questionnaire was developed from 11 project deliverables across six work packages, along with a structured protocol requesting one contribution per deliverable. The protocol elicited policy findings, gaps, barriers and proposed refinements. Standardised extraction and merging prompts supported classification under the three policy pillars (i.e., climate change, biodiversity, and food security) and consolidation of overlapping propositions. The documented register progressed from 454 extracted records to 158 merged statements and 103 candidate items. Removing 19 items and refining wording and order produced the final questionnaire, with source references retained for traceability.

Round 1 contained 84 statements in 18 thematic constructs: five for climate change, six for biodiversity and seven for food security. Respondents rated agreement on a five-point scale from strongly disagree to strongly agree, with neither agree nor disagree as the midpoint. The instrument included 66 positively worded and 18 negatively worded statements, with one negative item in each construct.

Round 2 translated selected concerns into assessments of tools and mechanisms. It covered 12 constructs, four per pillar, with six or seven instruments associated with each construct. The resulting 78 tool-construct pairs generated 156 rating variables: conceptual fit and integration feasibility for every pair. Fit assessed whether a tool already addressed the

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construct's core issues; feasibility concerned integrating the construct's outputs into that tool within three to five years.

Datasets and analytical approach

Round 1 comprised 53 responses across academia, civil society, policy, and practice. Round 2 used 48 independently collected expert responses. Neither dataset provides a basis for national representativeness. Checks addressed completeness, permitted score ranges and consistency between Round 2 labels and codes, while identifiers and source references preserved analytical traceability.

Round 1 construct summaries gave equal weight to the four stakeholder-group means, irrespective of group size. Round 2 gave equal weight to each analytical record, then averaged tool assessments within constructs and constructs within pillars. Figure 14 summarises the development of the two Delphi rounds.

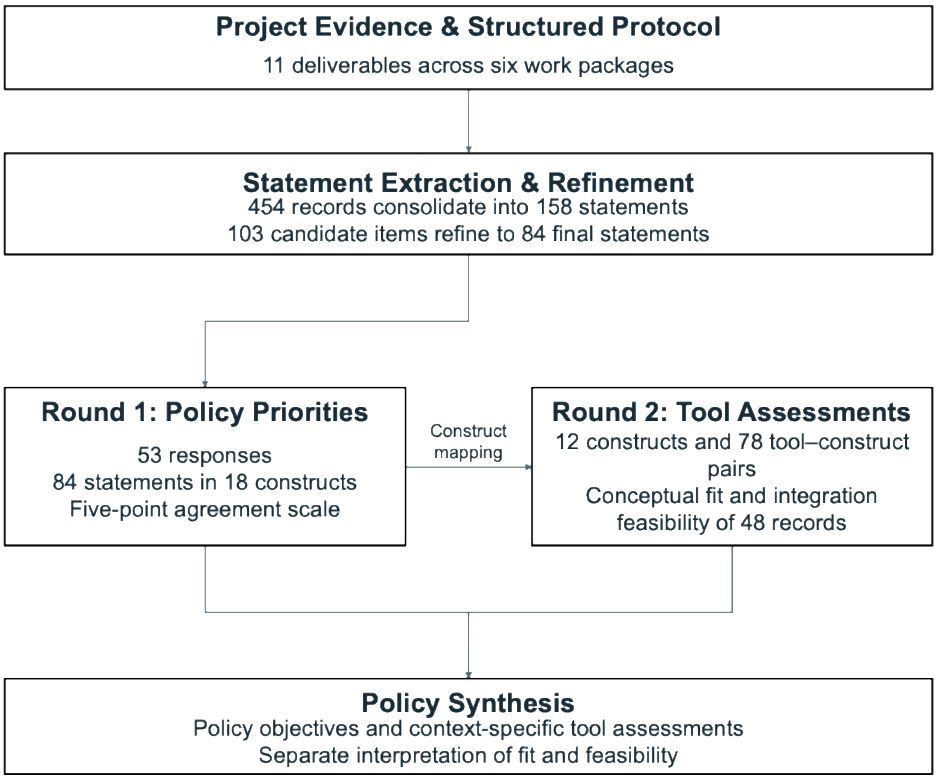

Figure 14: Development process of the Delphi study.

The Round 1 questionnaire establishes the response anchors and the negative item wording. D6.3 retains the recorded aggregates. Means were considered alongside medians, dispersion and the proportion of ratings in the two highest categories. The rounds assess different objects and are linked by construct meaning. They cannot establish changes in opinions or increasing consensus. The six Round 1 constructs without a Round 2 tool assessment remain relevant to the synthesis. Similarly, differences between fit and feasibility scores do not quantify an implementation gap because the dimensions have different meanings and response anchors.

Policy findings and food security implications

The synthesis supports connecting climate-resilient production with advice, capabilities, and access to support. The policy implication is to specify who will help farmers translate

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adaptation priorities into decisions and what assistance this requires. Such arrangements could support continuity of production under environmental pressures; their effects on yields, incomes, or food availability were not measured by the Delphi study.

Furthermore, risk assessment, biodiversity monitoring, and food-security information recur as relevant policy functions. The tool assessments indicate that suitability depends on the objective being addressed. Therefore, policymakers can emphasise the connection between evidence and its use: which decision the information supports, at what scale, by which actor and through what response. This provides a basis for preparedness recommendations while leaving data access, usability and institutional capacity to be checked in implementation settings.

The evidence also supports attention to coordination, risk information and contingency planning. A policy framework alone does not establish operational readiness, nor does it ensure effective implementation in practice. Recommendations should identify responsibilities for interpreting risks, coordinating institutions and activating responses, including how environmental concerns enter food-security planning. This would help translate broad policy priorities into arrangements for managing potential supply disruptions, while recognising that the Delphi ratings did not test the effectiveness of those arrangements.

In addition, statement-level evidence supports retaining food-waste communication and behavioural change in the policy synthesis. Lower unadjusted composite scores should not automatically reduce their priority, given the effects of negative item wording. The relevance to food security lies in supporting informed choices and reducing avoidable waste, with actual behavioural and distributional outcomes requiring separate assessment.

Broad support for sustainable farming does not imply endorsement of every production technology. The appraisal of a particular controlled-environment production statement cannot be generalised to sustainable agriculture. This distinction should be retained when considering production options and examining their suitability against local objectives, costs, capacities and environmental conditions before recommending wider adoption.

These findings favour guidance organised by policy objective and intended use. They do not support a universal ranking of instruments, demonstrate causal effectiveness or establish that all stakeholder groups share the same priorities. The broad implications above are policy interpretations of descriptive evidence. Table 5 connects the five policy themes with proposed actions and their potential relevance to food security. The implications summarise the interpretation above and require assessment in the intended implementation setting.

Policy theme	Proposed action	Potential food-security relevance
Farmer support and adaptation	Link advice and support to farm decisions, specifying responsible actors and required assistance.	Support continuity of production under environmental pressures.

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Policy theme	Proposed action	Potential food-security relevance
Monitoring linked to decisions	Specify the decision, scale and actor responsible for using risk information and responding.	Support timely risk detection and preparedness.
Governance and preparedness	Define coordination responsibilities and contingency response arrangements.	Strengthen planning for potential food-supply disruptions.
Communication and engagement	Match food-waste and behaviour-change activities to audiences, advisory channels and participation.	Support informed choices and reduce avoidable food waste.
Production choices in context	Assess production options against local objectives, costs, capacities and environmental conditions.	Help identify locally suitable production options.

Table 5: Policy implications of the Delphi synthesis.

Limits and appropriate use

The evidence concerns perceptions and policy relevance, rather than observed implementation outcomes. The exploratory Round 1 comparisons did not establish stakeholder differences after adjustment for multiple testing; this does not prove identical views. Round 2 supports description of the supplied analytical dataset, with no stakeholder-subgroup inference.

These findings are compared with the policy related findings from LCA, MAGNET and Living Labs as well as with previous policy conclusions formulated in D5.1 to identify recurring concerns, complementary evidence and differences. Such comparison should retain each source's provenance and analytical limits. Convergence should be reported where the combined analysis demonstrates it, as provided by the Thematic Analysis in section 2.2.

For each proposed recommendation, we can identify the policy objective, intended users, responsible actors, relevant mechanism and supporting evidence. Conceptual fit and perceived feasibility should remain separate. Information on access, expertise, resources, timing and coordination can turn a broad priority into a proposal for implementation.

A focused Delphi follow-up with Living Labs could examine these conditions and explain differing tool appraisals. This proposed activity is distinct from the Living Lab reporting. Any resulting systems mapping should document dependencies identified by participants; the numerical Delphi ratings cannot be converted into causal links or feedback strengths.

2.2 Themes and policy patterns emerging from the ECO-READY policy findings

Building on the latest policy-related findings summarised in section 2.1, ECO-READY formulates a set of final policy conclusions on the resilience and sustainability of European food systems. These final policy conclusions are elaborated through a Reflexive Thematic Analysis methodology (Braun & Clarke, 2006; 2021), following six steps:

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- Data familiarisation: in-depth reading of all qualitative materials to clarify their content and context.
- Data coding: generating initial codes to capture the main features of the data.
- Collating codes into themes: grouping related codes to form preliminary themes that reflect recurring and meaningful patterns in the dataset.
- Reviewing themes: refining and rethinking themes against both the coded extracts and the full dataset to ensure coherence and distinction.
- Defining and naming themes: clarifying the scope and analytical focus of each theme.
- Producing the thematic narrative: developing each theme into a clear and interpretative written account that supports the formulation of policy conclusions.

This methodology enables the systematic identification of recuring and patterned conclusions across a heterogeneous qualitative dataset. Qualitative evidence used includes relevant deliverables, scientific articles and reports which include a policy dimension; a complete list of the dataset selected for the Thematic Analysis is provided in the Annex 2. The Thematic Analysis methodology allows for the identification of policy conclusions within a wide spectrum of policy findings. By building themes from recurring patterns, it allows to triangulate and contextualise the results from each data source in relation to the others. Thus, no single deliverable or report is used in isolation but instead is considered alongside results from different disciplines and methodologies to verify whether they corroborate one another.

In addition, the Thematic Analysis is conducted in an iterative process. A first Thematic Analysis conducted in deliverable 5.1 provided preliminary policy conclusions. The second Thematic Analysis conducted in deliverable 5.5 allows for the analysis of final datasets derived from the later project tasks and hence provides a complete analytical framework. This iterative process also allows for the comparison of results in between the two Thematic Analysis. Results from the second analysis confirm the patterns that emerged from the first one; rather than bringing additional sub-topics, they provide refinements and nuances to already identified policy findings, gaps and preliminary recommendations. Therefore, the results remain organised under the same four overarching themes.

1. **Interdependencies in the agrifood-climate-biodiversity demand systemic food policies**

Across the dataset, food security, climate change, and biodiversity are shown to be tightly interdependent. Climate change threatens all pillars of food security, while biodiversity enhancement consistently appears as a resilience factor. At the same time, the ambition of both climate and land use policies influences the functioning of ecosystems. These interconnected dynamics justify treating food systems as part of a wider environmental and climatic nexus and call for integrated policy approaches.

Climate change intensifies risks across all pillars of food security

The dataset shows a clear, recurrent pattern: climate change jeopardises all four pillars of food security, particularly through its impact on agricultural productivity. The Systematic Review of Policies emphasises that “climate change and biodiversity loss are intrinsically linked and together pose a significant threat to global food security” (Di Gregorio et al.,

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2024a, p. 11), while the Literature Review proves that climate change threatens all four pillars of food security (Vu & Bourlakis, 2024, p. 34).

