



Stakeholder Landscape Analysis

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Summary

Who are the most relevant and important stakeholders for eLTER? What are their interests, relations and influence on the process of establishment of the eLTER RI? What are the stakeholders' expectations and needs of information, consultation, participation and role in the project and further on in the establishment of eLTER RI?

In order to map and navigate the Stakeholders' Landscape a clear answer to the above questions is needed. These answers are at the base of stakeholder engagement, and many of them feed directly into eLTER's Communication and Marketing Strategy (D7.2). The eLTER PPP project objectives require good understanding of the stakeholder landscape and how this can be turned into useful and actionable knowledge across the multitude of activities in the eLTER ESFRI process.

Further on, we envisage that the detailed knowledge of stakeholders through their personification would be integrated into a stakeholder engagement process and a contact management system. Good understanding and proper management of stakeholder relationships are key aspects of the sustainability of the eLTER RI.

An important step in the process of "internalising" the stakeholder engagement work is to agree on the purpose of engagement and its necessity (why), what outcomes are aimed for (what), and the scope and context of the engagement (who, how). Under WP7, Task 7.1 of the eLTER PPP project a comprehensive stakeholder assessment was undertaken, which comprised several steps: 1) initial mapping of stakeholder categories, 2) analysis and prioritisation of stakeholder relationships within each category, 3) inventory of existing stakeholder contacts and communication channels. This process is summarized in Figure 1 (note the two planets symbolize the two key project meetings Venus and Jupiter, at which the stakeholder work was presented to the eLTER community). The ultimate goal of this task was elaborating the basis for a coherent stakeholder engagement strategy and the integration of coordinated approaches and actions across the eLTER PPP and PLUS work packages and tasks.

Process

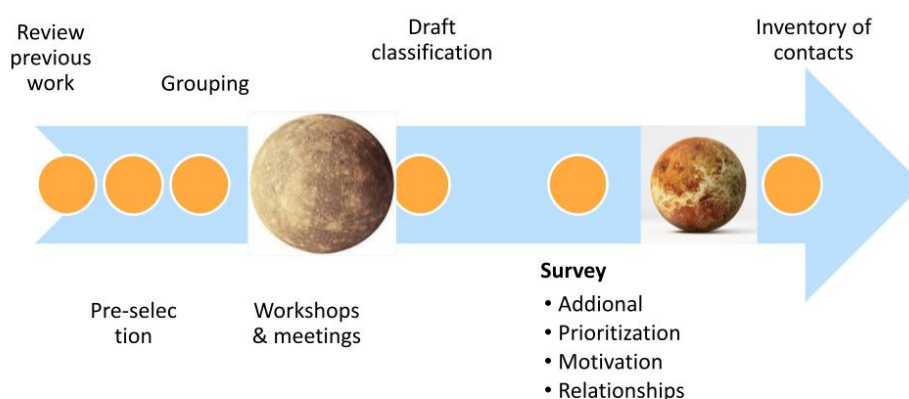


Figure 1: Steps of stakeholder assessment in Task 7.1 during 2020 and 2021.

Options for main stakeholder categories and groups were iteratively discussed on several occasions within the eLTER projects and across activities, which explicitly relate to eLTER RI users and stakeholders. This leads to the following Stakeholder Categories for the eLTER RI:

- Researchers and science stakeholders
- Research and Research Infrastructure funders
- Peers in environmental research and observation
- Internal stakeholders
- Government and policy decision-makers
- Business and industry
- Civil society and interested members of the public

As main activity and achievement of the PPP Task 7.1 consensus was achieved in April 2021. The eLTER RI Stakeholder Categories and Stakeholder Groups were rolled out by the eLTER Overall Coordination and integrated into relevant strategies and plans, such as the eLTER RI Strategic Plan (eLTER PPP D1.1), the eLTER Communication strategy, the eLTER Services Portfolio (eLTER PPP D5.1), the Governance Strategy (eLTER PPP 2.1 and 2.2), the eLTER PPP D1.3 (European and global embedding), the eLTER PLUS D2.1 (Analysis of eLTER's overall environment) and others.

1. Starting point for the stakeholder mapping

1.1 Previous work

Different elements of stakeholder analysis and engagement planning were done in past eLTER projects. Here we list and summarise the most relevant of these.

eLTER H2020 Project¹:

D5.1 Knowledge Exchange Strategy (2015- 2019)

The Strategy aims, i.a. „to engage with stakeholders over relevant issues” and thus elaborate the definition of target audiences, key messages, knowledge needs, communication channels. On this basis a Plan of Communication activities for the project was prepared.

D5.3: Best practices in stakeholder engagement

A study focusing on understanding the context, challenges and opportunities arising from the interaction between societal stakeholders and researchers. It resulted in a *Best Practice Guide* for site managers and national network coordinators, hence at local, sub-national and national levels particularly related to socio-ecological research methods. This previous work did not take into account the decisive stakeholder groups for the establishment of the pan-European Research Infrastructure. Therefore, in order to complement this work, we focus on the stakeholder engagement process by the eLTER RI and stakeholders at the European level as primary targets.

In the ESFRI application (2017):

- “integrative socio-ecological research is multi- & trans-disciplinary and (potentially) stakeholder-driven” => *stakeholders participate and shape research.*
- “Cross-disciplinary research, including the involvement of stakeholders as sources of professional and local knowledge” => *stakeholders receive & provide knowledge*
- Failing to engage stakeholders was described as a “moderate risk” for eLTER RI.
- The following elements of a business plan with relevance to stakeholder engagement were developed:
 - Definition of user groups and modes of access to eLTER infrastructures;
 - Quantification of services offered and funding models.

¹ H2020-funded project, GA: 654359, INFRAIA call 2014-2015

In the eLTER PPP and Plus project applications (2019): See Figure 2

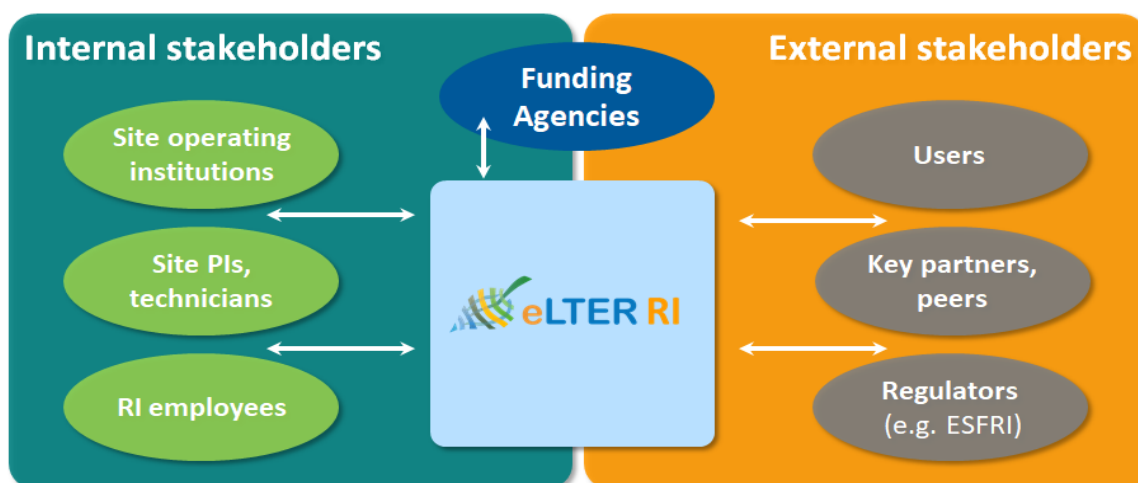


Figure 2: The key eLTER RI internal and external stakeholder groups as represented in the eLTER PPP project proposal.

The stakeholder work here is particularly pertinent for the preparatory phase of the RI establishment and the emphasis may change when eLTER RI moves into the operational phase. Even in the preparation and establishment we suggest a staged process with moving priorities.

2. Objectives of the Stakeholder Landscape Analysis

An important step in the process of “internalising” the stakeholder engagement work is to agree on the purpose of engagement and its necessity (why), what outcomes are aimed for (what), and the scope and context of the engagement (who, how). Applied across the full range of stakeholders, such assessment helps to develop consistent understanding of the objectives and align the approach among the relevant members and eLTER activities.

2.1 Stakeholder identification

Stakeholder identification aims...

1. To further specify the stakeholders of eLTER RI by transforming the current overview/grouping into "functional clusters", i.e. clusters of stakeholders, that can help streamlining and focusing/specifying the PLUS/PPP interactions with them.
2. To help define in detail the target audiences and key messages for the overarching communication and marketing strategy of eLTER.
3. To identify the needs for stakeholder involvement in the eLTER ESFRI process.
4. To hear, to learn, to consult, to inform and to influence stakeholders.

2.2 Relation of the Stakeholder Landscape Analysis to other eLTER RI, eLTER PPP and eLTER PLUS objectives

The results of the stakeholder analysis feed into and provide the structure of further eLTER processes:

1. Communication and Dissemination Strategy (eLTER PPP WP7, Tasks 7.1, 7.2 and 7.4)
2. Services portfolio development (WP5, Task 5.1)
3. Governance and management processes (eLTER PPP WP2, Tasks 2.1 and 2.2)
4. Business planning (eLTER PPP WP4, Task 4.3)
5. Stakeholder landscape screening (eLTER PLUS WP2 Task 1)

The eLTER PPP is a preparatory project for the further establishment of eLTER RI with one of its strategic goals being **Constant servicing of stakeholders in response to emerging research challenges**: To further develop and improve services, management and governance structures according to consultations with scientific, civil society, policy and business stakeholders and horizon scanning.

The PPP project has the following **specific objectives** linked to stakeholders:

- “2) plan, consolidate with shareholders and start to implement the effective governance and management structures for eLTER RI on European level;*
- ...
- 3) coordinate a smooth transition from preparation into operations by establishing a legal entity to support the eLTER RI together with relevant stakeholders, and by clearly identifying risks and risk reduction measures;*
- ...
- 7) Develop and set up communication, dissemination and marketing structures suited for seamless continuation in eLTER RI, and engaging the eLTER scientific user community and other user groups.”*

2.3 Relevant eLTER governance structures which include or integrate stakeholders

The following bodies are important platforms for engagement and collaboration with decisive internal and external stakeholders, for which specific activities are planned under the corresponding work packages:

- **The eLTER Interim Council** is the governance structure foreseen to enable the active involvement of stakeholders in decision making and dialogue. The so-called *Shareholders* are an already existing governance structure for the preparatory phase, predecessor of the Assembly of Members of the eLTER legal entity ERIC (European Research Infrastructure Consortium). The eLTER Interim Council will, among other stakeholders, involve representatives of funding organisations from the countries involved in eLTER RI to enable an ongoing dialogue. (eLTER Plus WP2)
- **The National Coordinator** in each country acts as a node to interact with national stakeholders (supported by eLTER PPP) and to coordinate the national activities in implementing the eLTER RI. These national level stakeholders vary from

country to country and between sites, but the main categories are similar. (eLTER Plus WP2)

- **Site and Platform Coordinators** vital for the operations and development of eLTER sustainability. Site and platform coordinators (SPCs) of these facilities form one of the most important shareholder groups of eLTER. SPCs, also known as Primary investigators (PIs), site managers, site coordinators or LTSEER Platform managers, are a very heterogeneous group of people responsible for a wide range of activities on sites and platforms.
- **Scientific Advisory Board(s)** include important individuals external to eLTER and who can have influence on the development of the RI.

3. Methodology

The objectives were achieved through the following four steps:

- 1) Stakeholder categories/groups identification through snowballing
- 2) Data gathering for analysis
- 3) Detailed stakeholder analysis
- 4) Prioritization of the stakeholders

The results are presented in Section 4 of this document, which also contains suggestions for the further personification of stakeholders through a methodology developed and applied for Site and Platform Coordinators.

3.1 Snowballing

The approach to stakeholder identification was the *ex-ante*, whereby stakeholders were identified in advance, in relation to likely categories, followed by a “snowballing” approach whereby new categories and groups are added upon suggestion by already engaged stakeholders. The initial categories were taken from previous projects. The simple listing of stakeholders was enriched with understanding of what eLTER community members expected from the stakeholder as well as the significance of the stakeholder to the project. Knowledge of these establishes the nature of the relationship between the RI and the stakeholders and ensures that project managers understand both groups’ needs.

Snowballing was organised on several occasions during the project in the frame of meetings with team members and internal stakeholders who are familiar with the planned project, but also among individuals familiar with the eLTER structure and the European RI landscape.

Another important aspect of these meetings was to further specify the expectations about the stakeholder engagement activities planned by eLTER, which will be critical for their design (e.g. communication and dissemination, service design and portfolio development, governance, etc). The possible linkages to the relevant project WPs and tasks where these engagement opportunities can take place were mapped Table 1.

