FERTIMANURE

Deliverable

Project Acronym: FERTIMANURE

Project full name: Innovative nutrient recovery from secondary sources – Production of high-added value Fertilizers' from animal MANURE

Grant Agreement No. 862849

D6.3. Inventory of stakeholder groups relevant for BBFs and market uptake

Project start date	January 1st, 2020
Duration in months	48
Deliverable due date	31/12/2021
Actual submission date	21/12/2021
Work package concerned	WP6
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Preface

The report is part of the Horizon 2020 project **Fertimanure – "From Farm to Market: Upcycling manure to improved fertilising products"**. The project is coordinated by BETA Technological Centre at the University of Vic in Catalonia, Spain, and includes 19 additional partners from 7 EU countries, Argentina and Chile. The project Consortium is composed of a variety of universities, research centres, clusters, public bodies, SMEs and NGOs.

FERTIMANURE project consortium

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Document History

Date	Author	Action	Status
09/12/2020	Kimo van Dijk	1st draft revision	Draft
10/12/2020	Ivona Sigurnjak	1st draft revision	Draft
10/12/2020	Rodrigo Arandi-Klee	1st draft revision	Draft
22/12/2020	Laia Llenas	Approved by UVIC	Approved by the PC

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Summary

This Deliverable is part of the Work Package 6: Market potential, business plan and exploitation and as such constitutes the required deliverable D 6.3 Inventory of stakeholder groups relevant for BBFs and market uptake as part of activity Task 6.2. Mapping stakeholder groups.

Within the first step, different stakeholders were identified and classified. Six main groups of stakeholders were created, including agricultural producers (e.g. crop farmers, livestock farmers, greenhouse horticulture, etc.), fertilisers processing industry (mineral and organic), academia and research focused on the nutrient recycling, business and financial advisors (e.g. agricultural banks), policy makers & authorities, and public entities & general public (e.g. farmer organisations and NGOs).

The various stakeholder groups identified are analysed based on the influence that they have on the project as well as on impact that the project has for them and their business activities.

To understand the ongoing changing business environment focused on bio-based value chains and products, 1st brainstorm sessions were organized in the participating countries.

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List of Abbreviations

BBFs	Bio-based fertilisers
CELAC	Community of Latin American and Caribbean States
D	Deliverable
EU	European Union
GDPR	General data protection regulation
DMP	Data Management Plan
NUE	Nutrient use efficiency
PC	Project Coordinator
PMB	Project Management Board
PTC	Project Technical Committee
R&D	Research and development
SG	Stakeholder group
SME	Small and medium enterprises
TH	Triple Helix
TMFs	Tailor-made fertilisers
QH	Quadruple Helix
QHM	Quadruple Helix Model
XLS	Excel file
WP	Work Package

1. Introduction

The FERTIMANURE project includes 20 partners from 7 EU countries, Argentina and Chile. EU countries participating in the project include **France, Germany, Spain, Italy, Belgium, The Netherlands,** and **Croatia** (Figure 1). CELAC region is represented by **Argentina**.

The project consortium is geographically well distributed across the Member States of the EU-27 with an intention to cover diverse range of agricultural and nutrient management practices and includes stakeholders with different knowledge background and fertiliser needs. CELAC region is represented by the largest CELAC member state – Argentina.

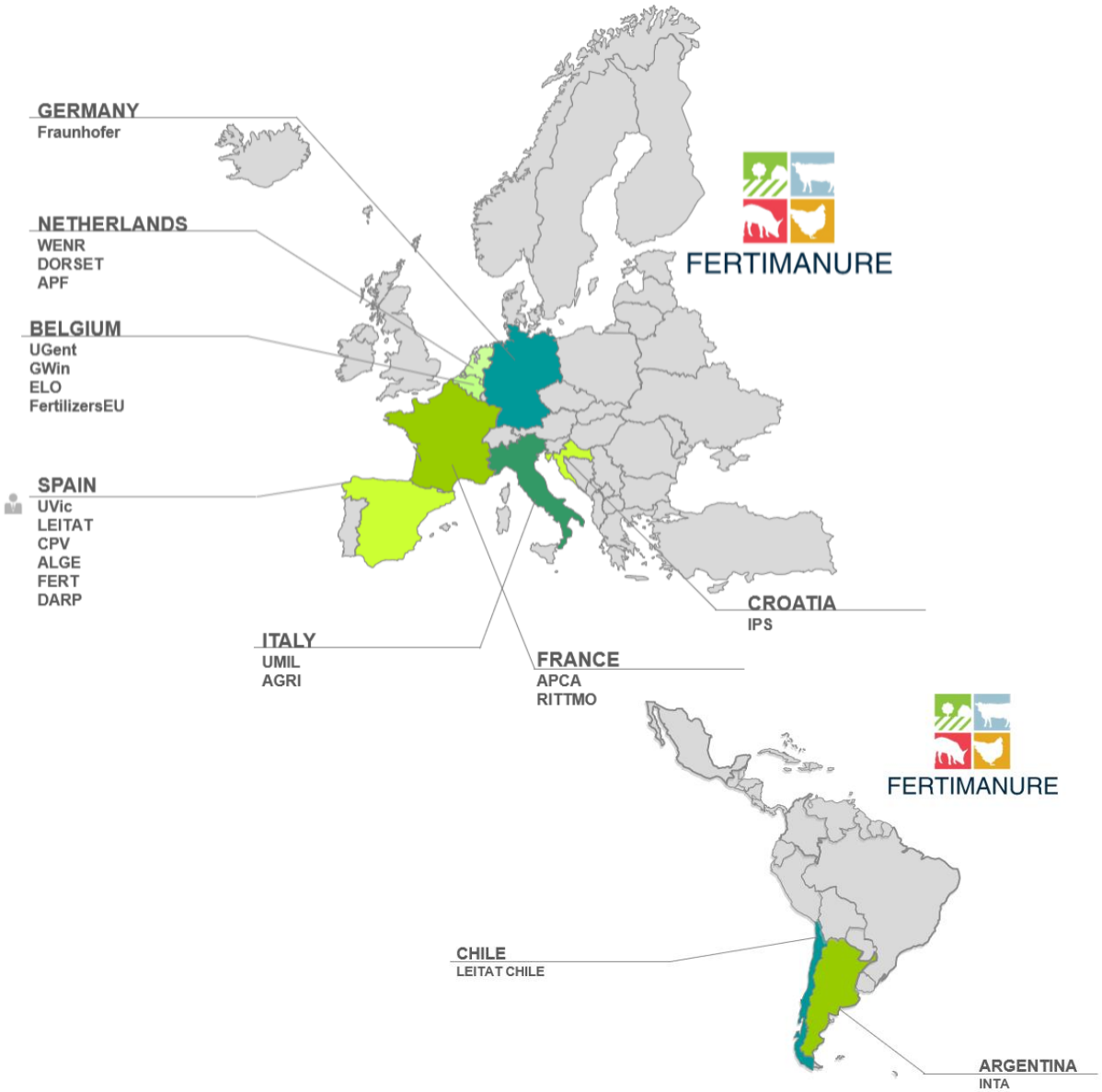

Figure 1 Map of the FERTIMANURE consortium partners and their distribution across countries

The main objective of FERTIMANURE is to develop, integrate, test, and validate **innovative nutrient management strategies** to efficiently recover mineral nutrients and other relevant products with agronomic value (organic amendments and biostimulants) from animal manure, to finally obtain reliable and safe fertilisers that can compete in the European fertilisers market.

Figure 2 Concept of the FERTIMANURE project

The project comprises of **9 work packages (WPs)**:

	WP no.	WP title
	**WP 1**	FERTIMANURE framework
	**WP 2**	Nutrient Recovery from animal manure
	**WP 3**	Production of Tailor-Made Fertilisers and Quality Assessment
	**WP 4**	Demonstration of the end-products performance: incubation, pot tests and field trials
	**WP 5**	Sustainability Assessment
	**WP 6**	Market potential, business plan and exploitation
	**WP 7**	Dissemination and communication
	**WP 8**	Project management and monitoring
	**WP 9**	Ethics requirements

This report is part of the **Work Package 6: Market potential, business plan and exploitation** and as such constitutes the required deliverable **D 6.3 Inventory of stakeholder groups relevant for BBFs and market uptake** as part of activity **Task 6.2. Mapping stakeholder groups**.

2. Methodologies and Organisation

The **mission** of **FERTIMANURE** project is to provide innovative solutions (technology, end-products, business models) to solve **real problems and opportunities** that farmers are currently facing. From one side, the livestock sector needs to resolve regional challenges related to nutrient excesses (e.g. pollution control, odour nuisance, etc.) at affordable costs and, on the other side, the agricultural sector, that currently relies on external sources of mineral nutrients for improved crop production, needs novel fertilising products that are: (i) homogeneous, predictable, and reliable, (ii) environmentally safe, (iii) match the crop requirements, (iv) have a high Nutrient Use Efficiency (NUE), and (v) are cost-effective and easy to apply.

The general objective of this **Task 6.2. Mapping stakeholder groups** is to perform mapping of stakeholder groups that are of interest in performing market analysis and the task will be crucial for preparation of business models and exploitation strategies in other parts/stages of the project.

Assigned project partners in all 7 participating EU countries will perform mapping of stakeholder groups that are of interest for the performance of market analysis.

To understand the ongoing changing business environment focused on bio-based value chains and products, **two brainstorm sessions** will be organized in each of the participating countries in the coming period of the project. Brainstorm sessions will include different stakeholders (research institutions, external sector related parties, agricultural producers, business chambers etc.) and should

go a step further in catalysing the list of barriers and opportunities currently present at the market.

This Task 6.2. is of crucial importance for the development of strong business plans that will maximize strengths and opportunities and on the other hand avoid threats and weaknesses that come from the competition between bio-based and mineral fertilisers and/or within the development process of new products (tailor made fertilisers).

The **Inventory of stakeholder groups** is a strategic document for detecting different stakeholders (research institutions, external sector related parties, agricultural producers, business chambers etc.) and more importantly analysing the effect that these stakeholders have on the FERTIMANURE project. This deliverable map and describes key actors and interested stakeholders whose support and involvement will ensure the success and sustainability of the project.

The task will be performed in two steps. The first step will focus on web research and initial communication among project partners to detect main stakeholder groups and currently known impacts and influences of stakeholders towards the project. Furthermore, the strategy for the involvement of stakeholders in the project will be set up.

The second step will focus on detailed analysis of stakeholders influences and will be based on two brainstorm sessions. In order to understand ever changing business environment focused on bio-based value chains and products. These sessions will be organized in each of the participating countries in the coming period of the project. Furthermore, brainstorm sessions will include different stakeholders (research institutions, external sector related parties such as agricultural extension services, agricultural producers, business chambers etc.) and should go a step further in catalysing the list of barriers and opportunities currently present at the market. First deliverable will be made in M12 and the final deliverable is expected at M24.

