



National and institutional level strategies collected

WP8 - T8.1 - MS8.3



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1. Background

The European integrated vision of science and innovation that includes research grounded on a seamless, unified, and accessible hub of information, will tool-up scientists to drive excellent science. The European Digital Strategy together with parallel supporting initiatives such as the European Scientific Forum of Research Infrastructures (ESFRI) and the development of the necessary aggregating platforms around the European Open Science Cloud (EOSC) provide the right umbrella for facilitating the transformative change that current societal challenges demand of governments and institutions to support the scientific community. Research infrastructures are there first to facilitate and then centrally provide domain-based data, and to offer a common catalogue of services demanded by its community in the context of today's highly technological environment that will only increase exponentially in the coming years. Becoming digital is no longer a long-term objective but a requirement for the present.

DiSSCo, the Distributed System of Scientific Collections, will provide those services on the foundation of European natural science collection digital objects that will integrate the digital representation of the specimen with its metadata and derived data from bio- and geodiversity collections.

As a research infrastructure, DiSSCo will gather forces around the delivery of findable, accessible, interoperable, and reusable (FAIR) data derived from natural science collections (NSCs) across Europe at a level of accuracy, precision, and scale that breakthrough scientific research requires. Providing open access to the large set of data and metadata extracted from the study of geo- and biodiversity collections is a herculean effort. European natural science museums, natural history museums, botanic gardens and other hosting collections institutions hold ca. 1,5 billion specimens that represent 80% of the world's described biodiversity. Currently, access to the data contained in these collections is hampered by, among other things, the lack of digitized specimens, the need for physical access, and the lack of interconnectivity with specimen-derived data located in distributed resources. Only 10% of the existing collections are digitized and these digital objects, duplicates of their physical counterparts, are concentrated in a very few institutions. Moreover, in order to provide open access to that information, physical barriers resulting from the existing

fragmented landscape of geographically dispersed facilities (and hence, collections data) must be overcome. Data residing in these facilities is further disconnected due to differences in standards, protocols, workflows, and management, also impeding seamless linkage and aggregation of information. The existence of different governing frameworks supporting natural science-based research adds another layer of complexity to the existing landscape. The call for a comprehensive and coordinated set of data held by institutions (which is the premise of DiSSCo supported by the collaborative effort of the community around CETAF, the Consortium of European Taxonomic Facilities), will need to address data harmonization and interoperability through common policies, protocols and standards that facilitate a coordinated response while still respecting unique attributes and preserving specialisation.

Before DiSSCo becomes operational (expected by 2026), the involved parties need to attain a level of maturity that reflects a shared understanding of a common framework that will enable coordination and integration. To that end, it is essential to define the different stages where alignment for interoperability will occur, from individuals to regional settings. With the NSCs as the original source of information at the center of DiSSCo services, the research community preserving, curating, enlarging and enriching the collections constitute the first step in the data life cycle value chain. In contrast to the traditional way of doing science, researchers will need to operate differently and become aware of the urgent need for coordination and interconnectivity, breaking silos while building collaborative and interlinked environments. To that end, the use of common standards, harmonized protocols and shared procedures based on best practices and agreed upon policies will enable interlinking data and building a comprehensive and organically functioning knowledge base. Consensus on a common shared approach will reframe limiting research perspectives and release restrictive institutional and national frameworks.

To address both data access and interoperability in an efficient and optimal manner, decisions made by national authorities to define, endorse and implement the required policies will rely on prioritization and specialization criteria that are themselves a function of the priorities and strategies dictated at the national and then institutional levels. Some of the critical factors that add complexity to the landscape in which DiSSCo operates include geographically distributed

facilities, diversity of applied frameworks (from enforced laws to suggested best practices), the diversity of the involved parties (public entities under academia, research national agencies or local governments), and differences in applying common standardized data generation and curation protocols (from individual datasets to harmonized regional references such as SPECIFY).

In summary, harmonizing policies supporting data provision is pivotal to advance the progress of constructing a comprehensive hub of geo- and biodiversity data. CETAF community is critical in this process with current emphasis on DiSSCo related activities, i.e. in the frame of collections digitization.

2. Rationale

In short, the DiSSCo RI works for the digital unification of all European natural science assets under common curation and access policies and practices that aim to make the data easily Findable, more Accessible, Interoperable and Reusable (FAIR). To those essential attributes, a new “R” for reproducibility will soon be added as a goal in scientific data delivery. Optimal use of natural science collections (NSCs) throughout the environmental science-related domain and equally across disciplines by facilitating (physical and more importantly virtual) access to digital collections, will position NSC-derived information at the forefront of data intensive bio- and geodiversity science. Essential to this new way of doing science, governments, institutions, and individuals will need to work together in guiding, endorsing and implementing a transformative change.

An integrative approach will rely on several criteria that will support objectives and maximize use of resources: institutional specialization priorities need to be aligned with national research and innovation strategies, and vice versa, a successful research strategy should be anchored on the qualification and maturity of the actors that will implement it.

The process for developing a shared agenda that will guide the implementation of DiSSCo RI at national and institutional levels is a process which begins with understanding the existing

consortium landscape. Subsequently, a coherent and comprehensive framework must be built upon that, that accounts for the diverse capacities and interests of the actors involved and their maturity in implementing the policies and strategies necessary for providing and using geo- and biodiversity data. For that, institutional and national specialization plans will be developed. Categorization and deployment of the specialization plans across institutions and countries will be governed by assessment across five dimensions: scientific realm, data scope, technological base, governance framework and financial commitments.

Achieving the necessary Implementation Readiness Levels (IRLs) of those same five dimensions constitutes the overall aim of the DiSSCo Prepare project, the EU funded project submitted under the Call H2020-INFRADEV-2018-2020 (Development and long-term sustainability of new pan-European research infrastructures) and approved with number 871043. DiSSCo Prepare (DPP) project supports preparatory activities of DiSSCo before the infrastructure can enter its construction and operation stages.

3. Objectives

DiSSCo Prepare Project will deliver DiSSCo's Master Plan, the final combined product of all the project's content related tasks that will serve as a blueprint for construction of DiSSCo RI. As mentioned, DiSSCo Prepare will bring the infrastructure up to Implementation Readiness Level across the five dimensions of science, technical, organizational, financial and data, as well as set the groundwork for a smooth, clear, agreed upon path whereby all involved actors are engaged and committed to support DiSSCo's continuing development until it becomes operational in 2026.

National Smart Specialisation and institution-level strategies inform prioritisation of objectives in each DiSSCo member country. Gathering the state-of-the-art nationally will provide the basis for the construction of an overall strategic map necessary for DiSSCo activities distribution and operation. Among the objectives of DPP Work Package 8 "Communication and Stakeholders Engagement", DiSSCo will work with researchers, institutions, and national representatives towards developing a **comprehensive Specialisation Plan** that will inform **capacities**

distribution, prioritisation of objectives and differentiation of specialisation strategies, considering specific circumstances at both the national and institutional levels. The Specialisation Plan will be rooted in a clear definition of areas, domains and categories to be addressed where policies, protocols and standards are relevant for DiSSCo implementation, classification criteria, and the requirements to inform compliance. Definition of the baseline will enable the investigation, development and implementation of pivotal policies and priorities by each country via the DiSSCo involved institutions, that will ensure a smooth path to the DiSSCo's construction and operation with partners ready to maximise the impact of participating and benefiting from such participation. Recommendations for specialisation distribution of collections digitisation will be provided under this Specialisation Plan.

To effectively achieve this goal, WP8 facilitates regular and close communication with national representatives through the respective national nodes (NNs) to channel the engagement of governments (whichever the level might be for each country) and, among others, enabling:

1. the identification of existing landscape of specificities,
2. based on the former, the definition and development of a granular thematic specialisation plan for collections digitisation ranging from national to institutional levels, and
3. the investigation of synergies and collaborative opportunities with relevant stakeholders (Task 8.3).

Therefore, the first step in this engagement and advocacy process towards the Specialisation Plan implies the **collection of relevant information from countries and the participating institutions**, which is identified as Milestone MS8.3 due on 28th of February 2021. This has been not an easy task due to the variety and wide scope of topics that collections digitization relates to. Still, thanks to the mechanisms implemented in the original "Communication and Dissemination Strategy ([D8.1](#)) and the Advocacy Strategy (including bilateral meetings) developed under T8.4, the collection of relevant information has succeeded and resulted in the development of a pivotal tool (country factsheets) that will inform the Specialisation Plan, governance model, and other activities essential for DiSSCo RI implementation.

4. Data collection process

Successfully balancing the activities and priorities of facility-, national- and European-level investments will be critical to operating a unified RI. Understanding the strengths, complementarities, unique attributes, capacities, and capabilities of its component facilities will be essential to achieving programmatic balance while at the same time establishing the means for DiSSCo RI to remain flexible in adjusting to changing priorities. Therefore, (smart) thematic specialization plans will be developed via direct communication with national nodes and their national authorities, targeted questionnaires and analyzed responses. The outputs of such investigations, however, serve multiple purposes in their capacity to inform a host of other DiSSCo advocacy, governance or engagement strategies as identified below in Section 2, *Connection to other tasks*. The national and institutional level strategies discussed in this document refer to those collected and compiled in developing DiSSCo's Funders Forum (FF) governing body whose outputs, while essential to the immediate need of establishing the FF, will be upcycled to inform other DiSSCo Prepare advocacy, governance, policies, strategies and plans including smart specialization.

As a pan-European RI, DiSSCo predicates its sustainability model on national financial and political support. Therefore, in DiSSCo's preparatory phase, it is essential that the RI stays aligned with but also flexible in response to (changing) national and international science and infrastructure priorities, and that national funding representatives be kept well-informed and consulted on both the strategic and operational planning of DiSSCo RI. The sooner DiSSCo secures the engagement of national funders in its decision-making processes, the easier it will be to shift from a project-based initiative to a sustainable RI that is well-embedded in national RI roadmaps. To this end, DiSSCo Prepare has set-up the Funders Forum consisting of financially and politically committed pan-European national authority decision-makers responsible for natural science collections and research infrastructures, and/or ESFRI delegates. The FF will hold a key position in the overall governance of DiSSCo Prepare as a funding consulting body.

Securing the long term political and financial commitment of national funders however, is a challenging task that remains ongoing. It is a carefully choreographed pas de trois between the

DiSSCo CSO, and more specifically CETAF as WP8 leader and the hub of the community, the national nodes acting as DiSSCo ambassadors, and their national authorities. It requires the well-considered application of DiSSCo Prepare's internal and external engagement strategies and tools codified in DiSSCo Prepare's WP8, *D8.1, "Communication and Dissemination Strategy"*, and advocacy strategies further framed in DiSSCo Prepare's *Advocacy Strategy*. The internal engagement strategies and tools employed by CETAF to deploy different tasks, specifically T8.1 under WP8, and globally by the CSO whenever required, with the national nodes are designed to keep the nodes aware of their critical roles, proactive in DiSSCo advocacy, informed and aligned with clear consistent messaging regarding the DiSSCo RI, and build trust and team spirit. However, even the most well prepared and synchronized teams may not be successful if their strategy lacks contextual refinement. Therefore, since countries differ in their science and infrastructure priorities, capacities, socio-political zeitgeist, and technological maturity, generic one-size-fits-all messaging by NNs would be insufficient to convincingly empower their narratives.

To customize the appeal by national nodes for DiSSCo engagement, each country's specific circumstances were evaluated and characterized to inform a node specific strategic approach. Accordingly, national level data collection and engagement strategies were employed to facilitate a deeper understanding of national circumstances and priorities and inform further strategic positioning (as to set-up and engage the DiSSCo's Funders Forum). The data collection tools consisted of two questionnaires (the National Priorities Matrix and the NN Survey on National Strategies) and bilateral meetings. Questionnaire outputs were compiled in the form of 'country factsheets' and served as the basis for 21 subsequent individual bilateral node meetings that further refined DiSSCo's country level understanding.

This milestone document (MS8.3) will report on the national and international strategies collected (June 2020 - January 2021), as the result of data collection strategies and tools under T8.1 and further used during Phase 1 of the Funders Forum communications campaign. The document will reflect the outcomes achieved in developing the DiSSCo Engagement Strategy under WP8 (T8.1)

in alignment to DiSSCo Prepare's Advocacy Strategy.

a. National priorities matrices

The communications campaign as part of the Communication and Engagement Strategy (D8.1) began in June 2020 with the deployment of the first of two questionnaires, the National Priorities Matrix (Figure 1).

<i>Criteria/ Node Status</i>	Readiness 1	Readiness 2	Readiness 3	Readiness 4	Readiness 5
Policy setting	<i>No national RI roadmap</i>	<i>Envisaged in short</i>	<i>Thematic alternative</i>	<i>Proposal submitted</i>	<i>National RI Roadmap</i>
Governmental Funding	<i>No funds beyond facilities operation</i>	<i>Funding to other domain-related initiatives</i>	<i>Fragmented funding through facilities</i>	<i>Funding through thematic national projects to the RI</i>	<i>Direct Funding to RI</i>
Position towards other RIs/initiatives	<i>Isolation</i>	<i>Competition</i>	<i>Informal collaboration</i>	<i>Agreement</i>	<i>Embedment</i>
Cohesiveness at national level	<i>Disparity</i>	<i>Vision aligned</i>	<i>Discussion at high level</i>	<i>Consortium in preparation</i>	<i>NN consortium</i>
Comments:					

Figure 1. National Priorities Matrix disseminated to national nodes to assess national readiness in four important areas. Readiness levels identified specific attributes for each assessment area. Textual qualifications of choices could be made under 'Comments'.

The survey was disseminated to all national nodes to assess national readiness status in four important areas, (i) policy setting, (ii) governmental funding, (iii) position towards other RIs/initiatives, and (iv) cohesiveness at national level. For each assessment area, NNs were asked to specify *one* of five readiness levels. Readiness levels were not numeric or otherwise generic but identified increasing levels of achievable attributes specific to each assessment area (Figure 2). A space was provided at the bottom of the form for textual comments allowing NNs to qualify their choices.

FOUR ASSESSMENT CRITERIA:

- 1. Policy setting:** Is a national RI roadmap in place?
 - *No national RI roadmap:* there is a void at national policy level
 - *Envisaged in short:* the national government has taken steps to establish a national roadmap.
 - *Thematic alternative:* the national node is able to advocate for DiSSCo through domain-related policies (e.g. digitization, biodiversity, cultural heritage).
 - *Proposal submitted:* the national node has submitted a proposal for DiSSCo to be added to the national RI roadmap and the answer is pending.
 - *National RI roadmap in place*
- 2. Governmental funding:** relevant policy entity financially supports/has financially committed to DiSSCo RI or not?
 - *No funds beyond facilities operation :* at national level, there is an absence of funding opportunities focused on research.
 - *Funding to other domain-related initiatives:* at national level, absence of funding opportunities targeting RIs.
 - *Fragmented funding through facilities:* funding opportunities exist at national level, but they are scattered.
 - *Funding through thematic national projects to the RI:* NNs advocating for DiSSCo are eligible for funding via projects.
 - *Direct Funding to RI*
- 3. Position towards other RIs and initiative:** what is the position of DiSSCo towards the other RIs supported by the national government?
 - *Isolation:* DiSSCo is not part of the landscape of governmentally supported RIs.
 - *Competition:* DiSSCo is not clear yet to other players which makes collaboration difficult and leads to competition.
 - *Informal collaboration:* DiSSCo has developed collaborations with the other RIs that are yet to be formalized.
 - *Agreement:* through the NN, DiSSCo has established formalized agreements towards collaboration.
 - *Embedment:* DiSSCo is completely embedded and an integral part of the national RI landscape.
- 4. NN internal cohesiveness between participant institutions:** is a national consortium formed? Has the node established operation and communication mechanisms between its participating institutions?
 - *Disparity:* NSC institutions act independently with no current sign towards harmonization.
 - *Vision aligned:* the institutions have evolved to an aligned vision that sets the foundations for a future consortium.
 - *Discussion at high level:* the discussions have moved to national authorities level towards the formation of the national consortium.
 - *Consortium in preparation:* the institutions are in the process of formalizing an agreement.
 - *National consortium is formed.*

Figure 2.