Table 1: Map of activities related to stakeholder engagement in the eLTER PPP and PLUS projects

Task	Key activities in relation to stakeholders	Delivery month	Lead	Participants
<i>eLTER PPP</i>				
Task 2.1 RI governance planning and shareholder collaboration	T2.1 management of the IC decision making process to achieve PPP specific objectives 2 and 3	several	UFZ	EAA, CNRS, SLU + all
Task 2.2 Supporting and connecting the national activities with the PPP (NRI interaction)	T2.2 management of the NC to achieve PPP specific objectives 2, 3 and 7	several	UFZ	EAA,) NCRS, UH + all
Task 7.1 Central communication coordination and planning	refined analysis of stakeholder landscape, target audiences and key messages	12	UFZ	Pensoft, UH, UKRI
Task 5.1 Service portfolio for defined user groups	survey RI user groups, definition of services per user groups	18	CNRS	UKRI
Task 6.1 Standardisation and harmonization	consultation of scientific user communities, site owners i.e. internal stakeholder, and other env. RIs	22	UFZ	BGU, CNRS, CNR, SGN, TUC, UH, WSL
<i>eLTER PLUS</i>				
Task 6.1 Communication planning and coordination	communication activities based on Strategy	9	Pensoft	
Task 2.2 Towards an incentivised and forceful eLTER backbone of PI s and site teams	establishment of Sites and Platforms Forum for Site and Platform Coordinators	12	SLU	UH, UFZ, EAA, IIT, CNR, CNRS, UKRI
Task 2.1 Continuous screening of SH and users landscape	Analysis on existing relationships and their further development	9	UH	UFZ, CSIC, CNRS

Meetings used for “snowballing” stakeholder identification from within the eLTER Community:

a) eLTER PPP and eLTER PLUS Joint Virtual Kick-off meeting, Virtual space, 30 March -3 April 2020

This meeting provided an opportunity to discuss the different types of stakeholders (and shareholders, being a special sub-group) as essential partners to successful eLTER. Who are they? What is their interest in eLTER? What are their expectations and needs in terms of information, consultation, participation and role? How can we rank them in terms of importance and influence? Who manages relationships with stakeholders and how? Concerning the Stakeholders’ Landscape (D7.1) clear answers to the above questions were needed. These answers are at the base of stakeholder management, as many of them feed directly into eLTER’s Communication and Marketing Strategy (D7.2). The meeting concluded that:

- We need to systematically classify and prioritize stakeholders.
- Use common language and labels across the projects and eLTER structures and across both projects WPs and Deliverables (consistent language incl. the stakeholders hierarchy). It is urgent to develop standardised terminology and glossary of terms.

- It is necessary to clearly define responsible persons for each stakeholder group and activity.
- A useful way of prioritising stakeholders is the Importance/Influence framework. Until this is done, the project will focus on the most important stakeholders at European level first (to ensure immediate information needs are met), then move on to national and local level stakeholders.

b) eLTER PPP and eLTER PLUS Webinar on Stakeholder Identification, 1 Sept 2020

The purpose of this webinar was to review the initially identified stakeholder categories and formulate the purpose for eLTER engagement with each category. The initial stakeholder types were compiled from previous eLTER projects and experience and were grouped in six major categories. The proposed approach to stakeholder identification is *ex-ante*, whereby stakeholders identified in advance, in relation to likely categories, followed by a “snowball” process whereby new categories and groups are added upon suggestion by already engaged stakeholders (starting with the eLTER Project team).

It was important for the webinar participants to be familiar with the expectations FROM these stakeholders by the eLTER PPP and PLUS teams, would be be critical to decide if and to what extent engagement activities will be pursued during the establishment of the eLTER RI

c) 1st eLTER Interim Council 10 Dec 2020

The IC meeting provided an opportunity to present the stakeholder analysis progress and to discuss with the members of the Interim Council and integrate their perspective on the results. Two key ideas were discussed with the IC members: the positioning of stakeholders in three “layers” in relation to their position to eLTER and the areas of strategic engagement with stakeholders (Figure 1).

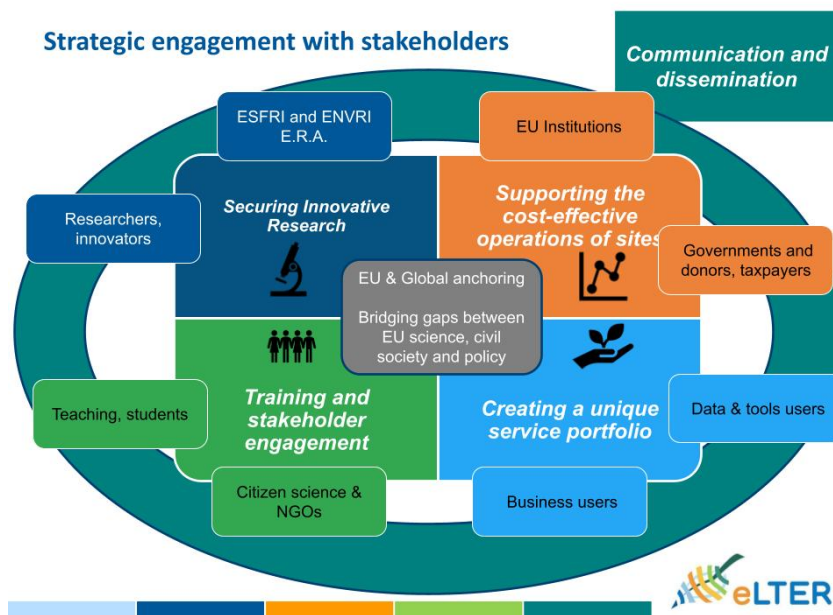
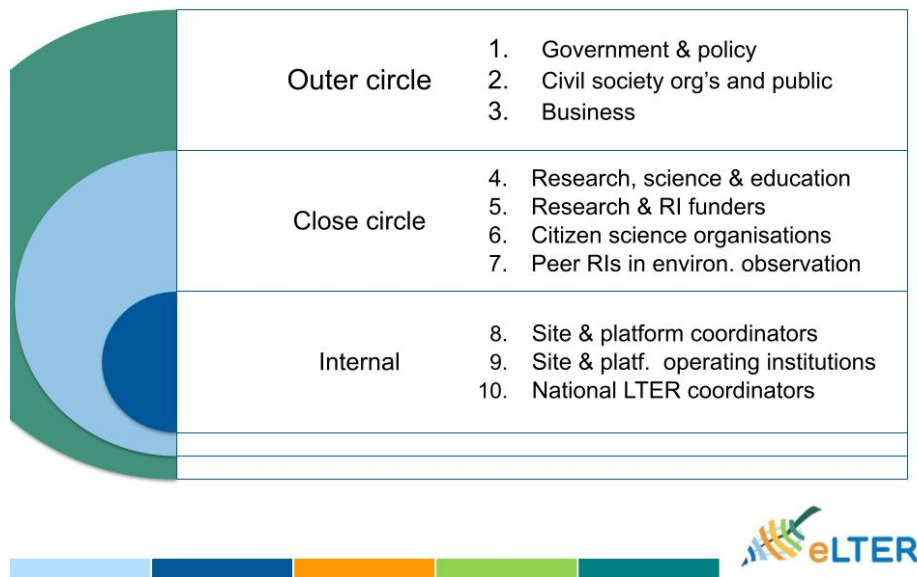


Figure 3: Stakeholder “layers” and strategic alignment of stakeholders as users of services.

The recommendations from the IC meeting comprise that:

- at European level the European Environment Agency should be considered as an important stakeholder, who on their own have a good experience with stakeholder engagement [this recommendation was considered by inviting EEA to form part of the Strategic/Scientific Advisory Board of eLTER PPP];
- stakeholder engagement must be seen as a two-directional process, stakeholders must adapt to work with eLTER and thereby build up structures to be prepared to receive data products;

- if decision-making stakeholders work in government and parliament they are bound to a schedule which is not flexible, and planning eLTER's interaction with them must be in line with this.

3.2 Data collection by questionnaire

On the basis of the classification of stakeholders we developed an online-questionnaire which aimed to collect responses from a representative sample of the eLTER community (n = 50 was the target response rate) , including members from all internal stakeholder groups.

The objectives of this questionnaire were:

- to clarify the current views of eLTER community on the importance and impact of different stakeholder groups on the planned eLTER RI
- to take into account their experience and point of view in the design of the eLTER RI stakeholder engagement strategy
- for the purpose of communication, to help target the most appropriate communication channels and key messages relevant to the key stakeholders.

The results of the survey were integrated in this report (See appendix).

Time-line for the distribution :

2020:

- Final review of draft questionnaire : May
- Preparation of circulation: June
- Responses collection : 1 – 21 November, potentially extendable by 30.11.
- Reminder message to all: 15 November
- Processing: 10 December
- Preliminary results presentation at the IC meeting (10 Dec)

2021:

- Final results: 31 January 2021

Target audiences/respondents

- National coordinators of LTER (n=73)
- eLTER PPP & eLTER PLUS Work package and Task leads (n=29)
- LTER Site/Platform coordinators providing TA/RA services (n=56)
- Total = 158 invited respondents

4. Results

4.1 Brief characterisation of Stakeholder Categories

- Research and Research Infrastructure funders ranging from national, to European as well as international funding organisations being important in the financing and sustainability of the research infrastructures.

- Researchers and science stakeholders being main direct users of the eLTER RI services (e.g. sites, data, training). This ranges from e.g. individual scientists, research performing organisations, research networks to pertinent science initiatives at international levels.
- Government and policy decision-makers ranging from European policy makers, European agencies (executive bodies) in the realm of eLTER (e.g. EEA, JRC, contributors to monitoring & conservation directives), to national and regional authorities and policy makers. Also global agencies and intergovernmental organisations need to be taken into account.
- Business and industry using services of the eLTER RI or enable innovation and cooperation in terms of observation (e.g. sensors) or information management, as well as environmental (impact) consultants and spatial architects.
- Civil society organisations and public ranging from Citizen Science organisations, environmental NGOs, land and forest owners' organisations to the wider public
- Peers in research and observation like related in-situ and remote monitoring and observation networks and organizations (e.g. UNECE-Working Group on Effects, JRC, ESA/Copernicus, EIONET) or related research infrastructures in the environmental domain. Within this category, European scale e-infrastructures (e.g. LifeWatch) and e-infrastructure initiatives like the European Open Science Cloud (EOSC) need to be taken into account as stakeholders interacting with the eLTER Information System as users. Despite the fact that the focus for the eLTER RI development lies on the European context, global best examples and peers (WMO, GEO, ILTER) will be considered and eLTER RI will make efforts to provide in-situ infrastructure and services of global relevance.
- Internal stakeholders, such as the Site and Platform Coordinators (SPC), the Site and Platform operating institutions or the National LTER networks Coordinators (NC).

4.2 Classification of Stakeholder Groups and visualization

From all discussions, brainstormings and the feedback from the comprehensive questionnaire the following Stakeholder groups were distilled and assigned to Stakeholder Categories (Table 2).

Table 2: Full and short names of Stakeholder Categories, Stakeholder Groups

Code	Stakeholder category SHORT	Stakeholder category FULL	Stakeholder group
A	Science & researchers	Researchers and science stakeholders	
			Researchers, university students
			Research performing organisations (RPOs)
			Disciplinary research communities
			High level assessment and recommendation frameworks
			Pertinent initiatives and institutions
			Scientific councils
			Research networks
B	Funders of research & RIs	Research and Research Infrastructure funders	
			National funders
			European funders
			International funders
C	Peers in research & observation	Peers in environmental research and observation	
			Monitoring and observation networks and organizations in-situ and remote
			Environmental Research Infrastructures (ESFRI)
			Global peers
D	Internal stakeholders	Internal stakeholders	
			Site and platform coordinators
			Site and platform operating institutions
			National LTER networks coordination teams
E	Decision makers	Government and policy decision-makers	
			European policy makers
			European agencies
			National policy makers
			Regional and local authorities
			Global agencies and intergovernmental organisations
F	Business & industry	Business and industry	
			Natural resource users
			Secondary and service industries
			Sensor and instrument manufacturers
			ICT developers & service providers
			Small and Medium Enterprises (SMEs)
			Landscape and site planners and environmental consultants
G	Civil society & public	Civil society and interested members of the public	
			Citizen science organisations
			Environmental NGOs
			Land and forest owners' organisations
			Associations promoting science and education

Figure 4 visualizes the eLTER Stakeholder landscape in a MindMap

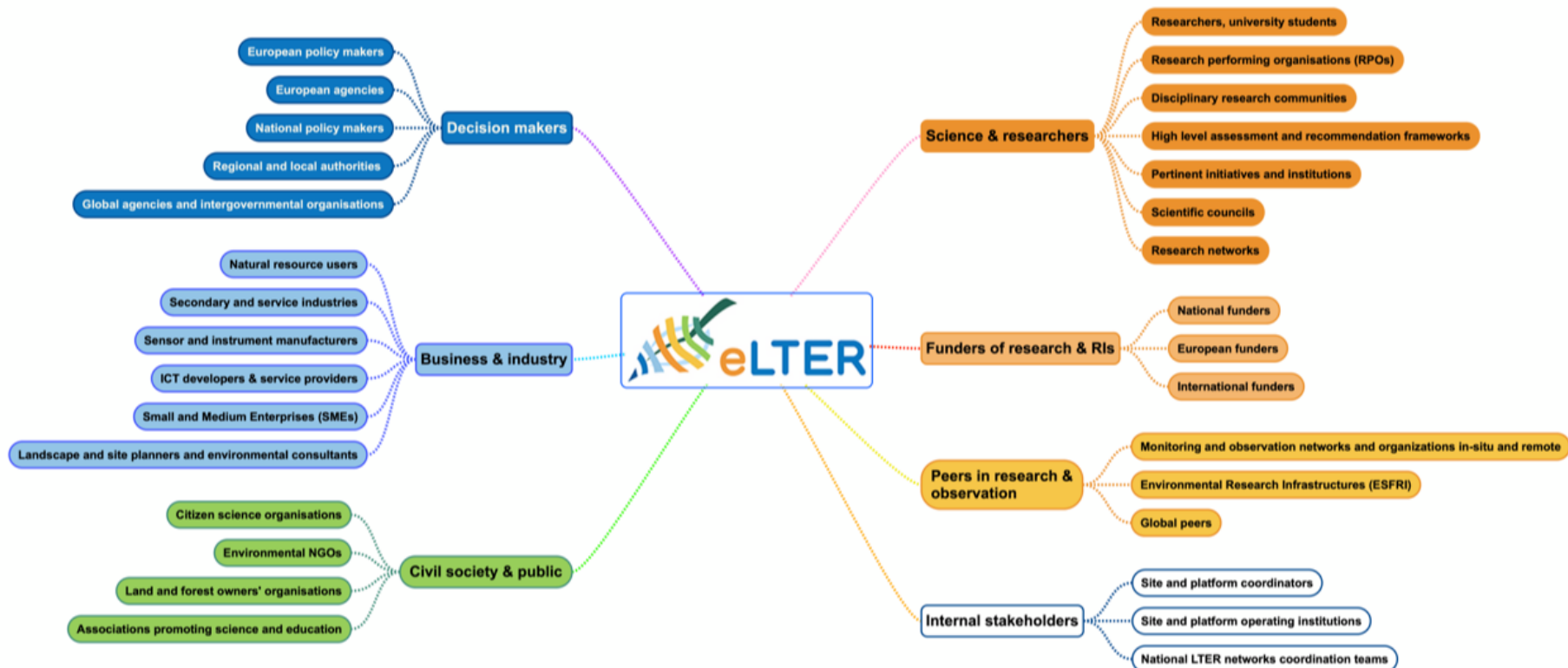


Figure 4: Classification of the main eLTER Stakeholder Categories (main branches) and assigned Stakeholder Groups (2020) developed on the basis of “snowballing” and refined through discussions within a core team. This classification serves as the basis for “downstream” planning, such as service development and communication.

