Key takeaways of the third LAMASUS Stakeholder Workshop

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Table of contents

List of Tables

List of Figures

Abbreviations

AKIS	Agricultural Knowledge and Innovation Systems
CAP	Common agriculture policy
DG AGRI	Directorate-General for Agriculture and Rural Development
EU	European Union
FSDN	Farm Sustainability Data Network
GHG	Greenhouse Gas
HVE	High environmental value
IIASA	International Institute for Applied Systems Analysis
INRAE	National Research Institute for Agriculture, Food and Environment
LULUCF	Land Use, Land-Use Change and Forestry
NUTS	Nomenclature of Territorial Units for Statistics
PBL	Netherlands Environmental Assessment Agency
SOC	Soil Organic Carbon
WIFO	Austrian Institute of Economic Research
WP	Work Package
WUR	Wageningen University & Research

1. Introducing the LAMASUS stakeholder engagement

The LAMASUS Horizon Europe project (www.LAMASUS.eu) aims to create a meaningful impact on the formulation, implementation, and monitoring of land-related policies in agriculture and forestry, particularly in the context of climate change. To achieve this, we are developing a comprehensive policy co-design portal and a novel governance model. This innovative framework brings together policymakers, researchers, and experts to provide the necessary tools and information.

The expertise of representatives of interest groups, officials from various government levels, and scientists is an important resource for the project. These participants provide input through sharpening research questions, bringing their expertise on relevant topics, and thus ensuring that policies reflect the diverse needs and aspirations of all involved actors.

CO-DESIGN APPROACH

LAMASUS builds on the expertise from EU-level policy makers that participate in the **Policy Advisory Board,** and on the insights and perspectives from local and national policy makers, land users, and other stakeholders, who participate in the **Stakeholder Board** to review and provide input on key milestones of the project.

The third LAMASUS stakeholder workshop was attended in person by 16 stakeholders, reflecting a continued strong commitment to inclusive and participatory engagement. The group represented a well-balanced mix of sectors and regions, which was in line with previous workshops.

In terms of research institutes and farmers, each accounted for 25% of participants, followed by executive/public administration (19%), NGOs (13%), interest groups (12%), and the food industry (6%). Compared to earlier workshops, the share of farmers and research institutes has remained consistent, while food industry participation—previously absent—was newly represented in this round (*Figure 1*). Gender balance showed a 69% male and 31% female split. This marks a modest improvement over the first workshop, where female participation was below 25%, although further progress remains important. Geographically, stakeholders came from 13 different countries, with Greece as the host country having the largest representation, followed by Austria. This broad distribution reinforces the project's European scope and mirrors the diversity achieved in previous workshops. Notably, this round included stronger participation from Eastern European countries, such as Romania and Hungary.

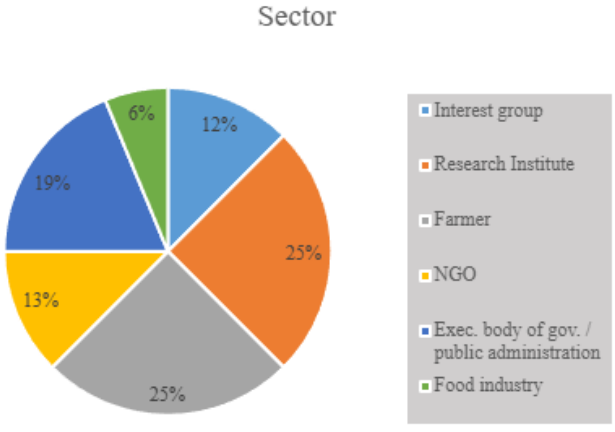

Figure 1: Stakeholder composition

2. Summary of the third stakeholder workshop

The third LAMASUS Stakeholder Workshop convened on March 5-6, 2025, in Thessaloniki, Greece, bringing together stakeholders to discuss sustainable land management, agricultural productivity, and land use change within the European context. The workshop featured contributions from key institutions, including the International Institute for Applied Systems Analysis (IIASA), the Austrian Institute of Economic Research (WIFO), Wageningen University & Research (WUR), the French National Institute for Agriculture, Food and Environment Research (INRAE), Netherlands Environmental Assessment Agency (PBL), Thünen Institute of Farm Economics (Thünen), and the Norwegian Center for Rural Research (Ruralis).

The day commenced with a welcome and overview of the workshop's aims by Tamás Krisztin (IIASA), he also presented the project's progress and recent developments. Subsequently, Anna Renhart (WIFO) and Felicity Addo (IIASA) introduced three draft policy briefs focusing on Sustainable Farming, Agricultural Productivity, and Land Use Change. A poster session followed, which deepened discussions on the research included in the policy briefs.

Participants then engaged in breakout sessions. These sessions were led by Anna Renhart (WIFO) on CAP and agricultural productivity, Felicity Addo (IIASA) on sustainable farming, and Tamás Krisztin (IIASA) on land use change. The breakout discussions provided input from diverse stakeholder perspectives to refine the briefs.

In the afternoon, the focus shifted to macro-modeling scenarios for medium- and long-term policy assessment. Presentations by Jonathan Doelman (PBL) and Nico Polman (WUR) introduced three scenarios: a Productivity-Oriented Approach, an Environmentally Ambitious Strategy, and a Balanced Pathway. Participants explored the assumptions, project outcomes, and policy implications during breakout discussions, facilitated by Peter Witzke, Tassos Haniotis, and Jonathan Doelman. During the breakout sessions, nuanced feedback was received, based on which the scenarios will be updated to ensure they accurately reflect diverse stakeholder priorities and real-world complexities. Breakout leaders summarised key insights and outlined actionable steps for integrating stakeholder inputs into the project's ongoing work during the ensuing plenary session moderated by Nico Polman (WUR). The workshop concluded with a plenary discussion on effective communication of findings, chaired by Franz Sinabell (WIFO), focusing on dissemination strategies and the upcoming roadshows in the four LAMASUS case study countries (i.e., Austria, France, Norway, and the Netherlands).

