NUTRI•KNOW

D2.2 Mapping of stakeholders and target audience

31st March 2024

D2.2

WE&B, UGent

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Summary of Deliverable

Deliverable 2.2 (D2.2) *Mapping of stakeholders and target audience* is part of the NUTRI-KNOW work package (WP) 2. The objectives of WP2 are to detect the alignment of the 12 engaged EIP-AGRI Operational Groups (OGs) outcomes with the current market and legislative situation; to identify the target-audience and the urgent needs, challenges, and opportunities of the agricultural sector; and to adapt the knowledge gathered to the current territorial needs. Subsequently, D2.2 consists of the identification of the stakeholders that have an interest and/or influence over the EIP-AGRI OGs outcomes and to map their interconnections. D2.2 is divided into 5 chapters: Introduction, Methodology, Results, Conclusions and Next steps, and Bibliography.

The stakeholder identification and mapping process of Task 2.2 followed the Social Network Analysis (SNA) procedure, which is based on the analysis of a social network structure. For the NUTRI-KNOW project, the SNA has been approached through a three-step process: Preparation, Consultation and Integration, outlined in Section 2.2.

The results are categorised into three distinct types. Initially, the Stakeholder Database and its composition are presented, along with the data resulting from the consultation process itself. Then, the resulting stakeholder maps and country-specific results are presented, followed by the results on communication preferences and the engagement of the consulted stakeholders.

The findings show that Task 2.2 has allowed the identification of key actors for the next activities in the NUTRI-KNOW project and their roles. Furthermore, this task contributes to guiding specific recommendations for future actions, including those pertaining to Task 2.3 and practice-oriented materials in WP3. Moreover, it allows to outline strategies for stakeholder engagement in communication actions within WP4.

Disclaimer

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EIP-AGRI	Agricultural European Innovation Partnership
GDPR	General Data Protection Regulation
OG	Operational Group
MOOC	Massive Open Online Course
SNA	Social Network Analysis
SH	Stakeholder

1. Introduction

In recent years, EU-funded projects have played a pivotal role in advancing knowledge on agricultural practices, technologies, and products. Despite significant progress, a notable gap exists between the generation of such knowledge and its practical adoption by practitioners in the farming sector. The lack of awareness, accessibility issues, and resistance to change contribute to challenges in knowledge uptake, hindering the potential benefits of the innovation stemming from EU projects[1].

The EIP-AGRI Operational Groups (OGs) are addressing this gap by fostering collaboration among diverse stakeholders. The key to unlocking the full potential of innovative practices lies in developing effective knowledge transfer mechanisms and enhancing collaboration to align the generated knowledge with the practical needs of the agricultural sector.

The NUTRI-KNOW project actively contributes to bridging this gap by expanding the outcomes of EIP-AGRI OGs beyond borders. This project focuses on collecting, translating, and sharing user-friendly knowledge to support the adoption of innovative practices. Notably, the NUTRI-KNOW project addresses urgent needs, challenges, and opportunities in the agri-food sector. It promotes trust and connections between stakeholders while intensifying cooperation and the implementation of innovative solutions. Specifically, NUTRI-KNOW focuses on nutrient management, addressing the various steps of the nutrient management value chain, including livestock farming, storage systems, fertiliser production, processing technologies, transport, and application. The overarching goal is to modernise the agri-food sector and promote nutrient management best practices among farmers, practitioners, and end-users[2].

Work Package (WP) 2 aims to explore how the engaged OGs are aligned with current EU policies (top-down approach) and the challenges and needs of the farmers and the agri-food sector (bottom-up approach). This WP focuses on analysing the connections among the OGs participants and relevant actors and networks in the nutrient management field. It also aims to assess previous work in this domain to avoid redundancy. The specific objectives of WP2 entail: to (i) Detect the alignment of OGs results with current market and legislative situation; (ii) Identify the target-audience and the urgent needs, challenges, and opportunities of the sector; (iii) Adapt the knowledge gathered to the current territorial needs by developing a thematic-analysis methodology; and (iv) Avoid duplication with ongoing or completed projects and networks.

Task 2.2 within WP2 consists of the identification of stakeholders that have an interest and/or influence over the OGs outcomes and the analysis of their interconnections. Subsequently, the objective of Deliverable 2.2 is to both identify and map stakeholders relevant to the implementation and dissemination of the EIP-AGRI OGs outcomes. This deliverable therefore aims to showcase visual maps that portray the relationships and interconnections among these stakeholders, thus contributing to bridge the knowledge gap between EU innovation in nutrient management and its practical implementation by practitioners. Additionally, it includes a comprehensive database encompassing all identified stakeholders. These visual maps aim to be integrated in the meta-database established in Task 1.4 and will be further used in WP3 and WP4 for the delineation of their activities, such as the practice-oriented material and the Community of Practice (CoP).

Deliverable 2.2 is divided into 5 chapters: Introduction, Methodology, Results, Conclusions and Next steps, and Bibliography. First, the process of stakeholder mapping and analysis of communication preferences is described in the methodology section (section 2), which includes

[1] European Commission. Joint Research Centre., *Supply Chain Analysis and Material Demand Forecast in Strategic Technologies and Sectors in the EU*.

[2] https://www.NUTRI-KNOW.eu

two main phases of consultation: questionnaires and interviews. Then, the results of the consultation process (section 3) are analysed following the SNA approach and presented in the form of a Stakeholder Database and visual stakeholder maps. As part of the results section, other inputs from the interviews about communication preferences resulting from the consultation are also presented. Further uses of the maps and database are discussed in the Next steps section (section 4) of the deliverable, which ends with a comprehensive overview of the stakeholder mapping activity.

2. Methodology

2.1. Overall approach

Stakeholder analysis can be used to understand environmental systems by identifying who has a stake in certain aspects of the system; and categorising stakeholders according to different criteria for participation in decisions regarding those aspects of the system [3]. Environmental applications of social networks are just beginning to emerge and so far have focused on understanding the characteristics of social networks that increase the likelihood of collective action and successful natural resource management [4]. Reed (2008) categorizes all methods of relationship investigations under two principles: "(i) Social Network Analysis (SNA) provides insights into patterns of communication, trust and influence between actors in social networks, and; (ii) Knowledge Mapping analyses the flows of information between these actors."

Agri-food systems are complex non-linear, multidimensional and heterogeneous networks of social, economic, institutional and environmental relations evolving over space and time [5]. Understanding the interactions and balance of power in agri-food systems is critical to effectively govern sustainability transitions [6].

The stakeholder identification and mapping process of Task 2.2 followed the SNA procedure, which is based on the analysis of the structure of a social network. SNA is used to examine structural characteristics of social relationships and can provide measures to analyse communication patterns within and between actors who may be individuals, collectives or institutions [7]. These relations can then be analysed for structural patterns that emerge among these actors. It helps to identify information pathways, spreaders (knowledge brokers) and gatekeepers (knowledge controllers); and supports the process of knowledge sharing within and between organisations [8].

Therefore, SNA views social relationships in terms of network theory [9] consisting of nodes and ties (also called edges, links, or connections). In the NUTRI-KNOW context, the nodes are the organisations/institutions that can have interest or influence in the nutrient value chain within the

[3] Grimble and Wellard, 'Stakeholder Methodologies in Natural Resource Management'; Mushove and Vogel, 'Heads or Tails?'

[4] Bodin and Crona, 'The Role of Social Networks in Natural Resource Governance'; Newman and Dale, 'Network Structure, Diversity, and Proactive Resilience Building'; Schneider et al., 'Building Consensual Institutions'; Tompkins and Adger, 'Does Adaptive Management of Natural Resources Enhance Resilience to Climate Change?'; Guerrero et al., 'Key Considerations and Challenges in the Application of Social-network Research for Environmental Decision Making'.

[5] Prota, Cucco, and Cistulli, 'Social Network Analysis for Territorial Assessment and Mapping of Food Security and A Methodological Approach Social Network Analysis for Territorial Assessment and Mapping of Food Security and Nutrition Systems (FSNS)'.

[6] Williams et al., 'Synthesising the Diversity of European Agri-Food Networks'.

[7] Scott, *Social Network Analysis*; Wasserman and Faust, *Social Network Analysis*.

[8] Chu, Wipfli, and Valente, 'Using Visualizations to Explore Network Dynamics'.

[9] Wasserman and Faust, *Social Network Analysis*.

framework of the 26 outcomes of the EIP-OGs involved in nutrient management, while the ties denote the relationships between them.

SNA for this project has been approached through a three-step process, namely: Step 1 Preparation; Step 2 Consultation and Step 3 Integration (see Figure 1). These steps are further elaborated upon in section 2.2.

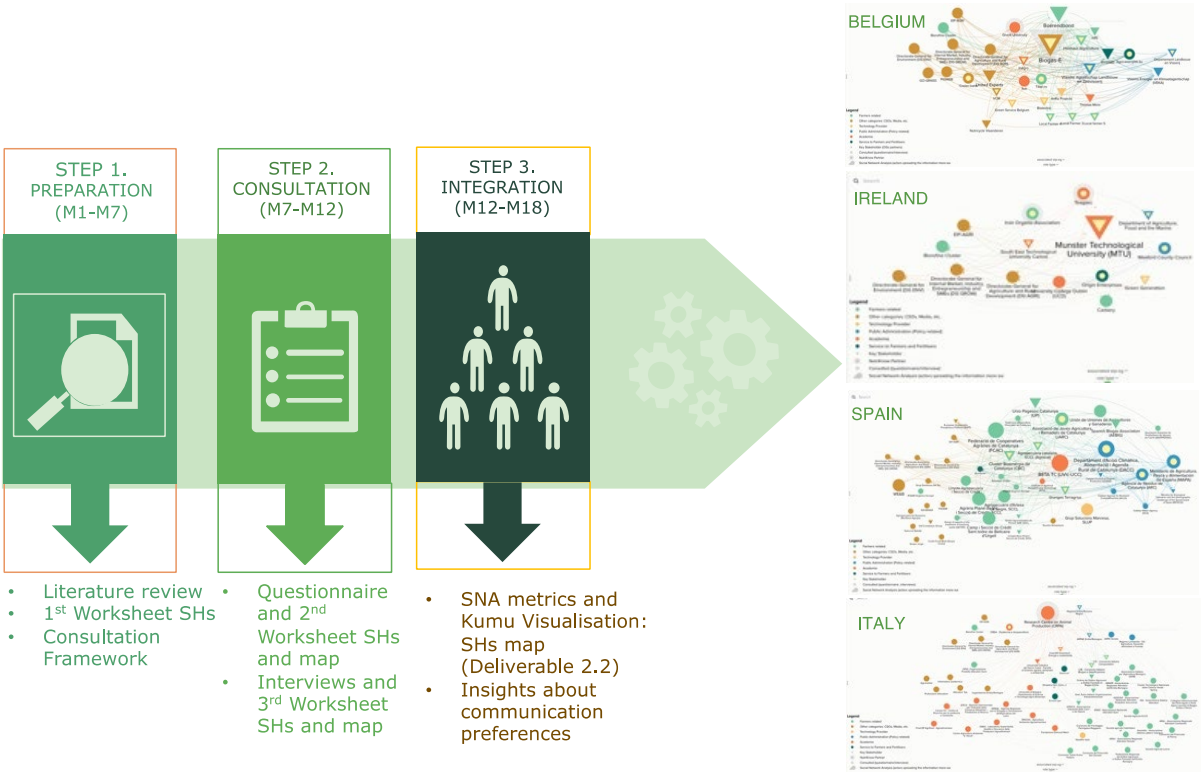

Figure 1. Methodology for the Stakeholder Mapping process in NUTRI-KNOW.

Step 1 was based on a snowball network study [10] which was initiated during a group engagement process during the project kick-off meeting. NUTRI-KNOW partners were first consulted in this initial meeting to indicate key target groups and related stakeholders according to their knowledge. The results from this first consultation allowed, in turn, for a further consultation to stakeholders beyond the project consortium (step 2).

Specific questions were addressed in the consultation process with regards to the social network structure of each of the demo sites.

As a result, a database of stakeholders related to the EIP-OGs and the nutrient management value chain was created with detailed information about the organisations and individuals (step 3).

[10] Williams et al., 'Synthesising the Diversity of European Agri-Food Networks'.

Following GDPR procedures and the project *Deliverable 6.2 Ethics Plan*[11] the database of stakeholders has been internally stored in NUTRI-KNOW project storage system.

To visualise the stakeholder maps, the web-based software Kumu[12]has been used. A general context (not associated with the demo-sites) has been created first, followed by four country-contexts maps for Belgium, Spain, Italy, and Ireland, based on the answers from the questionnaires and the interviews (step 3).

2.2. Methodological steps for the stakeholder mapping process

In this section we detail the methodological steps carried out in the data collection process, according to Figure 1. The data collection steps are: (1) Preparation, (2) Stakeholder consultation, and (3) Data integration.

2.2.1. Step 1: Preparation

Literature review

To organise the task, we conducted a brief literature review to refine the methodology and gain clarity on the target groups to be analysed. We conducted a systematic review of the current available data to identify current groups of actors in the nutrient management value chain. The keyword search of *Stakeholders OR social network AND nutrient management* guided the literature search.

Google Scholar and Scopus for scientific literature, and Google search for grey literature were the databases we used for the search. The search string was tested on the above-mentioned platforms to see where these coincide as well as where they differed. That allowed us to identify new authors and sources and to add document titles to those searches with fewest results. The documents uncovered from the search strings and the data sources have been included in an online Zotero[13] database. The literature reviewed has been catalogued by title, by author and year.

The literature review has allowed us to conceptualise the task as well as to identify the main target groups on which NUTRI-KNOW should focus.

Workshop for stakeholder identification

A first identification of the categories of stakeholders that should be involved in NUTRI-KNOW was conducted at the kick-off meeting of the project held in Vic, Spain, in January 2023 (Figure 3). This was achieved through a brainstorming workshop based on a group-building discussion with the consortium. The workshop aimed to generate an initial version of a Stakeholder Database. Partners were divided into break-out groups, one per country (Ireland, Belgium, Italy and Spain) to identify the key target groups per each of the nutrient management value chain stages. Figure 2 below shows the template each group had to fill out on behalf of their own country-context.

[11] NUTRIKNOW_D6_2_V1_0.pdf

[12] https://kumu.io

[13] https://www.zotero.org

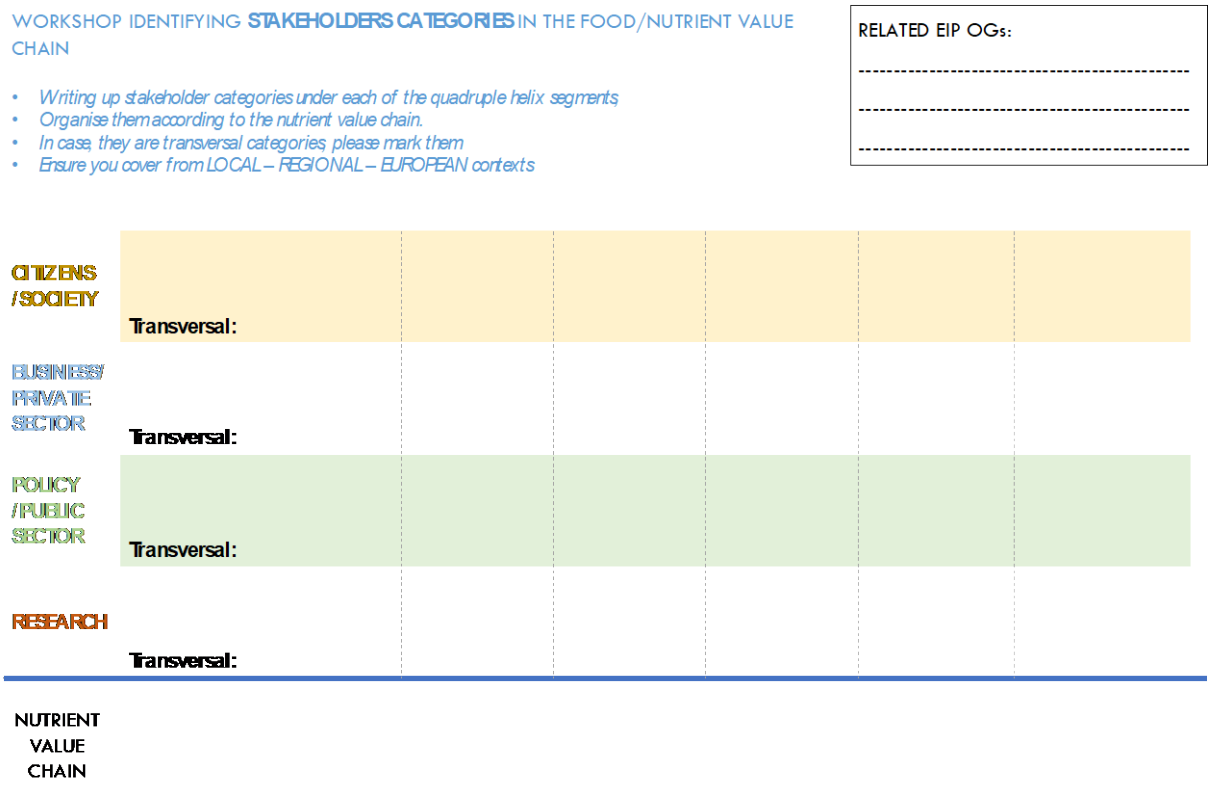

Figure 2. Template from the stakeholder identification Workshop in Vic, January 2023

Figure 3. NUTRI-KNOW partners at the WP2 Brainstorming Workshop in Vic, January 2023

This first analysis was used as a basis and a point of discussion in order to establish the next steps regarding the process of contacting the stakeholders and how to start approaching them.

Stakeholder Database development

The input gathered from the workshop for stakeholder identification during the project kick-off meeting served as the basis for the development of a first version of the Stakeholder Database. Resulting from the process, a list of categories of stakeholders was created. They were grouped

into target groups categories and each generic target group was broken down into specific subcategories, presented in Table 1.

Table 1. Stakeholder target groups (green cells) and subcategories of each group (white cells)

Farmers Related	Technology Provider User	Fertilisers Related	CSOs and Other Non-Profit
Farming trade union Farmers association Professional association Cluster Expert groups Local farmer Farmer association Cooperative	Technology provider Refinery Biogas plant Other	Fertiliser company Biobased fertilising industry Fertiliser test lab Other	NGO Other
Financial Institution	**Public Administration and Policy**	**Media**	**EU**
Bank Public funding agency Investor Other	Regional government County office/ other territorial services Public council National government National agency Regional agency Other	Local media Regional media European media Influencer Farming specialised media Other	European Agency Leader Group Cost action Network Other
Short-term Actions	**Academia**	**Services to Farmers**	**Other**
Project Initiative Collaborator Other	Research institution University Agricultural student Other	Farm advisor Advisory platform Agricultural contractor Trade chamber Capacity building institution Other	Other (*other organisations covering broader sectors than nutrient management or which do not fall into any of the above categories)*

Based on this division of target groups, the stakeholder Excel workbook was structured into four worksheets: 1) Description of the excel document, 2) Task 2.2 stakeholders, 3) Outcomes from each of the OGs, and 4) All the drop-down menus. The first excel sheet introduced the task objectives and the excel details; the second sheet gathered all the information about specific stakeholders (organisations and individuals), see Table 2; the third sheet outlined the outcomes of each OG (as identified by work package 1); and the fourth sheet contained all the information categories in table format to create the drop-down menus for the second sheet.

Once the initial information was organised into the Stakeholder Database, the document was shared with the NUTRI-KNOW partners for adding information from their specific institutions, for their review and validation. The partners provided input regarding the Stakeholder Database structure and format, as well as a review of the identified stakeholders. Additionally, they added new organisations and individuals that were deemed relevant for the implementation of the OGs outcomes. The database underwent iterative refinement through collaborative efforts among consortia partners, incorporating diverse insights until reaching its first complete version by September 2023. Finally, a new sheet – *Connections* -, was added to the database. This sheet included 3 fields: *From*, *To*, and *Strength*, in which the project partners marked their connection to the stakeholders and indicated the strength of their connection.

Following GDPR procedures, the database of stakeholders has been both internally stored in the WE&B (WP2 leader) storage system according to the NUTRI-KNOW *Deliverable 6.2 Ethics Plan*

and in the shared SharePoint, to which all consortium members have access but not including the confidential data.

Table 2. Fields of information about the stakeholders within the Stakeholder Database

Target group	In this column a drop-down menu allows to select a generic target group in which the identified stakeholder is included (1. FarmersRelated; 2. Technology_ProviderUser; 3. FertilisersRelated; 4. CSOs_OtherNonProfit; 5. FinancialInstitution; 6. PublicAdministration_Policy; 7. Media; 8. EU; 9. ShortTermActions; 10. Academia; 11. ServicesToFarmers; 12. Other). If "Other" select in the next column "Other" as well.
Specific target group	Depending on the generic target group selected in the previous column, another drop-down menu will appear with more specific target groups. If more than one options suits the stakeholder, please select the one that is more related. If none of the options correspond to the stakeholder identified, select "Other"
If "Other" Target group (write which one)	If the option selected in the previous column is "Other", write down the target group in which the stakeholder identified should be included.
Organisation	Name of the organisation identified as a stakeholder
Website	Website of the organisation
Contact	Contact of the organisation
Email of contact	Email of the contact
Associated NK partner	Partner/s who identified the stakeholder (drop-down menu)
4-Helix	Group of stakeholders of the quadruple helix to which the stakeholder belongs: Business/private sector; Citizens/society; Policy/public sector; Research
Geo-Level	Drop-down menu with the following options: Local; Regional (county, territory); National; European
Country-related	Drop-down menu with options of the country of the OGs to which the stakeholder is related (possibility of choosing multiple options): Belgium; Ireland; Italy; Spain; Other
Nutrient Value Chain	Drop-down menu with value chain options (possibility of choosing multiple options): Livestock farming; Storage system; Fertiliser production; Processing technologies; Transport; Application (consumption); Other
Associated EIP-OG	Drop-down menu with EIP-OGs to which the stakeholder is related (possibility of choosing multiple options): S1. Slurry concentrator refers to OG1 Development of a slurry concentrator with continuous total nitrogen data collection; S2. Manure management tool refers to OG2 Development of tools for optimising the joint management of livestock manure and the improvement of agricultural fertilisation, crop quality and environmental protection; S3. FERTICOOP-GO refers to OG3 FERTICOOP-GO Innovations to adapt to the best available techniques (BAT) in the Catalan cooperative agricultural sector; IT1. Livestock manure and digestates treatment refers to OG4 Livestock manure and digestates treatment to reduce emissions and produce Struvite; IT2. SOS- AQUAE refers to OG5 SOS-AQUAE - Sustainable farming techniques and renewable fertilizers to combine agriculture, water and environment; IT3. GAS LOOP refers to OG6 Gas Loop - Emissions capture for a virtuous nitrogen cycle in pig livestock;

	B1. RENURE refers to OG7 RENURE - recovered nitrogen from manure; B2. POKETBOER 2 refers to OG8 POCKETBOER 2 - More performant operation of pocket digesters; B3. Grass2Algae refers to OG9 Grass2Algae - From grass juices to the cultivation of microalgae; IR1. Biorefinery Glas refers to OG10 Biorefinery Glas - Small-scale Farmer-led Green Biorefineries; IR2. MOPS refers to OG11 MOPS - Maximizing Organic Production Systems Through integrated cropping systems; IR3. Duncannon Blue Flag Farming & Communities refers to OG12 Duncannon Blue Flag Farming & Communities Scheme.
Outcome EIP-OG	Drop-down menu with the CODE of the outcomes identified per OG to which the stakeholder is related (possibility of choosing multiple options): 1TH_concentrator; 2TL_conductivitymeters; 2TL_computerApp; 2TL_economicreduction; 2R_agrimanagement; 3R_BAT; 3TL_rapidtesting; 4TH_manuretreatment; 4P_struvite; 5R_packages; 6TH_airwashing; 6P_ammoniumsulphate; 7P_AmmoniumSulphate; 7R_evaluation; 8R_pocketdigesters; 9P_grassjuice; 10TH_mobilegrass; 10P_presscake; 10P_monogastrics; 10P_prebioticsugars; 10P_recoveredfertilisers; 11R_organiccropping; 11TL_greenmanures; 12TL_PPZmaps; 12R_waterquality; 12TL_rewardscheme.
Role in NUTRI-KNOW	According to your own criteria, write down the potential role of the stakeholder identified in the implementation and dissemination of the outcomes selected
Role type	Drop-down menu with the type of role that the stakeholder may have in the implementation and dissemination of the outcomes selected: Training; Contact to farmers; Outcome developer; Dissemination/Communication; Advise to farmers; Outcome use; Monitoring the implementation of legislation; Financial support; Policy regulation.

Throughout the consultation process, other information about the stakeholders was filled in, namely whether the stakeholder was key, the interview and questionnaire status, the preferred communication channels and material, their knowledge regarding the OGs and their perceived relevance, and their reason to search for solutions on nutrient management.

2.2.2. Step 2: Consultation

Once the information about the organisations was introduced by the project consortium, we started a process of consulting the stakeholders. This process was divided into two steps: Step 1) implementing a questionnaire to collect information from each stakeholder and step 2) completing the previous process with more detailed information by interviewing key actors identified in the consortium. The following sections describe these two stakeholder consultation activities in detail.

Questionnaires

The main objective of this step was to conduct a comprehensive analysis of identify stakeholders crucial for the successful implementation of EIP-OG outcomes across Europe. This encompassed various stakeholders such as farmers, technology providers, public authorities, researchers/universities, and civil society organizations (CSOs), amongst others. The focus was on delineating the key interconnections between these stakeholders to determine their roles in the implementation of the outcomes. The objectives guiding the consultation with these stakeholders were multifaceted. Firstly, the consultation aimed to pinpoint and understand the primary barriers and obstacles hindering the widespread adoption of EIP-OG outcomes. Then, it aimed to identify the relevant players and stakeholders capable of maximising the utilisation of EIP-OG outcomes, as well as those willing to engage in NUTRI-KNOW activities. Furthermore, the consultation aimed

to map out the essential characteristics of stakeholders interested or influential in the uptake of EIP-OG outcomes. Finally, it aimed to devise effective strategies for engaging with these key stakeholders to ensure their active participation and collaboration in the implementation process. In alignment with project Task 2.1, it was decided to combine this joint consultation process to prevent additional fatigue from contacting stakeholders.

These objectives were addressed by considering the following 4 dimensions of the analysis:

1. **Socioeconomic context and stakeholder characteristics** - This dimension collects key attributes of the stakeholders representing key organisations with regards to individuals' characteristics: gender, age, education, etc. and also organisational characteristics: role in the nutrient management cycle, target group, geographical reach, etc. (**fed to D2.1 and D2.2**).
2. **Governance and legislation** - This dimension explores the current challenges from stakeholders in the market and legislative situation (standardisation, conflict with different policies, trends, needs of new legislation, etc.). This dimension is analysed under the perspective of task 2.1 (**fed to D2.1**).
3. **Social structure and networking** - The social structure will determine the network of actors and how they relate to each other as a result of the Social Network Analysis (**fed to D2.1**).
4. **Effective engagement** – This dimension refers to those principles and criteria that will shape effective engagement in NUTRI-KNOW with regards to those activities focusing on the interaction with the stakeholders (**fed to D2.1 and D2.2**).

The overall approach is presented in Figure 4.