4.3 Prioritisation of stakeholders

The triage (classification and questionnaire) of stakeholders was the prerequisite for a prioritization in terms of eLTER interactions (information, communication, interactions, consulting, active involvement). One possible approach consists in the power/interest grid, which is a matrix used for categorising stakeholders during a change project to allow them to be effectively managed. Stakeholders are plotted on the grid in relation to the power and interest they have in respect of the project. The grid categorises stakeholders into the following four groups (see Figure 5).

- High power/high interest
- High power/low interest
- Low power/high interest
- Low power/low interest



Figure 5: Schematic stakeholder grouping by power (importance) and interest (influence). The grid is split into four quadrants, the bottom right is keep informed to maintain interest; the top left is to actively consult at the proper level to keep satisfied; top right is managed closely and actively engage; and bottom left is monitor (keep an eye on).

Categorising stakeholders in this way can allow to develop strategies to manage all stakeholders effectively incl. a stakeholder communication plan. Stakeholders with high power and high interest will want to be engaged with regularly, whereas stakeholders with low power and low interest do not require regular and detailed communication (however, this does not necessarily mean that they should be entirely ignored). The complexity of a project or process determines the detail to which the grid should be filled. For many projects, however, it is sufficient to consider the four categories below: Keep Informed, Maintain Interest, Actively Consult and Regularly Engage.

The complex and staged eLTER ESFRI process as operated by eLTER PPP and scientifically/technically supported by eLTER PLUS does not allow for an absolute prioritization of stakeholders across its phases. Interactions need to be aligned with the timing of RI component design specifications and negotiations with the funding shareholders. Some stakeholders are critically important for identifying and prioritizing needs and related future eLTER RI services at an early stage, can then be kept up to date and become important

again when e.g. pilot services are in place to be tested. Therefore we split the process runtime as supported by eLTER PPP 2020-2025 in 4 phases (Table 3):

- ➔ Phase 1, 2020/2021: main phase of screening and assessing internal stakeholders capacities, team building, establishment of working relations with the main funding shareholders
- ➔ Phase 2, 2022/2023: consultations with related external communities, users and peers towards interoperable designs and an optimized composition of the eLTER RI service portfolio
- ➔ Phase 3, 2024: fine tuning, final consultations, targeted information about the likely final design and eLTER Service Portfolio; formalization of cooperations
- ➔ Phase 4, 2025: broad information about eLTER RI across all organizational levels (local, regional, national, Europe, global), training and building up a diverse user community

Table 3: Planned nature of interactions with all eLTER Stakeholder Groups across the phases 2020-2025

Code	Stakeholder group	Phase 1	Phase 2	Phase3	Phase 4
	Full name	2020/2021	2022/2023	2024	2025
A	Science & researchers				
	Researchers, university students	Green	Red	Red	Red
	Research performing organisations (RPOs)	Red	Yellow	Yellow	Red
	Disciplinary research communities	Red	Yellow	Yellow	Red
	High level assessment and recommendation frameworks	Green	Green	Red	Red
	Pertinent initiatives and institutions	Blue	Blue	Red	Red
	Scientific councils	Blue	Blue	Red	Red
	Research networks	Green	Yellow	Yellow	Red
B	Funders of research & RIs				
	National funders	Yellow	Yellow	Yellow	Yellow
	European funders	Blue	Yellow	Blue	Yellow
	International funders	Green	Green	Red	Red
C	Peers in research & observation				
	Monitoring and observation networks and organizations in-situ and remote	Blue	Yellow	Yellow	Blue
	Environmental Research Infrastructures (ESFRI)	Yellow	Yellow	Yellow	Blue
	Global peers	Green	Red	Yellow	Red
D	Internal stakeholders				
	Site and platform coordinators	Yellow	Yellow	Yellow	Yellow
	Site and platform operating institutions	Red	Yellow	Yellow	Yellow
	National LTER networks coordination teams	Yellow	Yellow	Yellow	Yellow
E	Decision makers				
	European policy makers	Blue	Blue	Red	Red
	European agencies	Blue	Yellow	Yellow	Red
	National policy makers	Blue	Blue	Red	Red
	Regional and local authorities	Blue	Blue	Blue	Blue
	Global agencies and intergovernmental organisations	Blue	Blue	Blue	Red
F	Business & industry				
	Natural resource users	Blue	Blue	Blue	Red
	Secondary and service industries	Blue	Blue	Blue	Red
	Sensor and instrument manufacturers	Red	Yellow	Yellow	Red
	ICT developers & service providers	Red	Yellow	Yellow	Red
	Small and Medium Enterprises (SMEs)	Green	Yellow	Yellow	Red
	Landscape and site planners and env. consultants	Blue	Blue	Blue	Red
G	Civil society & public				
	Citizen science organisations	Blue	Blue	Red	Red
	Environmental NGOs	Blue	Blue	Blue	Red
	Land and forest owners' organisations	Blue	Blue	Blue	Red
	Associations promoting science and education	Green	Red	Yellow	Red

The staged planning of interactions clearly reveals the focus of phase one dominated by the need to achieve fundamental agreements on directions and assessing feasibilities with the internal backbone stakeholders of the eLTER RI (Site and Platform Coordinators, National Coordinators, Research Performing Institutions), a broad screening of requirements from major potential users and informing about the started eLTER ESFRI process. These foci have been mirrored by working priorities in related tasks and activities listed in Table 1)

We will carefully revisit the prioritization by the end of each phase.

4.4 Further detailed analyses

With an increasing number of details available and drawing from in-depth interactions with priority stakeholders the following descriptive and analytical methods might be applied in the next version of this recursive document.

4.4.1 Personification of stakeholders

The persona method is a simple way of synthesizing broad knowledge about a particular target group of stakeholders or target audience. It involves the creation of several (up to eight) archetypal fictive persons, which represent different types of stakeholders. The available knowledge about these stakeholder types is collected within the larger team. The key information for each type, such as characteristics, education, training and professional background, personal profile, team relationships and expectations/fears or issues to solve and synthesized on persona cards. According to the assigned high priority in phase 1 (see above), this method was successfully applied to an important Stakeholder Group of the Stakeholder Category “Internal Stakeholders”, namely the eLTER Site and Platform Coordinators (SPCs). The activity was lead by Jessica Parland-von Essen (CSC, Finland) from the eLTER PLUS team.

As there are more than 400 individual members of this large and heterogeneous group it is quite unfeasible to create individual persona cards for each member. An interactive, facilitated workshop was held as part of the first eLTER Sites and Platforms Forum in January 2021 to elaborate four “personas” of SPCs representing typical archetypes of job profiles, working conditions, needs and expectations. The aim of the workshop was to understand expectations of SPCs regarding eLTER, and to find the value proposition to them and improve communication. This workshop marked a starting point for detailed identification of the needs of priority stakeholder groups.

Figure 6 is an example one archetypical SPC “persona”.

Francine

Francine is a trained scientist but most interested in integrated assessments. She did the inquiry of research and other projects and available data, when the site was started 8 years ago. In doing this she got aware of the potential of the site and was mandated by the institution for landscape ecology to organize research team meetings.



Francine is supposed to "keep the site together". She is willing to sacrifice more than she is paid for to keep the site up and running (drawing resources from other projects). Her informal network helps keeping the site alive.

Francine hopes that clear criteria for sites will give her good arguments to expand the site and reach consistent standards. She is curious about LTSER and expects an elaborated concept and design to see, if becoming an LTSER platform is an option.

Fears and frustrations

She is worried that the site cannot survive without her. She constantly needs to convince superiors for need of new funding.

Monitoring duties feels annoying and sometimes she suffers from the selfishness of colleagues. She would rather spend time doing research.

SITE

The site is a quite big university driven platform. Some socio-ecological projects were already hosted, mainly on management practices in agro-forestry. The studies are a loose cluster of activities around a core site with plots in managed forest, agro-forestry areas and nature reserves. A second project has started using parts of it since a couple of years.

TEAM

A wide range of disciplines and sub-teams were active at the site, but only a small core team works permanently at three plots.

Talking to Francine



- creating impact and prestige for the platform, with things like
 - marketing
 - facilitation in lobbying
 - finding funding
- organising work
 - data sharing processes
 - management training and networking
 - lean processes for reporting

- visibility and impact for her site, research and data by
 - open data policy
 - involvement in large scale analysis
 - tools for stakeholder engagement
- shared user friendly tools and platforms for data management, processing and sharing
- a community platform and activities for peer support and knowledge sharing

Figure 6: Exemplary description of and approach towards a "persona", representing an archetype of eLTER's target groups.

4.4.2 Recursive review and additional methods

Due to the long-term nature and complex international structure of eLTER we propose a stratified approach to the prioritisation process according to 1) the project phase and 2) geographical scope. This exercise could also be repeated towards the end of the project as an evaluation, using the purpose statements as objectives against which to evaluate the success of stakeholder engagement.

Complementing the usage of the power-interest grid, eLTER RI might progress onto developing fine-tuned stakeholder management strategies, e.g. by using the RASCI approach (Responsible, Accountable, Support, Consult and Inform) to define each stakeholder's concrete role and involvement in the project which can also help effectively manage the project.

5. Conclusions, recommendations and outlook

Overall, the effort as main activity and achievement of the PPP Task 7.1 consensus was achieved in April 2021.

Overall, the high communication effort to develop a consistent stakeholder system has paid off. Instead of being isolated in a technical report produced by a small team, the process towards the stakeholder landscape now communitarised across two consortia has helped to raise awareness of eLTER's ambition and purpose of responding to requirements of a broad range of users. It also revealed, with which potential user groups the community has not yet or not sufficiently interacted. The eLTER RI Stakeholder Categories and Stakeholder Groups were rolled out via the "gearwheel concept" linking related tasks across eLTER PPP and eLTER PLUS (see Figure 7). This approach comprises the nomination of "gearwheel pivots", i.e. leading experts in charge of overlooking the development of overarching design elements (such as the stakeholder landscape) and their distributed consideration and implementation (Figure 8).



Figure 7: Main topical gearwheels in the eLTER ESFRI process connecting activities in eLTER PPP and eLTER PLUS

Each of the gearwheel connections between eLTER PPP and eLTER PLUS detailed to the level of WPs and tasks (see Figure 8).

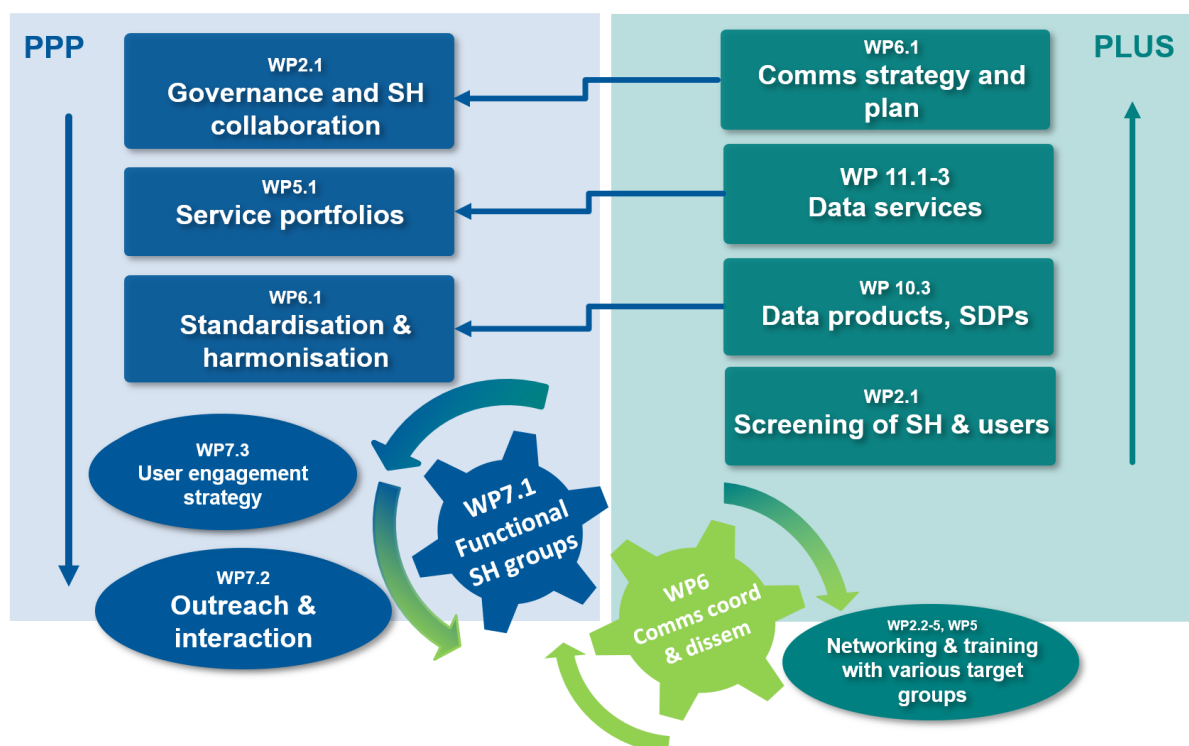


Figure 8: The role of the functional “Stakeholder groupings” gearwheel pivot in connecting tasks in eLTER PPP and eLTER PLUS (in close interaction with the communication and dissemination pivot). Left/blue elements: area of eLTER PPP; Right/green elements: area of eLTER PLUS.