On March 6th, stakeholders visited the rice farm of LAMASUS stakeholder Kostas Kravvas. The visit included a tour of the farm, a group picture, and a debriefing session, offering participants a practical perspective on precision farming techniques.

3. Summaries of the workshop sessions

This chapter summarises each workshop session and details the questions, comments, and suggestions from stakeholders, as well as proposed follow-up. The agenda for the meeting is available in the Annex.

3.1. POLICY BRIEFS

Three draft policy briefs developed in WP4 of the LAMASUS project were presented, focusing on:

- Sustainable farming
- Agricultural productivity
- Land use change

These briefs synthesise findings from over a dozen empirical studies and aim to inform agricultural, environmental, and rural development policy. The briefs were presented during a plenary session, individual research papers were discussed during a poster session, after which stakeholders discussed their feedback during three breakout groups. This process and the key paper titles per policy brief presented during the stakeholder workshop are described in Figure 2.

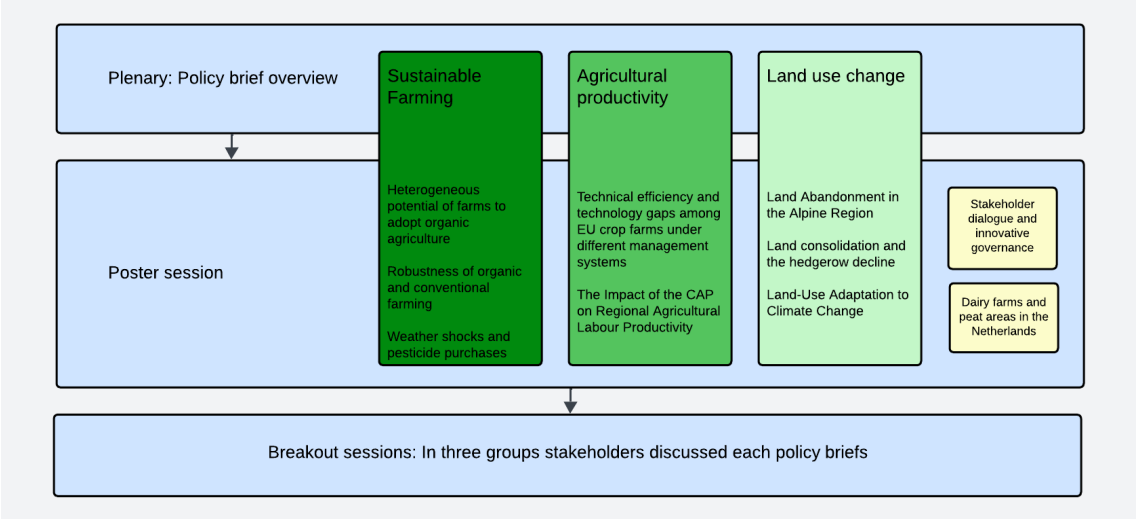

Figure 2: Overview of the policy brief-related workshop activities

Anna Renhart (WIFO) and Felicity Addo (IIASA) introduced the purpose, structure, and scope of the briefs, and outlined their relevance for upcoming scenario work under WP7, summarised here:

a. Sustainable farming

This brief explores the potential for sustainable farming systems to enhance the resilience of EU agriculture. It draws on evidence from a range of studies focusing on organic farming, and situates these findings within the broader context of sustainable practices such as agroecology, regenerative farming, and integrated pest management (IPM). The brief highlights patterns of adoption across different regions and farm types, noting that conversion rates are higher in areas with existing organic networks and that topography and population density are stronger predictors of uptake than market signals.

The brief outlines three main objectives:

1. Understanding the drivers of sustainable practice adoption.
2. Identifying barriers at structural, institutional, and regional levels.
3. Linking evidence to potential CAP and national policy adjustments.

b. Agricultural productivity

The second brief examines how agricultural productivity can be improved while meeting environmental objectives. It includes findings from meta-frontier efficiency analyses, labor productivity models, and yield growth studies, showing that:

- Low-intensity farms are significantly less efficient, particularly in Southern and Eastern Europe.
- Nitrogen input remains a dominant driver of yield growth, outweighing even market price dynamics.
- Climate stressors, particularly rising temperatures, are already impacting output levels.

The brief discusses how CAP Pillar I and II instruments have differing impacts on productivity and raises questions about how policy design can better incentivise efficiency, resilience, and technological innovation.

c. Land use change

The third brief focuses on land use dynamics and the trade-offs between agriculture, forestry, biodiversity, and rural development. It presents findings on:

- The limited effectiveness of CAP direct payments in preventing pasture abandonment in alpine areas.
- The role of land consolidation in landscape change, including hedgerow loss.
- Regional disparities in how CAP subsidies affect land use decisions across Europe.

The brief also emphasises the need for spatially explicit policymaking, better alignment between agricultural and environmental goals, and the inclusion of demographic trends in land use modelling and policy planning.

Following the presentation of the three policy briefs, a lively and substantive discussion took place among stakeholders. Participants raised a range of questions, critiques, and suggestions, particularly regarding the scope of sustainable farming practices, the practical implications of pesticide use under climate stress, and the coherence of land use objectives across the briefs. Their feedback provided valuable insight into the real-world applicability and clarity of the policy directions proposed. The main points raised during this exchange are summarised in *Table 1* below.