Definition of Four Assessment Criteria Readiness Levels. Each of four assessment criteria presented in the National Priorities Matrix was evaluated based on specific attributes defined above.

b. NN survey on national strategies

A second questionnaire in the engagement toolkit, the National Nodes (NNs) Survey on National Strategies, was disseminated to NNs as a Cognito form. The questionnaire was deployed to gain a more detailed understanding of the following areas:

- relevant national authorities,
- national funding structures including those for data mobilization,
- the positioning of natural science collections and DiSSCo in national RI roadmaps,
- a qualitative assessment of DiSSCo's relevance and potential contribution in the national political context,
- the status of the node or natural science institutions in having input to:
 - agencies or ministries responsible for deciding about participation in RIs,
 - national level environmental policies,
 - other decision-making or advisory bodies related to institutional missions, or
 - their participation in other biodiversity or environmental fora representing national interests.
- level of node's or natural science institution's interactions in the European landscape including with ESFRI delegates, other research infrastructures, and DiSSCo advocacy at the European level.

As mentioned, results from both questionnaires were compiled to form the basis of individual 'country factsheets' which became the starting point of advocacy actions for subsequent in-depth bilateral discussions with national node representatives, and for developing sound communication tools (key messages, DiSSCo brochure, website update, internal communication preparations).

c. Bilateral meetings

Over twenty-one bilateral meetings were scheduled with national node representatives to provide the opportunity for the Task leader and the CSO to clarify data submitted in the questionnaires, for node representatives to ask questions, express personal perspectives, identify current and

potential roadblocks to progress, and for both parties to arrive at a common understanding of national priorities and the relative position of the nodes, natural science institutions and DiSSCo in the national and European frameworks.

The country factsheets were enriched with the outputs from these discussions making them an extremely valuable resource in the continuing strategic needs of the Funders Forum initiative, as well as to inform the development and implementation of future DiSSCo Prepare advocacy and governance policies, strategies and plans including smart specialization.

5. Outcomes achieved

a. Country factsheets

The country-factsheets are the result of intensive work collecting information from DiSSCo nodes. As described above, National Nodes provided information via matrices and questionnaires on national priorities, and secondly, described the complexity of the research infrastructure landscape (authorities, funding programmes, priorities, challenges, added values, etc.) at a national level. Communities from countries without a node yet collaborated to provide the most aligned version from their different institutional point of view.

The information collected formed the foundation for discussions with DiSSCo nodes in more than 21 bilateral meetings. Those meetings had a twofold objective: to guarantee a common understanding of the information collected (national needs and priorities), and based on it, to discuss further advocacy actions to be tackled by each node or institution (the latter being the case in those countries where the national consortia are not formed yet as it happens in Belgium, Germany, and the United Kingdom).

The most relevant information derived from the bilateral meetings is now part of the country factsheets that has become a meaningful and valuable resource, continuously updated as part of DiSSCo engagement activities. The information encapsulated in these factsheets will also be used in other activities core to the future implementation phase of DiSSCo. For instance, it will facilitate

the operation of the new advisory body, the Funders Forum; it will identify, if any, patterns of conduct (regional *modus operandis*) that may facilitate discussions with countries not yet engaged in DiSSCo; it will contribute to the work to produce the DiSSCo (thematic) Specialisation Plan (under T8.1) and, among others, will augment discussions on policy, governance, DiSSCo positioning, and stakeholder engagement.

b. Engagement mechanisms

The collection of the aforementioned data and insights was structured in the framework of the deliverable D8.1 Communication and Engagement Strategy (T8.1) which was published in April 2020 and serves as the basis for engaging processes (T8.1) together with the complementary Advocacy Strategy actions (T8.4) throughout the first year of the DiSSCo Prepare Project. Both strategic plans define engagement and advocacy processes and mechanisms to: (i) ensure that National Node representatives are active and informed project partners; (ii) maximise node alignment towards a unified and coherent mechanism to address national governments; (iii) foster and strengthen partner project ownership; and (iv) enhance partner advocacy competencies through ongoing efforts from both WP leader and CSO to collaboratively define engagement and advocacy actions.

To achieve these key objectives and collect the various types of information regarding each node's national landscape, several engagement mechanisms were implemented under WP8 (T8.1):

- Frequent virtual meetings:
 - NN meetings which were convened monthly and presented an opportunity to disseminate DiSSCo updates and collect feedback from the nodes regarding how to best adapt the external communication tools, the DiSSCo narrative, to best support their advocacy actions.
 - Bilateral Meetings, which as mentioned previously in this report, were meetings between CETAF as Task Leader, the CSO and each national node. They were an opportunity to clarify information collected through data collection tools

conceptualized in DiSSCo's Advocacy Strategy, but also an opportunity to leverage collective knowledge to identify next steps for DiSSCo engagement and advocacy.

- Drop-in sessions regarding the Funders Forum survey: these sessions allowed for the national node representatives to obtain further clarification regarding the survey and the future advisory body, in a smaller, more personal setting.
- The Internal Engagement campaign launch meeting represented an attempt for the DiSSCo communication and engagement team under WP8 to engage with institutional communication staff to have them become active partners to DiSSCo communication efforts. It was a key learning moment, as it brought to light the important challenges encountered by nearly all of the institutions in involving each institution's communication staff in relaying DiSSCo communication initiatives. As part of this learning processes, the communication strategy will include the translation of institutional-led initiatives regarding museum-level engagement (Naturalis) to as many other institutions as possible.
- Diverse data collection tools such as the national strategies or Funders Forum survey and the national priorities matrix that were described in the previous section of this report addressing data collection processes.

These tools, mechanisms and processes were a key outcome of the strategies collection work that proved their efficiency in enhancing remote collaboration with project partners located across Europe under the WP8 overall engagement initiative.

c. Funders Forum

Finally, as mentioned previously, the data and insights collected under T8.1 were also part of Phase I of the DiSSCo advocacy strategy to inform the set-up of the Funders Forum (DiSSCo's interim advisory body). This required that national node representatives implement their respective advocacy actions (as discussed and coordinated during bilateral meetings) towards securing their national government's commitment. The national node advocacy efforts resulting from their engagement and commitment previously gained through the NNs meetings, were highly

successful as they resulted in DiSSCo securing critical mass for the Funders Forum's inaugural meeting at the end of February 2021.

6. Connections with other tasks (as a source of information to others)

a. Advocacy (T8.4)

DiSSCo's preparatory phase relies on a series of projects to consistently develop the necessary elements for the implementation phase (construction and operation phases).

To ensure alignment and capitalize on synergies among all the projects, DiSSCo set up an institutions-based governance model (the interim General Assembly) that ensures the coordination and strategic steering of the current DiSSCo community efforts. The model emphasizes the importance of communities of practice in supporting the new research infrastructure and translates into participation and financial support from institutions and experts from more than 120 Natural Science Collections (NSCs) across Europe through the NNs representation.

However, the transition to the implementation phase of the DiSSCo Research Infrastructure will demand, by definition, a new governance model based on sound national political and financial commitments. Essential to achieving this is the need to equip the DiSSCo Research Infrastructure with mechanisms to avoid misalignments with the national scientific priorities and guarantee long-term sustainability in the scientific, technical, data, governance, and financial dimensions.

Therefore, the interim General Assembly focuses on current preparatory phase objectives and will yield decision-making powers to the structures entitled to operate under the forthcoming DiSSCo legal entity that will drive to the running of the RI when operational.

The commitment of the national authorities to DiSSCo will depend, among others, on how early and consistently, DiSSCo engages with national interests and how it is perceived as one of the key facilitators of scientific excellence, benefiting socio-economic developments.

With the aim to ensure that DiSSCo's interaction with national authorities is constructive and fruitful, WP8 with the support of the CSO combines communication, dissemination, and advocacy actions.

The current advocacy strategy (Annex 2) underlines the need for advocacy actions and describes in two phases the activities and actors committed to establish a permanent and fluent communication between DiSSCo developments and the national priorities.

The advocacy strategy relies on sound communication tools and activities to guarantee that DiSSCo effectively fulfills specific national needs. The first phase of the advocacy strategy describes activities to establish a new advisory body, the Funders Forum (FF). The FF's objective will be to keep national authorities informed and prepare them to take over the responsibility of governing the DiSSCo RI once the legal entity is in place.

The advocacy strategy also describes activities in the second quarter of 2021 as part of a continuous procedure to ensure national authorities actively participate in both the strategic and operational planning of DiSSCo and commit to supporting it during the implementation phase.

b. D8.2 Thematic Specialisation Plan (T8.1)

The DiSSCo (thematic) Specialisation Plan, a key deliverable from WP8 "Stakeholder Engagement and Communication Strategy" (D8.1), is an important component towards completing DiSSCo organisational readiness. Foundational to this outcome, is the collection of each country's state-of-the-art as the basis for building a holistic strategic map necessary for DiSSCo activities distribution and operation. The country factsheets (Annex 3) will again serve as a basis for collecting each country's specific attributes, and their value and application will increase as they are progressively enriched. The precise format and content of the strategic map will be defined collectively with the task partners around the following shared vision, drafted by the Royal Belgian

Institute of Natural Sciences (RBINS), the institution leading this deliverable D8.2: *“The organizations contributing to DiSSCo form a very rich but diverse network. Consequently, many assets are unevenly distributed amongst these organizations. In order to document, promote and optimize the assets, and possibly to identify gaps, we will develop a tool to collect all relevant information and enable the assessment of the institution's specificities. The specialization plan will come out from the information in the tool, the gaps identified or SWOT analyses made.”* The thematic Specialisation Plan is closely connected, among others, to the work and expected outcome of WP7's task T7.3 Develop and establish DiSSCo policies as well as the work currently done in DiSSCO linked project, SYNTHESYS+ with the policies metadata schema.

c. DiSSCo Policies (T7.3)

The development and establishment of DiSSCo policies will also require that partner institutions be provided with a direction map, identifying a series of targets and possible pathways to reach them to ensure that their institutional policies align with common principles and rules supporting DiSSCo services (T7.3). The data outputs and engagement strategies developed for, and matured over the course of this deliverable, will go a long way towards ensuring that subsequently developed DiSSCo policies (e.g., for facilitating technical alignment) are sufficiently flexible to address and fully integrate consortium member needs regardless of institution size, geographic region, capacities, or funding resources.

d. Governance (T7.1)

The DiSSCo governance model, strategy, and operational planning will be defined as part of the legal entity model for DiSSCo RI (T7.2) to be approved by the interim General Assembly, with a prior assessment by the Funders Forum advisory body.

Wide DiSSCo partner consultations will be carried out to ensure the governance model is fit-for-purpose to ensure endorsement and commitment of the partnership built on top of the existing

DiSSCo Memorandum of Understanding. The consultation processes are consistently facilitated by the communication and engagement activities (T8.1) with the National Nodes under T8.1.

The knowledge from the previous work on institutional and national strategies will directly benefit the discussions on how to articulate the institutional relationship in DiSSCo RI, and possibly, also the work about the thematic Specialisation Plan (T8.1).

7. Continuation of the process (follow-up mechanisms to maintain alignment and to fill in possible gaps)

Building on top of this consequential work, the next phase will be further informed by the needs and gaps identified throughout the first year of DiSSCo Prepare project.

a. Identified needs (support to be provided to NNs)

Experience gained over the 1st year of the DiSSCo Prepare Project has highlighted key and pressing areas where the national nodes need support, ranging from strategic positioning and narratives to tangible, ready-to-use external communication and engagement material.

Among the needs identified, thanks to the mechanisms listed previously in this report, the WP8 leader CETAF, and when needed the CSO at large, can support the national nodes representatives in valuable manner by:

- Providing impactful and up to date communication material.

Firstly, the physical DiSSCo brochure targeting external stakeholders, primarily national governments representatives, will be shared with the nodes during the NNs meeting scheduled on February 25th, 2021. This valuable tool aims to drive home the narrative at the heart of DiSSCo as well as the added value of the RI for national institutions.

Secondly, a web page on the DiSSCo.eu website dedicated to the fourteen DiSSCo key messages was developed in developing the Engagement and Communication Strategy

with fourteen key messages, takeaways to support NNs as they engage with external stakeholders.

- Maintaining an open communication channel by leveraging collaboration tools that enable all partners, small and bigger institutions, to actively contribute to DiSSCo development. But also through the continuous implementation of the engagement mechanisms that have proven to be effective.

b. National strategies follow-up

Led by the CSO together with the support of the national DiSSCo nodes, the second phase of the advocacy strategy aims to better position DiSSCo RI in the national roadmaps, and secondly, establish agreements with national authorities for further political, and financial support during operation.

Actions towards the monitoring and further engagement rely heavily on communication and outreach activities (T8.2, T8.4).

The core activity focuses on the operation of the Funders Forum, to facilitate discussions with the organisation of meetings and supporting documentation. Furthermore, it is expected that the outcomes from these discussions (about legal, financial and organisational matters) will impact the development of DiSSCo's daily operations during the preparatory and transition(s) phases.

Secondly, the follow-up activities will address other DiSSCo countries and beyond that, countries that are not yet in the sphere of the research infrastructure. Thus, it is foreseen to organise regular events and meetings (thematic workshops, bilateral meetings). The objective is keeping abreast of changes in highly dynamic national realities, while building trust-based relationships.

8. Conclusions

The collection and use of detailed customized national level data undertaken under T8.1 of DPP

project is highly valuable in fortifying DiSSCo processes with knowledge pertaining to a country's readiness to implement, national governance and funding mechanisms, the positioning of DiSSCo in national roadmaps and political sphere, and, whenever possible, the national node's influence in decision-making or policy-forming fora. The compiled data obtained from the employed engagement strategies and tools such as questionnaires and bilateral and regular meetings, is essential not only to establishing the Funders Forum, but will become an valuable reference tool as the data resource is continuously updated and enriched with the outputs from other DPP outcomes (e.g. Specialization Plan), increasing its applicability to a range of uses including engagement, policy, strategy and governance.

Refining internal and external engagement strategies over time not only makes engagement more effective and efficient but has the added benefit of mitigating some identified DiSSCo Prepare project risks. The NNs monthly meetings organized under T8.1 will be pivotal in fostering closer relationships among representatives, to more effectively channel information forth and back, to synchronize messaging and facilitate customization towards national level strategies. At large, the engagement mechanisms put in place will largely contribute to motivating national nodes to take ownership of DiSSCo more proactively.

The outputs from this task T8.1, a rich data reference along with the regular use of successful engagement strategies conceptualized in the DiSSCo's Communication and Dissemination Strategy and the complementary DiSSCo's Advocacy Strategy, will foster trust and strengthen the essential bonds between DiSSCo and its national partners, critical for the RI's sustainable success.