This approach was an important measure to provide individual teams the larger contexts of their tasks and support identifying the key experts and other teams to consult with. It helped to integrate the eLTER Stakeholder Categories and Stakeholder Groups as a backbone into relevant plans and reports, such as the eLTER RI Strategic Plan (eLTER PPP D1.1), the eLTER Communication strategy, the eLTER Services Portfolio (eLTER PPP D5.1), the Governance Strategy (eLTER PPP 2.1 and 2.2), the eLTER PPP D1.3 (European and global embedding), the eLTER PLUS D2.1 (Analysis of eLTER’s overall environment) and others. The results of the prioritisation of stakeholders are already used for development of further engagement strategies (communication, user profiling, service portfolio, etc).

The eLTER Stakeholder analysis is a recursive process and document. According to the staged process and given the fact that the assessment of stakeholder groups roles and importance will dynamically change we suggest to

- digest experiences in phase 2 into a detailed personification of priority stakeholder groups (“personas” approach),
- repeat the application of the power/interest grid by the end of each phase and
- test the usability of the RASCI approach (see chapter 0)

6. Annexes

6.1 Acknowledgements

Jessica Parland-von Essen (CSC) for planning and organising the “Persona workshop” in January 2021.

6.2 Glossary of terms

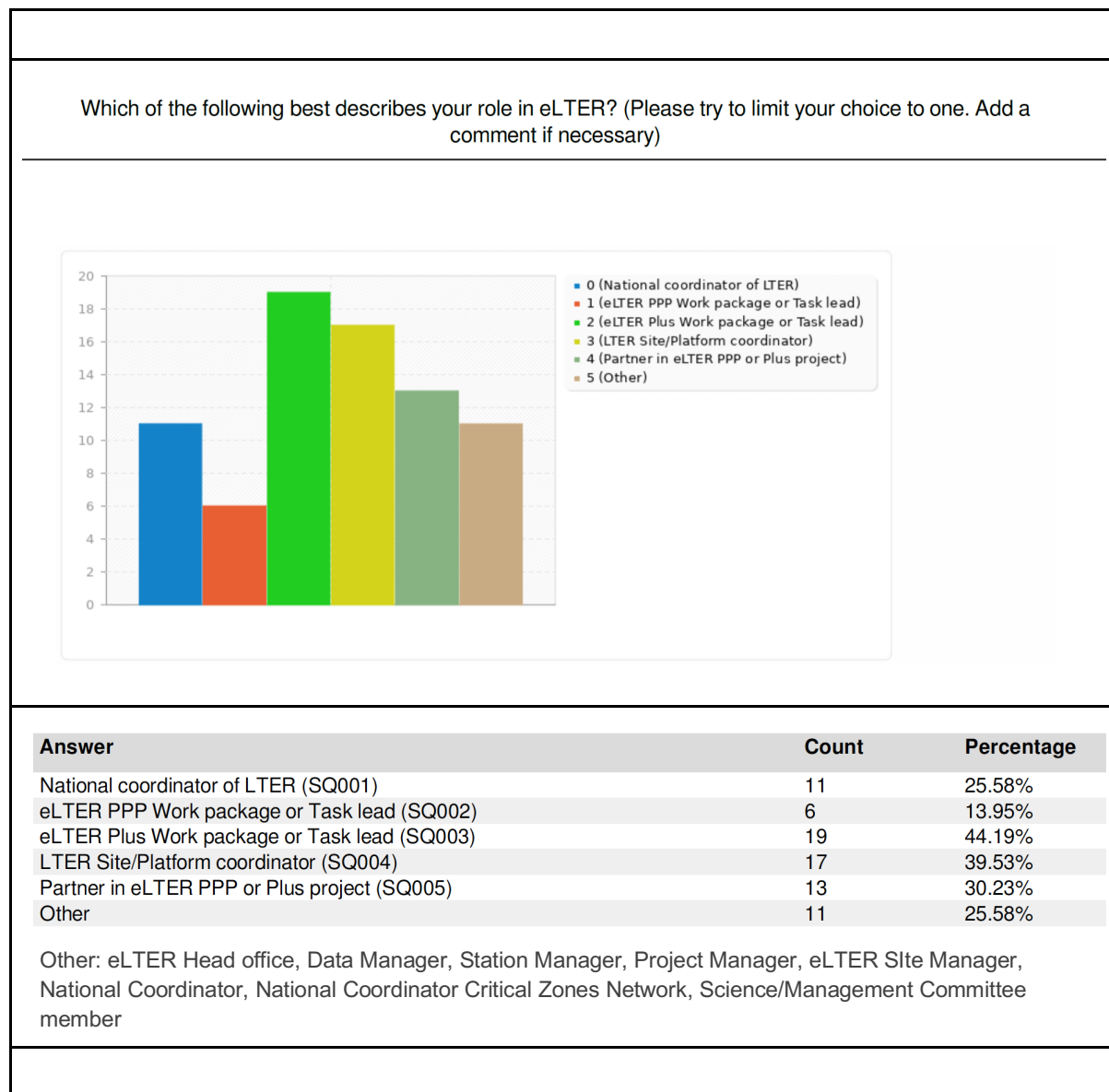
Glossary of terms about stakeholders to be used in both projects in a standardised way

Term	Meaning
Stakeholder	All parties that may benefit from or be interested in the eLTER RI services and operations. These include shareholders, potential users (researchers, students, public, policymakers, media), other RIs, research programmes and projects, and collaborating organisations.
Shareholder	Organisations or entities who fund eLTER RI implementation and operation. These can be countries' ministries, national science councils and academia, but also RPOs, providing resources to sustainable operations of the NRI and Central Services. Shareholders sit in the eLTER Interim Council and decide on strategic issues.
Stakeholder Categories	The seven main clusters of 31 Stakeholder Groups
Stakeholder Groups	All stakeholders were grouped in 31 groups. Each Stakeholder Group is assigned to one of the seven Stakeholder Categories
eLTER Interim Council	The highest decision making body making strategic decisions leading to eLTER RI, such as location of Central Services, statutes and financial issues. It consists of the shareholders. It was established in December 2020.
National Coordinator	A person responsible for coordinating NRI of a country and communicating between NRI and the legal entity of eLTER RI. The role of the NC is to provide the interface and to act as the main point of contact between the national contribution to eLTER RI and the eLTER PPP and later eLTER RI legal entity, and to disseminate to the relevant national stakeholders information from the eLTER RI. (Note: NC of the eLTER NRI may or may not be the same as the LTER national coordinator.)
Research Funding Organisation	Organisations that distribute and grant funds for research, research infrastructures and RPOs. See also Shareholders.
Research Performing Organisation	Research institutes, universities, governmental research organisations.

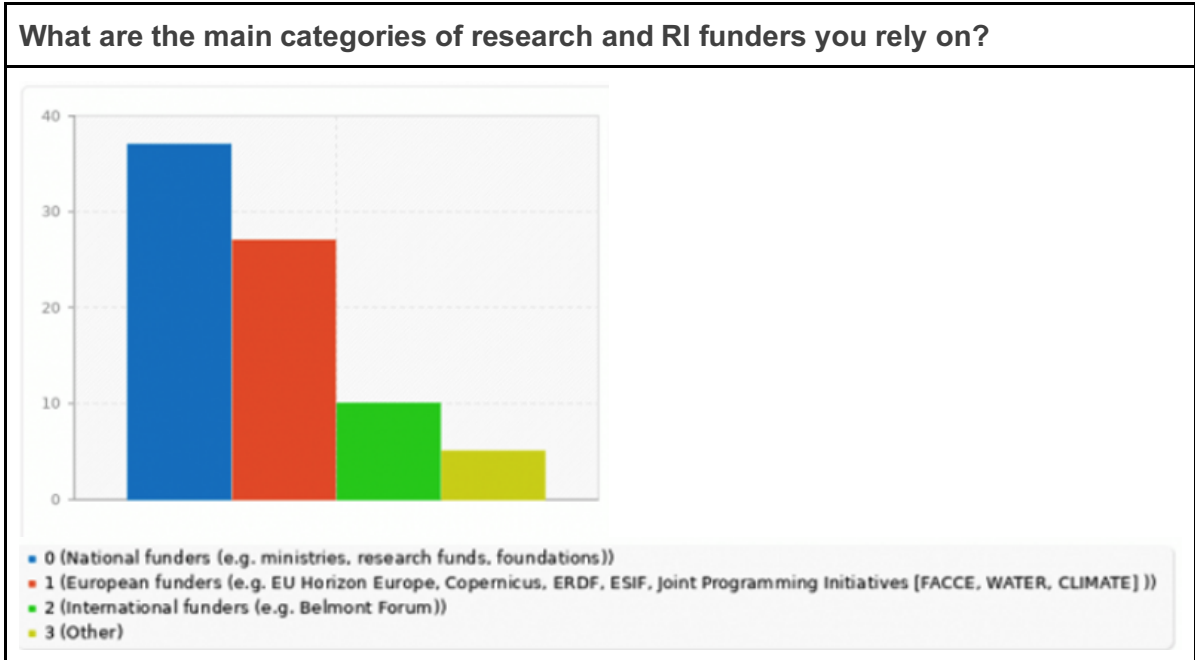
6.3 Results from the Stakeholder Survey

This chapter presents the collated details from the survey. Overall conclusions in terms of the staged stakeholder prioritization were drawn in the results chapter 4.

Survey participation



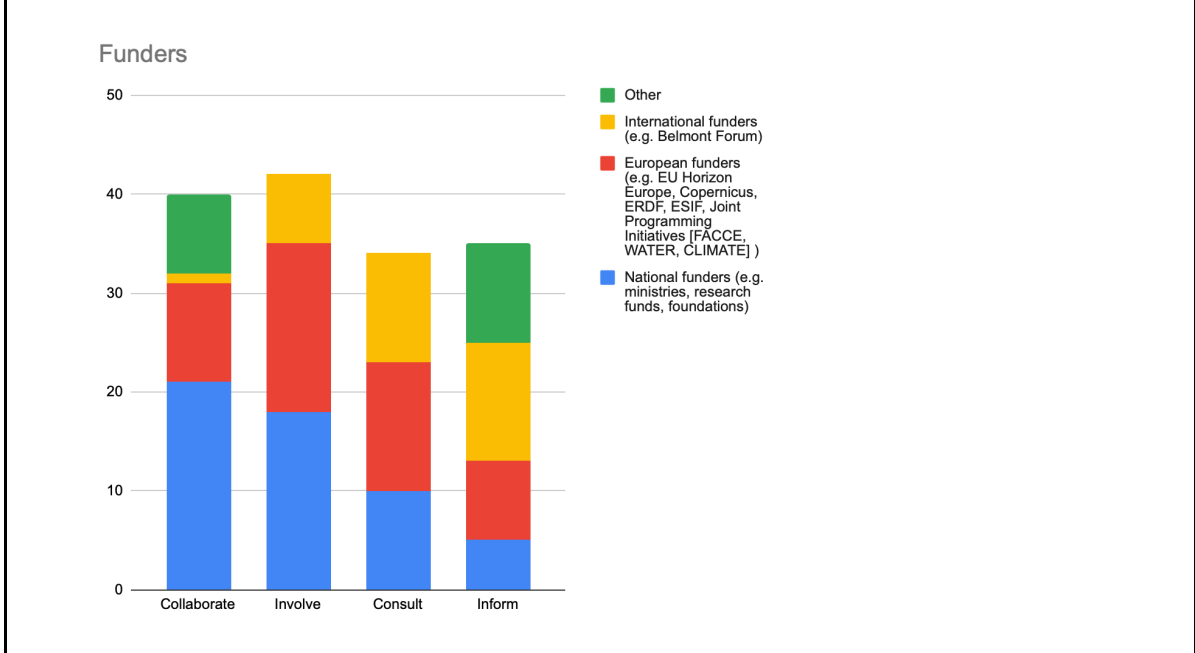
Research and Research Infrastructure Funders

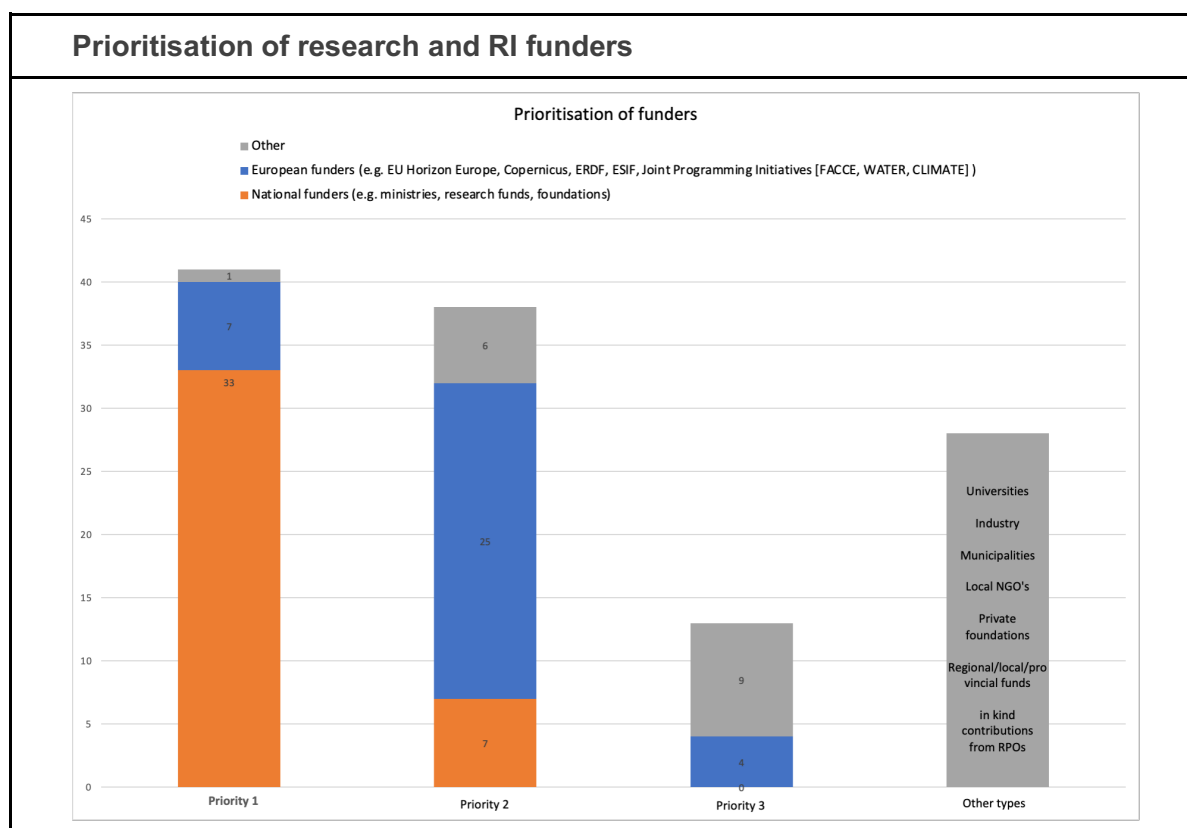


Answer	Count	Percentage
National funders (e.g. ministries, research funds, foundations) (SQ001)	37	94.87%
European funders (e.g. EU Horizon Europe, Copernicus, ERDF, ESIF, Joint Programming Initiatives [FACCE, WATER, CLIMATE]) (SQ002)	27	69.23%
International funders (e.g. Belmont Forum) (SQ003)	10	25.64%
Other	5	12.82%

Other: ERDF, RPOs and universities, Site/platform funders

Type of engagement with research and RI funders





Below is a collection of written answers from the respondents.