Table 1: Discussion on policy briefs

TOPIC	STAKEHOLDER COMMENT
Widen scope beyond organic farming	• Organic farming is not the only sustainable practice; agroecological, regenerative, and precision methods must be included. • We need clearer definitions and data for non-organic ecological practices (e.g. agroecology, IPM). • Organic certification does not reflect all sustainable behavior; some farmers go beyond organic standards.
Pesticide use & climate	• Pesticide use may increase due to climate stress; IPM and biological alternatives should be considered. • Incentives must match economic reality: fungicide cost vs. bonus was unbalanced; farmers won't act on principle alone. • Focus should shift toward climate change adaptation and resilience, not just yield levels.
Productivity & CAP instruments	• CAP lacks regional precision—subsidies do not always align with where productivity gains are possible. • Generational renewal is critical; young farmers are deterred by bureaucracy and lack of support. • Neighbor effects and regional differentiation are strong; data must capture local variation in subsidy effectiveness.
Land use change & hedgerows	• Consolidation needs clearer terminology; stakeholders need clarity on positive vs. negative effects. • Policy briefs seem incoherent when compared—trade-offs between food production and biodiversity need to be addressed explicitly. • Hedgerows reduce yield at margins but increase biodiversity and central productivity—should be framed positively.

3.1.1. Policy brief breakout sessions

Afterwards, the workshop moved into three parallel breakout sessions. Each room focused on one of the core thematic areas of the LAMASUS project: CAP & Productivity, Sustainable Farming, or Land Use Change. These sessions were designed to allow stakeholders to critically assess assumptions, share local experiences, and help shape the direction of future scenario development. The following sections summarise the outcomes of the three breakout sessions.

3.1.2.2 Sustainable farming – breakout

In the sustainable farming session, participants called for a more inclusive understanding of what farming sustainably means. Many felt that the current policy focus on organic farming was too narrow and urged the inclusion of additional practices such as regenerative farming, agroecology, and integrated pest management (IPM). The discussion highlighted a growing interest in voluntary certification systems, such as France's high environmental value (HVE) scheme or biodiversity credits in Ireland, which can help bridge the gap for farmers not formally certified as organic.

Market access, advisory services, and peer learning were identified as crucial enablers of sustainable transition. Participants stressed the importance of independent, non-commercial advisory systems and simplification of bureaucratic processes that currently discourage farmer participation. Sustainability, emphasised by many, must be understood not only at the farm level but also across ecosystems and supply chains. There was broad agreement that future CAP reforms must better reflect the complexity of sustainability while making it more accessible and actionable for farmers.

Table 2: Summary of the key points raised during the sustainable farming sessions

SESSION	MAIN STAKEHOLDER FEEDBACK	LAMASUS FOLLOW-UP
Definition of sustainability	Organic farming alone is too narrow; other models like regenerative, IPM, and agroecology should be recognised.	Broaden scenario definitions to include multiple sustainable farming practices beyond organic.
Certification and incentives	Support for schemes like HVE and biodiversity result-based payments; call for new certifications for non-organic sustainable practices.	Highlight national certification examples and explore criteria for a harmonised EU-wide recognition model.
Market access and farmer empowerment	Farmers need support networks and advisory systems to adopt sustainable methods; peer learning is crucial.	Integrate farmer-to-farmer learning models into dissemination and scenario narratives.
Administrative burden	High bureaucracy is a deterrent; simplification is necessary but shouldn't ignore complexity.	Assess administrative burdens in CAP measures and propose simplification strategies in policy briefs.

SESSION	MAIN STAKEHOLDER FEEDBACK	LAMASUS FOLLOW-UP
Holistic ecosystem approach	Policies should reflect whole-ecosystem thinking, including forests and landscape elements like hedgerows.	Include ecosystem-based indicators in dashboard tools and scenario outputs.

3.1.2.1 Agricultural productivity – breakout

This breakout session explored how the CAP can support sustainable productivity growth across Europe. Stakeholders discussed climate-induced yield changes and the broader implications for food security. A key focus was the generational shift in farming and its associated relationships. For example, younger farmers are often more open to innovation, but barriers such as inheritance laws and a lack of financial instruments were identified as major obstacles. Stakeholders emphasised that CAP measures currently fall short in supporting young entrants into agriculture, particularly those outside family succession lines.

The conversation also covered tensions between the CAP Pillar I and Pillar II instruments, with calls to redesign payment structures to better reward environmental outcomes. Technological innovation was seen as essential, but stakeholders stressed that it must go hand-in-hand with ecological sustainability. Concerns were raised about the actual impact of the Agricultural Knowledge and Innovation Systems (AKIS), with several voices suggesting that improved data (like the future FSDN system) is needed to track productivity changes more accurately.

Table 3: Summary of the key points raised during the CAP and productivity sessions

TOPIC	MAIN STAKEHOLDER FEEDBACK	LAMASUS FOLLOW-UP
Climate change and yield	Climate change affects not just quantity but also crop quality; soil salinisation is an emerging issue.	Include regional climate stress indicators and salinisation risks in scenario outputs.
Youth in agriculture	Young farmers face barriers due to land inheritance and lack of targeted policies; collective investments could help.	Integrate generational renewal into scenario assumptions; explore financial innovation tools.
CAP instrument effectiveness	Tensions exist between CAP Pillar I (income support) and Pillar II (environmental incentives).	Model Pillar I vs II trade-offs explicitly and include mixed payment schemes in dashboards.
Innovation and technology	Need for innovation incentives in Pillar II; environmental performance-based payments suggested.	Incorporate tech adoption scenarios with environmental benchmarks.
Role of AKIS systems	Lack of clarity on how AKIS systems affect productivity; better integration and transition to FSDN	Coordinate with AKIS stakeholders and simulate impacts using emerging FSDN-compatible metrics.