2.1. Description from the approved project application

An objective of the work package 6 and consequently the Task 6.2. is to understand ever changing business environment focused on bio-based value chains and products.

The FERTIMANURE project proposal describes Task 6.2 as follows:

> *"Assigned project partners in all 8 EU countries participating will perform mapping of stakeholder groups that are of interest for the performance of market analysis. In order to understand ever changing business environment focused on bio-based value chains and products, 2 brainstorm sessions will be organized in each of the participating countries (M10?, M28?). Brainstorm sessions will include different stakeholders (research institutions, external sector related parties, agricultural producers, business chambers etc.) and should go a step further in catalysing the list of barriers and opportunities currently present at the market. This will be of crucial importance for the development of strong business plans that will maximize strengths and opportunities and on the other hand avoid threats and weaknesses that come from the bio-based/mineral fertilisers competition and/or within the new product development process."*

2.2. Content of the report

The **Inventory of stakeholder groups relevant for BBFs and market uptake** will cover 3 main segments:

- ☑ **methodology of mapping stakeholder groups** based on literature review
- ☑ **overview of stakeholder groups** in the FERTIMANURE project and
- ☑ **general conclusions and recommendations** for next steps.

2.3. Data management

As the **Stakeholder mapping and Stakeholder list** includes personal data of the stakeholders (such as names, contact details, etc.) and is subject to a certain level of profiling (e.g. influence and interest levels in agriculture, nutrients recovery, research and innovation), such data must be managed carefully. Treating the collected stakeholders' data, FERTIMANURE consortium will strictly follow **Data management principles** (DMP) and rules established in the Data Management Plan (D 8.2.). It will also fully comply with the requirements set out under the General Data Protection Regulation (GDPR).

As set out in article **18.1 of the Grant Agreement**, the beneficiaries must - **for a period of five years** after the payment of the balance — keep records and other supporting documentation in order to prove the proper implementation of the action and the costs they declare as eligible.

Therefore, to assure unequivocal and maximum alignment with the obligations of the grant agreement, all documentation and data will be kept on the FERTIMANURE Teams drive for a minimum of 5 years following project closure as described above. All other data generated during the project and not uploaded to the cloud server must be kept for the same period by each individual beneficiary in an appropriate secure digital medium. For related matters and details, it is assumed that the beneficiaries respect all obligations specified in the Grant Agreement.

3. Methodology for mapping stakeholder groups (literature review)

References to stakeholders and the use of stakeholder analysis as a tool have become increasingly popular in the management, research and policy development during the last decade. This popularity reflects a recognition among managers, policy makers and researchers of the central role of stakeholders (individuals, groups and organizations) who have an interest (stake) and the potential to influence the actions and aims of an organization, project or policy direction (Brugha, 2000).

Although the term 'stakeholders' often appears in the literature, it has been pointed out that relatively little attention has been paid to developing systematic approaches for identification and an analysis of stakeholders (Bryson, 2004).

Stakeholders are persons, groups or institutions with interests in a policy, programme or a project. Their involvement may be critical in fully understanding the problem and implementing solutions, they may represent a possible barrier or threat, or they may simply have a democratic right to be involved because project decisions will affect them (Allen and Kilvington, 2010).

Stakeholder analysis is a way to identify a project's key stakeholders, assess their interests and needs, and clarify how these may affect the project's viability. Stakeholder analysis also contributes to project design by identifying the goals and roles of different stakeholder groups, and by helping to formulate appropriate forms of engagement with these groups.

Furthermore, stakeholder analysis enables the systematic identification of these stakeholders, the assessment and comparison of their particular set of interests, roles and powers, and the consideration and investigation of the relationships between them, including alliances, collaborations, and inherent conflicts. It examines who these interested parties are, who has the power to influence what happens, how these parties interact and, based on this information, how they might be able to work more effectively together (Reed, 2009).

In the FERTIMANURE project a **QUADRUPLE HELIX MODEL (QHM)** will be used. The QHM promotes a collaborative multidisciplinary approach between government, industry, academia and civil society in order to create new shared value for all participants within an open innovation ecosystem.

Both, the Triple Helix (TH) concept and the Quadruple Helix (QH), approach are grounded on the idea that **innovation is the outcome of an interactive process involving different spheres of actors, each contributing according to its 'institutional' function in society**. Contribution to innovation is envisaged in terms of sharing of knowledge and transfer of know-how, with the helices models assigning and formalising a precise role to each sphere in supporting economic growth through innovation (Cavallini et al., 2016). The QH model is prevalent throughout the Horizon 2020 Programme, as an important feature of research tackling a wide range of societal questions (Van Waart et al., 2015).

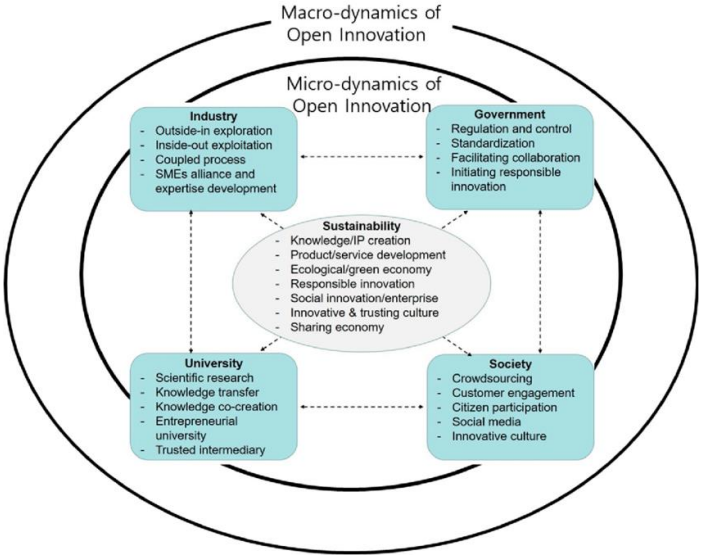

Figure 3 Micro- and macro-dynamics of Open Innovation with a Quadruple-Helix Model (*Yun and Liu, MDPI, 2019*)

The first task of stakeholder's mapping is the preliminary identification of the stakeholders. It is crucial to emphasize that stakeholders must have specific roles during the engagement. Therefore, an initial categorization can be performed according to their roles and the level of involvement. The role is crucial because some stakeholder's roles are more influential and significant than others.

According to CARTIF, an initial identification of the stakeholders can be performed considering the following classification of the stakeholders (Nutri2Cycle, Report with results of meta-analysis and sustainability labelling, CARTIF, 2020):

- ☑ **direct partner** the stakeholders who have a direct relation with the project
- ☑ **indirect partner** the stakeholders who do not have a direct relation with the project
- ☑ **ally** the stakeholders who support the success of the project
- ☑ **competitor** the stakeholders, who hinder the successful implementation of the project

Once stakeholders are identified, their characteristics and profiles should be analysed. It is always advised that the stakeholders represent a mix of perspectives, experiences, and roles relative to the project.

The selected criteria, which must be evaluated, are described briefly below:

- ☑ **capacity** evaluate the resource capacity of each stakeholder taking into consideration their knowledge, expertise, and technical capabilities
- ☑ **willingness** evaluate stakeholder's availability and willingness for participation
- ☑ **influence** evaluate the number and the quality of stakeholder's connections, which can influence all the involved parties
- ☑ **necessity** evaluate stakeholder's necessity for inclusion

The final step of the stakeholder's mapping is the prioritization process, which focuses on the sorting of the previously identified and analysed stakeholders.

The stakeholder mapping and analysis process can typically be broken down into four phases:

- ☑ **identifying** listing relevant groups, organizations, and people,
- ☑ **analysing** understanding stakeholder perspectives and interests,
- ☑ **mapping** visualizing relationships to objectives and other stakeholders and
- ☑ **prioritizing** ranking stakeholder relevance and identifying issues.

It is crucial to ensure that **FERTIMANURE** project engages with the right stakeholders from the early stages of the project. In addition, it is important to ensure that the stakeholder list includes stakeholders that have a high potential to engage and participate in FERTIMANURE activities.

The **FERTIMANURE project** took the **5-steps** approach to effectively meet the objectives of the T6.2. Mapping stakeholder groups (Table 1).

Table 1 Fertimanure stakeholder mapping process - overview per phases

Phase	Steps	Status
1st phase	**1. Stakeholders identification and classification**	done, deliverable M12
	2. Stakeholders analysis	done, deliverable M12
	3. Stakeholders mapping	done, deliverable M12
2nd phase	**4. Stakeholders prioritization**	in progress, to be continuously updated, deliverable M24
	5. Stakeholders engagement strategy setup	done, deliverable M12, to be updated, deliverable M24

4. Identify and analyse stakeholders

Stakeholders identification and classification

The identification of stakeholders establishes the base of engagement and communication strategies necessary for achieving greater participation and acceptance of the project. Projects can be delayed or side-tracked if key stakeholders are not identified.

Initial stakeholder identification consists of listing groups known to influence the project or on the other hand to be impacted by the project. It is important to list all actors with a potential interest in the project without limiting the list based on whether it is known that the group would have a stake in the project or not. Later, during analysis and stakeholder engagement, there will be the chance to confirm whether groups have a relevant stake or not.

An initial list of stakeholder groups may change during the project lifetime depending on stakeholders and Consortium decisions as well as depending on the project development. It is crucial to mention that identification and clarification should be a dynamic and continuous exercise in the execution of the project, as it allows deep understanding of the context and increases the possibilities of effectiveness and adoption of strategies.

Within the first step, different stakeholders were identified and classified. Six main groups of stakeholders were created, including **agricultural producers (e.g. crop farmers, livestock farmers, greenhouse horticulture, etc.), fertilisers processing industry (mineral and organic), academia and research focused on the nutrient recycling, business and financial advisors (e.g. agricultural banks), policy makers & authorities,** and **public entities & general public (e.g. farmer organisations and NGOs)**. Each of the categories mentioned has been further elaborated and classified. For the full overview of stakeholders' categorization see Table 4.

Stakeholders analysis

The various stakeholder groups identified are analysed based on the influence that they have on the project as well as on impact that the project has for them and their business activities.

Influence is defined as the degree of orchestration with other stakeholders and the capacity to influence project development. The Table 2 indicates the criteria used to measure stakeholder influence.

Table 2 Parameters for assigning the potential level of influence of relevant stakeholders

Degree	Description
Low	Stakeholders possess little capacity to influence project development
Medium	Stakeholders possess a medium level of capacity for influence on project development
High	Stakeholders possess a high level of capacity for influence on project development

The position of a stakeholder on the grid indicates the actions that project manager need to take when engaging in the project (see Table 3).