Availability emerges as the most frequently mentioned pillar at risk. As Vu & Bourlakis (2024, p. 56) explain, "critical changes in the climate (e.g., temperature, precipitation, ocean pH and salinity levels, extreme events frequency) […] can inhibit the development and wellbeing of crops and animals, leading to lower yields". Long-term processes (e.g., ocean acidification) and short-term climatic shocks (e.g., droughts and heatwaves) are both shown to reduce productivity across diverse food systems. This extends beyond crops: the Systematic Review documents marine impacts, noting "a decrease in the dissolved oxygen content in seawater, lakes and river oxygen depletion cause profound implications for marine and freshwater life and fisheries" (Di Gregorio et al., 2024a, p. 40), while the Literature Review highlights water warming and salinity changes affecting aquatic systems.

Livestock is similarly affected; the MAGNET modelling indicates that "livestock production plays a crucial role in meeting global food demand, particularly in regions with limited crop production, but it remains highly vulnerable to climate change impacts, such as reduced feed availability and declining productivity" (Moghayer et al., 2024, p. 44), echoed by the Literature Review stating that "warmer weather exposes livestock to heatstroke risks, affecting the quantity and quality of their products" Vu & Bourlakis (2024, p. 31). This illustrates that climate change has been documented as a driver of declining agricultural productivity across a wide range of staple foods in Europe, leading to availability risks.

These availability impacts in turn affect accessibility: as food production activities (farming, fisheries, husbandry, etc) are vital to the livelihood of a large population of the world, a reduction in the productivity of these activities will indirectly impede the ability of people to procure food for their own consumption" (Vu & Bourlakis, 2024, p. 65), a relationship also observed in the consumer survey: "high prices and reduced availability of sustainable agri-food products are observed, which limits their consumption" (Mousiadou et al., 2024, p. 76). Climate change thus creates pressures on food security, with fluctuating yields and prices, that particularly affect vulnerable groups.

Climate change also affects utilisation, as illustrated by evidence from the Literature Review that "high CO_2 concentration leads to reductions in protein, mineral, and vitamin concentrations in a wide range of crops" and that "degrading marine environments can directly affect the nutritional values of seafood" (Vu & Bourlakis, 2024, p. 35 and p. 36)

The last pillar of food security, stability, is also considered to be impacted by climate change. This is a corollary of the other pillars being affected, particularly due to declining availability, especially in the face of climate shocks or market price shocks. Overall, the findings demonstrate that climate change affects every dimension of food security, making it central to any systemic understanding of food systems. Thus, climate considerations must form part of each policy area, and particularly agricultural policy design.

Biodiversity enhances food system resilience to climate shocks

This sub-theme explores how, in opposition to climate threats, biodiversity gains significantly contribute to food system resilience. In the Literature Review, Vu & Bourlakis (2024, p. 56) expose that "a projection of continuous climate change in the future and the mitigation effects provided by biodiversity drivers contribute to the stability across the

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other three facets of food security", stressing the long-term stabilising effects of biodiversity on food systems. Conclusions from the policy roundtable also echo this, emphasising that "mitigation strategies should reconnect climate, biodiversity, and food security" (ECO-READY, 2025a, p.2). The positive impacts of biodiversity span all four food security pillars, particularly "impacts of utilisation and stability are more pronounced with biodiversity drivers" (Vu & Bourlakis, 2024, p. 45).

Biodiversity enhances food availability through complementary species interactions and Nature-based Solutions, with the Literature Review noting that "many agricultural practices, which utilise the complementary and harmonising effects between diverse species, can lead directly to increased outputs" and "the use of nature-based solutions in supporting crop growth and yield, through utilising beneficial soil biota faunas and micro-organisms, natural pollinators, natural pests control, and so on" (Vu & Bourlakis, 2024, p. 45 and p. 55). The productivity pay-offs not only improve availability, with the greatest long-term benefit being improved stability, but also offset adverse climate-induced variability.

Biodiversity strengthens utilisation by supporting nutrient-rich food production. Evidence shows that seed diversity or complex grazing systems producing meat richer in fatty acids can enhance nutritional quality. As climate change deteriorates the nutritional quality of food, increased biodiversity can once again increase food security resilience.

However, the dataset also underlines that biodiversity benefits are context specific. According to Vu & Bourlakis (2024, p. 55) in the Literature Review "the approaches must be selected taking into account appropriate knowledge, as the effects of biodiversity cannot be generalised without care. For instance, not all mixtures of crops can generate positive outcomes on yields, and an unsuitable mix can reduce overall outputs." This resonates with findings from the Systematic Review calling for "landscape-specific approaches to maximise biodiversity gains from agricultural practices, mitigate climate change effects and assuring food security" (Di Gregorio et al., 2024a, p. 66)

Overall, the data clearly positions biodiversity restoration as a critical resilience factor within the agrifood-climate-biodiversity nexus. As Polakova et al. (2025, p. 2) state in a recent ECO-READY scientific article "agrobiodiversity is an indicator that plays a crucial role in enhancing climate resilience in agriculture and the adaptability of cropping and farming systems to climate change".

The policy-related findings harvested for the second Thematic Analysis echo this resilience angle, underlining that "policies should better reflect the role of biodiversity in our food systems, particularly with regard to resilience in the face of climate change" (ECO-READY, 2026a, p.4) and that "recommendations should identify responsibilities for interpreting risks, coordinating institutions and activating responses, including how environmental concerns enter food-security planning" (ECO-READY, 2026d, p.2).

Biodiversity is thus a shield against the adverse effects of climate change on production and a risk mitigation factor to consider in food systems policies. This call for the "improved integration of biodiversity conservation into other sectoral policies and funding mechanisms" (Di Gregorio et al., 2024b, p. 15), especially between nature restoration efforts and the CAP. Beyond the one-way benefits between agriculture and biodiversity and one-way implications that connect climate change and agriculture, the ECO-READY policy

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findings point to major interrelations between climate change and biodiversity. Findings from the MAGNET biodiversity module evidence that "the co-benefit between biodiversity conservation and climate mitigation is substantial. Under the Green Transition, agricultural GHG emissions decline by 40–50 per cent relative to the 2017 baseline, and the largest reductions in land demand and fertiliser use accompany the smallest increase in MSA loss" (ECO-READY, 2026b, p.19).

At the same time, analysis of the completed dataset also stresses the pressures biodiversity is faced with. Results from the MAGNET model biodiversity module indicate that "all regions show declining (MSA) intactness, with the EU27 declining from approximately 0.68 to 0.62 by 2050" (ECO-READY, 2026b, p.7). Simultaneously, modelling points not only to agricultural pressures but also climate ones. Modelling results from the Middle Road scenario, which represents the continuation of current trends, evidence that while pastureland is the biggest land use type pressure for biodiversity, before cropland and forestland, "atmospheric pressures — principally CO_2 (30.3 per cent) and NO_x (26.6 per cent) — together account for over 56 per cent of global MSA loss, substantially exceeding the contributions of land-use categories" (ECO-READY, 2026b, p.7). Hence, biodiversity brings benefits for climate resilience and food security, but these ecosystem services are also threatened by land use and climate pressures.

Taken together, these findings underline the strong interdependencies between agriculture, climate, and biodiversity, both in terms of repercussions and mitigation opportunities. These thereby call for a strong integration of climate and biodiversity into agriculture policies to support a systemic approach in the development of food system policies.

2. **Fragmented food systems policy design fails to reflect agrifood-climate-biodiversity interconnections**

Building on the previous demonstration of the linkages in the agriculture-biodiversity-climate nexus, which call for a systems approach to food, this second theme focuses on effective food systems policy design. Across the data, policy findings consistently describe a misalignment between the interconnected nature of agrifood, climate, and biodiversity challenges and the fragmented, siloed way policies are designed and implemented. This theme captures how gaps in policy integration, weaknesses in the policy narrative, limited stakeholder inclusion, and insufficient trade-off analysis jointly hinder the development of coherent, system-oriented food policies.

Lack of policy integration undermines coherent food system governance

This sub-theme reflects a strong pattern across the dataset: while food systems depend on intertwined agricultural, environmental, and climate processes, the policies regulating these domains remain highly fragmented. Policy integration is critical for food systems transformation.

The diversity of legislative frameworks referenced in the dataset—including the CAP, the Farm to Fork Strategy, the EU Climate Law, the Nature Restoration Regulation, the EU Pollinator Initiative, the Seed Regulation, the EU rural development policy, and various national and regional instruments—illustrates the complexity of the policy landscape that governs food systems. However, results repeatedly highlight fragmentation as a structural

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barrier leading to inconsistencies across goals and instruments. As the report from the Cranfield policy roundtable emphasises, "silos and fragmentation persist, making it difficult to create unified policies across food security, climate resilience, and biodiversity" (ECO-READY, 2025a, p.1).

The examples provided in the data illustrate how incoherence manifests at different governance levels. At EU level, the CAP is reported to be insufficiently aligned with food, climate, biodiversity, the EU Pollinator Initiative, and water policies. Similarly, biodiversity policy is insufficiently integrated with climate policies, public procurement rules, and agricultural policies—here with a specific recommendation to align the Nature Restoration Regulation and the CAP. This is partly due to current insufficient approaches to modelling biodiversity indicators in state-of-the-art modelling tools, as evidenced by the latest scientific paper from ECO-READY (Polakova et al. 2025, p. 14). At regional level, the CONCAT Living Lab explains that “this fragmentation results in disconnected instruments and overlapping incentive schemes. For example, water governance and drought contingency planning are managed separately from agri-environmental measures and CAP eco-schemes” (CONCAT, 2025, p. 28).

EU policy fragmentation hinders systemic responses. In a context where EU strategies increasingly rely on national implementation plans, coordination challenges across governance levels further weaken policy coherence, captured by the AIDEMEC Living Lab as a challenge of coordination between levels of governance (EU/national/regional) (AIDEMEC, 2025, p. 19). Taken together, the data demonstrates that the lack of integration across thematic policy areas and governance scales is a central policy obstacle to transitioning toward sustainable food systems.

Incomplete policy narratives limit systemic food policy design

This sub-theme explores how the framing of food systems in public and policy discourse influences the scope of policy design. The dataset reveals that the policy narrative around food systems is inconsistent and often incomplete, affecting whether and how environmental, climate, and consumption issues are incorporated into policymaking.

Policy-related findings from ECO-READY show that the prominence of sustainability in EU food debates fluctuates over time. Di Gregorio et al. (2024a, p. 27) point out in the Systematic Review of Policies that "the evolution of European policy documents on climate change, food security, and biodiversity not only reflects thematic shifts but also underscores a growing emphasis on sustainability transition and resilience in recent years". This indicates that policy narratives shape the issues considered relevant and the types of actions seen as legitimate. However, the policy roundtable in Cranfield later suggested that current EU narratives may be moving away from systemic sustainability, with claims such as "the Farm to Fork strategy was a central element of the Green Deal but has lost prominence, with a growing emphasis on competitiveness over systemic sustainability” and "strategic autonomy and economic viability are now dominant concerns in EU policy, with a shift toward increasing innovation tools for farmers" (ECO-READY, 2025a, p.1). These shifts underline that policy narratives are neither neutral nor stable: they depend on the political milieu to emphasise certain priorities, reinforcing or obstructing a systemic approach to food systems.

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In addition, the data highlights blind spots within existing narratives. Consumption patterns and consumer behaviour are often excluded, as the policy roundtable from the Cranfield conference report puts it: "food is a political issue, and consumer diets and consumption patterns need to be brought back into the policy discussion" (ECO-READY, 2025a, p.1). Certain more specific topics, such as the impact of climate change on marine food systems as noted in the Systematic Review of Policies (see Di Gregorio et al. (2024a, p. 68)), are also noted to be absent from policy discourse. Analytically, this suggests that the narrative frames the topics to be debated and the stakeholders to be included. It also advances that an incomplete or fluctuating narrative leads to incomplete policies, since what is not part of the narrative is rarely part of the policy response.

Inclusive and participatory governance is essential to bridge policy silos

This sub-theme focuses on the role of governance in addressing fragmentation. As previously explained, the way in which the narrative frames the problem influences the definition of the relevant stakeholders at play. Across research and Living Lab policy findings, there is a strong call for inclusive, multi-stakeholder policy processes as a prerequisite for coherent food system policies.

