



D7.4 Knowledge Exchange Groups (KEG) framework & summary

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Work Package	WP7
Delivery Date (DoA)	M16
Actual Delivery Date	M16
Abstract:	Deliverable D7.4 outlines the strategic framework for implementing Knowledge Exchange Groups (KEGs) as collaborative platforms for multi-stakeholder engagement. The project addresses critical challenges in livestock production across five thematic areas: <i>true costs of food, whole value chains, consumer perspectives, ecosystem services, and sustainability indicators</i>. By fostering knowledge exchange at local, regional, European, and global levels, STEP UP seeks to develop evidence-based solutions, including the STEP UP Dashboard, to support policymakers and stakeholders. The consortium, comprising 16 partners from eight EU Member States, the UK, and Serbia, integrates expertise in livestock science, environmental economics, consumer behavior, and policy analysis to drive this transformation. The KEG framework is a core component of STEP UP's Multi-Actor Approach Strategy (MAAS), designed to facilitate co-creation, data exchange, and knowledge sharing among public and private sector actors within the livestock value chain. The framework is structured across three phases: <i>Concept Development (M1-16), Implementation (M19-34), and Impact and Knowledge Synthesis (M37-46)</i>. The first phase focuses on laying the groundwork through stakeholder mapping using the 3is framework (Influence, Interest, Impact) and defining tailored engagement strategies for each KEG. The KEGs are strategically designed to explore critical intersections of livestock systems, focusing on complex, multidimensional challenges that require collaborative, transdisciplinary approaches. These groups aim to create comprehensive understanding and innovative solutions by examining the intricate relationships between social, economic, and environmental aspects of livestock farming. The KEGs will facilitate deep, nuanced exploration of systemic challenges, leveraging diverse expertise to develop holistic insights and actionable strategies for the sustainable transformation of livestock production and consumption systems. The key topics around which KEGs are formed include true costs of food, whole value chains, consumer perspectives, ecosystem services, and sustainability indicators. Each KEG involves a diverse set of stakeholders from both public and private sectors, ensuring representation at local, regional, European, and global levels. This includes policymakers, livestock producers, feed producers, research institutions, industry experts, agricultural advisors, NGOs, environmental organizations, consumer groups, and other actors in the livestock value chain. KEGs facilitate effective information flow and interlinking between stakeholders and the consortium's community. The information flow is bidirectional, enabling feedback loops between KEGs, case studies, and work packages. Dedicated KEGs also focus on developing the STEP UP Dashboard, ensuring that insights are translated into user-friendly, evidence-based tools for policymakers and public authorities. KEGs aim to create a dynamic, co-creative environment that supports sustainable livestock production and addresses key challenges within the sector.

Document Revision History			
Date	Version	Author/Contributor/ Reviewer	Summary of main changes
22/04/2025	V1	Çağla Yüksel Kaya	
28/04/2025	V2	Milica Kovac (FSH)	Review
29/04/2025	V3	David Kenny or Wellington Osawe	Quality check
30/04/2025	V4	Çağla Yüksel Kaya	Final version and submission

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Title: Sustainable Livestock Systems Transition and Evidence Platform for Upgrading Policies

Type of action: HORIZON Research and Innovation Action

Topic: HORIZON-CL6-2023-FARM2FORK-01-6

Start date of project: 1 January 2024 • Duration: 48 months

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Table 1: List of abbreviations and acronyms

List of Abbreviations and Acronyms	
Abbreviation	Full Form
BLE	Bundesanstalt für Landwirtschaft und Ernährung
CAP	Common Agricultural Policy
CSIC	Agencia Estatal Consejo Superior de Investigaciones Científicas
EFFAB	European Forum of Farm Animal Breeders
ELPS	European Livestock Production Systems
eNGO	Environmental Non-Governmental Organisation
EU	European Union
FADN	Farm Accountancy Data Network
FEEDINOV	Associação para a Investigação e Inovação em Nutrição e Alimentação Animal
FSH	Udruženje za Preduzetništvo i Inovacije Foodscale Hub
GHG	Greenhouse Gas
IDELE	Institut de l'Élevage
IFIP	Institut du Porc Association
ILPS	Innovative Livestock Production Systems
INRAE	Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement
IST-ID	Associação do Instituto Superior Técnico para a Investigação e o Desenvolvimento
ITAVI	Institut Technique de l'Aviculture, de la Cuniculture et de la Pisciculture
KEG	Knowledge Exchange Group
MAAS	Multi-Actor Approach Strategy
MAA	Multi-Actor Approach
NGO	Non-Governmental Organization
PULS	Uniwersytet Przyrodniczy w Poznaniu
QUB	The Queen's University of Belfast
REA	European Research Executive Agency
SJOS	Safe and Just Operating Space
SLU	Sveriges Lantbruksuniversitet
STEP UP	Sustainable Livestock Systems Transition and Evidence Platform for Upgrading Policies
TEAGASC	Agriculture and Food Development Authority
TRL	Technology Readiness Level
WGs	Working Groups
WP	Work Package
WR	Stichting Wageningen Research

1. Executive Summary

1.1. Overview

The STEP UP project, funded under the HORIZON-CL6-2023-FARM2FORK-01-6 topic, aims to advance the sustainable transformation of European Livestock Production Systems (ELPS) through a comprehensive Multi-Actor Approach (MAA). This deliverable, D7.4, outlines a strategic framework to initiate the implementation of Knowledge Exchange Groups (KEGs) as collaborative platforms for multi-stakeholder engagement. The project addresses critical challenges in livestock production across five thematic areas: *true costs of food*, *whole value chains*, *consumer perspectives*, *ecosystem services*, and *sustainability indicators*. By fostering knowledge exchange at local, regional, European, and global levels, STEP UP seeks to develop evidence-based solutions, including the *STEP UP Dashboard*, to support policymakers and stakeholders. The consortium, comprising 16 partners from eight EU Member States, the UK, and Serbia, integrates expertise in livestock science, environmental economics, consumer behaviour, and policy analysis to drive this transformation.

1.2. KEG Framework and Implementation

The KEG framework, a core component of STEP UP's Multi-Actor Approach Strategy (MAAS), is designed to facilitate co-creation, data exchange, and knowledge sharing among public and private sector actors within the livestock value chain. This deliverable establishes the strategy for KEG implementation across three phases: *Concept Development (M1-16)*, *Implementation (M19-34)*, and *Impact and Knowledge Synthesis (M37-46)*.

The first phase, detailed in this report, focuses on laying the groundwork through stakeholder mapping and identifying the relevance of each category stakeholder using the 3is framework (Annex 6.1 Influence, Interest, Impact, p. 30) and defining tailored engagement strategies for each KEG.

For example, the True Costs of Food KEG (Table 4) targets high-influence, high-interest, high-impact stakeholders like EU and National Policy Makers by engaging them as key partners in shaping cost-accounting frameworks through regular high-level dialogues, aiming to secure their advocacy for integrating hidden costs into market pricing. Meanwhile, low-influence stakeholders like NGOs will be involved through collaborative advocacy initiatives to amplify awareness of hidden food costs, leveraging their networks for broader outreach. Similarly, the Whole Value Chains KEG (Table 5) plans to engage high-influence, high-interest stakeholders like Political Entities through strategic summits to drive value chain reforms, while collaborating with moderate-influence consumers through accessible education campaigns using social media and local influencers to highlight livestock production impacts.

The Consumer Perspectives KEG (Table 5) will engage high-influence catering companies by involving them in decision-making and co-creation processes, such as strategic meetings to develop sustainable and nutritionally balanced menus, while partnering with moderate-influence nutrition societies through consultation forums to integrate nutritional expertise into livestock systems. The Ecosystem Services KEG (Table 7) focuses on moderate-influence stakeholders like NGOs, creating collaborative platforms to share research on ecosystem impacts and involving them in assessment activities to leverage their local knowledge. Lastly, the Sustainability Indicators KEG (Table 7) will establish farmer-led innovation platforms with high-influence farmer organizations to ensure the practical applicability of indicators, while forming structured partnerships with moderate-influence groups like the European Environmental Bureau (EEB) to develop joint policy briefs.

Upcoming activities include the Delphi Survey (M18) for the True Costs of Food KEG to assess the applicability of true cost accounting methods, and engagements with nutritionists and consumer organizations (M15-M17) for the Consumer Perspectives KEG to define balanced diets and explore consumer trends. The KEGs will also drive the co-creative development of the STEP UP Dashboard,

ensuring it integrates environmental, social, and economic indicators to meet user needs for evidence-based decision-making.

Table 2. Summary of the objectives and key stakeholders for each KEG, providing an overview of the report's scope:

KEG Topic	Objective	Key Stakeholders and Engagement Focus
True Costs of Food	Account for hidden environmental, social, and health costs of food production.	EU/National Policy Makers (high-level dialogues), NGOs (advocacy campaigns), Consumers (educational campaigns).
Whole Value Chains	Explore and address impacts and externalities of livestock production from farm to fork.	Political Entities (policy summits), Retailers (sustainability projects), Consumers (education campaigns).
Consumer Perspectives	Understand consumer trends and wishes for sustainable livestock systems and balanced diets.	Catering Companies (co-creation of menus), Nutrition Societies (consultation forums), Retailers (industry forums).
Ecosystem Services	Assess impacts of livestock on ecosystems, maximizing benefits and minimizing harm.	NGOs (collaborative platforms), Policy Makers (evidence-based briefings), Farmers (demonstration sites).
Sustainability Indicators	Refine indicators to assess environmental, economic, and social impacts of livestock systems.	Farmer Organizations (innovation platforms), (e)NGOs (dialogue mechanisms), Retailers (market-focused working groups).

