



CESSDA Widening Activities 2018

Deliverable 1 – Resource Directory

Executive summary

Understanding the needs of both CESSDA service providers (SPs) and partners (i.e. future SPs) is essential for the success of CESSDA as a whole. Sustainable tools must be developed and made available for addressing these needs, as well as for facilitating and encouraging exchange between data archive services (DAS) at different maturity levels. The Resource Directory developed during the “CESSDA Widening Activities 2018” project is a tool that contributes to addressing partners’ and less mature CESSDA SPs’ needs.

The aim of the Resource Directory is to help disseminate existing resources within CESSDA and its SPs – that either help building a DAS or developing new services and features within existing DAS – among CESSDA partners and less mature CESSDA SPs. This contributes to the ultimate objectives of widening activities, which are to help the partners in building sustainable and mature data services and achieving CESSDA membership. Furthermore, the Resource Directory contributes to increasing CESSDA visibility in non-member countries.

The Resource Directory gathers resources together which are already available on different institutional websites. The resources are accessible via web links or DOIs; no resource is physically attached to the Directory. The Resource Directory is thus a central point of access to the resources that aid the building and development of mature DAS, and in achieving CESSDA membership. Information on relevant documents, trainings, tools and support services resulting from past and current CESSDA projects and activities at the SPs have been collected, selected and reviewed specifically for this purpose. The Resource Directory is therefore a curated inventory of these specific resources with aggregated listing of information.



The Resource Directory contains currently 189 resources (version 1.2) that support the development of a DAS. A wide range of resources is available in the Directory. In order to guide the users within the Directory, specific labels, descriptions and metadata were applied to index and define the resources. The labels and metadata can be used to select specific resources for a user-friendly search, allowing easy and rapid access to the resources of interest.

If a tool is already available, further developments of the Resource Directory are needed. The first one is to publish the Resource Directory online in a more user-friendly way and to make it available via the CESSDA website. Second, in order for the Resource Directory not to become obsolete, it needs maintenance. A proper maintenance means at the same time updating and completing its records to integrate the many resources available within CESSDA and its SPs, and enhancing the tool with, for example, an assessment of the quality of the resources (and not only the relevance).



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1 Introduction

Widening European coverage is among the priorities highlighted in the CESSDA strategy documents, and widening activities were covered within the framework of CESSDA SaW as well as other projects, such as SERSCIDA and SEEDS. The ultimate objectives of widening activities are to help the partners in building mature data services and achieving CESSDA membership.

The project “CESSDA Widening Activities 2018” has the aim of building on recent developments and ensuring continuity of long-term CESSDA widening efforts. Within this project, one of the main activities is to develop an extensive guide into available resources for data service building, capability and capacity development¹.

The aim of this activity is to help disseminate existing CESSDA support services, tools and knowledge among CESSDA partners. This is done by providing (1) a comprehensive inventory of and (2) a guide to the available CESSDA resources, i.e. resources developed during CESSDA projects and resources developed by and used within CESSDA Service Providers (SPs). The Resource Directory resulting from this task addresses both of these goals.

The task description also specified that the Resource Directory should be published on the CESSDA website and that the resources should be integrated into the Knowledge Sharing Platform, which was developed within the CESSDA SaW project.

1.1 CESSDA Service Providers involved

The institutions involved in this task are: FORS (lead), ADP, CSDA, DANS, TARKI and SND. Activities for the Resource Directory primarily involved FORS, CSDA, DANS and SND, while ADP and TARKI were involved in conducting the gap analysis on the available resources in the second part of the year.

¹ This activity was divided in two tasks: the Resource Directory and a gap analysis of CESSDA resources and support. Another deliverable is dedicated to this second task.



2 Process

2.1 Timeline

2017	
December	Kick-off meeting in Ljubljana
2018	
January – Feb.	Development of the collection tool
February – May	Collection of the resources within all CESSDA SPs
June	Presentation of the concept of the Resource Directory at Milano meeting
June – September	Review of the submitted resources
September	Sending of the 1 st version of the Resource Directory for the gap analysis
Sept. – November	Realisation of the gap analysis
Dec. – Jan. 2019	Drafting of the deliverable and diffusion of the 2 nd version

In order to build a comprehensive inventory, it was decided to collect information about the wide range of resources available within each CESSDA SP. The first task was then to develop an appropriate collection tool. This was undertaken within FORS, ADP and DANS in January and February. Then, CSDA was responsible for contacting SPs and collecting information about available resources. Finally, the review of the 237 reported resources and the preparation of the Resource Directory were carried out by FORS, SND, CSDA and DANS.

Throughout the year, FORS, DANS and ADP were in contact with CESSDA MO for the development of the CESSDA webpage dedicated to the Resource Directory. Since the new CESSDA website was under development during the year and published in November, it was not possible to include the Resource Directory in the CESSDA website in 2018. Also, during the year, the development of the Knowledge Sharing Platform was paused and the resources could not have been added there. Currently, the Resource Directory is available as a Google Sheet.



2.2 Collection of the resources

The goal of this activity is to provide an extensive guide into available CESSDA resources for data service building, capability and capacity development. For this purpose, the first task is to collect information about the wide range of resources developed by and available within CESSDA and its SPs, which could be useful and available for the partners.