The dataset demonstrates consensus that diverse actors—farmers, researchers, civil society organisations, private sector actors, Living Labs—bring complementary expertise and perspectives essential for designing realistic, equitable, and evidence-based policies. For example, the Systematic Review of Policies shows that “if data and drivers used to formulate legislative policies are derived only from a top-down analysis, there is a concrete risk to not allow farmers to reach the envisaged targets” Di Gregorio et al. (2024a, p. 65), highlighting that farmers’ involvement is key to designing workable measures. Similarly, civil society is seen as contributing to social equity goals. The stakeholder analysis states that “the involvement of Civil Society Organisations, according to the responses, is considered to be able to contribute to reducing inequalities and creating a ‘nutritional democracy’ regime” (Mousiadou et al., 2024, p. 77).

The data also emphasises that excluding stakeholders leads to narrow or unrealistic policies, summarised by Di Gregorio et al. (2024a, p. 60) in the Systematic Review of Policies as “the plurality of stakeholders involved in the policies determined a plurality of drivers and data that are taken as reference; therefore, according to the feedback of the policy actors it is extremely important that each stakeholder won’t be excluded or less considered than others in this debate”. Referring to the indicator design phase of policymaking, Polakova et al. (2025, p. 13) also illustrate that stakeholder engagement “fosters a sense of ownership among various actors with relevance for policymaking. It ensures that the indicators used for model input data are pertinent and beneficial from multiple perspectives, enhancing their overall relevance and applicability”.

In contrast, multi-actor, co-creative processes are perceived as mechanisms to weave together disparate knowledge bases and overcome fragmented policymaking. According to Living Labs’ demonstration of results/outcomes reports, it includes “integrating co-creation and participatory design processes […], ensuring that diverse voices and local knowledge systematically inform decision-making” (THALLA, 2025, p. 39), through for example strengthened “links between field actors and decision-makers through participatory innovation mechanisms” (LOFS, 2025, p. 26), “exchanges between production

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stakeholders, local authorities, and research organisations" (LOFS, 2025, p. 25) or "roundtables that connect research, farmers, and policymakers" (PROBIO, 2025, p. 21).

This pictures that inclusiveness is not only a governance principle but a practical tool to counter fragmentation and improve policy integration. Each stakeholder contributes a distinct perspective that enriches the understanding of food system challenges and helps overcome policy fragmentation. In addition, their inputs, whether evidence supporting specific measures, analysis of differentiated impacts, or field-based insights into practical implementation, strengthen the relevance and the effectiveness of policy design, leading to more comprehensive and efficient policymaking.

Limited trade-off analysis obstructs systemic decision-making

This sub-theme addresses another recurring pattern: trade-offs are recognised across the data but insufficiently analysed within policymaking, limiting the ability to design coherent, system-oriented strategies. The findings show that transitions to sustainability entail perceived tensions, particularly between sustainable practices and agricultural productivity. Public perceptions reflect uncertainty, as underlined in the stakeholder analysis: "the adoption of sustainable food production methods will have a positive environmental impact, but there is uncertainty regarding how this will happen and whether it will be able to meet global food demand" (Mousiadou et al., 2024, p. 76).

Results from the MAGNET model provide an empirical example of how trade-offs can be systematically examined. It shows that the Green Road scenario delivers strong environmental and social benefits while "there's a trade-off with food availability, which shows a slight decrease compared to the other scenarios. This suggests that a focus on sustainable and healthy diets might entail slightly lower overall calorie availability, although still sufficient to meet nutritional needs" (Moghayer et al., 2024, p. 36). Thus, in such scenario, more sustainable agricultural practices can be compatible with food security, provided that a transition to more plant-based diets is also observed. The analysis of such co-benefits and trade-offs informs the societal choices at stake, especially in terms of consumption patterns to be promoted by public policies.

Experts speaking at the policy roundtable in Cranfield reinforce this, noting that "policy gaps are not the main issue; rather, the lack of cross-sectoral trade-off analysis and coherence is the key challenge". Digital tools should support the "development of simulation models to evaluate trade-offs across the food value chain" (ECO-READY, 2025a, p.2). In sum, without systematic trade-off analysis, policymakers risk defaulting to siloed decisions, reinforcing the fragmentation identified earlier. Integrating such tools into policymaking would support more holistic, evidence-informed strategies.

Evidence thus demonstrates that gaps continue to hinder coherent food-system policymaking. Findings therefore calls for a systemic narrative to address food system issues beyond siloed visions, for participatory governance that meaningfully involves all stakeholders, and for the systematic use of trade-off assessment tools.

3. **Practical levers: sustainable practices, data, and knowledge to enable food system transitions**

Several levers emerge across the dataset that can help reduce policy fragmentation in the agrifood–climate–biodiversity nexus: climate and biodiversity-resilient agricultural

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practices, harmonised agricultural data collection at EU level, and improved tools and advice for farmers. These practical policy areas can reinforce more coherent, integrated food systems policies and are indispensable for creating enabling conditions and suitable regulatory environments for the transformation of agrifood systems.

Sustainable farming practices can bridge agricultural, climate, and biodiversity objectives

This sub-theme highlights the agricultural practices identified in the dataset as supporting both climate and biodiversity goals and thus bridging gaps between currently fragmented policy areas. The findings emphasise practices that improve resilience to climate shocks while strengthening ecological functions.

Water-resilient practices and soil health protection appear prominently, with Living Lab reports underlining the importance of supporting practices that keep soils rich and moist. These practices link agricultural resilience with biodiversity and climate objectives, demonstrating how policy integration can be anchored in concrete on-farm strategies.

Organic farming emerges as a key example of a holistic approach. The PROBIO Living Lab in Czechia describe organic agriculture as "a comprehensive system that simultaneously addresses ecological, economic, social, and production goals" (PROBIO, 2025, p. 21) and recommends exploring "the introduction of a "system premium" (inspired by Switzerland) as an additional payment for a comprehensive package of organic practices such as soil protection, biodiversity, water retention, and rural employment" (PROBIO, 2025, p. 20). This illustrates how a multi-performance system can support more integrated policy design.

The data also highlights agroecological approaches bridging the gap between climate and biodiversity challenges and agricultural practices. Agroforestry in particular stands out as a means of improving yields and agricultural resilience. As Vu & Bourlakis (2024, p. 49 and p. 55) explain, "agroforestry can also contribute to a more resilient social-ecological system, especially when facing shocks and disturbances", "approaches such as agroforestry or animal and crop integration systems can sustain agricultural yields while diversifying the food supply".

Crop diversification practices, including rotation (which was recognised within the 2021-2027 CAP's GAEC 7), mixed cropping, and intercropping, are similarly presented as mechanisms linking ecological and productive goals. Findings from the Literature Review show that "crop rotation and intercropping can lead to a considerable increase in yields of important crops" (Vu & Bourlakis, 2024, p. 45). In the policy section of their reports, the French LOFS Living Lab describes "mixed cropping […] as a resilience factor" (LOFS, 2025, p. 26) and the Polish EcoReadyMasuria recommends supporting "the uptake of mixed cropping systems, particularly intercropping […], through dedicated CAP support, innovation pilots, and access to tailored machinery and advisory services" (EcoReadyMasuria, 2025, p. 38).

Seed diversification strategies are also central to climate–agriculture integration. Various sources underline the importance of wild crop relatives and underutilised crops to strengthen climate resilience and income diversification, linking seed choices to water management challenges. Living Labs in Germany and Hungary call for "subsidies for drought resistant seeds" (ESAPPIN, 2025, p. 23) and for policy that "supports farmers with water

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management challenges to encourage a shift towards more sustainable crops" (EcoVita, 2025, p. 63).

The second Thematic Analysis bring additional elements on the agricultural practices that can underpin a more sustainable and resilient food system. In particular, the dataset points to the importance of practices that are adapted to local conditions. Findings stress the "importance of locally adapted solutions that combine technological innovation with farmers' knowledge and regional climatic conditions" (ECO-READY, 2026a, p.5) but also that "the dominant biodiversity pressure type varies substantially across member states" and concludes that "uniform EU-wide policy instruments will not deliver equivalent biodiversity outcomes across these structurally diverse agricultural systems" (ECO-READY, 2026b, p.20). Therefore, the need for context-specific practices is underpinned by local climate conditions and land use types to be considered in the design of adapted sustainable and resilient farming practices.

Agroecology is emphasised by Living Labs as an approach that enhances farms' climate resilience through its context-specific nature (PROBIO, LOFS). Beyond climate resilience, findings point to the capacity of agroecology to bridge food security, climate, and biodiversity challenges and raise its alignment with the Nature-based Solutions approach. The LOFS Living Lab for instance recommends "making agroecological infrastructure a real lever for climate adaptation" by integrating "Nature-based Solutions into agricultural and climate policies", stressing "the role of hedgerows, living soils, biodiversity, landscape infrastructures to simultaneously improve water, climate, biodiversity and production (LOFS, 2026, p. 13)". Environmental benefits of Nature-based Solutions are reinforced by social ones, with findings from the LCA underlining that, among other practices, "Nature-based Solutions can reduce both environmental burdens and social risks linked to sectors such as mining, fuel extraction, and chemical production" (ECO-READY, 2026c, p.6), hence raising other co-benefits for social sustainability. In that sense, Nature-based Solutions are evidenced as a set of practices that combines different co-benefits for climate and biodiversity. In addition, the context-specific intrinsic nature of Nature-based Solutions make them adaptable to different local climate conditions as well as to various local land use types and biodiversity pressure drivers.

Other, approaches that stand out are precision farming, vertical farming, and carbon farming, which the first enable to combine agricultural practices and water management and the latter to combine agriculture and climate change mitigation.

Harmonised EU-level agricultural indicators and data inform integrated food policy design

This sub-theme captures a strong consensus that while lots of agricultural data exists at different scales of data collection and data statistics, the lack of interoperability of these different systems and lack of harmonised agricultural data at EU level limits evidence-based approaches to integrated food systems policymaking. The dataset identifies several ways in which better data could support resilience and policy coherence.

Data is first portrayed as a tool for anticipating and mitigating climate impacts. As Vu & Bourlakis (2024, p. 54) explain in the Literature Review, "the use of data and forecasts can be extremely helpful in mitigating the negative consequences of such extreme climatic events". The second Thematic Analysis reinforces the need for more integration of climate

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data into agricultural practice design and decision-making, especially through the practitioners' lens of Living Labs. Some regret that "farmers […] irrigation bodies, veterinary services, and cooperatives are currently expected to respond to floods, droughts, wildfires, and zoonotic outbreaks without a dedicated governance structure, without real-time monitoring infrastructure" (THALLA, 2026, p.43) while others also calls for the promotion of "stress monitoring systems into policy frameworks" that would be "scalable across regions with varying weather-related challenges and diverse crops" (PROBIO, 2026, p.33). Beyond real-time climate data, LOFS also advances the use of "climate models […] to anticipate climate impacts and guide decisions" (LOFS, 2026, p.13). The need for integration between data and policy is thus reinforced in the completed data set, underlining the relevance of both real-time data and projections for informed agricultural policies and strengthened preparedness.

Data is also linked to structural transformation in sustainability transitions, with other findings from the Systematic Review of Policies stressing that "data and drivers should well ensure fair transition to sustainability for all the agri-food sectors also by establishing fair and well-recognised metrics and footprint calculations methods" (Di Gregorio et al., 2024a, p. 65). Behind the raw data, the latest ECO-READY's scientific article stresses that the data takes the shape of indicators as "statistical constructs which support decision-making by revealing trends in data", adding that "indicator monitoring is a precondition of policymaking, as effective policymaking starts with well-defined, measurable indicators" Polakova et al. (2025, p. 2).