1.3. Conclusions

Deliverable D7.4 provides a robust strategy to initiate the implementation of the KEG framework, setting the stage for transformative impacts in the livestock sector. The stakeholder engagement strategies, developed through the 3is mapping process, ensure targeted and inclusive collaboration with diverse actors, from policymakers to farmers. The planned development of the STEP UP Dashboard, guided by the KEGs, will bridge the gap between research and practice, offering policymakers actionable insights into livestock system sustainability. The iterative nature of the MAAS ensures adaptability, with future phases poised to refine strategies based on stakeholder feedback and emerging challenges. As STEP UP progresses, it aims to deliver a scalable model for multi-actor engagement, contributing to a more resilient and sustainable future for European livestock production.

2. Knowledge Exchange Groups (KEGs) Framework

The STEP UP project leverages Knowledge Exchange Groups (KEGs) as collaborative platforms designed to facilitate multi-stakeholder engagement, co-creation, and knowledge sharing among public and private sector actors involved in livestock production systems. They serve as dynamic forums to address the economic, environmental, and social impacts of European Livestock Production Systems (ELPS). By facilitating data exchange, joint analysis, and co-creative design, KEGs contribute to sustainable transformation, policy recommendations, and the development of innovative tools like the STEP UP Dashboard of ELPS.

KEGs ensure a structured flow of information among stakeholders at local, regional, European, and global levels, enabling collaborative solutions to challenges in livestock farming while integrating diverse perspectives. Their activities are designed to support policy-making, research innovation, and stakeholder engagement through co-creation and evidence-based decision-making.

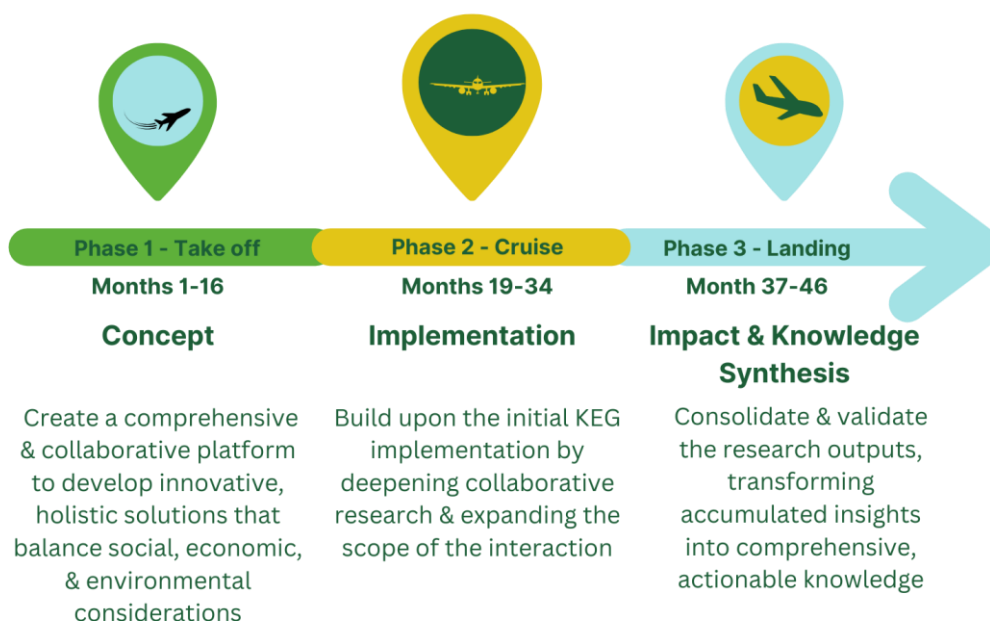


Figure 1 Knowledge Exchange Groups (KEGs) phases

2.1. First phase: Concept Development (M1-16)

The first phase of KEGs focuses on establishing and implementing collaborative groups to support concept design and case study integration. This phase is built upon the Multi-Actor Approach Strategy (MAAS) and is coordinated closely with WP2 and WP6. It involves selecting expert panellists to ensure a high level of knowledge and expertise, while all activities operate according to standardized protocols and frameworks to maintain consistency and quality throughout the process.

2.1.1. Key Objectives

The primary goals of the Knowledge Exchange Groups are to create a comprehensive and collaborative platform for addressing the complex challenges of terrestrial livestock systems. By bringing together diverse stakeholders and experts, KEGs aim to develop innovative, holistic solutions that balance social, economic, and environmental considerations. The groups will work towards transformative approaches that can effectively mitigate negative impacts while promoting positive externalities in livestock farming.

- Explore solutions with private and public stakeholders regarding livestock systems' impacts

- Address multiple impacts including:
 - Social impacts
 - Economic impacts
 - Environmental impacts on climate, biodiversity, and ecosystem services
- Focus on mitigating negative externalities and enhancing positive ones

2.1.2. Special Focus Areas

The Knowledge Exchange Groups will concentrate on targeted, strategic initiatives designed to maximize knowledge transfer and practical application. These focus areas are carefully selected to bridge critical gaps in understanding, support evidence-based decision-making, and create platforms for cross-regional and cross-system learning and collaboration.

- Development of a user-friendly STEP UP Dashboard to support policymakers with evidence-based data
- Cross-checking between different ELPS & ILPS case studies
- Facilitating knowledge exchange between regional and production system levels

2.1.3. Implementation Methods

The implementation of Knowledge Exchange Groups will be dynamic and multifaceted, emphasizing interactive and collaborative approaches. By leveraging diverse engagement methods, the KEGs will create comprehensive, participatory environments that foster knowledge sharing, innovative thinking, and practical skill development across different stakeholder groups.

- Series of online or in-person sessions
- Workshops
- Dissemination, Exploitation, and Communication (DEC) activities
- Partner and participant training
- Support for cluster co-creation
- Facilitation of individual case studies

2.2. Second phase: Implementation (M19-34)

The second phase of KEGs builds upon the foundational work established in the first phase, representing a critical evolutionary stage in the project's research strategy. Rooted in the insights gained from previous work packages and drawing from the collaborative methodologies established in the initial phase, this stage marks a significant transition from exploratory research to a more nuanced, comprehensive investigation. The phase is intricately linked with Work Packages 1-6, leveraging their collective knowledge and insights to refine and expand the research approach. Drawing from the methodological frameworks developed earlier and informed by detailed analyses from various project components, the second phase aims to deepen the understanding of livestock systems through integrated and collaborative research methods, with a specific focus on insights from T8.2, adherence to the first phase MAAS methodology, and coordination across multiple work packages.

2.2.1. Key Objectives

The second phase aims to build upon the initial KEG implementation by deepening collaborative research and expanding the scope of the interaction. By leveraging previous insights and methodological frameworks, the KEGs will focus on comprehensive assessment, cross-checking, and expanding stakeholder involvement to create more robust and inclusive research outcomes.

- Joint implementation and cross-checking of case studies
- Assessment of case study effects
- Review and update of existing methodological frameworks

- Expand stakeholder reach under the MAAS umbrella

2.2.2. Special Focus Areas

This phase emphasises strategic knowledge integration and stakeholder expansion with a deliberate approach to broadening the research perspective. The KEGs will prioritise comprehensive understanding through targeted engagement and innovative collaborative methods.

- Continued development of a user-friendly Project Dashboard
- Co-creative involvement of dedicated KEG
- Consumer-focused groups
- Exploration of "true costs of food"
- Considerations of "whole value chains"

2.2.3. Implementation Methods

The implementation strategy will be more inclusive, building on the foundations established in the first phase. By employing a diverse range of engagement techniques, the KEGs will create dynamic platforms for knowledge exchange, critical analysis, and collaborative problem-solving.

- Workshops
- Consultations
- Surveys
- Focus group events
- Selective addition of expert panel members
- Targeted stakeholder engagement

2.3. Final phase: Impact and Knowledge Synthesis (M37–46)

The final phase of KEGs marks the culmination of the project's collaborative research strategy, focusing on comprehensive assessment, methodological refinement, and knowledge integration. This phase represents a strategic opportunity to synthesise the extensive research conducted across multiple work packages, particularly drawing from the insights and results of T8.2 and T8.3, finalising methodological frameworks and operating protocols and capturing the cumulative research outcomes across the project's lifecycle.

2.3.1. Key Objectives

The final phase aims to consolidate and validate the research outputs, transforming accumulated insights into comprehensive, actionable knowledge. By critically assessing and synthesising the results from previous stages, the KEGs will provide a definitive overview of the project's findings, methodological innovations, and potential future directions.

- Address and assess insights from T8.2 and T8.3
- Finalise standardised operating protocols
- Validate methodological frameworks
- Document key research outcomes
- Prepare final knowledge synthesis

2.3.2. Special Focus Areas

This concluding phase emphasises knowledge integration and translational impact, with a concentrated effort to transform research insights into practical, user-oriented outputs. The KEGs will prioritise creating tangible, accessible resources that communicate the project's complex findings to diverse stakeholders.

- Final set of workshops and co-creative events

- Consumer-focused group discussions
- Exploration of "true costs of food"
- Considerations of "whole value chains"
- Finalisation of user-friendly Project Dashboard

2.3.3. Implementation Methods

The implementation strategy for the final phase will be highly targeted and synthesis-oriented, building upon the comprehensive groundwork established in previous stages. By employing focused engagement techniques, the KEGs will distil complex research into clear, impactful knowledge products.

- Targeted workshops
- Co-creative events
- Expert panel consultations
- Knowledge synthesis sessions
- Dashboard development and demonstration
- Preparation of final documentation

2.4. Composition of KEG (public and private sector initiatives)

The Knowledge Exchange Groups (KEGs) will comprise a diverse set of stakeholders from both public and private sectors, ensuring representation at local, regional, European, and global levels (**Error! Reference source not found.**). This includes policymakers, livestock producers, feed producers, research institutions, industry experts, agricultural advisors, NGOs, environmental organisations, consumer groups, and other actors in the livestock value chain. The selection process, facilitated by the consortium workshop mapping, will identify relevant expert panellists with expertise in upstream and downstream impacts of various livestock production systems. Additional panel experts may be invited as needed, depending on the specific thematic focus of each KEG.