Finally, it is important to list a set of observations that will guide the refinement of engagement strategies from now onwards and will inform the Specialisation Plan to be deployed under this same Task T8.1:

1. There are a set of conditioning factors to the analysis of the existing landscape.
 - a) In terms of policies influencing DiSSCo operating framework:
 - Variety of umbrella statements
 - Large scope of topics to be analysed, e.g. from data management plans (DMPs) used to personal sensitive data handling (GDPR implications)

-
- Diversity in the level of implementation, from guidance to endorsed and mandatory policies
 - b) With regards to the definition of informing national strategies on research:
 - Different conceptualization of NSCs, as cultural, (fundamental) research or environmental related assets
 - From the above, differences in the entities governing NSCs digitization, from research and innovation to culture, education or environment
 - Varied prioritization rankings of NSCs within the research national roadmaps (form already considered to unforeseen inclusion)
2. The decentralization of governments within a country contributes to potential misalignment of priorities at supra-national level and therefore to an increased difficulty in implementing coordinated actions.
 3. There are different levels of maturity in the communication channels established between national representation (ministries, agencies or funding entities): from direct, regular and fluent to nonexistent and difficult. From this, precise acknowledgement and recognition of the priorities might appear from explicit to blind.
 4. Achievement of a harmonized identification and assessment of national strategies need to be anchored on a set of common criteria to support the prioritization of digitisation at European level.
 5. Bilateral meetings have proven an efficient tool to support NNs and the DiSSCo engagement tasks to:
 - Efficiently communicate and transmit the DiSSCo vision and mission.
 - Acknowledge the level of integration of DiSSCo RI within the national research strategies.
 - Deliver relevant information and supporting documentation.
 - Identify clear timeframes, scopes and aims of national priorities in relation to DiSSCo.

-
- Facilitate articulation of national representation in the RI landscape by identifying complementarities and synergies.
 - Channel the engagement of national governments in the DiSSCo development from the start.
6. National “Factsheets” stand as an instrumental piece of information that will inform the Specialisation Plan as well as other developments for DiSSCo implementation (e.g. policies framework, Stakeholders Forum, and the governance model).

Annexes

I - Communication and Dissemination Strategy in the DiSSCo RI preparatory phase

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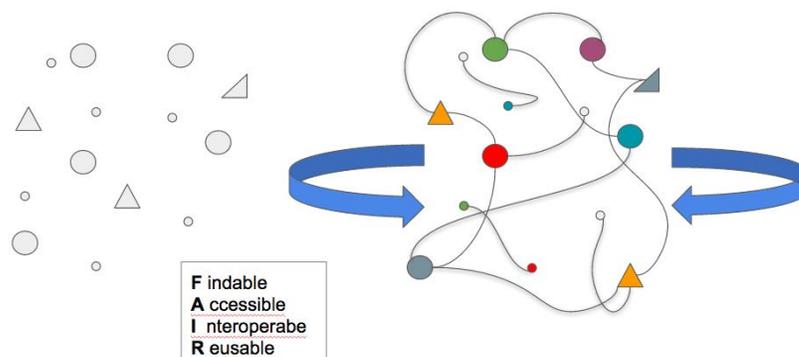
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01 INTRODUCTION

Natural science collections provide the only long-term time series data for nature. Our bio and geo diversity collections hold the critical data needed to tell us about how the earth and its natural systems formed over 4.65 billion years, the impact of human life on the natural world over the past few thousand years as well as to answer critical questions about preserving the natural heritage of the planet. Digital accessibility and interoperability are key to mobilizing our collective knowledge. In that context, science and technology need to come together and collaborate for the development of new tools and mechanisms that enable the research community to effectively and successfully build a robust knowledge base to support scientists, decision makers and the society at large in addressing the urgent challenges we currently face and advance solutions to e.g. mitigate the effects of the environmental crisis we suffer and halt the dramatic loss of biodiversity.

To that end, open access to accurate and reliable data is crucial in the development of adequate strategies. The immense and priceless assets that our natural science collections constitute worldwide require the information contained therein to not only be available and accessible but also to be interoperable and reusable, i.e. to be FAIR¹. Only then can they be exploited to their full capacity for the benefit of science and society by enabling sustainable and well-grounded scientific research. The Distributed System of Scientific Collections (DiSSCo) is the Research Infrastructure (RI) that facilitates the digital transformation of our unique and, in many cases, already irreplaceable heritage.²

- Findable, Accessible, Interoperable and Reusable (FAIR) data



¹ <https://www.dissco.eu/digital-object-architecture-doa-for-fair-data-and-services-in-biodiversity-science-and-geoscience/>

² Press release for DiSSCo RI sing in Helsinki, February 26-28 2020, <https://www.dissco.eu/dissco-rising/>

As a Research Infrastructure, DiSSCo has been - by virtue of being included on the European Scientific Forum for Research Infrastructures (ESFRI) roadmap update in 2018³ - officially considered as one of the crucial elements in Europe to build, sustain and improve the European Research Area (ERA) and contribute to position this continent as champion of breakthrough scientific research. However, for DiSSCo RI, the process has just started, and it has only recently, after the roadmap inclusion, initiated its preparation as to address how to implement that process.

DiSSCo RI will transform the existing fragmented landscape of natural science collections into an integrated knowledge base that will provide society with interconnected data around the specimen as hard evidence of the natural world.

DiSSCo RI represents the largest ever formal agreement between natural history museums, botanical gardens and collection-holding universities in Europe and also worldwide. Even though DiSSCo is at the very early stages of development as RI it anchors in a very strong, mature, and cohesive community that has been working together for decades via the Consortium of European Taxonomic Facilities, CETAF⁴, which has fostered the implementation of multiple joint projects and that is prepared and willing to undertake greater and more ambitious challenges. The community is thus ready to pursue the necessary level of readiness to build a pan-European mechanism that will offer researchers access to natural science collections-based data at the scale and precision they need to perform advanced science in a broad variety of fields.

Natural science collections provide resources and inspiration that are of vital importance to guide and encourage our societies as a whole to rethink the preciousness of our natural heritage in new terms of giving the value it has for humanity. Making them digitally accessible will be instrumental for this process. Towards this overall goal, DiSSCo community is currently engaged in the development of the DiSSCo Prepare (DPP) project, an EU-funded project⁵ that will drive DiSSCo RI through its Preparatory Phase, prior to the subsequent construction and operation phases. DiSSCo RI needs to address the data-related, technical, financial, scientific and governance aspects necessary to operate such a large-distributed initiative for natural sciences collections across Europe.

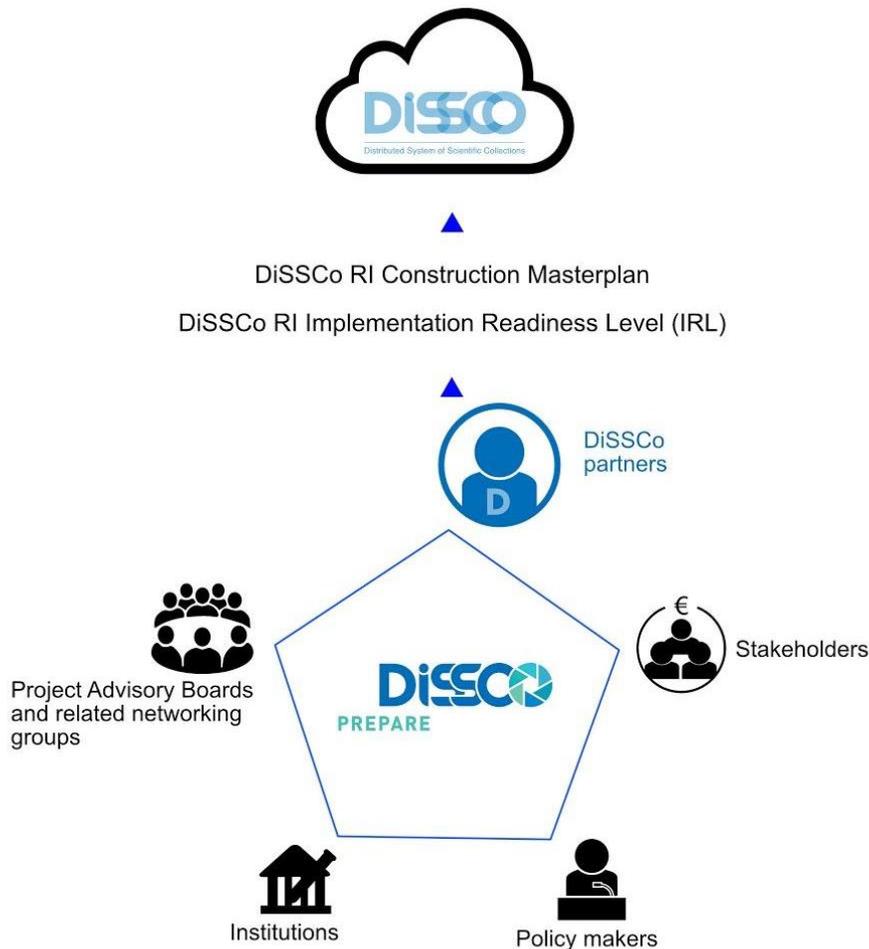
While the scientific data and common sense are on our side, we need to acknowledge our efforts are often lost in translation when trying to connect our work efforts, our collections and the wider domain. To allow DiSSCo RI to unfold and develop its full potential on the long term, tangible and effective communication and engagement mechanisms must shape not only the infrastructure itself but its position towards the environment it is intended to address and document.

³ <http://roadmap2018.esfri.eu/>

⁴ www.cetaf.org

⁵ This project, DiSSCo Prepare, is funded by the European Commission under the framework of Horizon 2020 under the INFRADEV-02-2019-2020 topic, Grant Agreement no. 871043 and is the preparatory phase project for DiSSCo,

These mechanisms will not only voice our overall objectives. They will position DiSSCo in the latest domain specific and/or broader conversations, they will increase visibility for each partner henceforth potentially expanding funding opportunities.



02 RATIONALE

The project DiSSCo Prepare (DPP) aims to achieve two key goals:

1. Improve the overall DiSSCo RI Implementation Readiness Level (IRL), in other words, the measure of the ability to embark on specific implementation actions based on clear actionable guidelines and across the five dimensions of the infrastructure: scientific, data, financial, technological and organisational.
2. Deliver a comprehensive and actionable DiSSCo RI Construction Masterplan: a corpus of material to be used during the construction phase (as organisational, financial and technical guiding framework). This framework will be the final output of the DPP project.

To that end, DPP is organised in nine Work Packages (WPs) each of them contributing to one or several dimensions of the IRL. To coordinate actions and ensure good alignment of thematically related work during the project, two project streams are established: the first covering Technology and Data (WPs 1, 3, 5 and 6) and the other addressing all business-related matters (WPs 2, 4, 7 and 8). Those work streams help WP partners navigate complexity and to interlink activities among all connected WPs.

Apart from the thematic coordination and alignment under those two streams, achieving DPP goals requires an open, inclusive, and unified approach that will constitute the backbone of the overall initiative from the very beginning and at each level of implementation. It is essential to enable constructive and circular synergies among multidisciplinary actors, from a diversity of communities, including scientists, innovation-driven agents, and research institutions as well as varied other stakeholders, such as national governments, academia, and other societal bodies. In other words, a common vision that will guide the entire process and will underpin the DPP work.

In the light of this joint endeavor, DPP will facilitate, among others, guidance to harmonize the efforts from the contributors to the project (direct and indirect, internal, and external) and will expand such a unified vision of what DiSSCo RI aims to achieve by tackling the right audiences and disseminating key messages through dedicated communication and engagement mechanisms. DiSSCo RI anchors an expanding community that embraces 120 members in Europe and gathers over 5,000 scientists across 21 countries. It is pivotal for the success of DiSSCo RI that the distributed efforts are fully aligned, well-coordinated and strongly committed towards that shared vision.

The present document, “Communication & Dissemination Strategy” (C&D Strategy) of DPP project, sets the groundwork to efficiently operate within the scope of the project in the most effective and fruitful way by implementing strategic mechanisms and using the most operational channels to fluently interconnect partners.

The C&D Strategy aims to facilitate the adequate dissemination of the DiSSCo RI objectives, to ease the translation of relevant messages for audiences outside the DiSSCo RI community, to spread the expected outcomes to a broad variety of users, to engage the relevant actors in the development of pivotal activities, and to strengthen cohesiveness among all related agents. By effectively implementing the C&D Strategy, the project will increase the visibility, expand the outreach of the achieved collective efforts and support the implementation of the DiSSCo RI at large.

03 OBJECTIVES

The C&D Strategy aims to facilitate the adequate dissemination of the DiSSCo RI objectives, to ease the translation of relevant messages for audiences outside the DiSSCo RI community, to spread the expected outcomes to a broad variety of users, to engage the relevant actors in the development of pivotal activities, and to strengthen cohesiveness among all related agents. By

effectively implementing the C&D Strategy, the project will increase the visibility, expand the outreach of the achieved collective efforts and support the implementation of the DiSSCo RI at large.

It is a key mechanism to ensure the adequate progress of DPP, to produce the envisaged results, to successfully achieve the fundamental goals of the project and thus contributing to the correct implementation of DiSSCo RI.

The C&D Strategy seeks to:

- **identify and operate mechanisms and tools** that will allow the exchange of information between the project and internal/external actors,
- **use the most adequate means,**
- **develop impact-effective activities,**
- **foster engagement of parties towards the financial and political commitment of national representations to the DiSSCo RI, and**
- **network with external actors** to gather their complementary input for the adequate development of the project, and to communicate DPP features and disseminate its outcomes.

The C&D Strategy looks for the involvement and participation of all direct partners, external stakeholders and related third parties to ensure their commitment towards the DPP results, and consequently to the further development of DiSSCo RI. Likewise, the expansion of DiSSCo RI's global perception as the valuable and necessary infrastructure that meets what natural sciences research currently needs and - more importantly - requires for advancing knowledge will be pursued.

The C&D Strategy is structured along three axes:

1. **Internal exchange of information** (direct and indirect contributors). The C&D Strategy will identify the most relevant tools and the adequate means to facilitate fluent flow of information among the project partners (i.e. internally to the project).
2. **External dissemination** of results
It will specifically focus on disseminating key messages and reaching out audiences external to the project with major outcomes. It aims to raise visibility of the importance of DiSSCo RI and to promote uptake by a variety of users of the envisaged services to be provided by the RI (i.e. external dissemination of the project results and the RI content).
3. **Internal and external engagement strategy (IES & EES)**
The **Internal Engagement Strategy (IES)** is focused on ensuring that all national nodes' (NNs) representatives are aligned and have a full understanding and acceptance of the project. It is a vital step to harmonize the project partners' activities so everybody conveys the same message, has a very clear comprehension of the DiSSCo RI and its development phases and addresses challenges at country level with a well-developed

knowledge base. IES will primarily target NNs as well as their engagement with national governments and will be implemented as a result of the work done under Task T8.1.

Complementing this, the **External engagement strategy (EES)** will support the work carried out under Task T8.3 as to ensure a dual flow of information with users and from third parties that are connected to the DiSSCo RI. By bringing industrial stakeholders and others from the public and private sectors, from education to high technology companies, into the fold, the project will gather the needs from user communities other than the natural sciences collections-based researchers. EES intends to establish mechanisms to reinforce a dialogue with users to understand their needs and hear their proposed solutions, their breakthrough ideas, their novel approaches that could complement and contribute to upgrading DiSSCo RI deployment. Furthermore, EES intends to build on dialogue established under feeder projects such as ICEDIG to continue to work with complementing international initiatives/RIs such as iDigBio, CRIA, ALA, GBIF, in the environmental and digital domains.