Why does eLTER engage with funders? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from the perspective of the funder?

a. Long-term financing

- Funders are essential as eLTER does not have its own funds to finance the work of the regional network on a permanent basis. Each national network has to seek funds within their country or internationally to keep operations steady over time.
- Funding is needed to keep the observation and research activities running. Funders' long-term commitment is needed to develop eLTER RI further, to ensure the long-term financing of the observation platforms. Sustainability of operations requires strong and continuous support from funding agencies.
- Long term funding is the result of long-term political commitment to run the RI. It is important that eLTER delivers products that are valuable to policy makers and provide input to policy decision-making.
- The funder's needs and points of view are essential for LTER if it is to be data and / or service provider that can contribute to societal challenges related to environmental issues. Providing long-term data can help national policy makers to make decisions based on the most accurate data.
- A coherent data network across Member States in the EU also makes it easier to assemble data at European level, which is of relevance to EU policy makers and funders. So common standards are needed to:
 - "foster inter-disciplinary and trans-disciplinary research into the functioning and evolution of socio-ecosystems
 - produce comparable sets of data at the European scale
 - promote the emergence of a shared vision concerning the need for a monitoring of socio-ecosystems based on sound science."

b. Motivations of the funders

- A funder will need to know why it is important for them to fund the work of eLTER and what their benefits will be. They will also need regular communication to ensure that these benefits are being realised. The funders pay a lot of attention to the VISIBILITY of their investments. For funders, eLTER RI needs to fulfill the expectations and promises, i.e. that they feel that it is worth continuing to invest on eLTER RI. They also need to see that eLTER RI takes their concerns and general risks.
- Without committed resources eLTER RI cannot be implemented. Those funders primarily responsible for RI funding (and from whom we mostly ask for funding i.e. operating institutions and ministries) are interested to promote and boost their own countries' institutions' and researchers' results, impact and efficiency, and their position in the international fora. They want to have cost efficient RIs and simple structures that do not overlap. They want to clearly understand "why eLTER", when there are already other observation based RIs in the environmental field, what added value and benefits eLTER brings to (their) science that could not be done without eLTER RI.
- From the financier's point of view, it will be essential that each site demonstrates the capacity to manage the money in order to comply with the objectives for which it was proposed, maintenance of the facilities, capacity to collect and analyse the parameters considered essential. It is essential for the funder that eLTER is a provider of data and/or services that can contribute so that the political decision makers can respond to societal challenges related to environmental issues with a strong scientific basis.
- Value for money in monitoring ecosystem changes, Support for data reporting the conventions and directives. Impact of management on the environment
- Funders must be convinced of the necessity of the eLTER RI and the great opportunities it will offer. They expect that their money is spent most efficiently for building data & knowledge base allowing decision makers and the society to cope with the grand challenges.
- Funders want European visibility. More and more from the university level to the national level, the European label is important as it guarantees quality. It is also an indirect way of choosing what to keep and what to abandon.
- Funders are likely to look after eLTER implementation and request specific services and products that will be carefully assessed in contrast to other providers. Somehow eLTER will have to face competitors and show the reliability and usability of our information and products.
- What kind of data can eLTER provide that will help:
 1. making decisions based on scientific knowledge ;
 2. enable a better understanding in managing open areas;
 3. coping with the changes mainly with climate change and the influence on ecosystems

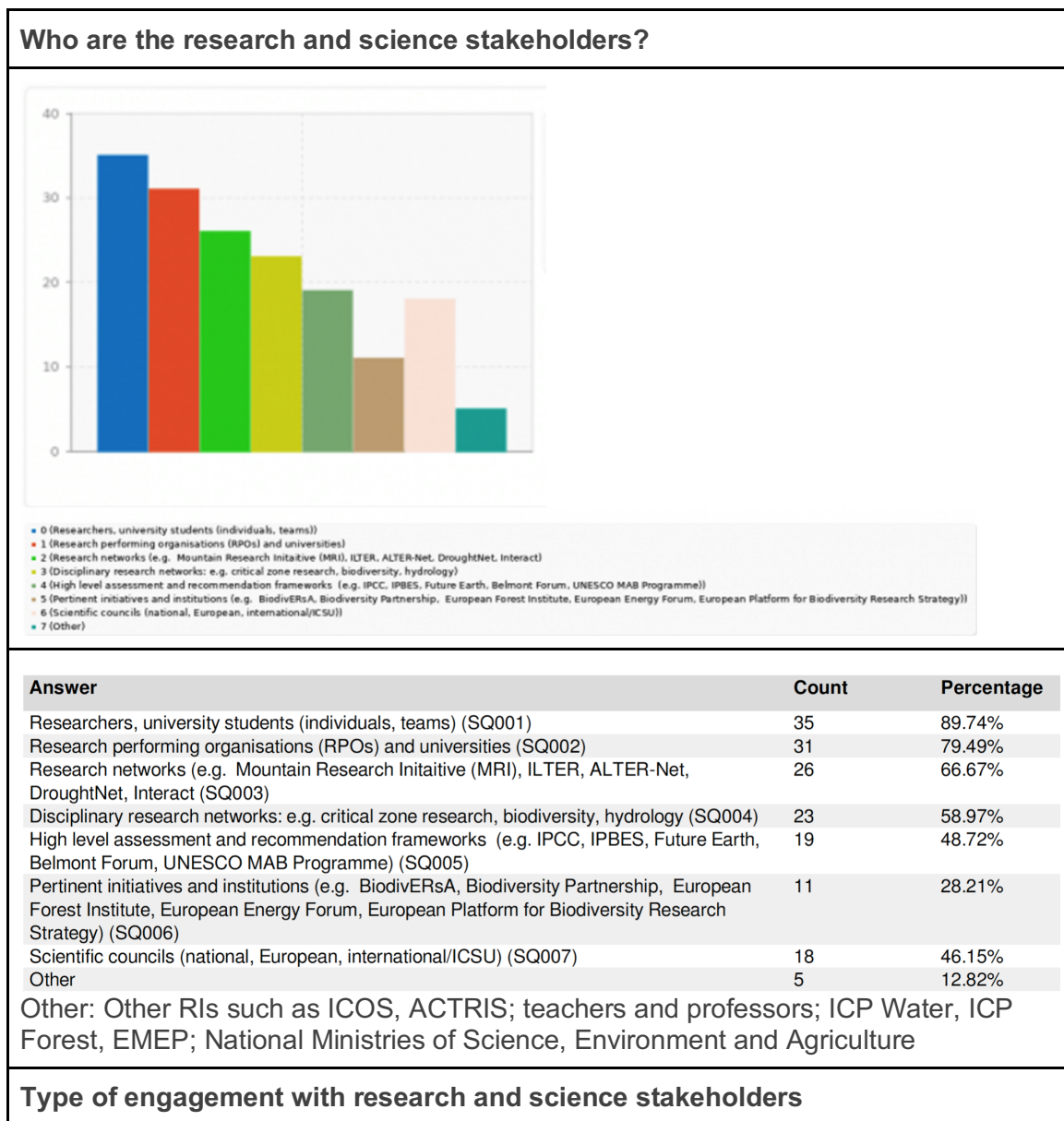
c. What are the priorities of eLTER funders?

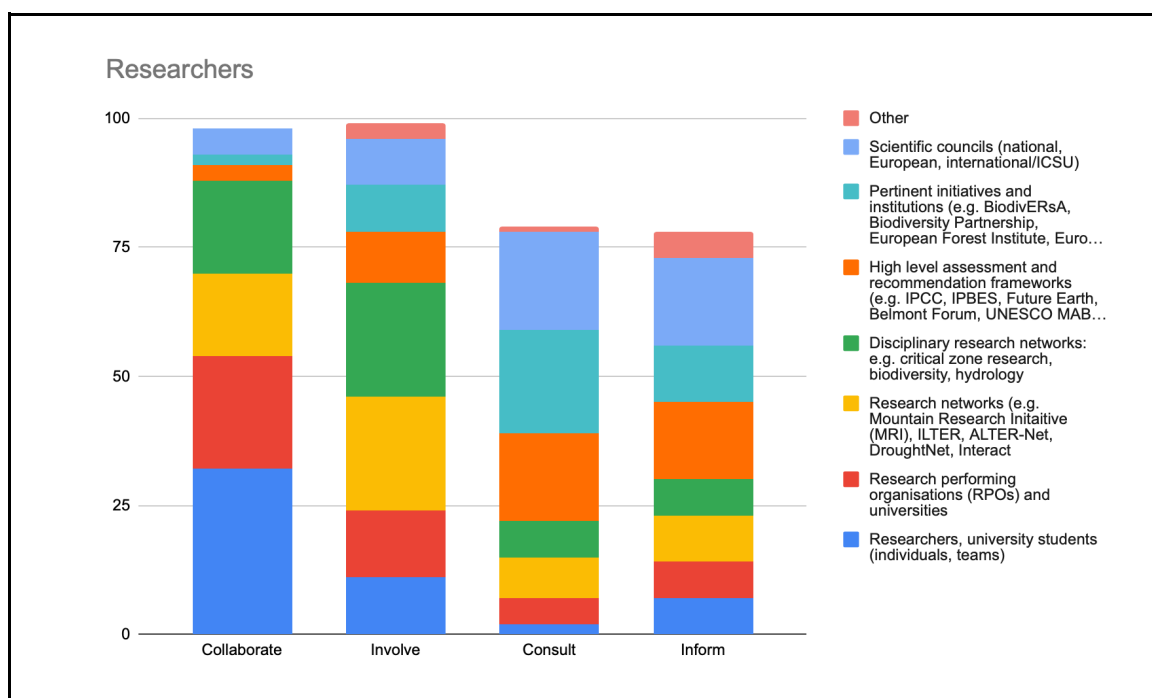
- Establish research infrastructures to bundle investments for environmental observation and research.
- Evaluation of effects of policies and measures to protect the environment ;
- The funders expect benefits from excellent research output and collaboration at European level and facilitation for political decision support regarding environmental challenges.

-
- *At the national level the general priority of the funder is to increase our impact and visibility in environmental research;*
 - *Ministries may further require science within eLTER RI to inform decisions (as well as the European funders).*
 - *National research funds are more interested in that we (researchers) conduct high-quality science (mainly evaluated by publications) within an European network."*
 - *The predominant interest is participation in European level research frameworks*
 - *NRIs depend on reliable and long-term funding within their country. On European level the RI will be project beneficiary of e.g. Horizon Europe to further develop its services*

Conclusion: eLTER will always heavily depend on (sustainable) national funding. Expected priorities and key issue for funders is **value for money** - must be ensured through the creation of a research infrastructure able to provide holistic information in time about the status of ecosystems across Europe.

Research and science stakeholders





Below is a collection of written answers from the respondents.

Why does eLTER engage with researchers? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from the scientific communities' perspective?