2.5. Mechanism for flow of information and interlinking

KEGs will facilitate effective information flow and interlinking between stakeholders and the consortium's community. This process will be supported through workshops, sessions, consultations, surveys, and focus group events designed to foster multi-actor approach (MAA) and co-creation. The information flow will be bidirectional, enabling feedback loops between KEGs, case studies, and work packages (notably WP2 and WP6). Standardised operating protocols and frameworks will guide the KEG activities, ensuring consistency and alignment across thematic areas. Dedicated KEGs will also focus on developing the STEP UP Dashboard, ensuring that insights are translated into user-friendly, evidence-based tools for policymakers and public authorities.

2.6. Roles and responsibilities of KEG members

KEG members will play a crucial role in the co-creative design process, contributing to the development and refinement of concepts, indicators, and scenarios. Their responsibilities include:

- **Expert Contributions:** Providing specialised knowledge and insights on economic, social, and environmental impacts of livestock systems.
- **Collaborative Development:** Engaging in workshops and sessions to co-create solutions and scenarios, particularly focusing on sustainability, resilience, and innovation in livestock systems.
- **Data Sharing and Case Studies:** Participating in and facilitating case studies to provide real-world contextual data, supporting the broader objectives of WP2 and WP6.

- **Stakeholder Engagement:** Ensuring effective communication and knowledge exchange between various stakeholders, fostering cross-checking and validating data and case studies.
- **Policy Support:** Offering recommendations and feedback to support evidence-based policymaking, especially through the STEP UP Dashboard.
- **Dissemination and Outreach:** Assisting in disseminating project results, ensuring that findings reach relevant stakeholders and contribute to broader discussions on livestock sustainability.

By fostering synergies with relevant research and innovation (R&I) initiatives and ensuring the continuous involvement of diverse stakeholders, KEGs aim to create a dynamic, co-creative environment that supports sustainable livestock production and addresses key challenges within the sector.

2.7. Key Topics for Knowledge Exchange Groups (KEGs)

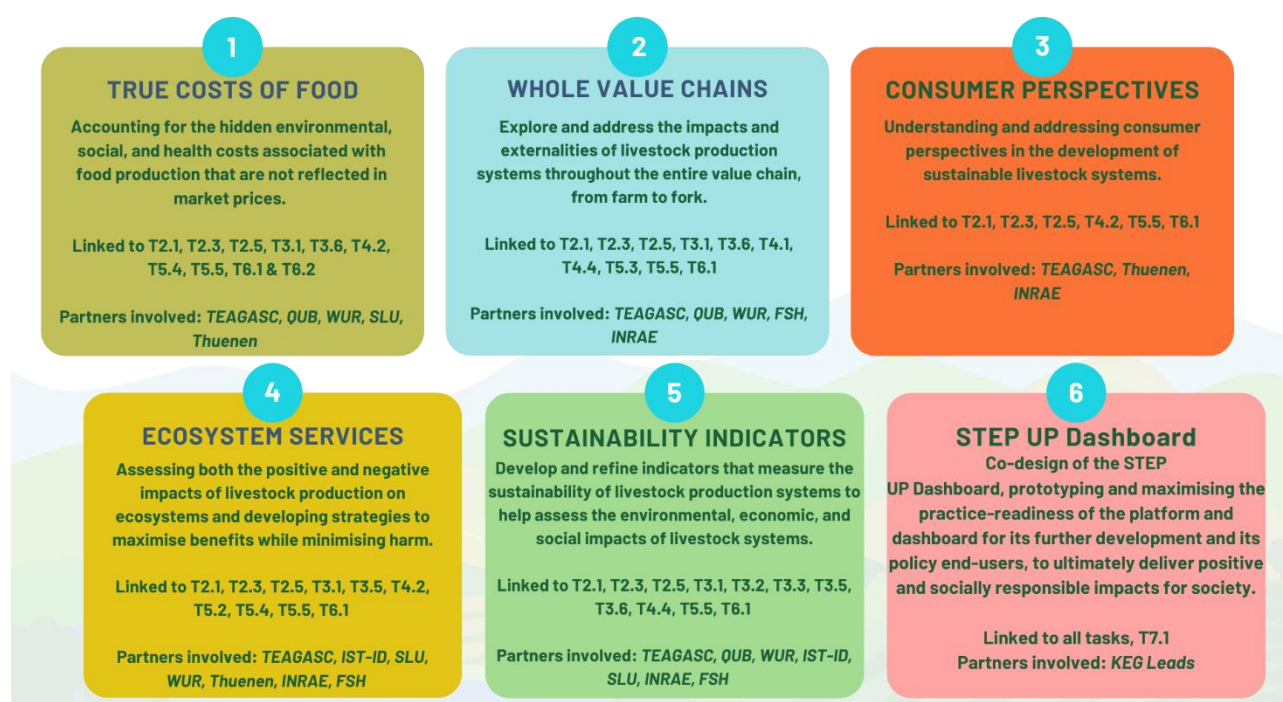


Figure 2 Knowledge Exchange Groups

The Knowledge Exchange Groups (KEGs) are strategically designed to explore critical intersections of livestock systems, focusing on complex, multidimensional challenges that require collaborative, transdisciplinary approaches. These groups aim to create comprehensive understanding and innovative solutions by examining the intricate relationships between social, economic, and environmental aspects of livestock farming. The KEGs will facilitate deep, nuanced exploration of systemic challenges, leveraging diverse expertise to develop holistic insights and actionable strategies for the sustainable transformation of livestock production and consumption systems.

In the STEP UP project, KEGs should be organised around thematic topics that address the multi-dimensional challenges and opportunities within European Livestock Production Systems (ELPS) and Innovative Livestock Production Systems (ILPS). These topics ensure a targeted and focused approach, enabling stakeholders to engage in meaningful discussions and contribute to developing sustainable solutions. The key topics around which KEGs could be formed has been identified with partners during the dedicated workshop at AM1 in Novi Sad.

Table 3 Key topics, required expertise and foreseen activities for KEG implementation

Key Topic	Required Expertise	Input Collection Activities
True Costs of Food	Agricultural economists, Environmental scientists, Policy makers, Consumer representatives, Farmers and producers	Consumer surveys, Economic impact assessments, Life cycle cost analyses, Comparative economic modelling
Whole Value Chains	Agricultural supply chain experts, Sustainability specialists, Food industry representatives, Logistics professionals, Environmental economists	Cross-sector stakeholder workshops, Value chain mapping, Comparative production system studies, Stakeholder consultation sessions
Ecosystem Services	Ecologists, Climate scientists, Agricultural researchers, Conservation experts, Land use planners	Environmental impact assessments, Biodiversity tracking, Ecosystem service valuation studies, Climate impact modelling
Consumer Perspectives	Market researchers, Consumer behaviour analysts, Food industry representatives, Sociologists, Communication specialists	Consumer focus groups, Behavioural studies, Market trend analyses, Perception surveys
Sustainability Indicators	Sustainability metrics experts, Agricultural policy researchers, Data scientists, Systems thinking specialists	Benchmarking studies, Indicator development workshops, Cross-regional comparative analyses, Expert panel consultations
STEP UP Dashboard	Members of other KEGs, Science Communication Specialists, Knowledge Translation, Storytellers	Research Integration, User Testing, Stakeholder Workshops, Feedback Collection, Cross-KEG Collaboration, Policy Translation

3. STEP UP Dashboard

3.1. Overview

The STEP UP Dashboard serves as a central tool within the STEP UP project, designed to provide comprehensive, science-based evidence on the impacts and externalities of European Livestock Production Systems (ELPS) and Innovative Livestock Production Systems (ILPS). This user-friendly platform functions as a centralized repository housing data on environmental, social, and economic indicators crucial for assessing the sustainability of livestock systems.

The dashboard's primary purpose is to support evidence-based decision-making among policymakers, stakeholders, and researchers, enabling them to navigate the complex challenges associated with sustainable livestock transformation. By providing accessible visualization tools and scenario analysis capabilities, the dashboard bridges the gap between scientific research and practical application.

3.2. Development Process Through KEGs

The STEP UP Dashboard is being developed through a co-creative process facilitated by dedicated Knowledge Exchange Groups (KEGs). This collaborative approach ensures that diverse perspectives and expertise are integrated throughout the dashboard's development lifecycle.

3.2.1. First Phase: Concept Development (M1-16)

During this initial phase, KEGs focus on establishing the conceptual framework for the dashboard, identifying key indicators, and defining user requirements. These groups work closely with stakeholders to ensure the dashboard addresses their information needs and practical challenges. In this initial phase the STEP UP Dashboard page has been created and integrated into STEP UP website (<https://dashboard.horizon-stepup.eu/>). In the next phase it will be published with its unique domain and will be populated.

3.2.2. Second Phase: Implementation (M19-34)

Building on the foundational work of the first phase, this stage involves the continuous development and refinement of the dashboard through co-creative involvement of dedicated KEGs. The focus shifts to practical implementation, testing, and improvement based on user feedback. This phase is characterized by deeper stakeholder engagement and integration of insights from case studies.

3.2.3. Final Phase: Impact and Knowledge Synthesis (M37-46)

The concluding phase focuses on finalizing the dashboard, incorporating all research outcomes and stakeholder input. This phase emphasizes the dashboard's role in knowledge synthesis and knowledge transfer, ensuring that it effectively communicates complex findings to diverse audiences. Final workshops and demonstrations help familiarize users with the dashboard's capabilities.

3.3. Key Functionalities

The STEP UP Dashboard incorporates several innovative functionalities designed to enhance understanding and decision-making:

3.3.1. Data Repository

The dashboard serves as a centralised repository, housing data on the positive and negative impacts of various livestock production systems. This includes environmental, social, and economic indicators, which are crucial for assessing the sustainability of these systems.