To support policy coherence across the agriculture-climate-biodiversity nexus, "indicators must be quantitative and directly linked to the drivers that policymakers identify from the global to the local-scale agriculture" Polakova et al. (2025, p. 2). Yet some challenges hinder such alignment. On the one hand, the lack of indicators and reliable datasets to assess the impact of agriculture on biodiversity hinders the integration of biodiversity protection and nature restoration objectives into agricultural policies such as the CAP (Polakova et al. 2025, p. 14). Water is seen as an issue especially overlooked within the CAP's indicators, as another ECO-READY scientific paper explains (Di Gregorio et al., 2024b, p. 11). On the other hand, the issue of harmonised sustainability metrics (carbon, water, biodiversity) is repeatedly cited as a barrier to integrated policymaking, as underlined by the Spanish Living Lab in the policy section of its report (CONCAT, 2025, p. 30)

However, the dataset points to significant challenges. Security concerns, particularly data ownership, privacy, and trust, are emphasised by Living Labs. CONCAT (Spain) for example notes the "lack of frameworks for secure and standardised agricultural data-sharing" and the need for "trust-building and clear data ownership agreements are essential" as well as "ensuring privacy and equitable data access" (CONCAT, 2025, p. 27).

Fragmentation and lack of interoperability across Member States are also prominent. The CONCAT Living Lab describes fragmentation whereby "different agencies maintain separate databases (climate, soil, water, biodiversity, CAP payments), and interoperability standards are underdeveloped" (CONCAT, 2025, p. 28). Research findings from the Systematic Review of Policies confirm that "there are different definitions and different methodologies of collecting data and this aspect can create some misunderstanding for policymakers" (Di Gregorio et al., 2024a, p. 64). As a result, recommendations converge

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on the need for an "EU protocol for agronomic data exchange for interoperability" as the Italian Living Lab puts it (AIDEMEC, 2025, p. 17).

Farmers need accessible tools and advisory support to enable the transition

A further pattern explored in this sub-theme concerns the lack of adequate tools, guidance, and support for farmers, which slows the adoption of sustainable practices and weakens climate resilience.

Advisory services emerge as a critical gap. Policy experts interviewed in Cranfield emphasise the need for "improved training and advisory services for farmers, as a key missing element in the transition to sustainable practices" (ECO-READY, 2025a, p.2) and Living Lab evidence confirms that "Farmers frequently lack access to training, technical support, and tailored advice" (PROBIO, 2025, p. 24). Results from experts' questionnaires analysis also points to "connecting climate-resilient production with advice, capabilities and access to support", directly linking the support measures for farmers with the "continuity of production under environmental pressures" (ECO-READY, 2026d, p.2). Multiple data sources call for "accessible, independent advisory services for farmers in all regions to strengthen resilience to climate shocks" (EcoVita, 2025, p. 63) and, to "strengthen the support capacities of local stakeholders: finance, train, and equip agricultural advisors" (LOFS, 2025, p. 25). It is especially underlined the need to improve these services through "increased funding for independent advisory services for organic farmers to support adoption of resilient practices" (PROBIO, 2025, p. 20); "train advisors in agroecological practices is important, thereby linking research work results with farming practises" (ECO-READY, 2025b, p.1).

Digitalisation represents another key support mechanism. Practitioners highlight gaps in the current CAP, noting that it "does not include specific lines for predictive technologies," and pointing to a "lack of specific incentives for AI adoption in agriculture" (AIDEMEC, 2025, p. 18). Despite challenges related to ease of use, farming demography, and rural connectivity, the data consistently frames digital tools as essential for sustainability and resilience. At the Cranfield policy roundtable, participants emphasised the value of data for "benchmarking systems for assessing farm-level sustainability in a standardised way", and for informed decision "promotion of GHG calculators for farms to support localised decision-making" (ECO-READY, 2025a, p.2). Overall, the dataset shows that well-funded, independent advisory services and stronger support for farm digitalisation together constitute essential enabling conditions for sustainable and climate-resilient agricultural transformation.

Local, regional, national, and EU policy environments need to foster the uptake of sustainable farming practices through CAP payment incentives and strengthened advisory services. This requires establishing a harmonised, interoperable, and secure EU-level agricultural data framework and a common set of indicators. Together, these policy levers supporting farm practice, knowledge exchange, and data interoperability can advance integrated multi-actor food system policy design.

4. **Consumer needs and equitable access to sustainable food**

This last theme elaborates on previous policy conclusions, notably that a systemic and integrated approach to food is needed, along with a policy narrative that takes consumers

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into account. Although consumers express strong intentions to shift towards sustainable diets, structural socio-economic inequalities limit their ability to contribute to food systems transformation. The data suggests that social policies targeting consumers can contribute to inclusive transition to sustainable food systems.

Socio-economic inequalities call for a social approach to sustainable food systems

This sub-theme highlights a consistent pattern across the dataset: consumers are willing to engage in sustainable food practices but remain constrained by economic barriers. In other words, the transition to sustainable consumption is shaped not only by environmental considerations but also socio-economic factors.

The data shows that consumers display a strong aspiration to buy sustainable food. As the stakeholder analysis shows, consumers seem to agree (52.8%) or strongly agree (4.8%) to pay extra for sustainable food (Mousiadou et al., 2024, p. 59). However, affordability emerges as a decisive constraint with the stakeholder analysis, "highlighting the importance of income, environmental awareness, and eco-labels in shaping sustainable food choices" (Mousiadou et al., 2024, p. 78). There is a dichotomy between consumers' intentions to consume sustainably and their ability to do so, which is mainly determined by the cost of food, i.e., its accessibility.

Yet, as highlighted in our first theme, food affordability, determined partly by its availability, is a major challenge for policymakers. The MAGNET modelling scenarios further illuminate this tension by showing that economic growth alone does not guarantee either sustainable food systems or equitable food access. The modelling indicates that "the Green Road suggests that a focus on inclusive growth and sustainable food systems can significantly improve food access for vulnerable populations" while "the Rocky Road scenario prioritises economic growth but shows negative trends in most other indicators. It leads to increased GHG emissions, land demand, and chemical fertiliser use, while also showing a decline in food access and utilisation" (Moghayer et al., 2024, p. 31 and p. 36).

Taken together, these findings demonstrate that socio-economic aspects must be central to food systems policies. Environmental sustainability, economic resilience, and social inclusion cannot be treated as separate objectives: the transformation of food systems must address all three simultaneously. This conclusion is pivotal for the sustainable transformation of food systems and echoes the need to include consumption in the narrative and consumers in the governance.

Consumer-focused policies can increase access to and demand for sustainable food

Policy levers identified in the data could reduce consumer vulnerability by improving both the physical and economic accessibility of sustainable foods. The evidence points toward three main directions: public procurement, fiscal policy, and marketing tools.

Public procurement emerges as a significant but underused food accessibility lever. Several Living Labs report barriers to uptake, including "weak uptake of Green Public Procurement criteria in regional and municipal contracting" (CONCAT, 2025, p. 30) and "limited recognition of public kitchens as drivers of organic demand: public institutions are not systematically included in strategies to promote organic consumption" (LivOrganic, 2025, p. 22). At the same time, they recommend that policymakers "increase the share of organic food in public catering (schools, hospitals, army, canteens)" (PROBIO, 2025, p. 21). These

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insights highlight that public institutions can play a dual role: structuring demand to stimulate sustainable markets while also increasing physical access to sustainable foods for citizens.

Fiscal policy is identified as a second key lever to accessibility, especially influencing affordability. The Hungarian Living Lab EcoVita illustrates this with existing VAT incentives, noting that Hungary applies reduced rates to some food items, although "this system is not based on scientific or health considerations, nor does it address environmental concerns like CO2 emissions" (EcoVita, 2025, p. 64). In response to the challenge of "high prices and reduced availability of sustainable agri-food products" as the stakeholder analysis puts it (Mousiadou et al., 2024, p. 76), this example illustrates the potential of taxation to modulate the cost of food products. At the same time, the dataset also points to "using taxation to increase the price of unsustainable products beyond that of sustainable ones" (ECO-READY, 2026a, p.5), while this opposite mechanism might rather limit access to food for the most vulnerable groups. Beyond fiscal policy, other options are presented to ease economic access, such as "making it (food) free by experimenting with local-level mechanisms, such as food social security" (ECO-READY, 2026a, p.5). If aligned with environmental indicators, fiscal incentives or more local experimentations could lower consumer prices of sustainable foods, addressing the affordability barrier highlighted earlier and supporting a fairer transition.

Finally, consumer awareness, driven by marketing and labelling, appear prominently across the dataset. Living Labs suggest introducing "public awareness campaigns on seasonal and local food consumption to support sustainable diets" (THALLA, 2025, p. 38), "awareness campaigns on sustainability & health benefits" (SECO-Collab, 2025, p. 18), "incentives for purchasing certified sustainable or organic agrifood products" (THALLA, 2025, p. 38), or "national promotional campaigns on organic farming. Current campaigns are often narrowly focused and highlight only selected aspects" (PROBIO, 2025, p. 21). Such measures could help overcome the visibility gap of sustainable foods thus enhancing their accessibility to consumers.

Sustainability labelling is another recurring recommendation. Labelling is seen as essential for empowering consumers to make informed choices. Living Labs call for "promoting food labelling schemes that highlight product authenticity, origin, and environmental impact" (THALLA, 2025, p. 38). This idea of sustainable food labelling is emphasised by other points such as the lack of "transparency in sustainability claims, allowing 'greenwashing' to undermine consumer trust" (CONCAT, 2025, p. 30) as well as the conclusion from the stakeholders analysis that "eco-labelling and the existence of signs of environmental excellence could lead to more conscious choices of agri-food products and increase the demand and consumption of sustainable food" (Mousiadou et al., 2024, p. 76). At the same time, "the lack of a common European definition of sustainable food […] restricts political action and impedes the implementation of sustainability labels" (ECO-READY, 2026a, p.5).

Consumers are vulnerable in the transition of food systems. They suffer from a lack of availability and accessibility of sustainable food products. However, a series of socio-economic measures, combined with an environmental approach, can improve food systems overall. Food policies must put consumers back at the heart of the narrative

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and governance and must improve access to sustainable food through public markets, promotion and quality policies, and tax breaks.

5. Conclusions and limitations

Conclusions from the second Thematic Analysis confirm, refine, and complete the results from the first one conducted in deliverable 5.1. Such corroborative effect reflects the volume of the data sources used in the first Thematic Analysis, which already provided most of the complete dataset. In addition, the corroboration is also explained by the nature of some data sources, such as the Living Labs final reports which build on previous results and interim recommendations formulated by the Living Labs network. These policy conclusions reflect the main themes and focal points across all policy-related results from ECO-READY. Therefore, they provide a basis for the development of a set of associated policy recommendations (see section 3.1), additionally informed by the most recent policy developments outlined in section 1.2.

Limitations of the Thematic Analysis should be mentioned. These need to be considered when informing the formulation of the policy recommendations. First, some of the final data sources were used in their interim stage due to the unavailability of final results. Second, our methodology has been structured to generate conclusions from consensual and recuring themes and might therefore omit more case-specific or isolated analytical angles.

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3. Evidence-based policy recommendations for sustainable and resilient food systems in Europe

3.1 Presenting the final set of policy recommendations

The following section introduces the ECO-READY final set of policy recommendations. The policy recommendations are grounded in the findings of the thematic analysis, which identified policy gaps and challenges as well as potential responses. As illustrated in Figure 15, the themes emerging from this analysis were also considered in light of the current policy context outlined in Section 1.2. The expertise of the ECO-READY consortium was instrumental in interpreting these findings against this evolving context, thereby ensuring that the recommendations are both actionable and realistic.