- *To offer eLTER data resources and explain how to access and use data and the tools available for their research.*
- *To enable interdisciplinary research in the observation platforms.*
- *Researchers are the backbone of any RI. Infrastructure should respond to the needs of the research community. They are the main user group and their feedback is essential to evaluate the quality and impact of our product.*
- *Researchers are the main users of eLTER RI and its services. In the establishment phase it is important to use their expertise that eLTER will tackle relevant questions and provide services that are useful for them.*
- *The long-term ecosystem research - conducted by the researchers - is the core business of eLTER. The aim of the RI should be to facilitate the research.*
- *The involvement of researchers and the scientific community in general is extremely relevant for several reasons. Firstly, for its contribution in the experimental design and in the elaboration of the parameters to be monitored, which should obviously have a scientific basis. Then, because research networks and organizations have already established communities that can easily be mobilized to further develop the LTER network. Also, its ability to involve university students and other teams to do their research on LTER sites is a way of getting more jobs within the network. The presence of researchers in the recommendation networks such as the IPCC or IPBES also makes their presence in the LTER network essential to pass on the recommendations obtained within the LTER network.*

- *We do not only need political and financial support, but most importantly on active collaboration so that eLTER will go into the future. Researchers are the primary target group of the RI outcomes and unless they really use these outcomes and find them beneficial, the RI will fail. We also depend on their contributions, especially data, and they will do this only if they truly see advantages and incentives in being part of eLTER.*

Researchers motivations to engage with eLTER

*To ensure access to sites and equipment for research;
Sharing knowledge/ information / technologies/ methods through exchanges;
Collaboration (e.g. for consortium project application);
Data/instrument harmonization;
Dissemination of knowledge/science through joint high impact journal publications;*

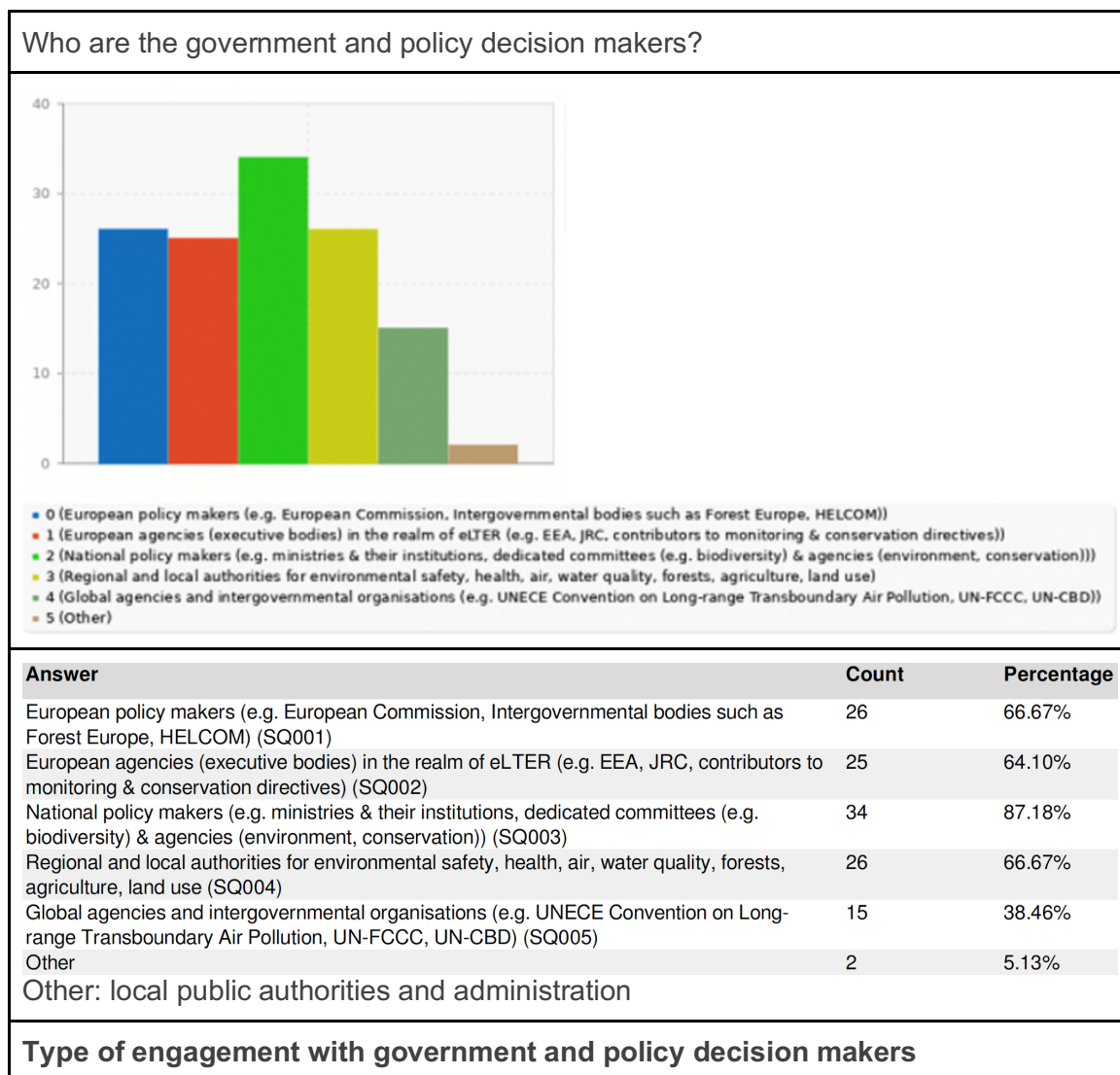
- *Researchers and students are our number one user group that the RI should serve the most. If they do not appreciate eLTER RI, then our work does not have meaning. Their issue is that do they know about the opportunity that is being built for them? Can they articulate their needs to us? Can we get that input from them? Another issue is that they have to get the services so easily and nicely and with added value, that it pays for them to come through us and not to continue "business as usual" (e.g. asking for data or access through their colleagues instead of accessing services from eLTER data/service portal).*
- *Thirdly, the socio-ecological research community is heterogeneous and fragmented. Can we build an RI that sovereignly serves these communities and maybe join them into one eLTER community*
- *Scientific communities expect FAIR data and added value in terms of e.g. linking data.*

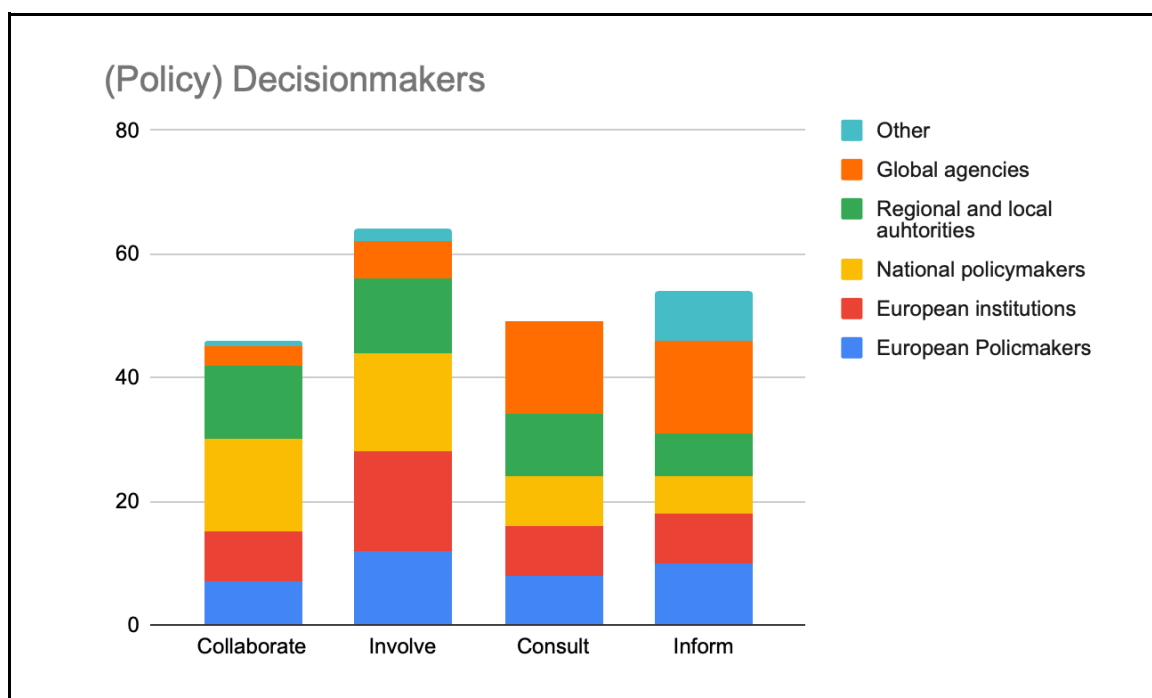
Researchers' priorities in relation to eLTER?

- *The main priority is to secure the reliability and accessibility of the data and services. DATA, Trends, structure and function of ecosystems.*
- *Gather data, harmonize measurements and data storage, synthesize data, outreach regionally to globally, knowledge transfer*
- *Use of the infrastructures for specific projects/investigation/deployment of instruments/data collection*
- *Producing new cutting edge knowledge (and thus papers). Sharing sites, instruments, data bases and models. Forming a community of interdisciplinary exchanges. Getting a big voice at the international level. An IR should bring something that you can not achieve alone.*
- *The most important task is to set up a pan-European research network that will provide scientifically relevant data on long-term ecosystem change, which will make it possible to anticipate ecosystem change and develop measures to prevent adverse ecological consequences.*
- *Researchers are the main consumers of eLTER services and products and they lead our scientific plan so they have to be deeply involved in every eLTER activity*
- *Main users of RIs are researchers. It is essential that they see an added value in participation and data sharing. Basic request to have a simple way of data sharing that does not request enormous input from the expert. If the system is too complicated, and needs much input for formatting, researchers will not use the opportunity.*
- *Make use and merge extensive long-term data series for large scale (European) risk assessment*
- *Purely scientific priority: building a scientifically-sound RI to be able to investigate environmental challenges and ecosystem responses in a coordinated way.*

-
- *Getting quality controlled data and data products collaborate with scientific projects get added value from cooperation site use.*
 - *Researchers will represent the main group of eLTER RI users. Researchers expect that eLTER will give them the opportunity to improve their scientific output, to make statements of a wider scope (European level) and to collaborate and network on a European level (including access to European funding pools).*
 - *More research, more legitimacy, more economies of scale (more efficient use of infrastructure). The issues from researchers point of view are easy access, good collaborations, increased chance for funding, reliability of data and infrastructure.*

Government and policy decision makers





Below is a collection of written answers from the respondents.

Why does eLTER engage with Decision-makers? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from the decision-makers' perspective? (The Decision-makers category includes science and policy decision-makers but does not specifically cover funders, covered under their own category)

- Decision-makers are another key user group of eLTER services and products.
- Often, it is difficult to separate the funders from the decision-makers, as these are usually the same (or very similar) categories.
- eLTER is per se focusing on policy relevant research and has therefore common agenda with decision makers
- Findings from eLTER research should influence a variety for science and policy decisions (most typically in environmental management, but not only). Data cover a variety of domains and is valuable across a range of policy remits.
- Summa summarum, it is extremely important for eLTER that we focus on the science policy agendas on many levels.
- What are the different policy priorities on various levels? (eLTER cannot serve very local needs because we are a pan-European RI.) On the other hand, eLTER is focused on the environment and social aspects of it. It faces challenges if a country is putting all its efforts on and promotes only e.g. bio-technologies and medical sciences. What kind of participation option could we provide in these cases to get our foot in the doorway, so to say?

Motivations of decision-makers to engage with eLTER?

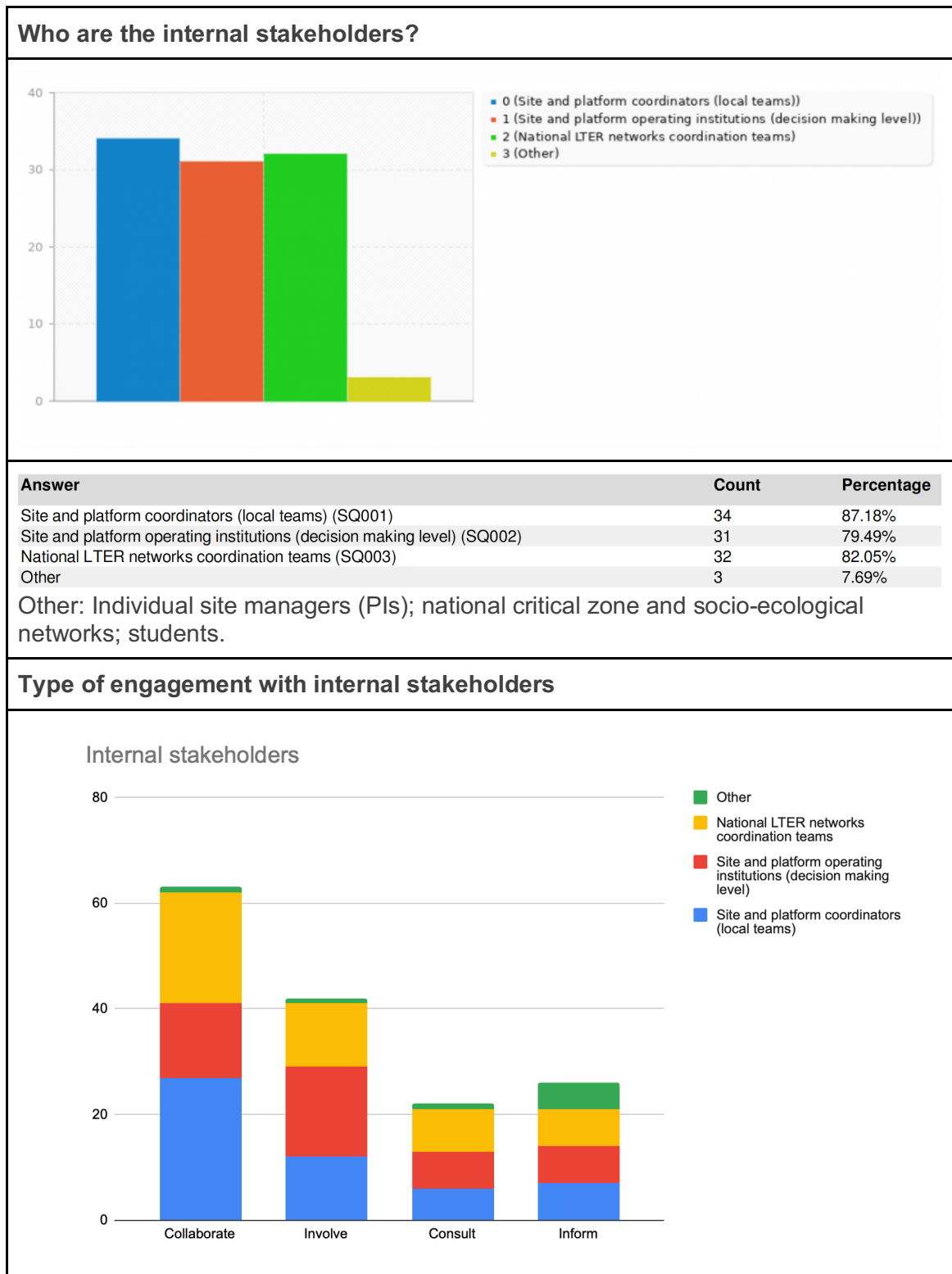
- For decision-makers it is important to have reliable information in an appropriate form so that they can use it for supporting their work (policy formulation and policy evaluation, impact assessment). Engaging with decision-makers will help us develop the services of eLTER RI so that they are useful for decision making.