3.3.2. Scenario Analysis

Users can explore different scenarios for transitioning European livestock systems. The dashboard incorporates the Safe and Just Operating Space (SJOS) framework, allowing users to evaluate the impacts of different policy and management scenarios on sustainability metrics.

3.3.3. Visualisation Tools

Interactive visualisation tools such as interactive maps, heat maps, dynamic charts, impact dashboards...etc will be integrated into the dashboard to help users understand complex data and trends. These tools make it easier to communicate findings to a broader audience, including policymakers and the general public.

3.3.4. Policy Recommendations

The dashboard provides tailored recommendations and tools for policymakers. These recommendations are designed to mitigate negative externalities and enhance positive ones, aligning with the goals of the European Green Deal and the Farm to Fork Strategy.

3.3.5. STEP UP Dashboard KEG

The STEP UP Dashboard KEG serves primarily as a dissemination and implementation group, focusing on translating research findings into actionable insights.

Rather than collecting primary data, the Dashboard KEG focuses on:

1. **Research Integration:** Synthesizing and integrating findings from the other KEGs into a coherent, user-friendly platform
2. **User Testing:** Conducting iterative testing sessions with potential end-users to refine functionality and interface
3. **Stakeholder Workshops:** Organizing demonstrations and training sessions to maximise adoption and proper usage
4. **Feedback Collection:** Establishing mechanisms to gather user experiences and suggestions for continuous improvement
5. **Cross-KEG Collaboration:** Working closely with research-focused KEGs to ensure accurate representation of their findings
6. **Policy Translation:** Developing features that specifically address policymakers' needs and decision-making processes
7. **Communication Strategy:** Creating supporting materials (guides, tutorials, briefs) to enhance dashboard utilisation

By focusing on dissemination expertise, the Dashboard KEG can maximize the platform's practice-readiness and policy impact, ensuring that valuable research findings from across the STEP UP project reach their intended audiences in accessible, actionable formats.

4. First phase: Concept Development

4.1. KEGs Workshop

As part of the STEP UP project's commitment to fostering collaboration and strategic planning within its Knowledge Exchange Groups (KEGs), a dedicated workshop was held during its first Annual Meeting on 27 February 2025 in Novi Sad, Serbia. This interactive session brought together partners from different Work Packages to engage in hands-on, structured activities to consolidate KEG objectives, stakeholder engagement, and forward-looking planning.

The workshop followed a four-step format to promote reflection, coordination, and action. Participants first reviewed their respective KEGs, clarified their objectives, and identified partner roles, including potential leads or co-leads. They then mapped key stakeholders using the 3is framework—Interest, Influence, and Impact—before outlining key activities and timelines for the upcoming 12 months. The workshop employed a systematic approach to map and categorise stakeholders based on their **Influence, Interest, and Impact – 3i Framework**, ensuring effective engagement strategies for the project's success. Stakeholders were plotted on an influence-interest-impact 3-axis, 3d matrix, and their relevance was categorised by establishing the degree of interest, impact and influence at a high, moderate or low level. The overall categorisation of each stakeholder group was then used to identify a tailored engagement strategy. The session concluded with identifying foreseen activities per KEG and a brief presentation of each KEG's results, fostering transparency and peer learning.

This collaborative approach strengthened the alignment within and across KEGs and laid the groundwork for targeted actions and stakeholder engagement strategies to be implemented throughout the project's next phase.

4.2. Workshop Results

4.2.1. KEG on True Costs of Food



Figure 3 Summary card for True costs of food KEG

4.2.1.1. Objective

The "True Costs of Food" Knowledge Exchange Group (KEG) focuses on accounting for the hidden environmental, social, and health costs associated with food production that are not reflected in market prices.

4.2.1.2. Internal Structure

The "True Costs of Food" KEG is structured around a series of tasks and collaborations to account for food production's hidden environmental, social, and health costs. The workshop draws on specific

Work Packages (WPs) and tasks, namely T1.3, T4.2, T5.4, T5.5, T6.1, and T6.2, focusing on stakeholder engagement, data analysis, and policy development related to food production costs.

Key partners involved in the workshop include TEAGASC, QUB, WUR, SLU, Thuenen, and Idele, bringing together expertise from agricultural research, environmental science, and policy analysis.

The Wageningen University & Research (WUR) is identified as the leading partner, overseeing the coordination and execution of the workshop activities.

This internal structure ensures a collaborative approach, leveraging the diverse expertise of the partners to address the complex challenges of true cost accounting in food systems.

4.2.1.3. External Structure and Mapping of Stakeholders

The stakeholders identified include the EU and National Policy Makers, Farmers, Local Authorities, Statistical Agencies (Eurostat), Consumers, NGOs, Retailers, Industrial Processors, and LCA Databases. Their categorisation and engagement strategies are summarised in Table 4.

Table 4 Stakeholder Mapping of KEG True Costs of Food

Category	Stakeholders	Engagement Strategy
High Influence, High Interest, High Impact	EU and National Policy Makers, Consumers	Engage as key partners in shaping cost-accounting frameworks. Involve them in co-developing policies and initiatives through regular high-level dialogues. Secure their advocacy for integrating hidden costs into market pricing systems.
High Influence, High Interest, High Impact, Shift Impact-Interest	Consumers	Collaborate closely to raise awareness of hidden food costs. Involve them in co-creation of educational campaigns and feedback loops. Organize strategic forums to align their interests with sustainable pricing initiatives.
High Influence, High Interest, Moderate Impact, Shift Interest-Influence	Local Authorities	Ensure alignment through active collaboration. Provide tailored updates on cost-accounting impacts in their regions and involve them in relevant decision-making. Host periodic workshops to co-plan local implementation strategies.
Low Influence, Moderate Interest, Low Impact, Shift Interest-Influence	NGOs	Engage through collaborative advocacy initiatives. Leverage their networks to amplify awareness of hidden food costs, involving them in campaign development. Establish regular consultations and share impact stories to sustain their enthusiasm.
Low Influence, Moderate Interest, Low Impact, Shift Interest-Influence	LCA Databases	Partner on technical contributions to cost assessments. Involve them in working groups to refine life cycle analysis methodologies for hidden costs. Provide regular updates and recognition to maintain their interest and support.
High Influence, Low Interest, Low Impact, Shift Influence-Interest	Statistical Agencies (Eurostat)	Engage through focused collaborations on data integration. Develop joint initiatives to enhance data accuracy for cost accounting, supported by structured workshops. Provide evidence-based insights to spark greater interest in the project.
Low Influence, Moderate Interest, Moderate Impact, Shift Interest-Impact	Industrial Processors, Retailers	Collaborate through targeted sustainability programs. Share data-driven insights on hidden costs and their market implications. Facilitate forums for feedback and co-develop strategies to integrate true cost principles into operations.

Low Influence, Low Interest, Moderate Impact, Shift Interest-Impact	Farmers	Provide actionable insights on the benefits of true cost accounting. Offer training and resources to adopt sustainable practices, supported by peer-sharing platforms. Include incentives to encourage active participation over time.
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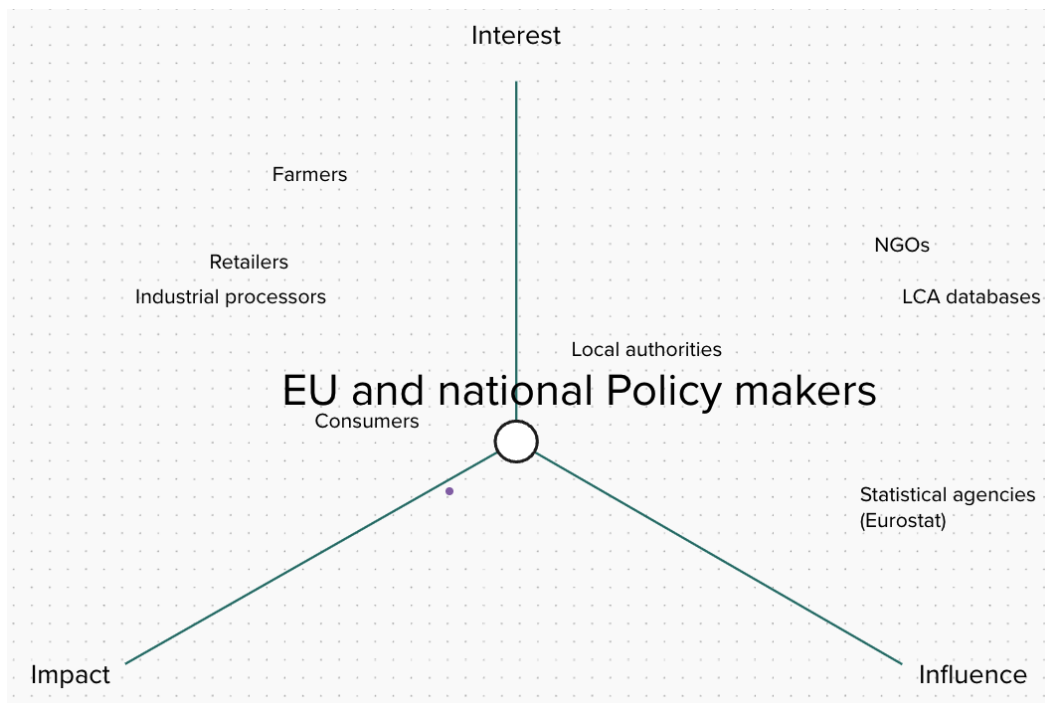


Figure 4 Workshop results on 3Is matrix for KEG True Costs of Food

4.2.1.4. Activities

The upcoming Delphi Survey of T4.2 on applicability of true cost accounting methods aimed at the end of RP1 (M18) will provide basis for this KEG.