Based on this C&D Strategy, several supporting communication tools will be developed and operated. These include a logo and graphic charter (developed under WP9), the project website (which will be hosted as part of the DiSSCo website www.dissco.eu) as well as social media channels. All project partners are committed to feeding any newsworthy content into these channels and to engaging with their respective communication and press teams.

Cycle of C&D objectives

- to identify and operate mechanisms and tools to **network** with external actors;
- to develop **impactful activities**;
- to foster **engagement**;
- to promote **alignment, good coordination and strong commitment** (global-transversal)



The C&D Strategy is then articulated around several key pillars:

- **clear messages** to use in joint communication campaigns through which potential users of the capacities and benefits of DPP will be informed;
- **engagement mechanism** to facilitate promoting the project activities towards stakeholders and potential users of the DiSSCo RI;
- **varied set of appropriate tools and channels** (see Table 2 below) to address targeted audiences and reach out to a wide diversity of users' and data providers' communities, i.e. to the maximum number of actors involved in and affected by the preparatory phase of DiSSCo RI;
- **different formats** (publications, press releases, brochures, posters, images, videos etc.) to ensure effective communication, maximize reach and optimize use of available resources; and
- **measurable metrics** for assessing the reach and success of the project's communication actions.

04 DiSSCo Prepare (DPP) VISION

DiSSCo Prepare project will act as the driving force to raise the RI's overall maturity to bring it into the position to transition into the construction phase. The project will provide a framework for the implementation of DiSSCo RI. It will work to establish the principles, criteria and procedures for the digital unification of all European natural science assets under common policies and practices that aim to make the data derived from the digital objects, the digital surrogates of the collections specimen, easily Findable, more Accessible, Interoperable and Reusable (FAIR). This aims to bring the collections to the digital age by creating an integrated data-driven RI that will underpin the entire research lifecycle and provide access to mass, linked, harmonized, reliable and precise data from the natural world. This approach is of vital importance to tackle local and global challenges of our times and produce societal impact. In that respect DiSSCo vision needs to be loudly voiced out and widely spread.

4.1 Recipients

To reach that impact, the C&D Strategy (developed under Work Package 8 of DPP) will act on several fronts (see Table 1 for detailed identification of project-related actors).

First, internally through the Internal Communication Strategy, by fostering coordination and fluent flow of information, increasing cohesiveness and promoting collaboration among project partnership.

Secondly, as detailed in the Internal Engagement Strategy, the C&D Strategy will seek the necessary transition from institutional-based participation to the national/governmental

involvement. This will be done by transmitting a unified and shared vision for DiSSCo, providing the national nodes the engagement mechanisms to facilitate such a transition, and implementing the necessary steps to make effective compromises at national level towards the development and sustainability of DiSSCo.

Finally, the C&D Strategy will support, by defining and deploying, the External Engagement Strategy, including the most adequate fora and channels to facilitate the active participation of stakeholders in the project, be they from the private sector (technology suppliers, industry, etc.), public entities (governmental representatives, funding agencies, environmental-related organizations, etc.), academia or civil society initiatives (NGOs, citizens scientists, etc.) at European and international level, within and outside the environmental domain.

Table 1 - Project-related actors

Actors directly related to the implementation of the C&D strategy

Public scientific institutions	Natural history museums Botanic gardens Universities Biodiversity research centres
Private collection-holders institutions	Small and/or private collections Citizen Science Organisations
Individuals	Collection workforces (curators, technicians, etc.) Researchers Citizen scientists
NGOs and societal initiatives	WWF BirdLife IPBES National and local NGOs for the Conservation of Nature Citizen Science Organisations
Affiliated communities and initiatives	CETAF DiSSCo GBIF GGBN TDWG CoL Species2000 iDigBio ALA

Actors indirectly related to the implementation of the C&D strategy

Governmental and intergovernmental agents/actors	ESFRI delegates Ministry representatives National Contact Points Funding agencies European Union institutions and agencies UN bodies
Industry	Companies in the fields of digitisation, data capture and storage, data interoperability, etc.
Societal bodies	Media NGOs General public
Other related groups at a different scale	International continental groups and organisations (e.g. CRIA, Flora of China – Chinese Academy of Sciences, Russian Academy of Sciences, etc, ...) Other RIs dealing with large-scale digitisation
Other related groups in different domains	Relevant agents in the cultural heritage sector (e.g. E-RIHS, DARIAH, Europeana) or health domain (ELIXIR)

4.2 Means

The C&D Strategy provides the most adequate environment to address all those targeted audiences. Therefore, it endeavours to:

- create a **web-based like space** (embedded into dissco.eu) for partners to participate and stakeholders to be engaged and to network, where guidelines, recommendations and best practices are exchanged;
- generate and maintain a **fluid exchange** and a permanent **feedback of information** between the DPP partnership (with Teamwork, Slack and GitHub as supporting platforms) and its related external actors (social media channels, Twitter, Facebook, LinkedIn, Instagram);
- develop **engagement tools** to promote project activities towards stakeholders (roundtables, workshops, webinars, virtual working events);
- **disseminate the main outcomes** of the project to all its relevant agents (through all available channels); and

-
- set up the **mechanisms beyond the project lifetime** as to ensure the access and re-use of its outcomes for the benefit of science and society (e.g. collection of publications in RIO Journal).

4.3 Key Messages to communicate

To convey the purposes and objectives of DiSSCo RI to the aforementioned variety of audiences, the vision and the main features of the DiSSCo RI need to be encapsulated into the fitting information pieces and formulated clearly enough for diverse needs and expectations. To that end, the C&D Strategy encompasses a set of basic key messages that will be repeated constantly in all fora where DiSSCo RI and any DiSSCo-linked project, including DPP, will be present. Those informative bits will be disseminated on a regular basis but also on ad-hoc instances when so required, from the different platforms used and specifically on the project website and Twitter account. Engagement from partners and beyond will equally be sought for communication purposes and messages will also be distributed through the project partners' institutional channels and also via their own networks. Such a recurrence will ensure the correct understanding of the aims of both, the DPP project and the RI at large, and will contribute to building stable channels.

The messages will be reviewed every six months, updated and complemented as the project evolves and progresses. The messages will include relevant words to be used as hashtags on social media that will act as hooks for further information developments.

As a starting point, the following messages will be used during the first period of DPP, and will be embedded into the project website, to raise visibility and attract attention.

KEY MESSAGES:

Targeted audiences:

1. Scientific community
2. Governments
3. Decision drivers and societal bodies (NGOs and media)
4. Private sector (stakeholders, industries)
5. International agencies and bodies
6. Public domain (citizen scientists, citizens)

Audiences	Key Messages
Private sector (stakeholders, industries)	<p>DiSSCo RI will empower #research, #innovation and beyond by allowing #openaccess as well as data exchange among #naturalsciences collections</p> <p>DiSSCo will unlock over 1.5 billion specimens data, making it accessible for multidisciplinary and cross-domain research</p> <p>DiSSCo will deliver updated, accurate and reliable information benefiting industry, policy and research alike</p> <p>DiSSCo will support more responsible and literate societies, industries, and policy makers by delivering FAIR data</p> <p>The DiSSCo RI is based on the shared commitment of scientific organisations, private entities and governments to the research and innovation process</p> <p>DiSSCo: a vibrant community of researchers, citizen scientists, industrial agents, decision makers and actors from civil society who are pushing forward the largest ever digitisation effort in natural sciences across Europe.</p>
Policy drivers and societal bodies (NGOs, media)	<p>DiSSCo facilitates open access to robust evidence on our planet’s natural diversity</p> <p>DiSSCo aims at building a comprehensive system of natural science collections across Europe</p> <p>DiSSCo sets up coherent data gathering through harmonized policies and standardized processes</p> <p>By unfolding knowledge about the natural world, DiSSCo becomes an irreplaceable resource in addressing current societal challenges and paving the path to a more sustainable future</p> <p>DiSSCo supports innovation by rendering access to digitised data enclosed in over 1.5 billion specimens from 120+ natural sciences collections across Europe</p> <p>DiSSCo RI bridges the gap between scientific research and societal bodies and thus empowers policymakers to tackle biodiversity and sustainability challenges at a global level</p>
General domain	<p>DiSSCo as a research infrastructure facilitates breakthrough research and contributes to societal development in a variety of ways, from enhancing skills in</p>

<p>(citizens scientists, citizens)</p>	<p>education to supporting economic growth, tackling urgent environmental issues and caring for human health</p> <p>DiSSCo is deeply rooted in society as RIs are indispensable tools for enabling and developing excellence in education, research and competitiveness.</p> <p>DiSSCo acts to promote the role of natural sciences in European societies, reconnecting them to their natural environment.</p> <p>DiSSCo contributes to a knowledge-based society by providing access to the hard evidence of our planet's bio/geo -diversity and thus, fostering the understanding of life on Earth.</p>
<p>Policy-makers and Governments (ministries, governmental agencies)</p>	<p>The EU funded project DiSSCo Prepare is the first step towards building DiSSCo, a research infrastructure that will provide a unique digital access point to natural science collections data</p> <p>DiSSCo Prepare will ensure the readiness level of DiSSCo to become operational by 2026</p> <p>Financial and political commitments from countries towards building a Pan-European research infrastructure for digital data of bio- and geo-diversity brings in the adequate driving forces for its success.</p> <p>DiSSCo will benefit society across domains as well as involved actors and stakeholders as it will support skills enhancement, strategic biodiversity collections-based priorities and technical and technological innovations that spur competitiveness and growth.</p>
<p>International agencies and bodies</p>	<p>DiSSCo Prepare works to build a large-scale RI that will liberate data enclosed in natural science collections across Europe and beyond</p> <p>DiSSCo will articulate the provision of FAIR data on bio- and geo-diversity and that requires a coordinated effort and alignment among sister initiatives worldwide</p> <p>DiSSCo Prepare will set up the basis for the harmonization of policies and the use of globally agreed standards that will serve both, the collaborative research and the production of excellent science across borders</p>

Keywords for creating new messages:

- A mechanism to foster innovation and new developments through partnerships between science and industry
- A pivotal pillar for scientific excellence
- A driving force of cohesive and integrated EU strategies
- A channel to motivate societal actors to participate in the co-creation of science
- A platform to support networking among peers around the world

HASHTAGS

Similarly, the C&D Strategy will foster the use of shared hashtags among the DPP partners, as a means to engage with similar audiences and through sister initiatives across Europe and beyond.



#DiSSCoPrepare #DiSSCoRI

#digitisation #digitalcollections #digitalassets #digitalscience #virtualaccess #digitalage

#Digitalrevolution

#datacommunity #datasharing #opendata #datasets

#openscience #naturalsciencescollections #collectionsmatter #innovation
 #researchinfrastructure [#ScienceMatters](#) #naturalheritage #naturalsciences #sciencecommunity
 #advancingscience
[#EU H2020](#) [#ResearchImpactEU](#) [#researchdata](#) #EUnetwork [#EUresearch](#) [#EUscience](#)
 #ImpactThatMatters

This C&D Strategy distinguishes various kinds of communication and networking actions depending on the nature of content to transmit, which audiences are being addressed and what kind of interaction is deemed necessary to ensure the impact of the project.

Table 2 - Messages and tools used per category of targeted audience

Targeted audience	Message(s)	Content	Channels
Scientific community	Benefits from integrated virtual access to unified collections data Scientific advances possible by providing global accessibility to European collections for a multidisciplinary approach and thus enabling new forms of research	Examples of collaborative work for facilitating discoveries	Twitter campaigns, Open access to outputs, publications, discco.eu, participation in relevant forums
Citizen Science	Contribution to the co-creation of science Contribution to scientific literacy	Use cases showing support to scientific development	Instagram; twitter, discco.eu
Policy makers	Delivering updated, aggregated, reliable information for informed decision-making	Presentation of tools (dashboards)	Press releases, twitter, discco.eu, position papers, publicity material, participation in relevant forums
Public, NGOs	Using cutting edge technology to unlock the knowledge stored in collections to protect the environment	Examples of how collection knowledge supports tackling societal challenges	Campaigns, videos, social media, discco.eu

Industry	Potential breakthrough innovation by stimulating partnering and services procurement agreements	Technology and service needs for constructing and running DiSSCo	Discussion fora fair booths
Related RIs	Mapping resources and impacts to find and exploit synergies and cluster services	Present already identified complementarities (e.g. long term data storage) to showcase potential shared interests	Workshops
Collection Managers	Improved Collection Management through harmonised policies and guidelines	Examples for coordinated implementation (e.g. CETAF ABS Code of Conduct)	Training and benchmarking seminars/webinars, discco.eu

05 IMPLEMENTING THE C&D STRATEGY

This C&D Strategy distinguishes various kinds of communication and networking actions depending on the nature of the content to transmit, which audiences are being addressed and what kind of interaction is deemed necessary to ensure the impact of the DPP project.

In that respect, there are three communication pillars that DiSSCo Prepare focuses on:

1. internal communication,
2. external dissemination, and
3. internal/external engaging strategies

Internal communication applies to the exchange of information and communication within the project and between project participants, while **external communication** refers to reaching out to the various targeted audiences that the project is addressing.

Furthermore, **dissemination efforts** towards third parties is about including a targeted community into a reciprocal discussion about:

- a. the role of DiSSCo Prepare, its concept, purposes, achievements, and processes, and
- b. the capacities, future enhancements and possible drivers that may lead the further development of DiSSCo RI.

Finally, **engaging and networking** with national nodes will include the set-up of (virtual) spaces, where exchange of positions, views and information can be facilitated, especially consultation processes intended at obtaining targeted feedback.

All of them contain some overlap to a certain degree. That is why it is important to describe the domains of activity separately, each with their own proper tools, as to ensure that the final communication objectives are met with respect to the overall project framework.

The C&D Strategy will be instrumental to effectively reach the diversity of user communities tackled in DiSSCo Prepare. It is necessary to identify targeted messaging, encapsulated in visual materials and tailored campaigns, and to communicate those through the most impactful channels.

Transmitting the aims and expectations of the DiSSCo RI through the involved actors and users will imply:

- **fostering the participation in actions** under the ESFRI umbrella within the environmental domain and beyond to give visibility to DiSSCo RI and contribute significantly to enhance connectivity among European RIs;
- **developing extensive networking activities** and establishing a permanent dialogue with stakeholders – strengthening the interactions with those usually less engaged (general public & industry) by establishing discussion fora, enhancing the innovation potential through collaborative work and identifying the messages to stimulate shared actions;
- **achieving alignment** through DiSSCo's Strategic Alignment of Projects (SAP) and the synchronisation groups implemented across all DiSSCo-related projects (ICEDIG as design study, SYNTHESYS+ for facilitating virtual and physical access, ENVRI-FAIR for services clustering, CETAF WGs for community-rooted mechanisms and MOBILISE for networking) to unify criteria and identify complementarity under different thematic streams that crosscut all relevant projects and initiatives;
- **raising awareness** of the usefulness of tools created by DiSSCo Prepare to societal progress and to that end, to support informed decision making by policy makers by stimulating permanent flow of information with governmental representatives and acknowledging sensitivity to cultural differences and national specificities;
- **intensifying the interaction with the user base** to maximise involvement and acceptance of the DiSSCo RI as it progresses.

5.1 Internal communication

The significance of internal communication for DPP lies in its relation to the other pillars. In order for the external communication channels to effectively report on project developments or the progress of achievements and objectives, information needs to be transmitted to the operators of DPP. Activities within internal project communications serve as a tool for external communication and will support efficient delivery of messages to the target audiences.