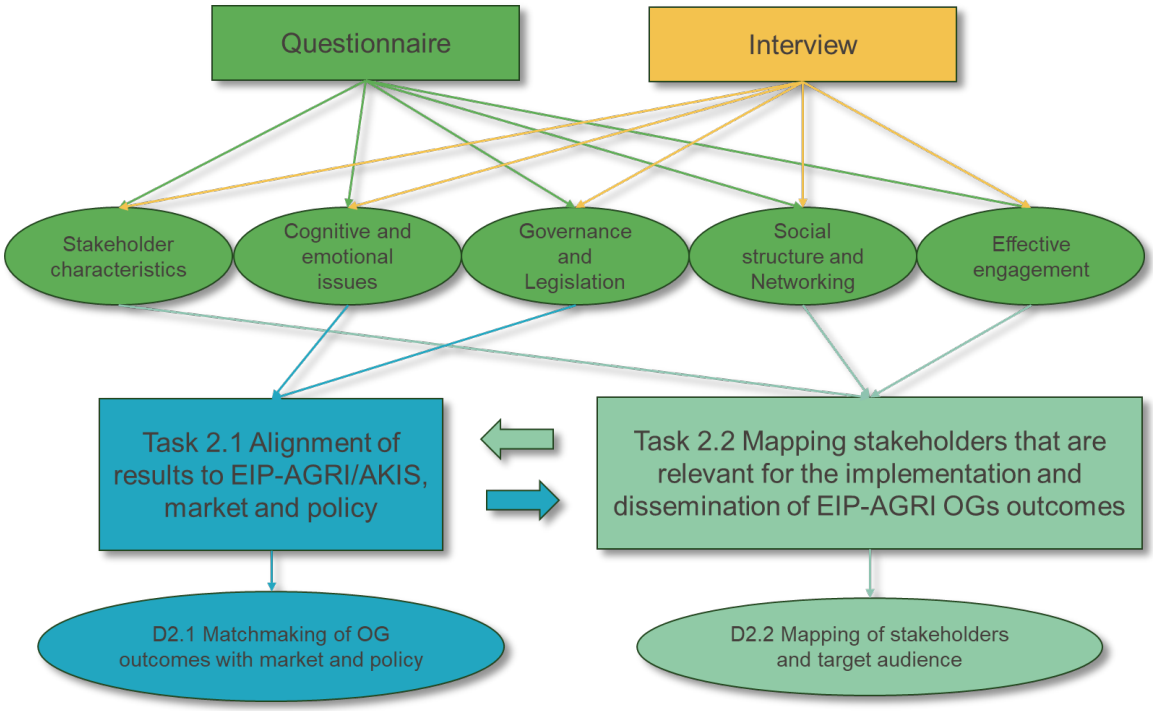

Figure 4. Overall approach for the consultation and data collection in D2.1 and D2.2

The questionnaire (not representative at a statistical level since it is addressed only to the relevant stakeholders) mainly consisted of closed questions, so that the gathered results were more reliable and to minimise the bias, but also contained some open questions to let the respondents develop their own point of view. The questions were co-developed with the consortia partners to maximise

information gathering through collective expertise. The questions were refined iteratively, incorporating feedback from partners until reaching the final version that was then sent to the stakeholders to answer.

The questionnaire was structured in the following way:

- **Section 1: Introduction** to the questionnaire to explain the objectives of the consultation, as well as informing about the ethical aspects according to the ethical procedures and a consent to collect questions.
- **Section 2: Stakeholder attributes -** description of the organization and its role within nutrient management **(fed to D2.2)**.
- **Section 3: Knowledge & Relatedness about EIP-OGs related to NUTRI-KNOW** – this section aims to establish a logical screening process for respondents, assessing their degree of relevance to the outcomes of the OGs (**fed to D2.1 and D2.2**).
- **Section 4: Cognitive, Knowledge about EIP-AGRI OGs Outcomes**- this section aims to obtain the respondents opinion and perception about the needs and challenges of the implementation of the outcomes of the OGs (**fed to D2.1**).
- **Section 5: Policy and Legislation challenges** – questions about the perceived challenges in marketing and policy regarding agricultural nutrient management (**fed to D2.1**).
- **Section 6: Networking and relationship questions** – questions about social network analysis and communication aspects (material and channels) for effective engagement **(fed to D2.2)**.
- **Section 7: Demographic questions** – questions about gender and age to collect statistical information of respondents and contact information (if they want to provide it) **(fed to D2.2)**.
- **Section 8 – Acknowledgement and Data protection and storage data information**

First, the consultation protocol (see Annex 2) was developed, which consisted of (1) creation of the survey in the online survey platform SurveyMonkey[14] with a shareable link and QR code (2) distribution of the survey to the partners, alongside email templates (participation, follow-up, and acknowledgement) to be shared with the stakeholders, (3) the partners organised amongst themselves which stakeholder they were in charge to contact and then connected with them (4) collection of all the responses and tracking of the stakeholders that answered (see Figure 5).

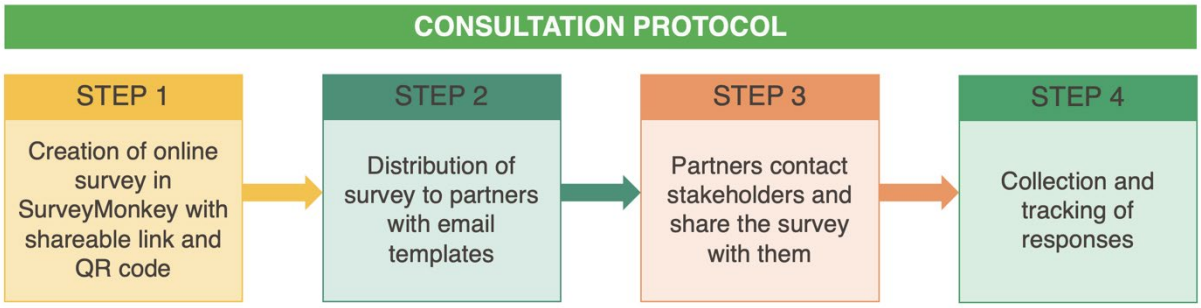

Figure 5. The four steps of the consultation protocol

The questionnaire was developed in English and was then translated by the partners to the local languages of the case study countries where the OGs are active – namely, Catalan, Spanish, Dutch

[14] https://www.surveymonkey.com

and Italian. After completing the translations, the online questionnaires were meticulously developed, followed by a thorough quality control and testing which was conducted in collaboration with partners in each of the languages. The final questionnaire in English can be found in Annex 1.

Once the questionnaires were created, steps 2, 3 and 4 of the consultation protocol were followed.

Since the questionnaire was devised to be answered by a limited number of targeted stakeholders, the focus was to obtain as many complete responses from them as possible. During the questionnaire phase of the consultation process, the engagement with stakeholders was not as high as expected, resulting in an insufficient number of responses for robust data analysis. Therefore, the consortium decided to identify the **key** stakeholders in order to prioritise obtaining response from them. Furthermore, a shorter version of the questionnaire was created to be shared with the stakeholders that were not directly involved in the OGs or were not identified as key. This version was also developed in all the other local languages.

The questionnaires were open for a period of 8 weeks. Upon closure a first round of analysis was performed. This involved an individualised and aggregated data analysis, which is further detailed in Section 2.2.3. Sections 3, 4, and 5 of the questionnaire will be analysed in Task 2.1 and presented in *Deliverable 2.1 Matchmaking of OG outcomes with market and policy*, due in March 2024.

After this process, the status of data collection was assessed and it was decided that the gathered information was not comprehensive enough and that an interview phase was required to enhance the quality of the data.

Interviews

Following the above consultation process and given that the results obtained in the questionnaires were not conclusive enough to draw clear conclusions, it was decided to continue with a more thorough consultation process through in-depth interviews with the identified key actors who had not previously responded to the questionnaire. To this end, country-specific protocols were created and structured on the basis of sections 1 to 6 of the questionnaires (in total 4 versions of the interview protocols were created and adapted to each country including Italy, Ireland, Belgium and Spain). An example of one protocol can be found in Annex 3, corresponding to the English version. For each section, open-ended questions were proposed, and the results collected per country from the questionnaires were displayed in order to motivate more nuanced responses. The interviews were conducted by the consortium partners in their own languages (Catalan, Italian, English and Flemish). The interview protocol was already incorporated into procedure to gather consent from research participants (interviewees) according to the GDPR regulation and NUTRI-KNOW Ethics Plan. Afterwards, the interviews were transcribed verbatim and translated to English from all the local languages by the partners. The transcriptions are saved in WE&B's storage as they contain sensitive information.

2.2.3. Step 3: Integration

The results of the questionnaires and interviews are integrated based on two types of results, 1) results on **stakeholders and their relationships** (Section 2 of the questionnaire: Stakeholder attributes and Section 6 of the questionnaire: Networking and relationship questions of the questionnaire, and interviews) and 2) results on **communication preferences** in terms of materials and channels (Section 6 of the questionnaire: Networking and relationship questions of the questionnaire and interviews).

Data analysis and visualisation

The results regarding the connections with stakeholders indicated initially by the partners in step 1, were used to create Question 34 in the questionnaire (Annex 1). This question further explores the relationships among the stakeholders by identifying the most relevant stakeholders (see Annex 1). Based on the initial information, a list was curated with a selection of key stakeholders. Participants of the questionnaire were asked to rate the strength of their connection to the stakeholders provided in that list and add others if relevant.

The results from the questionnaire were then transferred to an updated version of the Stakeholder Database - adapted for smooth importing into the Kumu platform- the online software used for creating the maps for data visualisation. Kumu generates links for each map that are open to the public and shareable and in such confidential data was removed from this version. The generated maps allow for an interactive consultation and user's search.

The Excel document was structured in terms of "elements" and "connections", adequate for the SNA. The first version of the map portrayed all the connections among the stakeholders based on the information gathered from the questionnaire. To have a more comprehensive overview of the connections in each of the countries where the OGs are active, 4 additional views – one per country context - were created from the general map. Each additional view showed only the connections among the stakeholders related to the OGs of each country (see Figure 6 as an example of the map for Belgium), thus making the map more simplified and tailored to the specific context.

Other views can be addressed when further updates of the maps are conducted. These maps represent the initial picture of NUTRI-KNOW and they are intended to be updated as the project evolves and engagement actions are implemented.

The generated Stakeholder Database leads also to the possibility to have an overview map of all the country-maps integrated in one and also showing stakeholders that are not from a specific context. The resulting map is visually complex and does not allow for a robust analysis. It should also be considered that the whole methodological process was done on a country-by-country basis, so showing a unified result would lose methodological criteria.

The maps are composed by elements and connections (more detailed information is included in section 3.2.1). The elements are the circles, which represent the stakeholders, and the triangles, which indicate the stakeholders that have been identified as key. The colour of the circles indicates the target group (see Table 1) to which each stakeholder belongs to, and the inner circle marks the stakeholders that have been consulted through the questionnaire.

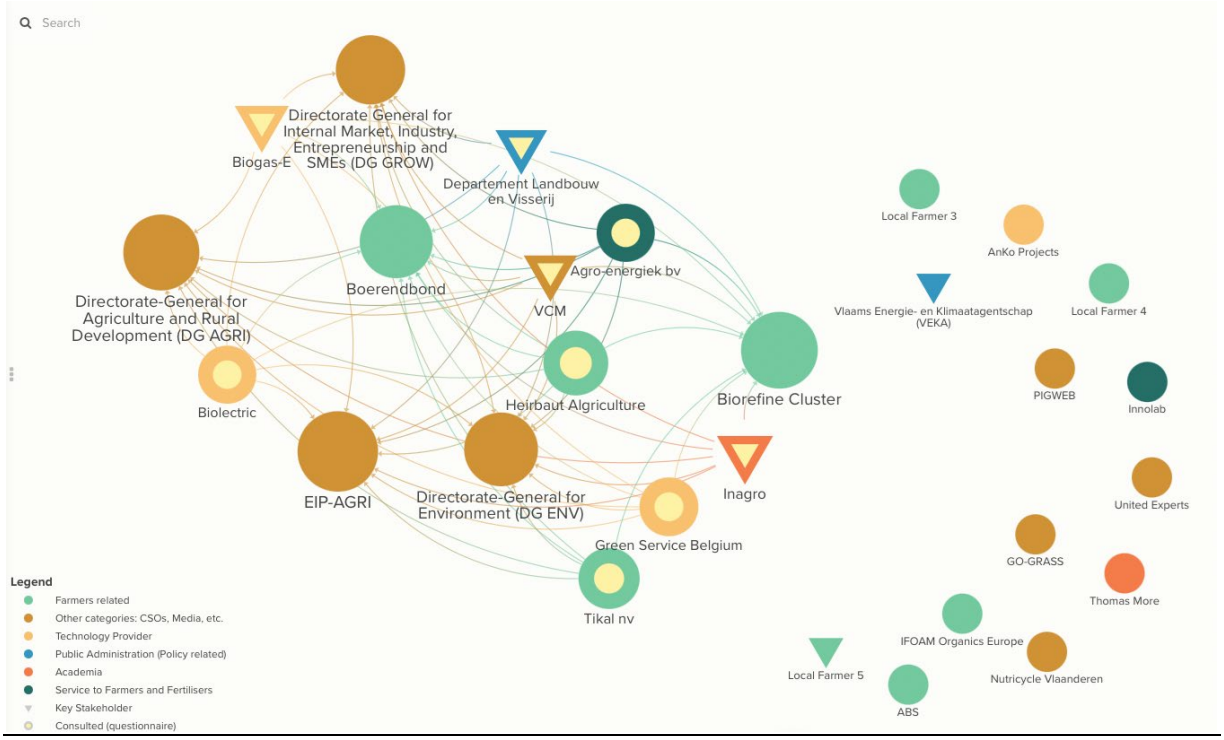

Figure 6. Example of the first version of the stakeholder map for Belgium from Kumu

The data gathered in the questionnaire about the stakeholders, their knowledge of the OGs and their connections was used to design the interview protocol (see Annex 3). The maps served as the foundation for validation and identifying further connections during the interviews. In each interview, the local map of stakeholder connections was presented and additional connections were identified. Based on the transcriptions of the interviews, the new inputs were added to the maps to improve the data visualisation.

Moreover, bilateral discussions with the partners from Belgium, Spain, Italy and Ireland were held to co-decide any changes that were required for the visualisation and potential uses of the maps within the NUTRI-KNOW project and beyond.

With all the gathered information from the consultation process and the feedback from the consortium partners, the last versions of the stakeholder maps were created, which present a comprehensive visualisation of the interconnections among the stakeholders relevant for the implementation and dissemination of the EIP-AGRI OGs outcomes. These final maps are presented in section 3.2 of the deliverable. The maps will be uploaded on the project website, providing opportunity for the participants and wider community to engage with the results.

Lastly, questions 35 and 36 of the questionnaire have been analysed to determine the communication preferences of the consulted stakeholders. These questions inquire about the type of communication material related to the NUTRI-KNOW project to be shared with the stakeholders, as well as the preferred channel of communication to share the material. Moreover, during the interviews the questionnaire results regarding the communication preferences were displayed to the participants allowing the collection of more in depth responses. Interview transcripts were also analysed to investigate evidence regarding communication material and channels preferences. This data on communication preferences will be of further used in other project activities where the practice-oriented materials are developed (WP3), and then the communication through different channels and formats take place based on these inputs (WP4, WP5).

3. Results

The results are organised according to three types of results. First, in section 3.1 the Stakeholder Database and its composition are presented along with the data resulting from the consultation process itself. In section 3.2 the resulting stakeholder maps and country-specific results are presented, meanwhile section 3.3 is dedicated to the results on communication preferences and engagement of the consulted stakeholders.

3.1. Stakeholder Database

All the information related to the stakeholders is gathered in the **Stakeholder Database** presented in Annex 5. This database is also available for consortium partners in the NUTRI-KNOW SharePoint. All sensitive information such as personal contact details is only stored in WE&B's storage.

3.1.1. General stakeholder data

In the Stakeholder Database, we have collected data from the stakeholders on the following aspects relevant to the objectives of Task 2.2. This data includes the step within the nutrient value chain in which stakeholders are involved; the quadruple-helix group and target group to which they belong; the geographical and country-level in which they operate; the EIP-OGs to which they are associated; and the type of role they hold in implementing and/or disseminating the outcomes of the OGs. The analysed data for these stakeholder parameters is desegregated below.

Nutrient value chain

As the NUTRI-KNOW project focuses on nutrient management and addressing the different steps of the nutrient management value chain, the following data shows the steps within the nutrient value chain in which the stakeholders are involved. These steps include livestock farming, storage systems, fertiliser production, processing technologies, transport, and application.

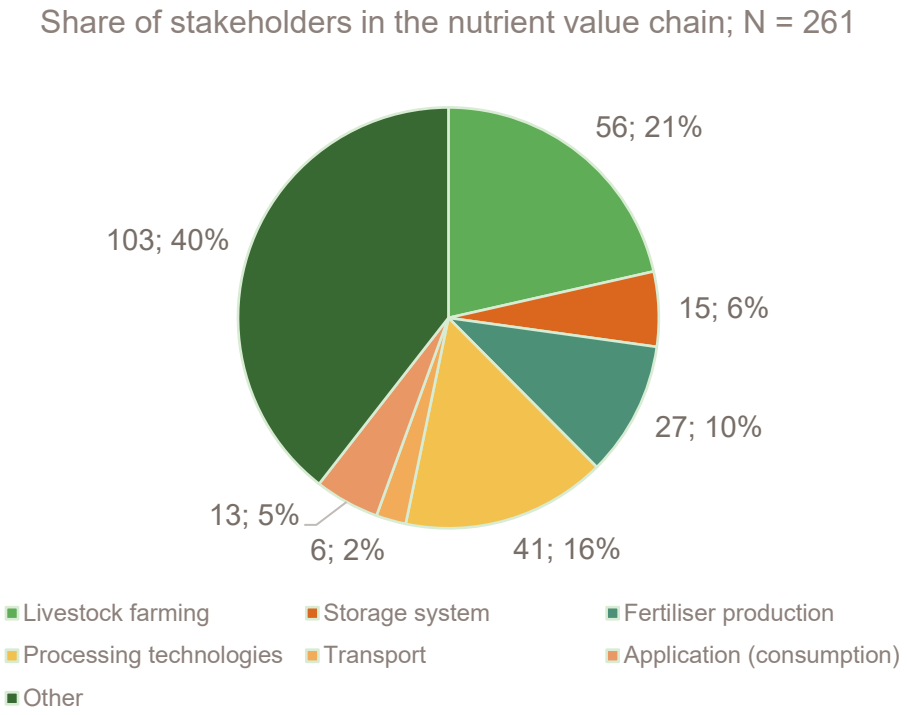

Figure 7. Percentage of stakeholders that are related to each nutrient value chain step

As seen in Figure 7, most stakeholders belong to the category "Other", accounting for 40% of the total share of stakeholders. This category was selected when the stakeholders were involved in a transversal way to the nutrient value chain steps, in other words when they were not related to any specific step in the nutrient value chain (activities such as capacity building, research, policy, etc.). However, regarding the nutrient value chain, the most represented step by stakeholders is livestock farming (21%), followed by processing technologies (16%) and fertiliser production (10%). The least represented step within the nutrient value chain are storage systems, application (consumption) and transport, making up only 6,5, and 2% respectively of the total share of stakeholders.

Quadruple-helix target groups

This section presents the distribution of stakeholders that belong to each group of the quadruple helix, encompassing the 4 key categories of stakeholders i.e._(i) Business/private sector; (ii) Citizens/society; (iii) Policy/public sector and (iv) Research.

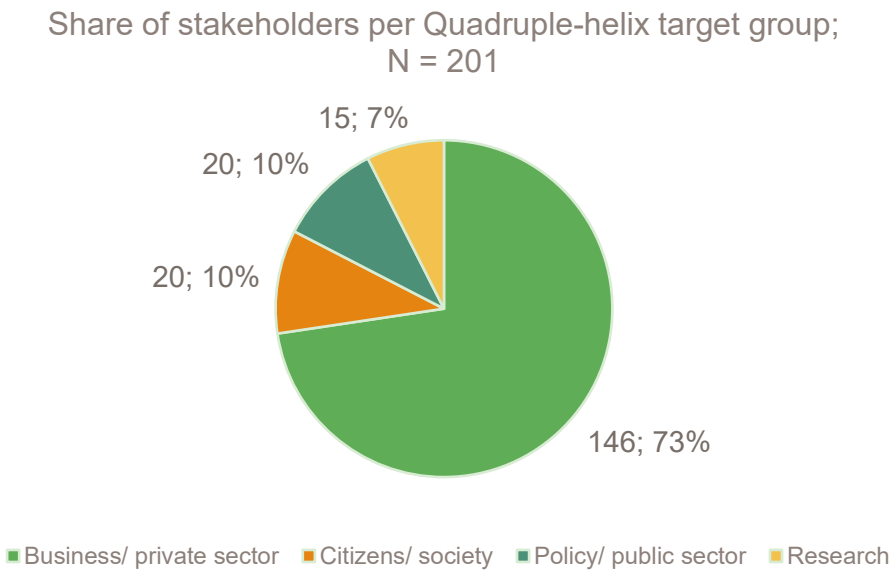

Figure 8. Share of stakeholders that belong to each Quadruple-helix target group

When analysing the stakeholders through the quadruple-helix groups, the business/private sector comes up as the most predominant group, making up 73% of the total number of stakeholders. This is because many farmers' associations and clusters are considered to be private sector, as they are not publicly managed, and are the largest bulk of identified stakeholders. Citizens/society, policy/public and research groups make up a similar proportion of the total share (each with 7% respectively). Since only key organisations from the region in question have been identified at the national and regional level from these helix segments (being one or two stakeholders per country), the proportion is not really relevant here and it is more a matter of having them identified as influential actors.

Target groups

The stakeholders that belong to each target group - presented in Figure 9 – are categorized according to the stakeholder identification phase (see section 2.2.1). The detailed division of target groups into subcategories has been presented in Table 1).

Figure 9. Number of stakeholders that belong to each target group.

As seen in Figure 9, the most represented target group is the Farmers Related group, followed by Academia. Public Administration and Policy; Services to Farmers; Media; Fertilisers Related; and Technology Provider – User each hold similar amounts of representation. The least represented target groups are Short-Term Actions, EU, CSO/Other Non-Profit, and Financial Institutions.

Geographical level

The following data portrays the geographical distribution of the stakeholders within the NUTRI-KNOW context, depending on the level on which they operate – European, national, regional, or local.

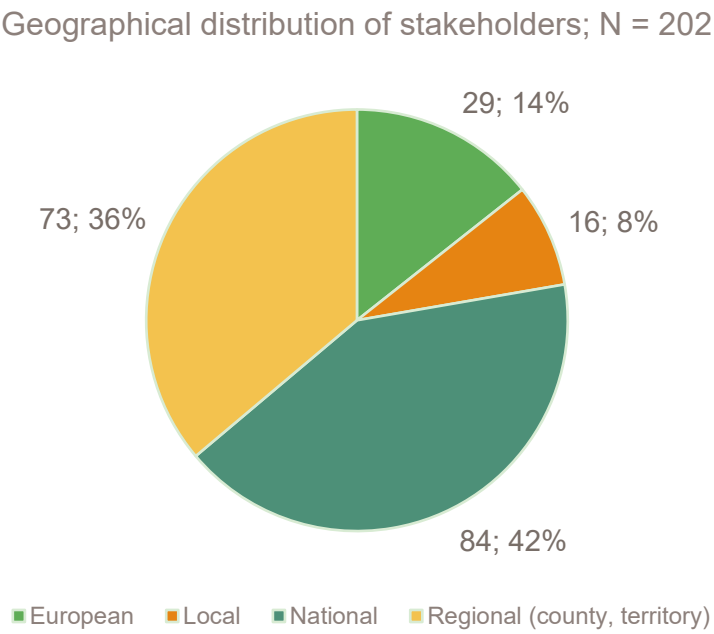

Figure 10. Percentage of stakeholders that operate in each geographical level

42% of stakeholders operate on a national level, followed by 36% of stakeholders that operate on a regional level from the countries where the 12 EIP-OGs operate. In contrast, only 8% of the total share of stakeholders act on the local scale, and 14% have the European scope.

Country-related

Similar to the previous data, the country related data focuses on the specific countries relevant to NUTRI-KNOW i.e. the countries the stakeholders belong to. The countries include those where the project demo-sites are located (Spain, Italy, Belgium and Ireland), as well as other countries.

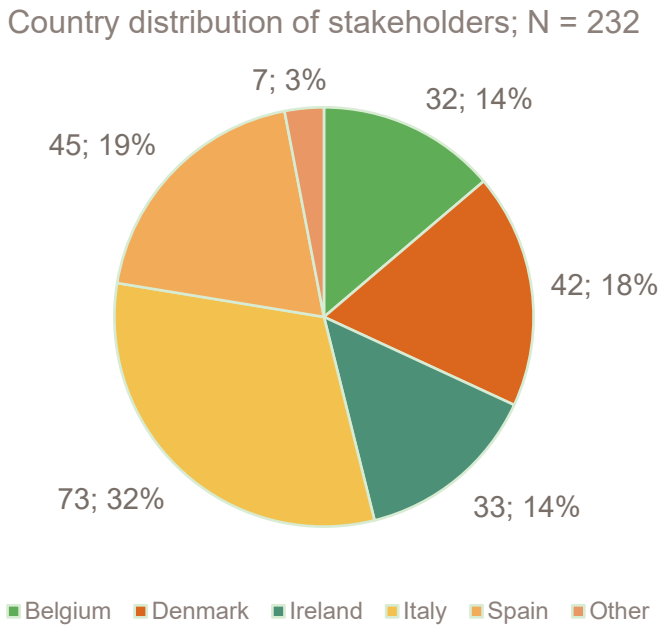

Figure 11. Percentage of stakeholders that belong to each country relevant to the NUTRI-KNOW project

The analysis shows that Italian stakeholders represent 32% of the total share of identified stakeholders. This is followed by the Spanish (19%) and the Danish (18%) stakeholders. Belgian and Irish stakeholders each hold an equal proportion of the total share, accounting for 14%. In section 3.1.2 below, this analysis per country is presented for only consulted stakeholders.

Associated EIP-OGs

Next, the EIP-OGs associated to the stakeholders are presented. Stakeholders may be associated to none, one or more than one OG. Figure 12 presents the number of stakeholders that are related to each of the EIP-OGs.

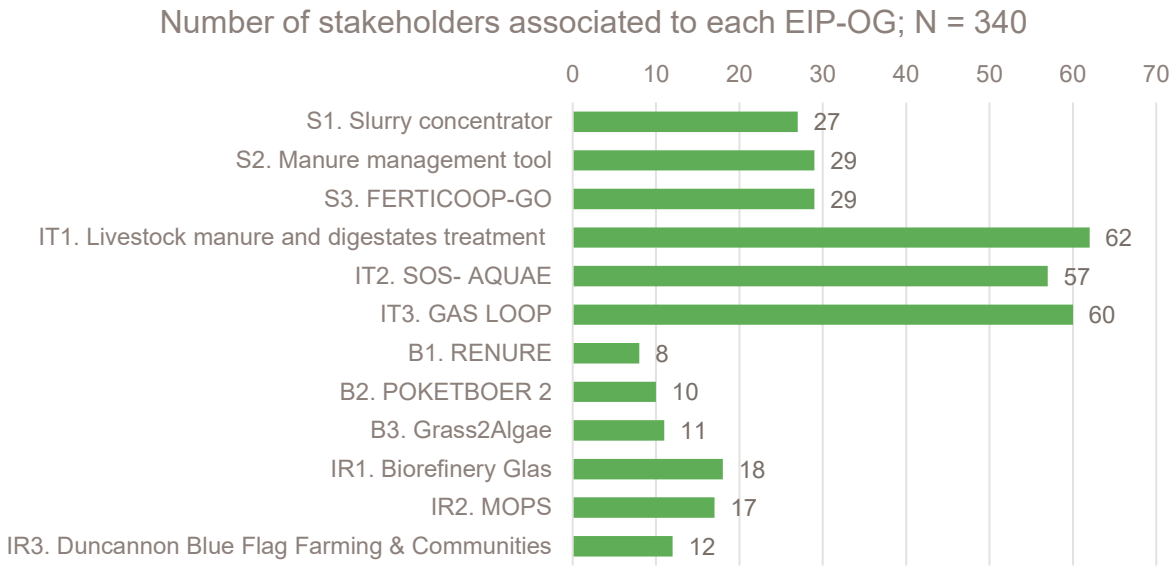

Figure 12. Number of stakeholders that are associated and/ or members to an EIP-OG

The OGs that have the highest number of associated stakeholders are the Italian OGs, namely IT1. Livestock manure and digestates treatment, IT3. GAS LOOP and IT2. SOS-AQUAE. They are followed by the Spanish OGs: S3. FERTICOOP-GO, S2. Manure management tool, and S1. Slurry concentrator. Next are the Irish OGs – IR1. Biorefinery Glas, IR2. MOPS, and IR3. Duncannon Blue Flag Farming & Communities. And lastly, the Belgian OGs: B3. Grass2Algae, B2. POCKETBOER 2, and B1. RENURE.