4.2.2. KEG on Whole Value Chains

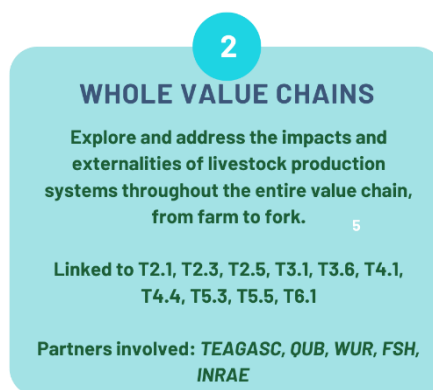


Figure 5 Summary card for Whole Value Chains KEG

4.2.2.1. Objective

The "Whole Value Chains" Knowledge Exchange Group (KEG) focuses on exploring and addressing the impacts and externalities of livestock production systems throughout the entire value chain, from farm to fork.

4.2.2.2. Internal Structure

The "Whole Value Chains" KEG is structured to explore and address the impacts and externalities of livestock production systems throughout the entire value chain, from farm to fork. The workshop is integrated with multiple Work Packages and tasks, specifically T2.1, T2.3, T2.5, T3.1, T3.6, T4.1, T4.4, T5.3, T5.5, and T6.1, focusing on a comprehensive analysis of livestock production's impact across the complete value chain.

Key partners involved in this KEG include TEAGASC, QUB, WUR, FSH, and INRAE, bringing together expertise in agricultural science, environmental assessment, livestock systems, and value chain analysis. This collaborative structure leverages specialised knowledge from each partner institution to examine the multifaceted aspects of livestock production systems and their externalities.

The partnership approach ensures a holistic evaluation of value chains, combining research methodologies and practical insights to develop a comprehensive understanding of impacts at each production stage. This internal structure facilitates an integrated approach to addressing sustainability challenges throughout livestock value chains, focusing on local and system-wide considerations.

4.2.2.3. External Structure and Mapping of Stakeholders

The stakeholders identified for the Whole Value Chains KEG include Political Entities, Farmers, Research Centres, Consumers, Retailers, NGOs, and Feed Producers. Their categorisation and engagement strategies are summarised in Table 5.

Table 5 Stakeholder Mapping of KEG Whole Value Chains

Category	Stakeholders	Engagement Strategy
High Influence, High Interest, High Impact	Political Entities	Engage as strategic allies to drive value chain reforms. Involve them in co-creating policies through regular high-level summits. Secure their endorsement for initiatives addressing livestock production externalities across the farm-to-fork spectrum.
Moderate Influence, Moderate Interest, Low Impact, Shift Interest-Influence	Consumers	Spark interest through accessible education campaigns. Use social media, local influencers, and interactive events to highlight the impacts of livestock production. Collaborate with consumer networks to co-develop practical guides for sustainable consumption.
High Influence, High Interest, Moderate Impact, Shift Influence-Interest	Retailers	Partner on sustainability-driven retail innovations. Launch demonstration projects to showcase the benefits of addressing livestock externalities. Facilitate industry roundtables to co-design solutions for sustainable and transparent value chains.
High Influence, High Interest, High Impact, Shift Influence-Impact	NGOs	Engage through collaborative advocacy efforts. Share evidence-based data on livestock impacts and externalities, involving them in solution-focused task forces. Partner with environmental and welfare experts to develop actionable, balanced strategies.
High Influence, Low Interest, Low Impact, Shift Influence-Impact	Feed Producers	Collaborate on targeted sustainability initiatives. Develop programs to address feed-related externalities, backed by data on environmental impacts. Offer training and incentives to adopt practices that enhance value chain sustainability.
Low Influence, Low Interest, Moderate Impact, Shift Impact-Influence	Farmers	Provide practical tools to address livestock production impacts. Offer training, resources, and peer-sharing platforms to adopt sustainable practices. Include incentives to align farming methods with value chain sustainability goals.
Low Influence, Moderate Interest, Moderate Impact, Shift Impact-Interest	Research Centres	Leverage their expertise through focused research collaborations. Engage them in co-developing studies on livestock externalities across the value chain. Host joint workshops to align research with practical farm-to-fork solutions.

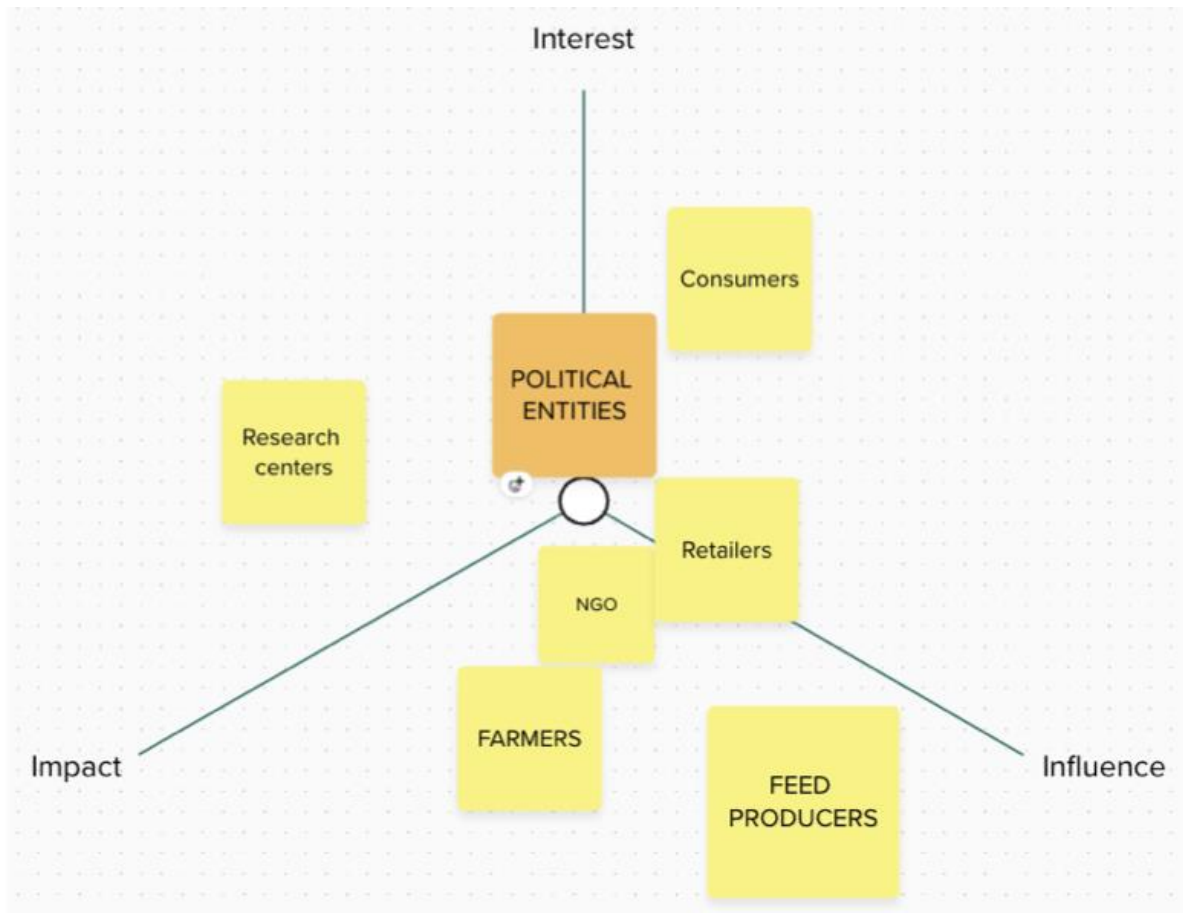


Figure 6 Workshop results on 3is matrix for KEG Whole Value Chains

4.2.3. KEG on Consumer Perspectives



Figure 7 Summary card for Consumer Perspectives KEG

4.2.3.1. Objective

The "Consumer Perspectives" Knowledge Exchange Group (KEG) focuses on understanding and addressing consumer trends, their wishes for developing sustainable livestock systems, and what constitutes nutritionally balanced diets.

4.2.3.2. Internal Structure

The "Consumer Perspectives" KEG is structured around tasks and collaborations to understand and address consumer trends and their wishes linked to developing sustainable livestock systems and nutritionally balanced diets. The workshop draws on specific Work Packages (WPs) and tasks, namely T2.1, T2.3, T2.5, T4.2, T5.5, and T6.1, focusing on defining balanced diets with nutritionists (T6.1, M15) and consumer trends (T6.1, M17) to gain insight into consumers' perspectives and their willingness to pay more for sustainable food.

Key partners in the KEG include TEAGASC, Thuenen, INRAE, Idele, and FSH. These partners bring together expertise from agricultural research, environmental science, and policy analysis.

This internal structure ensures a collaborative approach, leveraging the diverse expertise of the partners to address the complex challenges of consumer perspectives in food systems.

4.2.3.3. External Structure and Mapping of Stakeholders

The stakeholders identified include the catering companies, nutrition societies, retailers and consumer organisations in different member states. Their categorisation and engagement strategies are summarised in Table 6.

Table 6 Stakeholder Mapping of KEG Consumer Perspectives

Category	Stakeholders	Engagement Strategy
High Influence, High Interest, High Impact	Catering companies	Engage closely, involve in decision-making and co-creation processes. Establish regular strategic meetings and joint planning sessions. Seek their endorsement for sustainable livestock products and nutritionally balanced menu development.
Moderate Influence, High Interest, Moderate Impact Shift Interest	Nutrition Societies	Collaborate closely on defining balanced diets. Establish regular consultation forums to integrate nutritional expertise into sustainable livestock systems. Develop joint research initiatives and communication materials that connect nutrition science with sustainability practices.
High Influence, High Interest, High Impact Shift Impact-Influence	Retailers	Develop targeted engagement programs highlighting business benefits of sustainable livestock systems. Create demonstration projects showcasing consumer response to sustainability-focused products. Establish industry forums to discuss implementation challenges and opportunities.
Moderate Influence, Low Interest, Low Impact Shift Influence	Consumer organisations	Engage through strategic partnerships and targeted initiatives. Develop partnerships with key consumer advocacy groups to promote sustainable practices and nutritionally balanced diets. Organize workshops and forums to discuss consumer trends and preferences. Provide resources to help advocacy groups promote sustainable livestock products.