First contact with the SPs was made on the 22nd of February, and the deadline for filling the collection tool was set for the 21st of March. Selected contacts within each SP received an explanatory e-mail (see appendix I) with a link to the collection tool, which consisted of a specific Google sheet for each SP. Reminders were sent throughout the period, and the collection ended in May with responses from all SPs.

The CESSDA SPs were asked to report English-language resources developed by and available at their institution, as well as resources their institution contributed to developing within CESSDA projects and working groups (and any other resources) that would help partners:

- (a) to define the future data service and its main features;
- (b) to develop basic infrastructure and services, and to establish the data service;
- (c) to develop more specific and advanced activities.

CESSDA SPs were encouraged to share resources with different forms such as relevant documents, support services, trainings, tools and materials, which could help CESSDA partners to build data services and achieve CESSDA membership in the future. These could be resources that are already available (or will be available in the near future) on an ongoing basis, by time interval (e.g. webinar going on each year) or on request (e.g. consultancy, peer-to-peer services).

2.2.1 Collection tool

The collection tool contained six tabs. The first one contained information on the task and on the resources that should be reported. In the second tab, the SPs could report their resources. The other tabs contained information on and explanation of the drop-down lists.

The second tab was used to collect the resources. For each reported resource, the SP was asked to provide different information:

- Resource title
- Short summary of the resource



- Resource type (drop-down list)
- Resource form (drop-down list)
- Principal and additional category (drop-down list)
- Resource link or DOI
- Main institutional author
- Main contact person
- Inclusion in the Knowledge Sharing Platform (drop-down list)
- Remarks

The first three drop-down lists were used to define the resource in terms of its type (2), form (9) and category (6) and the last drop-down list to determine if the resource should be included in the Knowledge Sharing Platform and by whom (4, table 1). The list used in the resource form was adapted from the Knowledge Sharing Platform. The other lists were developed for the purpose of the collection. The categories were defined based on the Guide for Developing National Data Service Plans² and the Capability Development Model³, both created during the CESSDA SaW project, as well as the SERSCIDA data service training manual.⁴

Table 1: Drop-down lists used in the collection tool

Resource type	<ol style="list-style-type: none"> 1. Guidance (for the DAS staff, i.e. the resource answers questions like where to begin, what to do, how to do it and when, as well as how to go further) 2. Example (for the DAS staff, based on one or more institutions)
Resource form	<ol style="list-style-type: none"> 1. Document, report, deliverable 2. Presentation, poster, image 3. Webpage 4. Webinar (video or audio recording) 5. Tutorial, training tools and materials 6. Software 7. Expertise, consultancy, peer-to-peer services 8. Site visit opportunities 9. Other
Resource category	<ol style="list-style-type: none"> 1. Definition of the organisation (i.e. mission statement, scope of the collection, beneficiaries, etc.) 2. Services and activities (i.e. data acquisition, ingest, dissemination and preservation, etc.) 3. Staffing, management and financing

² <https://www.cessda.eu/Tools-Services/For-Service-Providers/Guide-for-Developing-National-Data-Service-Plans>

³ <https://www.cessda.eu/Tools-Services/For-Service-Providers/CESSDA-CDM>

⁴ http://www.serscida.eu/images/deliverables/SERSCIDA_D_4_2_Training_Materials_V1_2.pdf



	4. Technical infrastructure
	5. Communication & promotion
	6. Partner support & cooperation
	1. No, it is already added.
Knowledge	2. No, we will take care of it (institution in charge).
Sharing Platform	3. No, it is not available/suitable for the KP.
	4. Yes, add it to the KP for us (widening group in charge).

The information collected for each resource helped in sorting and reviewing the resources. Also, after some revision, it was used as metadata and to sort the resources in the final version of the Resource Directory.

2.3 Review of the resources

All the separate Google sheets were assembled in a common folder. In total, CESSDA SPs have reported 237 resources. The range of resources reported by the SPs goes from 0⁵ to 57.

The chosen methodology comprises several risks on the coverage. First, it was up to the SPs to report or not their resources and to fill in enough information for each resource. Moreover, the collection might not capture everything as a person may not have oversight of everything at a SP, knowledge or institutional memory and may not take the time to complete the collection tool. To lower this risk, several persons were contacted in each SP.

Looking at the results, most SPs took the time to report their resources. Those who reported no resources are new members or members without SPs. Also, this methodology allowed finding resources beyond the results from previous widening projects. Nevertheless, it was checked that all relevant resources from past widening projects were mentioned.

The review of the resources consisted first in deleting duplicates (e.g. SPs mentioning the same deliverable). Second, for every reported resource, it was decided to keep or not the resource in the Directory (asking the questions: Is it appropriate? Does it help to build an archive, develop a service?). So resources have been checked for relevance, but not for quality. In case of the rejection of a resource, the reviewer included a reason. This could be shared with interested SPs. Third, the information given by the SPs for each resource was double-checked and adapted for the

⁵ Four SPs did not report any resources.



Resource Directory purposes: the resource should be easily accessible by the users and contain a brief explanation on how/for what purpose it could be useful.

During the review, we added information on the development phase of the DAS the resource was helping with (at the conception of the archive, at its establishment or for improvements). We also improved the lists that help to define the resources by adding choices in the resource types (tool) and categories (evaluation & certification and sub-categories). Finally, based on the remarks in the gap analysis, we added for each resource the year the resource was last edited, and we reviewed the links, as some were already obsolete.