Type of role in NUTRI-KNOW

As one of the objectives of this task is to identify and map the stakeholders relevant to the implementation and dissemination of the EIP-AGRI OGs outcomes, it is crucial to determine the type of role they hold in such an activity. In the next figure, we present the number of stakeholders that hold each type of role relevant for the dissemination and implementation of the outcomes.

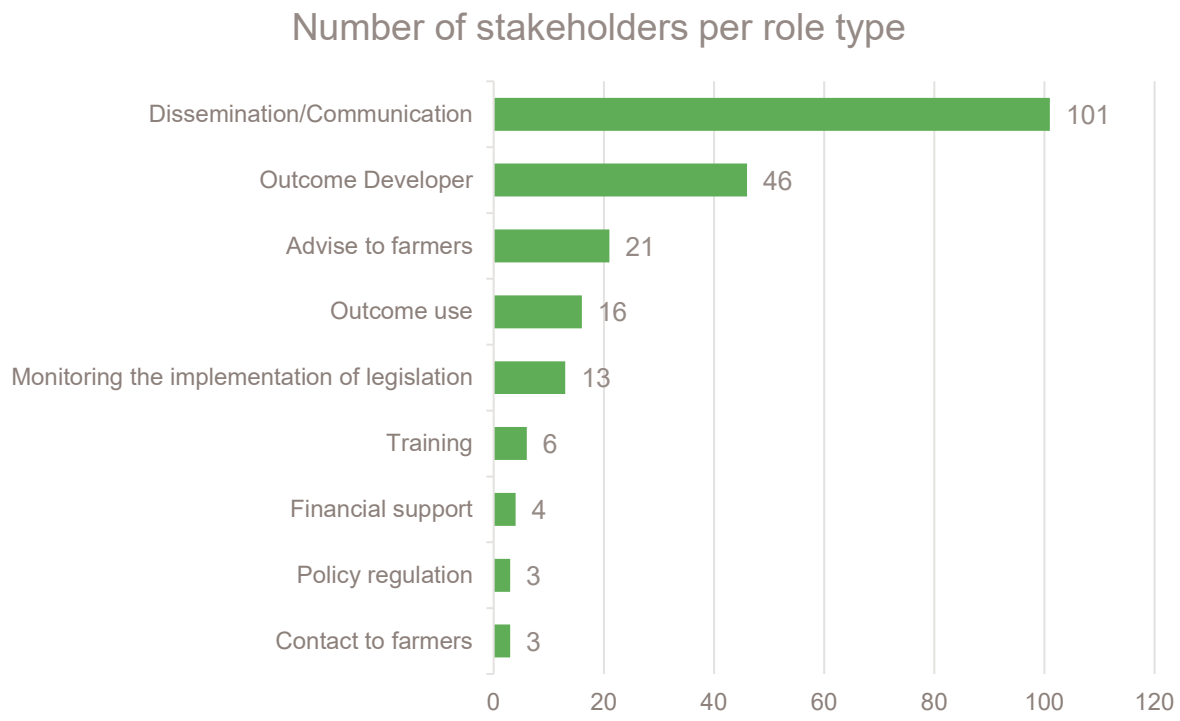

Figure 13. Number of stakeholders that hold each type of role in the dissemination and implementation of EIP-OGs outcomes

The analysis shows that most stakeholders have a role in disseminating and/or communicating the OGs outcomes. Only a few appear to have a role in providing financial support and training or intervening in policy regulation.

3.1.2. Data from the consulted stakeholders (interviews and questionnaires)

This section presents the results from the data collected from stakeholders through the consultation process, including the questionnaire and interview phase. Detailed information on the number of responses obtained in each phase per country is displayed in Table 3 below. The geographical area encompasses the countries where the OGs are active as well as other countries where consulted stakeholders operate. A total of 49 responses were obtained through the questionnaire phase, and 9 stakeholders were reached through the interviews.

Table 3. Number of responses obtained from each country in each phase of the consultation

Consultation phase	Number of obtained responses per geographical area				
	Belgium	Ireland	Italy	Spain	Other
Questionnaire	14	21	6	12	6
In-depth Interviews	2	1	4	2	0

Number of consulted stakeholder per target groups

The following data shows the number of stakeholders that were consulted and belong to each of the previously identified target groups. The information is presented for each consultation phase, differentiating the number of stakeholders identified from the questionnaires and from the interviews.

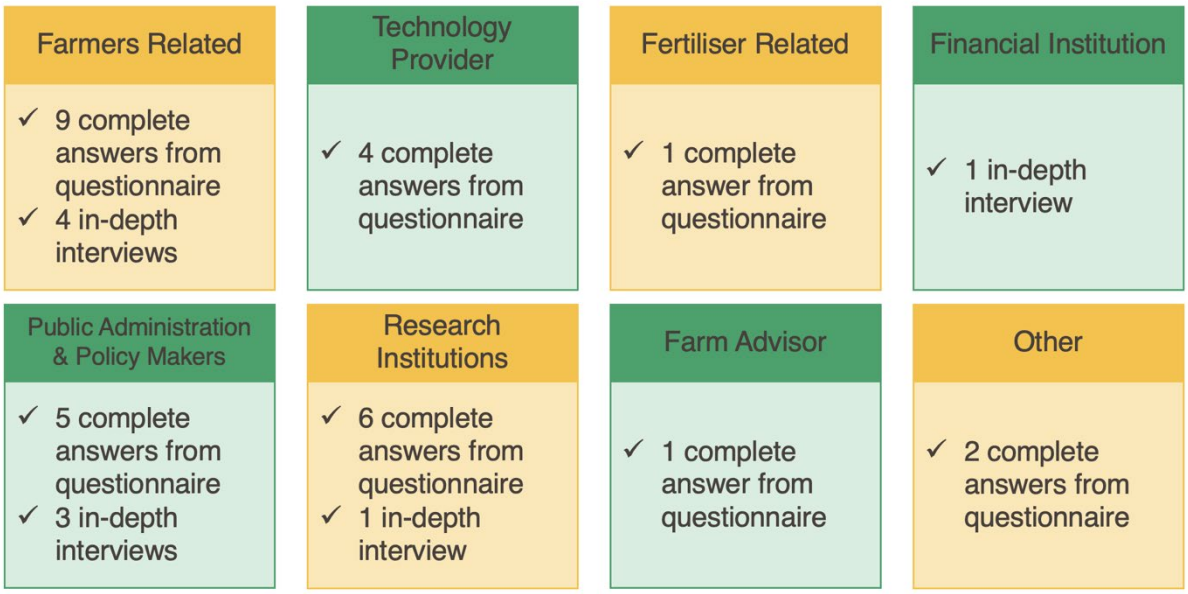

Figure 14. Number of consulted stakeholders that belong to each target group

The most represented target groups in the consultation process are Farmers Related, Public Administration – Policy, and Academia, which are also the most represented target groups in the general Stakeholder Database. The consultation process has engaged with stakeholders from the following target groups: Services to Farmers, Financial Institutions, Fertilisers Related, Technology Provider – User, and Other. However, there has been no consultation with stakeholders from the EU, Short-Term Actions, Media, and CSOs/Other Non-Profit groups, which mostly correspond to the least represented stakeholders in the general analysis, as seen in Figure 9.

Share of consulted stakeholders per each related country

The data in Figure 11, presents the distribution of stakeholders per country relevant to NUTRI-KNOW. In this case, only data from consulted stakeholders is displayed.

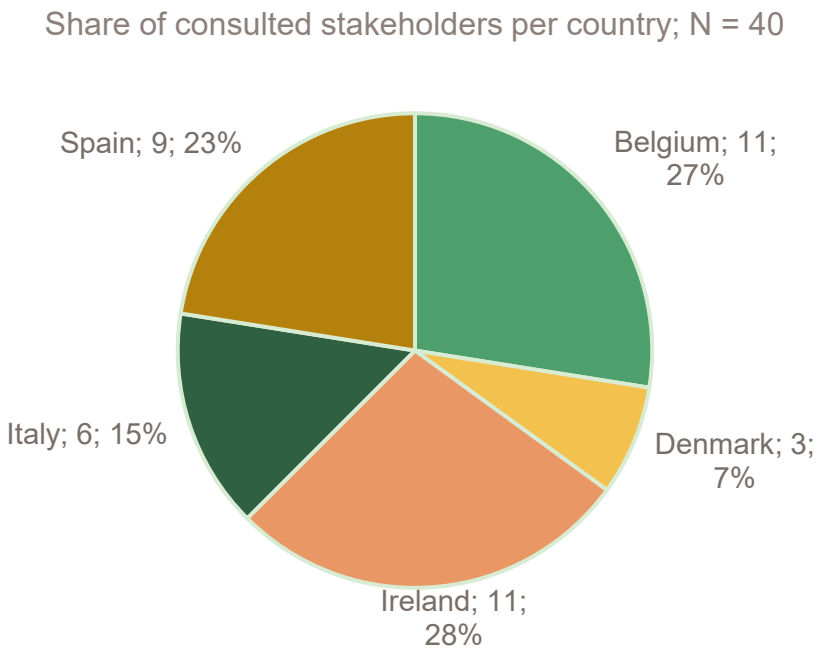

Figure 15. Number of consulted stakeholders that belong to each country relevant to the NUTRI-KNOW project (including questionnaires and interviews)

Irish, Belgian, and Spanish stakeholders account for the majority of stakeholders consulted (with a 28, 27 and 23%, respectively, of the total share of stakeholders), in contrast to the high representation of Italian stakeholders in the general country distribution (see Figure 11).

Demography of participants (questionnaires)

Lastly, from the data gathered through the consultation phase, we present a demographic overview, portraying the age and gender distribution of the consulted stakeholders.

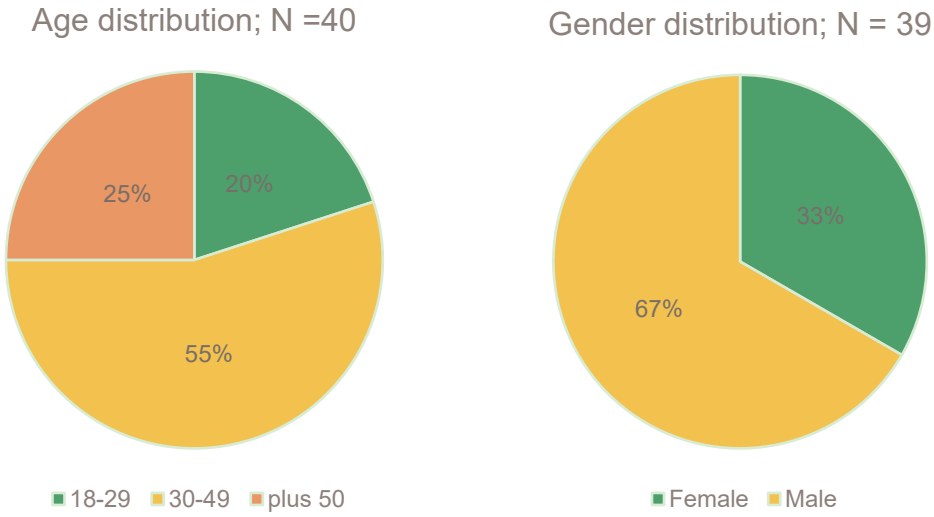

Figure 16. Age and gender distribution of the consulted stakeholders in the questionnaires

Two-thirds of the stakeholders consulted in the questionnaires are male and belong to the 30-49 age group. The remaining age group representation is split between the 18-29 (20%) and plus 50

(25%) groups. Of the engaged participants in the agriculture sector, there's a noticeable predominance of males and an inclination towards older age demographics.

3.2. Stakeholder Maps

The results of the SNA are presented through the stakeholder maps for each of the participant countries of the NUTRI-KNOW project. An introductory section together with an explanation of the generalities of the maps is followed by the results of each country.

3.2.1. Generalities regarding the stakeholder maps

This section provides an overview of the stakeholder maps that have been created for the NUTRI-KNOW project. For each country, a screenshot of the map is provided as a figure and a link is shared to the dynamic interactive web-based map where more detailed and specific information can be found. This sub-section acts as short guide to assist in reading the maps in order to extract the most value and accurate results from them.

Box 1: How to read the NUTRI-KNOW stakeholder maps

Basic tips for reading the NUTRI-KNOW Stakeholder maps

The maps illustrate the connections among diverse players within the agricultural landscape in the context of the project. It links farmers, technology providers, public administration, academia, service providers, as well as other actors in this landscape. Through highlighting key stakeholders and questionnaire/interview respondents, the maps offer a visual representation of the relationships among actors that are relevant for the uptake of the NUTRI-KNOW OGs outcomes.

The stakeholder maps, co-developed by the NUTRI-KNOW consortium and stakeholder inputs, will undergo further refinement during later stages of the project. This process allows the results of the project to be capitalised in the EIP-OGs.

Social Network maps have two essential elements: the nodes (in our project these are the identified stakeholders) and the edges (the connections between them).

The **connections** represent the current existing relationships between the organisations. These connections are in the context of the project, and not for other purposes where a connection might exist. They can also be clicked to show additional information that is not displayed on the map and the strength of the connections can be displayed with a rating from 1 to 3, where 3 is the strongest connection level.

The **colour key** is displayed for each map in the legend, normally organised by the type of target group.

Coloured elements with a yellow bullseye are the stakeholders consulted through questionnaires and interviews. A colour code is provided for the differentiation between the target groups.

By clicking on each of the nodes further information (attributes) on the specific stakeholder is displayed based on the main Stakeholder Database, as described in Section 2.2.1.

3.2.2. Stakeholder maps per case-country

This sub-section provides a description of each stakeholder map for each of the countries (Belgium, Ireland, Italy and Spain) where the 12 NUTRI-KNOW EIP-OGs are located.

NUTRI-KNOW related Stakeholder map in the Belgium context

This section describes the results from the stakeholder map in Belgium.

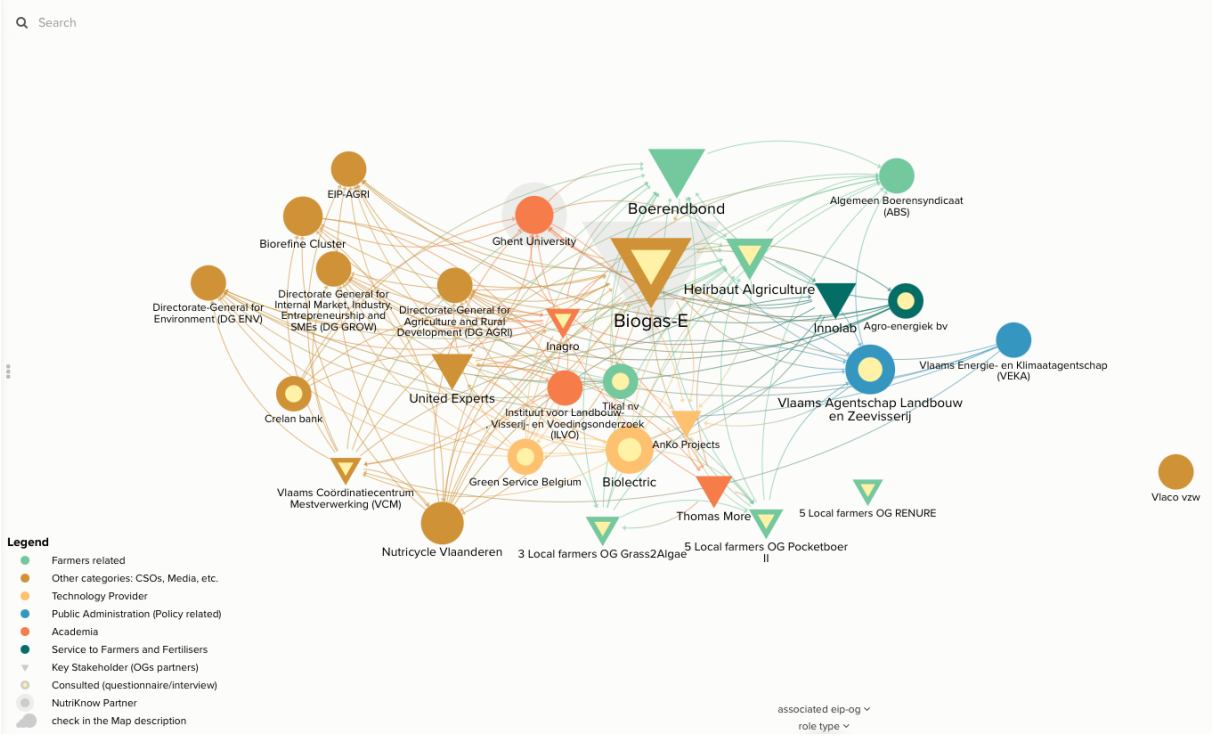

Figure 17. Stakeholder map in the Belgian context of NUTRI-KNOW. The dynamic map is available here

Figure 17 portrays the relevant stakeholders in the Belgian context for the uptake of the related EIP-OGs outcomes and their interconnections. The Belgian NUTRI-KNOW partners agreed that the most suitable visualisation of the map consisted of creating a filter view through a drop-down menu (at the bottom centre of the map) that allows the viewer to see which stakeholders are associated to each EIP-OG ("associated eip-og") and a filter to show the type of role they hold within NUTRI-KNOW ("role type"). Boerendbond, which is a Flemish farmers association, has been situated at the top of the map as they can be regarded as the first point for channelling relevant information due to their extensive and diverse connections. Other central actors for information distribution are the Flemish regional agencies, which are connected to many stakeholders on the map.

The findings of the SNA closeness metric show that the actors in Belgium that can have a greater stake in spreading information through the stakeholder network most easily and that may have a broader overview of the rest of the network, apart from the NUTRI-KNOW partners, are the following:

- **Inagro**: is a privatised agency of the Province of West Flanders which focuses on research in various agricultural sectors and different research areas, such as smart farming and nature inclusive farming practices. It is connected to technology providers, agricultural organisations, and regional bodies. As a research entity, it holds a potential role in disseminating the knowledge to farmers and local entities.
- **Innolab**: a laboratory expert in biomass valorisation. As they are related to fertiliser production, they hold a potential role in the development of the OGs outcomes. Furthermore, they appear to be well connected to the regional Flemish agencies and other technology providers, such as Green Service Belgium and Bioelectric.

- **Vlaams Agentschap Landbouw en Zeevisserij**, the Flemish Agency for Agriculture and Marine Fisheries. As a regional agency they are well connected to many stakeholders in Belgium and have a role in monitoring the implementation of policies.

Other relevant actors in the SNA are the group of local farmers, the company VCM as bridge between farmers, policy and research, and Herbaurt Agriculture one of the end-users identified , and Crelan Bank as a financial actor. Crelan Bank can have a potential role in financing regarding the implementation of OGs outcomes.

Regarding the SNA metric of betweenness, the results show the actors that have more control over the flow of information and can act as key bridges within the network. However, they can also be potential single points of failure. These actors are the following:

- **Boerendbond**: a farmers' association that provides services related to advocacy, training, networking, innovation, creating support and providing advice. They are connected to several types of actors, such as local farmers, regional agencies and technology providers. They get the highest score on this metric, showing the centrality of this actor in being a bridge with local farmers.
- **Heribaut Algriculture,** as a private organisation related to the farmers that has been identified as a potential user of the Belgian OG outcomes.
- **Vlaams Agentschap Landbouw en Zeevisserij**: already described above

Overall, in the map of Belgium, the best positioned groups are quite diverse, encompassing farmers associations, services to farmers, and research institutions, together with other groups with great relevance such as regional agencies in the climate and agricultural fields.

The roles identified for these actors are in monitoring the implementation of policies, connection to farmers, and dissemination and communication.

NUTRI-KNOW related Stakeholder map in the Irish context

This section provides information about the gathered stakeholder map in Ireland.

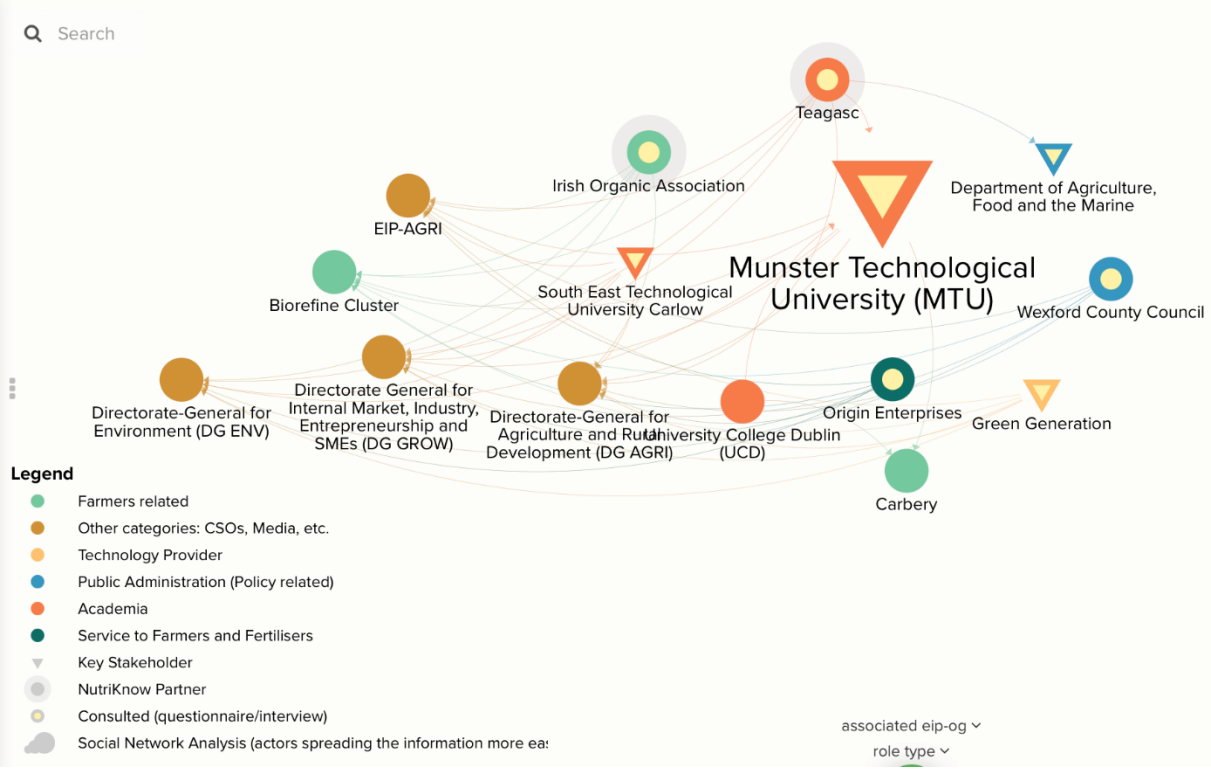

Figure 18 Stakeholder map in the Irish context of NUTRI-KNOW. The dynamic map is available here

The Ireland stakeholder map displays the stakeholders' connections which have been established that showcase effective project communication flows. Unlike in other contexts, the two project partners **Teagasc** and **IOA** are considered to be able to reach the relevant stakeholders themselves, so this stakeholder map shows the outcome of those actors with whom IOA and Teagasc are building relationships. The Irish NUTRI-KNOW partners have expressed their desire for their stakeholder map to be updated as the project progresses.

The SNA metrics (both closeness and betweenness) indicate that the most relevant stakeholders in addition to Teagasc and IOA (these two are place-centered in the map), are the academic sector partners who are also part of the EIP-OGs. These are Munster Technological University, University College Dublin and South East Technological University Carlow. These organisations are involved with several European projects related to nutrient management that can support the NUTRI-KNOW OGs communication.

Wexford County Council from a local level and the national body of **Department of Agriculture, Food and Marine** are also relevant key actors with regards to policy and public administration sector. Both are actors that form part of the EIP-OGs, and their role in NUTRI-KNOW is essentially to provide advice to farmers through their communication networks regarding nutrient management information. They can act as key entry points for any communication action hailing from NUTRI-KNOW. Private sector actors that play a key role in this network in providing advice to farmers include Origin Enterprises, which has also been part of the EIP-OGs related groups, and Green Generation that is focused more on sustainable production

The actors identified that can have an active role in further developing and/or using the outcomes from the EIP-OGs are organisations related to farmers such as the Biorefine cluster (an Interreg initiative) and Carbery (a private organisation of associated farmers).

NUTRI-KNOW related Stakeholder map in the Spanish context

This section provides information on the stakeholder map from Spain.

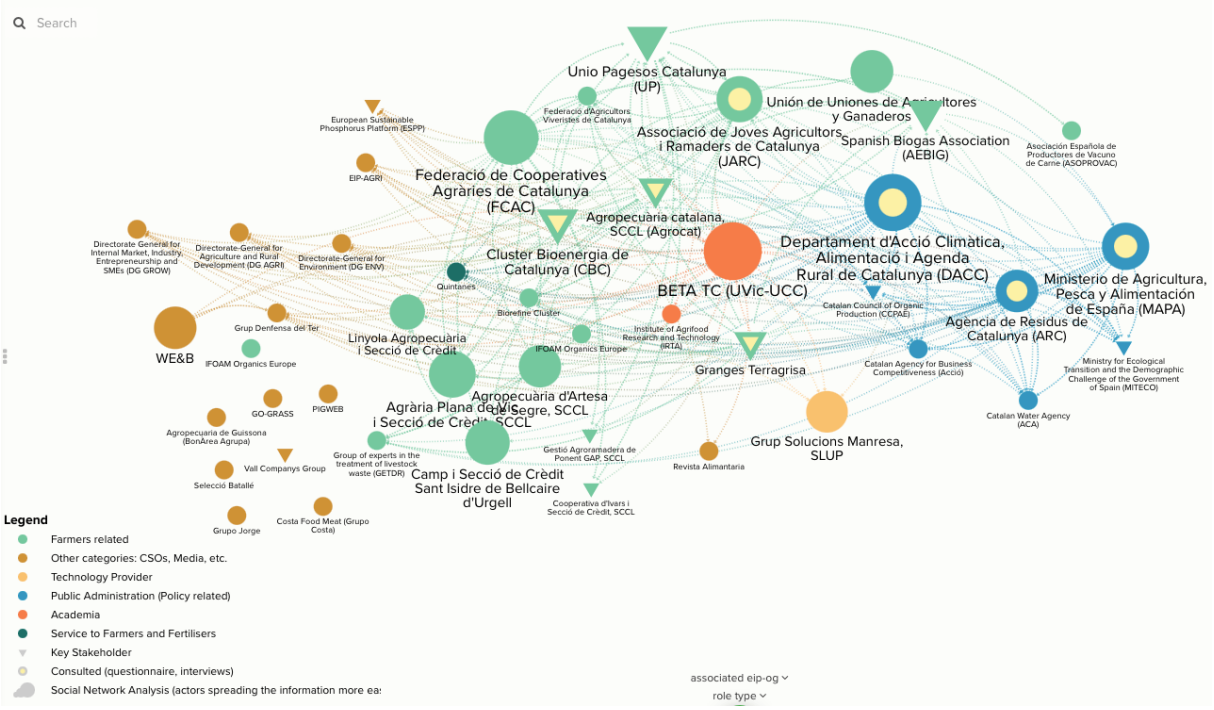

Figure 19 Stakeholder map in the Spanish context of NUTRI-KNOW. The dynamic map is available here

Figure 19 presents the relevant stakeholders in the Spanish context linked to the exploitation and use of the related EIP-OGs. The Spanish NUTRI-KNOW partners considered that the best view for their case is to visualise the stakeholders by target group and to allow, through the drop-down menu (bottom centre of the map) the view of the EIP-OG associations ("associated EIP-OG") and the type of role they can play in NUTRI-KNOW ("role type"). Stakeholders have been organised on the map in such a way that on a vertical axis, the actors that should be the first point for channelling information are considered at the top. This does not mean that the rest of stakeholders do not play a role, as they could also act as communicators and/or play a role in further developing the EIP-OGs related outputs. On the horizontal axis the public agencies at regional, national and European level are displayed. In the centre of the map, the NUTRI-KNOW partners are shown who are, by default, the key elements in that they have more control of the information and relevance in the network.