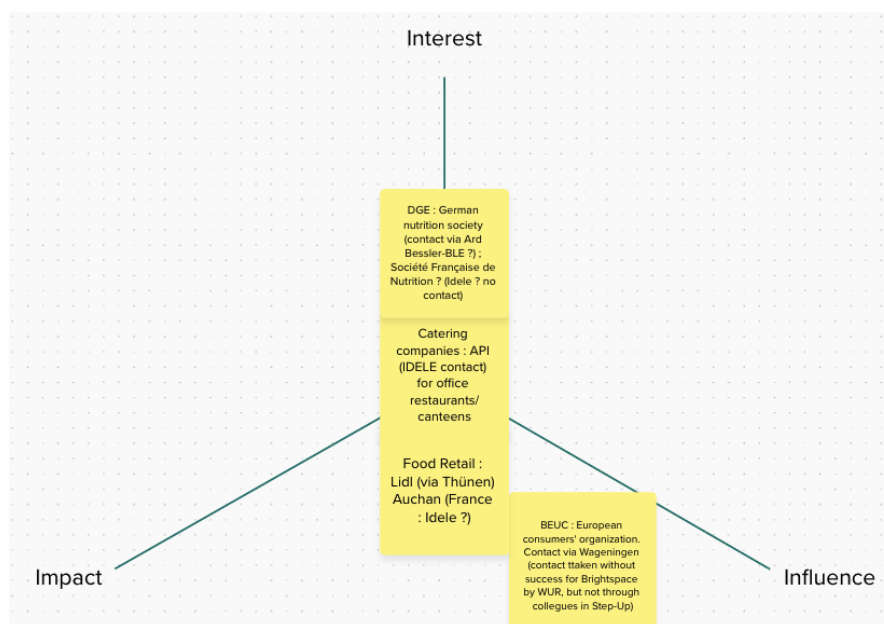


Figure 8 Workshop results on 3is matrix for KEG Consumer Perspectives

4.2.3.4. Activities

As part of the upcoming activities, the KEG will engage with nutritionists to discuss what constitutes a balanced diet (Task 6.1), which is already planned for M15. This meeting aims to define nutritional guidelines that align with sustainable food systems. Additionally, the project will meet with catering companies, retail representatives, and consumer organisations by the end of May 2025 to explore current consumer trends and mid-term evolutions. The goal of these discussions, under Task 6.1, is to understand consumers' perspectives and their willingness to pay more for sustainable food options. These engagements are crucial for developing strategies that resonate with consumer values and drive the adoption of sustainable practices in the food industry.

4.2.4. KEG on Ecosystem Services

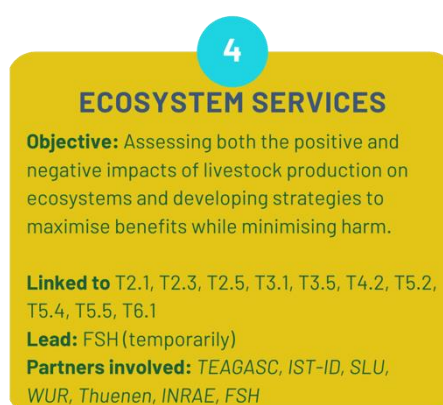


Figure 9 Summary card for Ecosystem Services KEG

4.2.4.1. Objective

The "Ecosystem Services" Knowledge Exchange Group (KEG) focuses on assessing both the positive and negative impacts of livestock production on ecosystems and developing strategies to maximise benefits while minimising harm.

4.2.4.2. Internal Structure

The "Ecosystem Services" KEG is structured to assess both the positive and negative impacts of livestock production on ecosystems and develop strategies to maximise benefits while minimising

harm. This knowledge exchange group integrates work across multiple tasks and work packages, specifically T2.1, T2.3, T2.5, T3.1, T3.5, T4.2, T5.2, T5.4, T5.5, and T6.1, providing a comprehensive framework for evaluating ecosystem impacts.

Key partners involved in this KEG include TEAGASC, IST-ID, SLU, WUR, Thuenen, INRAE, and FSH. These partners bring together diverse expertise in agricultural science, ecosystem assessment, environmental management, and policy development. FSH has been identified as the leading partner (temporarily) for coordinating activities and ensuring cohesive execution of the KEG's objectives.

This collaborative structure leverages specialised knowledge from each partner institution to comprehensively evaluate ecosystem services related to livestock production, combining research methodologies and practical insights to develop sustainable strategies.

4.2.4.3. External Structure and Mapping of Stakeholders

The identified stakeholders include catering companies, nutrition societies, retailers, and consumer organisations in different member states. Table 7 summarises their categorisation and engagement strategies.

Table 7 Stakeholder Mapping of KEG Ecosystem Services

Category	Stakeholders	Engagement Strategy
Moderate Influence, Moderate Interest, Low Impact Shift Interest-Influence	Society / Consumers	Develop ecosystem services awareness campaigns highlighting the connection between livestock and environmental health. Create educational materials explaining both positive and negative impacts of livestock on ecosystems. Partner with environmental education organizations to expand outreach.
Moderate Influence, High Interest, Low Impact Shift Interest- Influence	NGOs	Create collaborative platforms to share research findings on ecosystem services. Involve in ecosystem assessment activities to leverage their local knowledge. Establish joint working groups focused on specific ecosystem services affected by livestock production.
Moderate Influence, Moderate Interest, Moderate Impact Shift Influence -Impact	Green finance	Develop ecosystem services valuation frameworks relevant to investment decision-making. Create case studies demonstrating financial returns of ecosystem-friendly practices. Establish knowledge exchange on emerging ecosystem services payment schemes.
Moderate Influence, Moderate Interest, Moderate Impact Shift Impact- Influence	Policy makers	Provide evidence-based briefings on ecosystem services impacts of livestock systems. Develop policy scenarios showing trade-offs between different ecosystem services. Create visualization tools demonstrating spatial distribution of ecosystem impacts.
Low Influence, Moderate Interest, Moderate Impact Shift Impact-Interest	Insurance companies	Present risk-reduction data connected to ecosystem services preservation. Develop evaluation tools for assessing ecosystem resilience benefits. Create technical working groups on quantifying ecosystem service values for risk assessment.
Low Influence, High Interest, Low Impact Shift Interest-Impact	Farmers	Establish demonstration sites showcasing ecosystem services enhancements. Develop practical assessment tools for on-farm ecosystem impacts. Create farmer-to-farmer knowledge exchange networks on maximizing positive ecosystem impacts while minimizing harm.

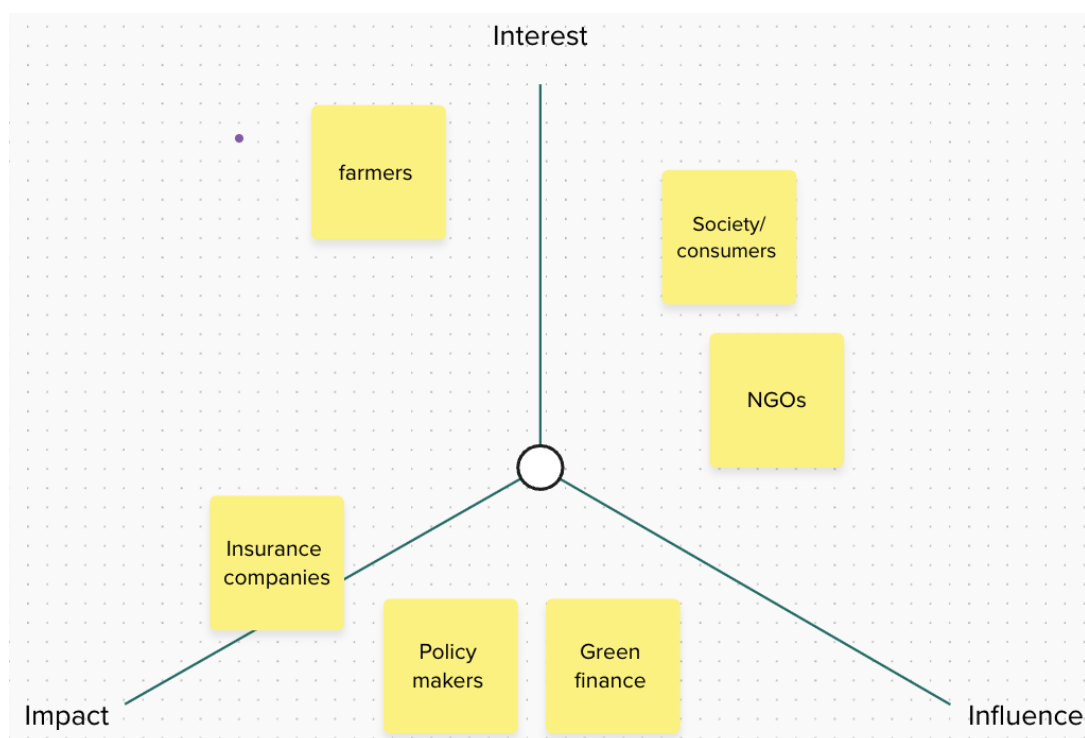


Figure 10 Workshop results on 3Is matrix for KEG Ecosystem Services

4.2.4.4. Activities

As part of the upcoming activities, the KEG will engage with partners to initiate dialogue with different disciplines involved in the project. It will aim to prepare a position paper by the next AM at M26.