- *Because we do policy-relevant research and want our research to have a positive impact. Decision makers want to know that the information is solid, empirically-based and reliable. Getting the message across to decision makers also requires that this information is communicated in the appropriate format and in an engaging way.*
- *From the point of view of the decision makers, an IR will have to promote the collection of relevant data for decision making at the local scale. Also the work of these same data so that they can be easily interpreted by technicians and lay people.*
- *Decision-makers shall use eLTER research outcomes for making decisions towards sustainable development.*
- *The data should also inform the prevention and remediation of future SES changes and crises.*

At what levels of decision making is eLTER data most relevant?

- *Decision makers need a more global approach than the national approach, defined by the global dimensions of the ecological crisis. IR is a way for researchers to organize themselves for helping decision makers and giving alerts at such scales.*
- *At the level of European decision-makers it is important to establish a continent-wide network that collects the same parameters for the different countries so that the decision at this scale is informed by multiple local scales data collection points. At European level the most significant decisions are made by the European Commission when it decides to approve eLTER ERIC. So we need to comply with EC Regulation 723/2009 of 25 June 2009 in order to fulfill one of our major goals.*
- *At Institution level so that participating institutions can commit to the RI objectives (include eLTER among their strategic research objectives and support, including financially, its operations).*
- *Often RI need to be on the national RI Roadmaps to be successful. This decision is often made by science ministries. They want to see eLTER worthy of that, high on the national science priorities and responding to national science policy needs.*
- *eLTER RI should be able to look in the past (i.e. evaluate long-term trends and thus the impact of e.g. climate change) but also in the future (i.e. predict further impacts and predict potential implications of specific actions).*
- *All eLTER sites are managed either by conservation managers or land owners. They have to be deeply involved in eLTER RI as major end users to be guided to take informed decisions.*

Internal stakeholders

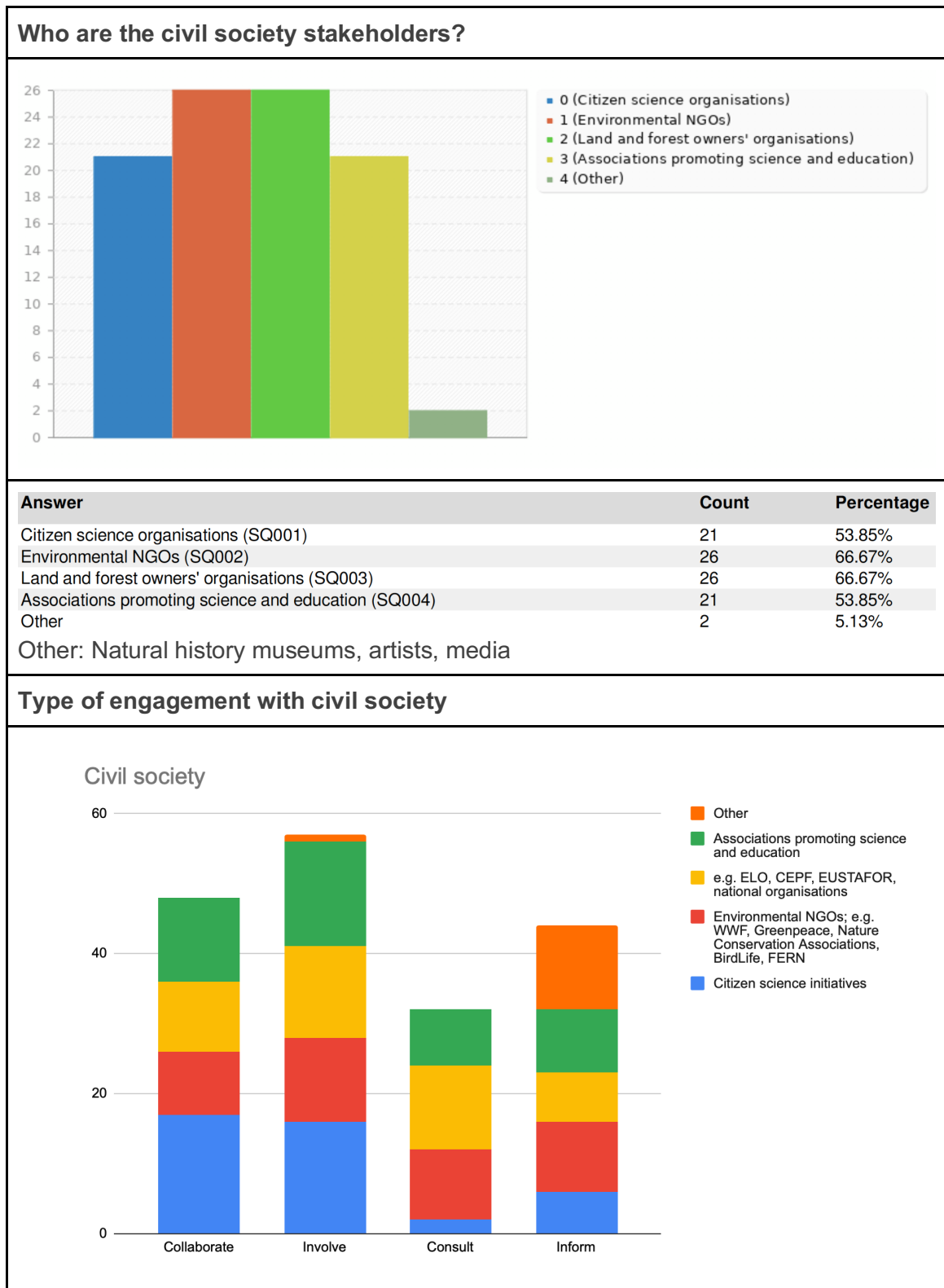


Below is a collection of written answers from the respondents.

Why does the eLTER project engage with its internal stakeholders? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from an internal stakeholders' perspective?

- Internal stakeholders are building the RI. Sites and site coordinators are the backbone of eLTER activities.
- Key issues: provide => proper services and IT infrastructures, enable harmonized observation data ; ensure => motivation, participation, engagement.
- To help site and platform coordinators understand how to interact and use eLTER data tools and to get involved in research topics.
- To increase engagement in RI building across the team it is necessary to harvest ideas, engagement, and initiative.
- If you want to collaborate, you need to know each other or have the opportunities to get to know each other.
- *Without committing the internal stakeholders who are the operators and main funders of the RI the eLTER RI will not come true. We need their full commitment. For them this can be excess burden and we need to very clearly explain them how science moves forward, data has to be managed properly, better science can be made when the observations are harmonised and comparable and of high quality. (Some, hopefully small group, ecological observation site managers may be very old fashioned and protectionist and do not understand modern data management issues). In co-located sites some site owners can also wonder why yet another Ri for whom we need to work. We need to show benefits of eLTER for their sites; they will get more action and scientific merit, funding opportunities, and the central services will help them in keeping up with the progress and strengthening their position in many ways. The truth is that in short term it would be easier to continue business as usual. eLTER brings more work. When you make something new that is inevitable. How to convince them that this is a very good thing, and they can have a say.*
- *For the coordinators of the sites and platforms, it is essential to be heard by the coordination of eLTER so that there can be real collaboration between the bases and the coordination of the network. Without this collaboration, it is difficult for site coordinators to feel motivated to implement what is defined at a higher level.*
- *Internal Stakeholders will be responsible for running their part of the eLTER RI. The design of the single site must fit with the objective of the RI as well as the objective of the operating institution and the involved scientists.*
- *eLTER should be useful and does not add a layer of administration and complexity. It should be exclusive but encourage all scientists to collaborate. This is also true for educational purposes. A number of colleagues are skeptical on the need of European infrastructures, in particular for eLTER as a lot of the funding comes from local stakeholders and they think the European level is too technocratic and does not care about the local issues and the diversity.*
- *To build up the eLTER RI expert input and exchange experiences in many ways with the various members of the eLTER community is essential. The national networks are the backbone of the future eLTER RI and the national representatives are the links to their national networks and ministries. The internal stakeholders expect transparency and proper information and involvement throughout the whole eLTER RI development process.*