Two of the Spanish project partners, Federació de Cooperatives Agràries de Catalunya (**FCAC**) and Departament d'Acció Climàtica, Alimentació i Agenda Rural de Catalunya (**DACC**) are very well positioned are considered to be able to reach the relevant stakeholders.

The SNA results show that Spanish actors that can spread information to the rest of the network most easily and usually have high visibility in what is happening across the entire network, other than the NUTRI-KNOW partners. The organisations with the highest ranks are the following:

- **Cluster de Bioenergia de Catalunya**, a stakeholder who has been consulted and has already validated the visualisation of the map. It is an actor that has shown great interest in collaborating to disseminate the results of the EIP-OGs within its own network.
- **The Ministry of Agriculture, Fisheries and Food of Spain** (**MAPA**), is a national public institution that has maximum responsibility for agriculture, and therefore has high influence, however, it is difficult to reach the detail of information to be able to communicate, and it would be necessary to rely on the actors of the network that are

located above and with connection to MAPA to contact them in a more efficient way (through **Unión de Uniones** for example).

- **Unión de Uniones** and **Unió de Pagesos**, that are association of farmers' associations considered key stakeholders in this metric, and in the other SNA metrics (betweenness, degree), therefore they are located at the top of the map. We consider that any NUTRI-KNOW communication actions should be first channelled by them.

Other actors that have been relevant in the SNA are other agricultural associations and cooperatives. In the Spanish context, cooperatives and associations in the agricultural sector are crucial to reach a larger number of relevant actors. There are certain entities with which NUTRI-KNOW partners are in closer contact, which include: Agrària Plana de Vic i Secció de Crèdit, SCCL; Associació de Joves Agricultors i Ramaders de Catalunya (JARC); Camp i Secció de Crèdit Sant Isidre de Bellcaire d'Urgell) i Federació d'Agricultors Viveristes de Catalunya.

Regarding the betweenness metric in SNA, the results reveal those actors that exert the greatest control over information flow and thus serve as vital bridges within the network, consequently they can also be potential single points of failure. Within the Spanish network map these actors are as follows:

- **Unió de Pagesos de Catalunya**, already described above.
- **Spanish Biogas Association**, related to the "processing technologies" step of the value chain,could have a crucial role in communicating to its members regarding the EIP-OGs outcomes. Similarly, the sister organisation in the region of Catalunya is also well positioned in this metric, **Cluster de Bioenergia de Catalunya.**
- Some key farmers associations have also been identified as vital bridges within the network, namely: Agropecuària catalana, SCCL (Agrocat); Associació de Joves Agricultors i Ramaders de Catalunya (JARC), Agropecuària catalana, SCCL; and Agrocat Camp i Secció de Crèdit Sant Isidre de Bellcaire d'Urgell.
- Again, the relevance of the Ministry of Agriculture, Fisheries and Food of Spain (MAPA) gets high score for this metric showing the centrality of this actor in the communication actions.

In the NUTRI-KNOW Spanish stakeholder map, farmer-related groups are generally best positioned, yet there are also highly relevant groups, such as regional and national agricultural agencies. The main role identified for these actors is in training and dissemination and communication.

NUTRI-KNOW related Stakeholder map in the Italian context

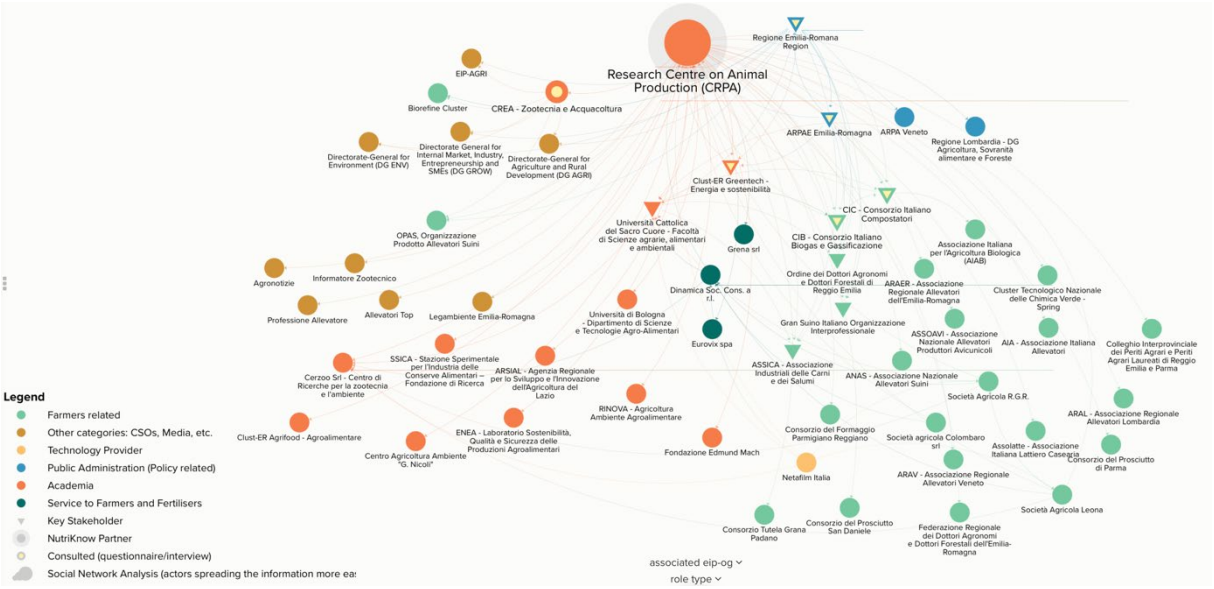

Figure 20. Stakeholder map in the Italian context of NUTRI-KNOW. The dynamic map is available here

Figure 20 shows the stakeholders and their connections in the Italian context that are relevant to maximising the EIP-OGs outcomes. The stakeholders are presented mainly by target groups, thus allowing the viewer to see which actors within each group are more connected, as requested by NUTRI-KNOW Italian partners (CRPA). At the top of the map, **CRPA** and **Regione Emilia-Romana** are located, which are the initial points of information flow and communication as they have the highest number of connections.

Apart from CRPA, which is a project partner, the findings of the SNA closeness metric show that the Italian actors that can spread information to the rest of the network most easily, and usually have high visibility into what is happening across the network, are the following:

- **Netafilm Italia**: an entity related to soil irrigation that can have a role in the use of the outcomes.
- **ARPAE Emilia-Romana**, the Regional Agency of Emilia-Romana for Prevention, Environment and Energy. As a regional body it has a crucial role in monitoring the implementation of legislation.
- **Società Agricola Leona**: a farmers' association involved in livestock farming. Its connection to academia and other farmer's associations positions them as crucial actor in the communication of information.

As for the SNA betweenness metric, which shows the actors that have more control over the flow of information and can act as key bridges within the network, the results point to the following actors:

- **CREA**: an Italian research organisation dedicated to the agri-food supply chain and supervised by the Ministry of Agriculture, Food Sovereignty and Forests. Their role in the implementation of the outcomes lies in the development area of the outcomes.
- **CIB – Consorzio Italiano Biogas e Gassificazione** and **CIC – Consorzio Italiano Compostatori**: as agricultural associations, they can act as bridges to share information with many entities and individual farmers. Both CIC and CIB have a crucial role in the dissemination and communication of the EIP-OG outcomes.

Within the Italian context, the actors that are best positioned in terms of connections are related to farming, research, and public administration. Their roles regarding the broadening of the EIP-OGs outcomes include monitoring the implementation of legislation, outcome use and development, and communication and dissemination.

3.3. Trends in communication per target group

This section provides the results extracted from the **questionnaires and interviews** with regards to communication preferences. First, it describes the results regarding the communication channels that are preferred by the consulted stakeholders. Following this, their preferences on the communication materials are then presented.

3.3.1. Preferences for the channels of communication

Communication channel refers to the means or medium through which information is transmitted from a sender to a receiver. Communication channels can vary widely depending on the context, audience, and the objectives of the communication purpose. In this sense, through the consultations, we provided a list of the channels that the NUTRI-KNOW project intends to use to be able to further categorise and prioritise these channels. Examples of communication channels include face-to-face meetings, phone calls, emails, text messages, social media platforms, print media, websites, and broadcast media such as television or radio. Choosing the appropriate communication channel is crucial in ensuring effective and efficient communication for actions framed within the NUTRI-KNOW project.

The results from the questionnaires (see *Figure 21*) showed participants' ratings about the suggested communication channels (email, social media, online Community of Practice) from NUTRI-KNOW activities. Almost half of the consulted stakeholders prefer being reached first **via email** for communication purposes. The second most chosen option is to remain informed and engaged through an **online community of practice**[15]. **Social media** channels are perceived to be the least preferred option.

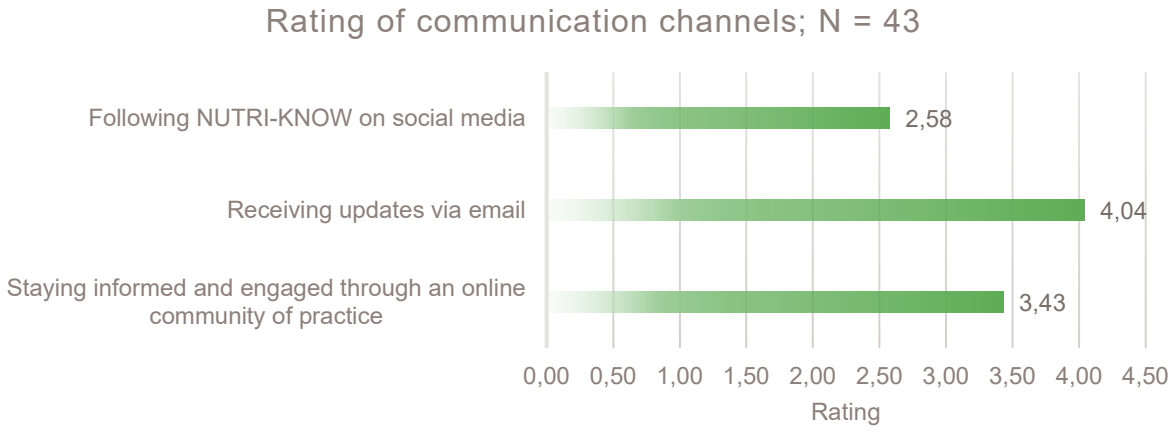

Figure 21. Rating from the consulted stakeholders in the questionnaires of the preferred communication channels (rates varies from 1, being the less preferred option, to 5, the most preferred option)

[15] NUTRI-KNOW will establish a cross-border Community of Practice; an open, dynamic, self-organised and horizontal structure that will bring together practitioners who share common concerns in nutrient management and work together to achieve both individual and group goals. The same practitioners will form this community, which will interact regularly through their active participation. The same practitioners will share their practice to learn how to do it better. This Community of Practice will promote the increase of practical information flow between farmers, creating spill-overs and taking into account the differences between territories. Thus, the Community of Practice will help to drive the NUTRI-KNOW strategy, solve problems faster, transfer best practices, validate results, develop professional skills and talents, increase cross-fertilisation actions, but also engage key actors and NUTRI-KNOW results beyond the project period.

From the interviews, where the previous figure was presented as part of the interview protocol, more elaborated responses were obtained. There are some commonalities among all country-contexts as well as certain differences.

All interview participants understand that there is not a unique response regarding preferences in communication and what could work for them, may potentially not work for others in the same region and context. Therefore, the NUTRI-KNOW approach in creating various modes of communication is seen as appropriate and vital.

Interviewees from Spain and Italy (hailing from the private sector associations related to farming sectors and other associations and farmer related organisations) suggest that this is an ageing sector however, in contrast and positively, it is starting to include young people. Communication today should therefore be adapted to both types of population. Interviewees suggest that in general everyone has a smartphone, and that communication should therefore be adapted to this format. For the more elderly farmer population in general, social networks do not work as well, but media such as WhatsApp do, according to the interviewees. In the younger sector of farmers, social networks are an important communication vector. Interviewees in Spain noted that the 2024 February and March farmers' mobilisations[16] were communicated via WhatsApp and via social media, both of which had a great impact. Although this should be treated with caution, as communicating about social mobilisations to improve working conditions is not the same as communicating about new innovations.

Continuing with how to communicate with farmers, the Belgian interviewees who came from both the private and public sector, believe that there are examples of newsletters that are tailormade for this target that can have had a great impact to date (e.g. VILT https://vilt.be/nl). In general, in the Belgian case, it is considered that the farming sector uses social media too seldomly to put too much emphasis on this channel.

In the Irish case, interviewees (public sector) consider that social media can be a good hook, as a first communication action, and then move on to options that can offer more relevant content. They also add that there are active knowledge transfer groups, which are very effective.

Both the Belgian and Irish interviewees are of the opinion that there are large events where farmers go, which are very clear windows of opportunity to show relevant information from the sector, where they can be in direct contact with innovations, and they can engage in conversations.

A subject that comes up from the Belgian interviews regarding how to communicate with farmers is the trust of the communicator., It should be kept in mind, however, that these interviews were conducted during a period in which the European farmers were very mobilised with marches across all European regions. Precisely, the interviewees recall that it is a sector in which trust in the communication source must be high.

The nutrient management sector is much more than just farmers, already in section 3.2 it has become clear how there are organisations that act as key information bridges in the sector who are not farmers directly, and therefore it is necessary to know how to communicate with these bridging groups/organisations. The interviewees gave some ideas regarding communication preferences, in fact, many of the interviewees originate from these institutions. Interviewees felt that they receive a lot of generalised emails that are not effective, as well as sector newsletters that they do not have time to read. For example, one interviewee suggests that the EIP newsletter is not very effective as it talks about projects in general and not specific results, and they have to invest time in searching for the information in the text and end up not reading them anymore. Respondents say,

[16] Example of one post news about this fact: https://www.reuters.com/world/europe/protesting-farmers-jam-brussels-with-tractors-ministers-meet-2024-02-26/

however, that emails addressed to them with specific content is useful, and even more so if the email clearly indicates actions they need to take to communicate.

As for social media, in the case of those actors we have identified who are not farmers, Belgian and Irish interviewees believe that it is a good channel as a first option to create a sort of first hook of interest. Social media can provide key messages persuading people to find out more about a particular aspect. Regardless, 3 out of the 9 stakeholders interviewed regarded social media as a powerful channel to capture people' attention on the ongoing demo events and news, particularly targeting the young and future farmers. As one of the Irish interviewees commented, it should be used as a funnel effect. After the initial social media message, more elaborate communication elements with more content should be prepared and communicated.

In a society with limited time available especially for face-to-face events, the interviewees consider that an online community that generates stakeholder exchanges, such as the suggested Community of Practice, could be very useful. However, they suggest that the notifications generated should be very punctual and perhaps in periodical newsletter format, since if they receive too many notifications, they would no longer be interested in them and thus it would lose its effect.

3.3.2. Preferences in the Communication Materials and Tools

In the context of NUTRI-KNOW, "communication material" refers to the tangible or digital assets created to convey messages, information, or instructions to the nutrient management sector. NUTRI-KNOW materials are being designed to effectively communicate key points regarding the EIP-OGs to promote understanding, and influence behaviour or decision-making among key stakeholders on the new innovations from the EIP-OGs. Communication materials and tools in the NUTRI-KNOW project will take various forms, including: practice-oriented materials, booklets, factsheets, practice abstracts, short videos, MOOC, webinars, Community of Practice, etc.

Through the questionnaires and interviews, a list of the communication materials that NUTRI-KNOW project intends to use was presented in order for it to be prioritised.

The results from the questionnaire are presented in Figure 22. The option that reobtained the highest rating was **audio-visual** resources, followed by comprehensive factsheets. Other materials that the stakeholders are interested in receiving are informative booklets and digital self-assessment options. The means of communication material with the lowest score are concise leaflets and engaging infographics.

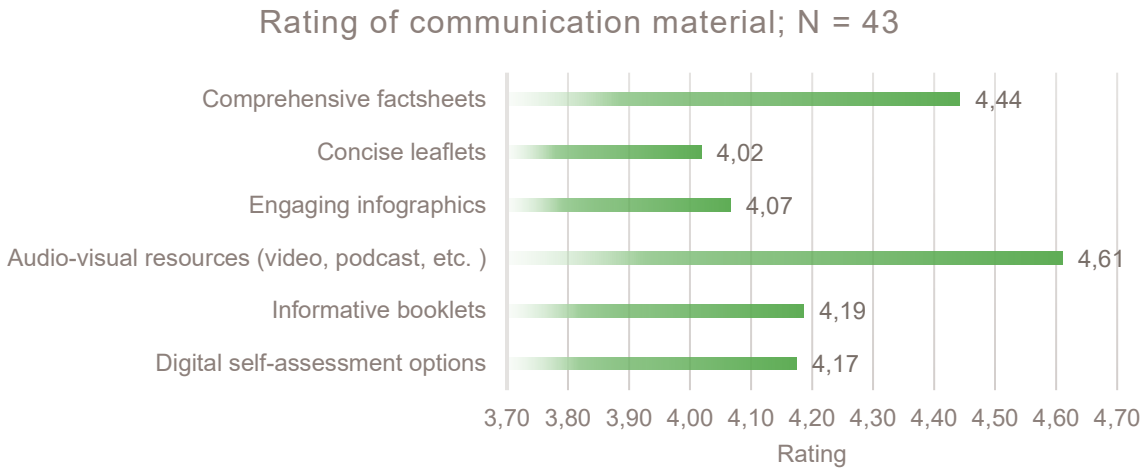

Figure 22. Rating from the consulted stakeholders in the questionnaires of the preferred communication material and tools (rates varies from 1, being the less preferred option, to 5, the most preferred option)

All interviewees agree that audiovisual materials are the preferred format. In particular, interviewees refer to the content being adapted for viewing on smartphones and with targeted and concise content (no more than 2 pages, very short videos or podcasts, etc.). This means that more developed material should be available in case the communicative receptor expresses more interest in gaining further information (e.g. booklets and factsheets). However, as a first input, flash and visual elements of communication should be available, according to the interviews. As suggested by the interviewees, communication materials should be adapted to the two-step approach suggested in the previous section. One of the interviewees from Italy, from the private sector, suggests the importance of maintaining a scientific communication mode that has its references to articles or similar.

The general conclusions about communication preferences can be summarised as follows:

- Audio-visual resources, such as videos and podcasts, are highly favored for their engaging and dynamic nature. Communication with the interviewees reflected that the audio-visual materials are helpful to attract the attention quickly and encourage the readers' interest for more comprehensive and informative materials;
- Closely following the audio-visual materials are the comprehensive factsheets, engaging infographics and concise leaflets, which are usually equipped with a visual appeal and the ability to distill complex information into an easily digestible format;
- Engaging infographics are less favored compared to other more detailed materials but are still a part of the preference spectrum, indicating a preference for in-depth, detailed materials that serve as a reliable reference.
- Digital self-assessment tools are the least preferred type of material, suggesting that while interactive tools have their place, they may not be as widely embraced as other forms of educational content.

The interviewees did not receive much information regarding the Community of Practice, because at the time of the interviews, it was not yet clear about the CoP outline and concept. The findings gathered by the interviewees from Ireland in this respect are positive in tone and they are looking forward to learning more about the CoP structure. They provide positive attitudes because a platform for engagement on innovation in the sector in a very tailored way to the nutrient management sector that does not require travel, they perceive it as having great potential for use.

4. Conclusions and Next steps

In this final section, conclusions are provided on how the stakeholder maps have been generated and the main implications in terms of communication actions. Specific next steps in the subsequent tasks of the project are included in the green highlighted text. Moreover, additional comments on the limitations found in the process of collecting data are provided.

About the process of collecting data and Stakeholder Database

The database created has allowed for collaborative work with the NUTRI-KNOW partners and to create a shared map of stakeholders suitable for future project actions, showing the stakeholder consultation process, their relationship with the OGs and their role within the project, among other available attributes of each stakeholder.

- Throughout the project different engagement actions with stakeholders are expected to be carried out through activities planned in other WPs (specifically in WP4), such as webinars, MOOCs, etc. An updated Stakeholder Database is relevant to keep track on how the knowledge capitalisation is achieved. Therefore, an updated stakeholder map would allow the visualization of this process, for instance showing those actors with whom more participative actions are being developed. In this way, the Stakeholder Database should remain operational during project's lifetime.

- Task 1.4 of the project (Summary meta-database) will generate a meta-database to ensure a coherent development of practice-oriented material in WP3. The Stakeholder Database must be integrated into the meta-database to ensure tailored communication.

With regards to the composition of the generated Stakeholder Database, to date, most of the stakeholders identified are from the livestock farming stage of the nutrient value chain, as most of the "farmers related" actors are from this category. Equally, attention has been given to identifying actors from each segment, as well as those more cross-cutting actors (from the “other” category) that can help maximize the effect of NUTRI-KNOW.

- It is crucial to identify stakeholders within the nutrient-value chain sectors of application and consumption who will play a role in future activities. Some interviewees considered that the consumer sector is also relevant for the project. Not only are farmer groups relevant and already identified, but project efforts should also focus on other target groups deemed relevant.

In terms of stakeholder representation in the quadruple helix, all sectors are covered in the Stakeholder Database. Farmers are represented in several segments. First, some farmers' associations fit into the Citizen/Society segment, and a significant number of stakeholders representing farmers fall into the Business/private sector segment, where small entrepreneurs such as local farmers, private associations, etc. are represented.

- Future project actions should focus on collaboration with the specific actors that can act as a hook and multiply the communicative effect. Stakeholders that act as a bridge between different types of target groups should also be considered. The SNA has shown that key actors have already been contacted and have expressed their willingness to act accordingly or to promote their engagement in the project.

Whilst European or more international actors are European projects, related EC agencies or departments, and some key clusters, the most relevant actors with international scope have been visualised in each view of the stakeholder map alongside the connections with actors from national and regional level in the four addressed countries of the project.

The analysis shows that most stakeholders have a role in disseminating and/or communicating the OGs outcomes or providing advice to farmers. This is very much linked to the objective of the project but only a few appear to have a role in providing financial support and training or intervening in policy regulation.

- To create change here, it must be ensured that these stakeholders are reached out to, particularly those who have been given less importance in the consultation phase. Therefore, next actions should focus also in engaging with actors from the financial and policy sectors.

About the Stakeholder maps

The generated stakeholder maps show the most relevant actors and their connections to each other, allowing the identification of the key specific actors with whom to strengthen the communication of the project. In the process of identifying them, contact and engagement have already been achieved. These maps should be considered as dynamic. They now show the current state of the process, but in order to continue to be useful they should be updated. Spaces for reflection should also be created to know on whom to focus the energies of communicative actions.

Four maps for each country have been chosen in order to be more operational in terms of socio-cultural context, language, etc. Although there is a possibility to visualise a general map of all actors together, it did not offer a very conclusive view and operationality of the map.

The Stakeholder mapping process is very limited to the context of NUTRI-KNOW and initiated with the project partner's networks. At no time this map is showing the general nutrient management sector in each country, but to show which stakeholders will help us more in the next activities of the project. Therefore, the study is not a robust SNA based on a consultation process that has reached out to all stakeholders represented. It would require many more iterations of the questionnaire and would lead to participant fatigue.

Many of these actors are farmers' or practitioners' associations. The relevance of "networks of networks" and the important role of these organisations in reaching out to all levels of the farming sector should be underlined. For this reason, to be successful in engaging with them, special care must be taken not to over-reach and exploit their engagement, but rather do so in a strategic way.

The connections with actors from public/policy sector has been identified as more or less limited, and in general there is a lack of connection with them. Communication lines aimed at them should be strengthened, and it is also a sector that needs to receive recommendations, so the activity of identifying policy and legal recommendations should be very focused on them.

A notable gap exists between connections from the generation of knowledge (academic sector) and its practical adoption by practitioners in the primary sector. However, the key point bridge found are those "networks of networks".

- As the Stakeholder Database is updated, the maps should undergo periodic revisions to show the progress of the project in linking target groups and EIP-OGs.

About communication preferences

Following the results obtained in section 3.3, there is no "one-size-fits-all solution" and there is no clear recipe, as what seems to work for some may not work for others. There are no conclusive quantitative results in this respect. Nevertheless, some clear patterns of communication preferences in the nutrient management sector can be identified.

Once a choice of communication is identified, communicative actions should always be made based on two clearly differentiated steps: first, using very common communication channels among the recipients to capture their attention. If the attention is obtained and more information is demanded, then more extensive communication materials (booklet, factsheet, webinar, etc.) can be offered in a second step.

According to the results obtained, in the practitioner sector and not so directly linked to livestock production, the communication channel that can work best is LinkedIn. If it is also one of the key actors identified in this report, it is worth sending personalised and targeted e-mails with key messages that include very precise indications. For actors more related to the farming sector, there are channels that already work perfectly and should be exploited, as in the case of the Knowledge Groups in Ireland, or existing conferences that farmers often attend. In order to have this two-step-communicative process and to reach a wider audience among farmers, it is necessary to consider demographic conditions such as age, which influences the use of some communication channels over others.

Additional comments on the process of collecting data

There was also a significant time constraint in contacting one by one each stakeholder to run through the questionnaire and to motivate them to participate. This made the entire data gathering process laborious, less effective and overly time consuming for NUTRI-KNOW partners trying to get responses on time.

Regarding the nature of the method used to gather responses from the key stakeholders identified at this stage, i.e the questionnaires, also raised some constraints:

- The number of participants involved in the activities largely drove the final number of interventions possible, and as the number of participants involved varied greatly between the country contexts, it was decided that the use of relative percentages rather than the frequency of mentions would facilitate the most accurate comparison of results and subsequent interpretation.
- The resulting questionnaire was long and demanded the participant's attention for about 20 minutes. By trying not to send out more questionnaires and combining different objectives of consulting with the stakeholders, the result was a longer questionnaire.

Regarding the respondent attitude, some constraints and risks are also identified as follows:

- *Sincerity*: while there are many positive aspects with questionnaires, a lack of sincerity can be a problem. The respondents may not be 100% honest in their answers. This can happen for several reasons, including the social desirability bias and the desire to protect privacy. To avoid the lack of sincerity, respondents have been informed that the process does not allow personal identification.
- *Conscientious answers*: Every administrator expects to obtain conscientious answers, but there is no way of knowing if the respondent has thought about the question before answering. Sometimes the answers are chosen before reading the whole question or the possible answers. Sometimes respondents move from one question to another quickly, or make decisions in a fraction of a second, affecting the validity of the data. For instance robust answers about their network of stakeholders might not be fully gathered if respondents wanted to finish earlier the questionnaire, oversighting some potential stakeholders.
- *Understanding and interpretation*: The problem of not asking questions to face-to-face users is that they can be interpreted differently. Without someone to explain the questionnaire and make sure that each individual understands the same, the results can be subjective. Respondents may also find it difficult to understand the meaning of some questions that are clear to the creator. This lack of communication can lead to biased results.
- *Feelings and emotions*: A survey or a questionnaire cannot fully capture the emotional responses or feelings of the respondents. Without administering the face-to-face questionnaire, there is no way to observe facial expression, reactions or body language. Without these subtleties, important information may go unnoticed
- *Respondents' own motivation*: as with any type of research, bias can be a problem. The participants of the survey may be interested in your product, idea or service. Others may be participating because of the questionnaire theme. These trends can lead to inaccuracies in the data, generated by an imbalance in the respondents who think excessively positively or negatively on the subject.