Internal Communication activities will then be specifically devoted to achieve several final objectives:

-
- Providing support and guidelines to the partners involved in each WP and make sure that the flow of work and information reach the concerned audience through the proper channel;
 - Fostering teamwork and networking among the internal actors to maintain a permanent and dynamic flow of information which will be a basis for further objectives of external actions of dissemination and advocacy;
 - Allowing the Coordination team to actively supervise and monitor partners performance (through risk assessment) as well as enabling the deployment and the follow-up of the project at each stage.

5.1.1 Internal Communication Activities

WP8 task partner meeting:

These meetings will be held biweekly at first to launch the communications activities and meet the first deadlines. The meeting intervals will then be adjusted according to the project needs and partner agendas. These meetings will be led and documented by CETAF as the leader of WP8 under T8.2.

DiSSCo Prepare Executive Board Meetings

The DPP Executive Board meetings will gather WPs leaders and will be led and documented by Naturalis as the project leader. The EB meets to review progress of the work implementation, review risks and invoke mitigation procedures, and prepare the agendas for Project Council meetings. It meets virtually every three months.

For Stream coordination, meetings every six weeks (or more regularly if needed as the project progresses) will be organized by Naturalis for Data and Technology, and by CETAF for the Business. Those will gather the leaders of the related WPs falling under each stream and may invite others if so required..

Workshops

Two Roundtables will be organised under WP9. These will be used to assess and advance the IRL levels of DiSSCo RI where necessary. From the Roundtables organised during the ICEDIG project we could learn that these can be very efficient tools to obtain specific knowledge from outside the consortium if organised well. They enable the project to target experts for a concentrated exchange of knowledge without an extensive use of their scarce time. The possible topics should be listed and/or submitted to the Executive Board. According to the need of the situation, e.g. if physical meetings are not possible or a common date cannot be found, alternative solutions to a presence workshop can be proposed. Those can include a virtual meeting, a series of workshops and/or a series of visits to the locations of the experts.

A number of specific workshops will be held under the purview of different work packages. It is under the responsibility of the respective task and work package leaders to organise and lead these meetings as well as to document and use the results.

Project Meetings

One conference has already taken place and functioned as the nexus for the communication and engagement activities within the DiSSCo Prepare project: the Kick-Off Meeting in Helsinki took place on February 27th, 2020. The event gathered the project partners and stood as the constitutive impulse for the preparatory phase. Beyond the overall presentation, a dedicated breakout session for the topics discussed in this document has already been held, where WP partners were primed for their commitment as well as for the importance of cohesive and powerful communication and engagement mechanisms to sustain the network's achievements on the project.

To that effect, dedicated time slots will be used at each of the annual All-Hands Meetings to coordinate dissemination and communication activities.

Communication groups

In order to integrate and harmonize the communication mechanisms throughout the entire project, each partner will define a contact person to be part of the Communication Group that will meet, virtually (or physically according to the needs and relevance) according to an agreed upon schedule (that will be defined among them once identified). On the working platform, a dedicated space (e.g. Slack) will be used to share information, practices and upload documents related to communication practices and questions, including difficulties encountered and suggestions to overcome them. This group of communication professionals can also ensure that project results and developments are not only communicated through the project but also the partner channels.

5.1.2 Tools

The use of the logo and visual charter

DiSSCo Prepare visual identity, which will be conveyed by a dedicated logo, a proper graphic charter (both to be developed under WP9) and used in all kinds of communications. All beneficiaries of the project will consistently use them for communication purposes. This is essential to reach effectively the diversity of user communities tackled in DiSSCo Prepare at each stage of the project. Furthermore, the visual identity will be a key thread to align both internal communication and external dissemination purposes across deliverables and milestones of the project.

Furthermore, all communication activities related to the project, at all times and regardless of the format (website, promotional material, social media, etc.), will include:

(a) the display of the EU emblem as well as (b) the following text:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 871043”.



H2020-INFRADEV-2019-2
Grant Agreement No 871043

Designated stable contacts

DiSSCo Prepare partners will be engaged with each other by instantaneous circulation and exchange of information on the collaborative platform set up for this purpose (Teamwork.com), through online messaging across the partnership and, when necessary, through targeted messaging to subgroups within the partnership.

To facilitate this exchange of information each partner will designate, apart from its legal and project representatives, a **contact person for each task** it is involved in to act as liaison and rapporteur towards the WP8 leader.

Additionally, the **DiSSCo Prepare Executive Board**, which consists of WP Leaders and Stream Coordinators, will be tasked with regularly compiling and identifying the relevant information that Work Package 8 leader (i.e. CETAF) needs to transmit and communicate externally.

Moreover, the **WP leaders** will be engaged in informing CETAF on the progress made in their respective work packages at any time when this is considered relevant for enhancing the external profile of DiSSCo Prepare so that all outputs and newsworthy events can be communicated promptly and regularly.

These channels are determinant to connect and empower the partners along the overall progress of the project and to allow them to communicate in a collaborative way the list of tasks established and distributed from WP1 to WP9.

Working platform

Teamwork.com has been selected as the supporting project management platform. This choice was made because the same platform is being used for all DiSSCo-linked projects, which will facilitate sharing of outputs. Corresponding user privileges and online profiles will

be given to all partners. This platform will gather the internal communication processes including message exchange, upload of documentation, establishing deadlines and milestones, and internal assignment of tasks and duties.

Online messaging services (on individual or group basis) included in the Teamwork.com platform will be used by the partners. In addition to the online messages on Teamwork, Slack will also be used by the partners where appropriate, allowing them to exchange direct messages (individual or group) to create and/or follow the different work streams through specific channels.

5.2 External dissemination

One of the primary objectives of DiSSCo Prepare focuses on building sustainable and close synergies with the targeted audiences and stakeholders of the project. They need to be involved and engaged in its development, to ensure that all relevant actors participate in the co-creation of a bottom-up mechanism that facilitates the innovation process in any topics related to the new RI DiSSCo. Technological innovation, efficient deployment, harmonized and collaborative infrastructure development will be critical for the success of DiSSCo in the natural science domain. Therefore, potential innovators working in closely related fields such as optics, robotics, artificial intelligence, geo-localisation, imaging, lab instruments, data storage and many others are to be closely engaged from the outset, as primary targeted external audiences of the preparatory phase.

CETAF will contribute largely to the development of this task by providing its experience and knowledge of the overall landscape of related initiatives and organisations. In most of these, CETAF already is an active member, mostly by having signed MoUs in place. CETAF will ensure keeping a close, active and permanent contact with them as well. CETAF will also facilitate disseminating the right messages to each of the interested profiles by using the tools and mechanisms described in this Communication and Dissemination strategy. It will ensure a fluent transfer of information and sustainability of the parties' engagement. This aspect of external communication will be developed in collaboration with the task partners in T8.2.

External Communication will imply achieving third parties to be committed to DiSSCo and therefore:

- To attract relevant stakeholders to participate in DiSSCo Prepare as external sources of information and discussion participants;
- To further engage them in development tasks;
- To obtain their commitment, when feasible, to contribute (in any manner or extent) to the implementation of DiSSCo Prepare;

Finally, dissemination and exploitation of results have several objectives to achieve:

- To enlarge the audiences and the scope of the messages;

-
- To reach out to the broadest possible range of users and practitioners in the bio- and geodiversity realm;
 - To ensure sustainable access to those results;
 - To spread the engagement messages through the extensive networks of partners, specifically, CETAF and DiSSCo, and their related stakeholders;
 - To raise awareness and ensure the uptake of project results.
 - To produce guidelines, information manuals and recommendations to better engage and contribute to DiSSCo.

5.2.1 External Dissemination Activities

In order to optimize the outreach of the project's results and outcomes within the context of a wide range of potential beneficiaries and users, communicating and circulating the messages should be done efficiently (see Table 1), presented ready-to-use, be easily-accessible on the dedicated and relevant platforms and of course, be widely promoted. This stage will be determinant to increase DiSSCo visibility and acknowledgement in the sector.

Contacting third parties external to the DiSSCo Prepare project is essential to ensure its wide reach and to raise visibility of the DiSSCo progress among related actors.

Intensive use of online communication platforms

At a primary level, external communication efforts for public outreach occur through the operation of online communication platforms.

For the duration of the project, the designated CETAF Communication Assistant and the DiSSCo Prepare Assistant will be operating the **DiSSCo Prepare website** with essential information containing project description, vision, mission, principles, objectives and up-to-date news and events. This will be executed on a regular basis in accordance with events occurring throughout the project period and relating to the progress of any of the WPs. Moreover, a number of dissemination output documents will also be uploaded on the designated dissemination sections of the website (cf. 5.2.2b).

CETAF will be in charge of managing all **social media channels** by keeping them updated with the latest developments and news coming out of and/or related to the project. Moreover, the manager shall encourage the rest of partners to share as many communication inputs as relevant and to spread the initial messages through their own institutional/private accounts, as to exponentially increase the impact of each single publishing action.

All project partners commit to feeding any newsworthy content into these channels and to engage with their respective communication and press teams. In fact, much of the news will be provided by the WP leaders to CETAF, as the online content manager, as they possess the most up-to-date information and are themselves the closest to any developments that occur within their own work package. This internal-to-external communication mechanism of project developments will remain a task of great significance for the WP Leaders as they are

the gatekeepers of news between on-the-ground activities and CETAF as WP8 Leader. This also implies that the leaders (and if applicable, the stream coordinators as well) shall transmit accurately and promptly to CETAF any relevant information to the project.

Information updates on the DiSSCo Prepare website will be made regularly, whenever news need to be made public and at least once a month.

Production of promotional material

In order to ensure and underpin the outreach efforts and demands for DiSSCo Prepare events, promotional material and press releases will be produced to convey the key messages of the project. This material will form a “**communication toolkit**” including DiSSCo Prepare presentation, flyer, concept note, press releases (for general release) and/or posters, that each partner may use when attending any related event and/or acting as representative on behalf of DiSSCo Prepare. Said toolkit will be uploaded on Teamwork. WP8 leader may decide to make it publicly available to stakeholders, in which case the selected material will also be uploaded at the DiSSCo Prepare website and updated when necessary.

External communication will also entail the organising of events for engagement purposes and a bimonthly newsletter (will encourage partners to share with their overall organisation so that the entire organisation is up to date on all DiSSCo-related matters) which will be fed with information gathered from the partners every two months. These two activities will be explained in more detail below when referring to stakeholder engagement and networking.

Display of Social media campaigns

DiSSCo Prepare will launch under the main communication campaign, a social media campaign (“Let’s prepare the RI-volution”, a starter kit with communication tools (banners for Twitter/Facebook,etc.) conveying the key messages encapsulated in visuals so that the partners can upload on their own profiles and act like spokespersons of the project. By doing so, as “social seeders”, the partners can act as the vector towards external audiences such as stakeholders, institutions or any related network in the field of research infrastructures, technologies, science, data storage, biodiversity, etc.

Interrelation with the DiSSCo Coordination and Support Office

The DiSSCo Coordination and Support Office (CSO) works along two main streams. One of them is the Communication and Engagement stream (CSO-CE) that fulfills tasks adjacent to those of WP8 in terms of coordinating the DiSSCo network. Work between the two entities (WP8 and CSO-CE) will be very closely coordinated. This close coordination is facilitated by the fact that the CSO-CE personnel is to some degree also involved in WP8 core activities.

CSO-CE for example will make sure that key messages produced for DiSSCo RI align with those for DPP, that the different (social) media channels complement each other, and that the different bodies around DiSSCo RI and DPP communicate in an efficient manner. CSO-

CE is also in a position to complement certain engagement activities on the national level (see chapter 6), e.g. by supporting engagement events with government representatives. To summarize, the DiSSCo coordination office will ensure a birds-eye view to coordinate all the work performed around the project.

Connectivity with Project Advisory Boards and related networking groups

The Project Advisory Boards and related networking groups will be acting as "pollinators", who constantly move back and forth between WP leaders and the DiSSCo governing board to ensure monitoring and spreading of results and outcomes. CETAF, as leader of WP8 and the CSO-CE, will ensure the right flow of information forth and back and will support the boards in their communication activities

Scientific and Technological Advisory Boards

To make sure that both the technological infrastructure and scientific coverage are aligned and developed coherently, two key advisory boards will support DiSSCo Prepare across the overall project: the Scientific Advisory Board (SAB) and Technical Advisory Board (TAB). In each of their fields of expertise, they will provide external advice and guidance to critical elements. The advisory boards will act as consultants to inform, assess and propose action to the DiSSCo Prepare Executive Board (EB). The advisory boards will be made up ⁶ with international experts, who will play a key role in highlighting issues to consider, tabling risks to mitigate or identifying specific new challenges to address.

Stakeholders Forum

The Stakeholders Forum (SF) will be convened as the forum for discussion and interaction among all related stakeholders, including RIs. The SF will provide critical feedback to the overall decision-making process of the Project across the five dimensions of implementation readiness of the infrastructure.

Funders Forum

It is essential that DPP stays aligned with the scientific and infrastructure priorities at national level. As such, it is essential that representatives of national funders (science and science infrastructure government departments and ministries) are kept well-informed and consulted on both the strategic and the operational planning of DiSSCo RI. To this end, DiSSCo Prepare will set-up and support its Funders Forum (FF). The consulting body will comprise representatives from national authorities, the future representatives in the DiSSCo legal entity, and will constitute a key body in the overall government of DiSSCo, contributing to

⁶ <https://www.dissco.eu/dissco-prepare-governance/>

ensure the right level of engagement of national funders and enabling DiSSCo to adjust accordingly to national and international priorities.

The FF will meet twice a year and will communicate directly with the Project Council of DPP and DiSSCo General Assembly⁷, the decision making body of DiSSCo.

SAP and SGs

The Strategic Alignment of Projects (SAP⁸) will ensure that the DiSSCo-linked projects are kept synchronised. The SAP will be supported by DiSSCo Prepare and will convene on a regular basis to support the coordination of activities at WP and Task level across the DiSSCo-linked projects.

Publication of results

Dissemination will anchor on Open Access to DiSSCo Prepare outputs, since - as an initiative formed by public research institutions - DiSSCo is committed to Open Science. The standard dissemination procedure will start with the provision of open access to all project deliverables through the project and DiSSCo⁹ websites. Where possible, deliverables will be turned into publications through articles and other published materials, in open access journals such as Research Ideas and Outcomes (RIO) and the European Journal of Taxonomy (EJT).

Additionally, they will be deposited in the long-term preservation repository Zenodo, to ensure both long-dissemination and continuity among Natural Science institutions and participants networks. To this end, a DiSSCo community will be created in Zenodo that encompasses all project deliverables and associated publications, datasets and source codes. For the latter, an additional repository to be used is GitHub, in which a DiSSCo community already exists¹⁰. Here, source code will be made available equipped with suitable licences, and will follow the formalised guidelines of the Data Management Plan of the project, including requirements for FAIR data.

5.2.2 Tools

DiSSCo Prepare Visual Identity

The visual identity of the project will be developed under the responsibility of the WP9 Leader and includes the design of the logo of the project and the rationale behind its design via a graphic charter.

⁷ <https://www.dissco.eu/what-is-dissco/governance/>

⁸ SAP consists of leaders of ongoing and upcoming projects relevant to DiSSCo such as DiSSCo prepare, ICEDIG, MOBILISE, SYNTHESYS, CoL+ and NaturalHeritage.be.

⁹ <https://www.dissco.eu/what-is-dissco/knowledge-base/>

¹⁰ <https://github.com/DiSSCo>

Communication platforms

The **DiSSCo Prepare website** is the key and essential means on which to build the communication of the project to external parties. The project website was created at the start of the project (available online at M2).¹¹

The technical set-up, maintenance and support will be provided by Naturalis under T8.1 and the website is embedded in the dissco.eu web presence to clearly establish the link between the project and the RI and make navigation between them as simple as possible. The website is designed in an attractive and user-friendly way and needs to serve the needs of all partners.