3 The CESSDA Resource Directory

3.1 *Definition, target audience and differences with the KSP*

The CESSDA Resource Directory is a central point of access to the resources that aid the building and development of mature DAS, and in achieving CESSDA membership. Information on relevant documents, trainings, tools and support services resulting from past and current CESSDA projects and activities at the SPs have been collected, selected and reviewed specifically for this purpose. The Resource Directory is therefore a curated inventory of these specific resources with aggregated listing of information. In order to guide the users within the Directory, specific labels and descriptions were used to index and define the resources. The last version of the Resource Directory (v.1.2, February 2019) is currently available as a Google Sheet.⁶

The target audience is principally the staff and management of CESSDA partner DAS, but less matured CESSDA SPs can also benefit from the available resources. Therefore, the Resource Directory should be accessible to all staff of CESSDA partner institutions and CESSDA SPs, and to other archiving activities in Europe and beyond.

The Resource Directory and the Knowledge Sharing Platform serve different roles and needs. Indeed, the KSP's target audience is CESSDA SPs and MO, whose principal aim is to make all CESSDA projects' reports and deliverables accessible. Thus, the KSP consists of a document repository with the documents physically attached. On the other hand, the resources are not physically included in the Directory, but are accessible via links.

⁶ <https://docs.google.com/spreadsheets/d/1P0Fccxb6aypi-bYn2zuncBve6dOxuN6A9cFjyXBph8/edit?usp=sharing>



3.2 How to look for and find specific resources?

In order to guide the user within the Directory, specific labels, metadata and descriptions were used to index and define the resources. These labels were first developed for the collection of the resources and then revised when reviewing the resources and based on the comments received in the gap analysis.

Figure 1: List of labels used in the current version (v1.2) of the Resource Directory

Resource category	Development phase of the DAS	Resource type	Resource form
General	Conception	Guidance	Document, report, deliverable
Definition of the organisation +	Establishment	Example	Presentation, poster, image
Services & activities +	Improvement	Tool	Webpage
Staffing, management & financing +			Webinar, video or audio recording
Technical infrastructure			Tutorial, training tools and material
Communication & promotion			Software
Partner support & cooperation			Expertise, consultancy, peer-to-peer services
Evaluation & certification			

In addition, for each resource the year the resource was last edited⁷ and the provenance of the resource from a CESSDA project or SP were added. Also, for each resource a brief description is provided on how it could be used and for what purpose. The resource titles have also been standardized to ease the search with keywords and the selection of resources on the same topic.

⁷For web pages, we added the year we last controlled that the link was working, so for the current version it is 2018.



These labels and metadata (year and related institution/project) could be used to select specific resources in a faceted search (for a user-friendly search allowing easy and rapid access to relevant resources). For example, after selecting a specific category like « Services and activities », the user may decide that he/she is interested in resources that focus on the establishment phase and that offer guidance. Then he/she will see directly how many resources are left with the selected criteria and chose among them.

As the labels attributed to each resource are the key tools for looking for and finding resources, they are now explained in more detail.

Resource category

The user can look for resources helping to develop activities in a specific area or “category” of the DAS (see Appendix 2 for examples of activities that resources could help to develop, in each category):

- 0. General*
 - 1. Definition of the organisation*
 - 1.1. Mission statement*
 - 1.2. Definition of the organisation*
 - 1.3. Scope of collection*
 - 1.4. Beneficiaries*
 - 2. Services & activities*
 - 2.1. Pre-Ingest - Acquisition*
 - 2.2. Ingest - Curation*
 - 2.3. Access - Dissemination*
 - 2.4. Preservation*
 - 2.5. Support and assistance to data producers and users*
 - 3. Staffing, management & financing*
 - 3.1. Host institution of the future data service*
 - 3.2. Governance structure*
 - 3.3. Staff & internal structure*
 - 3.4. Financing schemes*
 - 4. Technical infrastructure*
 - 5. Communication & promotion*
 - 6. Partner support & cooperation*
 - 7. Evaluation & certification*

Each resource has been labelled with the category targeting most effectively the resource. In the current version of the Resource Directory, we allowed up to two categories. When resources approach more than two categories, they are labelled



with the higher category. For example, if a resource explains how to acquire, curate, preserve and disseminate data, this resource is labelled as “Services & activities”. A resource dealing with the definition of the organisation, services and activities, as well as internal and governance structure will be labelled as “General”.

Development phase of the DAS

The resources that the users need probably differ depending on the development phase of the DAS. Also, while some resources help to define or develop activities in the DAS, others help to improve the institution, its services and its infrastructure. This is why the resources have been labelled according to the following development phases:

0. *All phases*
For resources that can help different phases of the DAS development (e.g. CESSDA working groups).
1. *Conception*
The resources help to define the future data service (name, host institution, services, internal and governance structure, infrastructure needs according to the chosen services, etc.).
2. *Establishment*
The main features of the future data service are already defined (for example in a development plan). The resources help to take action in each category, which should lead to the establishment of the data service.
3. *Improvement*
After the basic services and infrastructure are put in place, the resources help to develop more specific and advanced activities.