The interviews follow a qualitative thematic analysis methodology that aims to weight the importance of addressed issues during our stakeholder's consultation through interviews. This resulted in a friendly and kind discussion gathering enriching inputs.

Nevertheless, a profound analysis would be required in the aim to understand a) the rationale behind how these issues emerged in the discussion (socio-technical transitions in the nutrient management sector), and b) the specific communication interventions that are to be prepared by the WP4 activities.

5. Annex 1: Questionnaires (ENG)

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NUTRI-KNOW questionnaire

Introduction

Της Νυτρι-Κνοω προφεχτ αιμ στο βροαδεν κνοωλεδγε ον τηε ουτχομ εσοφ ΕΙΠ-ΑΓΡΙ Οπερατιοναλ Γρουπσ (ΟΓ) ανδ οτηερ ρεσεαρχη ανδ ιννοωατιον προφεχτσ ον νυτριεντ μαναγεμ εντ ιν τηε αγριχυλτυραλ σεχτορ. Τηε προφεχτ ισ λοοκινγ ατ σιξ σταγεσ ιν τηε νυτριεντ μαναγεμ εντ ωαλυε χηαιν (Λιωεστοχκ Φαρμ ινγ, Στοραγε Σψστεμ σ, Προχεσσινγ Τεχηνολογιεσ, Φερτιλισερ Προδυχτιον, Τρανσπορτατιον/Δισ τριβυτιον, ανδ Φερτιλισερ Αππλιχατιον). Το τηισ ενδ, Νυτρι-Κνοω σεεκσ το χολλεχτ ανδ ασσεσσ τηε λεαρνινγ σ φρομ τηε ΕΙΠ-ΑΓΡΙ Οπερατιοναλ Γρουπσ ασ ωελλ ασ ρελεωαντ προφεχτσ ανδ τρανσφορμ τηεμ ιντο εασψ-υνδερστανδινγ πραχτιχαλ ματεριαλσ τηατ χαν βε υσεδ βψ φαρμ ερσ, πραχτιτιονερσ, ανδ οτηερ ρελεωαντ ενδ-υσερσ αχροσσ Ευροπε.

Τηισ συρωεψ αιμ σ το ιδεντιφψ ρελεωαντ πλαψερσ ανδ χολλεχτ οπινιονσ φρομ διφφερεντ στακεηολδερσ ον τηε ουτχομ εσοφ 12 ενγαγεδ ΕΙΠ-ΑΓΡΙ οπερατιοναλ γρουπσ ιν Νυτρι-Κνοω προφεχτ (ηττπσ://ωωω.Νυτρι-Κνοω.ευ). Ιν τηισ θυεστιονναιρε τηερε αρε θυεστιονσ φοχυσινγ ον τηε χυρρεντ στατυσ οφ νυτριεντ μαναγεμ εντ πραχτιχεσ ανδ ωηο τηε μαιν αχτορσ αρε.

Τηε δατα χολλεχτεδ φρομ τηε παρτιχιπαντσ ωιλλ βε κεπτ χονφιδεντιαλ ανδ ωιλλ ονλψ βε υσεδ φορ τηε πυρποσε οφ τηε ρεσεαρχη. Αλλ ρεσπονσεσ ωιλλ βε στορεδ σεχυρελψ ανδ αχχεσσ το τηε δατα ωιλλ στριχτλψ φολλοω τηε ΦΑΙΡ πρινχιπλε (Φινδαβλε, Αχχεσσιβλε, Ιντεροπεραβλε, Ρευσαβλε). Περσοναλινφορμ ατιον ωιλλ βε κεπτ σεπαρατε φρομ τηε συρωεψ ρεσπονσεσ ανδ ωιλλ ονλψ βε υσεδ φορ τηε πυρποσε οφ φολλοω-υπ ορ χλαριφιχατιον οφ ρεσπονσεσ.
Παρτιχιπατιον ιν τηε συρωεψ ισ ωολυνταρψ ανδ παρτιχιπαντσ ηαωε τηε ριγητ το ρεφυσε το ανσωερ ανψ θυεστιονσ ορ το ωιτηδραω φρομ τηε συρωεψ ατ ανψ τιμε. Τηε χολλεχτεδ δατα ωιλλ βε υσεδ ονλψ φορ τηε πυρποσε οφ τηε ρεσεαρχη ανδ ωιλλ νοτ βε σηαρεδ ωιτη ανψ τηιρδ παρτιεσ ορ υσεδ φορ χομ μερχιαλ πυρποσεσ.

Βψ παρτιχιπατινγ ιν τηε συρωεψ παρτιχιπαντσ χονσεντ το τηε χολλεχτιον, στοραγε, ανδ υσε οφ τηειρ ρεσπονσεσ φορ τηε πυρποσε οφ τηε ρεσεαρχη.

Τηανκ ψου φορ ψουρ παρτιχιπατιον ιν τηισ συρωεψ

* 1. Δο ψου ωαντ το χοντινυε?

- ◯ Yes
- ◯ No

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NUTRI-KNOW questionnaire

Your organization description

The following questions are in relation to the description of the activity to the organisation you represent.

* 2. **Please indicate in which stage of the nutrient value chain your organisation's or professional activity is located** (*multiple answers are allowed*)

- ☐ Livestock farming
- ☐ Processing technologies
- ☐ Storage system
- ☐ Transportation/Distribution
- ☐ Fertiliser production
- ☐ Fertiliser application
- ☐ Other (please specify)

* 3. **Name of your organisation** (if you don't belong to any, write *individual*)

* 4. **What is your organisation's main role in nutrient management?**
Please select one or two options that best defines your organisation's activity

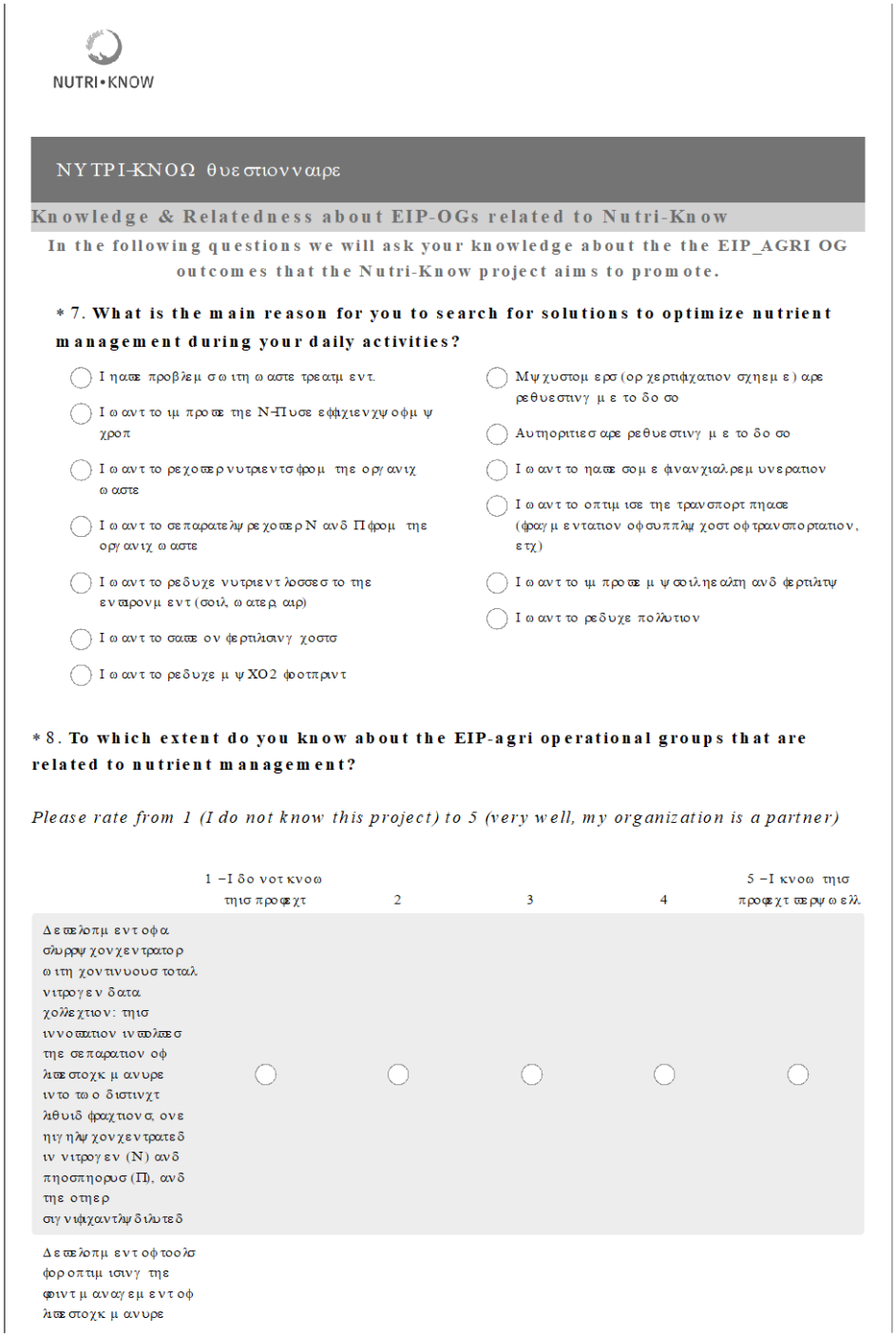
- [ ] Farmer/practitioner
- [ ] Farm advisor
- [ ] Technology provider
- [ ] Fertiliser production
- [ ] Research & Academia
- [ ] Public Administration - National
- [ ] Public Administration – Regional
- [ ] Agricultural chambers
- [ ] National Food Authorities
- [ ] Food industry
- [ ] Media
- [ ] Financial Institution
- [ ] Civil society organisation (CSOs, non-profit)
- [ ] Organization operated under EU level
- [ ] Short Term action (project, initiative, etc.)
- [ ] Other: Enter text

* 5. **Please indicate the main geographical level at which your organisation operates**

- [ ] European
- [ ] Regional (county, territory)
- [ ] National
- [ ] Local

* 6. **Please indicate if your organisation is mainly active in any of the following countries.**
If you do not have a principal activity in any of these countries, please indicate in which ***country*** *your organisation has its principal activity*

- [ ] Spain
- [ ] Italy
- [ ] Ireland
- [ ] Belgium
- [ ] Other countries (please specify):



NUTRI•KNOW

NYTPI-KNOΩ θυεστιονναιρε

Knowledge & Relatedness about EIP-OGs related to Nutri-Know

In the following questions we will ask your knowledge about the the EIP_AGRI OG outcomes that the Nutri-Know project aims to promote.

* 7. What is the main reason for you to search for solutions to optimize nutrient management during your daily activities?

- Ι ηαπε προβλεμ σ ωιτη ωαστε τρεατμ εντ.
- Ι ωαντ το ιμ προπε τηε Ν-Πυσε εφφιχιενχψ οφμ ψ χροπ
- Ι ωαντ το ρεχοπερ νυτριεντσ φρομ τηε οργανιχ ωαστε
- Ι ωαντ το σεπαρατελψ ρεχοπερ Ν ανδ Πφρομ τηε οργανιχ ωαστε
- Ι ωαντ το ρεδυχε νυτριεντ λοσσεσ το τηε ενϖιρονμ εντ (σοιλ, ωατερ, αιρ)
- Ι ωαντ το σαπε ον φερτιλισινγ χοστσ
- Ι ωαντ το ρεδυχε μ ψ ΧΟ2 φοτπριντ
- Μψ χυστομ ερσ (ορ χερτιφιχατιον σχημ ε) αρε ρεθυεστινγ μ ε το δο σο
- Αυτηοριτιεσ αρε ρεθυεστινγ μ ε το δο σο
- Ι ωαντ το ηαπε σομ ε φινανχιαλ ρεμ υνερατιον
- Ι ωαντ το οπτιμ ισε τηε τρανσπορτ πηασε (φραγ μ εντατιον οφ συππλψ χοστ οφ τρανσπορτατιον, ετχ)
- Ι ωαντ το ιμ προπε μ ψ σοιλ ηεαλτη ανδ φερτιλιτψ
- Ι ωαντ το ρεδυχε πολλυτιον

* 8. To which extent do you know about the EIP-agri operational groups that are related to nutrient management?

Please rate from 1 (I do not know this project) to 5 (very well, my organization is a partner)

	1 – Ι δο νοτ κνοω τηισ προϕεχτ	2	3	4	5 – Ι κνοω τηισ προϕεχτ περ ψ ωελλ
Δεπελοπ μ εντ οφ α σλυρρψ χον χεντρατορ ωιτη χοντινυουσ τοταλ νιτρογεν δατα χολλεχτιον: τηισ ινποατιον ινπολπεσ τηε σεπαρατιον οφ λιπεστοχκ μ ανυρε ιντο τωο διστινχτ λιθυιδ φραχτιονσ, ονε ηιγηλψ χον χεντρατεδ ιν νιτρογεν (Ν) ανδ πηοσπηορυσ (Π), ανδ τηε οτηερ σιγνιφιχαντλψ διλυτεδ					
Δεπελοπ μ εντ οφ τοολσ φορ οπτιμ ισινγ τηε φιντ μ αναγ εμ εντ οφ λιπεστοχκ μ ανυρε					

and the improvement of agricultural fertilisation, crop quality and environmental protection	○	○	○	○	○
FERTICOOP-GO Innovations to adapt to the best available techniques (BAT) in the Catalan cooperative agricultural sector	○	○	○	○	○
Livestock manure and digestates treatment to reduce emissions and produce Struvite	○	○	○	○	○
SOS-AQUAE: Sustainable farming techniques and renewable fertilizers to combine agriculture, water and environment	○	○	○	○	○
Gas Loop - Emissions capture for a virtuous nitrogen cycle in pig livestock	○	○	○	○	○
RENURE: REcoverd Nitrogen from manURE	○	○	○	○	○
POCKETBOER 2 - More performant operation of pocket digesters	○	○	○	○	○
Grass2Algae - From grass juices to the cultivation of microalgae	○	○	○	○	○
Biorefinery Glas - Small-scale Farmer-led Green Biorefineries	○	○	○	○	○
MOPS - Maximizing Organic Production Systems	○	○	○	○	○
Duncannon Blue Flag Farming & Comunities Scheme	○	○	○	○	○

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9. **For the operational groups you already know, through which way did you learn about them?**

Social media, e.g. Twitter, Facebook, LinkedIn, etc	
EU CAP or EIP-AGRI websites	
Newsletters	
Demo event	
Physical workshops	
Webinar	
Other	

NUTRI•KNOW

NUTRI-KNOW questionnaire

Cognitive, Knowledge about EIP-Agri OGs Outcomes

In the following questions we will ask your opinion regarding the implementability of the EIP_AGRI OG outcomes that the Nutri-Know project aims to promote

How do you see the results of the operational groups (click to see the detailed results) help with your organizational activities? *Please take your time in answering the following questions*

* 10.

OG1: Development of a slurry concentrator with continuous total nitrogen data collection

Catalonia, Spain

Outcome:

Technology for nutrient concentration of slurry at a low cost, without additional emissions, and with minimal energy consumption. This innovation involves the separation of livestock manure into two distinct liquid fractions, one highly concentrated in nitrogen (N) and phosphorus (P), and the other significantly diluted.

Please rate from 1 (not relevant) to 5 (very useful)

* 11.

OG2: Development of tools for the optimization of joint management of livestock manure and the improvement of agricultural fertilization, crop quality and environmental protection

Catalonia, Spain

Outcomes:

1. Use of conductivity meters for optimized fertilization with *in-situ* determination of NPK content of slurry.
2. A computer application to quickly and accurately generate the livestock management book and fertilisation plans.
3. Application of economic emission reduction strategies during slurry storage (acidification; addition of straw).
4. Recommendations to improve the livestock manure management.

Please rate from 1 (not relevant) to 5 (very useful)

* 12.

OG3: FERTICOOP-GO Innovations to adapt to the best available techniques (BAT) in the Catalan cooperative agricultural sector

Catalonia, Spain

Outcome:

1. Best available techniques (BAT) to reduce ammonia and greenhouse gas emissions in farms and slurry pools.
2. Use of rapid testing systems and IT platforms to facilitate fast and reliable recommendations for fertilisation.

Please rate from 1 (not relevant) to 5 (very useful)

* 13.

OG4: Livestock manure and digestates treatment to reduce emissions and produce Struvite

Emilia Romagna, Italy

Outcome:

1. Development and implementation of the STRUVITE prototype treatment system to reduce greenhouse gas emissions from Livestock manure and digestates.
2. Application of recovered struvite to promote the N and P relocation in areas characterized by nutrient deficiencies.

Please rate from 1 (not relevant) to 5 (very useful)

* 14.

OG5: SOS-AQUAE Sustainable farming techniques and renewable fertilizers to combine agriculture, water and environment

Emilia Romagna, Italy

Outcome:

Innovative application of 'renewable' fertilizers derived from livestock slurries and digestate by drip lines in sub-irrigation, to optimize the efficiency use of the local-available nutrients.

Please rate from 1 (not relevant) to 5 (very useful)

* 15.

OG6: Gas Loop - Emissions capture for a virtuous nitrogen cycle in pig livestock

Emilia Romagna, Italy

Outcome:

1. Ammonia Washing Machine (TRL 9) to reduce ammonia emission and improve the air quality inside the pig housing;
2. Production of ammonium sulphate (4 %N – 6,4 %N) as alternative for synthetic N fertilizers.

Please rate from 1 (not relevant) to 5 (very useful)

* 16.

OG7: RENURE: REcoverd Nitrogen from manURE

Flanders, Belgium

Outcome:

1. Recovery of ammonium salts from livestock manure as alternative for synthetic N fertilizers.
2. Recommendations for the application of RENURE products and dissemination of the impact throughout Flanders.

Please rate from 1 (not relevant) to 5 (very useful)

* 17.

OG8: POCKETBOER 2 - More performant operation of pocket digesters

Flanders, Belgium

Outcome:

Elaboration of recommendations based on the experiences dairy farmers who are already using pocket digesters, to find solutions for common problems and improve performance

Please rate from 1 (not relevant) to 5 (very useful)

* 18.

OG9: Grass2Algae - From grass juices to the cultivation of microalgae

Flanders, Belgium

Outcome:

Processing the excess farm-edge grass into grass juice which is suitable for cultivation of microalgae biomass as alternative protein source.

Please rate from 1 (not relevant) to 5 (very useful)

* 19.

OG10: Biorefinery Glas - Small-scale Farmer-led Green Biorefineries

SouthWest, Ireland

Outcome:

1. Demonstration of a small-scale mobile grass biorefinery on multiple farms.
2. Simultaneous production of multiple products from grass, including an improved fodder press-cake fiber for cattle, protein concentrate feed for monogastrics, high value prebiotic sugars (for the food and feed markets) and recovery of nutrients for use as fertilizer.

Please rate from 1 (not relevant) to 5 (very useful)

* 20.

OG11: MOPS - Maximizing Organic Production Systems

Various locations in Ireland

Outcome:

Optimisation of organic horticulture production through crop planning and effective use of green manures and other organic manures and fertilisers to improve continuity of supply and reduce reliance on imported inputs

Please rate from 1 (not relevant) to 5 (very useful)

*21.

OG12: The Duncannon Blue Flag Farming and Communities Scheme

South-East Ireland

Outcome:

1. Demonstration of a range of innovative and cost-effective farm management practices for water-quality protection.
2. A template for the development of farm-specific pollution potential zone 'PPZ' maps.
3. A template for a water-quality focused, results-based, reward scheme which could be used to improve water-quality in particularly sensitive catchments.

Please rate from 1 (not relevant) to 5 (very useful)

*22. **In a general perspective, how would you rate the level of importance of the following items in supporting the implementation of the results from research projects and operational groups?**

Please rank from 10 (the most important) to 1 (the least important)

Χοστ φορ ιμ πλεμ εντινγ τηε προδυχτσ, ρεχομ μ ενδατιονσ, τεχηνολογιεσ, ορ τοολσ.

Ρεσυλτσ οφ ηιστοριχαλ συχχεσσ/φυλδεμ ονστρατιονσ.

Αχχεσσ το τηε τεχηνιχαλ δοχυμ εντσ ορ Δεχισιον συππορτ τοολσ.

Συππορτ φρομ τηε αδ ϖισορψ αγ ενχψ

Ιμ παχτ το τηε ενϖιρονμ εντ (θυαλιτψ οφ αιρ, σοιλ, ωατερ, βιοδιϖερσιτψ ετχ.).

Χομ πλιανχ ωιτη λοχαλ/λεγισλατιον ορ νοτ.

Χομ πατιβιλιτψ ωιτη εξιστινγ φαρμ ινφραστρυχτυρε ανδ εθυιπμ εντ.

Φιναν χιαλ συππορτ/ιν ϖεστμ εντ πολιχιεσ ανδ σχηεμ εσ.

Ρεγυλαρ υπδατεσ αβουτ χομ μ υνιχατιον αχτιϖιτιεσ ανδ νετωορκσ.

Φεασιβιλιτψ οφ τηε νατιονάλ περμ ιτσ (εασψ/διφφιχυλτ το οβταιν χερτιφιχατιον).

* 23. **Please select from the list below which challenges you would currently face in order to implement the results from a research project or operational groups** (at a general level)

Please click the relevant ones (accept multiple choices)

- [ ] I cannot think of any major obstacles to implementing the outcomes of the proposed OG
- [ ] I am not aware of the technologies/products/tools
- [ ] There is a lack of confirmed results/successful cases from historical implementation
- [ ] It is difficult to obtain the permit according to the current legislations
- [ ] Lack of interest
- [ ] There are trade barriers or protectionist measures to access markets in other regions
- [ ] Specific skills are needed to implement the technologies/products/tools
- [ ] Additional investment is needed in infrastructure or to adopt new methods
- [ ] The financial support from government is not sufficient
- [ ] Lack of information on the cost structure of implementing some of the outcomes of the proposed OG
- [ ] Other challenges (please specify)

* 24. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Standardization body (e.g. International Plant Protection Convention (IPPC), International Organization for Standardization (ISO) and national standardization organizations)

Please indicate NO, if not applicable, and if YES, indicate the following categories from 1 (not effective) to 5 (highly effective)

Not effective		Medium effective		Highly effective	N/A
☆	☆	☆	☆	☆	○

* 25. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Technical guidance documents (e.g. Best-Available-Techniques (BATs), Best Management Practices (BMPs), Good Agricultural Practices (GAP), etc.)

Not effective		Medium effective		Highly effective	N/A
☆	☆	☆	☆	☆	○

* 26. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Financial supporting program (e.g. Rural Development Program, EIP-AGRI, Common Agricultural Policy (CAP), etc.)

Not effective		Medium effective		High effective	N/A
★	★	★	★	★	○

* 27. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Legal framework (e.g. European Green Deal, Nitrates Directives, National Emission Ceiling Directive, Fertilising Products Regulation, etc.)

Not effective		Medium effective		High effective	N/A
★	★	★	★	★	○

* 28. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Market outreach initiatives (e.g. Agricultural trade shows and exhibitions, Industry Associations and Trade Groups, Community Supported Agriculture (CSA), Social media campaigns and online platforms, etc.)

Not effective		Medium effective		High effective	N/A
★	★	★	★	★	○

* 29. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Knowledge exchange (e.g. between researchers and endusers, industries and farmers, among farmers, etc.)

Not effective		Medium effective		High effective	N/A
★	★	★	★	★	○

* 30. Please indicate the level of effectiveness of available resources in your organisation's activity about this Resource:

Advisory Agencies (e.g. Government Agricultural Agencies, Farm Advisory Services, Technology and Innovation Hubs, etc.)

Not effective		Medium effective		High effective	N/A
★	★	★	★	★	○

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Policy and Legislation challenges

This section includes questions regarding challenges in marketing and policy regarding agricultural nutrient management.

* 31. **Is there any inconsistency with different policies in your country that impact your activities?**

(answer accept multiple choices)

- [ ] Conflict between EU and national fertilizer regulations
- [ ] Regional variations in nutrient management regulations
- [ ] Tension between manure export and local nutrient recycling
- [ ] Imbalance between agricultural intensification and environmental policies
- [ ] High legislative pressure than governmental support
- [ ] No conflicts that affect my practice
- [ ] I don't know
- [ ] Other (please specify)

* 32. **Please select if your organisation`s activity is in the need of new legislation in your country/region?**

If yes, please specify on which aspect the new legislation is needed and provide an explanation for each aspect

- [ ] I am not aware of any need for new legislation
- [ ] Fertiliser manufacture & trade
- [ ] Nutrient use and management in crop and livestock production
- [ ] Biodiversity
- [ ] Treatment of animal manure and organic wastes
- [ ] Containment of water pollution
- [ ] Containment of air pollution
- [ ] Waste and food waste
- [ ] Non-regulatory nutrient management
- [ ] General Initiatives
- [ ] Other (please specify)

33. Do you have any other comments or feedback on the current market and legislative situation?

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ΝΥΤΡΙ-ΚΝΟΩ θυεστιονναιρε

Νετωορκινγ ανδ ρελατιονσηιπ θυεστιονσ

Ιν τηισ σεχτιον, ωε ωουλδ λικε το αναλψσε ωηο ψου χονσιδερ το βε τηε ρελεϖαντ στακεηολδερσ φορ ψουρ οργανισατιον ιν τηε νυτριεντ μαναγεμεντ χψχλε

*** 34. Βασεδ ον τηε κνοωλεδγε οφ τηε Νυτρι-Κνοω χονσορτιυμ, ωε ηαϖε αλρεαδψ ιδεντιφιεδ σεϖεραλ ρελεϖαντ οργανισατιονσ ιν τηε σεχτορ.**

Πλεασε αδδ (ιφ ανψ) τηε λεϖελ τηατ ψουρ οργανισατιον ηασ ωιτη τηε φολλοωινγ οργανισατιονσ ωηερε 1 ιμπλιεσ τηατ ψου ηαϖε λοω ρελατιον, 3 τηατ ψου ηαϖε α σιγνιφιχαντ ρελατιονσηιπ, ε.γ. ψου χολλαβορατε ιν α προϕεχτ ορ ινιτιατιϖε ατ τηε μομεντ.