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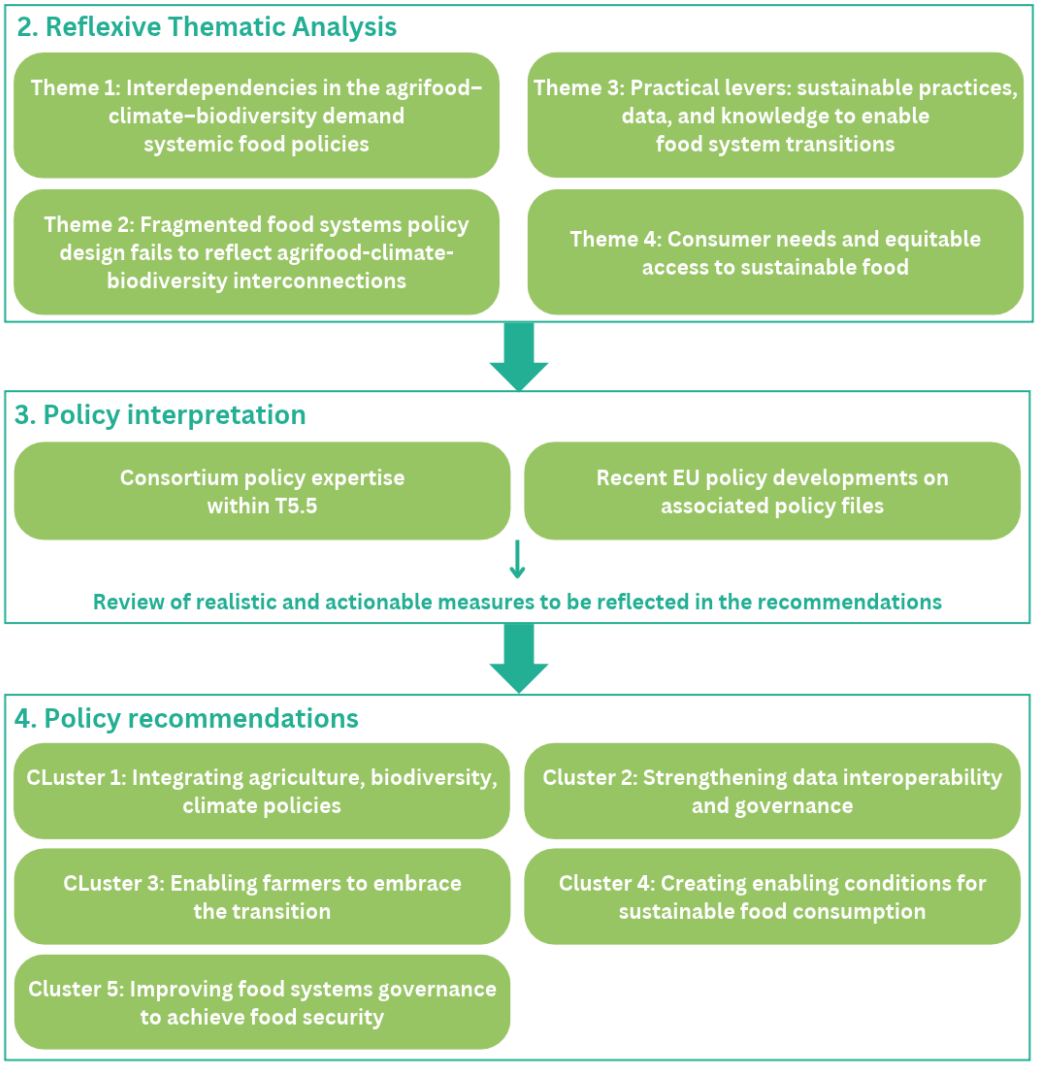

Figure 15: Overview of the process from the Thematic Analysis themes to the policy recommendations clusters.

The recommendations are structured around five clusters:

- Integrating agriculture, biodiversity and climate policies for food security
- Strengthening data interoperability and governance
- Enabling farmers to embrace the transition
- Creating enabling conditions for sustainable food consumption
- Improving food systems governance to achieve food security

Recommendations were clustered to provide a clearer and more coherent policy narrative. Clusters are not intended to mirror the four themes identified through the thematic analysis. Rather, they offer a policy-oriented organisation of the recommendations, while ensuring that the substance of each of the four themes is reflected in their content. Table 6 provides an overview of the distribution of themes' findings into the policy recommendations clusters.

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Themes \ Recommendation clusters	Cluster 1: Integrating agriculture, biodiversity, climate policies	Cluster 2: Strengthening data interoperability and governance	Cluster 3: Enabling farmers to embrace the transition	Cluster 4: Creating enabling conditions for sustainable food consumption	Cluster 5: Improving food systems governance to achieve food security
Theme 1: Interdependencies in the agrifood–climate–biodiversity demand systemic food policies	☑	☐	☐	☐	☑
Theme 2: Fragmented food systems policy design fails to reflect agrifood-climate-biodiversity interconnections	☑	☐	☐	☐	☑
Theme 3: Practical levers: sustainable practices, data, and knowledge to enable food system transitions	☑	☑	☑	☐	☐
Theme 4: Consumer needs and equitable access to sustainable food	☐	☐	☐	☑	☐

Table 6: Distribution of thematic analysis themes across policy recommendation clusters.

1. Integrating agriculture, biodiversity and climate policies for food security

Climate change impacts on agricultural production affect food availability, stability, affordability and utilisation. In the face of this growing threat to Europe's food security, biodiversity plays a vital role in strengthening the long-term resilience of agricultural systems. Adopting a more integrated policy approach that reflects the interdependencies between agriculture, climate, and biodiversity would thus contribute to reinforcing food security within the European Union.

The European Commission, European Council, and European Parliament should establish a fully EU-funded, sub-ringfenced budget for agri-environmental climate actions in the next Common Agriculture Policy, to deliver on biodiversity and climate, thus ensure EU food security. Policy frameworks must support farmers in the transition towards a more sustainable and resilient food system.

Member States should promote in their National and Regional Partnership Plans context-specific agricultural practices that enhance biodiversity, agroecosystems and climate resilience through agri-environmental and climate actions and transition payments. Support should be directed to practices delivering multiple benefits, rather than assessing interventions in isolation, and reducing dependence on synthetic pesticides, fertilisers, fossil fuels, and other external inputs, while maintaining productive capacity. Member States should give priority to Nature-based Solutions, conversion and maintenance of organic farming, agroecological approaches, agroforestry, crop diversification, water retention, and precision farming where it contributes to reducing input use.

The European Commission should adopt a science-based granular methodology to define the budget coefficients for each CAP intervention aimed at environmental objectives in future Multiannual Financial Frameworks, to accurately measure the environmental performance of CAP interventions. Comprehensive and evidence-based studies must be conducted over the coming years to ensure a realistic translation of the findings into the policies and programmes of the post-2034 Multiannual Financial Framework.

The European Commission and Member States should ensure coherence between future National and Regional Partnership Plans and the targets and measures outlined in the draft National Restoration Plans, leveraging the potential of agri-environmental and climate actions to contribute to the restoration of targeted agricultural ecosystems. Dedicated inter-ministerial dialogues and a robust coordination mechanism across the European Commission's directorates should ensure the coherence among the plans.

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The European Commission, Member States, and relevant agri-environmental stakeholders should maintain the level of ambition and strengthen coherence between the Common Agriculture Policy and the implementation of the Birds and Habitats Directive, building on existing acquis and on biodiversity's driving role for Europe's long-term food security.

The European Commission and Member States should recognise food security as an outcome of interconnected climate, water, soil, biodiversity, and socioeconomic risks as part of the European Climate Resilience Framework. They should encourage climate-risk assessments for agricultural production and food supply chains, including compound risks such as drought combined with heat stress, and promote Nature-based Solutions that strengthen soil health, water retention, and ecosystem resilience.

2. **Strengthening data interoperability and governance**

Fragmentation and a lack of interoperability between datasets and databases across all levels hinder evidence-based policymaking and reinforce policy silos. Strengthening data harmonisation and interoperability can turn data into a key enabler of food systems transformation.

The European Commission should strengthen monitoring of environmental outcomes under the CAP. Robust indicators on biodiversity loss and restoration and indicators relevant to climate shocks, such as soil health and water retention indicators, should help assess the CAP performance for food security. Biodiversity monitoring associated with agricultural policies should track outcomes for different taxonomic groups rather than relying exclusively on aggregate biodiversity indicators.

The European Commission and Member States should seek to improve harmonisation and data interoperability across agriculture, climate change and biodiversity. This requires greater alignment of definitions, indicators, and data formats across regulations and administrations. This would enable the same high-quality dataset to fulfil multiple reporting requirements, enhance the comparability of environmental outcomes across policy frameworks and reduce the red tape associated with duplicated reporting processes. Data interoperability within the CAP operational databases should also be a priority to allow for standardised fields and units for soil health, chemical inputs, and yield metrics at EU, national, and local levels. Member States should explore National Interoperability Platforms for single-point data entry.

The European Commission should establish an Agri-Data Ethical Infrastructure to facilitate the sharing of agricultural data and its contribution to data-driven decision-making for food security. Such an infrastructure should be co-developed with farmers, ensure farmers' data ownership, and apply the FAIR principles (Findable, Accessible, Interoperable, Reusable). This would facilitate private farm management systems to safely feed into public monitoring databases.

National and regional authorities should support the use of Farm Advisory Services to act as data intermediaries, helping farmers translate raw farm data into actionable insights for their own productivity in the face of climate shocks and biodiversity loss, not just for compliance.

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3. Empowering farmers in the transition

Better integration of environmental and climate considerations into agricultural policies can support the transition towards more resilient and sustainable food systems. Farmers, as key contributors to food security, must be adequately supported throughout this transition. A coherent and remunerative framework is essential but can only be effective as part of a broader support package that includes guidance and training on the implementation of sustainable agricultural practices.

Member States should ensure NRPPs fund regional advisory networks that connect non-profit advisors specialised in agroecological practices to foster the environmental performance of farms. These networks may link to certified training centres of excellence, regional hubs across the EU, providing training, education, and knowledge exchange for farmers and advisors tailored to their local, regional challenges, legislative context, and environmental conditions. Further, Member States should set aside funding for advisory support to farmers to help them understand and implement the new CAP without extra financial or administrative burden.

Member States should prioritise, under the starter pack for young farmers, providing access to advisory services and training programmes rooted in farmers' local knowledge and intergenerational peer learning and focused on knowledge exchanges on organic and agroecological systems to leverage the high interest of new entrants in sustainable farming.

European and national CAP networks, supported by on-the-ground advisory services, should guide farmers in the adoption of Nature-based Solutions in agriculture to harness the benefits that biodiversity brings to agricultural productivity and the resilience of agricultural landscapes in the face of climate change.

Member States should support crop diversification and facilitate farmers' access to drought-resistant seeds, suitable machinery and tailored advisory services. Innovation pilots and knowledge exchange can help establish which interventions are effective in different farming systems and under different pedo-climatic conditions.

The private sector must step in to spread and manage risks of farmers who embark on an agroecological journey. Insurance companies should collaborate with advisory services and draw up insurance schemes that incentivise and reward agroecological practices and cover potential losses. Member States can complement these finance efforts by tax breaks on land property linked to agroecological practices.

4. Supporting consumers in the transition to resilient and sustainable food systems

Promoting sustainable food consumption and ensuring their affordability should be key policy priorities. Food affordability remains a priority challenge to ensuring food security, particularly for vulnerable consumers. The transition towards more sustainable food systems should therefore go hand in hand with a food policy comprising socio-economic measures that ensure access to affordable and sustainable food for all.

National, regional, and local authorities should embrace the newly proposed environmental quality criteria in future public procurement to capitalise on the potential of public canteens, particularly in schools, to champion sustainable consumption. The European Commission's DG GROW should facilitate the exchange of good practices at the EU level, build capacities, and help address implementation challenges.

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National, regional, and local authorities should further explore the available economic instruments, including tax incentives and local Food Social Security pilots, to improve the affordability of sustainable food for vulnerable groups.