3.1.2.3 Land use change – breakout

The final breakout room focused on land use policy and the need for better integration across agricultural, forestry, and conservation objectives. Participants highlighted that policies too often operate in silos, undermining efforts to manage land multifunctionally. Land consolidation was discussed as a double-edged tool – useful for both agriculture and forest restoration if deployed strategically and with environmental safeguards.

Stakeholders expressed strong support for a comprehensive EU soil protection framework, noting that soil health is foundational to sustainable land management. Discussions also emphasised the need for greater regional flexibility, allowing member states and sub-national actors to tailor CAP interventions to local land use pressures. Lastly, the group advocated for more targeted support of biodiversity-enhancing practices, such as agroecology and hedgerow conservation, especially in marginal areas where current incentives are insufficient.

Table 4: Summary of the key points raised during the land-use change sessions

TOPIC	MAIN STAKEHOLDER FEEDBACK	LAMASUS FOLLOW-UP
Policy integration	Agriculture and forestry policies must be integrated to manage competing land uses.	Model land use scenarios that explicitly connect agriculture and forestry transitions.
Land consolidation	Land consolidation should be considered for both farmland and forests to improve management.	Include land consolidation effects in regional simulations and scenario pathways.
Soil protection	A comprehensive EU soil protection law is needed to prioritise soil health.	Address soil protection in policy briefs and integrate soil health into dashboard metrics.
Incentives and flexibility	Flexible, regionally adapted policies are essential for effective land management.	Enable dashboard customisation by region to reflect policy flexibility.
Biodiversity and agroecology	Practices like hedgerow conservation and agroecology should be promoted through targeted support.	Highlight agroecology and hedgerow value in biodiversity and carbon outcome indicators.

3.1.2. Poster session

During the poster session, participants explored the underlying scientific work. These posters presented key historical empirical results, offering insights into farm-level practices,

productivity dynamics, landscape management, and stakeholder governance. Organised thematically, the posters reflected the geographical breadth and methodological diversity of the LAMASUS project, with case studies from Austria, France, Germany, the Netherlands, and Norway. In the next subsections, the posters and findings are summarised.

3.1.1.1 Sustainable farming

Heterogeneous potential of farms to adopt organic agriculture: The case of German dairy and arable farms

A study presented by the Thünen Institute of Farm Economics focused on the conversion dynamics of conventional farms to organic farming, with a particular emphasis on dairy and arable farm types. The analysis drew on detailed spatial and structural data covering Germany, aiming to identify how these types of farms transition and under what conditions.

The findings revealed that extensive farms, particularly those located in less productive regions, exhibited a higher probability of converting to organic. One of the key factors influencing this decision was the presence of existing organic farms nearby – a phenomenon referred to as the "neighborhood effect". Farms surrounded by peers who had already converted were significantly more likely to follow suit, suggesting that local knowledge exchange, peer influence, and trust in organic markets play an important role. In this study, dairy farms are more likely to convert than arable farms. Arable farms, lacking on-farm nutrient cycling, depend on external structures like biogas infrastructure for conversion. In contrast, dairy farms have inherent nutrient management. Targeting "regional organic hubs" with these synergies allows for focused investment and amplified conversion potential. This distinction is particularly relevant for policy design, as it implies that targeted strategies may be needed to accelerate organic conversion across different farm types.

Robustness of organic and conventional farming: The case of Norwegian farms

The Ruralis case study investigated the long-term resilience of organic versus conventional farms, focusing on structural robustness during periods of economic and policy uncertainty. Using longitudinal registry data covering a ten-year period, the analysis compared farm exit rates and continuity between the two groups.

The results showed that organic farms consistently had lower exit rates, indicating greater business stability and a higher likelihood of long-term viability. The findings suggest that these farms have a comparative advantage in adaptability, which may be an undervalued asset in CAP reform debates.

Weather shocks and pesticide purchases

Research conducted by INRAE examined the link between short-term weather anomalies and pesticide use, focusing in particular on fungicides and herbicides. Drawing on regional time-series data of pesticide purchases and meteorological records, the study investigated how sudden changes in temperature and rainfall affected farm-level input decisions.

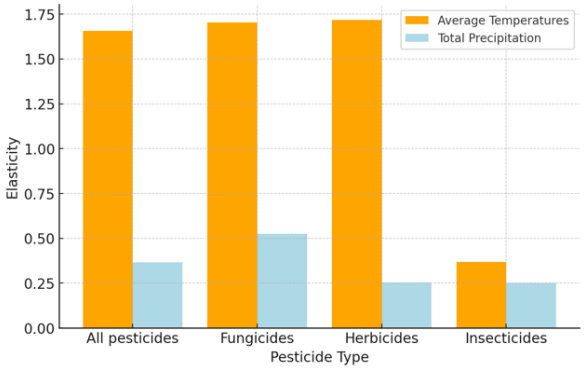

Figure 3: Weather Elasticities of Pesticide Purchase

The findings revealed a clear and statistically significant relationship: in years marked by abnormal weather conditions, such as excessive humidity or abrupt temperature shifts, there was a marked increase in pesticide purchases. The response was most pronounced among medium- to large-scale farms, which may have greater operational flexibility and commercial pressure to protect yields.

3.1.1.2 Agricultural productivity

Technical efficiency and technology gaps among EU crop farms under different management systems

A study conducted by IIASA applied a meta-frontier efficiency analysis to assess technical performance differences among European farms, with a particular focus on the impact of production intensity. The study covered data from multiple EU countries.