	1 – λοω λεϖελ ρελατιον	2 – μεδιυμ λεϖελ ρελατιον	3 – σιγνιφιχαντ ρελατιονσηιπ
Ασσοχιαχιό δε Σεϖεσ Αγριχυλτορσ ι Ραμαδερσ δε Χαταλυνψα (ΣΑΡΧ)	○	○	○
Γρυπ Δενφενσα δελ Τερ	○	○	○
ΟΠΑΣ, Οργανιζζαζιονε Προδοττο Αλλεϖατορι Συινι	○	○	○
Βοερενδβονδ	○	○	○
Υνιο Παγεσοσ Χαταλυνψα (ΥΠ)	○	○	○
Θυιντανεσ	○	○	○
Σπανιση Βιογασ Ασσοχιατιον (ΑΕΒΙΓ)	○	○	○
Φεδεραχιό δ'Αγριχυλτορσ ςιϖεριστεσ δε Χαταλυνψα	○	○	○
ΕΙΒ, Ευροπεαν Ινϖεστμεντ Βανκ	○	○	○
Ευροπεαν Συσταιναβλε Πηοσπηορυσ Πλατφορμ (ΕΣΠΠ)	○	○	○
Δεπαρτμεντ οφ Χλιματε Αχτιον, Φοοδ ανδ Ρυραλ Αγενδα οφ τηε Χαταλαν Γοϖερνμεντ (ΔΑΧΧ)	○	○	○
Ωαστε Αγενχψ οφ	○	○	○

Catalonia (ARC)	○	○	○
Catalan Water Agency (ACA)	○	○	○
Catalan Agency for Business Competitiveness (Acció)	○	○	○
Ministry for Ecological Transition and the Demographic Challenge of the Government of Spain (MITECO)	○	○	○
Ministry of Agriculture, Fisheries and Food of the Government of Spain (MAPA)	○	○	○
EIP-AGRI	○	○	○
Directorate-General for Agriculture and Rural Development (DG AGRI)	○	○	○
Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)	○	○	○
Directorate-General for Environment (DG ENV	○	○	○
Catalan Council of Organic Production (CCPAE)	○	○	○
Biorefine Cluster	○	○	○
Group of experts in the treatment of livestock waste (GETDR)	○	○	○
Greentech Media	○	○	○

From the list above, are you missing any other relevant organisations with whom you are collaborating?
If so, please rate the level of interaction where 1 implies that you have no relation, 3 that you have a significant relationship, e.g. you collaborate in a project or initiative at the moment

*35. Regarding educational and communication materials about innovative solutions in the area of nutrient management, which channels and formats do you prefer to receive more detailed information about them?

For each format below select from 1 (not my favourite option) to 5 (the most desirable option)

	1 – Non desirable option				5 – Most suitable option
Digital self-assessment tools	○	○	○	○	○
Information booklets	○	○	○	○	○
Audio-visual resources (video, podcast, etc.)	○	○	○	○	○
Engaging infographics	○	○	○	○	○
Workshops	○	○	○	○	○
Community meetings	○	○	○	○	○

Other formats (please specify):

* 36. How would you prefer to access these educational materials mentioned above or receive updates about workshops, training sessions, and related activities?

	1 - less preferable communication channel				5 - most appropriate communication channel
Staying informed and engaged through an online **community of practice**	○	○	○	○	○
Receiving updates via **email**	○	○	○	○	○
Following NUTRI-KNOW on **social media**	○	○	○	○	○

Other (please specify)

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Demographic questions

This section includes questions to address statistical information from respondents

37. **Gender**

- ◯ Female
- ◯ Male
- ◯ I do not wish to state

38. **Age**

- ◯ 18-29
- ◯ 30-49
- ◯ +50

39. **Email contact to be included in our Stakeholder Database**

40. **Contact Person**

41. **Website of your organisation (if any)**

42. Do you have any comments about this survey and the questions within it? *Please write down your comments*

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NUTRI-KNOW questionnaire

Ακνοωλεδγεμεντ

Τηισθυεστιονναιρε ωασδεσελοπεδ βψτηε ΝΥΤΡΙ-ΚΝΟΩ προφεχτ. Ψουρ ρεσπονσε ανδ παρτιχιπατιον αρε σερψιμπορταντ φορ τηε δεσελοπμεντ οφτηε προφεχτ αστηεψ ωιλλ ηελπ υστο αναλψσε ιτσ σοχιαλ χοντεξτ.

Τηε ΝΥΤΡΙ-ΚΝΟΩ δαταβασε μαψ χονταιν χερταιν περσοναλ ινφορματιον αβουτ ψου ασ παρτ οφ ουρ γενεραλ προφεχτ αχτιϖιτιες, ινχλυδινγ χονταχτ δεταιλς, προφεσσιοναλ αφφιλιατιον, ανδ αρεασ οφ εξπερτισε. Ωε ηαϖε βεχομε αωαρε οφ ψουρ ινφορματιον ιν α νυμβερ οφ ωαψς – διρεχτλψ φρομ ψου, φρομ οτηερς, ορ οτηερτιμες τηρουγη ουρ ρελατιονσηιπ ωιτη ψου – ανδ μαψ ηαϖε ρεχειϖεδ ιτ ανδ/ορ ρεταινεδ ιτ ιν ϖαριους φορμς, ωηετηερ ιν ωριτινγ, ελεχτρονιχαλλψ σερβαλλψ ορ οτηερωισε.

Ωε υσε τηισ ινφορματιον φορ προφεχτ-ρελατεδ πυρποσεσ ονλψ Φορ εξαμπλε, ωε νεεδ τηισ ινφορματιον το ιδεντιφψ παρτιχιπαντσ φορ τηε ΝΥΤΡΙ-ΚΝΟΩ εϖεντς, φορ εξπερτ ιντερϖιεωσ ανδ ωορκσηοπς, ετχ. Ψου χαν βε χερταιν τηατ ωε ωιλλ νοτ υσε ψουρ περσοναλ ινφορματιον φορ χομμερχιαλ πυρποσες. Ωε τακε στεπς το ενσυρε τηατ ψουρ περσοναλ δατα ισ στορεδ σαφελψ

Σταψιν τουχη ωιτη ΝΥΤΡΙ-ΚΝΟΩ ϖια τηε προφεχτ ωεβσιτε: ωωω.Νυτρι-Κνοω.ευ

Ιφ ψου ωιση το ρετραχτ ψουρ περσοναλ δατα, πλεασε χονταχτ υσ (ΩΕ&Β) ϖια εμαιλ: ινφο≡ωεανδβ.οργ

Αγαιν, τηανκ ψου σερψμυχη φορ τηε παρτιχιπατιον ανδ φορ ψουρ τιμε,

Τηε ΝΥΤΡΙ-ΚΝΟΩ τεαμ

6. Annex 2: Consultation protocol (for questionnaire)

Stakeholder Consultation

Protocol

July 2023

WE&B, UGENT

Funded by the European Union

Document History

V	Date	Beneficiary	Author
V0.1	07/07/2023	WE&B	Beatriz Medina
V0.2	13/07/2023	Ugent	Hongzhen Luo
V1	13/07/2023	WE&B	Beatriz Medina

1. Introduction

In recent years, significant knowledge has been accumulated through European Union (EU)-funded projects regarding managing practices, technologies, products, and recommendations in the primary sector. This wealth of knowledge includes advancements in agricultural management practices, the development of new technologies, and the introduction of innovative products. However, there is a substantial gap between the generation of this knowledge and its adoption by practitioners in the field. While efforts have been made to disseminate knowledge and facilitate collaboration among stakeholders, the knowledge generated from EU projects is not being effectively transferred to and embraced by practitioners in the primary sector. This gap hampers the potential benefits and impact of the knowledge and innovation generated through these projects.

The reasons for this knowledge uptake challenge could be multifaceted. It may stem from a lack of awareness among practitioners about the available knowledge and its relevance to their specific contexts. Additionally, there may be barriers related to the accessibility and usability of the information, including issues such as language barriers, complex technical jargon, or the absence of user-friendly tools and guidelines. Furthermore, the adoption of new practices and technologies often requires changes in established routines and practices, which can be met with resistance or scepticism from practitioners who may be hesitant to deviate from their traditional approaches.

Addressing this knowledge gap is crucial to unlock the full potential of innovative practices, technologies, and products developed in the primary sector. The European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI[1]) Operational Group (OG) brings together farmers, researchers, advisers, businesses, environmental groups, consumer interest groups, and non-government organizations (NGOs) to advance innovation in the agricultural sector. Despite the continuous flow of information, new or improved managing choices have not been appropriated by practitioners as expected. More efforts should be focused on developing effective knowledge transfer mechanisms that facilitate the dissemination of research outcomes and recommendations in a practical and user-friendly manner. Collaboration between researchers, practitioners, and other stakeholders should be strengthened to ensure that the knowledge generated aligns with the practical needs and challenges faced by those working in the primary sector. Ultimately, by narrowing the knowledge gaps and facilitating the adoption of innovative practices, the agricultural sector can evolve toward more sustainable, productive, and resilient systems.

To this end, the EU-funded NUTRI-KNOW project aims to broaden EIP-AGRI OGs outcomes across borders to modernise and dynamise the agri-food sector by collecting, translating and sharing an easy-to-understand and practice-oriented knowledge. A meta-database of OGs outcomes, legislation, market needs and outputs to support the appropriate adoption of the OG results and experience by relevant end-users through 12 OGs from 4 EU member states (Spain, Italy, Belgium, and Ireland). Thereby, NUTRI-KNOW will contribute to fostering and share of knowledge and innovation and aiming the most urgent needs, challenges and opportunities of farmers but also, building trust and establishing connections between main stakeholders,

intensifying thematic cooperation, co-creation and transposition of innovative solutions, considering territorial specifications.

WP2 aims to explore how the engaged OGs are aligned with current EU policies (top-down approach) and the challenges and needs of the farmers and the sector (bottom-up approach). This WP will analyse the connections among actors involved in the OGs and relevant stakeholders/networks in the field of nutrient management, as well as the work already done in this field to avoid duplications. The specific objectives are: (i) Detect the alignment of OGs results with current market and legislative situation; (ii) Identify the target-audience and the urgent needs, challenges and opportunities of the sector; (iii) Adapt the knowledge gathered to the current territorial needs by developing a thematic analysis methodology; and (iv) Avoid duplication with ongoing or completed projects and networks.

This document provides guidance to WP2 partners on how the exploratory phase of the stakeholder consultation will be undertaken in accordance with a conceptual framework and based on the requirements of the whole WP.

Furthermore, the document provides the necessary procedures, planning, protocols, roles and responsibilities within the NUTRI-KNOW consortium with regards to the consultation process, as well as introductory overview of the analytical model that frames it. These aspects furthermore address the key stakeholders who have been identified at this stage of the project implementation.

2. Objectives of the Consultation and Dimensions of Analysis

The objectives to address a consultation to key stakeholders are the following:

- To identify key barriers and obstacles to address further uptake of outcomes of EIP-OG.
- To find out who relevant players and stakeholders that can maximise the use of the EIP-OG outcomes and get involved in NUTRI-KNOW activities?
- To map the key characteristics of stakeholders interested or influential in the uptake of EIP-OG outcomes.
- To know how we can effectively engage with key stakeholders.

To address the objectives addressed above we can identify 5 dimensions of analysis:

1) **Socioeconomic context and stakeholder characteristics** - For this dimension we will collect key attributes of the stakeholders representing key organisations with regards to individuals' characteristics: gender, age, education, etc. and also organisational characteristics: role in nutrient management cycle, target group, geographical reach, etc.
2) **Cognitive and emotional issues** - This dimension explores perception analysis of the involved stakeholders with regards to the Nutri-Know activities.
3) **Governance and Legislation** - This dimension will explore the current challenges from stakeholders in the market and legislative situation (standardisation, collision with different policies, trends, needs of new legislation, etc.).

4) **Social structure and Networking** - The social structure will determine the network of actors and how they relate to each other as a result of the Social Network Analysis.
5) **Effective engagement** – This dimension refers to those principles and criteria that will shape effective engagement in NUTRI-KNOW with regards to those activities focusing on the interacting with the stakeholders.

2.1. What are the EIP-OG outcomes?

The project Deliverable 1.1 *Inventory and analyses of engaged OGs outcomes on nutrient management* summarises the main outcomes collected from the 12 engaged EIP-AGRI OGs concerning nutrient management, including the focus outcome categories (Product, Recommendation, Technology, and Tool), the involved value chain steps (Livestock Farming, Storage Systems, Fertiliser Production, Processing Technologies, Transport, and Application), status and maturity level (started, pilot, near to practice, on market) and the relevant EU/national/regional regulations.

This D1.1 stated that efforts are still needed for more efficient knowledge exchange with targeting practitioners, including (1) identifying the relevant stakeholders based on the outcome categories and involved value chain steps; (2) collecting the opinion from stakeholders on the OG outcomes and how the OGs help with their activities at different value chain steps. Therefore a consultation process with stakeholders is needed on that end

The table below provides a summary of OGs outcomes and a code provided per each of them.

Table 1 – Summary of OGs outcomes and a code provided per each of them.

EIP-AGRI O.G.	Region, country	Keyword category	Status	Code metadatabase
Development of a slurry concentrator with continuous total nitrogen data collection	Catalonia, Spain	Farming equipment and machinery; Fertilisation and nutrients management	Finalised	1TH_concentrator
Development of tools for optimising the joint management of livestock manure and the improvement of agricultural fertilisation, crop quality and environmental protection	Catalonia, Spain	Soil management and fertilisation	Finalised	2TL_conductivitymeters 2TL_computerApp 2TL_economicreduction 2R_agrimanagement
FERTICOOP-GO Innovations to adapt to the best available techniques (BAT) in the Catalan cooperative agricultural sector	Catalonia, Spain	Agricultural practice; Fertilisation and nutrient management; Waste and by-product management	Ongoing	3R_BAT 3T_rapidtesting

Livestock manure and digestates treatment to reduce emissions and produce Struvite	Emilia-Romagna, Italy	Farming equipment and machinery Fertilisation and nutrients management Climate and climate change	Ongoing	4TH_manuretreatment 4P_struvite
SOS-AQUAE Sustainable farming techniques and renewable fertilizers to combine agriculture, water and environment	Emilia-Romagna, Italy	Farming equipment and machinery Fertilisation and nutrients management Soil management / functionality Water management	Ongoing	5R_packages
Gas Loop - Emissions capture for a virtuous nitrogen cycle in pig livestock	Emilia-Romagna, Italy	Animal husbandry and welfare Climate and climate change	Ongoing	6TH_airwashing 6P_ammoniumsulphate
RENURE	Flanders, Belgium	Fertilisation and nutrients management	Ongoing	7P_AmmoniumSulphate 7R_evaluation
POCKETBOER 2	Flanders, Belgium	Climate and climate change Energy management Waste, by-products and residues management	Finalised	8R_pocketdigesters
Grass2Algae	Flanders, Belgium	Agricultural production system Waste, by-products and residues management	Finalised	9P_grassjuice
Biorefinery Glas - Small-scale Farmer-led Green Biorefineries	SouthWest, Ireland	Biomass, value chain, bioeconomy, circular economy, nutrients, fertiliser	Finalised	10TH_mobilegrass 10P_presscake 10P_monogastrics 10P_prebioticsugars 10P_recoveredfertilisers
MOPS - Maximizing Organic Production Systems Through integrated cropping systems	Various, Ireland	Plant production and horticulture, fertilisation and nutrients management, supply chain, marketing and consumption, farming competitiveness and diversification, organic farming, cooperation	Finalised	11R_organiccropping 11TL_greenmanures
Duncannon Blue Flag Farming & Communities Scheme	SouthEast, Ireland	nutrient use efficiency, leaching, water quality	Ongoing	12T_PPZmaps 12R_waterquality 12TL_rewardscheme

2.2. What are key characteristics and opinions sought of the Stakeholder Analysis?

The stakeholder analysis will be based on a snowballing process where we will look for key stakeholders attributes/characteristics and opinions with regards on the OG outcomes and how the OGs help with their activities at different value chain steps. They can be divided in two type of question categories: 1) Objective answers: the stakeholders organisation and attributes, 2) Subjective answers: perceptions and opinions about implementing OG outcomes and their potential role.

The analysis of the Stakeholder Database V.01 (created with the knowledge of the consortium) will allow us to differentiate stakeholders according to their relevance and role in contributing to the NUTRI-KNOW objective. Those with a higher relevance will be invited to fill in a longer version of the questionnaire and those with a less relevant role will only be invited to fill in a short version of the questionnaire.

3. Action Plan – General procedure

This section provides a procedure about how NUTRI-KNOW partners should get in contact with key selected stakeholders. The table below provides the overview of the general procedure and a tentative schedule.

Table 2 – General procedure for NUTRI-KNOW stakeholder Consultation and Roles.

Steps	Description	Tasks	Calendar	Role
STEP 1 Before submitting the questionnaire	This step comprises those preliminary tasks that need to be done before launching the questionnaire such as development of email prototypes, review of the questionnaire, necessary translations, etc.	- Identifying information about stakeholders – Stakeholder Database	14th July 2023	All partners to send contribution to WE&B
		- Review of the questionnaire template and procedure	July-August 2023	All partners to send contribution to WE&B and Ugent
		- Creation of questionnaire link in local languages (IT, EN, SP, DL, CAT) & Control test - Preparing communication texts to contact stakeholders - First questionnaire at ESNI (Ugent), 20th September	September 2023	WE&B, Ugent, CRPA

STEP 2 Launching the questionnaire	In this step the questionnaire will be launched and responses collected	- Sending out emails with questionnaire (two versions) - Longer version of the questionnaire can be also delivered during workshops and other events - Follow up email/phone, other events? - Acknowledging participation	October 2023	All WP2 partners
STEP 3 Analysing the questionnaire	This step involves the analysis of responses and assessment if further consultation is needed	- Collecting data in common database - Assessing if further consultation is needed	November – December 2023	WE&B /Ugent
STEP 4 Iteration and/or interviews	This step, involves the iteration of previous step if considered	- Iteration of previews step and/or organisation of in-depth interviews	December 2023– January 2024	TBD

Key rules:

- Updates of all documents are always welcome, but they will be centralised by the WP2 leader, WE&B.
- Each partner responsible for gathering data from the key stakeholders should report any doubts to WP2 Task leaders (WE&B, Ugent)
- Each partner should be aware of the Ethics procedure, according to WP6 and check them in order to comply with data protection rights.
- For each of the stakeholders, anyone can take note and notify WE&B of their own impressions and reflections, if any.
- Keep an active dialogue with WE&B for any problem that is encountered along the way.

4. Stakeholder Database

The Stakeholder Database consists of information related to each stakeholder identified. Updates during the course of the project are expected at any time, as this procedure will follow a snowball process, according to the consultation presented here. The management of the stakeholders and their data will be centralising by the WP2 leader, WE&B. Although all NUTRIKNOW partners will contribute to this database, WE&B will be the database owner and therefore will undertake all updates on behalf of the partners. With the first request of inputs from the NUTRI-KNOW consortium we will create the *Stakeholder Database version* 1.

Each WP2 partner is designated a role and should be in charge of consulting the stakeholder assigned to them in the Stakeholder Database.

The database will always remain available for review and in read-only format in https://universitatdevic.sharepoint.com/:f:/r/teams/NUTRI-KNOW-Equip/Documentos compartidos/General/Implementation/WP2 Co-creation process to align EIP-AGRI OGs outcomes with stakeholders' challenges and needs/Task 2.2 Stakeholders?csf=1&web=1&e=Vw8iWO.

The following table describes the main fields of the Stakeholder Database.

Table 3 – Description of the fields in the Stakeholder Database.

Target group	In this column a drop-down menu allows to select a generic target group in which the identified stakeholder is included (1. FarmersRelated; 2. Technology_ProviderUser; 3. FertilisersRelated; 4. CSOs_OtherNonPorfit; 5. FinancialInstitution; 6. PublicAdministration_Policy; 7. Media; 8. EU; 9. ShortTermActions; 10. Academia; 11. ServicesToFarmers; 12. Other). If "Other" select in the next column "Other" as well.
Specific target group	Depending on the generic target group selected in the previous column, another drop-down menu will appear with more specific target groups. If more than one option suits the stakeholder, please select the one that is more related. If none of the options correspond to the stakeholder identified, select "Other"
If "Other" Target group (write which one)	If the option selected in the previous column is "Other", write down the target group in which the stakeholder identified should be included.
Organisation	Name of the organization identified as stakeholder
Website	Website of the organization
Contact	Contact of the organization
Email of Contact	Email of contact
Associated NK Partner	Partner/s who identified the stakeholder (drop-down menu)
4-Helix	Group of stakeholders of the quadruple helix to which the stakeholder belongs (drop-down menu)
Geo-level	Drop-down menu with the following options: Local; Regional (county, territory); National; European
Country-related	Drop-down menu with options of the country of the OGs to which the stakeholder is related (possibility of choosing multiple options)
Nutrient Value Chain	Drop-down menu with value chain options (possibility of choosing multiple options)
Associated EIP-OG	Drop-down menu with EIP-OGs to which the stakeholder is related (possibility of choosing multiple options)
Outcome EIP-OG	Drop-down menu with the CODE of the outcomes identified per OG to which the stakeholder is related (possibility of choosing multiple options)
Role	According to your own criteria, write down the potential role of the stakeholder identified in the implementation and dissemination of the outcomes selected

5. The Questionnaire

The questionnaire (not representative at statistical level due to the fact that will be addressing key stakeholders) is based on closed questions mainly, so that the gathered results are more reliable and will minimize bias, but we will also introduce some open questions to let the respondents develop their own point of view.

The language used will be Italian, Catalan, Spanish, English and Flemish.

The questionnaire will be preceded by prior contact via email or telephone with each of the stakeholders

The questionnaire itself will consist in the following sections:

- Section 1 - An introduction to the questionnaire in order to explain the objectives of the consultation, as well as informing about the ethical aspects according to the ethical procedures and a consent to collect questions.
- The questions which will be divided in following sections:
    - Section 2: Stakeholders attributes – questions about the organisation (objective).
    - Section 3: Knowledge & Relatedness about EIP-OGs related to Nutri-Know – questions to create a logic and screening of respondents based on their level of relatedness to the Outcomes of the OGs (objective).
    - Section 4: Cognitive, Knowledge about EIP-Agri OGs Outcomes- questions about respondents' opinion and perception about needs and challenges about the implementation of the outcomes of the OGs (subjective).
    - Section 5: Policy and Legislation challenges – questions about perceived challenges in marketing and policy regarding agricultural nutrient management (subjective).
    - Section 6. Organisation – questions about social network analysis
    - Section 7 Sociodemographic – questions about gender and age to collect statistical info of respondents and contact information (if they want to add) (objective).
- Section 8 – Acknowledgement and Data protection and storage data information

5.1. The questionnaire template

The questionnaires can be found in the five languages in this folder of the SharePoint.

5.2. Limitations in a questionnaire expected

Regarding the nature of the method used to gather responses from the inhabitants at this stage, i.e the questionnaires, have raised certain constraints. These constraints are listed below:

- A lack of completed questionnaires
- A lack of support to the respondent if any questions were not fully understood.
- Difficulty in controlling and verifying the responses

Regarding the respondent's attitudes, some constraints and risks have also identified, these are as follows:

- *Sincerity*: while there are many positive aspects related to the use of questionnaires, a lack of sincerity can be a problem. The respondents may not be 100% honest in their answers. This can happen for several reasons, including the social desirability bias and the desire to protect privacy. To avoid the lack of sincerity, respondents have been informed that the process does not require personal identification.
- *Conscientious answers*: every administrator expects to obtain conscientious answers, but there is no way of knowing if the respondent has thought about the question before answering. Sometimes the answers are chosen before reading the whole question or the possible answers. Sometimes respondents move from one question to another quickly, or make decisions in a fraction of a second, affecting the validity of the data.

- *Understanding and interpretation*: The problem of not asking questions face-to-face is that they can be interpreted differently. Without someone to explain the questionnaire and make sure that each individual understands the same, the results can be subjective. Respondents may also find it difficult to understand the meaning of some questions that are clear to the creator. Thus, this lack of communication can lead to biased results.
- *Feelings and emotions*: A questionnaire cannot fully capture the emotional responses or feelings of the respondents. Without administering the questionnaire face-to-face, there is no way to observe facial expressions, reactions or body language. Without these subtleties, important information may go unnoticed.
- *Respondents own motivation*: as with any type of research, bias can be a problem. The participants of the questionnaire may be interested in your product, idea or service. Others may be participating because of the questionnaire theme. These trends can lead to inaccuracies in the data, generated by an imbalance in the respondents who think disproportionately positively or negatively on the subject.

Email Templates

- **Email to participants**

Subject: Participation in the Nutri-Know Project Questionnaire

Dear Sir/Madam,

I hope this email finds you well.

The reason for this email is because you have been identified as a relevant actor in the agri-food sector. We would like to request your collaboration in the enclosed questionnaire, prepared under the framework of the Nutri-Know project (https://www.nutri-know.eu). This project, funded by the European Commission Horizon Europe research program, aims to broaden knowledge on the outcomes of EIP-AGRI Operational Groups (OG) and other research and innovation projects on nutrient management in the agricultural sector. The EIP-AGRI OGs bring together farmers, researchers, advisers, businesses, environmental groups, consumer interest groups, and non-government organizations (NGOs) to advance innovation in the agricultural sector. The Nutri-Know project intends to modernise and dynamise the agri-food sector by collecting, translating and sharing an easy-to-understand and practice-oriented knowledge.

One of the aims of the project is to explore the challenges and needs of the stakeholders from the agri-food sector. To this end, the questionnaire intends to collect opinions from different stakeholders on the outcomes of the 12 engaged EIP-AGRI OGs. With your participation, as a relevant stakeholder, you will contribute to build knowledge in the agri-food sector.

Kindly, find here the link to access the survey.

Finally, we thank you for your participation and collaboration.

Sincerely,

The Nutri-Know team

- **Email to send the questionnaire to Nutri-Know Advisory Board members**

Subject: Participation in the Nutri-Know Project WP2 Questionnaire

Dear Nutri-Know Advisory Board Members,

In the frame of the Nutri-Know project WP2 on Co-creation process to align EIP-AGRI OGs outcomes with stakeholders' challenges and needs, we have designed a questionnaire which aims to to collect opinions from relevant stakeholders on the outcomes of the 12 engaged EIP-AGRI OGs. This consultation is intended to explore the challenges and needs of the stakeholders from the agri-food sector.

In order to engage with you and draw on your experience as an Advisory Board member, we would like to kindly invite you to fill in the questionnaire. You can find the link here.

By participating in this endeavour, you would be taking part in building knowledge about the urgent needs, challenges and opportunities of the agri-food sector in your region, thus contributing to a more comprehensive definition of project needs. Your contribution would also enable us to validate or nuance the adequacy of the current market and legislative situation that have been identified so far in the project.

Many thanks and looking forward to receiving your valuable inputs,

The WP2 Task Leaders

- **Email to follow-up questionnaire respondents**

Subject: Kind Reminder: Participation in Nutri-Know Project Questionnaire

Dear Sir/Madam,

I hope this email finds you well. This is a kind follow up on the participation in the questionnaire for the Nutri-Know project on nutrient management in the agri-food sector. Your input is highly valued, and we are eager to gather insights from relevant actors such as yourself.

We kindly urge you to take a few moments to contribute with your perspective. Your valuable input will significantly aid in our efforts to enhance our understanding of the challenges and needs of stakeholders from the agri-food sector.

Should you have encountered any issues or have concerns about the questionnaire, please feel free to reach out to us.

We sincerely appreciate your time and cooperation in this endeavor.

Warm regards,

The Nutri-Know Team

- **Email acknowledging participation**

Subject: Acknowledgment of Your Participation in the Nutri-Know Project Questionnaire

Dear Sir/Madam,

Thank you for taking the time to participate in the Nutri-Know project questionnaire. Your valuable input as a key figure in the agri-food sector is greatly appreciated and will contribute to enhancing our understanding of the challenges and needs within the industry.

We look forward to utilizing your insights to advance knowledge in the agri-food sector.

Best Regards,

7. Annex 3: Consultation protocol (for interviews)

NUTRI•KNOW

WP2 Instructions for interviews in Belgium

January 2024
(WE&B, Ugent)

OBJECTIVE OF THE INTERVIEW

To explore with the interviewee:

- *how the outcomes of the EIP-OGs can align with the needs of the nutrient-value chain sector to become more sustainable and*
- *how we can accelerate their implementation within the sector*

2

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02.04.24

BEFORE THE INTERVIEW

- Plan meetings of 1 hour duration, they can be online or face-to-face
- Add information in the Column F in the Stakeholder Worksheet for the planned interviews
- Check and adapt the questions if needed and validate these changes with the WE&B team
- Familiarise yourself with the questions before the meeting
- Please, **do not forward in advance interview questions to actors** as the intention of the interview is to gather sincere and spontaneous answers.
- Be sure you can **record** the conversation. Ask for permission to do so.
- Keep in mind that if there is no answer to a certain question, this is also valuable information for us.
- In a last mail exchange before the interview (e.g. when confirming our reminding about the agreed date) attach the information about the OGs Outcomes and send the data policy information.