Resource type

The user also can choose between three types of resources:

1. *Guidance*
The resource offers guidance for the DAS staff. That is the resource that answers questions like where to begin, what to do, how to do it and when, as well as how to go further.
2. *Example*
The resource can be used as an example by the DAS staff.
3. *Tool*
The resource is a tool that could be used or implemented by the DAS staff.



It is important to keep in mind that the primary users of the Resource Directory are the DAS staff. Resources are thus labelled as guidance and examples taking this into account. So a document that offers guidance on research data management for researchers is labelled as an example. In the perspective of the Resource Directory, this document could be used by the DAS staff as an example from a CESSDA SP on the resources the SP provides on this topic for its research community.

Resource form

Finally, the user can be interested in a specific delivery form of the resources. The labels used to indicate the form of the resources were adapted from the Knowledge Sharing Platform:

1. *Document, report, deliverable*
2. *Presentation, poster, image*
3. *Webpage*
4. *Webinar, video or audio recording*
5. *Tutorial, training tools and materials*
6. *Software*
7. *Expertise, consultancy, peer-to-peer services*

3.3 What kinds of resources are available?

The Resource Directory currently contains 189 resources (version 1.2). Most resources are related to the “services & activities” of the DAS (45%), while very few resources deal with “staffing, management & financing” (2%) and “partner support & cooperation” (3%, table 2). In between, we find resources related to the “technical infrastructure” (13%), the “definition of the organisation” (11%) and the “communication & promotion” of the archive (10%).

Within the “services & activities”, most resources (33) offer support and assistance to data producers and users. They are followed by resources referring to data dissemination (24), acquisition (19), and preservation (12). Fewer resources are directly related to data curation (8), but resources on this topic might also deal with data acquisition, dissemination and long-term preservation, and thus be labelled as related to “services & activities” (22).



Table 2: Resources' frequency and percentage by labels and metadata

	Frequency	Percentage
Resource category		
Services & activities	118	45
Technical infrastructure	33	13
Definition of the organisation	29	11
General	27	10
Communication & promotion	27	10
Evaluation & certification	16	6
Partner support & cooperation	8	3
Staffing, management & financing	6	2
Development phase of the DAS		
Establishment	83	44
Improvement	59	31
Conception	40	21
All phases	7	4
Resource type		
Example	121	64
Guidance	52	28
Tool	16	8
Resource form		
Document, report, deliverable	102	54
Webpage	26	14
Expertise, consultancy, peer-to-peer services	16	8
Webinar, video or audio recording	13	7
Tutorial, training tools and materials	12	6
Presentation, poster, image	11	6
Software	9	5
Year the resource was last edited		
2016-2018	140	74
2013-2015	27	14
2009-2012	4	2
not relevant/unknown	18	10
CESSDA related institution and project		
CESSDA SPs	104	55
Past widening projects	64	34
CESSDA MO and groups	12	6
Other	9	5

Note: Total number of resources per label/metadata is 189, except for the resource category which is 264 (as 75 resources received two labels).



There are resources available across the three development phases. About two-thirds of the resources are examples (64%). 28% of the resources offer guidance for the DAS staff, and only 8% are related to tools. More than half of the resources are in a document or report form (54%). The second most common form is web pages (14%), while expertise, consultancy and peer-to-peer services are in the third rank (8%). So, most of the resources are institutional documents and information available on institutional websites. However, few training resources (or categorized as training resources) are present in the Directory.

The available resources are recent. Three-fourths of the resources were published between 2016 and 2018. The oldest resource was published in 2009. More than half of the resources come from CESSDA SPs (55%), while 34% were developed during past widening projects (namely CESSDA SaW, SEEDS and SERSCIDA). 6% of the resources relate to CESSDA MO and CESSDA working groups and task forces. Finally, 5% of the resources are connected to other institutions and projects (Dataverse, CoreTrustSeal, DASISH and FOSTER).

4 Future developments

4.1 *Publishing the Resource Directory online*

The original aim was to publish the Resource Directory on the CESSDA website and integrate relevant resources in the Knowledge Sharing Platform – if not already included – during the CESSDA 2018 Widening Activities. Due to the elaboration of the new CESSDA website and the pause in the development of the KSP, this original aim was not reached.

Currently the Resource Directory exists as a Google Sheet, as this was a sensible way for working collaboratively, with what is essentially tabular (meta)data. There are a number of options for presenting the contents to the partners and CESSDA SPs, each with their advantages and disadvantages as presented below.

In choosing a solution, one should remember that:

- The Resource Directory must be accessible to all staff of CESSDA partner DAS and CESSDA member SPs, and probably as well to other archiving activities in Europe and beyond, as these are likely to be the main users.
- In order to maintain and keep the Resource Directory up to date, it should be possible the widening group (or any team dealing with the Resource



Directory in the future) to add new resources, review or delete old ones (e.g. review the links), and add, review or delete labels and metadata.

4.1.1 Fully integrated into the CESSDA Website

This solution is the initial plan for the Resource Directory and has the advantage of indexing the content and thus facilitating searching, faceting and filtering for easy and user-friendly usability. Also, faceted search makes good use of the available labels and metadata. However, this solution presents a number of challenges. First, getting the Resource Directory content into the Content Management System (CMS) that delivers the CESSDA Website is not simple. In this case the maintenance of each record could only be achieved through a form input. Also, at least three template web pages would be needed for advanced search, results display, and data entry.