The European Commission should reconsider its EU promotion policy, increasing opportunities to promote sustainable products and organic food in future calls, to improve awareness of, and uptake of, sustainable food choices.

European, national, regional, and local authorities should promote plant-based diets in Europe to support environmental objectives and recognise the role of food consumption as a key driver of food-system transformation. A detailed analysis of the synergies and trade-offs between food consumption and biodiversity conservation and restoration should inform the coherent development of associated food policies at EU, national, and regional levels.

The European Commission's DG RTD should strengthen research on sustainable food consumption in the next Horizon Europe programme. Further research should improve understanding of consumer behaviour in relation to environmental sustainability criteria, particularly the impact of food on biodiversity and climate, as well as the impact of marketing, sustainability labelling, and advertising rules.

5. **Improving food systems governance to achieve food security**

Structural gaps continue to hinder the development of coherent food system policies. A more systemic approach to governance at all levels can help overcome regulatory silos, laying the foundations for more inclusive policymaking and a shared, comprehensive vision of food security that explicitly recognises the trade-offs involved in achieving it.

The European Commission should initiate an inclusive and science-based European food debate as envisaged in the Farm to Fork Strategy. This debate should discuss sustainable food production and consumption, openly addressing the associated benefits and trade-offs in order to build a shared roadmap for food security in Europe.

Public authorities at all levels should adopt a food systems design approach to break down silos and unlock synergies between agriculture, climate, and biodiversity. This requires reinforced multi-level governance and meaningful multi stakeholders' engagement across institutions and sectors, including consumers.

3.2 Communicating and disseminating the policy recommendations to support their uptake and exploitation

The following section outlines the communication, dissemination and integration activities aimed at promoting awareness and uptake of ECO-READY's policy recommendations.

1. **Communication outputs and activities**

The ECO-READY policy recommendations and policy outputs were communicated throughout different channels and formats to reach out to a variety of stakeholders. The ECO-READY preliminary recommendations are introduced in two policy briefs (see Figure 16).

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Entitled “Protecting biodiversity strengthens food security - scenarios and policy pathways for Europe’s food systems” and “Addressing food systems climate impact - co-benefits for food security, environment and social impacts”, the policy briefs looked into the interconnections between food security and respectively biodiversity and climate change. Developed in parallel of Deliverable 5.5 and the associated final policy brochure, these policy briefs provided targeted thematic scientific results and preliminary recommendations. The policy brief format also allowed for facilitated communication of these recommendations to policymakers. Both policy briefs were presented and made available during the EU policy dissemination event organised at the European Parliament on 3 November 2026. The policy briefs are directly accessible from the ECO-READY website.



Figure 16: ECO-READY policy briefs’ covers.

In addition, the final policy recommendations elaborated in section 3.1 are presented in a final policy brochure (see Figure 17). The brochure consists of a 9 pages document that provides a summary of the key policy conclusions and introduces the associated policy recommendations. Hence, the ECO-READY policy brochure provides a more targeted format to communicate the main policy results to an external audience, in particular to policymakers. The policy brochure is also directly accessible from the ECO-READY website.

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Figure 17: ECO-READY final policy brochure cover.

To facilitate outreach, both policy briefs (Figure 18) as well as the policy dissemination event (Figure 19) were shared through the ECO-READY social media channels as well as though those of several partners and associated stakeholders. For the policy dissemination event, the posts gained much visibility with over 50 interactions and 10 reposts.

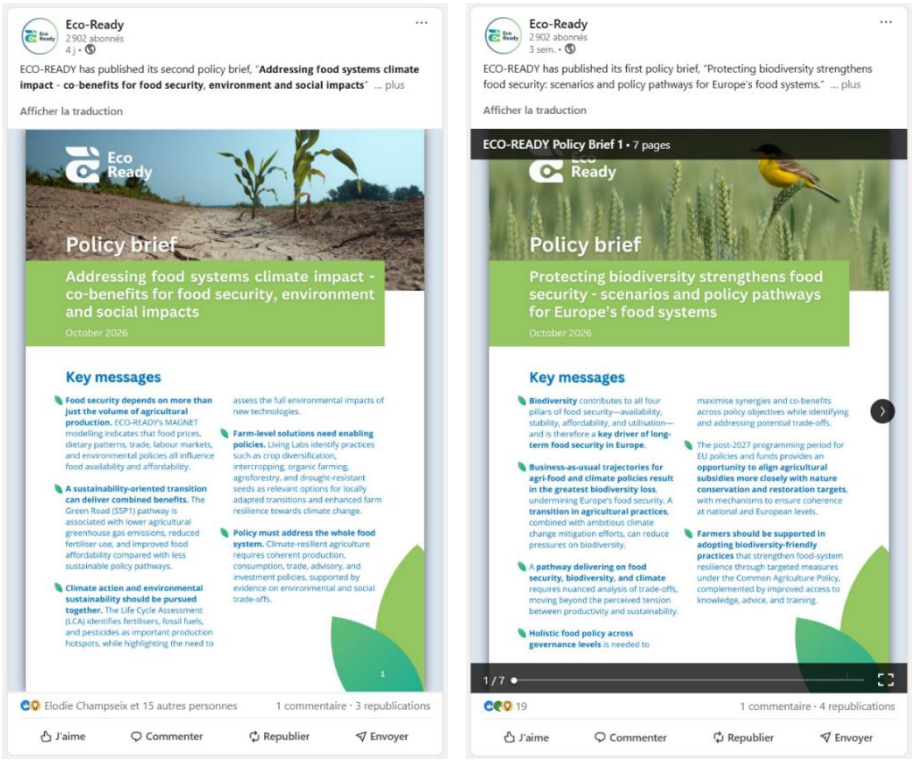

Figure 18: screenshots depicting the publication of policy briefs on ECO-READY's social media channels.

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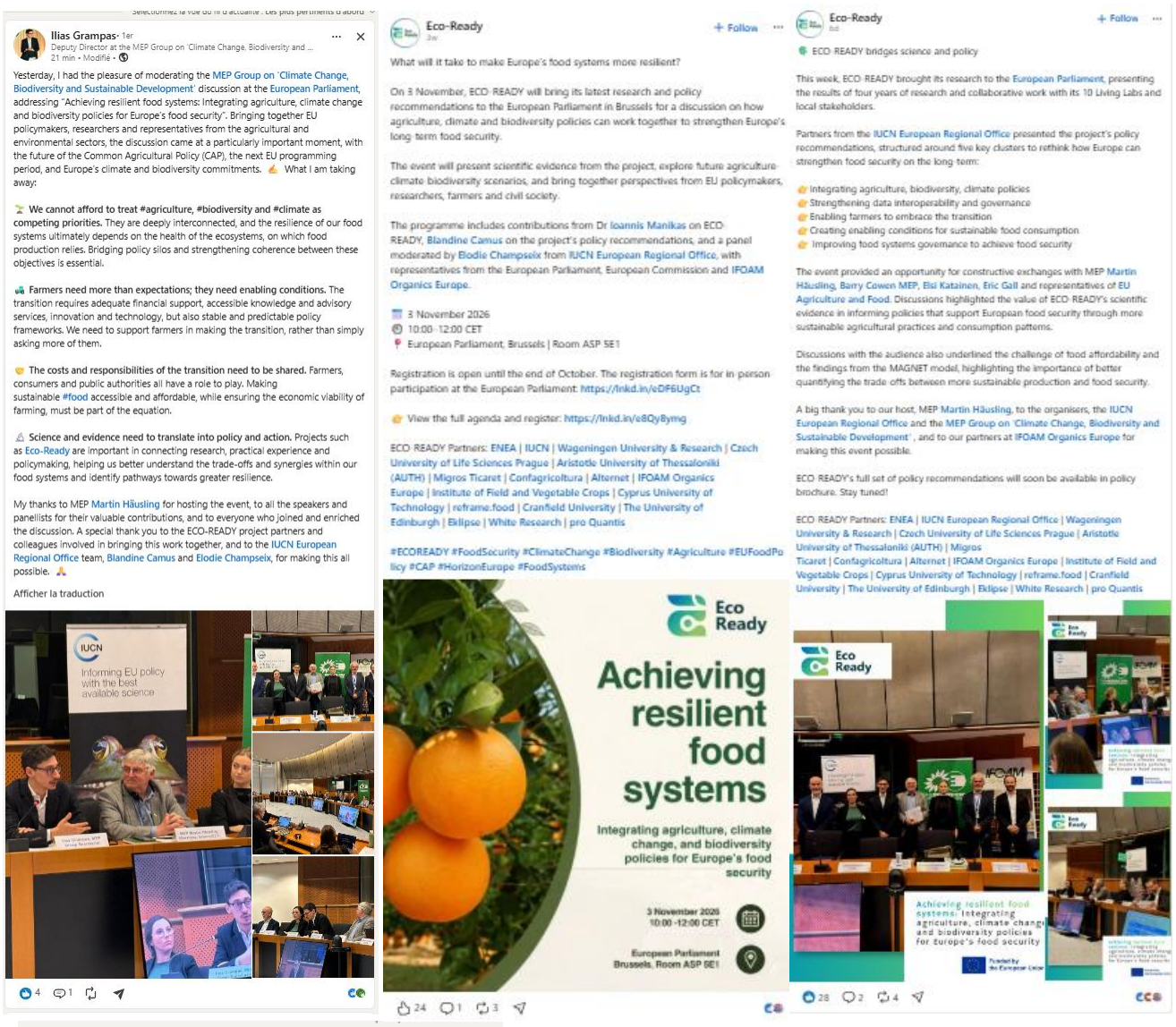

Figure 19: selection of screenshots depicting the social media uptake of ECO-READY's policy event.

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2. Dissemination activities

ECO-READY's preliminary and final policy recommendations were disseminated by the partners through a range of conferences, debates and policy workshops, the main ones of which are summarised below.

On 17 June 2026, IUCN Europe organised a webinar to present the ECO-READY policy results in the framework of the EU Green Week (see Figure 20). Title "Investing in Nature through Farming: Policy Pathways for the Future CAP", the event provided an introduction to the MAGNET biodiversity modelling and associated preliminary policy recommendations. The event comprised a policy panel discussion, featuring the European Commission Directorate for Agriculture and Rural Development and the LAMASUS project. The webinar gathered sixty participants, including several policymakers, and provided a forum at the interface of science and policy to discuss the implications of the ECO-READY policy findings for the future Common Agriculture Policy and Nature Restoration Regulation implementation.



Figure 20: ECO-READY EU Green Week webinar designs.

ECO-READY also held a final policy event at the European Parliament on 3 November 2026 to disseminate its policy recommendations (see Figure 20). The event provided an opportunity to present the full set of policy conclusions and associated recommendations from the project, introduced by IUCN Europe, and to distribute the policy briefs produced. ECO-READY's policy outcomes were discussed during a panel bringing together MEP Martin Häusling, Gregorio Davila Diaz, Deputy Head of Unit on Environmental Sustainability, DG AGRI, European Commission and Eric Gall, Deputy Director, IFOAM Organics Europe. Several other Members of the European Parliament attended the event and contributed to the discussions, as well as representatives from the European Commission's DG CLIMA, DG SANTE and from the European Economic and Social Committee. Dialogue with a targeted audience of around forty people emphasised the importance to ground policy dialogue into scientific evidence, and the necessity of better considering climate and biodiversity in agricultural policies to improve food security.

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Figure 21: photos from the ECO-READY final policy event at the European Parliament.

3. Integration opportunities

ECO-READY's policy conclusions on food security and the associated policy recommendations will be integrated into the ECO-READY Observatory through the Policy Hub developed under WP5 Task 5.6, as detailed in the Deliverable D5.4 (Champseix et al., 2026).