Table 3 Clarification of the power-interest grid and consequent actions

HIGH POWER HIGH INTEREST	**MANAGE CLOSELY**	☑ **REGULARLY ENGAGE** ☑ These stakeholders are likely to be decision makers and have the biggest impact on the project success ☑ Consortium needs to keep these stakeholders close and manage their expectations
HIGH POWER LOW INTEREST	**KEEP SATISFIED**	☑ **ACTIVELY CONSULT** ☑ These stakeholders need to be kept in a loop with what is happening on the project ☑ Even though these stakeholders may not be interested in the outcome, they still yield power and can affect the project results ☑ This type of stakeholders should be dealt cautiously since they could use their power in a negative way if they are unsatisfied
LOW POWER HIGH INTEREST	**KEEP INFORMED**	☑ **MAINTAIN INTEREST** ☑ These stakeholders need to be adequately informed ☑ Continuous communication is required to ensure that no major issues are arising ☑ These stakeholders tend to be supportive and helpful for the execution of the project
LOW POWER LOW INTEREST	**MONITOR**	☑ **KEEP INFORMED** ☑ These stakeholders should be continuously monitored ☑ Consortium should not spend lots of time and energy on excessive communication with these stakeholders

It is an imperative to understand the power that each stakeholder possesses because it brings the focus on empowering or controlling the impact of different stakeholders during project lifetime. Once values are assigned (from low to high) for each of the two criteria, one can see where on the grid each stakeholder can be placed (Figure 4).

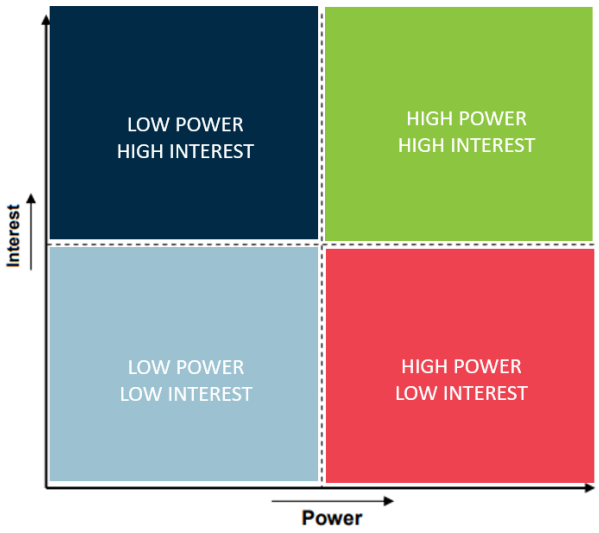

Figure 4 Mapping of the stakeholders on a power/interest grid on the basis of the power and interest for each stakeholder

Based on the previously identified 6 main stakeholder groups, it is assumed that all stakeholders from the:

- ☑ **Stakeholder group 1** have high impact and high influence on project development.
- ☑ **Stakeholder group 2** - some categories such as fertiliser companies and manure processors have both high impact and influence, chemical industry has medium impact and influence, while public and private investors in bioeconomy have high impact but medium influence.
- ☑ **Stakeholder group 3** – have high impact and influence on the project development.
- ☑ **Stakeholder group 4** – have medium impact and influence on the project development.
- ☑ **Stakeholder group 5** – have predominantly low impact while influence may vary from high to low.
- ☑ **Stakeholder group 6** – have predominantly medium impact and influence with an exception of fertiliser associations that have both high impact and influence.

Stakeholders prioritization

Stakeholders prioritization makes a clear and non-ambiguous distinction between stakeholders based on their « high or low » position on the priority list. The prioritization uses the index values to arrange the stakeholders in order of importance and allocate a unique priority number. The higher the index, the more important the stakeholder is at that time and consequently, the higher the priority.

The key element for a successful stakeholder's prioritization is not to agonize over whether the stakeholder list is « completely right ». Project's relevant and prioritized stakeholder list will change over the time and according to the project development.

Stakeholders prioritization is a living document that will be updated several times during the project lifetime (M12, M18, M24). Furthermore, discussion with partners regarding the prioritization list will occur every 4 months since different stages of the project´s development, as well as opinions of stakeholders and/or consortium partners can change to the new project needs.

Stakeholders engagement strategy setup

The final stage is the process by which key stakeholders are engaged to win their support and understanding. Possible synergies and frictions are identified via maps and eventually engagement strategy is created for different stakeholders.

The stakeholder's engagement plan seeks to define a technically and culturally appropriate approach to consultation and disclosure. An engagement plan is the foundation for achieving stakeholders buy-in for the project. The actions from the engagement plan will be continuously updated depending on different types of stakeholders.

The stakeholder engagement plan is generally formed in a way that a set of principles defining core values are established. Common principles include the following:

- ☑ **commitment** is demonstrated when the need to understand, engage and identify the community is recognised and acted upon early in the process
- ☑ **integrity** occurs when engagement is conducted in a manner that fosters mutual respect and trust
- ☑ **respect** is created when the rights, values and interests of stakeholders and affected communities are recognised
- ☑ **transparency** is demonstrated when community concerns are responded to in a timely, open and effective manner

- ☑ **inclusiveness** is achieved when broad participation is encouraged and supported by appropriate participation opportunities; and
- ☑ **trust** is achieved through open and meaningful dialogue that respects and uploads a community's beliefs, values, and opinions.

The stakeholder engagement plan includes 8 actions (Figure 5).

Figure 5 Actions for the stakeholders' engagement plan of a project

A **good communication strategy** in the FERTIMANURE project for engaging with key stakeholder groups will include the following:

	Action	**Reason behind**
WHAT	What topics need to be discussed and with what sentiment?	Negative, neutral, positive
WHY	Why this subject is addressed with this group?	Prevention, reaction, general announcement
WHO	Who is responsible for communicating with each stakeholder group?	Work package leaders, project coordinator, consortium dissemination experts (e.g. WP7 leader)
HOW	How will communication with each stakeholder group occur? How can stakeholders respond/react?	Workshops and/or round table discussion, paper or web forms, video communication etc.
WHEN	When the communication will occur?	Monthly, every 4 to 6 months, yearly

Before engaging with key stakeholder groups, it is important to review their general profiles and explore their needs and interests. These actions will help project partners to understand stakeholders' backgrounds, expectations, motivations, beliefs, and ultimate goals.

5. FERTIMANURE stakeholders mapping

5.1. Overview of stakeholder groups

Mapping stakeholders is a visual exercise and analysis tool that determines which stakeholders are the most useful to engage with. Visualisation helps to detect and fully understand the often-complex interplay of issues and relationships.

Firstly, the analysis has been performed by doing a desk research and evaluating stakeholders' recent activities, interest in agriculture and nutrients recovery, new technology, innovation in general, sustainable production and so on.

Based on the research performed, the following list of 6 stakeholder groups has been set up: **(i) agricultural producers, (ii) fertilisers processing industry, (iii) academia and research, (iv) business and financial advisors, (v) policy makers and authorities and (vi) public entities and general public**.

This is the first step towards deeper assessment of different stakeholders. Stakeholder analysis should expose maximum possible avenues to create business from the outcomes of the project. To achieve this, we try to assess all the possible stakeholders which can be impacted by or could have impact on the FERTIMANURE project. The envisioned stakeholder groups provide high level understanding which further assist in understanding the motivation of each stakeholder.

The most important are those stakeholders that have a high interest for the FERTIMANURE project. Therefore, they will be contacted first and most of the active engagement activities will be designed to collaborate with them.

Furthermore, stakeholders with a high influence and also highly interested in FERTIMANURE project results or end - products will be actively engaged to the project since its beginning through the social media posts (e.g., by tagging, provoking their comments, etc.), directly invited to participate in brainstorm sessions, workshops, etc. These stakeholders will be regularly contacted, consulted, and informed about the FERTIMANURE results and activities.

There are many stakeholders who are likely to benefit from the FERTIMANURE bio-based fertilisers (BBFs) and tailor-made fertilisers (TMFs). For example, fertiliser manufacturers/suppliers are likely to benefit from the project innovation segment.

On the other hand, safe and nutrients sustainable agricultural production is an important component. Therefore, validation of innovative nutrient management strategies to efficiently recover mineral nutrients and other relevant products with agronomic value (organic amendments and biostimulants) from animal manure to finally obtain reliable and safe fertilisers is of crucial importance for the European fertilisers market. Thus, farmers, fertiliser manufacturers and suppliers are going to have interest and positive attitude towards the project's innovation. It is expected that the aforementioned categories will be promoters of the end-products (e.g. BBFs and TMFs).

Full overview of the stakeholders' categorization is depicted in the Table 4. Stakeholders have been organised according to the type of interest and power that they have for the project.

Table 4 The stakeholder groups identified for the FERTIMANURE project

	**STAKEHOLDER GROUP 1 (SG1)**	**agricultural producers**	1) livestock farmers 2) arable farmers, crop growers 3) agro SME´s 4) agro associations 5) sustainable agriculture associations
	**STAKEHOLDER GROUP 2 (SG2)**	**fertilisers processing industry**	1) Fertiliser companies (manufacturers and sellers, both mineral and organic) 2) chemical industry 3) manure processors 4) public investors in bioeconomy 5) private investors in bioeconomy 6) technology providers 7) fertiliser association
	**STAKEHOLDER GROUP 3 (SG3)**	**academia and research**	1) research institutions 2) EU subject related networks and clusters (agro - industry, sustainable chemistry) 3) EU R&D neighbouring projects and consortiums 4) nutrient recycling research community
	**STAKEHOLDER GROUP 4 (SG4)**	**business and financial advisors**	1) business consultants 2) financial institutions 3) agricultural banks 4) funding agencies
	**STAKEHOLDER GROUP 5 (SG5)**	**policy makers & authorities**	1) ministries of agriculture 2) paying agencies for agriculture 3) agro-connected intermediaries established by government (extension service, LAGs) 4) local council 5) regional government 6) waterboards 7) standardization body 8) EU policy makers 9) CELAC policy maker
	**STAKEHOLDER GROUP 6 (SG6)**	**public entities & general public**	1) non- governmental organisations 2) media 3) general public – rural communities