4.1.2 Accessible through the CESSDA Website but maintained as a spreadsheet

It is possible to use the Google Sheet API or a javascript library to access the content of the spreadsheet to be displayed in the CESSDA website. This method has the advantage of simpler maintenance of the records and new additions, however it is not clear how fully featured the search functionality would be. This may not be an issue with only a couple of hundred resource records, but it could be if it grows significantly larger. Development of client-side software code (most likely Javascript) would be required for communication between the CESSDA Website and the Google API.

4.1.3 Fully external to the CESSDA Website

If it is deemed inappropriate or undesirable for the CESSDA Website to host the RD, then it may be possible to provide a web interface to the spreadsheet and host on Google Sites or another hosting option. This is not an optimal option as it will take some development work and the skills of a web developer and designer, and commitment to maintaining the technical aspects of the Website. The Resource Directory may also be suitable metadata for cross-domain registries such as the SSHOC marketplace, but that is difficult to determine before the project starts.

4.1.4 As part of a CESSDA Development Support Webservice (or infrastructure)

As described in the CESSDA SaW deliverable D4.6, there is a requirement for some form of infrastructure to ensure the sustainability of SP-to-SP support (as required in the Annex 2 obligations) and to “engineer serendipity”. The Resource Directory could be integrated into whatever future webservices platform is developed to support Development Support Services (perhaps as part of the CESSDA GUIDE proposal).



4.1.5 *Leave the Resource Directory as a publicly accessible Google Sheet for users to browse*

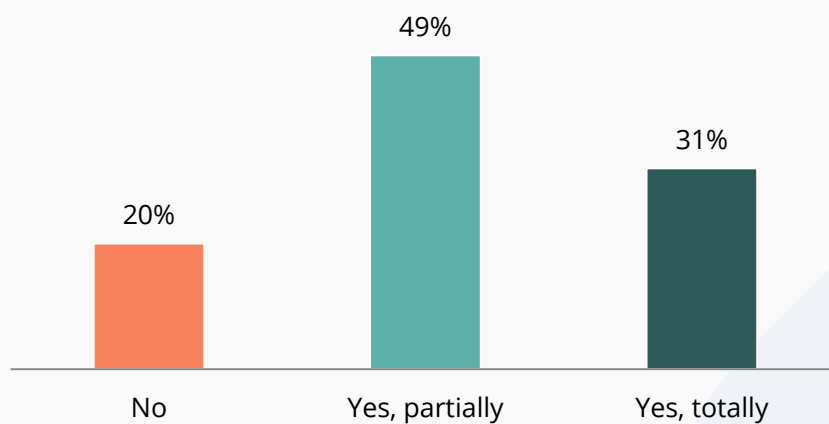
Leaving the Directory as a publicly accessible Google Sheet would perhaps be the easiest option, since it is small enough to browse and the number of users may not be high. On the other hand, it will not be badged as a CESSDA development and would still require some form of maintenance of the content, as would all of the other options. This solution is also the least user-friendly.

4.2 *Maintaining the Resource Directory*

4.2.1 *Why maintaining and developing further the Resource Directory?*

The first reason to maintain and upgrade the Resource Directory is because it benefits CESSDA partners. From the gap analysis survey⁸ undertaken with the partners, it is clear that even with just this initial information and gathering of resources that it would be useful to maintain this Directory. Overall, the respondents indicated overwhelming support for the Resource Directory, confirming that the tool is useful for the building of a DAS (Figure 2) and thus should be improved and kept up-to-date in the future.

Figure 2: Are the resources in the Directory helpful for answering your questions/resolving your problems? (17 respondents with 51 responses, 28 partners in the survey)



Moreover, the Resource Directory can also benefit CESSDA SPs. If the Directory has been developed first for CESSDA partners that are building their archives, the

⁸ The gap analysis was conducted with a first version of the Resource Directory (v1.1, September 2018), with less metadata and only 160 resources.



resources available can also be of help for less mature CESSDA SPs, and SPs that need to improve a specific area. The future collections of resources could also target specific needs of (less mature) CESSDA SPs.

Indeed, amongst the CESSDA service provider community (SPC) there is considerable expertise, knowledge, skills, and solutions in all aspects of running a social science data archive, and more. However this knowledge and value is not evenly spread, and in a rapidly developing domain some SPs develop specialist value propositions for their institutions and beneficiaries that may be of value for other SPs in the community. For those SPs with a lower level of maturity, learning from the experiences, or utilising the services, of other SPs will help them leapfrog forward and thus rapidly improving the capabilities of CESSDA as a whole. This learning from others has been recognised in the CESSDA Statutes Annex 2 on Service Provider Obligations:

- “10. Provide mentor support for CESSDA ERIC Observers and their representative Service Providers to achieve full Membership;*
- 11. Provide member support for countries with immature and fragile national infrastructures to help them build up needed competence later to be able to fulfil tasks as Members.”*

CESSDA SPs staffs have, for quite some time and in an *ad hoc* fashion, supported colleagues in other data archives. However, as the CESSDA SPC grows, it would be more beneficial to CESSDA (and the SPC) if support opportunities could be made available transparently to all SPs. A starting point to ensure these obligations are met in an organised and systematic fashion, and to providing a central point to discover support for the whole SPC and CESSDA partners, is a Directory of Resources that SPs can offer to other SPs.