News, events and updated information will be provided by the partners (from WPs 1 to 9) to nourish this online platform, and will subsequently be collated, filtered and published by the WP8 leader, as to maintain the usability and relevance of the website at a high standard. A prompt and continuous flow of information and exchange between the participants of the project to supply the CETAF website content manager with material for the website is essential for the functioning of the external and internal communication activities.

All materials will be published in a timely manner and updates will be made on a regular basis and made accessible to the public.

Social media accounts

Specific channels as social media outlets can operate to engage a broader public. Accounts will be opened for DiSSCo Prepare project on Twitter and Facebook and messages will be regularly placed on both, though Twitter is considered to be more effective, especially for a scientific audience. The existing audiences of the partners' social media channels (e.g. CETAF, DiSSCo, ICEDIG, MOBILISE, SYNTHESYS+, partner institutions etc.) will be called upon to view and share the content produced by the DPP social media and thus contribute to its greater impact.

Events

Under events, different actions will be considered, either as directly organized and sponsored by DiSSCo Prepare or organized externally to the project but still closely linked to its objectives. DiSSCo Prepare partners may either attend them directly through its partnership by means of designated representatives (virtual or physical), or participate with presentations, posters, joint booths, etc. if deemed beneficial for the project's success

Conferences

A Closing Conference scheduled at the final stage of the project (M35) will be held so that complementary dissemination information about the project's achievements will be publicly

¹¹ <https://www.dissco.eu/prepare/>

communicated to the targeted audiences and relevant stakeholders can participate. The event will gather the project partners, stakeholders and the wider research community and function as the kick-off to the subsequent DiSSCo RI phases.

06 ENGAGEMENT STRATEGY (IES and EES)

6.1 Background

A specific responsibility will have to be carried under WP8 to handle “Stakeholder engagement & Communication Strategy”. This part of the overall C&D Strategy will have to define the different engagement activities that fall under its purview.

In the framework of WP8, engagement means, among others, commitment and involvement, exchange of information, provision of feedback and active participation from all parties concerned. WP8, and more specifically Task T8.1 “DiSSCo national nodes engagement” focuses on engagement and advocacy measures to be deployed by and for DiSSCo partners. These will have to transcend the group of direct beneficiaries that will contribute to develop DiSSCo Prepare.

Moreover, CETAF, as WP8 leader, in its role of representing the entire community of its member institutions, will equally need to meet the challenge of combining community needs at institutional level with the need to improve, foster and promote their translation for engaging the governmental, national actors with the goal to have them become engaged countries in the further DiSSCo development. This will specifically be addressed under Task T8.1 “DiSSCo national nodes engagement”, where all countries that have signed the European Memorandum of Understanding (MoU) with DiSSCo will be participants and will have a representation, a voice, on how to better channel and implement the necessary steps that let DiSSCo evolve into a well established European RI. The countries are represented by the institutions designated as National Node (NN) representatives, either because they act in such a capacity for an existing national consortium or because they have been nominated to take on this responsibility while the Consortium was being built.

In addition to the national commitments being pursued as the main goal of the activities implemented under T8.1, a direct involvement and participation will be actively pursued in regards to third parties, including stakeholders (to be tackled in Task T8.3 “DiSSCo stakeholders engagement”) and other research infrastructures both in the environmental domain and beyond (under Task T8.4 “Dissemination, Outreach and Advocacy”). This will largely amplify both the scope of WP8 and the targeted audience content-wise but also geographically, by including similar initiatives outside Europe.

From the above, it is clear that a special effort for collaboration and alignment is required from the very beginning of WP8. Following the need for harmonization and for coordination, the

Engagement Strategy will be implemented in two steps (that will quickly overlap) and built along two axes, based on the targeted audiences:

- a. First, an **internal engagement strategy (IES)** focused on ensuring that all NN representatives, as truly operational mechanisms of communication, are aligned and have a full understanding and acceptance of the project. It is a vital step to harmonize the project partners' activities so that everybody transports the same message, has a very clear comprehension of the DiSSCo RI and its development phases and addresses challenges at country level with a well-developed knowledge base.
- b. Secondly, an **external engagement strategy (EES)** to ensure a dual flow of information with and from third parties that are connected to the DiSSCo RI. By bringing industrial stakeholders and others from the public and private sectors, from education to high technology companies, into the fold, WP8 will gather the needs from user communities beyond the natural sciences collections-based researchers. Furthermore, WP8 intends to establish mechanisms to reinforce a dialogue with users to understand their needs and also hear their proposed solutions, their breakthrough ideas, their novel approaches that could complement and contribute to upgrading DiSSCo deployment, through the Stakeholders Forum.

6.2 Internal Engagement Strategy

Even though IES and EES do complement each other and shall be a means to reinforce their respective findings and outcomes, prior to devoting efforts to engage external stakeholders, it is instrumental to take the necessary steps to ensure all partners are aligned behind the same vision, are clear about the project's mission, objectives and its overall approach. Internal engagement will aim to develop capacity, create and strengthen synergies and foster project ownership from each partner at every step and for any activity planned. Hence, National Nodes will be the focus target audience for IES where they will act as vessels channeling the content and tools, developed in this strategy, to their members. Furthermore, they will be vital intermediaries and DiSSCo representatives when engaging the EES targeted national and governmental bodies in their countries.

The process for internal alignment and cohesiveness around the strategic pillars of DiSSCo will aim to ensure each partner, through their respective national node, is actively engaged in the DiSSCo preparatory phase. Specific objectives are as follow:

- To maximize harmonization of national nodes' positions towards a unified and coherent mechanism to address national governments;
- To strengthen ownership of the project among partners;
- To promote capacity building, benchmarking and active learning
 - Mutualisation of efforts,
 - Sharing updates, knowledge and best practices;
- To achieve effective and impactful advocacy.

6.2.1 Guiding Principles

The IES aims to give precise and clear answers to the relevance of internal stakeholders' engagement.

Engaging national nodes and national governments during the DiSSCo Preparatory Phase is instrumental. DiSSCo will move from an institution-based scheme to a fundamentally nation-based framework, in which institutions will be mandated by their respective governments to participate in the DiSSCo RI in accordance to their respective priorities and as dictated by their own research agendas and roadmaps. This will guarantee national commitments and thus sustainability of DiSSCo in the long term. It is crucial DiSSCo Prepare engages with all partners from the onset: to ensure perennial support at country level for DiSSCo and its acceptance as demonstrated through active advocacy and effective implementation of strong policy.

Through IES and EES, the targeted audiences will enhance DiSSCo acceptance by inscribing the RI into the existing RIs framework. By pursuing synergies with national digitization initiatives and claiming the unprecedented scale at which DiSSCo operates; DiSSCo Prepare will position DiSSCo as a facilitator in addressing timely societal issues ranging from environmental (biodiversity loss, climate change) to socio-economic (education, employment) challenges through a unified effort.

To that end, several critical actions will be put in place, informed by the following guidelines:

a) Maximize harmonization

By providing a practical toolkit, the NNs will be equipped with the means and tools necessary to disseminate the right messages and engage with the relevant contact points at national level, with a unified vision across borders to underline the nature of DiSSCo as a pan-European Research Infrastructure.

A set of visual materials will be produced to provide the NNs with adequate material that can be adapted to the specific needs, e.g. for language and specific national strategies, and further elaborated at the country level. The tools will be localized in collaboration with the NNs. This will include:

- A pledge with a set of key messages
- A template (ppt format) for presenting and framing DiSSCo within the large and complex landscape in the environmental research domain.
- Basic guidelines to approach, attract and retain attention from decision makers in the national instances.

b) Foster and strengthen project ownership

To achieve a harmonized position towards national RI roadmaps and policies at country level, an alignment across the NNs regarding the means and messages with which to

address the national governments will have to be reached. This will have to take into consideration the cultural diversity, diverging levels of maturity gained in regards to NSCs digitisation, differences in prioritisation and specialisation as well as differences and the existing variety across countries in capacities and resources availability. The processes and mechanisms implementing the project (see below) will be infused with the same spirit.

To that end, CETAF will mobilize the partners around DiSSCo Prepare and collect their respective national and institutional level strategies. The information gathered will serve as the basis for the external communications and engagement strategies for advocacy towards external governmental and institutional stakeholders. The outcome will be an overall strategic map necessary for DiSSCo activities distribution and operation. This will help us reach WP8 milestone MS46 (collection of national and institutional level strategies (T8.2)) as well as to complete WP8 deliverable D8.2 (a granular thematic specialisation plan ranging from national to institutional levels).

In summary, partners' responsibilities will be divided as follow:

Partner	To-do
CETAF	<ul style="list-style-type: none"> ● Collect all national and institutional level strategies from the project partners ● Set up follow-up engagement mechanism to ensure alignment and harmonisation with national RI roadmap processes and relevant foreseen developments
<p>NATIONAL NODES (with PMs):</p> <p>Naturalis (NL), NHMD (DK), UNIFI (IT), Luomus (FI), Tartu (EE), NHM (UK), MfN (DE), MNHN (FR), IRSNB (BE), IBER-BAS (BU), UW (PL), NM (CZ), NHMW (AT), CSIC (ES), HNHM (HU), IBSAS (SK), NRM (SE), NHM-UIO (NO), UoC-NHMC (GR), MhnhL (LU), UPORTO (PT)</p>	<ul style="list-style-type: none"> ● Identify relevant contact points within your respective government ● Channel your relevant institutional strategies and policies to CETAF ● Validate resume of policies corpus ● Contribute to continuous circular communication channels to provide feedback and stay informed.

c) Enhance DiSSCo Prepare partners' advocacy competencies

Biodiversity concerns society in its entirety. It encompasses global and national biodiversity loss, sustainable land use, food security (e.g. work on crop wild relatives), health (e.g. vectors of disease) and ensuring we have the right natural resources available (e.g. cobalt) for transition to a zero-carbon economy. Collections-based research can help finding responses to these crucial challenges. Our collections also have huge cultural and historical significance. A RI compiling data from leading European natural sciences collection will unquestionably benefit all sectors from public to private-led innovation. Anchoring DiSSCo in the societal challenges and opportunities narrative will ensure its sustainability as a vision worth supporting beyond the scientific and research domains.

RI's and cutting edge science innovations do not exist in isolation of other domains of societal challenges and opportunities. On the contrary, this connection will need to constantly be part of all DiSSCo Prepare's engagement tools and processes as well as in all interactions with every stakeholder.

In WP8, all the tasks include an outward effort to engage with all stakeholders and anchor DiSSCo in existing domain specific and beyond frameworks. This anchoring effort will be:

- On one hand, approached through the collection of the state of the art from partnering national institutions, the analysis of national policies. By gathering and considering their respective current policies, DiSSCo Prepare partners are listening to the position of governmental stakeholders. This in turn informs how each partner positions their institution and their work. Compiling information and building a strategic plan to address the bias or disinformation around natural sciences collections and RIs.
- On the other hand, advanced through the key messages developed. These key messages will be at the heart of internal and external communications. They will be centralized within a toolkit accessible online.

6.2.2 Activities

Using the guiding principles mentioned above - a unified vision, harmonisation in diversity, effective collaboration and openness across regions, disciplines, and sectors - the IES envisages a set of activities that will build on them and will contribute to achieve the overall objectives, i.e. foster engagement, promote advocacy and largely disseminate the project achievements.

a. Continuous and circular community dialogue

At the heart of the internal partnerships, the driving force will be the constant exchange of information. Information, meaning knowledge and best practices, will be shared through different channels. To that end, the mechanisms foreseen include regular virtual meetings, the publication of newsletters and opening different communication channels (via slack, teamwork.com, email) to widely support the information flow. Each channel will have a clearly defined role and purpose. Teamwork is already well-established across the DiSSCo domain for discussions around project tasks, as a document repository and space to access all information or conversations around, in this case, DPP. Slack can be used for more focused, short-term activities such as development sprints or for specific tasks. Other tools will be investigated and used if need be.

b. Capacity Building

Being part of a collective, our strengths lie in our differences from institutional capabilities to the national/regional ecosystem. In our internal communication and engagement strategies resides a golden opportunity to help each other strengthen advocacy muscles in a learning environment. The capacity building activity will build from existing frameworks of advocacy strategies gathered from institutions and national nodes contributing to the project. Once all the relevant institutional, national or regional strategies are collected, CETAF will work towards completing WP8 milestones MS49 (Identifying indicators for alignment) and MS50 (Outreach and advocacy strategic plan first version in place). The resulting report for MS49 will serve as basis for pairing national nodes and institutions for a mentorship activity in which CETAF will work with volunteering/willing partners to build pairs according to:

- The maturity of the relevant policy context the institution/national nodes exist in,
- The respective characteristics of both partners (size, domain, resources),
- Other criteria to be determined.

Once the mentorship is set, each pair will be responsible for determining how they will work together, the duration and the means/processes that will structure their collaboration. To enrich the tools mentioned below, the best practices recommendations resulting from their ongoing or one time sit-down, the pair will be able to produce a document that will be shared in the engagement toolkit as well as during the regular formal meeting with the other national nodes.

6.2.3 Tools

Our communication channels will encourage continuous information and knowledge exchange alongside furthering capacity through the following means:

a. Meetings

Regular, formal meetings will be held which will aim on one hand to stimulate continuous communication among partners and distribution of information. It will then be each partners' responsibility as part of their commitment in this project part while on the other hand, each partner will be responsible to communicate in their respective organisations, and nodes if applicable, on the status of DiSSCo Prepare. This will generate more support from the organisation which further strengthens ownership and engagement.

WP8 will have three types of meetings:

- **WP8 task partners meeting:** Bi-weekly (as specified above)
- **WP8 NNs meetings:** using the established DiSSCo structure of monthly meetings with representatives from the partner networks on national level, WP8 general staff will meet with national nodes every two weeks for the first 2 months to get on speed and then move them to monthly meetings. These meetings will be led and documented by WP8 leader. **DiSSCo Prepare Executive Board meetings:** DiSSCo Prepare meetings with the other WPs leaders, they will be led and documented by Naturalis as the project leader.
- **DiSSCo Prepare Stream Coordination meetings:** every 6 weeks, as described above.

b. Mentoring mechanism

Using information provided by the NNs as basis, the needs of every partner will be identified and they will be paired according to where capacity building is needed in order to best engage with governments.

The pair will be responsible to define the frequency and the form of their collaboration.

c. Engagement toolkit

This toolkit will be updated throughout the project and can serve as a unified reference for all partners. Here, they will find various tools as referred to in the Communication section (chapter 4) to assist them in their engagement efforts towards their national governments. NNs will disseminate the folder of documents to their respective organisations members.

d. Workshops

Where necessary, WP8 will rely on virtual or physical workshops involving all partners or a number of them, depending on the topic, the needs and the relevance to achieve the desired objective.