A dedicated tab (see Figure 21) will provide users with access to a range of resources intended to support further policy work after the project timeline, whether by building on ECO-READY's findings and recommendations or by adapting and applying them in different contexts and at different scales. The recommendations developed by ECO-READY are therefore presented as a source of inspiration rather than as prescriptive guidance. ECO-READY's recommendations will be included on this page, inviting readers to browse the policy briefs and the final policy brochure, which are the main documents used to communicate and disseminate the recommendations.

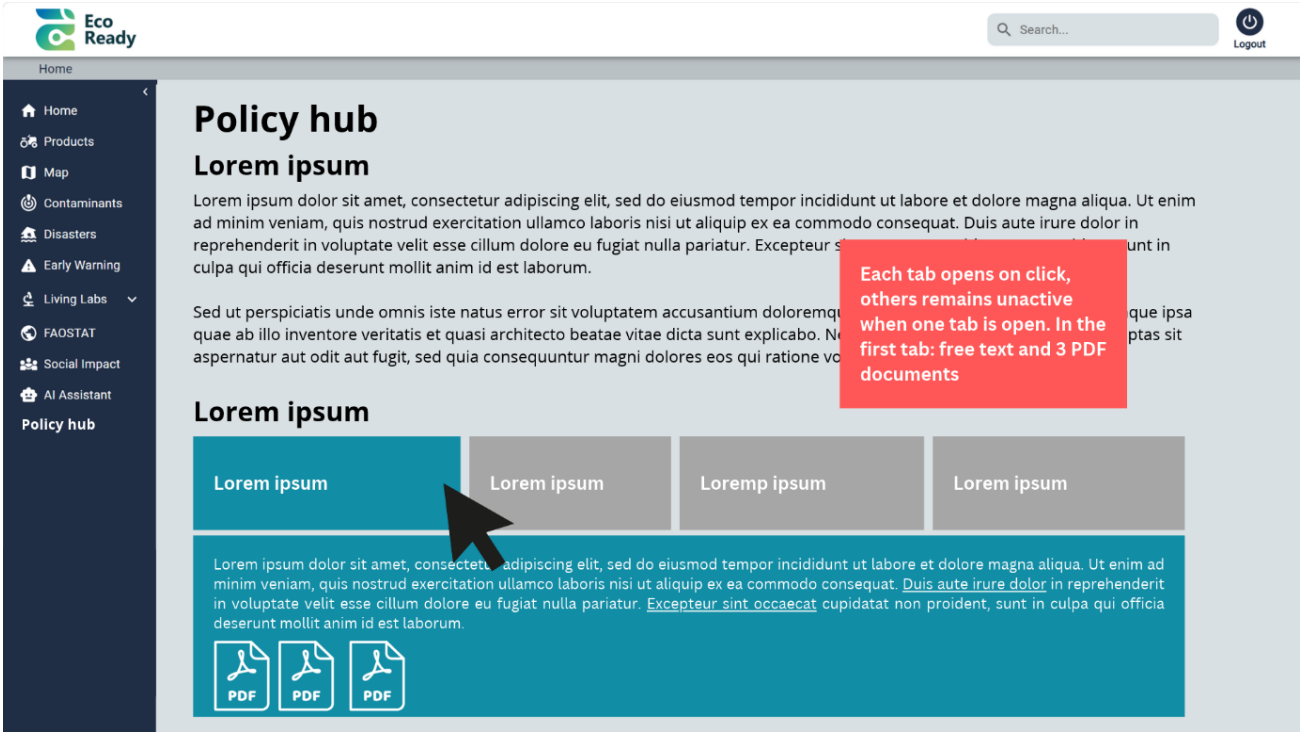

Figure 21: mock-up of the Policy Hub page for the ECO-READY Observatory, featuring a section for recommendations.

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This approach is also consistent with the principles underpinning ECO-READY's ethical infrastructure (Meenakshi Sundaram et al., 2026), according to which advice and recommendations should be grounded in the interpretation of specific data and evidence. Accordingly, while making the recommendations available through the Observatory may facilitate their uptake and further application, their relevance should not be considered permanent. As the underlying data evidence base and policy context evolve, the recommendations may need to be reassessed and updated to ensure that they remain relevant and appropriate.

To this end, dedicated features of the Observatory have been requested to ensure the integrity of the policy recommendations already provided during the project timeline, including some contextual and time boundaries mentioned to users. If users would like to update the policy recommendations to a more recent context, the primary information used within the Observatory would need to be updated by providing documents supporting recent policy changes, updated data more adequate to the request and follow the policy co-validation process explained and supported by the Policy Hub structure on the Observatory. The update of the background content of the Policy Hub section of the Observatory is also supported by the post project sustainability plan (Bourlakis et al., 2026).

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Conclusions

This deliverable marks the culmination of consolidating the ECO-READY policy results and formulating evidence-based policy recommendations to support Europe's food security objectives.

Building upon the methodological foundations of Deliverable 5.1 and Reflexive Thematic Analysis, the analysis confirms the preliminary policy conclusions of ECO-READY. It highlights the need for the **long-term integration of climate and biodiversity considerations for food security.** The requisite **policy response includes a more systemic approach to food security** based on a more inclusive policy narrative and governance. In addition, **levers for change include further promoting resilient and sustainable farming practices, better integrating and utilising data, and reinforcing advisory services.** Furthermore, the final conclusions highlight **consumers' vulnerability** with regard to food affordability. In this context, the findings confirm the role of public policies in supporting consumers by ensuring food affordability and guiding the transition of food consumption patterns.

Based on these conclusions, ECO-READY developed a set of policy recommendations. These **recommendations were formulated by confronting evidence-based conclusions with on-the-ground expertise and recent policy developments**, in order to ensure their adequacy and robustness. This process also included a co-creation phase with research and Living Labs partners.

The policy recommendations are organised into five clusters: Integrating agriculture, biodiversity and climate policies for food security, Strengthening data interoperability and governance, Empowering farmers in the transition, Supporting consumers in the transition to resilient and sustainable food systems and Improving food systems governance to achieve food security. In total, **22 policy recommendations** were formulated across these clusters, targeting key European policy frameworks such as the Common Agricultural Policy, the Nature Restoration Regulation and the European Climate Resilience Framework, as well as further national and regional legislations. These recommendations should be interpreted as a whole based on a systemic approach to food policies. This will enable coherent implementation without leaving farmers and consumers behind.

In a fragmented policy context, **these recommendations provide an opportunity to rethink food policy design in Europe.** In particular, future years will open a window of opportunity with the development of new CAP payments, national restoration targets and further national climate preparedness plans. Each of these milestones offers an opportunity to strengthen the synergies between agriculture, climate change and biodiversity.

By addressing recommendations to European, national, regional and local decisionmakers, **ECO-READY embraces a systemic vision of food security, allowing each level of governance to drive change** based on its area of competence. **The final ECO-READY policy brochure summarises all conclusions and associated policy recommendations**, and can be used alongside this deliverable to circulate the policy recommendations widely to decisionmakers at all levels.

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References

AIDEMEC. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

AIDEMEC. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

Anastasiadis, F., Bevivino, A., Camus, B., Champseix, E., Di Gregorio, L., Galema, S., Latini, A., Levin-Koopman, J., Louvrou, N., Mattas, K., Oosterwijk, A., Moghayer, S., Schiefer, G., Vu, N. (2025) From research and practice to policy: ECO-READY policy conclusions for an ecologically resilient European food system. https://www.eco-ready.eu/pdfs/2025_11_27_Ecoready_final_D5.1.pdf

Anastasiadis, F., Tsolakis, N., Koumpoti, A., Mattas, K., Tsakiridou, E., & Syndoukas, N. (2026). *Synthesis of policy related results into a coherent and concise guide and a tool integrating and aligned to EC tools and mechanisms* (ECO-READY Deliverable D6.3). Link to be published.

Ap Dafydd Tomos, B., Oosterwijk, A., Levin-Koopman, J., Galema, S. (2026). *Report on the Environmental & Social Life Cycle Assessment & Social Impact Assessment*. Link to be published.

Bourlakis, M., Vu, N. (2026). *Post-project business and sustainability plan* (Deliverable 6.4, ECO-READY). Link to be published.

Champseix, E., Camus, B., Vu, N., Meenakshi Sundaram, H., Otter, V. (2026). *Policy Hub Functions and Integration in Post-Project Sustainability Plan* (Deliverable 5.4, ECO-READY). Link to be published.

CONCAT. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

CONCAT. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

Council of the European Union. (2026a). *Regulation establishing the conditions for the implementation of Union support under the CAP - Partial general approach*. https://data.consilium.europa.eu/doc/document/ST-14837-2026-INIT/en/pdf

Council of the European Union. (2026b). *MFF 2028-2034: Council secures negotiating position for a strong and future-oriented common agricultural policy*. https://www.consilium.europa.eu/en/press/press-releases/2026/10/26/mff-2028-2034-council-secures-negotiating-position-for-a-strong-and-future-oriented-common-agricultural-policy/

Council of the European Union. (2026c). *Regulation amending Regulation (EU) No 1308/2013 (CMO) as regards the school scheme, sectoral interventions, the protein sector, hemp, marketing standards, import duties, the availability of supplies and securities - Partial mandate for negotiations with the European Parliament*. https://data.consilium.europa.eu/doc/document/ST-14647-2026-INIT/en/pdf

Cranfield University; Vu, N.; Bourlakis, M. (2024). *Climate change, biodiversity, and food security nexus: A structured data review* (Deliverable 1.1, ECO-READY). https://www.eco-ready.eu/pdfs/ECO_READY_A_structured_data_review.pdf

Di Gregorio, L., Latini, A., Nolfi, L., Stefanova, M., Notarfonso, M., & Bevivino, A. (2024a). Connecting data with CAP, Green Deal and other EC legislative frameworks & policies

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The ECO-READY project has received funding from the European Union's Horizon Europe Research and Programme under grant agreement n° 101084201

(Deliverable 1.2, ECO-READY). https://www.eco-ready.eu/pdfs/ECO-READY_D-1.2.pdf

Di Gregorio, L., Nolfi, L., Latini, A., Nikoloudakis, N., Bunnefeld, N., Notarfonso, M., Bernini, R., Manikas, I., & Bevivino, A. (2024b). Getting (ECO)Ready: Does EU legislation integrate up-to-date scientific data for food security and biodiversity preservation under climate change? *Sustainability, 16*(23), 10749. https://doi.org/10.3390/su162310749

ECO-READY. (2025a). *Summary of ECO-READY Policy Roundtable – Cranfield, April 3, 2025* (internal report - unpublished).

ECO-READY. (2025b). *Event report from the Limassol conference on Biodiversity, Food Security and Policy Making – Limassol, May 12-15, 2025* (internal report - unpublished).

ECO-READY. (2025c). *Event report from the Living Lab policy sorting workshop – Online, July 30, 2025* (internal report - unpublished).

ECO-READY. (2026a). *Event report from the workshop "Delivering impact: building the ECO-READY legacy for food systems" – Brussels, January 28, 29 2026* (internal report - unpublished).

ECO-READY. (2026b). *Report on the MAGNET biodiversity module results* (WP1 internal report - unpublished).

ECO-READY. (2026c). *Report on the Life Cycle Analysis results* (WP5 internal report - unpublished).

ECO-READY. (2026d). *Report on the interim Delphi Study results* (WP6 internal report - unpublished).

EcoReadyMasuria. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

EcoReadyMasuria. (2026). Final *demonstration of results/outcomes* (internal report - unpublished).