Its findings revealed that low-intensity farms, especially those located in Southern and Eastern Europe, operated significantly below the production frontier when compared to their high-intensity counterparts in Northern and Western regions. Using a stochastic frontier framework, the research quantified how close each farm group was to its respective technology frontier and then compared them to the meta-frontier, representing the best performance attainable with current technology across all systems. The results showed clear structural disparities. Low-intensity farms, often reliant on extensive grassland systems or traditional mixed cropping, exhibited efficiency scores that were 20–40% lower on average. In contrast, high-intensity farms using capital- and input-intensive methods consistently operated near the frontier.

The Impact of the CAP on Regional Agricultural Labour Productivity

This case study was conducted by WIFO and IIASA using regional data from Austria, with a particular focus on mountainous and peripheral areas. The research applied spatial economic analysis to evaluate how different components of the Common Agricultural Policy (CAP)—especially Pillar II measures—affect labor productivity and land management in challenging environments. The study used regional mapping techniques to visualise labor trends and contextual variables, and explored how CAP support interacts with structural demographic pressures.

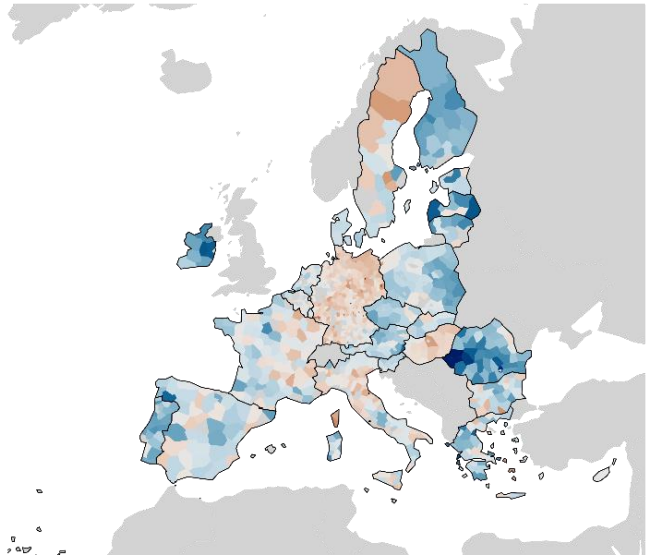

Figure 5: Regional map of pastureland loss with overlays of CAP payments and population density

The findings indicate that CAP subsidies, while helpful in specific instances, are not sufficient to prevent grassland abandonment, particularly in high-altitude or remote areas. Payments for mountain farming and biodiversity under Pillar II had a modest and uneven impact, while demographic trends—such as population aging, youth outmigration, and lack of successors—were found to be much stronger drivers of land abandonment. Abandonment was especially pronounced in regions with poor infrastructure and market access. In some cases, off-farm employment served as a partial buffer, but only where connectivity allowed for diversified income sources. These results highlight the need for better-integrated rural development strategies that align CAP instruments with broader socioeconomic realities.

3.1.1.3 Land use change

Land Abandonment in the Alpine Region: Agricultural Subsidies in Austria

This in-depth case study by WIFO and IIASA on grassland abandonment in mountainous regions of Austria focused on the effectiveness of CAP subsidies in preventing land-use decline. The research analysed a range of drivers behind abandonment.

Its findings revealed that agricultural subsidies alone are insufficient to halt the loss of managed pastureland, especially in steep and remote alpine zones. While targeted Pillar II payments, such as those for mountain farming and biodiversity services, had a modest positive effect, the study found that demographic pressures – aging populations, youth outmigration, and the absence of successors – were far more decisive factors. The analysis also showed that abandonment tended to concentrate in areas with low population density and limited access to infrastructure, where farming already faces structural disadvantages.

Guilty or scapegoat? Land consolidation and the hedgerow decline

INRAE presented a study on the relationship between land consolidation policies and hedgerow loss in French bocage regions, known for their rich network of field boundaries and biodiversity corridors. The research challenged the widespread assumption that land consolidation is uniformly detrimental to landscape structure, instead offering a more layered, data-driven perspective. The study used a difference-in-differences approach, comparing hedgerow density before and after land consolidation across multiple regions and decades.

The analysis revealed that while land consolidation was indeed associated with hedgerow removal, this effect was largely concentrated in early implementation periods, particularly before the 1990s, when environmental regulations and spatial planning constraints were weaker or absent. In more recent decades, the negative effects of consolidation appeared less pronounced, with some areas even showing partial recovery or stabilisation of hedgerow density, suggesting the success of greening measures and habitat protections introduced over time.

Land-Use Adaptation to Climate Change: Evidence from European 1990-2018 grid-level data

This comprehensive empirical study by INRAE shows how land use patterns in Europe have responded to climate change over the past three decades. Using grid-level panel data from 1990 to 2018, the researchers tracked shifts in cropland, grassland, and forest cover across the EU, relating these changes to local climate variables such as temperature increases, precipitation trends, and frequency of extreme events.

The analysis revealed that land systems are already adapting to climate signals in measurable ways. In warmer southern regions, land use has tended to shift away from forest and permanent grassland, often toward more intensive agricultural uses. Conversely, in cooler or formerly marginal regions – such as parts of Scandinavia and the Baltic – rising temperatures have coincided with a gradual expansion of cropland, suggesting a northward migration of agricultural potential.