6.2.4 Summary

INTERNAL ENGAGEMENT STRATEGY			
Objectives	Guidelines	Activities	Tools
To ensure all partners are <ul style="list-style-type: none"> Aligned behind the same vision, Clear about the project's mission, objectives and its overall approach. IES will aim to develop capacity, create and strengthen synergies as well as foster project ownership from each partner at every step and for any activity planned.	Maximize harmonisation	<ul style="list-style-type: none"> Open, constant and circular information and communication channels flow Ensure consistent practice 	<ul style="list-style-type: none"> Communication and engagement toolkit Formal meetings
	Foster and strengthen project ownership	Capacity building	Toolkit material: such as National Nodes or Institution updates for the Coffee@DiSSCoPrepare
	Enhance partners' advocacy capabilities	Capacity building through collaboration	<ul style="list-style-type: none"> Workshops Mentoring/pairing Engagement toolkit

6.3 External Engagement Strategy

Besides the involvement and direct participation of DiSSCo partners and their related governmental agents, there is a plethora of relevant stakeholders around the RI that can play an instrumental role in developing and strengthening the RI's position. Hence, external engagement needs to be understood as the process to attract actors other than the direct DiSSCo partners as well as the implemented mechanisms to keep the stakeholders informed of the developments of the RI. When and wherever possible, we need to engage these external stakeholders in the co-design, co-production and/or co-improvement of services.

The Stakeholders Forum will be a critical priority. This group will ultimately be the major investors in DiSSCo. Here the CSO will play a key role by coordinating between the needs of the NNs and the overall alignment and positioning of DiSSCo at the European level, and also provide support to develop national messaging, and ensure this is harmonised between the NNs and developed within a necessary long-term lens. This will be done through coordination of guidance and feedback both from the Advisory Boards, and at the General Assembly level and with associated working groups.

The goals of this process are to 1) identify and exploit complementarities with external stakeholders; 2) tune our services to their needs; and 3) align activities with national and

European funders that support DiSSCo objectives. These activities will promote the long-term sustainability of DiSSCo by pointing out its societal relevance and importance to external stakeholders. The purpose will be to explore opportunities for collaboration and raise awareness for targeted audiences (decision makers and the business sector primarily) towards national policies and mechanisms for action. To achieve this, DiSSCo will harmonize approaches towards the implementation of a coordinated action in developing joint services and producing coherent frameworks for tenders and partnerships that could be implemented across countries.

DiSSCo Prepare is a unique opportunity to ensure the DiSSCo project does not exist in isolation from its stakeholders. Engaging with all stakeholders from the onset will aim to cement:

- DiSSCo's relevance: *where DiSSCo adds value, what to deliver, for whom.*
- DiSSCo's time-sensitivity: *which challenges it will help to address better and faster (such as climate change).*

Despite the challenge to define and measure the Social Economic Impact of natural sciences collections (NSCs), in the age of the information (and thus data) society, DiSSCo's relevance and time-sensitivity is now more present than ever and has the potential to become instrumental to tackle pressing issues of societal challenges (loss of biodiversity, impact on nature of climate change, etc.). To that end, collaboration with societal actors, from the private sector to public instances (including academia), puts each of them in a position where they can contribute to a framework under which they can create partnerships and jointly foster breakthrough scientific developments.

The main goal for this external engagement activity is to strengthen the linkages and to build strategic partnership among relevant stakeholders and communities that may act either as providers and co-producers of services or as potential users of those services. The idea is to produce guidelines to implement a consistent practice across DiSSCo Partners and maximise success in the production and delivery of services by co-working, collaborating and co-producing pivotal outcomes, either individually by a NN or jointly by more NNs in a distributed but coordinated manner.

Therefore, several subtasks are to work towards this goal:

1. Stakeholders grid to identify relevant stakeholders across several axes:
 - a. Users;
 - b. Legal nature: from the private (including IT companies) to the public sphere (academia, citizen science initiatives), considering a wide variety of contractors (in formats, size and legal nature);
 - c. Fields of reference: in regards to DiSSCo (either domain specific or outsiders) needs such as computing capacity, publication services, etc.;
 - d. Geographical spread: as to cover not only European but also international initiatives.
2. Calls for information gathering: on the existing possible frameworks to be used in order to build:

-
- i. Partnerships agreements;
 - ii. Procurement protocols;
 - iii. Service provision contracts.

The search will integrate specific institutions and RIs and other initiatives that already contribute to EOSC and ERA, participate in ESFRI, Europeana or EuroGEOSS and complement the cluster activities developed by the environmental RIs gathered within the ENVRI-FAIR project.

This sub-task will equally involve working on two levels:

- Criteria to be taken into consideration when building procurement agreements for service provision; and
- Indicators that will guide alignment of existing practices as to learn from the best and produce, when possible, an expanded and enhanced model.

Due to the specificity of the realm in which DiSSCo operates, there is a clear challenge in attracting and retaining engaged industrial actors in the process of servicing big data from NSCs. Lessons learnt from activities carried out in previous stakeholder engagement exercises (as in SYNTHESYS+ under Task T5.3) will be valuable to be considered as a sound baseline.

To encourage stakeholders participation, it will be necessary to:

1. clearly identify potential areas where industrial partners may have an interest for further innovating and developing services especially in the context of a commercially viable product;
2. prepare a set of business cases where the partnership museum-industry has proven efficient and successful; and
3. disseminate best practices and recommendations to guide the establishment of procedures, subscription of services provision and signature of agreements.

Several activities are foreseen throughout the entire project as to contribute to efficiently achieve the objectives pursued under T8.3

6.3.1 Guiding principles

External engagement will ensure that all NNs, through the internal engagement leader, have regular exchanges of information, keep duly updated and remain well connected with other bodies external to the DPP, in particular with the SAB, to ensure that all NNs fully acknowledge the scientific mission, are aligned to it and have a well-rounded perspective. Similarly, to build complementarity and avoid duplication, the external engagement tools will establish how the WP8 leader and thus the NNs are informed on the developments and the approaches discussed at the Stakeholders Forum.

To facilitate the above, several principles will guide the external engagement strategy:

Using the guiding principles mentioned above - a unified vision, harmonisation in diversity, effective collaboration and openness across regions, disciplines, and sectors - the IES envisages a set of activities that will build on them and will contribute to achieve the overall objectives, i.e. foster engagement, promote advocacy and largely disseminate the project achievements.

a. [Positioning DPP in the broader landscape of services providers](#)

To keep DiSSCo well placed to exploit the emerging technology and research policy of the European Open Science Cloud (EOSC) development, and to ensure that the envisaged services to be provided by DiSSCo are recognised and paired at EU level (EOSC and others).

b. [Smart and strategic alliances with external parties](#)

External engagement will be developed within a long-term strategic prioritization framework. Partnerships will be assessed on a needs/benefit structure to be developed as part of the early work of this group. These alliances will be informed by a smart and strategic approach to one hand, identify each partner's strengths and assets and on the other hand, by a defined shared vision of the ideal outcome.

c. [Fluent and permanent communication with internal beneficiaries](#)

The need to align closely with internal engagement and have bi-directional dialogue with the NNs, for which the leader of Task T8.3 will be invited to all NNs meetings. When necessary, specific meetings will be set up to tackle relevant topics that concern relationship, alignment and/or complementarity of internal and external actors.

Several critical themes will underpin these principles:

1. The need for agility and continuous feedback and refinement to enable DiSSCo to stay at the forefront of ever- changing technical environments;
2. A commitment to actively seek out complementing infrastructures and industries, identify where joint efforts could exist as well as build on existing investments. The final aim relies on paving the path to construct partnerships with stakeholders from the private sector and leveraging cross-infrastructure collaboration;
3. A continued commitment to work towards optimal EOSC integration and work closely as the next iteration of the EOSC roadmap is developed.

6.3.2 Activities

The following activities will work towards a more strategically and formally aligned effort to identify proper governance models for participatory contributions and, based on that, to build a global alliance around biodiversity and geodiversity data infrastructures, overcoming the challenges of an increasingly crowded and complex landscape.

They will translate the guiding principles into practices that will aim to achieve external engagement objectives:

a. Landscape mapping and community of interest building

Landscape analysis will be created to map the relevant stakeholders, including RIs in the domain and beyond, to inform thematic groupings and partnerships and where efforts should progress jointly, or be leveraged, built on Deliverable 9.4 of the ICEDIG project. Furthermore, descriptive grids will be developed to identify common needs with the objective to collectively address or advocate for those needs to funders and/or industry actors at the European and national level. Those developed metrics will serve as indicators of the project's progress and achievements. It will inform adjustments where and when necessary.

b. Metrics & Methodology

i. Criteria for services and service providers

A set of criteria that will guide the different entries into the graph, both at the services (outcomes) and the providers (stakeholders) level.

ii. Methodology

Based on the criteria, a methodology will be applied for analysis that can support and inform prioritization of resources where appropriate and when considering partnerships. In other words, to set the framework to analyze potential partnerships and agreements within international fields of reference

iii. Metrics to gain insights

That will serve as indicators of the project's progress and achievements. They will inform adjustments where and when necessary.

c. Bi-directional flow between external stakeholders and DiSSCo

Underpinning all relevant activities, a set of mechanisms and channels that support consistent communication between external stakeholders and DiSSCo, and contribute to maximize impact of outcomes across the consortium

6.3.3 Tools

Meetings

Regular, formal meetings will be held within the WP8 and with other relevant partners which will aim to gather feedback on the progress of the task, and serve as a check in terms of managing the work. The meetings will also allow the task leader and participants to disseminate knowledge within their organizations.

Those will be convened by the Task T8.3 leader in coordination with WP8 leader every month and on an ad-hoc basis if needed.

In order to collate the relevant information and extract meaningful input for the T8.3, the task leader may address for each of those monthly meetings a different sub-group of partners given the expertise and domain knowledge being contributed, as the remit for external engagement is a broad one. Every 6 months, there will be a specific request to seek advice from the TAB and particularly the SAB in order to gain further insight into the infrastructures or funding bodies that need to be sought to establish dialogue or communications with.

Published Materials

A Concept Note of the DiSSCo RI together with complementary information of internal character (such as envisaged DiSSCo services, tools in progress, etc.) and also towards external understanding (DiSSCo positioning visual, grid for DiSSCo-related initiatives, etc.) will be produced as presentation material to third parties, to ensure clear understanding of the DiSSCo RI vision and objectives and ease the possibilities of collaboration.

Online tools

Online tools and platforms will be used accordingly for key messaging and also as a collective workspace with regards to documentation. It is envisioned this group will also sort and keep a database of stakeholders. This will be discussed until M4. Still, several outcomes from DiSSCo-related projects, such as the RI landscape dashboard developed under ICEDIG, may act as a CRM and be used by this group.

Forums

Where necessary, the WP8 and specifically T8.3 for external engagement, will rely on virtual the workshops / roundtables to be organized under WP9 that will involve a certain number of partners, complemented by external stakeholders as appropriate. If other settings are required, additional gatherings will be organized under T8.3 as multi-person, multi-institutional meetings will take place using video conferencing.

6.3.4 Summary

EXTERNAL ENGAGEMENT STRATEGY

Objectives	TARGET AUDIENCE <i>mobilized along 3 axes</i>	Guidelines	Activities	Tools
<p>+To set up mechanisms and channels that support the long-term sustainability of DISSCo.</p> <p>+To strengthen linkages and build strategic partnerships among relevant stakeholders and communities.</p> <p>+Maximize impact of outcomes across the consortium by implementing consistent practices across partners</p> <p>+Identify synergies & coordinate action and joint services development</p>	LEGAL STATUS	Overall goal is to engage in effective interaction:	Mapping of relevant stakeholders and sectors of activity (<i>axis: influence and interest in RIs</i>)	<p>Thematic workshops</p> <p>Dialogue with the community</p> <p>Open consultations to related institutions and associations</p>
	Public: Relevant national or regional governments National scientific agencies	Regarding national policies and how Smart specialisation can assist in implementing more effective policies. Raise awareness towards national policies and mechanisms for actions	Capacity building Share best practices through collaborative resource about engagement with both public and private industry Continuous advocacy work through established fluent communication channels	
	Private: Relevant industry actors	Regarding innovation, win-win opportunities in RIs and the data encapsulated in DISSCo.	Map benefits for said industry to collaborate with DISSCo RI and its capacities. Create opportunities for collaboration	
	FIELD OF REFERENCE Domain specific (e.g. Biodiversity Heritage Library-BHL) Cross sectoral entities (e.g. Open Access publishers)		Networking Create synergies	<p>Participation in the relevant fora (physical or virtual through webinars)</p> <p>Attendance to ESFRI- & Horizon Europe-related events.</p> <p>Landscape analysis of stakeholders to produce a <i>Stakeholders Grid</i> to identify relevant stakeholders.</p> <p>Calls for information gathering</p>
	GEOGRAPHICAL SPREAD	Raise awareness of DISSCo	Networking Collaboration	<p>Open consultation to related institutions and associations</p> <p>Online platforms: channel key messages regarding #DISSCo and engage in relevant public conversations with decision makers and influential stakeholders.</p> <p>Online tools: social media accounts, DISSCo website</p>

07 TIMELINE OF THE C&D PLAN

M1 27 February 2020	Kick-Off Meeting in Helsinki. Presentation of DiSSCo Prepare in presence of partners
M2 March 2020	DiSSCo Prepare website operational (MS44-Task8.1)
M3 April 2020	C&D Strategy finalised (D8.1)
M3 April 2020	National & Institutional level strategies start being collected (Task 8.2)
M6 July 2020	First communication strategy campaign launched targeting national nodes engagement (MS45-Task 8.1)
M9 October 2020	Identifying indicators for alignment (Task 8.3)
	Outreach and advocacy Strategic plan first version in place (Task 8.4)
M12 January 2021	AH Meeting
M18-M24	1 st Roundtable (under WP9) (MS69)
M24 January 2022	AH Meeting
M24-M30	2 nd Roundtable (under WP9) (MS70)
M36 January 2023	Closing Conference

09 RESOURCES COMMITTED TO THE C&D PLAN

WP8 leader: CETAF- Consortium of European Taxonomic Facilities

MILESTONES

MS	Task	Concept	Lead beneficiary	Due Date (in months)
44	8.1	Website Operational	CETAF	2
45	8.1	First communication strategy campaign launched targeting national nodes engagement	CETAF	6
46	8.2	National & Institutional level strategies collected	CETAF	6
47	8.2	Setting criteria for the procurement framework	CETAF	9
48	8.2	Initial findings for specialisation plan	CETAF	18
49	8.3	Identifying indicators for alignment	CETAF	18
50	8.4	Outreach & Advocacy Strategic plan first version in place	CETAF	18
69		Roundtable 1	Naturalis	18
70		Roundtable 2	Naturalis	27

DELIVERABLES

Deliverable	Title	Lead beneficiary	Due date (in months)
D8.1	Communication & Dissemination strategy	CETAF	3
D8.2	Thematic specialisation plan	CETAF	32
D8.3	Partnership Best Practices	NHM	34

General overview of WP8 commitments

The resources devoted to implementing the Communication and Dissemination strategy are listed in the table below, with a distribution of Person months (PMs) allocated by each Project Partner to each Task where they are involved.

Task	Participants	PMs
8.1 DiSSCo national nodes engagement (M1-36)	CETAF IRSNB Naturalis, MNHN, Luomus, MfN Tartu,UCPH, UniFi,NHM, IBER-BAS, UW, NM, NHMW,CSIC, HNHM, IBSAS,NRM,NHM-UIO, UoC-NHMC, MnhnL,UPORTO BGBM	4.5 4 3 2 1
8.2 External Communication Strategy (M1-36)	CETAF Naturalis ULISBOA MNHN	2.5 1 2 1
8.3 DiSSCo stakeholder engagement (M1-34)	NHM CETAF Luomus MeiseBG MNHN	4.5 1.5 1 1 1
8.4 Dissemination, Outreach and Advocacy (M1-36)	CETAF Naturalis ULISBOA	2 2 2

10 PROGRESS OF THE C&D PLAN: PERFORMANCE INDICATORS

The three axes developed in this strategy will be monitored in terms of their performance and progress. For each activity, several indicators will be used for monitoring. Results will be presented regularly to the DiSSCo Prepare Council Board.