3

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DURING THE INTERVIEW

- As you start the interview, please begin with filling out the table below. The table provides details of the name of the person and their roles
- Introduce Nutri-Know project and the objective of the interview again
- Ask for recording of the session:
  - If the session is online, once the session is recording ensure to record Agreement YES on the Consent Sheet Form
  - If the session is offline, the informed sheet can be signed by the participant
- Ask the questions and let the participant(s) speak freely
- Closing the interview – Summarize the major findings with them and explain the next steps:
  - All results from the interview will be analysed in an aggregated way and presented in a report, never from an individual perspective
  - The recording will be deleted once we have reviewed the answers and aggregated the results.
  - Thank the interviewee for their time and ask if they have any open questions

Date and Location	
Facilitator(s)	
Rapporteurs (if any)	
Participant (s) name	

4

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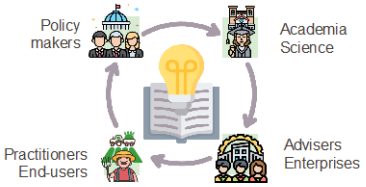
Stakeholder consultation survey

To facilitate the dissemination and communication of the outcomes from the 12 engaged OGs in NUTRI-KNOW project, a stakeholder consultation survey is developed:

1) to identify the group of stakeholders who are **closely involved** in the nutrient management activities and show great interest in the progress of innovative practice;
2) to identify the **barriers and challenges** in the current **market and legislation**.

Multi-actor approach



Six question sessions

1) Your role and activities
2) Knowledge & Relatedness about the OGs
3) Opinion on the OG outcomes
4) Policy and Legislation challenges
5) Networking and communicating
6) Demographic questions

5

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Notes: In the last three months of 2023, we circulated a survey to encourage opinions from all types of stakeholders regarding their awareness of the OGs and the current challenges in implementing the OG outcomes. There are 6 question sessions as listed here.

THE INTERVIEW QUESTIONS

6

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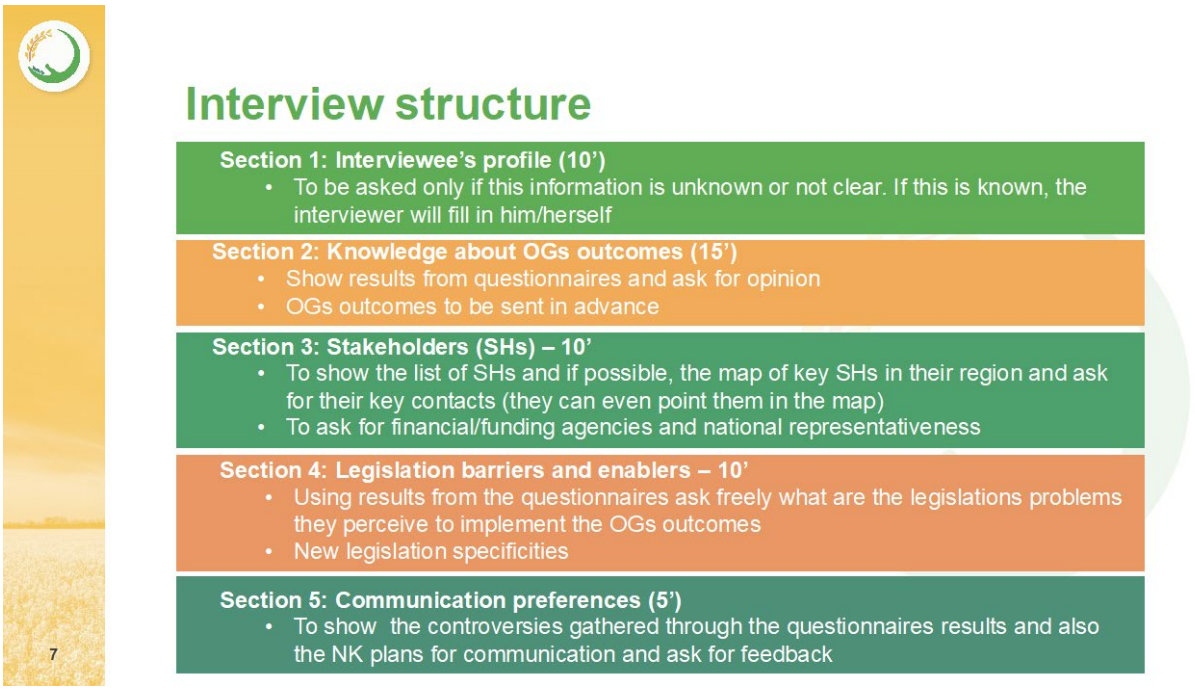
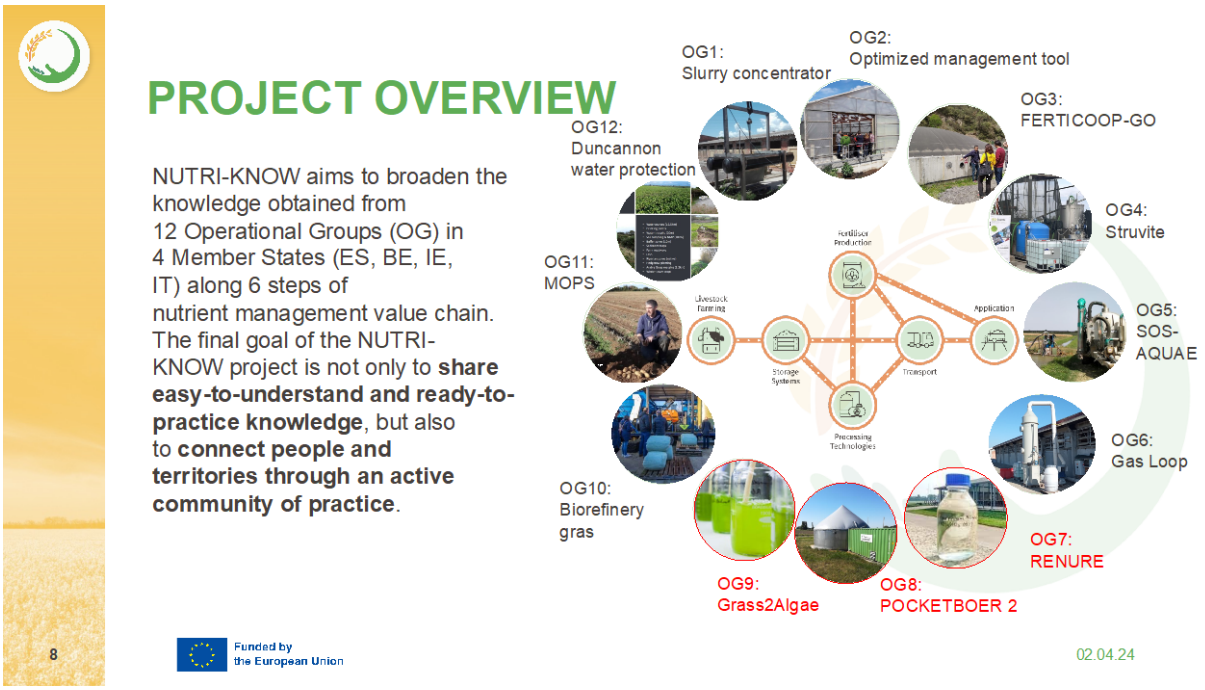
Notes: Slide 6 – to Slide 21 entail questions of the interview



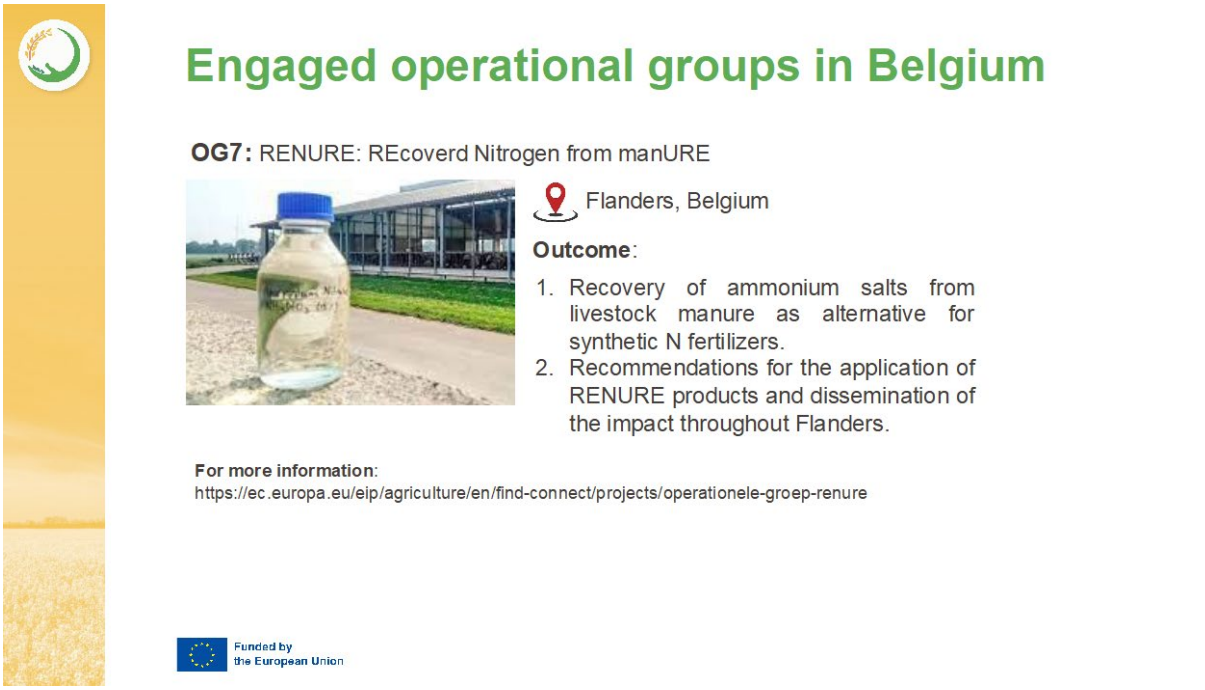
Notes: The interview is a shortened version of the stakeholder consultancy survey, with the aim to specify the opinions of key stakeholders that are currently missing in our identified stakeholder fuzzy map. With this interview, we would like to discuss with you about the primary results of the survey and learn from you perspectives how you see these challenges can be addressed. The interview consists of 5 sections:
1. an introduction of each other and the project. Here we would try to collect any missing information from the interviewee's profile;
2. the knowledge about OG outcomes
3. outreach for key stakeholders,
4. barriers and enablers, as well as
5. Communication preferences.



Notes: After having ensured that the consent sheet has been handed and you are recording the conversation, the project might need to be introduced. Please find here a short introduction:

NUTRI-KNOW aims to broaden the knowledge obtained from 12 Operational Groups (OG) in 4 Member States (ES, BE, IE, IT) along 6 steps of nutrient management value chain. The final goal of the NUTRI-KNOW project is not only to share easy-to-understand and ready-to-practice knowledge, but also to connect people and territories through an active community of practice.

Within the 12 OG, 3 are about innovations from Flanders, as marked in red at the bottom. The project is looking at six stages in the nutrient management value chain, namely Livestock Farming, Storage Systems, Processing Technologies, Fertiliser Production, Transport, and application.



Notes: Ensure that you send this information before the interview

Engaged operational groups in Belgium

OG8: POCKETBOER 2 - More performant operation of pocket digesters

Flanders, Belgium

Outcome:

Elaboration of recommendations based on the experiences dairy farmers who are already using pocket digesters, to find solutions for common problems and improve performance

For more information:
https://ec.europa.eu/eip/agriculture/en/find-connect/projects/pocketboer-2-performantere-werking-van

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Notes: Ensure that you send this information before the interview

Engaged operational groups in Belgium

OG9: Grass2Algae - From grass juices to the cultivation of microalgae

Flanders, Belgium

Outcome:

Processing the excess farm-edge grass into grass juice which is suitable for cultivation of microalgae biomass as alternative protein source.

For more information:
https://ec.europa.eu/eip/agriculture/en/find-connect/projects/grass2algae

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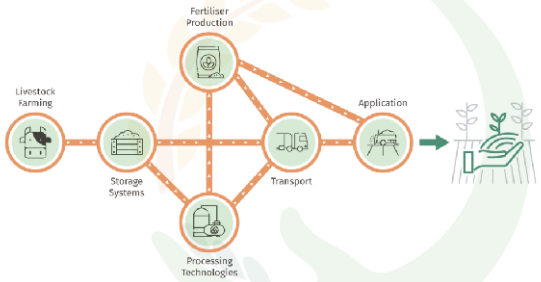
Notes: Ensure that you send this information before the interview

Interview Section 1: Interviewee's profile

- ❑ Consent Sheet signed (or recorded)
- In which stage of the nutrient value chain are you involved (see figure)?
- What would you say is your main role in nutrient management: policy, research, practitioner, advocacy, society, etc.?
- At which geographical level do you generally operate: local, regional, national, international?
- Where are you active? (Spain, Italy, Belgium, Ireland, other)



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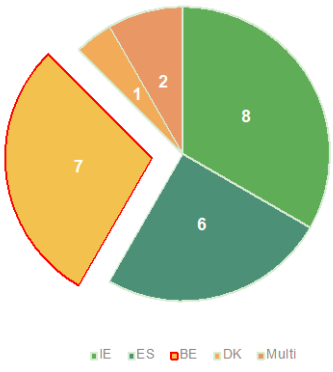
Notes: In this section we make sure that we have all the information regarding the profile of the interviewee's organisation or of the interviewee's person in case he/she does not represent any organisation (the slide shows the information to make sure to have). If this information is already known, this section can be skipped.

Section 2: Knowledge about OGs outcomes



Q1: What is the main reason for you to search for solutions to optimize nutrient management during your daily activities?

I want to improve the N-P use efficiency of my crop	2/7
I want to reduce nutrient losses to the environment (soil, water, air)	1/7
I want to save on fertilising costs	1/7
I have problems with waste treatment.	1/7
I want to recover nutrients from the organic waste	1/7
I want to have some financial remuneration	1/7

13

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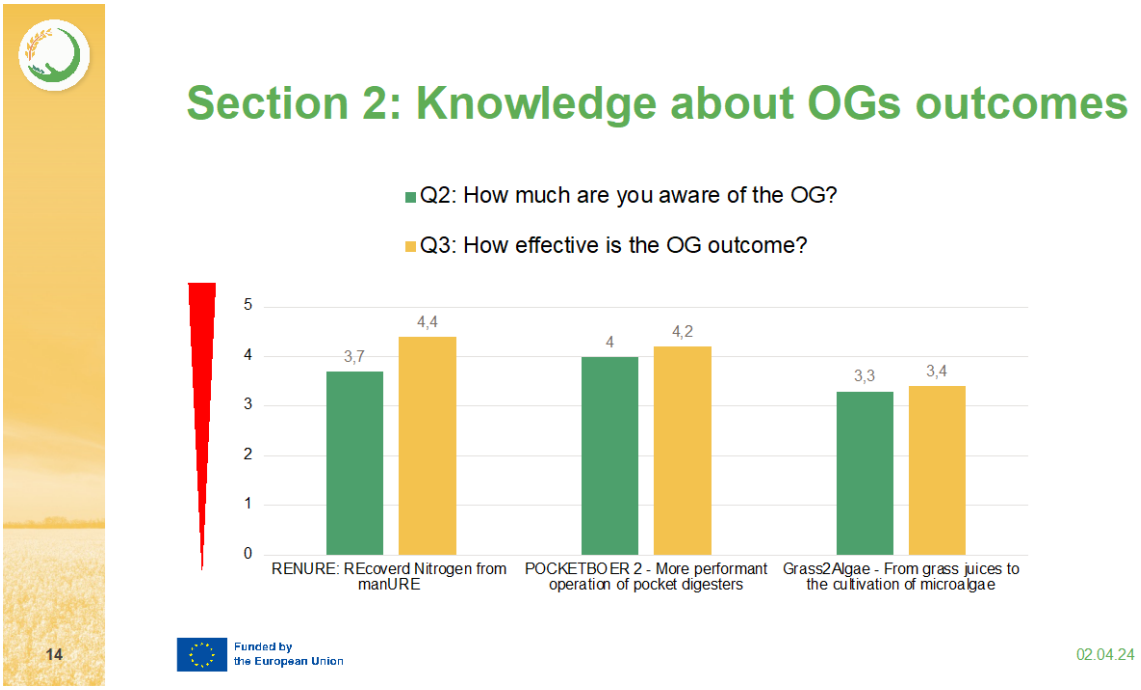
02.04.24

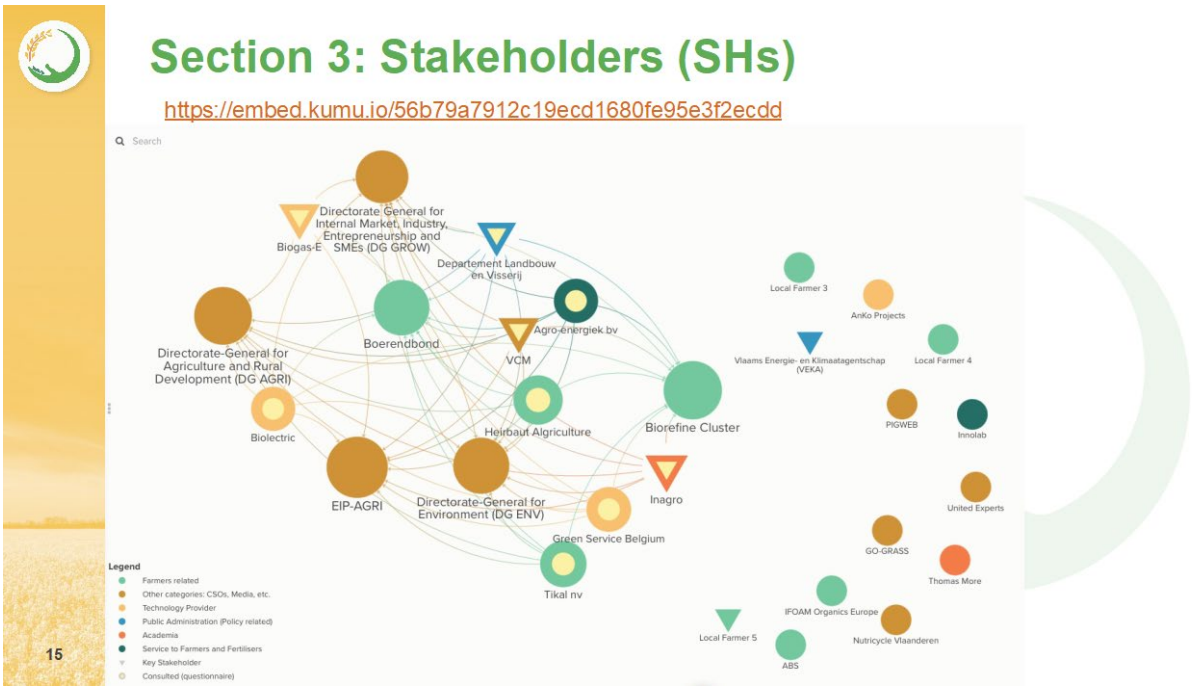
Notes: Here in Flanders, we have received 7 responses for the following questions. The first question refers to the most urgent need of the stakeholder when searching for solutions in nutrient management practice. The reasons of stakeholders in Flanders are diverse, from improving nutrient efficiency, to reducing environmental impact and fertilising cost.

According to your knowledge, what would be the most common reason for farmers in this region to search for nutrient management solutions?



Notes: The second and third questions explored the awareness or effectiveness among local stakeholders, with higher score representing higher level of awareness or effectiveness. In general, the Flemish OGs are scored at a medium to high level of awareness and effectiveness among the local stakeholders.

Are you aware of the three OGs in your region? How would you score their effectiveness?

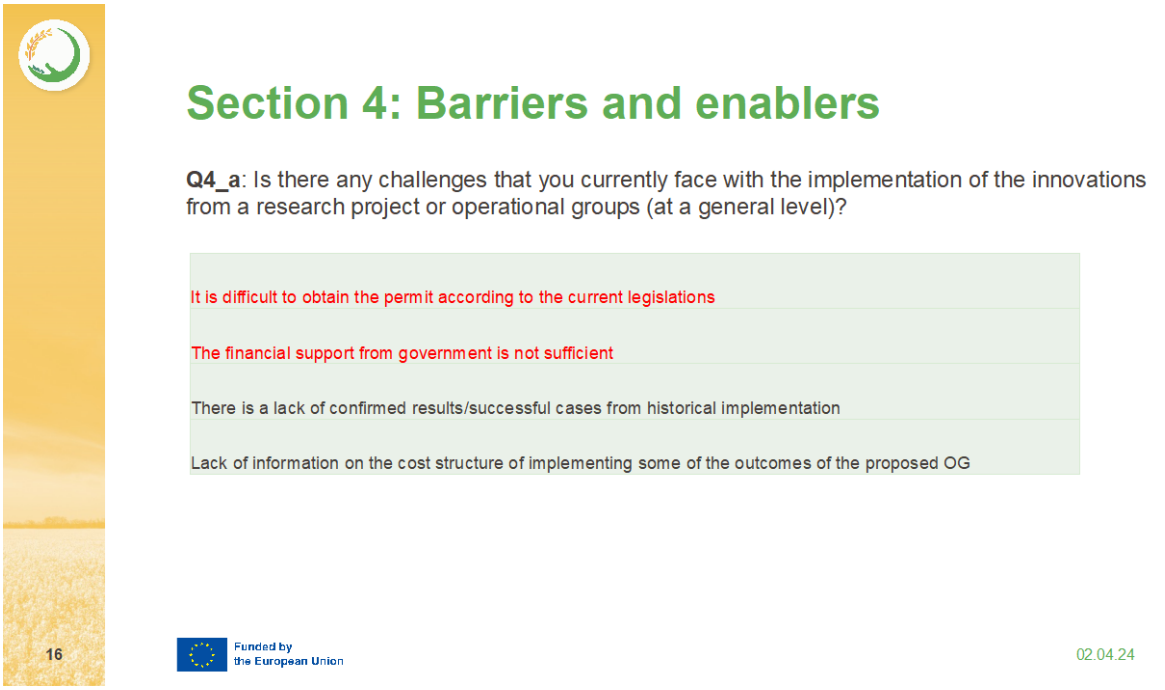


Notes: With the knowledge of Nutri-Know partners and the answers obtained in the previous questionnaire, we have built a first map of stakeholders and their connections in relation to actors that could be influential in maximizing the use of the results of the OGs, (show the slide or click on

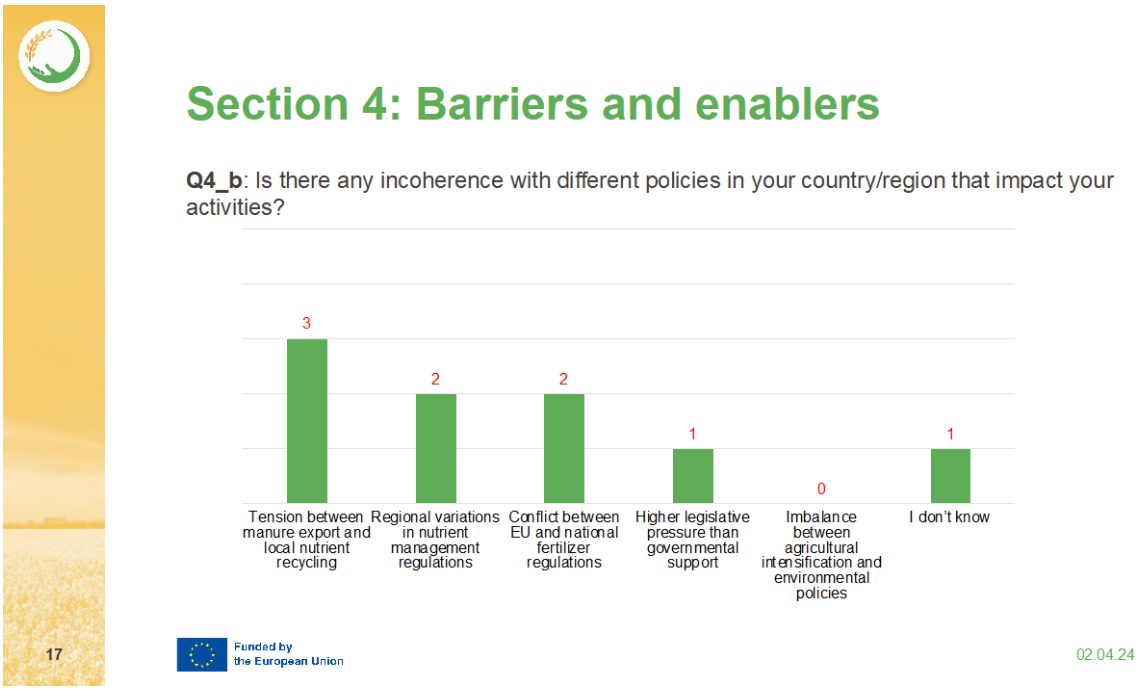
the link). The yellow dots mark the stakeholders that have already answered the questionnaire. *What do you think? Who is missing? What connections are missing?*

We have not identified any national level actors or funding agencies. *Can you think of any? If so, who would you connect them to on the map?*

Note: if the meeting is online, you can paint directly on the map, and if it is offline, we suggest you bring a printed copy where you can hand-draw your answers.
Note 2: This map shows the connections that we have identified, it does not mean that they are ALL the actors of the nutrient management value chain, but the ones that the NK consortium has considered relevant for the project's objective. The map shows the identified connections, the larger spheres are the stakeholders that are better positioned in terms of connections in the network. Those that are not connected do not mean that they are not connected in reality, only that their connection has not been identified for the time being.

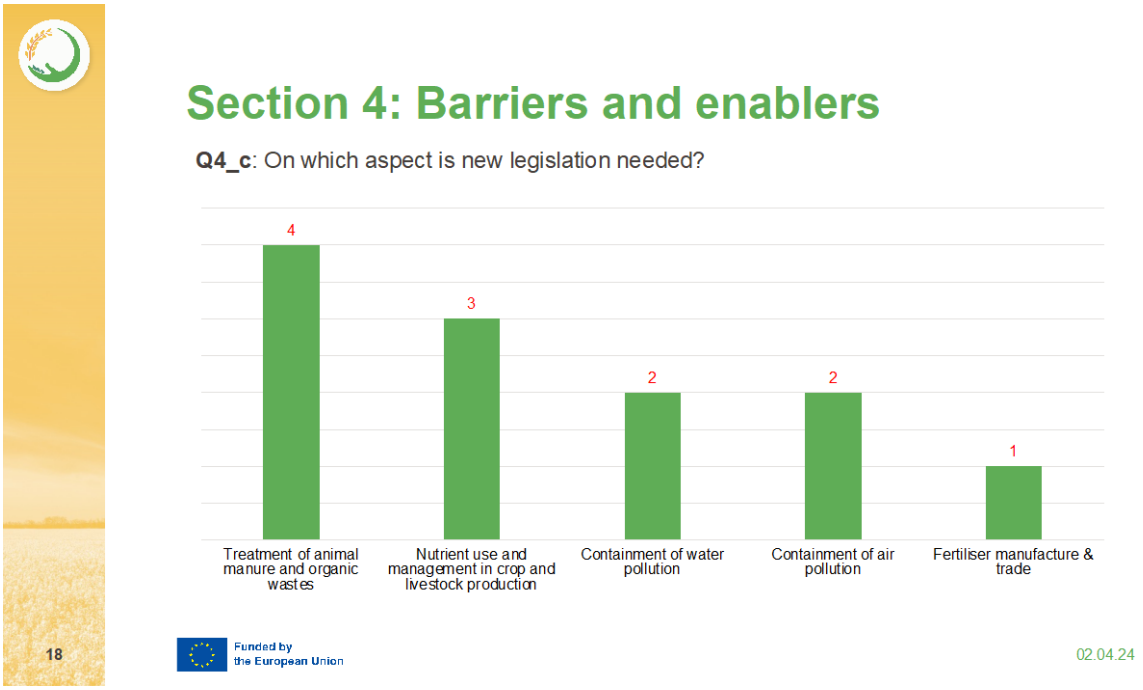


Notes: The respondents highlighted the challenges in getting the legislation permit and lack of financial support. There are other options of challenges, but respondents in Belgium do not think those are of any issue:
I am not aware of the technologies/products/tools
Lack of interest
There are trade barriers or protectionist measures to access markets in other regions
Specific skills are needed to implement the technologies/products/tools
Additional investment is needed in infrastructure or to adopt new methods
Do you agree with the results? How do you see the possible approach to address these challenges?