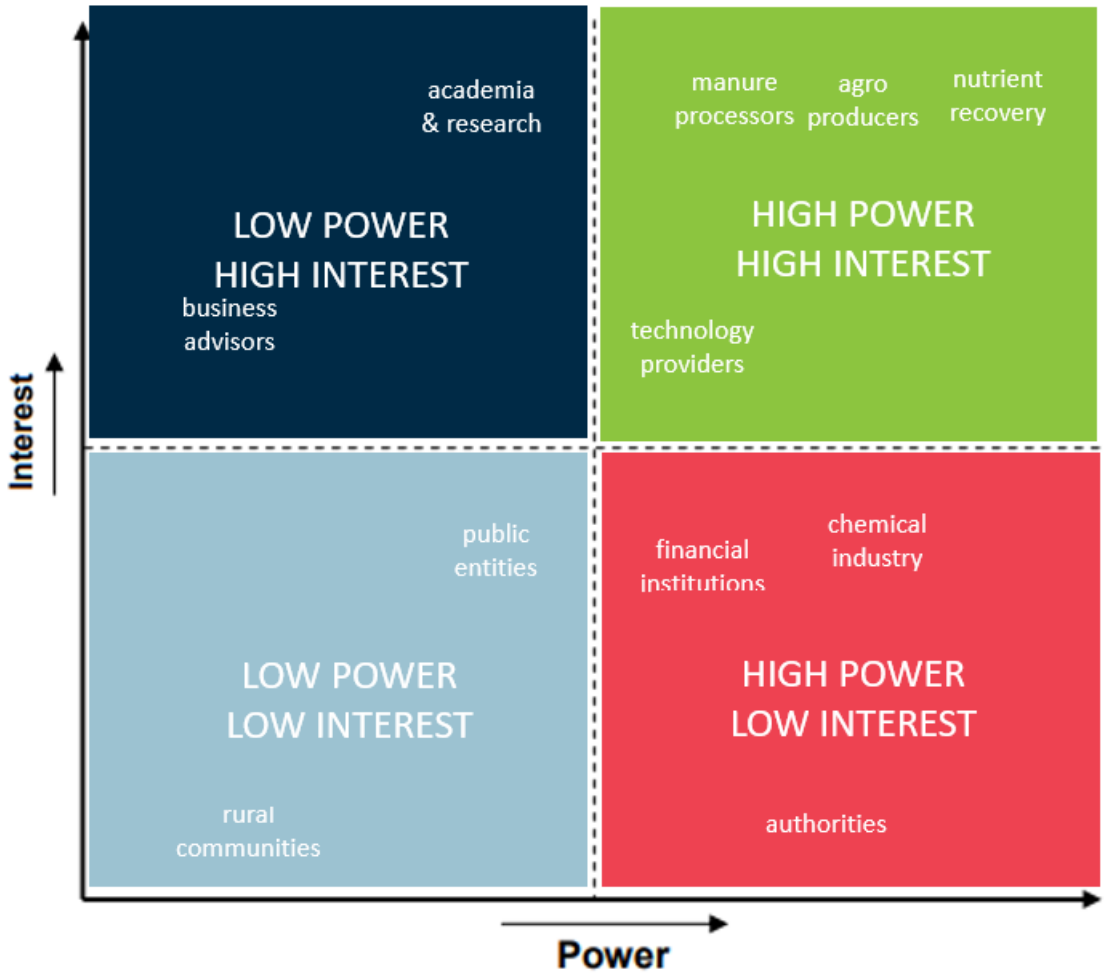

Figure 6 Mapping of the FERTIMANURE stakeholders on a power/interest grid on the basis of the power and interest for each stakeholder

5.2. Value proposition for each of the stakeholder categories

	STAKEHOLDER GROUP 1 (SG1)	**agricultural producers**	1) livestock farmers 2) arable farmers, crop growers 3) agro SME´s 4) agro associations 5) sustainable agriculture associations

Stakeholder group **agricultural producers** (SG1) needs:

- cost effective, homogeneous, high-quality, and crop-friendly fertilisers (matching crop requirements)
- lower frequency of fertilisers application
- need for reduced space for manure storage – reduced volume of by-products from the farm
- optimization of by-products and waste flows on the farm
- reduction of costs for the purchase/production of fertilisers
- need for biobased fertilisers to minimise environmental footprint
- need for tailor-made fertilisers according to the crop specific needs
- use of the same machinery for the application of different BBFs/TMFs
- recovery and reuse of nutrients from existing animal by – products including livestock manure

FERTIMANURE offers to answer the following needs of these stakeholders:

- access to innovation and new technologies in agriculture
- own production of BBFs from existing waste streams/by-products
- new homogeneous and easy-to-use BBFs and TMFs with high nutrient use efficiencies (NUE) on the market
- well-defined and standardised fertilisers designed to farmer needs
- environmentally safe fertilisers and support to the sustainable agricultural production
- customized fertiliser formulations adapted to specific crop/soil requirements
- information about the existing and upcoming regulatory framework (e.g. application, placing end-products on the market)
- information about the regional differences concerning the agricultural production and fertilisers application across the EU and CELAC
- insight for the development of own fertiliser production capacity (FERTIMANURE pilot plants)
- information about the logistics (easy storage and handling) related to the fertiliser production/application of BBFs/TMFs
- information about the field assessment of new types of fertilisers (e.g. BBFs, TMFs)
- demo workshops regarding fertilisers application and nutrient use efficiency - focused on the crop producers
- development of business plans for on-farm production of BBFs
- development of business models for farmers concerning on-farm production of BBFs

	**STAKEHOLDER GROUP 2 (SG2)**	**fertilisers processing industry**	1) fertiliser companies (manufacturers and sellers, both mineral and organic) 2) chemical industry 3) manure processors 4) public investors in bioeconomy 5) private investors in bioeconomy 6) technology providers 7) fertiliser association

Stakeholder group **fertiliser producers** (SG2) needs:

- effective & high-quality technologies for fertiliser production
- access to innovation processes and new technologies
- cost effective, homogeneous, high-quality, and crop-friendly fertilisers
- continuous monitoring of regulatory framework across the EU/CELAC
- investigation of new market opportunities
- development of new approaches and new products for existing agricultural producers
- novel manure valorisation alternatives
- continuous search of high-quality and cost-effective input streams for production of fertilisers
- seek solutions on transport, storage, and logistics of high-volume animal by-products (searching ways to reduce the volume)
- need for subsidies concerning the investment cost in centralised/on-farm production sites (private/public investors in bioeconomy)

FERTIMANURE offers to answer the needs of these stakeholder:

- information about the existing and upcoming regulatory framework (application, placing end-products on the market)
- information about the regional differences concerning the agricultural production and fertilisers application across the EU and CELAC
- an opportunity to visit/analyse development of 5 FERTIMANURE pilot plants for production of BBFs/TMFs (success stories)
- insight in the inflow/outflow characterization of end-products
- baseline for the international standardisation of BBFs/TMFs
- development of new technologies for BBFs/TMFs production
- customized fertiliser formulations adapted to specific crop/soil requirements
- collaboration with SMEs and SME-supporting organisations (clusters and SME associations) for the development of networks among end-users
- development of business plans for production of BBFs and TMFs
- development of innovative business models for fertiliser producers
- information about the field validation of novel fertilisers in different crops
- overview of techno – economic, environmental, and socio-economic assessment of end-products
- insight in the research on BBFs and TMFs potential market uptake and industrial exploitation

	**STAKEHOLDER GROUP 3 (SG3)**	**academia and research focused on nutrients recycling**	1) research institutions 2) EU subject related networks and clusters (agro - industry, sustainable chemistry) 3) EU R&D neighbouring projects and consortiums 4) nutrient recycling research community

Stakeholder group **academia and research focused on nutrients recycling** (SG3) needs:

- investigation of state-of-the-art nutrients recovery and reuse (technologies, models, approaches)
- applied research - development of concrete end-products (BBFs/TMFs) to meet the end-user requirements
- long-lasting and quality-focused international collaboration
- dissemination of research findings to the scientific community, end-users and public
- greater commercialisation of research findings and proper understanding of market's needs
- following up research (worldwide) focused on nutrients recycling and sustainable agricultural production (closing nutrient loops)
- new communication and dissemination channels between Consortiums/projects to increase efficiency of research and eliminate double work

FERTIMANURE offers to answer the following needs of these stakeholders:

- understanding animal manure flows across the EU and CELAC
- insight in the research of the BBFs and TMFs potential market uptake
- categorization of R&D EU and national funded projects on nutrients recycling and sustainable agricultural production
- provides information on the existing and upcoming regulatory framework (application, placing end-products on the market)
- information about the regional differences concerning the agricultural production and fertilisers application across the EU and CELAC
- an opportunity to visit/analyse development of 5 FERTIMANURE pilot plants for production of BBFs/TMFs (success stories)
- offers insight in the inflow/outflow characterization of end-products
- baseline for the international standardisation of BBFs/TMFs
- guidelines for an increased sustainability of the cross-sectorial livestock-agri-food- chemical value chains
- overview of quality and environmental impact assessment of end-products
- overview of techno – economic and socio-economic assessment of end-products
- overview of field assessments of novel fertilisers and its nutrients losses (BBFs, TMFs)
- development of business models for farmers concerning on-farm production of BBFs
- opportunity to publish research findings (newsletters, website, social media, workshops, etc.)
- presentation of work performed at the conferences dedicated to nutrients recycling
- chance to work with stakeholders from the private sector (livestock and crop producers, technology providers, etc.)

	**STAKEHOLDER GROUP 4 (SG4)**	**business and financial advisors**	1) business consultants 2) financial institutions 3) agricultural banks 4) funding agencies

Stakeholder group **business and financial advisors** (SG4) needs:

- reliable technical information on technology processes and restrictions
- reliable information on the market needs and trends
- technical information on the inflow/outflow characterization of BBFs/TMFs and technology behind
- reliable information on the economic background for BBFs/TMFs investments (OPEX, CAPEX, return of investment)
- information about the subsidies available for the investments (regional, national, EU level)
- up to date information on regulatory framework across the EU/CELAC
- awareness of regional differences in fertilisers production and application (EU/CELAC)

FERTIMANURE offers to answer the following needs of these stakeholders:

- information about the existing and upcoming regulatory framework (application, placing end-products on the market)
- an opportunity to visit/analyse development of 5 FERTIMANURE pilot plants for production of BBFs/TMFs (success stories)
- insight in the inflow/outflow characterization of BBFs/TMFs and technology behind
- baseline for the international standardisation of BBFs/TMFs
- collaboration with SMEs and SME-supporting organisations (clusters and SME associations) for the development of networks among end-users
- development of business plans for on-farm production of BBFs and centralised production of TMFs
- development of innovative business models for fertiliser producers
- overview of techno and socio – economic assessment of end-products
- insight in the research of the BBFs and TMFs potential market uptake
- guidelines for the industrial exploitation in EU/CELAC

	**STAKEHOLDER GROUP 5 (SG5)**	**policy makers & authorities**	1) ministries of agriculture 2) paying agencies for agriculture 3) agro-connected intermediaries established by government (extension service, LAGs) 4) local council 5) regional government 6) waterboards 7) standardization body 8) EU policy makers 9) CELAC policy makers

Stakeholder group **policy makers and authorities** (SG5) needs:

- understanding of BBFs/TMFs products and nutrients recovery and reuse technologies
- understanding of end-user (market) needs (livestock and crop producers, manure processors)
- comprehension of regional differences concerning agricultural production and fertilisers application across the EU and CELAC
- current trends in the EU on upcoming regulatory framework)
- current trends in the EU on subsidies systems)

FERTIMANURE offers to answer the following needs of these stakeholders:

- well-defined and standardised fertilisers designed to farmer needs
- environmentally safe fertilisers to support sustainable agricultural production
- provides information on the existing and upcoming regulatory framework (application, placing end-products on the market)
- information about the regional differences concerning the agricultural production and fertilisers application across the EU and CELAC
- development of business models for farmers concerning on-farm production of BBFs
- baseline for the international standardisation of BBFs/TMFs
- collaboration with SMEs and SME-supporting organisations (clusters and SME associations) for the development of networks among end-users
- overview of environmental impact assessments of end-products
- overview of field assessments of novel fertilisers and its nutrients losses (e.g. Nitrate directive)
- overview of socio-economic assessments of end-products
- insight in the potential market uptake of BBFs and TMFs
- guidelines for the industrial exploitation in EU/CELAC
- categorization of EU and national funded R&D projects on nutrients recovery and reuse, and sustainable agricultural production
- opportunities to work with stakeholders from the research and private sector (livestock and crop producers, technology providers, etc.)