In addition, the Resource Directory will directly and indirectly support many of the strategic objectives and goals of CESSDA ERIC:

- “Objective 4: To develop and coordinate standards, protocols and professional best practice.*
- Objective 6: To enable, extend and promote access agreements, licensing models, and any other legal and organisational measure that enables and extends such access to distributed data resources.*
- Objective 7: To actively contribute to the development, promotion and adoption of standards for data distribution and data management, thereby enhancing the quality of infrastructural services.*
- Objective 10: To promote and facilitate wider participation in CESSDA.*



5th Strategic Goal: CESSDA ERIC will collaborate to develop its human, technical, and scientific resources. CESSDA ERIC will invest in its assets, and be aware of their value; it will be open source based, developing non-proprietary world-leading standards in human and technical capability."

The Resource Directory will also indirectly support the following milestones:

- "1.1 Trusted by its stakeholders*
- 2.3 Widening membership*
- 2.5 Building capacity*
- 5.4 Building human capability*
- 5.5 Aware of its own asset value"*

4.2.2 Maintenance and enhancement of the Resource Directory

A proper maintenance of the Resource Directory means at the same time updating and completing its records to integrate the many resources available within CESSDA and its SPs, and upgrading the tool.

First, in order for the Resource Directory not to become obsolete, it is needed to integrate all relevant resources available and to add new resources. Indeed, in 2018, it was the first time we collected such resources for the Directory. The current concentration on existing resources has led to a document dominated directory (54% of the resources). A few expertise and consultancy type services are offered (8% of the resources). There are probably a lot of available resources (e.g. expertise) at the CESSDA SPs that were not mentioned in the collection tool. CESSDA SPs might think of additional resources to include, now that they can see the resources shared by others in the Resource Directory. Also, over the years, new resources are created that could be helpful for the partners and CESSDA SPs.

To better help partners and (less mature) CESSDA SPs, in the future collections we could ask SPs to share specific categories or types of resources targeting specific needs. Thanks to the gap analysis, we already have feedback from partners and new member SPs and identified areas where relevant resources are missing (for example in staffing, management and funding of the DAS or in the minimum maturity level needed to become a CESSDA member and membership rules). We also know that resources offering guidance and practical information, examples from working archives and training were most appreciated by partners⁹.

⁹ See the deliverable on the gap analysis for partners' ideas for developing new resources that will better suit their needs.



Second, updating periodically the information on the resources already part of the Directory is important, as not all resources are static (e.g. policies change) nor are their locations (few links are DOIs), so links broke. Also, technical maintenance of the database might be needed over time.

Third, to enhance the Resource Directory, it will be important during the future reviews to check not only for relevance of the submitted resources but also to assess the quality of the resources. Metadata and labels could be reviewed and added so users can find more easily the resources needed. We could also think of putting into place an area where users could also rate and recommend resources for others.

To encourage new additions and updates, the widening group (or any team dealing with the Resource Directory in the future) should develop a reusable tool for seeking additional resources, updating information on current resources and identifying individual or institutional subject experts in CESSDA SPs. Based on this tool, each CESSDA SP should mention if its reported resources are still up to date and if it has more/new resources to fill the gaps and answer the needs. Ideally, this process should be driven annually – as part of the SP annual report for example – and SPs should be responsible for doing it. The widening group (or any team dealing with the Resource Directory in the future) should be in charge of the review and inclusion in the Resource Directory of the updated information and the additional resources.

4.3 Other possible development

The Resource Directory could evolve as a part of a mutual development support infrastructure (see Appendix 3), with for example the addition of a specific directory for tools and technical solutions (as asked by some partners in the gap analysis) and a dynamic exchange platform – kind of communications portal – that would promote ongoing exchange and active assistance between CESSDA SPs and partners.

This online infrastructure could be available for CESSDA SPs and partners to search for and discover resources that help building and developing a DAS, seek and obtain assistance from other SPs with expertise in particular domains, and exchange with pairs about current challenges and solutions. This will help to overcome barriers between SPs and to facilitate a more seamless integration of infrastructures and data in Europe.



5 Conclusion

The Resource Directory – as a central point of access of the resources that supports the building and development of a DAS – enables the dissemination of existing and relevant resources within CESSDA and its SPs and contributes to helping the partners and less mature CESSDA SPs in building sustainable and mature DAS.

A wide range of resources are already available in the Directory. The gap analysis of CESSDA resources conducted within the same task showed that the Resource Directory is a useful tool and that the available resources are helpful for answering partners' and new members' questions and meeting their needs when building and developing their DAS. However, some gaps remain. In the future, more targeted resources should be (developed and) included to close the gaps and meet most needs. As the Resource Directory benefits clearly CESSDA partners and less mature SPs, its maintenance and enhancement should be organised and funded and it should be easily accessible by CESSDA SPs and partners.



Appendix 1 – Contact e-mail to the SPs

Dear ***name all***,

We contact you as **the director of *name of the SP* and experts involved in CESSDA projects** with a request concerning CESSDA Widening Activities 2018.

Widening European coverage is among the priorities highlighted in the CESSDA strategy documents and widening activities were covered within the frame of CESSDA SaW as well as other projects such as SERSCIDA and SEEDS. CESSDA Widening Activities 2018 has the aim to build on recent developments and ensure continuity of long-term CESSDA widening efforts.