EcoVita. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

EcoVita. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

ESAPPIN. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

ESAPPIN. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

European Commission. (2025). Commission Communication on A dynamic EU budget for the priorities of the future – The Multiannual Financial Framework 2028-2034 (COM_2025_570_1) https://commission.europa.eu/publications/multiannual-financial-framework_en

European Commission. (2025). Proposal for a Regulation of the European Parliament and of the Council establishing a European Fund for economic, social and territorial cohesion, agriculture and rural, fisheries and maritime, prosperity and security (COM_2025_565_1) https://commission.europa.eu/publications/european-fund-economic-social-and-territorial-cohesion-agriculture-and-rural-fisheries-and-maritime_en

Funded by the European Union

The ECO-READY project has received funding from the European Union's Horizon Europe Research and Programme under grant agreement n° 101084201

European Commission. (2025). Proposal for a Regulation of the European Parliament and of the Council establishing a European Fund for economic, social and territorial cohesion, agriculture and rural, fisheries and maritime, prosperity and security (COM_2025_565_1) https://commission.europa.eu/publications/european-fund-economic-social-and-territorial-cohesion-agriculture-and-rural-fisheries-and-maritime_en

European Commission. (2025). Proposal for a regulation of the European Parliament and of the Council amending Regulations (EC) No 999/2001, (EC) No 1829/2003, (EC) No 1831/2003, (EC) No 852/2004, (EC) No 853/2004, (EC) No 396/2005, (EC) No 1099/2009, (EC) No 1107/2009, (EU) No 528/2012 and (EU) 2017/625 as regards the simplification and strengthening of food and feed safety requirements (Commission Proposal COM (2025) 1030 final). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025PC1030

European Commission. (2026). A resilient Europe for a changing climate: Communication on the EU Framework for Climate Resilience (Commission Communication COM (2026) 720 final). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52026DC0720

European Commission. (2026). *Commission Decision amending Commission Decision C(2021) 7991 setting up the group of experts on the European Food Security Crisis Preparedness and Response Mechanism (C/2026/6551) https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C_202604900*

European Commission. (2026). Proposal for a regulation of the European Parliament and of the Council on public contracts and concessions (COM/2026/590 final). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52026PC0590

European Commission. (2026a). Best practices for agri-environmental and climate actions within the CAP post-2027 - Lessons learnt from the current CAP strategic plans https://agriculture.ec.europa.eu/media/news/driving-sustainable-farming-new-guidance-cap-2028-2034-2026-04-28_en

European Commission. (2026b). 2026 State of the Union address by the President. https://ec.europa.eu/commission/presscorner/detail/ov/SPEECH_26_1868

European Commission. (2026c). Birds and Habitats Directives stress test: Public consultation. https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/18072-Birds-and-Habitats-Directives-stress-test/public-consultation_en

European Commission. (2026d). *6th report on the state of food security in the EU*. https://agriculture.ec.europa.eu/common-agricultural-policy/agri-food-supply-chain/ensuring-global-food-supply-and-food-security_en#food-supply-and-security-dashboard

European Commission. (2026e). *7th report on the state of food security in the EU*. https://agriculture.ec.europa.eu/common-agricultural-policy/agri-food-supply-chain/ensuring-global-food-supply-and-food-security_en#food-supply-and-security-dashboard European Parliament and Council of the European Union. (2009). Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC. https://eur-lex.europa.eu/eli/reg/2009/1107/oj/eng

Funded by the European Union

The ECO-READY project has received funding from the European Union's Horizon Europe Research and Programme under grant agreement n° 101084201

European Parliament and Council of the European Union. (2024). *Regulation (EU) 2024/1991 on nature restoration and amending Regulation (EU) 2022/869*. https://eur-lex.europa.eu/eli/reg/2024/1991/oj/eng

European Scientific Advisory Board on Climate Change. (2026). *Climate adaptation and mitigation in the agri-food system: Recommendations for coherent EU policies*. https://climate-advisory-board.europa.eu/reports-and-publications/climate-adaptation-and-mitigation-in-the-agri-food-system-recommendations-for-coherent-eu-policies

Fotakidis, D., Chatzikostas, G., Kabouridou, D., Chatzidimitriou, E., & Kyriakou, A. (2024). *Funding for third party planning and monitoring: 3rd report* (Deliverable 3.4, ECO-READY).

LivOrganic. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

LivOrganic. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

LOFS. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

LOFS. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

Meenakshi Sundaram, H., Champseix, E. (2026). *Guiding Values for the Observatory* (Deliverable 5.3, ECO-READY). Link to be published.

Moghayer, S., Dominguez Viera, M., Ghaderi Zefreh, M., Kristkova, Z., Doeschl-Wilson, A., & Manikas, I. (2024). *Modelling future scenarios of food resilience* (Deliverable 1.5, ECO-READY). https://www.eco-ready.eu/pdfs/ECO-READY_D-1.5.pdf

Mousiadou, A., Michopoulou, S., Kostopoulos, Y., Stamos, A., Kyriakidis, A., Altsitsiadis, A., Louvrou, N., Mattas, K., Tsakiridou, E., Anastasiadis, F., & Syndoukas, N. (2024). *Stakeholder analysis* (Deliverable 2.1, ECOREADY). https://www.eco-ready.eu/pdfs/ECO_READY_D2.1_Stakeholder_analysis.pdf

Poláková, J., Potopova, V., Smeets Kristkova, Z., Weststrate, J., van Zeist, WJ, Oosterwijk, A., Kolářová, M., Dominguez Viera, M., Zahradníček, P., Štěpánek, P., Bunnefeld, N., Dettenhofer, M., Manikas, I. (2025). From local to global and from global to local: Designing the protocol to model agriculture and climate resilience. *Environmental and Sustainability Indicators*, 27, 100855. https://doi.org/10.1016/j.indic.2025.100855

Probio. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

Probio. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

Schipper, A.M., van der Marel, M., Bakkenes, M. et al. Impact factors for quantifying country-level terrestrial biodiversity intactness footprints (IBIF). Sci Data 12, 1660 (2025). https://doi.org/10.1038/s41597-025-05946-1

SECO Collab. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

SECO Collab. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

THALLA. (2025). *Interim demonstration of results/outcomes* (internal report - unpublished).

Funded by the European Union

The ECO-READY project has received funding from the European Union's Horizon Europe Research and Programme under grant agreement n° 101084201

THALLA. (2026). *Final demonstration of results/outcomes* (internal report - unpublished).

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Annexes

Annex 1: Agenda of policy recommendations co-creation workshop)



ECO-READY is a European research project aiming at achieving Ecological Resilient Dynamism for the European food system through consumer-driven policies, socio-ecological challenges, biodiversity, data-driven policy, sustainable futures. It will provide an Observatory, designed to be a real-time surveillance and food security early warning system. In addition, the project recognises the profound impacts of climate change and biological factors on food systems and will produce a series of policy recommendations for Europe's food security.

Entering its final year, ECO-READY is organising a two-day workshop to set the ground for its long-term impact. The event aims to present and discuss recent results and, above all, to give participants a voice in shaping the conditions for its long-lasting impact on food systems transformation. Interactive workshop sessions will engage participants in discussions from co-creating policy recommendations to contributing to the ECO-READY Observatory's sustainability plan.

Audience: the event will bring together ECO-READY partners and Living Labs. Some sessions will also be open to Brussels-based food systems experts (upon invitation).

Day 1 - 28 January | Co-creating recommendations for sustainable and resilient food systems

09.45-10.10	Registration & welcome coffee
10.10-10.20	Welcome words *Elodie Champseix, IUCN*
10.20-11.00	Introducing the computer-assisted contingency planning tool *Gerhard Schiefer and Porya Shahrezaie, proQuantis*
11.00-11.40	Building trust: discovering the ECO-READY ethical infrastructure *Harineeswari Meenakshi Sundaram, Eklipse / Alternet*
11.40-12.10	Coffee break
12.10-12.50	Exploring the key findings from the Life Cycle Assessment *Branwen Tomos and Jason Levin-Koopman, Wageningen University & Research*
12.50-13.30	Presenting the ECO-READY policy conclusions: the path towards policy recommendations *Blandine Camus and Elodie Champseix, IUCN*
13.30-14.30	Lunch break

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The afternoon workshops will be open to external experts upon invitation

14.30-14.45 Introduction to ECO-READY
Ioannis Manikas, Czech University of Life Sciences - ECO-READY Coordinator

14.45-15.45 Co-creation policy workshop part 1 - Turning conclusions into actionable recommendations
This workshop aims to discuss the policy changes necessary to drive change for biodiversity, climate change, sustainable consumption, data & indicators, and advisory services

15.45-16.15 Coffee break

16.15-16.45 Co-creation policy workshop part 1 – Restitution in plenary

16.45-17.45 Co-creation policy workshop part 2 - Living Labs carrousel
This workshop aims to explore inspiring policy and administrative enabling frameworks for food security and resilience in Living Lab territories and beyond

17.45-18.00 Closing words
Blandine Camus, IUCN

From 20.00 Joint partners diner at Wolf (rue du Fossé aux Loups 50)

Day 2 - 29 January | Shaping the long-term post-project sustainability

09.00-09.15 Introduction to day 2
Michael Bourlakis, Cranfield University

09.15-10.00 Introduction and demo of the ECO-READY Observatory
Ioannis Manikas, Czech University of Life Sciences - ECO-READY Coordinator, Ali Hurriyetoglu, Wageningen University and Themistoklis Diamantopoulos, Aristotle University of Thessaloniki

10.00-10.30 Presentation of the plan for sustaining the Observatory beyond the lifetime of ECO-READY project
Michael Bourlakis and Nam Vu, Cranfield University

10.30-11.00 Coffee break

11.00-12.15 Group discussion: Post-project sustainability of the Observatory
The aim of this session is to discuss the key aspects in regard to Observatory's capability to continue after ECO-READY project lifetime.
Session leads: Cranfield University team.

12.15-13.15 Workshop on Validation of Observatory Business Model Prototypes
Several potential business models were developed based on existing literature and data collected during workshops at the ECO-READY conference in Cyprus. The goal is to discuss important elements of several business models (results of previous workshop) to finalise business model prototypes, and to select of the best fitting one in the end of the project.
Session leads: Wageningen University team

13.15-13.20 Closing words
Ioannis Manikas, Czech University of Life Sciences - ECO-READY Coordinator

From 13.20 Networking lunch

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Annex 2: List of qualitative data composing the dataset used for the Thematic Analysis

Document title	Related Work Package	Status of the document
Climate change, biodiversity, and food security nexus: A structured data review	Deliverable 1.1, Work Package 1	Public
Connecting data with CAP, Green Deal and other EC Frameworks & Policies	Deliverable 1.2, Work Package 1	Public
Modelling future scenarios of food resilience	Deliverable 1.5, Work Package 1	Public
MAGNET biodiversity module results report	Work Package 1	Non public
Stakeholder analysis	Deliverable 2.1, Work Package 2	Public
Demonstration of results/interim and final reports - AIDEMEC Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports - CONCAT Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports -EcoReadyMasuria Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports - EcoVita Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports -ESAPPIN Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports -LivOrganic Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports - LOFS Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports - Probio Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports – SECO Collab Scandinavian Living Lab	Work Package 3	Non public
Demonstration of results/ interim and final reports - THALLA Living Lab	Work Package 3	Non public
Contingency planning: A framework for dealing with contingencies in food security	Deliverable 5.2, Work Package 5	Public
Event report from the Cranfield conference's policy roundtable, 3 April 2025	Work Packages 5 & 6	Non public
Event report from the Limassol conference on Biodiversity, Food Security and Policy Making, 12-15 May 2025	Work Package 5	Non public
Event report from the Living Lab policy sorting workshop, 30 July 2025	Work Package 5	Non public

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Event report from the policy recommendations co-creation workshop, 28 January 2026	Work Package 5	Non public
Life Cycle Assessment results report	Work Package 5	Public through D5.5
Policy Delphi study results report	Work Package 6	Public through D5.5
From local to global and from global to local: Designing the protocol to model agriculture and climate resilience. *Environmental and Sustainability Indicators, 27, 100855.*	/	Published article
Getting (ECO)Ready: Does EU Legislation Integrate Up-to-Date Scientific Data for Food Security and Biodiversity Preservation Under Climate Change? *Sustainability, 16(23), 10749.*	/	Published article

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