	STAKEHOLDER GROUP 6 (SG6)	**public entities & general public**	1) non- governmental organisations 2) media 3) general public – rural communities

Stakeholder group **public entities** (SG6) needs:

- reliable technical information on technology processes and restrictions
- reliable information on the market needs and trends
- reliable information on the economic background for BBFs/TMFs investments (OPEX, CAPEX)
- information on subsidies available for the investments (regional, national, EU level)
- up to date information on regulatory framework across the EU/CELAC
- presentation of success stories and best available practices
- understanding basic principles of BBFs/TMFs and nutrients recovery and reuse technologies relevant for general public
- representative, positive, and factual information about the effect of new technologies/production plants on the community (to avoid NIMBY effect)

FERTIMANURE offers to answer the following needs of these stakeholders:

- information about novel and environmentally safe fertilisers that support sustainable agricultural production
- information on the existing and upcoming regulatory framework (application, placing end-products on the market)
- information about the regional differences concerning the agricultural production and fertilisers application across the EU and CELAC
- development of business models for farmers concerning on-farm production of BBFs
- participation at demo workshops regarding fertilisers application and nutrient use efficiency - focused on the crop producers
- an opportunity to visit/analyse development of 5 FERTIMANURE pilot plants for production of BBFs/TMFs (success stories)
- overview of environmental impact assessments of end-products
- insight in the potential market uptake of BBFs and TMFs
- guidelines for the industrial exploitation in EU/CELAC
- categorization of EU and national funded R&D projects on nutrients recovery and reuse, and sustainable agricultural production
- insight to the research findings made available for the general public (user-friendly approach, e.g. newsletters, website, social media, workshops, etc.)
- presentation of work performed at the conferences dedicated to nutrients recovery and reuse

6. Targeted actions

The stakeholder's engagement plan seeks to define a technically and culturally appropriate approach to consultation and disclosure. Concrete targeted actions that will occur within the FERTIMANURE project are listed below (Table 5).

Table 5 FERTIMANURE targeted actions for stakeholder engagement

Phase	Steps	Status	Partner responsible	Deadlines	
				task/activity	deadline
1st phase	**1. Stakeholders identification and classification**	done	WP6 (IPS)	Stakeholder groups identification	M12
	2. Stakeholders analysis	done	WP6 (IPS)	Stakeholder analysis (report)	M12
	3. Stakeholders mapping	done	WP6 (IPS)	Stakeholders 1st phase mapping (report)	M12
2nd phase	**4. Stakeholders prioritization**	in progress	WP6 (IPS)	Brainstorm sessions Briefing meetings with dedicated partners PTC updates to WP leader and project coordinator	M16 M22 M12 M16 M20 M13 M17 M21
	5. Stakeholders engagement strategy setup	baseline done, to be updated	WP6 (IPS)	Stakeholder engagement strategy – 1st version Stakeholder engagement strategy – 2nd phase (updated version)	M12 M24

7. Evaluation progress of engagement actions

Monitoring and evaluation is a process that helps to improve performance and achieve results. The objective with stakeholder engagement is to improve current and future management of engagement outputs, outcomes, and impacts. Each individual engagement will be monitored and evaluated, then aggregated and evaluated as a whole.

It is essential to keep record of each stakeholder meeting (brainstorm sessions) and the key outcomes or information derived from it. This way the project consortium will keep track of its contacts and build on them to deliver the most effective relationships with stakeholders.

Based on the feedback gathered and actions undertaken, it is important to:

- ☑ review the plan and reassess the effectiveness of the messages sent to stakeholders
- ☑ type of stakeholders and target audience to be reached
- ☑ the suitability of the experts delivering the message
- ☑ the channels of communication chosen, and
- ☑ the next steps planned

In line with this, the WP6 leader will quarterly organise sessions with dedicated consortium partners regarding the prioritisation list update.

Engagement processes are likely to involve a variety of people with different levels of expertise, confidence, and experience. When engaging it is important to address capacity or knowledge gaps. It is important to:

- ☑ **never assume common levels of knowledge** – everybody understands the issues at stake,
- ☑ **provide enough time** – time to understand and form opinions about the research and
- ☑ **report back to stakeholders** – participants should receive feedback on the research findings.

Stakeholders engagement and continuous evaluation of the process will support researchers in detecting the most prominent attitudes, as well as benefits and potential barriers that are crucial for the development and further progress of the FERTIMANURE project.

8. Stakeholder engagement and external communications

The messages that FERTIMANURE Consortium will distribute needs to be very clear, concise, and consistent. The messages need to be based on verified facts and figures. Arguments used should be technical, credible, representative, positive, factual, and coherent.

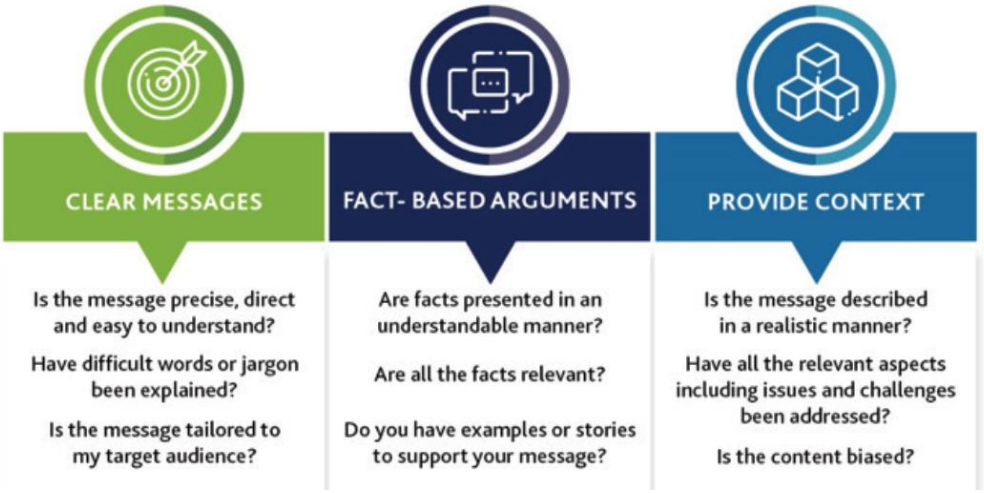

Figure 7 Key elements for the successful stakeholders' engagement

The engagement of stakeholder groups in the FERTIMANURE project is depicted in the Table 6. where a list of strategies is offered as well as an overview of who is responsible for the realization of the stakeholders´ engagement.

A basic overview of stakeholders´ engagement plan is listed in Table 6, while the full overview of information relevant for each of the stakeholders´ groups is depicted in the file "D 6.3. Inventory of stakeholder groups relevant for BBFs and market uptake" (.xls and .pdf file format).

Table 6 FERTIMANURE stakeholder engagement strategy

	Stakeholder group	Stakeholder name	Stakeholder engagement strategy	Persons responsible
	**STAKEHOLDER GROUP 1 (SG1)**	**Agricultural producers**	- Organisation of workshops/round table discussions, - Dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), - Visits to pilots and field demonstrations, - Setting out questionnaires on end-user preferences and market uptake	Leaders of WP 6/7/4/2 dedicated project partners from each EU/CELAC country
	**STAKEHOLDER GROUP 2 (SG2)**	**Fertilisers processing industry**	- Scientific papers published in high-impact peer reviewed international journals, - Participation in international conferences/workshops, - Webinars on specific project-related issues, - Organisation of brainstorm sessions, - Dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), - Visits to pilots and field trials	Leaders of WP 6/7/2 Dedicated project partners from each EU/CELAC country
	**STAKEHOLDER GROUP 3 (SG3)**	**Academia and research**	- Scientific papers published in high-impact peer reviewed international journals, - Active participation in international conferences and/or workshops, - Technical webinars on specific project-related issues	Dedicated project partners from each EU/CELAC country
	**STAKEHOLDER GROUP 4 (SG4)**	**Business and financial advisors**	- Specific articles in dedicated industrial or agricultural journals, international conferences / workshops, - Brainstorm sessions with matchmaking session, - Setting out questionnaire on BBFs and TMFs market uptake	Dedicated project partners from each EU/CELAC country Project coordinator Leader of WP 2
	**STAKEHOLDER GROUP 5 (SG5)**	**Policy makers & authorities**	- Participation in international conferences / workshops, - Organisation of specific webinars targeting policy makers, - Organisation of brainstorm sessions	Dedicated project partners from each EU/CELAC country Project coordinator Leader of WP 7
	**STAKEHOLDER GROUP 6 (SG6)**	**Public Entities and general public**	- Webinars on specific project-related issues, - Dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web) - Visits to pilots and field trials, - Conferences organization	Dedicated project partners from each EU/CELAC country Project coordinator Leader of WP 7

9. Stakeholders prioritization & engagement strategy setup

Second phase of the **FERTIMANURE Deliverable 6.3.** ***Inventory of stakeholder groups relevant for BBFs and market uptake*** includes Stakeholders prioritization and Stakeholders engagement strategy setup.

Stakeholders prioritization makes a clear and non-ambiguous dinstiction between stakeholders based on their << high or low >> position on the priority list. Stakeholders prioritization is a living document and prioritized stakeholder list will change over the time and according to the project development.

The stakeholder's engagement plan seeks to define a technically and culturally appropriate approach to consultation and disclosure. An engagement plan is the foundation for achieving stakeholders buy-in for the project.

In the 1st phase of the project, Stakeholders identification and classification were prepared and in the 2nd phase the list of identifying stakeholder groups has been updated in communication with the work package 7 leader and taking into account reviewer comments.

Compared to the 1st list, the changes are as follows: In SG1 (agricultural producers) agro associations and sustainable agriculture associations have been addded from SG6 (public entities & general public), in SG2 (fertilisers processing industry) fertiliser association has been addded from SG6 (public entities & general public), in SG5 (policy makers & authorities) standardization body, EU policy makers and CELAC policy maker have been added. Based on the above, in SG6 remained non-governmental organisations, media and general public – rural communities.