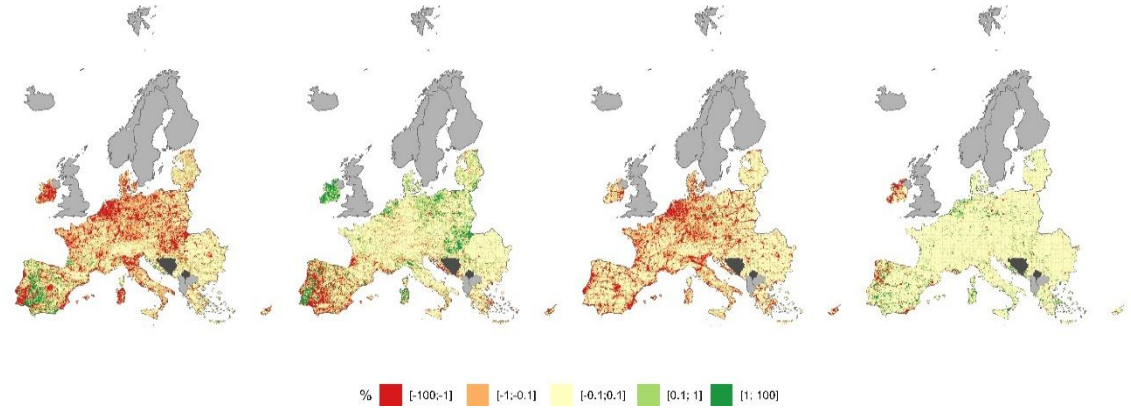

Figure 6: Land-use change from 1990 to 2018

3.1.1.4 Governance and stakeholder processes

Stakeholder dialogue and innovative governance

WIFO researchers explored how the LAMASUS project integrates stakeholder engagement into scenario development and policy assessment, positioning dialogue as a central element to design future-oriented and socially accepted land use strategies. Drawing on insights from multiple workshops, interviews, and co-creation activities, the research presented governance approaches that enable collaboration between scientists, policymakers, farmers, and civil society actors.

This poster highlighted that dialogue is not just a form of communication, but a governance tool in itself. Through facilitated workshops, such as those conducted throughout the LAMASUS project, stakeholders were encouraged to challenge assumptions, contribute experiential knowledge, and negotiate between competing land use goals. These interactions served to ground scientific modelling in real-world priorities and opened space for more inclusive forms of decision-making. The study distinguished between different levels of governance innovation:

- Procedural innovations (e.g. use of scenario co-design, iterative feedback loops),
- Institutional innovations (e.g. integration of stakeholder panels into project governance),
- Substantive innovations (e.g. framing of policy options through value-based trade-off discussions).

Policy scenario: dairy farms and peat areas in the Netherlands

This poster by WUR examined the impacts of peatland protection measures on dairy farming systems in the Netherlands. The study focused on regions characterised by drained peat soils, which are known to emit high levels of CO_2 due to ongoing oxidation. As the Netherlands intensifies efforts to reduce greenhouse gas emissions from agriculture, peatland areas have become a policy hotspot. The study presented modelling scenarios that simulated the introduction of rewetting policies, land-use restrictions, and carbon-based regulations on dairy farms operating in these zones.

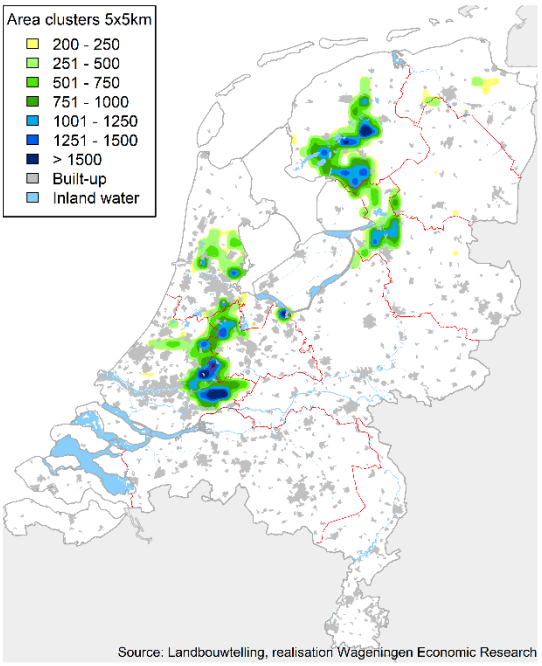

Figure 7: Spatial Distribution of Livestock Populations

The findings illustrated a sharp trade-off between emission mitigation and economic viability. While rewetting and reduced drainage would significantly curb soil-related emissions, they would also limit the land's suitability for intensive dairy production. This, in turn, could reduce herd sizes, milk yields,

and farm income – raising concerns about the social and economic sustainability of such measures. A cost-impact curve was featured, showing how different levels of peatland rewetting would reduce emissions (on the x-axis) but increase economic costs for dairy farms (on the y-axis). The curve steepened quickly after modest intervention levels, illustrating that initial gains are cost-effective, but deep rewetting becomes increasingly burdensome for farmers.

3.2. MACRO-MODELLING SCENARIOS

In the second part of the workshop, participants turned their attention to medium- and long-term agricultural and land use scenarios developed within the LAMASUS modelling framework. The scenarios were designed to inform policy design through simulation of future outcomes.

Jonathan Doelman (PBL) and Nico Polman (WUR) introduced three scenarios for policy assessment:

- Productivity Focused: Emphasises technological progress, intensive agriculture, and food security.
- Environmental Ambitions: Prioritises biodiversity, carbon sequestration, and climate adaptation.
- Balanced Pathway: Aims to combine elements of the two other scenarios into an integrative compromise.

These scenarios form the backbone of forthcoming modelling exercises using the LAMASUS Toolbox. The temporal scope of the scenarios extends to 2050, allowing for the assessment of long-term policy impacts. They cover a range of policy dimensions, including CAP funding levels, technology adoption, environmental regulations, and land-use planning. In terms of sectoral coverage, the scenarios encompass crop and livestock agriculture, forestry, and natural ecosystems. The spatial resolution ranges from the local farm scale (NUTS3) to the EU level and includes global trade dynamics. Stakeholders were invited to assess the underlying assumptions, identify possible blind spots such as food crises or geopolitical shocks, and reflect on the trade-offs embedded in each scenario trajectory. The session also emphasised the ambition to integrate key legislative developments, including the Nature Restoration Law, LULUCF targets, and the Soil Health Directive into future modelling iterations.