One of our main activities in 2018 is to provide an extensive guide into available resources for data service building, capability and capacity development. For this purpose, the first task is to collect information about the wide range of resources available within CESSDA SPs, which could be potentially useful and available for the CESSDA Partners Network (i.e. non-member SPs and proto-archives). We are interested in English resources developed by and available at your institution, as well as resources your institution contributed in developing within CESSDA projects and working groups. The resources take different forms such as relevant documents, support services, trainings, tools and materials, which could help CESSDA partners to build data services and achieve CESSDA membership in the future. These could be resources that are already available (or will be available in the near future) on an ongoing basis, by time interval (e.g. webinar going on each year) or on request (e.g. consultancy, peer-to-peer services). Please think also of resource persons that are experts in specific fields and could be available for consultancy.

In order to gather this information from all the CESSDA SPs we developed a collection tool and identified CESSDA WG leaders and experts from your archive (*please transmit the link to the collection tool to other relevant experts*): ***SP link to collection tool***. We would kindly ask you to review carefully all relevant resources and fill in the collection tool providing detailed information about the available resources by the **21st of March**. Please, for further communication, let us know who will be the main contact person at ***name of the SP*** for this task. Once you have finished filling in the collection tool (or if you have no such resources at your institution), could you please inform us by sending an email to Yana ([email](#)).

In the following steps, we will also collect feedback from CESSDA partners to provide a gap analysis. We also aim to publish a guide into available resources on the CESSDA website and integrate the resources into the Knowledge Platform.

Thanks in advance for your kind cooperation!

On behalf of the project team,

Christina Bornatici, Jindrich Krejci, Yana Leontiyeva

Parkveien 20, 5007 Bergen, Norway | (+47) 55 58 36 48 | cessda@cessda.eu

www.cessda.eu



Appendix 2 – Table for reviewers to label resources by categories and development phases

This table was developed to help reviewers to label resources according to the category and development phase they helped partners with.

Table 3: Examples of activities that could be found in each category, sorted by development phases

	1. Conception	2. Establishment	3. Improvement
0. General			
1. Definition of the organisation			
1.1. Mission statement	> Write the mission statement (define the overall strategic goals, the role and mandate of the organisation) and get approval from the right institution (e.g. ministry)		
1.2. Definition of the organisation	> Name the data service, define the type of organisation (new independent organisation or housed within a larger organisation) and its main purpose		
1.3. Scope of collection	> Define the nature and scope of the data that are collected: fields, disciplines to prioritise, type of data (quantitative, qualitative)		
1.4. Beneficiaries	> Define the primary beneficiaries/recipients of the various services (e.g. researchers and students, general public, etc.)	> Understand and answer the needs of the beneficiaries	
2. Services & activities	> Definition of the sets of activities to provide		



2.1. Pre-Ingest - Acquisition	<ul style="list-style-type: none"> > Study legal background and develop data producers contracts > Define pre-ingest/acquisition policies and procedures, deposit process 	<ul style="list-style-type: none"> > Establishment of policies, quality control procedures as well as written protocols and workflows > Solicitation and acquisition of data from data producers (e.g. identify valuable data, contact data producers, create a list of preferred formats, etc.) 	
2.2. Ingest - Curation	<ul style="list-style-type: none"> > Define ingest/curation policies and procedures, data management 	<ul style="list-style-type: none"> > Process data that arrive through archiving system > Data documentation and cataloguing (metadata, citation...) also for access 	<ul style="list-style-type: none"> > Add persistent identifiers
2.3. Access - Dissemination	<ul style="list-style-type: none"> > Study legal background and develop data (end) users contracts > Define access/dissemination policies and procedures 	<ul style="list-style-type: none"> > Make the data available through a distribution mechanism (e.g. catalogue, access management, etc.) 	<ul style="list-style-type: none"> > Access - rights and management support
2.4. Preservation			<ul style="list-style-type: none"> > Create and implement a data preservation and succession plan > Data protection and ethics
2.5. Support and assistance to data producers and users		<ul style="list-style-type: none"> > Give support and assist data depositors and end users (e.g. guidelines, trainings) 	<ul style="list-style-type: none"> > Give support and assist data depositors and end users (e.g. guidelines, web resources, data citation, resources on DMP, data discovery...)
3. Staffing, management & financing			