Table 7 The stakeholder groups identified for the FERTIMANURE project

	**STAKEHOLDER GROUP 1 (SG1)**	**agricultural producers**	1) livestock farmers 2) arable farmers, crop growers 3) agro SME´s 4) agro associations 5) sustainable agriculture associations
	**STAKEHOLDER GROUP 2 (SG2)**	**fertilisers processing industry**	1) Fertiliser companies (manufacturers and sellers, both mineral and organic) 2) chemical industry 3) manure processors 4) public investors in bioeconomy 5) private investors in bioeconomy 6) technology providers 7) fertiliser association
	**STAKEHOLDER GROUP 3 (SG3)**	**academia and research**	1) research institutions 2) EU subject related networks and clusters (agro - industry, sustainable chemistry) 3) EU R&D neighbouring projects and consortiums 4) nutrient recycling research community
	**STAKEHOLDER GROUP 4 (SG4)**	**business and financial advisors**	1) business consultants 2) financial institutions 3) agricultural banks 4) funding agencies
	**STAKEHOLDER GROUP 5 (SG5)**	**policy makers & authorities**	1) ministries of agriculture 2) paying agencies for agriculture 3) agro-connected intermediaries established by government (extension service, LAGs) 4) local council 5) regional government 6) waterboards 7) standardization body 8) EU policy makers 9) CELAC policy maker
	**STAKEHOLDER GROUP 6 (SG6)**	**public entities & general public**	1) non- governmental organisations 2) media 3) general public – rural communities

Choosing how to engage a stakeholder means choosing the appropriate participation level. The level of participation depends on what needs to be achieved with the targeted stakeholders (Bassan, Reymond, 2014).

Several aspects should be considered when developing the involvement strategy (Koanda, 2006):

- perception of involvement – indicates how involved stakeholders feel
- willingness to contribute to the project
- expected benefit from the project
- level of obligation which the stakeholder feels towards their responsibilities in the project
- people influencing the willingness of the stakeholder and extent of the peer pressure.

Four main participation levels can be distinguished:

Figure 8 Participation levels

INFORMATION: The objective is to enable the stakeholders to understand the situation, the different options and their implications. All the stakeholders need to be well informed in order to understand their role and the objectives of the project. For some stakeholders, who are not involved in the decision-making porcess, the involvement is limited to receiving information, which can be done through informative meetings, workshops, field visits, brainstorm sessions.

CONSULTATION: The objective is to obtain the stakeholders feedback on the situation, options, scenarios and/or decision. It allows interests, priorities, needs and concerns to be taken into account.

COLLABORATION: The objective is to work as a partner with the stakeholders.

EMPOWERMENT: The objective is to build the capacities of stakeholders so that they are able to make informed decisions.

Table 8 Stakeholder participation matrix

	Participation levels			
	Information	**Consultation**	**Collaboration**	**Empowerment**
Planning	all stakeholder groups	SG1, SG2	SG1, SG1, SG3	SG4, SG5
Implementation				
Monitoring & Evaluation				

To understand the stakeholders opinion about the ongoing changing business environment focused on bio-based value chains and products, 1st brainstorm sessions were organized in the next partners participating countries: Spain, France, Belgium, Argentina and Croatia. Remaining countries will organise their brainstorm sessions in the beggining of the 2022 (Germany, Italy and The Netherlands). 2nd brainstorm sessions will be organised in April (M28) and the results will be incorporated in the deliverable D6.3 in M30 when is deadline of the Task 6.2 Mapping stakeholder groups.

In order for the partners to organize a brainstorm session, a protocol was prepared. The protocol provides general infromation and guidelines related to the implementation of brainstorm sessions with end-users regarding the BBFs market uptake. Brainstorm session include defferent stakeholders and should go a step further in **catalysing the list of barriers and opportunities currently present at the market**. This is of crucial importance for the development of strong business plans that will maximize strengths and opportunities and on the other hand avoid treats and weaknesses that come from the bio-based/mineral fertilisers competition and/or within the new product development process.

The first brainstorm sessions were intended for stakeholder groups (SG1, SG2, SG4 and SG6) and the participation of at least 15-20 participants was required. Implementation steps for partners included the translation of the questionnaire regarding the market uptake, preparation of a database of stakeholders to contact, sharing the brainstorm session link on their social media (Facebook, LinkedIn, Twitter, etc.), preparation and modification of presentation materials, sending feedback to task leader (IPS).

The following communication channels have been selected:

- social media (e.g. Facebook, LinkedIn, Twitter)
- digital contacting (e.g. e-mail)
- direct contacting (e.g. phone calls, meeting, …)
- paper publications (e.g. agro-related newspapers)

Table 9 Brainstorm session overview by partners countries

COUNTRY/PARTNER	DATE	NUMBER OF PARTICIPANTS	STAKEHOLDER GROUP
FRANCE (APCA)	20.10.2021.	15	fertilisers processing and chemical industry, manure processors, technology providers and R&D centers, public entities & general public
ARGENTINA (INTA)	25.10.2021.	25	agricultural producers, fertilisers processing and chemical industry, manure processors, technology providers, public entities & general public
BELGIUM (ELO)	24.11.2021.		
BELGIUM (FERTILIZERS EUROPE)	29.10.2021.	16	fertiliser producers
SPAIN (UVIC)	01.12.2021.	20	agricultural producers, fertilisers processing and chemical industry, manure processors, business and financial advisors, public entities & general public
CROATIA (IPS)	01.12.2021.	27	agricultural producers, public entities & general public

In **France**, APCA organised their 1st brainstorm session on 20th October 2021 through online webinar. Main participated stakeholders were from fertilisers processing and chemistry industry (fertiliser companies, manure processors and fertiliser producer union), technology providers and R&D centers, project officers, farm advisors and policy makers.

Partners from **Argentina** (INTA) organised their brainstorm session through live event in which participated 25 stakeholders (agricultural producers, fertiliser processing industry and manure processors, technology providers and business and financial advisors).

In **Belgium** were organised 2 brainstorm sessions from two FERTIMANURE partners (FERTILIZERS EUROPE, ELO).

Project coordinator UVIC from **Spain** organised their brainstorm session on 1st December 2021 through live event in which participated 20 stakeholders (agricultural producers, fertilisers processing industry, manure processors, public and private investors in bioeconomy and business and financial advisors.

Partners from **Croatia** (IPS) organised their brainstorm sessions through online workshop and 27 stakeholders participated (mainly agricultural producers).

FERTIMANURE stakeholder engagement strategy was prepared in the first phase of the document (Table 6). Engagement strategy is related to communication and dissemination activities (WP7). According to Communication and Dissemination Plan, communication channels are:

- ✓ branding (logo)
- ✓ website
- ✓ social networks (LinkedIn, Twitter, Facebook, YouTube)
- ✓ leaflet, poster, roll-up
- ✓ video
- ✓ newsletter
- ✓ attendance to the main events and conferences
- ✓ webinars
- ✓ large scale events

Effective stakeholder engagement will help to understand the perspective of other actors and support in building a strong working relationship with stakeholders. More engaged stakeholders will provide access to insights, knowledge and resources. With well contribution from stakeholders on key matters, project partners will be able to make more well-informed decisions and plan accordingly.

Three main tasks need to be done in order for the engagement strategy to be established (Figure 9).

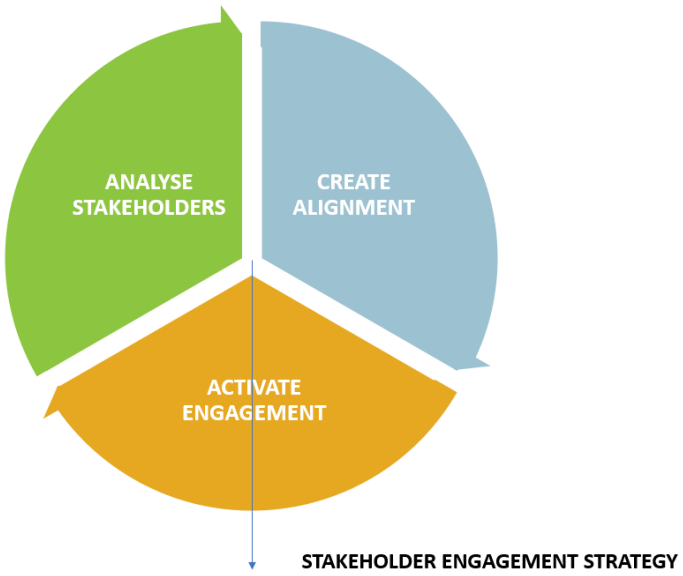

Figure 9 Stakeholder engagement strategy

10. Discussion

The Inventory of stakeholder groups is a strategic document for detecting different stakeholders (research institutions, external sector related parties, agricultural producers, business chambers etc.) and more importantly analysing the effect that these stakeholders have on the FERTIMANURE project. This deliverable map and describes key actors and interested stakeholders whose support and involvement will ensure the success and sustainability of the project.

Within the Deliverable, different stakeholders were identified and classified. Six main groups of stakeholders were created, including agricultural producers (e.g. crop farmers, livestock farmers, greenhouse horticulture, etc.), fertilisers processing industry (mineral and organic), academia and research focused on the nutrient recycling, business and financial advisors (e.g. agricultural banks), policy makers & authorities, and public entities & general public (e.g. farmer organisations and NGOs). Each of the categories mentioned has been further elaborated and classified.

11. Conclusions

Stakeholders are crucial for the successful implementation and dissemination of the project findings. Therefore, **stakeholders´ identification and analysis** is an iterative process that will continue throughout the project lifetime. The FERTIMANURE Consortium will collaborate and engage with numerous and diverse stakeholders and the input received will allow better understanding of the real sector challenges and objectives, concrete innovation implementation and sovereign market uptake of end-products (BBFs and TMFs).

Mapping stakeholder groups is a visual exercise and an analysis tool that determines which stakeholders are the most useful to engage with. Visualisation helps to detect and fully understand the often-complex interplay of issues and relationships.

First stakeholder analysis has been performed by doing a desk research and evaluating stakeholders' activities, interests in agriculture and nutrients recovery and reuse, new technologies, innovation in general, sustainable production and so on. Based on the research performed, the list of **6 paramount stakeholder groups** has been set up including: (1) agriculture producers, (2) fertilisers processing industry, (3) academia and research, (4) business and financial advisors, (5) policy makers and authorities and (vi) public entities and general public. Each of the categories mentioned has been further elaborated and classified.

Stakeholder group 1 - **agricultural producers** includes livestock farmers and crop growers, agro SME´s, agro associations as well as sustainable agriculture associations. **Stakeholder group 2** – **fertilisers processing industry** includes fertiliser companies, chemical industry, manure processors, public and private investors in bioeconomy, technology providers and fertiliser association. **Stakeholder group 3** - **academia and research** involves research institutions, EU subject related networks and clusters, EU R&D neighbouring projects and nutrient recycling research community. **Stakeholder group 4** - **business and financial advisors** includes business consultants, financial institutions, agricultural banks and funding agencies. **Stakeholder group 5** - **policy makers & authorities** refers to ministries of agriculture, paying agencies for agriculture, agro-connected intermediaries established by government, as well as local council and regional government, waterboards, standardization body, EU and CELAC policy makers. **Stakeholder group 6** – **public entities and general public** includes non-governmental organisations, media and general public – rural communities.