Table 5: Policies per scenario

Scenario	Strong productivity	Strong environmental ambitions	Balanced pathway
Carbon sequestration strategy	Forests and less productive peatlands – Carbon sinks through dedicated afforestation on agricultural land, where not directly profitable without CAP payments.	Arable land & peatlands – Carbon storage prioritised on far mland through extensification and restoration. High water tables on peatlands.	Mixed approach – Carbon credits, agroforestry, and soil carbon farming integrated with production.
Afforestation	Large-scale afforestation to create forest carbon sinks, reduces available cropland.	Limited afforestation, focusing on land-sharing approaches rather than large-scale conversion.	Targeted afforestation, promoting agroforestry, si lvopasture, and tree planting on abandoned land.
CAP payments (Pillar I & II)	CAP redirected to support the adoption of smart agriculture technologies. Share of direct payment to agronomic research, allowing to produce more with less.	Pillar I direct payments reduced, funds redirected to agri-environmental payments (AEP) and greening incentives.	Pillar I reduced keep 20% direct payments, remaining payments as incentives for soil organic carbon management and regenerative farming.
Organic farming	Limited expansion (below CAP SP targets) to maintain productivity focus.	Expansion to 25% of farms by 2030, driven by subsidies and regulations.	Organic farming promoted through top-up incentives for soil-related outcomes rather than direct payments.
Fertiliser & pesticide reduction	Limited input reductions to preserve high yields supported by research on precision farming and IPM, while still considering hot spot regions.	Strong taxation on fertilisers (-50% surplus), pesticide bans, and further taxes on chemical inputs.	Moderate taxation on fertilisers, banning a deliberated selection of hazardous pesticides.

Participants were divided into three breakout groups, each engaging in two rounds of discussion. The sessions were facilitated by Peter Witzke, Tassos Haniotis, and Jonathan Doelman, who guided conversations through key design questions:

- How realistic are the assumptions and parameters?
- Which variables or indicators are missing?
- What kind of feedback loops or crisis scenarios should be modelled?

- How can the scenarios reflect regional differences across the EU?

Stakeholders brought in a wide range of expertise—from modelling and agronomy to policy and civil society perspectives. Discussions were rich and detailed, with several requests for better regional granularity, clearer inclusion of farmer incentives, and more attention to global responsibility (e.g., food security and imports).

Table 6: Key comments on the macro-modelling scenarios

Scenario	Key stakeholder comments	LAMASUS proposed adjustments and follow-up
Scenario A – productivity	Considered too optimistic; risk of environmental externalities; potential over-reliance on technological solutions without safeguards.	Include risk assessments; stress-test productivity assumptions; explore equity impacts.
Scenario B – environmental	Concerns about economic viability and feasibility under current CAP structure; realism questioned due to climate extremes and low market incentives for biodiversity.	Add crisis sensitivity; enhance realism of CAP budget assumptions; explore biodiversity monetisation strategies.
Scenario C – balanced path	Seen as desirable but vague; needs clearer metrics and realistic trade-offs; important to balance food sovereignty and ecological ambition.	Develop clear outcome indicators (e.g., income, GHG, biodiversity); scenario evolution in case of political shifts.
Cross-cutting themes	Need for regional flexibility; stress-testing for crises (e.g. war, climate extremes); more explicit farmer behavior and advisory systems; clarify CAP implementation logic.	Add regional modules and sensitivity analyses; model advisory uptake; simulate CAP shifts under disruptive scenarios.

3.3 SCIENCE FOR THE PEOPLE: HOW TO COMMUNICATE EFFECTIVELY

The final session of the day, chaired by Franz Sinabell (WIFO), focused on how to effectively communicate the results of LAMASUS' complex modelling and scenario work to policymakers, practitioners, and the broader public. It emphasised that for research to have real-world impact, it must be not only rigorous but also transparent, accessible, and actionable.

A key element of this strategy is the development of the LAMASUS Land Policy Dashboard, a digital platform currently under construction. Designed as a user-friendly portal, the dashboard will enable stakeholders to explore the implications of different policy choices through interactive visualisations and region-specific indicators. It will include:

- Scenario comparisons showing projected outcomes for GHG emissions, land use change, soil carbon, biodiversity, productivity, and other metrics;
- Filter and drill-down features allowing users to view country- or NUTS3-level results and examine the impact of specific policy levers;
- Narrative summaries that contextualise the quantitative findings and help users interpret key trade-offs;
- Downloadable datasets and briefings for use in policy processes, teaching, or stakeholder outreach.

The stakeholders gave valuable feedback for this dashboard summarised in *Table 7*.

Table 7: Stakeholder feedback for the dashboard

Topic	Stakeholder Feedback	Proposed Response / Follow-up
Dashboard usability	Design must accommodate non-specialist users (e.g., policymakers, NGOs, farmer groups); avoid overly technical interfaces.	Develop a clean, intuitive interface with simple menus, tooltips, and guided navigation.
Clarity and transparency	Clearly communicate assumptions and uncertainties behind model outputs.	Include narrative summaries, uncertainty bands, and info buttons explaining parameters and data sources.
Interpretation of results	Need for storylines or example use cases to help users understand real-world applications.	Provide preset scenarios and walkthroughs illustrating policy trade-offs in concrete contexts.
Accessibility of outputs	Users want to download datasets, charts, and briefings for internal use (policy work, presentations, teaching).	Enable data export, printable summaries, and slide-ready visual downloads in multiple formats.
Roadshow content	Use roadshows to showcase country-specific results and discuss national CAP priorities.	Structure each roadshow around national case studies + dashboard demonstration, with time for feedback and Q&A.
Stakeholder engagement	Participants should be able to test the dashboard in real-time and provide feedback before public launch.	Include interactive demo sessions and feedback surveys during roadshows; adapt design based on this input.
Communication formats	Recommend LAYERED COMMUNICATION: videos, infographics, and short briefs tailored to different audiences and technical levels.	Develop a communications package with modular content for various stakeholder groups and media channels.
Communication formats	Results should link clearly to CAP STRATEGIC PLANS, national indicators, and regional adaptation strategies.	Prepare customisable dashboards and filters to support national and subnational policy dialogue.