Activity	Monitoring progress
DiSSCo Prepare website	<ul style="list-style-type: none"> ● Visitors, returning visitors, geographic distribution, etc. ● Prominence in google searches <ul style="list-style-type: none"> - Source: Google Analytics - Frequency: every 6 months
Social media (i.e. Twitter)	<ul style="list-style-type: none"> ● Number of online interactions on the DiSSCo PP social media channels <ul style="list-style-type: none"> - Source: analytics of Twitter
Workshops KoM and Closing conference	<ul style="list-style-type: none"> ● Attendance numbers from public and project audiences and distribution of the participating public ● Relations being established with stakeholders <ul style="list-style-type: none"> - Source: data collated in each workshop/conference
External event participation	<ul style="list-style-type: none"> ● Attendance to the events ● Format of attendance (level of participation) <ul style="list-style-type: none"> - Source: Registration and Attendance forms filled in by participants
All-hands meetings	data collated in each AH meetings, agenda, notes

II - Advocacy Strategy in the DiSSCo RI preparatory phase

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1. Introduction

The DiSSCo Research Infrastructure (DiSSCo RI) established an institutions-based governance model during its preparatory phase based on an interim General Assembly confirmed by institutional signatories to the European Memorandum of Understanding. The institutions-based model emphasizes the importance of communities of practice in supporting the new research infrastructure and translates into participation and financial support from institutions and experts from 120 Natural Science Collections (NSC) across Europe.

At the end of the preparatory phase, however, DiSSCo will become a legal entity which implies a new governance model based on strong national political and financial commitments. Essential to achieving this is the need to equip the DiSSCo Research Infrastructure with mechanisms to avoid misalignments with the national scientific priorities and guarantee long-term sustainability in the scientific, technical, governance and financial dimensions.

With this objective in mind, DiSSCo is in the early stages of working towards sound commitments at a national level across 21 countries already engaged with the research infrastructure by implementing collaborative communication and advocacy strategies in multiple dimensions with its national nodes. The commitment of the national authorities to DiSSCo will depend on how early and consistently DiSSCo engages with national interests and how it is perceived as one of the key facilitators of scientific excellence benefiting socio-economic developments as a whole.

To ensure the DiSSCo RI effectively fulfills specific national needs and to customise its message, DiSSCo will establish a new advisory body, the Funders Forum (FF). The FF's objective will be to keep national authorities informed and prepare them to take over the responsibility of governing the DiSSCo RI once the legal entity is in place.

The advocacy strategy for the Funders Forum (hereafter, the Funders Forum strategy) presented in this document aims to establish a continuous procedure to ensure national authorities actively participate in both the strategic and operational planning of DiSSCo and commit to supporting it during the construction and operational phases.

The Funders Forum strategy provides a description of the activities needed to set-up and operate the Funders Forum and the advocacy actions needed during the preparatory and transition phases to guarantee sufficient commitment to the DiSSCo RI construction and operation phases.

2. The Funders Forum Advocacy Strategy

This report will define the audiences, expected changes, principles and actions of the advocacy strategy. The Funders Forum strategy aligns with ongoing efforts carried out by the Communication and Engagement team and provides steps and tools to move further, specifically for the Funders Forum and other governmental advocacy actions.

2.1 The Framework

In an effort to ensure that DiSSCo's interaction with national authorities is constructive and fruitful, the CSO-CE plans to combine communication, dissemination and advocacy actions. The Funders Forum strategy is a piece of and complements DiSSCo's advocacy strategy that also includes engagement with Stakeholders.

Awareness

Ongoing CSO-CE activities are mostly devoted to keeping NNs aware and informed about DiSSCo. Although this audience is already committed to DiSSCo, it is expected that nodes will show different levels of maturity or readiness. It is also expected that they will not share the same opinions about the research infrastructure nor have a convincing narrative. Therefore, communication tools and NN meetings (as described in DiSSCo's communication and dissemination strategy) have been implemented to keep NNs aware of the importance of their role in the process, and to provide them with communication tools and sound narratives.

Willingness to take action

Keeping the audience well-informed, however, does not automatically ensure their advocacy for the cause. It is also essential that NNs develop a strong opinion and vision justifying why DiSSCo is critical to the RI landscape and should be supported, and be able to proactively advocate for it. It is therefore incumbent upon the CSO-CE to combine communication with advocacy, to instill a sense of need and importance that effectively moves both the nodes and national authorities towards the expected level of commitment.

DiSSCo's communication and dissemination strategy includes tools and clear objectives to empower the NNs narrative when discussing DiSSCo's relevance with national authorities. Furthermore, three-layered communication between DiSSCo, the institutions and national authorities will complement the flow of information needed for other communication

modes such as the website, thematic workshops, and international fora and will serve as a resource for advocacy strategy, including the Funders Forum strategy. Sustained communications will also build on trust among individuals engaged in the DiSSCo mission and ensure transparency of national nodes.

The advocacy strategy for the Funders Forum establishes cooperation between the DiSSCo CSO, DiSSCo NNs and Funders Forum representatives with a twofold objective: (1) to build tailored advocacy strategies at the national level that foster national commitments for the operation of DiSSCo and (2) to help shape the strategic and organisational developments of the research infrastructure during its preparatory phase.

Activities will be spread over two phases in a time period of approximately four years when the legal entity will be in place. This document is considered a working document to be updated whenever necessary. The timeline (Annex 1) covers till the end of 2021.

Set up and operation of the Funders Forum (FF) and the Stakeholders Forum (SF)

The Funders Forum advisory body will constitute a key body in the overall government of DiSSCo. Its input will ensure the appropriate level of national funder engagement and allow DiSSCo to adjust according to (changing) national and international priorities.

Simultaneously, DiSSCo Prepare, the preparatory phase project, will similarly include the formation of a Stakeholders Forum. The Stakeholders Forum will be a forum for discussion and interaction among all related stakeholders, including RIs. It will provide critical feedback in the overall decision-making process across the five dimensions of implementation readiness of the infrastructure: science, data, finance, technology, and organization.

2.2 Audiences

Two audiences are identified as subjects of the advocacy actions as either main actors and/or target audiences are

- DiSSCo national nodes (NNs¹²),

¹² NN may be a national consortium of signatories of the DiSSCo European MoU, or natural science collection-based organisations from countries where a node has not been formed yet.

-
- National authorities responsible for NSCs, ESFRI representatives, and/or Research Infrastructures.

National authority representatives with major roles in decision-making processes will be the final target audience while the NNs play an essential role through the entire process of engagement. NNs will participate in defining the advocacy strategy (Phase 1) and act as DiSSCo ambassadors at national level (Phases 1-2).

2.3 Objectives (Changes)

The Funders Forum strategy's main objective is to obtain national commitment to DiSSCo's construction and operation phases. This should be a long-term financial and political commitment based on DiSSCo's position as a large-scale research infrastructure of European and national interest.

Interim objectives

It is essential that DiSSCo works collaboratively with target audiences in defining interim objectives not only to tailor them to meet national needs but also to accommodate changing circumstances. Collaborating on interim objectives may avoid the unfair perception that the strategy failed at a certain moment if the objective is not fully achieved within a certain timeframe. Furthermore, interim objectives can be tracked to determine where adjustments might be necessary. Some possible interim objectives may include: stronger coalitions among institutions without a formed node, increased communication coverage (media coverage), increased advocacy capacity (e.g. DiSSCo champions), better monitoring tools for national roadmap developments, etc.

2.4 Mode of operation - A strategy in two phases

Implementing the Funders Forum advocacy strategy will consist of two consecutive phases with different objectives, modes of operation, and use of resources.

2.4.1 Phase 1

Timeframe: July 2020 - February 2021

Objective: To create the Funders Forum (once approved by DiSSCo GA) and organise its inaugural meeting in early 2021 with sufficient representation.

Lead: The CSO team with the support of interested node representatives from institutions and national authorities.

Target audiences: Both, NNs, and national authorities.

Advocacy activities (see Annex 1 Gantt chart of activities)

Advocacy strategy activities are predicated upon continuous collaboration with the NNs and their alignment with the communication and dissemination activities carried out by DiSSCo CSO-CE.

2.4.1.1 Identifying the final target audience

National authorities responsible for NSC, ESFRI delegates and/or research infrastructures represent the main target audience in the policy process. The backing and endorsement of senior representatives with an active role in decision-making is essential to obtaining national funding commitments.

The CSO-CE has recently initiated activities aimed at customizing DiSSCo's messaging to senior decision-makers. It has disseminated two questionnaires to NNs with the objective to gather accurate information on national priorities to enable the positioning of DiSSCo and DiSSCo nodes towards the targeted audience (national authorities).

Activity: Analysis of the information provided by the NNs will inform preparations for the communication campaign to be launched in September 2020 and the calendar of bilateral meetings.

Tools: Analysis of NN questionnaire responses, NNs meetings, other communication tools.

Lead: CSO-CE

2.4.1.2 Identify underlying assumptions and beliefs

Designing an advocacy strategy requires one to have an in-depth knowledge of how the policy making process works at a national level and the best way to approach it. In addition, one needs to understand the perception of DiSSCo by both the NNs and national authorities. It will be essential in early discussions with NNs to identify competing or misaligned assumptions about DiSSCo's services, position in the RI landscape, or its processes. This will help the NNs in developing and customizing their own advocacy strategies.

Activity: Through analysis of NN questionnaire responses and bilateral meetings (or regional meetings as a first stage), the NNs together with the CSO will collaboratively define assumptions that fit their national reality.

Tools: Analysis of NN questionnaire responses, key messages from the communication campaign, calendar of bilateral/regional meetings.

Lead: CSO-CE

2.4.1.3 Identifying common practices

In shaping the communication campaign, the next step is identifying common practices among countries. For instance, regions may share commonalities in their modes of administrative operation (e.g., South-Europe or among the Scandinavian countries).

Activity: Based on the answers from the questionnaires, the CSO-CE will establish a matrix of different readiness levels across the NNs. That matrix will serve as a basis for establishing current readiness levels, best practices and actions to enhance the capacity of the NNs in their communication with their national authorities. Thematic workshops targeting specific audiences can be organised.

Tools: Analysis of NN questionnaire responses, key messages from the 1st communication campaign, bilateral/regional meetings & workshops.

Lead: CSO-CE

2.4.1.4 Tailoring advocacy strategies (including a contingency plan)

The core of the advocacy strategy is to use narratives that speak to specific national priorities and these will be developed in collaboration with the NNs and interested national authorities.

Activity: To this end, the first communication campaign (between DiSSCo, the institutions and national authorities) to be launched in September 2020, will be the starting point. Key messages together with the analysis of national readiness levels will support the definition of customized national advocacy actions through a calendar of bilateral consultations (End September-November 2020).

Also a contingency plan will be developed in close collaboration with the NNs.

Tools: The Funders Forum information package, analysis of NN questionnaire responses, key messages from the communication campaign, calendar of bilateral meetings, thematic workshops, identification of interim objectives.

Lead: CSO-CE

2.4.1.5 Shaping the Funders Forum advisory body

Establishing the Funders Forum is a unique exercise in engaging national authorities to advise on RI development while simultaneously keeping the project rooted in institutional support and the actors leading the initiative. This exceptional balance requires an in-depth understanding of the role of the Funders Forum as a precursor to the country-based RI governance model and therefore requires the input of future responsible individuals as early as possible. Participation and engagement of the national authorities relies heavily on this understanding.

Activities: It is important that the national authorities understand and participate in shaping the role and function of the advisory body. To this end, the CSO-CE has produced an initial Funders Forum information package including a draft of the Funders Forum Rules of Procedure. This package provides a comprehensive view of the roles and responsibilities of the advisory body and will serve as the CSO's basis for communication with the targeted audiences starting with the NNs. Comments and suggestions will lead to a final information package that will then be discussed with the national authorities of the twenty-one countries in DiSSCo in a second round of bilateral meetings.

Tools: Funders Forum information package, NNs meetings, NNs comments on the information package, calendar of bilateral meetings.

Lead: CSO

The case of The Netherlands

The Netherlands, as the hosting country of DiSSCo during its preparatory phase, provides significant political and financial support through Naturalis Biodiversity Center.

Early in the preparatory phase representatives of the Ministry of Education, Culture and Science manifested interest in following the progress of and participating in development of certain documents for the Funders Forum. This has provided an excellent opportunity to strengthen collaboration with the hosting country and set up a model of cooperation that will be applied to other countries.

Therefore, the CSO will share with the Ministry, the Funders Forum information package also containing a report framing the rationale of the current governance model of the Funders Forum together with the Rules of Procedure.

2.4.1.6 Coordination with the Stakeholders Forum

The perception of the DiSSCo RI at a national level is directly influenced by how DiSSCo and other RIs and initiatives cooperate to foster socio-economic resilience and how synergies translate into wiser investments of resources and policies management. Currently, DiSSCo actively participates in discussions in the research and technical domains at both the European and international levels and works collaboratively with several RIs and other data-driven initiatives.

To consolidate and continue these activities, DiSSCo plans a broad consultation across the preparatory phase that will be driven by a Stakeholders Forum. The objective will be for stakeholders to provide critical feedback in the overall decision-making process of the preparatory phase across the readiness dimensions of the infrastructure. This feedback will be integrated and duly considered in coordination with the Funder's Forum input.

Activities: The Chairs of both the Funders Forum and Stakeholders Forum will be invited regularly to attend the meetings of both bodies. It is foreseen that they will report on certain common issues.

Lead: CSO

2.4.2 Phase 2

Timeframe: March 2021 - establishment of DiSSCo legal entity

Twofold objective: (1) to expand the number of participants in the body and therefore, DiSSCo's role in national roadmaps, and (2) to start bilateral agreements with national authorities for political and financial support to the DiSSCo RI.

Lead: The CSO together with the support of the national DiSSCo nodes.

Targeted audience: National authorities participating in the Funders Forum.

Advocacy activities (see Annex 1)

2.4.2.1 Bi-annual Funders Forum meetings

The Funders Forum will meet twice per year on a regular basis to advise and report on strategic and organisational planning during the preparatory phase. Reports will be conveyed by the CSO to the DiSSCo General Assembly for acknowledgement and will trigger action for the CSO and the DiSSCo Prepare Project Council.

The Funders Forum meetings may take place in a way that optimizes alignment with the Scientific and Technical Advisory Boards and the Stakeholders Forum. The latter plays a key role motivating national engagement. DiSSCo's alignment with other RIs and international initiatives will show how cooperation among RIs boost cost-effective national investments while delivering scientific excellence benefiting society.

Lead: CSO

2.4.2.2 Monitoring progress through periodic bilateral meetings

The calendar of bilateral meetings is expected to involve changing actors and topics. These meetings guarantee a continuous collaborative mode of operation and fluent communication and are an effective tool to monitor the readiness and willingness of the countries to join.

Lead: CSO.

2.4.2.3 Preparation of agreements with national authorities

Bilateral agreements between DiSSCo RI's new legal entity and the national authority will guarantee a commitment for at least 3 years, to financially and politically support the construction and operation phases of the RI.

Lead: CSO. It may be necessary to engage external legal advice.

III - Country Fact-Sheet Template



NAME COUNTRY Factsheet Engagement Analysis Report

Introduction

Analysis based on the answers given by the Name of the Node and/or Institutions (aiming to set up a DiSSCo node) to the National Nodes Priorities and Funders Forum Questionnaire, and the Analytical Matrix.

NN composition: (i)

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