Stakeholders engagement and continuous evaluation of the process will support researchers in detecting the most prominent attitudes, as well as benefits and potential barriers that are crucial for the development and further progress of the FERTIMANURE project.

The Inventory of stakeholder groups is thus a living document that will be continuously updated to incorporate perspectives, priorities and questions generated by stakeholders over the course of the time.

12. Recommendations

Stakeholders are crucial for the successful implementation and dissemination of the project findings.

Stakeholders engagement and continuous evaluation of the process will support researchers in detecting the most prominent attitudes, as well as benefits and potential barriers that are crucial for the development and further progress of the FERTIMANURE project.

It is essential to keep record of each stakeholder meeting (brainstorm sessions) and the key outcomes or information derived from it. This way the project consortium will keep track of its contacts and build on them to deliver the most effective relationships with stakeholders.

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FERTIMANURE

INNOVATIVE NUTRIENT RECOVERY FROM SECONDARY SOURCES-PRODUCTION OF HIGH-ADDED VALUE FERTILISERS FROM ANIMAL MANURE

PROJECT COORDINATOR

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Leitat (Spain)
GreenWin (Belgium)
European Landowners Organisation (Belgium)
IPS Konzalting (Croatia)
Fraunhofer (Germany)
Dorset Green Machines (The Netherlands)
Prinsen Dairy Company (The Netherlands)
French Chamber of Agriculture (France)
Cooperativa Plana de Vic (Spain)
AlgaEnergy S.A. (Spain)
Fertinagro Biotech (Spain)
RITTMO Agroenvironnement (France)
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Departament d'Agricultura, Ramaderia, Pesca I Alimentació (Spain)
Fertilizers Europe (Belgium)
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PROJECT WEBSITE:

https://www.fertimanure.eu

Brief project summary

The mission of the FERTIMANURE project is to provide innovative solutions (technology, end-products, and business models) that solve real issues, ie the manure challenge, and help farmers with the challenges that they are currently facing. FERTIMANURE will develop, integrate, test and validate innovative nutrient management strategies so as to efficiently recover and reuse nutrients and other products with agronomic value from manure, to ultimately obtain reliable and safe fertilisers that can compete in the EU fertiliser market.

The FERTIMANURE project will cover both technological and nutrient management approaches. The technological side will be addressed with the implementation of 5 innovative & integrated on-farm experimental pilots for nutrient recovery in the most relevant European countries in terms of livestock production (Spain, France, Germany, Belgium, The Netherlands), whereas nutrient management will be addressed through 3 different strategies adapted to mixed and specialised farming systems:

Strategy #1 with on-farm production and use of bio-based fertilisers (BBF)(1) , **Strategy #2** with on-farm BBF production and centralised tailor-made fertilisers (TMF)(2) production, and **Strategy #3** with on-farm TMF production and use.

Definition of Bio-based fertilisers (BBFs): *Bio-based fertilisers (BBFs) are fertilising products or a component to be used in the production of (Tailor-Made) Fertilisers that are derived* ***from biomass-related resources.***

The BBFs of FERTIMANURE are "obtained through a ***physical, thermal/thermo-chemical, chemical, and/or biological processes for the treatment*** *of manure or digestate that result into a change in composition due to a change in concentration of nutrients and their ratios compared to the input material(s) in order to get better marketable products providing farmers with nutrients of sufficient quality".*

However, just separation of manure in a solid and liquid fraction (as first processing step) is excluded. These products are not conceived as a BBF, although they are valuable sources to supply nutrients on agricultural land.

LIST OF BBFs Produced in FERTIMANURE

Number	BBF-code	BBF product description
1	NL-AS	Ammonium sulphate solution
2	NL-LK	Liquid K-fertiliser
3	NL-SC	Soil conditioner
4	NL-WP	Wet organic P-rich fertiliser
5	NL-DP	*90% dried organic P rich fertiliser (calc)*
6	ES-NC	Nutrient-rich concentrate
7	ES-DSC	Bio-dried solid fraction
8	ES-PA	Phosphorous (ashes)
9	ES-AM	Ammonium salts
10	ES-AA	AA-based biostimulants
11	DE-AS	Ammonium sulphate solution (liquid)
12	DE-BC	Biochar (solid)
13	DE-AP	Ammonium phosphate on perlite (solid)
14	BE-AN	Ammonium nitrate
15	BE-AS	Ammonium sulphate
16	BE-AW	Ammonium water
17	FR-BC	Biochar
18*	FR-AS	Ammonium sulphate
19*	FR-AN	Ammonium nitrate
20	FR-LK	Liquid K-fertiliser

*Ammoninium sulphate/nitrate has been split into two BBFs

Definition of Tailor-Made Fertilisers (TMFs): *A tailor-made fertiliser (TMF) is a customized fertiliser that meets with the nutrient requirements of a specific crop by taking into account the soil type, soil fertility status, and growing conditions and fertilisation practises.*

The TMFs obtained in FERTIMANURE are produced from BBFs (produced from manure or digestate and/or other recovered fertilising products that are available) and/or mineral fertilisers (MF) (and/or biostimulants).

Fully crop specific TMFs can be defined and centrally produced assuming e.g. a sufficient nutrient status of a soil type and no additional fertilisation practice.

However, on farm level the soil-crop requirements will be different due to another nutrient status of the soil and the fact that often manure/digestate will be applied on the fields which has to be taken into account as nutrient supplier. Consequently, the composition of the TMF (combination of BBF and MF) that will be used by the farmer can differ from the one produced in a centralised way.

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INVENTORY OF STAKEHOLDER GROUPS RELEVANT FOR BBFs AND MARKET UPTAKE

STAKEHOLDER GROUP NO.	ACRONYM	STAKEHOLDER DESCRIPTION	CATEGORIES	IMPACT	INFLUENCE	What is SG´s interest in the project?	How could SG contribute to the project?	How could SG block the project?	STRATEGY for engaging SG
STAKEHOLDER GROUP 1	SG1	agriculture producers	**livestock farmers**	high	high	new farm activities, entering into a new market (fertilisers), reducing exploitation costs	production and/or application of new fertilisers (BBF, TMF), brainstorming on new business models, provide practical experience to avoid unnecessary mistakes	not accepting the idea of production and/or application of BBFs/TMFs, not accepting new business models, not being genuine about the end-users, preferences for the application of BBFs and TMFs	organisation of workshops/round table discussions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials, setting out questionnaires on end-users preferences and market uptake
			arable farmers, crop growers	high	high	new farm activities, entering into a new market (fertilisers), reducing exploitation costs, analysing data from field experiments	production and/or application of new fertilisers (BBF, TMF), brainstorming on new business models, provide practical experience to avoid unnecessary mistakes	not accepting the application of BBFs/TMFs, not convinced about benefits of BBFs/ TMFs, not accepting new business models, not being genuine about the end-users preferences for the application of BBFs and TMFs	organisation of workshops/round table discussions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials, setting out questionnaire on end-users preferences and market uptake
			horticulture growers	high	high	new farm activities, entering into a new market (fertilisers), reducing exploitation costs, analysing data from field experiments	production and/or application of new fertilisers (BBF, TMF), brainstorming on new business models, provide practical experience to avoid unnecessary mistakes	not accepting the application of BBFs/TMFs, not convinced about benefits of BBFs/ TMFs, not accepting new business models, not being genuine about the end-users preferences for the application of BBFs and TMFs	organisation of workshops/round table discussions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials, setting out questionnaire on end-users preferences and market uptake
			agro associations	medium	medium	analysing new business opportunities, providing practical input for the development of business plans/models, analysing data from pilot plants and field experiments, analysing new added value for the organic by-products produced on a farm level, awareness of new technologies across the EU/CELAC	acceptance and application of new technologies and fertilisers, promotion of new technologies among members of the association, participation as an intermediary in socio-technical questionnaires, active and practical participation for the drafting of regulatory framework	not accepting the application of BBFs and TMFs	webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
			sustainable agriculture associations	medium	medium	analysing new business opportunities, providing practical input for the development of business plans/models, analysing data from pilot plants and field experiments, analysing new added value for the organic by-products produced on a farm level, awareness of new technologies across the EU/CELAC	acceptance and application of new technologies and fertilisers, promotion among members of the association, feedback on results of the field validation of novel fertilisers in different crops (challenges, benefits)	not accepting the application of BBFs and TMFs, no promotion	webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
			agro SME´s	high	high	new farm activities, entering into a new market (fertilisers), reducing exploitation costs, analysing data from field experiments	production and/or application of new fertilisers (BBF, TMF), brainstorming on new business models, provide practical experience to avoid unnecessary mistakes	not accepting the application of BBFs/TMFs, not convinced about benefits of BBFs/ TMFs, not accepting new business models, not being genuine about the end-users preferences for the application of BBFs and TMFs	organisation of workshops/round table discussions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials, setting out questionnaire on end-users preferences and market uptake

	**STAKEHOLDER GROUP 2**	**SG2**	**fertilisers processing industry**	**fertiliser companies**	high	high	new business opportunities (e.g. on-farm TMF production), new range of products (BBFs, TMFs)	acceptance and application of new technologies and fertilisers, active participation in the development of new technologies (via pilots), active participation in the development of business models	not accepting new market needs for the development of new types of fertilisers, not providing information/insight on technologies/products during brainstorm sessions	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				chemical industry	medium	medium	involvement in new innovative segments of fertiliser production, adjusting business towards new market requirements - new business opportunities	acceptance and application of new technologies and fertilisers, active participation in the development of new technologies (via pilots), active participation in the development of business models	not accepting new market needs for the development of new types of fertilisers, not providing information/insight on technologies/products during brainstorm sessions, not accepting benefits of BBFs/TMFs	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				manure processors	high	high	involvement in new innovative segments of fertiliser production, adjusting business towards new market requirements - new business opportunities, opportunity for business cooperation, providing an added value for manure and other organic compounds on the farm	acceptance and application of new technologies and fertilisers, active participation in the development of new technologies (via pilots), active participation in the development of business models, support in analysing manure streams and life cycle	not accepting benefits of BBFs/TMFs, not accepting new market needs for the development of new types of fertilisers, not providing information/insight on technologies/products during brainstorm sessions, not being genuine about the end-users, preferences for the application of BBFs and TMFs	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				public investors in bioeconomy	high	medium	the opportunity to invest in new innovative technologies, new business opportunities, supporting data business models	showing interest for new technologies development, investment in new innovative technologies and fertiliser production processes, dissemination of project results, providing feedback on stakeholders interest	low interest or disinterest in investing in new technologies, not convinced about benefits of BBFs/ TMFs, lack of capital for new innovative investments, lack of understanding of new market trends and market needs	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				private investors in bioeconomy	high	medium	new business opportunities and business cooperation, participation in the development of new technologies, analysing data from pilots	showing interest for new technologies development, investment in new innovative technologies and fertiliser production processes, dissemination of project results, providing feedback on stakeholders interest	low interest or disinterest in investing in new technologies, not convinced about benefits of BBFs/ TMFs, lack of capital for new innovative investments, lack of understanding of new market trends and market needs	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				fertiliser associations	high	high	analysing new business opportunities, providing practical input for the development of business plans/models, analysing data from pilot plants	acceptance and application of new technologies and fertilisers, promotion of new technologies among members of the association, participation as an intermediary in socio-technical questionnaires, active and practical participation for the drafting of regulatory framework	refusal of application of new fertilisers	webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				technology providers	medium	medium	new business opportunities and business cooperation, participation in the development of new technologies, analysing data from pilots	acceptance and application of new technologies and fertilisers, active participation in the development of new technologies (via pilots), active participation in the development of business models, support in analysing manure streams and life cycle	low interest or disinterest in investing in new technologies, not convinced about benefits of BBFs/ TMFs, lack of capital for new innovative investments, lack of understanding of new market trends and market needs	scientific papers published in high-impact peer reviewed international journals, participation in international conferences/workshops, webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials

	**STAKEHOLDER GROUP 3**	**SG3**	**academia and research**	**research institutions**	medium	medium	development of new projects/proposals, participating in new research findings concerning BBFs/TMFs/market uptake on these products, international collaboration, opportunity to work with a variety of stakeholders across the EU and CELAC, analysing data from field trials/pilots	international cooperation, follow-up of the research findings, follow-up the progress with pilots and field trials, establishing new communication and dissemination channels between Consortiums, existing knowledge to overcome challenges related to fertilisers standardisation process	lack of budget for comprehensive research, lack of experts to conduct and follow-up the research, competition among different consortiums and projects, lack of data sharing within the project consortium, lack of data sharing outside the project consortium	scientific papers published in high-impact peer reviewed international journals, active participation in international conferences/workshops, technical webinars on specific project-related issues
				EU subject related networks and clusters (agro-industry, sustainable chemistry)	medium	medium	development of new projects/proposals, participating in the analysis of BBFs and TMFs market uptake, international collaboration, opportunity to work with a variety of stakeholders (including other networks/clusters) across the EU and CELAC	involvement in further research, encouraging the use of BBFs and TMFs, active dissemination of project findings, overview of existing nutrient recovery initiatives and research based projects across the EU and CELAC	lack of interest in research and insufficient promotion of the benefits of new fertilisers	scientific papers published in high-impact peer reviewed international journals, active participation in international conferences/workshops, technical webinars on specific project-related issues
				EU R&D neighbouring projects and consortiums	medium	medium	development of new projects/proposals, participating in the analysis of BBFs and TMFs market uptake, international collaboration, opportunity to work with a variety of stakeholders (including other networks/clusters) across the EU and CELAC	involvement in further research, encouraging the use of BBFs and TMFs, active dissemination of project findings, overview of existing nutrient recovery initiatives and research based projects across the EU and CELAC	lack of interest in research and insufficient promotion of the benefits of new fertilisers	scientific papers published in high-impact peer reviewed international journals, active participation in international conferences/workshops, technical webinars on specific project-related issues
				nutrient recycling research community	high	medium	development of new projects/proposals, participating in new research findings concerning BBFs/TMFs/market uptake on these products, international collaboration, opportunity to work with a variety of stakeholders across the EU and CELAC	involvement in further research, encouraging the use of BBFs and TMFs, active dissemination of project findings, overview of existing nutrient recovery initiatives and research based projects across the EU and CELAC	lack of interest in research and insufficient promotion of the benefits of new fertilisers	scientific papers published in high-impact peer reviewed international journals, active participation in international conferences/workshops, technical webinars on specific project-related issues
	**STAKEHOLDER GROUP 4**	**SG4**	**business and financial advisors**	**business consultants**	low	medium	analysing new business opportunities, providing practical input for the development of business plans/models, analysing data from pilot plants analysing regulatory framework	participation as an intermediary in socio-technical questionnaires, collaboration with SMEs and clusters development of business plans and delivery of reliable information for the development of business models	disinterest in new business models development	specific articles in dedicated industrial or agricultural journals, international conferences/workshops, brainstorm sessions with matchmaking session, setting out questionnaire on BBFs and TMFs market uptake
				financial institutions	low	high	analysing new business opportunities, analysing regulatory framework that will affect market trends understanding of technology basis	acceptance and application of new technologies and fertilisers, economic understanding of new business models related to BBFs and TMFs	not accepting the application of BBFs and TMFs	specific articles in dedicated industrial or agricultural journals, international conferences/workshops, brainstorm sessions with matchmaking session, setting out questionnaire on BBFs and TMFs market uptake
				agricultural banks	low	high	analysing new business opportunities, analysing regulatory framework that will affect market trends understanding of technology basis	acceptance and application of new technologies and fertilisers, economic understanding of new business models related to BBFs and TMFs	not accepting the application of BBFs and TMFs	specific articles in dedicated industrial or agricultural journals, international conferences/workshops, brainstorm sessions with matchmaking session, setting out questionnaire on BBFs and TMFs market uptake
				funding agencies	low	high	analysing new business opportunities, analysing regulatory framework that will affect market trends understanding of technology basis	acceptance and application of new technologies and fertilisers, economic understanding of new business models related to BBFs and TMFs	not accepting the application of BBFs and TMFs	specific articles in dedicated industrial or agricultural journals, international conferences/workshops, brainstorm sessions with matchmaking session, setting out questionnaire on BBFs and TMFs market uptake

	STAKEHOLDER GROUP 5	**SG5**	**policy makers & authorities**	**ministries of agriculture**	low	high	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, analysis of business models to potentialy support by initiatives, opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC), analysing data from pilots/field trials	delivery of data related to agro- and fertilising sector, modification/development of legal framework for BBF/TMF, increased funding for further R&D, subsidies to farmers - an investment cost, subsidies to farmers to reduce operational costs, fertiliser value testing and validation procedures established, certification guidelines created and implemented, dissemination of project findings, presenting "success stories", participation as an intermediary in socio-technical questionnaires	legislative framework that prevents the sale of new fertilisers, reducing funding for new research projects, reducing subsidies	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of brainstorm sessions
				paying agencies in agricultural sector	low	medium	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, analysis of business models to potentialy support by initiatives, opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC)	subsidies to farmers - an investment cost, subsidies to farmers to reduce operational costs dissemination of project findings, presenting "success stories"	reducing subsidies of new management and spreading equipment	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				agro - connected intermediaries established by government (extension service, LAGs)	medium	medium	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, international collaboration	dissemination of project findings, presenting "success stories", participation as an intermediary in socio-technical questionnaires	insufficient opportunity to introduce new fertilisers and farm application technologies (lack of tenders)	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				local council	low	low	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, international collaboration	participation as an intermediary in socio-technical questionnaires, subsidies to farmers to reduce costs, dissemination of project findings, presenting "success stories"	insufficient opportunity to introduce new fertilisers and farm application technologies (lack of tenders), non-acceptance of investment in new fertilisers	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				regional government	low	medium	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, analysis of business models to potentialy support by initiatives, opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC) and/or regions	participation as an intermediary in socio-technical questionnaires, subsidies to farmers to reduce costs, dissemination of project findings, presenting "success stories"	insufficient opportunity to introduce new fertilisers and farm application technologies (lack of tenders), non-acceptance of investment in new fertilisers	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				waterboards	low	low	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, international collaboration	participation as an intermediary in socio-technical questionnaires, dissemination of project findings, presenting "success stories"	non-acceptance of investment in new fertilisers	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				standardization body	medium	medium	opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC), opportunity to get an insight into the needs of the market and farmers as fertiliser producers, international collaboration	participation as an intermediary in socio-technical questionnaires	legislative framework that prevents the sale of new fertilisers, reducing funding for new research projects, reducing subsidies	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of large scale event
				EU policy makers	low	high	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, analysis of business models to potentialy support by initiatives, opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC), analysing data from pilots/field trials	delivery of data related to agro- and fertilising sector, modification/development of legal framework for BBF/TMF, increased funding for further R&D, subsidies to farmers - an investment cost, subsidies to farmers to reduce operational costs, fertiliser value testing and validation procedures established, certification guidelines created and implemented	legislative framework that prevents the sale of new fertilisers, reducing funding for new research projects, reducing subsidies	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of brainstorm sessions

				CELAC policy maker	low	high	opportunity to get an insight into the needs of the market and farmers as fertiliser producers, analysis of business models to potentialy support by initiatives, opportunity to exchange valuable information on fertilisers in other countries (EU, CELAC), analysing data from pilots/field trials	delivery of data related to agro- and fertilising sector, modification/development of legal framework for BBF/TMF, increased funding for further R&D, subsidies to farmers - an investment cost, subsidies to farmers to reduce operational costs, fertiliser value testing and validation procedures established, certification guidelines created and implemented	legislative framework that prevents the sale of new fertilisers, reducing funding for new research projects, reducing subsidies	participation in international conferences/workshops, organisation of specific webinars targeting policy makers, organisation of brainstorm sessions
	STAKEHOLDER GROUP 6	**SG6**	**public entities & general public**	**non-governmental organisations**	medium	medium	analysing new business opportunities, providing practical input for the development of business plans/models, analysing data from pilot plants and field experiments, analysing new added value for the organic by-products produced on a farm level, awareness of new technologies across the EU/CELAC	acceptance and application of new technologies and fertilisers, promotion among members of the association, feedback on results of the field validation of novel fertilisers in different crops (challenges, benefits)	not accepting the application of BBFs and TMFs, no promotion	webinars on specific project-related issues, organisation of brainstorm sessions, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials
				media	low	medium	getting reliable and state-of-the-art information on new technologies for the production of BBFs/TMFs, following up research findings on social acceptance and market uptake of new products, following up researcher´s requests for legislation modifications	promotion of project results, informing public entities about the project and its objectives, informing stakeholders on the research findings, share of success stories in different communication channels	insufficient interest in presenting the project	webinars on specific project-related issues, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web), visits to pilots and field trials, conferences organization
				general public - rural communities	medium	medium	getting reliable information on new technologies for nutrients recovery, getting an information on new types of products to be found on the market, understanding the effect of nutrient recovery business sector on jobs and economy development	open-mind approach to new technologies for the production of BBFs and TMFs showing interest in success stories	the community's disinterest in adopting and learning something new and innovative	specific articles in dedicated industrial or agricultural journals, dissemination of project results in a user-friendly way and on a regular base (social media, newsletter, web)