To ensure widespread uptake and meaningful dialogue, LAMASUS will implement a layered dissemination strategy, with a central focus on national-level roadshows in: Austria, Netherlands, Norway and France. Each roadshow will be hosted by the respective national consortium partners, who will present the findings from their country-specific case studies – such as organic farming dynamics in Germany, peatland protection in the Netherlands, pasture abandonment in Austria, and climate-driven pesticide use in France – and demonstrate how these insights are reflected and interact with the dashboard's scenario outputs.

These roadshows are intended to:

- Facilitate a policy dialogue with national ministries, local stakeholders, and CAP strategists;
- Provide a space for interactive testing and feedback on the Land Policy Dashboard;
- Support capacity building for stakeholders seeking to use LAMASUS tools in their own planning and advocacy work.

The LAMASUS team emphasised that these events are part of an ongoing co-production process, ensuring that modelling tools and narratives are informed by real-world expertise and grounded in practical needs, in addition to dissemination of its results. The goal is to create a living interface between science and policy, adaptable over time and responsive to emerging challenges.

4. Field Visit: Rice Farm

On March 6th, 2025, participants spent the morning visiting the rice farm of Kostas Kravvas, a LAMASUS stakeholder and farmer based near Thessaloniki. This visit offered a valuable opportunity to observe land use realities on the ground and to reflect on how policy ideas and modelling assumptions intersect with daily farming challenges.

After a short bus transfer, the group was welcomed by Mr. Kravvas and his family, followed by a tour of the farm's infrastructure, irrigation systems, and fields. Participants were introduced to the site's specific challenges, such as salinity management, water use efficiency, and market pressure on rice prices, all of which are closely linked to CAP measures and sustainability goals discussed the previous day.

The visit also prompted reflection on the complexity of applying EU-wide policy frameworks to regionally diverse farming systems. Stakeholders noted the high dependency on local environmental conditions, infrastructure investments, and farmer networks, emphasising the importance of flexibility in policy design and support for knowledge exchange at farm level.

After the tour, participants gathered for a light debriefing session with local refreshments, where they discussed their impressions and linked the observations back to the macro-scenarios and policy briefs. The conversation touched on issues such as:

- The visibility and impact of CAP support in practice
- Trade-offs between environmental goals and production needs
- How farms like Kravvas' can act as real-world testbeds for policy implementation

The visit concluded with a group photo and a final round of informal exchanges, reinforcing a sense of connection between research, policy, and the realities of everyday land management.

This grounded perspective was appreciated by many participants as an essential complement to the theoretical and modelling-heavy sessions of the workshop, underscoring the value of integrating local insights into European-level policy development.

Annex

Wednesday, March 5, 2025

08:45-09:00 Registration

09:00-09:10 Welcome of stakeholders, presentation of agenda and aims of workshop
Tamás Krisztin, IIASA

09:10-09:30 Progress and recent developments
Tamás Krisztin, IIASA
20 min presentation followed by 10 min of Q&A

09:30-10:30 Introduction to policy briefs
Anna Renhart, Felicity Addo, IIASA

10:30-11:00 Coffee break & Poster session of WP4 papers

11:00-12:15 Policy briefs | Breakout sessions
CAP and productivity
Lead: Anna Renhart, WIFO
Rapporteur*: Walter Rossi Cervi; WUR*

Sustainable Farming
Lead: Felicity Addo, IIASA
Rapporteur: *Sebastian Neuenfeldt, Thünen*

Land use change
Lead: Tamás Krisztin, IIASA
Rapporteur: *Ana-Luisa Barbosa, European Commission*

12:15-13:00 Reporting back from breakout sessions and plenary discussion
Moderation: Anna Renhart

13:00-14:00 Lunch

14:00-14:30 Macro-Modeling Scenarios for medium- and long-term policy assessment

Jonathan Doelman, PBL and Nico Polman, WUR

14:30-15:45 Scenarios | Breakout sessions
Breakout groups discussing the same topics (3 groups, main scenarios)
Each participant
Leads: Peter Witzke, Tassos Haniotis, Jonathan Doelman
Meeting room: Azzuro and Rosso

15:45-16:15 Coffee break & Poster sessions of WP4 papers

16:15-17:15 Scenarios | Breakout sessions
Breakout groups discussing the same topics
Leads: Peter Witzke, Tassos Haniotis, Jonathan Doelman
Meeting room: Azzuro and Rosso

17:15-18:00 Reporting back from breakout sessions
Moderation: Nico Polman, WUR

18:00-18:30 Science for the people | How to communicate findings effectively
Plenary discussion on dissemination of results & roadshows
Chair: Franz Sinabell, WIFO

19:30 Working Dinner at Charoupi Restaurant (Location, Doxis 4, Thessaloniki 546 25)

Thursday, March 6, 2025

09:00 Bus transfer to rice farm of LAMASUS stakeholder Kostas Kravvas
09:30 Arrival at farm, group picture
09:45-10:45 Words of welcome, tour of the farm Kostas Kravvas
10:45-11:30 Debriefing scenarios over light snacks and refreshments
11:30 Bus transfer to airport