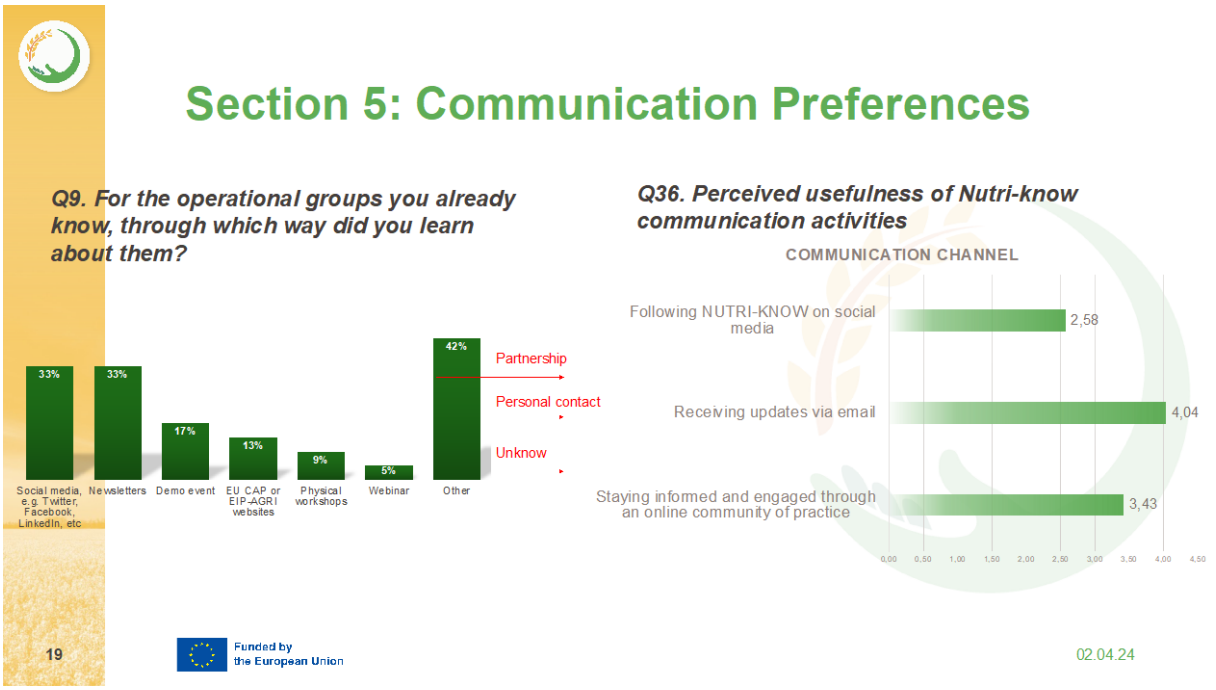


Notes: In response to the legislation barriers and enablers, Flemish stakeholders highlighted the tension between manure export and local nutrient recycling, there are also regional variations in nutrient management regulations, conflict between EU and national fertilizer regulations.

What do you think is the most standing out incoherence?

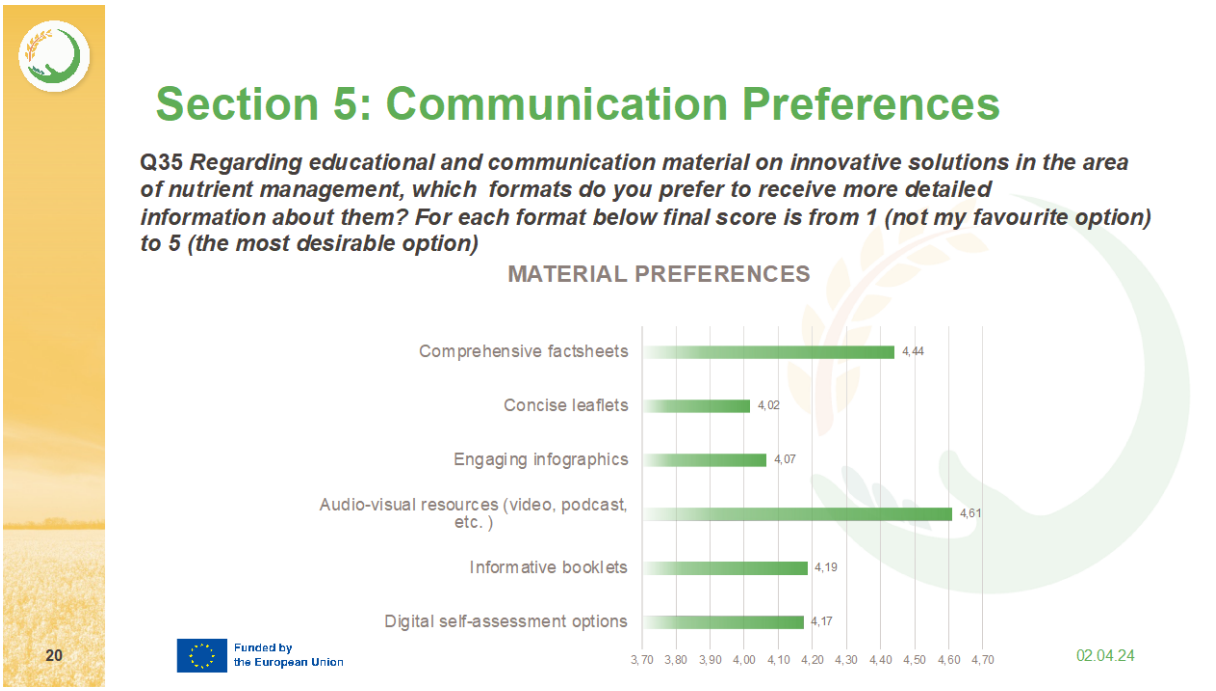


Notes: The respondents to the survey have highlighted the need for new legislations in treatment of animal manure and organic waste, nutrient use and management in crop and livestock production. *Do you agree with it? Could you please give an example, what should be improved in regulations for treatment of animal manure and organic waste?*



Notes: From the responses collected in the survey, we found some deviation in the communication preferences. For example, when they are asked how did they know about the OG, socia media seem to be an effective approach; however, when evaluating the effectiveness of different communication channels, social media was scored the last perceived. It means the social media might be more powerful in this type of communication than what we thought.

Do you agree? What is your preferable communication channel?



Notes: This question relates to the preferences in sharing communication material. Show the results of the survey and ask whether they agree with them. *What would be your preffered type of material?*

END OF THE INTERVIEW

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AFTER THE INTERVIEW

- Transcribe (in English) the interview (according to the record of the conversation) and save it in a document with the following naming format: WP2_Interview_your organisation name_location_date (ddmmyyyy) (eg. WP2_Interview_WE&B_Barcelona_12012024).
- Have look at Interview & Transcription Tips.pdf.
- In the text, highlight your own thoughts, appreciations and relevant statements.
- Provide a short summary (one two paragraphs with your own reflections that could help the analysis and integration).
- Ensure that you have collected the consent sheet from participants and stored it properly. If you have a physical signed consent sheet of the interviewee, send a scan of it via mail as well as the original via post to WE&B. If you have recorded the consent by voice at the beginning of the interview send the part of the recording when the consent is given to WE&B.

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8. Annex 4: Research information letter (consent sheet)

DATE, LOCATION

Dear Ms./Mr. ……..,

NUTRI-KNOW is a project funded by the European Commission Horizon Europe research program (Grant agreement No 101086524) that aims to contribute to a safe and cost-efficient nutrient management, which is a strategic element for the EU agricultural sector (http://nutri-know.eu). NUTRI-KNOW aims to support the modernisation and dynamisation of the agrifood sector by broadening EIP-AGRI Operational Groups (OGs) outcomes across borders. NUTRI-KNOW will contribute to foster and share knowledge and innovation aiming to address the most urgent needs, challenges, and opportunities for farmers.

What does it mean for you to participate in the NUTRI-KNOW Project?

- **Participation is voluntary**

Your participation in the NUTRI-KNOW project is voluntary and you can choose to stop participating at any time. You can withdraw your consent at any time without giving any reason. It shall be as easy to withdraw as to give consent. Withdrawing consent shall not impact the legality of processing done before the withdrawal. There will be no negative consequences for you if you decide to withdraw your consent. Data and information that has been collected up to the point of withdrawal will continue to be used by the NUTRI-KNOW Consortium, unless the participant requests that their data is removed from the dataset.

If you should decide to withdraw your consent, please contact the research contact person and let them know of your intention of leaving the research project. You can contact the research contact person at the address given below (Ms. Beatriz Medina). Please keep in mind that if you do not provide us with your authorization now or if you cancel it in the future, you will not be able to participate in this study.

We hope that most participants will find the discussion interesting and thought-provoking. If, however, you feel uncomfortable in any way during the interview session, you can decline to answer any question or to end the interview.

- **How do we store and handle the information you provide?**

The provided information will be treated anonymously, which means it will be aggregated with other data and not used as individual data. This is in accordance with the data protection regulation from the European Commission: art. 5.1, “b”, of the Regulation (EU) 2016/679 of the European Parliament and of the Council, of 27th April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC. The results from the study will be stored in the NUTRI-KNOW database which will be archived by WE&B and will be deleted one year after the project ends. The results will be made available to other collaborating researchers within the NUTRI-KNOW project.

Results from this study will be used for the NUTRI-KNOW project and for scientific purposes only. Personal data will be processed in a manner that ensures appropriate security and confidentiality of personal data, which includes preventing unauthorized access to or use of personal data and the equipment used for processing. Recorded information will be processed during the phase of data analysis and will be included in project internal reports or later in scientific publications. Your recorded information will only be processed for the purposes of the project (‘purpose limitation’) and limited to what is necessary in relation to the purposes for which they are processed (‘data minimisation’). The results of this study may be published in scientific magazines, conference proceedings or books.

- **Contact person**

If you want to receive a copy of the results of this study, if you would like to request any further information about your rights as a participant in the testing phases, if you are not satisfied with the way this study is being carried out, or if you have any question or complaint during the testing phase, please contact the leading researcher:

Beatriz Medina,

WE&B

beatriz.medina@weandb.org

Thank you on behalf of NUTRI-KNOW team, we are looking forward to speaking to you soon!

CONSENT SHEET FORM

LINK ACCESS

General		
I confirm I have read and understood **the Information Letter and Consent Sheet** (attached) for the above project. The information has been fully explained to me and I have been able to ask questions, all of which have been answered to my satisfaction.	Yes ☐	No ☐
I **give my consent** to participate in the interview of the research project entitled NUTRI-KNOW	Yes ☐	No ☐
I **give my consent** to record this interview.	Yes ☐	No ☐
I understand that this project **is entirely voluntary and if I decide that I do not want to take part, I can stop taking part in this project at any time without giving a reason.** I understand that deciding not to take part will have no negative consequences for me.	Yes ☐	No ☐
I understand that participation may involve being interviewed and tested by researchers, members of the NUTRI-KNOW.	Yes ☐	No ☐
I understand that I **will not be paid or receive any materialistic reward for taking part in this project.**	Yes ☐	No ☐
I know who to contact if I have any question about the NUTRI-KNOW, my participation thereto or my privacy.	Yes ☐	No ☐
I consent to take part in this project having been fully informed of the **risks, inconveniences and benefits** which are described in full in the Information Letter which I have been provided with.	Yes ☐	No ☐
I agree to being contacted by researchers by email and phone as part of this project.	Yes ☐	No ☐
I agree that my data is collected in a central database. In order to facilitate scientific discoveries, **my non-identifiable data** will be made available to the public (in absolutely anonymous form) for the use permitted by research.	Yes ☐	No ☐
Data processing		
I consent to the **collection of personal data** such as my **name, email address** in accordance with the purposes of this research project.	Yes ☐	No ☐
I understand that personal information about me, including the transfer of this personal information about me outside of the EU, will be protected in accordance with the General Data Protection Regulation.	Yes ☐	No ☐

9. Annex 5: Stakeholder Database

The complete Stakeholder Database can be found in the NUTRI-KNOW SharePoint. Here it is presented the Target Group, the Specific Target Group and the Organisation's name for each stakeholder.

Target group	Specific target group - Q4	Organisation
Academia	University	Aarhus Universitet
FarmersRelated	Professional association	ABS
Academia	Research institution	Accademia Nazionale di Agricoltura
PublicAdministration_Policy	Regional agency	Agència de Residus de Catalunya (ARC)
FarmersRelated	Cooperative	Agrària Plana de Vic i Secció de Crèdit, SCCL
ServicesToFarmers	Agricultural advisory centres	Agri Nord
FertilisersRelated	Biobased fertilising industry	Agrofert srl
FertilisersRelated	Fertiliser company	Agrofertil
Technology_ProviderUser	Machinery	Agrometer A/S
Media	Farming specilised media	Agronotizie
FarmersRelated	Cooperative	Agropecuària catalana, SCCL (Agrocat)
FarmersRelated	Cooperative	Agropecuària d'Artesa de Segre, SCCL
Other	Other	Agropecuaria de Guissona (BonÀrea Agrupa)
Agricultural student	Agricultural College	Agroskolen, Hammerum
FarmersRelated	Farmers association	AIA - Associazione Italiana Allevatori
Media	Farming specilised media	Allevatori Top
FertilisersRelated	Fertiliser company	Amoniak (NH3) og Urea, Yara Danmark A/S
FarmersRelated	Farmers association	ANABIC - Associazione Nazionale Allevatori Bovini Italiani da Carne
FarmersRelated	Farmers association	ANAS - Associazione Nazionale Allevatori Suini
Technology_ProviderUser	Other	AnKo Projects
FarmersRelated	Farmers association	ARAER - Associazione Regionale Allevatori dell'Emilia-Romagna
FarmersRelated	Farmers association	ARAL - Associazione Regionale Allevatori Lombardia

FarmersRelated	Farmers association	ARAV - Associazione Regionale Allevatori Veneto
PublicAdministration_Policy	Regional agency	ARPA Lombardia
PublicAdministration_Policy	Regional agency	ARPA Piemonte
PublicAdministration_Policy	Regional agency	ARPA Veneto
PublicAdministration_Policy	Regional agency	ARPAE Emilia-Romagna
Academia	Research institution	ARSIAL - Agenzia Regionale per lo Sviluppo e l'Innovazione dell'Agricoltura del Lazio
FarmersRelated	Farmers association	ASSICA - Associazione Industriali delle Carni e dei Salumi
FarmersRelated	Farmers association	ASSOAVI - Associazione Nazionale Allevatori Produttori Avicunicoli
FertilisersRelated	Fertiliser company	Agro-energiek bv
FarmersRelated	Farming trade union	Associació de Joves Agricultors i Ramaders de Catalunya (JARC)
FarmersRelated	Farmers association	Assolatte - Associazione Italiana Lattiero Casearia
Technology_ProviderUser	National agency	Biogas Danmark
Other	Other	Biogas-E
Technology_ProviderUser	Biogas plant	Biolectric
FarmersRelated	Cluster	Biorefine Cluster
FarmersRelated	Professional association	Boerendbond
Other	Other	Bord Bia
Media	Agricultural media	Branchemagasinet DM&E
Agricultural student	Agricultural College	Bygholm Landbrugsskole
FarmersRelated	Cooperative	Camp i Secció de Crèdit Sant Isidre de Bellcaire d'Urgell
FarmersRelated	Other	Carbery
PublicAdministration_Policy	Regional agency	Catalan Agency for Business Competitiveness (Acció)
PublicAdministration_Policy	Regional agency	Catalan Council of Organic Production (CCPAE)
PublicAdministration_Policy	Regional agency	Catalan Water Agency (ACA)
Academia	Research institution	Centro Agricoltura Ambiente "G. Nicoli"
Academia	University	Centro Interdipartimentale per l'Innovazione in campo Agro-ambientale – AGROINNOVA
Academia	Research institution	Cerzoo Srl - Centro di Ricerche per la zootecnia e l'ambiente

FarmersRelated	Farmers association	CIB - Consorzio Italiano Biogas e Gassificazione
FarmersRelated	Farmers association	CIC - Consorzio Italiano Compostatori
Academia	Other	Clust-ER Agrifood - Agroalimentare
Academia	Other	Clust-ER Greentech - Energia e sostenibilità
FarmersRelated	Cluster	Cluster Bioenergia de Catalunya (CBC)
FarmersRelated	Cluster	Cluster Tecnologico Nazionale delle Chimica Verde - Spring
FarmersRelated	Professional association	Colleghio Interprovinciale dei Periti Agrari e Periti Agrari Laureati di Reggio Emilia e Parma
FarmersRelated	Professional association	Composting and Anaerobic Digestion Association Ireland (cré)
FarmersRelated	Farmers association	Consorzio del Formaggio Parmigiano Reggiano
FarmersRelated	Farmers association	Consorzio del Prosciutto di Parma
FarmersRelated	Farmers association	Consorzio del Prosciutto San Daniele
FarmersRelated	Farmers association	Consorzio Tutela Grana Padano
FarmersRelated	Cooperative	Cooperativa d'Ivars i Secció de Crèdit, SCCL
Other	Other	Costa Food Meat (Grupo Costa)
Academia	Research institution	CREA - Zootecnia e Acquacoltura
Agricultural student	Agricultural College	Dalum Landbrugsskole
ServicesToFarmers	National agency	Dan Æg A/S
FertilisersRelated	Fertiliser company	DanGødning A/S
FarmersRelated	Feed Company	Danish Agro
ServicesToFarmers	National agency	Danish Crown
Academia	University	Danmarks Tekniske Universitet, DTU
ServicesToFarmers	National agency	Danske Svineproducenter
PublicAdministration_Policy	Regional agency	Departament d'Acció Climàtica, Alimentació i Agenda Rural de Catalunya (DACC)
PublicAdministration_Policy	Regional agency	Vlaams Agentschap Landbouw en Zeevisserij
PublicAdministration_Policy	National government	Department of Agriculture, Food and the Marine

EU	European Agency	Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)
EU	European Agency	Directorate-General for Agriculture and Rural Development (DG AGRI)
EU	European Agency	Directorate-General for Environment (DG ENV)
FarmersRelated	Feed Company	DLG
ServicesToFarmers	Credit unions	DLR Kredit A/S
Media	Agricultural media	EffektivtLandbrug
FinancialInstitution	Other	EIB, European Investment Bank
EU	Network	EIP-AGRI
FarmersRelated	Feed Company	Emmelev Mølle A/S
Academia	Research institution	ENEA - Laboratorio Sostenibilità, Qualità e Sicurezza delle Produzioni Agroalimentari
FertilisersRelated	Biobased fertilising industry	Enrich Environmental
Other	Other	Environmental Science Association of Ireland (ESAI)
ShortTermActions	Project	EU REALM
Media	Farming specilised media	European Network for Rural Development
Other	Other	European Sustainable Phosphorus Platform (ESPP)
FertilisersRelated	Biobased fertilising industry	Eurovix spa
Media	Agricultural media	Fagmagasinet Frøavleren
Media	Agricultural media	Fagmagasinet Mark
Technology_ProviderUser	Technology provider	Farmeye
FarmersRelated	Farmers association	Federació d'Agricultors Viveristes de Catalunya
FarmersRelated	Professional association	Federazione Regionale dei Dottori Agronomi e Dottori Forestali dell'Emilia-Romagna
Academia	Research institution	Fondazione Edmund Mach
Technology_ProviderUser	Machinery, seperation of manure	Gea Westfalia Seperator A/S
FarmersRelated	Cooperative	Gestió Agroramadera de Ponent GAP, SCCL

ShortTermActions	Project	GO-GRASS
FertilisersRelated	Biobased fertilising industry	Gouldings
FarmersRelated	Farmers association	Gran Suino Italiano Organizzazione Interprofessionale
FarmersRelated	Cluster	Food and Bio Cluster
FarmersRelated	Other	Granges Terragrisa
Technology_ProviderUser	Technology provider	Grassa
Technology_ProviderUser	Biogas plant	Green Generation
Technology_ProviderUser	Biogas plant	Green Service Belgium
Media	European media	Greentech Media
FertilisersRelated	Biobased fertilising industry	Grena srl
FarmersRelated	Expert groups	Group of experts in the treatment of livestock waste (GETDR)
CSOs_OtherNonPorfit	NGO	Grup Denfensa del Ter
Technology_ProviderUser	Technology provider	Grup Solucions Manresa, SLUP
Other	Other	Grupo Jorge
FarmersRelated	Local farmer	Heirbaut Algriculture
FarmersRelated	Professional association	IFOAM Organics Europe
Academia	Research institution	Inagro
Media	Farming specilised media	Informatore Zootecnico
ServicesToFarmers	Credit unions	InGreen AgroFunding A/S
FertilisersRelated	Fertiliser test lab	Innolab
FarmersRelated	National agency	Irish Farmers Association
Media	Farming specilised media	Irish Farmers Journal
FarmersRelated	Professional association	Irish Organic Association
Other	Other	Irish Water
Technology_ProviderUser	Machinery, seperation of manure	JH Agro
FarmersRelated	Local farmer	Local farmer
Agricultural student	Agricultural College	Jordbrugets UddannelsesCenter Århus

Academia	University	Københavns Universitet
FarmersRelated	Local farmer	Local Farmer 3
Media	Farming specilised media	L'informatore Agrario
ServicesToFarmers	Agricultural advisory centres	L&F Centrovice
ServicesToFarmers	Agricultural advisory centres	LandboNord
ServicesToFarmers	Agricultural advisory centres	LandboSyd
Media	Agricultural media	LandbrugsAvisen
Technology_ProviderUser	Machinery, seperation of manure	Landia A/S
CSOs_OtherNonPorfit	NGO	Legambiente
CSOs_OtherNonPorfit	NGO	Legambiente Emilia-Romagna
FarmersRelated	Local farmer	Local Farmer 4
FarmersRelated	Cooperative	Linyola Agropecuària i Secció de Crèdit
Media	Agricultural media	Maskinbladet
ServicesToFarmers	National agency	Mejeriforeningen og Landbrug & Fødevarer
PublicAdministration_Policy	National agency	Ministeriet for Fødevarer, Landbrug og Fiskeri
PublicAdministration_Policy	National agency	Ministerio de Agricultura, Pesca y Alimentación de España (MAPA)
PublicAdministration_Policy	National agency	Ministry for Ecological Transition and the Demographic Challenge of the Government of Spain (MITECO)
Academia	University	Munster Technological University (MTU)
FarmersRelated	Local farmer	Local farmer 5
Other	Other	Nutricycle Vlaanderen
ServicesToFarmers	Credit unions	Nykredit
FertilisersRelated	Biobased fertilising industry	Oilean Glas Teoranta (OGT)
ServicesToFarmers	National agency	Økologisk Landsforening
FarmersRelated	Farmers association	OPAS, Organizzazione Prodotto Allevatori Suini
FarmersRelated	Professional association	Ordine dei Dottori Agronomi e Dottori Forestali di Reggio Emilia
ServicesToFarmers	Agricultural advisory centres	Patriotisk Selskab
ShortTermActions	Project	PIGWEB

Media	Farming specilised media	Professione Allevatore
Media	Farming specilised media	Professione Suinicoltore
ServicesToFarmers	Capacity building institution	Quintanes
PublicAdministration_Policy	Regional government	Regione Emilia-Romagna DG Agricoltura
PublicAdministration_Policy	Regional government	Regione Emilia-Romana Region
PublicAdministration_Policy	Regional government	Regione Lombardia - DG Agricoltura, Sovranità alimentare e Foreste
PublicAdministration_Policy	Regional government	Regione Piemonte - Agricoltura e cibo
Media	Farming specilised media	Revista Alimantaria
Academia	Research institution	RINOVA - Agricoltura Ambiente Agroalimentare
Media	Farming specilised media	Rivista di Suinicoltura
Technology_ProviderUser	Machinery	Samson A/S
FertilisersRelated	Fertiliser company	SCAM
ServicesToFarmers	Advisory platform	Origin Enterprises
Technology_ProviderUser	Technology provider	Sede Ireland (Veolia)
ServicesToFarmers	Advisory platform	SEGES Innovation P/S
Other	Other	Selecció Batallé
Academia	University	South East Technological University Carlow
FarmersRelated	Professional association	Spanish Biogas Association (AEBIG)
Academia	Research institution	SSICA - Stazione Sperimentale per l'Industria delle Conserve Alimentari – Fondazione di Ricerca
Academia	Research institution	Teagasc
Media	Farming specilised media	Terra e Vita
Academia	University	Thomas More
FertilisersRelated	Biobased fertilising industry	Trade Corp
FarmersRelated	Farming trade union	Unio Pagesos Catalunya (UP)

Other	Other	United Experts
Academia	University	Università Cattolica del Sacro Cuore - Facoltà di Scienze agrarie, alimentari e ambientali
Academia	University	Università di Bologna - Dipartimento di Scienze e Tecnologie Agro-Alimentari
Academia	University	University College Dublin (UCD)
Other	Other	Vall Companys Group
FarmersRelated	Local farmer	Tikal nv
FarmersRelated	Local farmer	Local farmer
Other	Professional association	VCM
ServicesToFarmers	Agricultural advisory centres	VKST
PublicAdministration_Policy	Regional agency	Vlaams Energie- en Klimaatagentschap (VEKA)
CSOs_OtherNonPorfit	NGO	Vlaco vzw
PublicAdministration_Policy	County office/ other territorial services	Wexford County Council
FertilisersRelated	Fertiliser company	Yara Danmark A/S
FinancialInstitution	Bank	Crelan bank
Academia	University	BETA TC (UVic-UCC)
FarmersRelated	Farmers association	Federació de Cooperatives Agràries de Catalunya (FCAC)
Academia	University	Ghent University
Academia	Research institution	Research Centre on Animal Production (CRPA)
CSOs_OtherNonPorfit	Other	WE&B
CSOs_OtherNonPorfit	Other	ESCI
Academia	Research institution	Ilvo
PublicAdministration_Policy	Other	CAP Network Ireland
FertilisersRelated	Other	European Compost Network (ECN)
FarmersRelated	Farmers association	Associazione Italiana per l'Agricoltura Biologica (AIAB)
FarmersRelated	Farming trade union	Unión de Uniones de Agricultores y Ganaderos
Academia	Research institution	Institute of Agrifood Research and Technology (IRTA)
FarmersRelated	Farmers association	Asociación Española de Productores de Vacuno de Carne (ASOPROVAC)

ServicesToFarmers	Capacity building institution	Dinamica Soc. Cons. a r.l.
FarmersRelated	Farmers association	Società agricola Colombaro srl
FarmersRelated	Farmers association	Società Agricola R.G.R.
FarmersRelated	Farmers association	Società Agricola Leona
Technology_ProviderUser	Technology provider	Netafilm Italia

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