3.1. Host institution of the future data service	<ul style="list-style-type: none"> > Define possible host institutions and evaluate their strengths and weaknesses 	<ul style="list-style-type: none"> > Select an appropriate host institution and confirm identity of the host institution(s) to assume the data service > Identify work space/facility 	
3.2. Governance structure	<ul style="list-style-type: none"> > Define the main bodies and key stakeholders involved in the governance of the data service, including their roles, responsibilities, and composition (e.g. executive board, oversight board, scientific board, advisory board) 	<ul style="list-style-type: none"> > Establish the board(s) and recruit its members > Develop basic performance monitoring system (i.e., indicators, measures for monitoring change over time, annual reporting) 	
3.3. Staff & internal structure	<ul style="list-style-type: none"> > Define the internal structure of the data service, including any hierarchical relations (organisational chart) > Define the minimum position types needed, with designated roles and responsibilities (i.e. who does what). Determine how many staff members will be needed to adequately meet the main objectives. > Define institutional rules and regulations for staff (e.g., regarding sick leave) (only if a new institution is envisioned) 	<ul style="list-style-type: none"> > Prepare job descriptions (evaluate and determine the skills and capacities for the positions), advertise, interview, issue contracts 	<ul style="list-style-type: none"> > Develop knowledge and skills of staff through ongoing training (identify skills and capacities to be developed, plan how to address these needs)
3.4. Financing schemes	<ul style="list-style-type: none"> > Description and analysis of potential funding sources (hosting institution(s), the national institutions and international funds and supports, etc.) > Define the specific financing scheme for the establishment process and the general financing 	<ul style="list-style-type: none"> > Confirm identity of the funding institution(s) to assume the data service (obtain a commitment of x years of funding of the repository activities) 	<ul style="list-style-type: none"> > Search for new funding opportunities, domestic and foreign (select grants, submit proposals for grants) > Monitor demand for the repository services, growth



	scheme to run the data service once it has been established		and funding
4. Technical infrastructure	> Define the infrastructure needed to run the archive (according to the chosen set of services, the beneficiaries' needs, etc.)	> Select hardware (servers, desktop computers, security and backup systems), software and tools (statistical analysis programs, databases and archiving system tools) > Implement and maintain the technical systems (prepare and install hardware, software and tools)	> Make sure of technical resilience
5. Communication & promotion	> Identify target publics for outreach and promotional activities (e.g., research community, policy-makers, media) > Begin promotional activities	> Establish relevant and effective forms of communication with target publics: create website, institutional brand and logo, database of users, internal and external communications tools (i.e. newsletters, email lists)	> Establish continuous visibility among key stakeholders and users: keep the public and ministries aware of data service activities and benefits (conduct regular meetings with high-level ministry officials) > Participate in relevant national and international conferences and workshops



6. Partner support & cooperation	<ul style="list-style-type: none">> Identify national and international stakeholders and relevant partner institutions> Determine how the data service can benefit from these relationships by finding synergies and areas for cooperation.	<ul style="list-style-type: none">> Establish formal communication channels with and between stakeholders and partner institutions> Join and participate in CESSDA and CESSDA projects and activities	
7. Evaluation & certification			<ul style="list-style-type: none">> Evaluate the data service to improve the work and services provided



Appendix 3 – SP-to-SP Development Support Services: in the background, the CESSDA SaW Project

Service Providers are naturally orientated towards supporting their designated communities rather than each other, after all that is their primary strategic goal. Therefore, a model on how support services and activities/actions could be maintained amongst the SPC is key to ensuring the annex 2 obligations can be met and measured as a value to members and SPs.

As part of the CESSDA SaW project there was a task on “Development Support: Establishing the necessary conditions for creating new or reinforcing existing social science data services”, with a number of objectives including establish if there is a demand for support services amongst the SPC.

Deliverable 4.6¹⁰ was the outcome of this CESSDA SaW task, in which a number of possible economic models for mutual SP support service environments were considered and a couple of sustainable forms were proposed. The limiting factors for any environment are:

- the small size of the SPC,
- supporting other SPs is not a primary strategic goal and hence the SPs activities are not targeted in this direction, and
- the capability maturity of SPs vary considerably. Deliverable D3.6 “Final integrated audit report” identified that size and capacity of the organisation do have an influence upon their maturity in many capabilities and activities.

In the CESSDA SPC context, the models for sustainable development support services could be considered to be:

- Provider and Consumer Model (Market Economy)
- Mutually Beneficial Exchange of Services Model (Barter Economy)
- Pay it Forward Model (Gift Economy)
- Contribution (to the CESSDA Community) Model (Sharing Economy)
- Cooperative Needs Model
- Service Package Model

Naturally the Market Economy Model is always possible, but not necessarily desirable for national SP funders who see ‘their money’ trickle out to another country. The Barter Economy may have tax and particularly VAT implications for contracted

¹⁰ <http://cessdasaw.eu/content/uploads/2017/11/SAW-D4.6.pdf>



exchange of service. The Gift Economic Model and the (in-kind) Contribution Model do not fit the small size of the CESSDA SPC.

This leaves the Cooperative Needs Model (CNM) and the Service Package Model (SPM). The CNM brings together a number of SPs (and/or observer country SPs) to procure a development support service from another SP, whereas the SPM brings together a number of SPs to create a package of solutions that can improve one (or perhaps more) SP's capability maturity and meeting the Annex 2 obligations. Both models would require funding from CESSDA or a third party such as the EU, unless CESSDA changes its statutes to include in-kind contributions.

"In conclusion, there is an evident need to improve the capabilities and maturity of the SPs' provision to their designated communities. This need is not uniform across all SPs or for every capability but is more apparent amongst the smaller service providers with less the capacity to meet the Service Provider Obligations."

"It is for CESSDA and the service provider community to develop support services, and ensure that the Service Providers' Obligation to "provide member support" is fulfilled and sustained over time, by enabling deeper insight into the provision of DSS and needs, plus providing the opportunity to meet the development requirements through an infrastructure that facilitates more inclusive and encompassing work plans and projects."

The Resource Directory is the starting point towards evolving a vibrant community of mutual support and development community amongst the SPC.



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