Civil society and interested members of the public

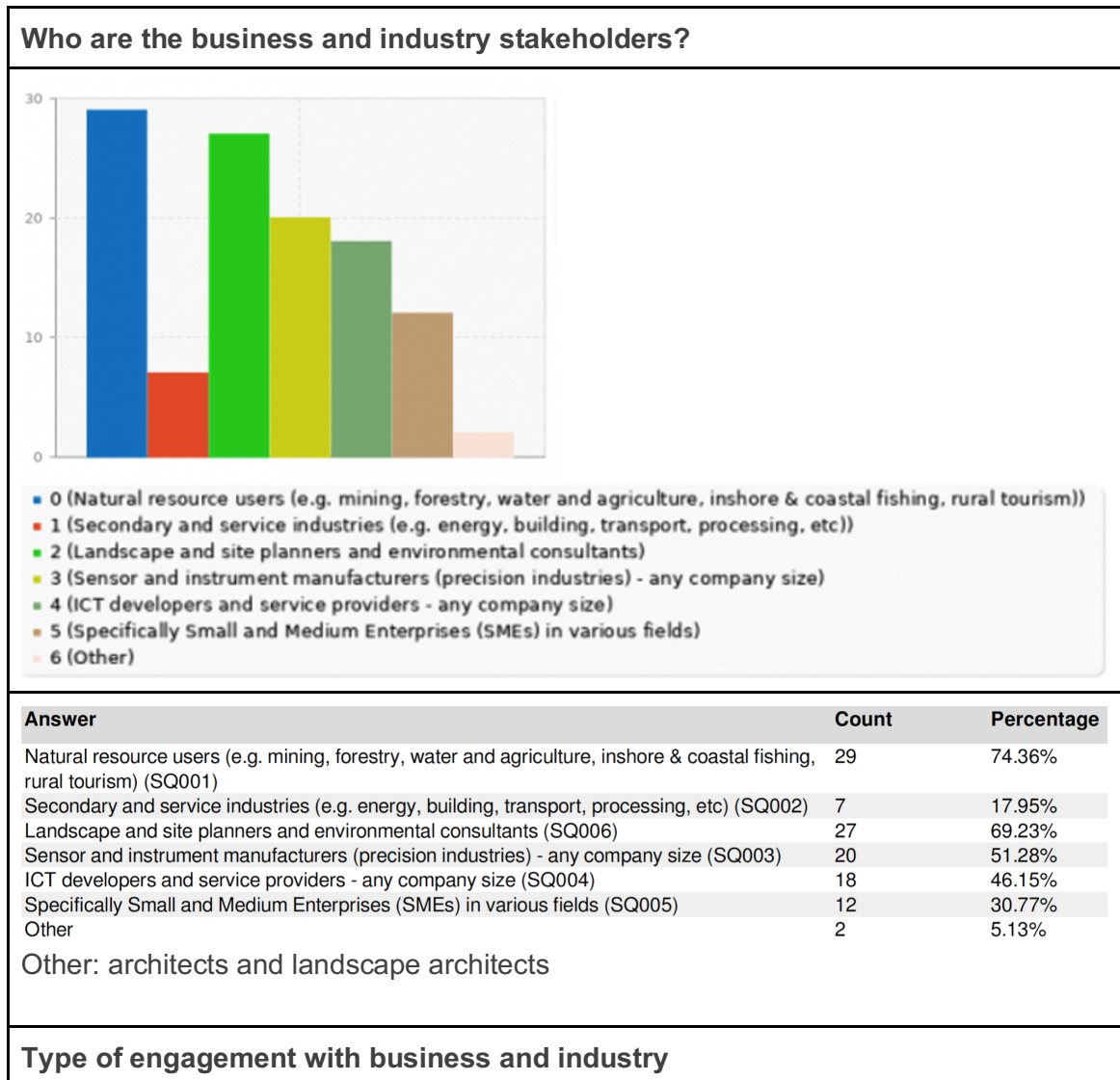


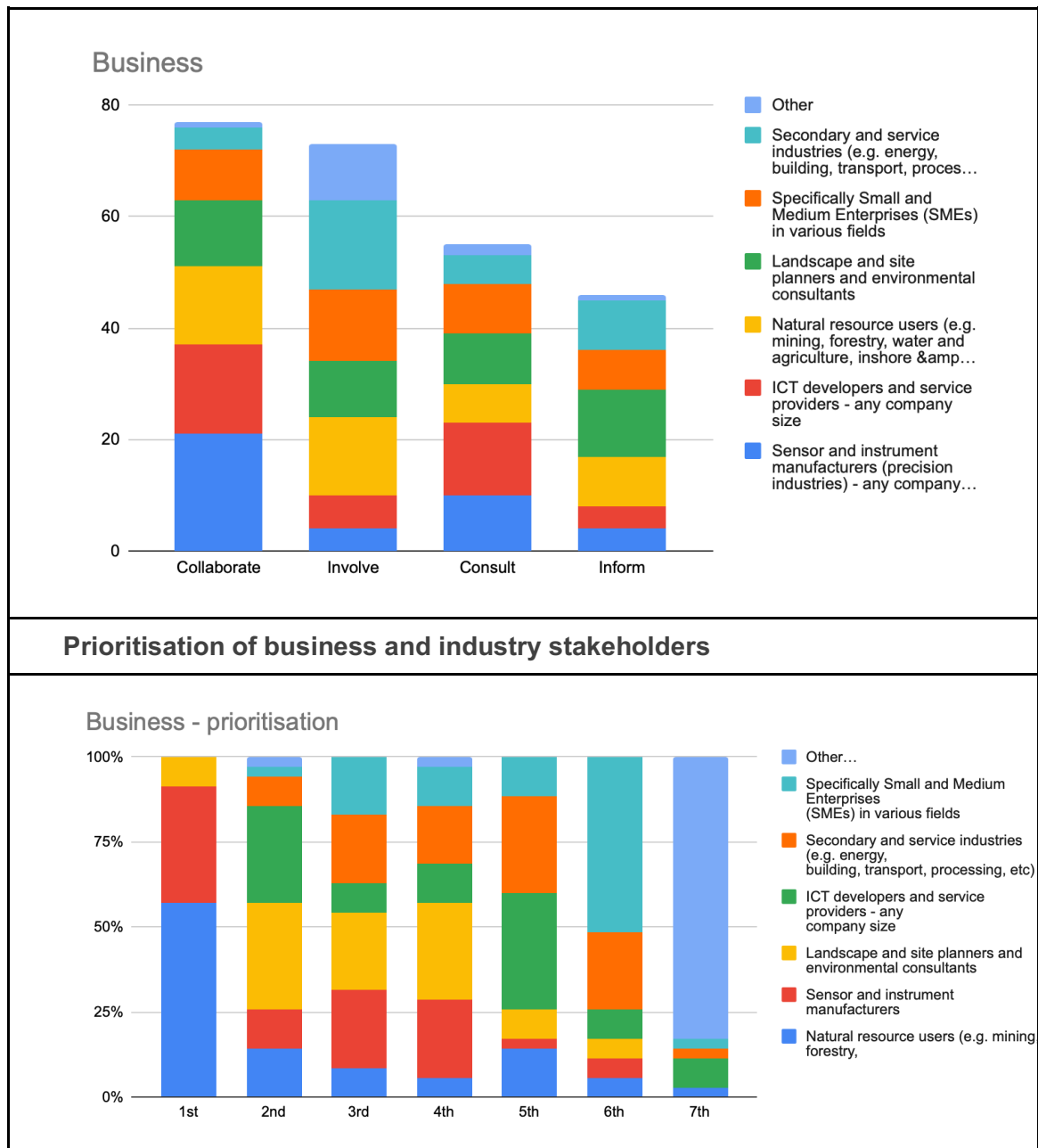
Below is a collection of written answers from the respondents.

Why does eLTER engage with civil society? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from the active citizen`s perspective?

- *To increase outreach of research results, mostly for the purpose of awareness raising.*
- *We need to have the trust of civil society. Science needs to be credible in the eyes of the public. We can help to make science transparent and this increases the credibility and trust among the citizens. This has an effect on how well people accept and perceive the funding for science and RIs too.*
- *Civil society support is necessary for all publicly-funded activities. Also adds legitimacy to research activities, and produces synergies like increase in ecological literacy. Citizens are generally unaware of research activities, but if the research is on subjects that affect the lives of citizens, they would likely want to be engaged.*
- *Our funding comes from public sources and civil society should know how their money is used. The data are also valuable teaching resources for schools etc. Civil society is also very interested in the areas of research that eLTER covers.*
- *In the end eLTER RI aims to serve society. It would be useful to involve citizens for example into observations or other projects. Engaging with civil society can also emphasize the importance of environmental issues and eLTER RI. Citizen science is one of the areas we need to develop in observational schemes.*
- *« I think that these stakeholders are essential in building IR's, namely through the collection of data by citizen scientists who would otherwise be very difficult to collect. The involvement of these people will also make them feel an integral part of the infrastructure and so they are increasingly willing to contribute to the conservation of the environment and the landscape in which they are integrated. »*
- *« Likewise, the collaboration of forestry organizations, NGOs and others is important in the design of the monitoring itself, since these associations will also be able to contribute their know-how to their design and to their realization, through their members. Everyone's involvement promotes the recognition of the importance of the landscape and consequently of its preservation. »*
- *"These stakeholders are essential in building RIs, namely through the collection of data by citizen scientists who would otherwise be very difficult to collect. The involvement of these people will also make them feel an integral part of the infrastructure and so they are increasingly willing to contribute to the conservation of the environment and the landscape in which they are integrated.*
- *eLTER will include socio-ecological research often carried out in trans-disciplinary projects. The involvement of civil society plays an important role when sensitivities, Motivation for Action etc. have to be detected. The importance of Citizen Science is growing. Therefore, Civil Society shall be made aware of its possibility to contribute to research tackling questions of its own interest.*
- *Citizens are aware of the environmental crisis and need to know the efforts by scientists, policy-makers and technocrats. eLTER should deal with permanent communication and outreach of major achievements to society.*

Business and industry





Below is a collection of written answers from the respondents.

Why does eLTER engage with the business? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from the business' perspective?

- eLTER data and resources are valuable for business e.g. sensor development.
- Businesses are a potential funding stream and/or partners in joint bids for funding.
- Business will enlarge the groups of users of eLTER RI. It can also create funding opportunities and allow access to new technologies and correspond to the needs of eLTER RI if the development is done together. Business can be seen as a provider of measuring equipment and it is important to be able to trust the quality and the reliability.
- RIs are required to be places for innovation. We just have to tackle that somehow. Provide something, ideas, opportunities. The issue from the business point of view

is that they do not know what is available for them, what opportunities and resources. And we do not know what we could provide to businesses (downstream businesses).

What types of businesses and from what sectors?

- *There are several business branches that may make sense to be involved in IRs. At the local level, all businesses that have a direct impact on the landscape, such as users of natural resources (eg forestry, miners, farmers, etc. primary sector) must be involved because they are the ones who directly exploit the resources will have a more direct impact on the landscape. Their involvement may lead to environmental awareness and more environmentally friendly attitudes. In turn, this involvement may also bring the perspective of the stakeholder and their needs to IR, with the possibility of directing the investigation towards the questions they intend to see answered. Only this collaboration will allow an effective sustainable management with a positive impact on the landscape scale.*
- *This same view of involvement will make sense to involve the secondary sector of industry, as well as small and medium-sized enterprises in various fields of activity.*
- *The sensor and instrumentation sector will have a particular interest in providing equipment that is effective and that, by proving this same effectiveness and providing innovative solutions, may be advised throughout the LTER network.*
- *ICT Services are essential for the transfer, storage, processing, accessibility etc. of data and Information.*
- *Less relevant than for other networks as business has been focused on production but we should probably engage with the insurance companies as environmental disasters are becoming a larger part of their business/payment.*
- *Finally companies have to be integrated in RI construction and operation to transfer knowledge to society in the form of economic activities. SME are better suited for this purpose to become the translatory tool of information provided by eLTER to the society.*
- *eLTER can be supported by business and industry in the instrumentalisation of eLTER sites and the development of service products. Companies could hope to increase their turnover and their visibility at European level (opening of further sales markets and company expansion).*

eLTER has limited experience working with business

- *Very limited experience in engaging with the business e.g. business is only relevant for the eLTER equipment (sensors) and may be data management (ICT).*
- *The people who develop the research infrastructure are not very skilled in creating services for business purposes. Another thing is that for our own sake we also need technological development for effective observations and data solutions (upstream businesses). These can be done in co-development. The main thing is: there is not enough capacity to tackle the private sector stakeholders.*
- *“I suppose we could if there were mutual interests. But I generally believe that unless the business is focused on non-environmentally destructive activities, business goals are antithetical to scientific endeavors, and in many cases to environmental goals, as well.”*

Peers in environmental research and observation

Who are they?		
Answer	Count	Percentage
Monitoring and observation networks and organizations in-situ and remote (UNECE-Working Group on Effects, WMO, JRC, ESA/Copernicus, EIONET) (SQ001)	29	74.36%
Environmental Research Infrastructures (RIs in mainly in the ESFRI context) (SQ002)	33	84.62%
Other	4	10.26%
Other: UNECE-WGE, Eurosite, projects, networks in ENVRI		

Below is a collection of written answers from the respondents.

Why does eLTER engage with peers, e.g. other environmental research infrastructures? What are the specific (expected) issues (priorities) concerning the eLTER RI establishment from these peers' perspective?

- *eLTER aims to be holistic, so involving peers is extremely important. The key issues are: added value (co-design), cost-efficiency (co-location) and interoperability.*
- *Exchange of monitoring experiences, data, and methods/models.*
- *We can learn best practice and pool our experience and resources. It is important that the data infrastructures can work well together (interoperability) to enable cross-disciplinary research.*
- *Synergies: It makes no sense to be developing monitoring programs for the same goals, or goals that have many points in common without trying to build bridges. By collaborating with other networks, it is possible to find synergies and be able to do more with less resources.*
- *Owing to the broad approach of eLTER co-location will be key. And this is only possible when engaging with other RI infrastructures and also monitoring networks.*
- *Engaging with peers gives opportunities of learning and potential for cooperation. Integrative activities can also be cost-efficient.*
- *eLTER must not overlap with the other RIs. There has to be dialogue and agreements with the peer RIs about the interfaces. Our identity has to clearly differ from the other peers in Europe. At the same time we need to be visible and have our place in the peer community not to be overridden. And at the same time we need to actively find common solutions with our peers. The Horizon Europe emphasises that the RIs in one domain (like env RIs) need to start joining forces (integrated communities), making service level agreements with each other, even merging. We need to have distinctive services, and we need to maintain our integrity in this landscape. All peers are struggling with these issues.*
- *It is strategic to identify every thematic stakeholder to engage them in our RI to have a better understanding of the needs and requirements these peers are addressing to incorporate them in the development plan.*

Additional categories suggested

Political allies such as green parties and clubs.

Schools, colleges and universities using environmental data.

Natural resource use observatories (eg water "operational state services" in FR)

6.4 Results of the brainstorming discussion during the Stakeholder identification workshop

1 September 2020, Brainstorming

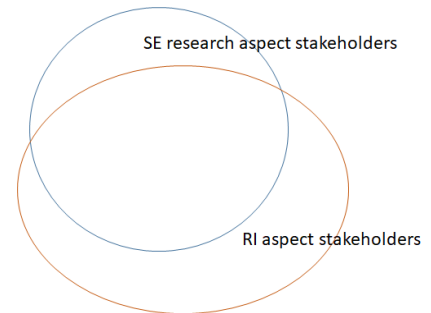
Who are the most important stakeholders for “my part” of eLTER?

- Participant 1: What stakeholders are important in which phase (1--3--6 years it may be different); For me the most important are: **National operator institutions, ministries**; At this moment of time the most important from my perspective is to strengthen the community and build it and the common vision.
- Participant 2: Currently, the LTSER platform “first-layer” stakeholders: **platform managers, researchers, protected area managers**, other **decision-makers** and at other planning levels, other **public officials** and **users** that we can identify at an early stage.
- Participant 3: Since my organisation (INGENIO, CSIC-UPV) and EBD-CSIC operate together in eLTER PLUS for many purposes - the **eLTER PLUS SE Team** and all other interested partners and WP/Task leads in our whole systems approach (SE, transdisciplinary).
- Participant 4: For the Arava Valley/Wadi Araba Platforms in Israel and Jordan the most important stakeholders are the **local governance structures** (details depend on community/scale - e.g. **family leaders, community leaders, regional officials**), **local business interests** (ecotourism, farmers, energy producers), **research institutes, regional planners, ecologists** (on both sides of the international border).
- Participant 5: **Senior managers of the UK LTER network partners**; the **UK environmental research funding bodies**; **environmental scientists** interested in long-term data.
- Participant 6: **city governors, regional decision-makers, academics** local and national, **service providers, ministries** (although there is no good entry point there), members of PoLTER
- Participant 7: **local policymakers, landowners, producers associations, environmental NGOs, researchers, beekeepers, farmers, hunters, birdwatchers.**
- Participant 8: **The Ministry** (of science and education), **our networks** (RZA, OZCAR, station managers and technical staff), **Department heads, Universities**, possibly **national environment agency.**
- Participant 9: **Department and faculty heads, station managers/PIs, ministerial level, Academy of Finland** (funding agency), **researchers** and **students.**
- Participant 10: **Department and faculty heads, station managers/PIs, Managers of conservation areas, environmental NGOs, students, citizens.**
- Participant 11: **Media outlets** with a focus on issues related to eLTER, **social media opinion leaders** in the area of ecosystem research and research infrastructures, **DGs** and bodies of the EU.
- Participant 12: **ministries, research funding bodies, site managers**, data providers (**scientist**), **universities.**

Following the brainstorming, a discussion was opened to discuss the similarities and differences across the identified stakeholder categories. What are the common patterns depended on the stage of development of the eLTER network and on the specific institutional and funding arrangements in the country.

Summarized from this discussion, the following conclusions and recommendations to the eLTER stakeholder engagement work could be drawn:

- A systematic classification and prioritisation of stakeholders is needed, to synchronize the categories and typology of stakeholders across the eLTER network.
- to develop and use common language and labels across the projects and eLTER structures, also to be used across both projects WPs and Deliverables (consistent language): it is urgent to develop standardised terminology, a glossary of terms.
- to clearly define responsible persons for each stakeholder group and activity within the projects.
- a useful stakeholder prioritisation framework: e.g. an Importance/Influence matrix. Until this is done, as stakeholders should be prioritised early on in the project, activities should start in relation to the most important stakeholders at European level (to ensure their immediate information needs are met), then move on to national and local level stakeholders.



- to distinguish between stakeholders as subjects of eLTER RI interactions and as objects and codesigners of eLTER S-E research (blue circle) that the RI enables (brown circle). There is also a degree of overlap, but not full:
- There are timing mismatches among project WPs and tasks that rely on a stakeholder analysis. This requires a regular review and update of the classification and priorities. To deal with timeline issues e.g. changing stakeholder landscape, evolving and recurring topics in different WPs the project needs to ensure that stakeholders are reviewed periodically. This could be done throughout several WPs and Deliverables (Figure 2).
- Task 2.1 of eLTER Plus project will also be collecting stakeholder engagement information on a recurring basis.