4.2.5. KEG on Sustainability Indicators

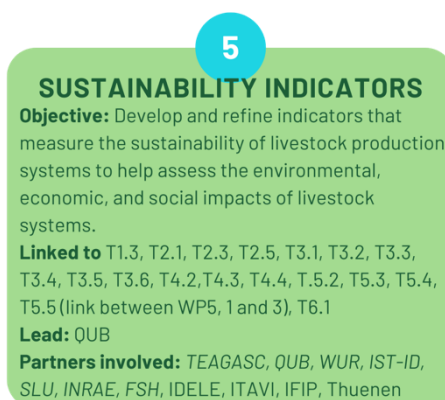


Figure 11 Summary card for Sustainability Indicators KEG

4.2.5.1. Objective

The "Sustainability Indicators" Knowledge Exchange Group (KEG) focuses on enhancing and refining indicators that assess the sustainability of livestock production systems to evaluate their environmental, economic, and social impacts.

4.2.5.2. Internal Structure

The "Sustainability Indicators" KEG is structured to develop and refine indicators that measure the sustainability of livestock production systems to help assess the environmental, economic, and social impacts of livestock systems. This knowledge exchange group integrates work across an extensive range of tasks and work packages, specifically T1.3, T2.1, T2.3, T2.5, T3.1, T3.2, T3.3, T3.4, T3.5, T3.6, T4.2, T4.3, T4.4, T5.2, T5.3, T5.4, T5.5 (serving as a link between WP5, 1, and 3), and T6.1.

Key partners involved in this KEG include TEAGASC, QUB, WUR, IST-ID, SLU, INRAE, FSH, IDELE, ITAVI, IFIP, and THUENEN. These partners bring together a comprehensive coalition of expertise in agricultural research, sustainability assessment, economic analysis, and social impact evaluation. QUB has been identified as the Leading Partner for coordinating activities and ensuring the cohesive execution of the KEG's objectives.

This collaborative structure leverages specialised knowledge from each partner institution to develop robust sustainability indicators for livestock production systems. It combines research methodologies and practical insights to create comprehensive assessment frameworks. The internal structure facilitates an integrated approach to addressing the multifaceted nature of sustainability in livestock systems.

4.2.5.3. External Structure and Mapping of Stakeholders

The identified stakeholders include the Animal Task Force (ATF) and its members, (e)NGOs, EEB, sectoral organisations, food processors and retailers, national and international agencies, public and private data holders, farmers' organisations, FSDN, case studies (ILPSs), green finance and policymakers. Table 8 summarises their categorisation and engagement strategies.

Table 8 Stakeholder Mapping of KEG Sustainability Indicators

Category	Stakeholders	Engagement Strategy
Moderate Influence, Moderate Interest, Low Impact Shift Interest-Influence	Animal Task Force	Develop collaborative technical forums to increase engagement. Share relevant research findings and seek input on practical applications. Create structured opportunities for knowledge exchange to strengthen their connection to project outcomes.
Moderate Influence, High Interest, Low Impact Shift Interest-Influence	(e)NGOs, Animal welfare organisations	Establish regular dialogue mechanisms to channel their enthusiasm. Create working groups focusing on specific sustainability indicators relevant to animal welfare. Provide transparent data and research findings to support their advocacy while aligning with scientific evidence.
Moderate Influence, High Interest, Low Impact Shift Interest-Influence	European Environmental Bureau (EEB)	Form structured partnership with defined communication channels. Involve in technical advisory capacities to leverage their environmental expertise. Develop joint position papers and policy briefs to amplify mutual objectives.
High Influence, High Interest, High Impact	Farmer organisations	Establish farmer-led innovation platforms to ensure practical applicability. Create regular feedback mechanisms and demonstration opportunities to showcase implementation success.
High Influence, High Interest, Low Impact Shift Influence - Interest	Food processors	Develop business case analyses showing economic benefits of sustainability indicators. Create industry working groups focused on practical implementation throughout supply chains. Provide competitive advantage data to strengthen commitment.
High Influence, Moderate Interest, Low Impact Shift Influence - Interest	International organisations (FAO, OIE, OECD)	Establish high-level strategic partnerships. Align project indicators with international frameworks and standards. Create periodic briefing mechanisms and joint publications to enhance relevance to their objectives.
Moderate Influence, Moderate Interest, Low Impact Shift Influence	National agencies	Implement structured data-sharing protocols with clear benefits. Provide regular briefings on findings relevant to national priorities. Develop tailored communication materials that connect project outcomes to agency mandates.

Moderate Influence, Moderate Interest, Low Impact Shift Influence - Interest	Public/ private data holders	Create data exchange agreements with mutual benefits clearly defined. Develop technical interfaces for streamlined data integration. Establish intellectual property frameworks that protect interests while enabling project success.
Moderate Influence, Moderate Interest, Moderate Impact Shift Influence-Impact	FSDN	Form specialized working groups on data standardization and integration. Develop joint technical publications and case studies. Create structured collaboration protocols with defined roles and responsibilities.
Low Influence, Moderate Interest, Moderate Impact Shift Impact- Influence	ILPSs	Implement demonstration projects showcasing practical applications. Create knowledge exchange networks to share implementation experiences. Develop targeted capacity building programs to enhance their ability to implement sustainability indicators.
Moderate Influence, High Interest, High Impact Shift Impact- Interest	Retailers	Establish market-focused working groups with clear value propositions. Develop consumer-facing sustainability communication frameworks. Create collaborative implementation roadmaps with phased approaches to sustainability adoption.
Low Influence, Low Interest, Moderate Impact Shift Impact	App developers	Create technical specification documents for potential applications. Organize hackathons or innovation challenges to stimulate engagement. Provide open access to relevant APIs and datasets to lower barriers to participation.
Low Influence, Moderate Interest, Moderate Impact Shift Impact-Interest	Green finance	Develop sustainability metrics relevant to investment decision-making. Make use of case studies demonstrating financial returns of sustainable practices. Establish regular information exchange on emerging sustainability-linked financial products.
Low Influence, Moderate Interest, Moderate Impact Shift Impact-Interest	Insurance companies	Present risk-reduction data connected to sustainable livestock practices. Develop pilot projects for sustainability-linked insurance products. Create technical working groups focused on quantifying sustainability benefits for risk assessment.
Low Influence, High Interest, Moderate Impact Shift Interest-Impact	Policymakers (national/regional)	Provide policy briefs with clear, actionable recommendations. Develop region-specific implementation scenarios and impact assessments. Create regular consultation mechanisms to align indicators with policy development.
Low Influence, High Interest, Moderate Impact Shift Interest-Impact	Policymakers (EU)	Establish formal consultation channels to EU policy processes. Develop policy impact assessments using project indicators. Create synchronization mechanisms between project outputs and EU policy development timelines.

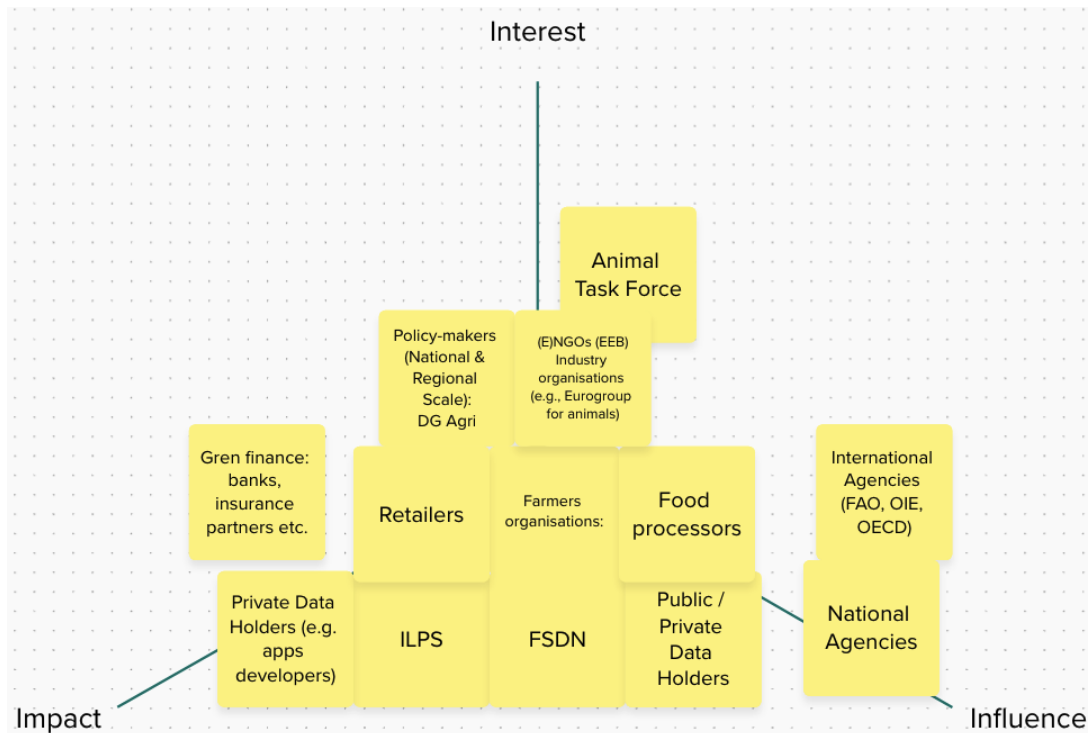


Figure 12 Workshop results on 3is matrix for KEG Sustainability Indicators

4.2.5.4. Activities

The Sustainability Indicators KEG has planned a structured timeline of activities spanning from Month 14 (February 2025) to Month 26 (February 2026). The key activities include:

1. **Internal In-person Workshop (M14):** A collaborative session focusing on the interaction between Work Packages 1, 3, 5, and 6. This workshop is scheduled to take place after the delivery of the D1.3, approximately in months 18-20 of the project. This activity will synchronise efforts across different work packages and establish common frameworks for sustainability indicators.
2. **International Conference:** An event focused on linking with other organisations and agencies, tentatively scheduled around Month 30. This conference will serve as a platform to share preliminary findings, gather external feedback, and establish partnerships with relevant international stakeholders for broader impact.
3. **Final Dissemination Activities:** Concentrated efforts at the end of the project to disseminate results to target audiences. This includes preparing final publications, organising knowledge transfer events, and developing implementation guidelines for the sustainability indicators developed throughout the project.

These activities are strategically scheduled to maximise stakeholder engagement, ensure effective cross-work package collaboration, and optimise the impact of the sustainability indicators developed through the KEG.

5. Conclusion

The STEP UP project, through Deliverable D7.4, establishes a strategic framework for initiating the implementation of the Knowledge Exchange Groups (KEGs) framework, paving the way for the sustainable transformation of European Livestock Production Systems (ELPS). This deliverable outlines a structured approach to address the multidimensional challenges of livestock production across five key thematic areas: *true costs of food, whole value chains, consumer perspectives, ecosystem services, and sustainability indicators*. By fostering multi-stakeholder collaboration, the KEGs aim to bridge research, policy, and practice, setting the stage for impactful execution in the upcoming phases.

During the First Phase “Concept development” (M1–M16), significant progress was made in designing and initiating the KEG framework:

- A structured stakeholder mapping exercise used the 3is framework (Influence, Interest, Impact) to assess and categorise relevant actors across the five thematic KEGs.
- A dedicated KEG workshop was held during the Annual Meeting in Novi Sad (February 2025), which led to:
 - The definition of objectives for each KEG.
 - The identification of KEG leads and co-leads.
 - The development of engagement strategies tailored to stakeholder categories.
- Summary cards and stakeholder engagement plans were produced for each KEG, as documented in Tables 3–7.
- The initial structure and webpage of the STEP UP Dashboard were established and integrated into the project website to support future co-creation (<https://dashboard.horizon-stepup.eu/>).
- Initial activities were launched, including stakeholder outreach and preparatory planning for early-stage data collection and engagement (e.g., Delphi Survey planning for True Costs of Food; nutritionist consultations for Consumer Perspectives).

Looking ahead, the upcoming phases will focus on implementation and synthesis:

- Second Phase “Implementation” (M19–34) will involve:
 - The joint implementation of KEG-led activities, such as workshops, surveys, focus groups, and expanded engagement with policymakers, producers, and consumers.
 - Cross-checking of case study results across KEGs and production systems.
 - The STEP UP Dashboard’s ongoing development and user testing, guided by real-time KEG inputs.
- Final Phase “Impact and Knowledge Synthesis” (M37–46) will consolidate and finalise results:
 - Synthesis of insights from all KEGs into actionable policy recommendations.
 - Finalisation of methodological frameworks and the Dashboard.
 - Broad dissemination and training to ensure adoption of tools and indicators.

This phased approach transforms the KEG framework from a conceptual strategy to a fully implemented, multi-actor engagement model. With clear pathways from stakeholder mapping to co-created outputs, STEP UP is poised to deliver sector-wide dialogue and practical, evidence-based solutions for a sustainable European livestock sector.

Table 9 Summary of the key elements of the conclusion, highlighting the strategic framework, stakeholder engagement, dashboard development, upcoming activities, and anticipated impacts of the STEP UP project.

Phase	Timeline	Key Activities	Status
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Phase 1: Concept Development	M1–M16	- Stakeholder mapping using the 3is framework (Influence, Interest, Impact)	✓ Completed
		- KEG objectives and roles defined during Novi Sad workshop (Feb 2025)	✓ Completed
		- Engagement strategies developed for each KEG topic	✓ Completed
		- KEG summary cards and stakeholder matrices (Tables 3–7) created	✓ Completed
		- Initial KEG activities scoped (e.g. Delphi Survey for True Costs of Food; nutritionist meetings for Consumer KEG)	✓ Initiated
		- STEP UP Dashboard webpage created and integrated into project website	✓ Completed
Phase 2: Implementation	M19–34	- Implementation of KEG-led activities (workshops, surveys, stakeholder events)	□ Planned
		- Case study analysis and cross-checking across KEGs	□ Planned
		- Iterative development and user testing of STEP UP Dashboard	□ Planned
Phase 3: Impact and Knowledge Synthesis	M37–46	- Finalisation of methodological frameworks and policy briefs	□ Planned
		- Knowledge synthesis from all KEG outputs	□ Planned
		- Dashboard completion and dissemination	□ Planned
		- Stakeholder training, adoption support, and outreach	□ Planned

6. Annex

6.1. 3i Stakeholder Analysis Framework¹ and Matrix Scoring

The STEP UP project employs the 3is Stakeholder Analysis Framework (Influence, Interest, Impact) to systematically map and evaluate stakeholders, ensuring effective engagement strategies for the Knowledge Exchange Groups (KEGs). This framework was utilised during the workshop on 27 February 2025 in Novi Sad, Serbia, to categorise stakeholders and develop tailored engagement approaches for each KEG (p16).

6.1.1. Framework Overview

The 3is framework assesses stakeholders across three dimensions:

- **Influence:** Measures a stakeholder's ability to facilitate or impede the project's success, such as through decision-making authority, resource control, or influence over others. High-influence stakeholders can significantly affect project outcomes.
- **Interest:** Evaluates how much a stakeholder cares about the project or its outcomes, indicating their likelihood of active engagement. High-interest stakeholders are more responsive to involvement efforts.
- **Impact:** Assesses the potential positive or negative effects the project may have on a stakeholder, identifying who is most affected, even if unaware of these impacts. This helps prioritise stakeholders vulnerable to significant consequences.

6.1.2. Evaluation and Scoring Process

Stakeholders are evaluated on each dimension using a scoring scale of 1 to 5, where 1 represents the lowest level and 5 the highest. The scoring is plotted on a 3D matrix (Influence, Interest, Impact), as shown in the cube visualization provided to partners. The axes are labeled as follows:

- Influence (X-axis): Ranges from 1 (low influence) to 5 (high influence).
- Interest (Y-axis): Ranges from 1 (low interest) to 5 (high interest).
- Impact (Z-axis): Ranges from 1 (low impact) to 5 (high impact).

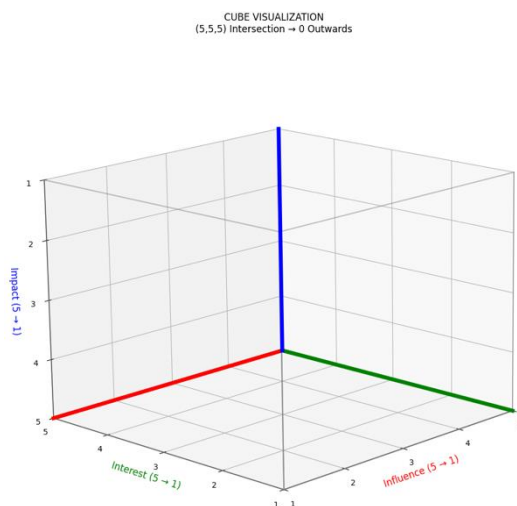


Figure 13 3is Matrix used for stakeholder mapping

¹ Reed, M (2024), How to do stakeholder analysis, <https://www.fasttrackimpact.com/post/2019/03/11/how-to-do-stakeholder-analysis>

Each stakeholder is assigned a position in the 3D matrix based on their scores. For example, a stakeholder with a score of (5, 5, 5) indicates high influence, high interest, and high impact, placing them at the center of the cube. The cube visualization provided (Figure 13) illustrates the maximum score, with axes colored for clarity: Interest in green, Influence in red, and Impact in blue.

The scoring process involves the following steps, incorporating specific questions to guide the evaluation of each dimension:

1. **Assessment:** Partners assess each stakeholder using targeted questions to evaluate their Influence, Interest, and Impact. These questions ensure a comprehensive understanding of each stakeholder's role and relevance to the project:
 - **Influence:**
 - Who has decision-making authority in this area?
 - Who controls relevant resources or implementation channels?
 - Who has the ability to enable or block progress?
 - Who influences the opinions of other important stakeholders?
 - **Interest:**
 - Who might benefit from or be disadvantaged by this work?
 - Who is actively working in this area?
 - Who might experience indirect or long-term effects?
 - **Impact:**
 - Who will experience direct consequences from this work?
 - Who might experience indirect or long-term effects?
 - Which groups are most vulnerable to potential negative impacts?

These questions guide partners in determining the appropriate score for each dimension based on the stakeholders' characteristics and relationship to the project.

2. **Scoring:** Each dimension is scored from 1 to 5 based on the responses to the above questions. For instance, EU and National Policy Makers in the True Costs of Food KEG (Table , p17) were scored as (High Influence, High Interest, High Impact), approximately (5, 5, 5), due to their decision-making authority, active engagement, and significant project impact.
3. **Categorisation:** Stakeholders are categorised based on their scores, such as "High Influence, High Interest, High Impact" or "Low Influence, Moderate Interest, Low Impact" (pp. 16-24). For example, a stakeholder scoring (5, 5, 5) is categorised as having the highest priority for engagement.
4. **Engagement Strategy Development:** The position in the matrix informs the engagement strategy. Stakeholders at (5, 5, 5) are prioritized for close collaboration (e.g., "Engage as key partners" for EU Policy Makers in Table), while those with lower scores (e.g., 1, 2, 1) may be monitored or engaged through lighter touchpoints (e.g., "Provide updates" for LCA Databases in Table).

6.1.3. Application in STEP UP

The 3is matrix scoring enabled the STEP UP project to prioritise stakeholder engagement effectively. For example, in the True Costs of Food KEG (Table), stakeholders like EU and National Policy Makers, positioned at (5, 5, 5), are engaged as key partners to shape cost-accounting frameworks, while NGOs at (Low Influence, Moderate Interest, Low Impact) are involved in advocacy campaigns. Similarly, the Sustainability Indicators KEG (Table) positions farmer organisations at (High Influence, High Interest, High Impact), leading to farmer-led innovation platforms, while NGOs at (Moderate Influence, High Interest, Low Impact) are engaged through dialogue mechanisms. This systematic approach ensures that engagement efforts are strategic, focusing on stakeholders critical to the project's success, as detailed in the stakeholder mapping tables (pp. 16-24).