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Research and Innovation Action

CESSDA Strengthening and Widening

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Deliverable 3.4 National development plans for data services in non-CESSDA member countries in the ERA

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Abstract: This deliverable contains the second output of task 3.3 – national development plans (NDPs) for establishing data services in the social sciences in non-CESSDA member countries in Europe. In total, NDPs have been developed in 13 countries. Nine NDPs are included in this deliverable, while four are still pending approval from national authorities and/or local potential host institutions.

History

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1.0	29/08/2017	First version	Christina Bornatici (FORS), Brian Kleiner (FORS)
2.0	05/09/2017	Peer review	Aleksandra Bradic Martinovic (IEN), Marijana Glavica (FFZG), Trond Kvamme (NSD), Claudia Oliveira (ICS-ULISBOA), Veerle Van Den Eynden (UKDA)
3.0	07/09/2017	Final version	Christina Bornatici (FORS), Brian Kleiner (FORS)
4.0	18/09/2017	Final review before submission by Delivery Committee Chair and Coordinator	Jindrich Krejci (CSDA), Ivana Versic (CESSDA)

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Time schedule before delivery

Next Action	Date	Care of
Start of work	09/01/2017	FORS
1st version of the national development plans (NDPs)	31/05/2017	FORS, FFZG, ICS-ULISBOA, IEN, NSD, UKDA
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Final version of the national development plans	30/08/2017	FORS, FFZG, ICS-ULISBOA, IEN, NSD, UKDA
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Review of the Delivery Committee Chair	15/09/2017	CSDA
Review by Project Coordinator	18/09/2017	CESSDA
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Executive summary

The goal of task 3.3 of CESSDA SaW was to draw up individual national development plans (NDPs) for aspiring CESSDA Service Providers (SPs). The plans were developed by country teams, i.e. people and/or institutions working towards the establishment of a national data service in the social sciences and taking part in the elaboration of the development plan. This included organisations that might become future CESSDA SPs, and where possible, national ministries and research councils.

The plans are divided into four main sections: the mission statement; the general features of the data service; the description of resources and challenges; and, the planning for the data service. The first three sections address larger strategic considerations in conceiving and establishing a national data service. The fourth section (optional) helps country teams to make a concrete step-by-step plan for new data services and future developments. Country teams could also develop other sections according to their local situation.

Among the ERA countries targeted by the CESSDA SaW project, we selected 21 for this task. These are non-CESSDA member countries with either no data services in the social sciences, or data services in the development phase with promising infrastructure building proto-activities. Countries with established (national) data services in the social sciences that are not CESSDA members yet were left out.

Once the countries had been selected, a major task was to identify the appropriate actors and institutions that could become potential aspiring service providers, and to establish contacts with them and with the ministries and research councils. After the approval of the country teams, they developed their plans based on the *Guide for Developing National Data Service Plans*[1] and with the assistance of the CESSDA SaW partners involved in this task.

NDPs for nine countries - Albania, Austria, Bulgaria, Croatia, Kosovo, Macedonia, Montenegro, Serbia and Ukraine - have been developed and are included in this deliverable. Representatives of four countries - Cyprus, Iceland, Latvia and Luxembourg - are still developing their NDPs, which should be ready this autumn. These are pending approval from national ministries and/or local potential host institutions. No NDPs are expected for the eight remaining countries: Belarus, Bosnia and Herzegovina, Faeroe Islands, Israel, Malta, Moldova, Spain, and Turkey.

It should be noted that NDPs are not intended to be definitive documents. They should be adapted and further developed in the future as the situation on the ground evolves.

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[1] Bornatici Christina and Kleiner Brian (2016), *Guide for Developing National Data Service Plans*, CESSDA SaW (H2020), v.1.0. Available at : https://www.cessda.eu/content/download/1065/9156/file/CESSDA%20SaW-3.3-guide.pdf

Abbreviations and acronyms

CESSDA	Consortium of European Social Science Data Archives
EC	European Commission
ERA	European Research Area
ERIC	European Research Infrastructure Consortium
NDP	National Development Plan
SaW	Strengthening and Widening
SEEDS	South-Eastern European Data Services
SERSCIDA	Support for Establishment of National/Regional Social Sciences Data Archives
SP	Service Provider

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1. Introduction

The primary purpose of task 3.3 of the CESSDA SaW project was to assist aspiring service providers in drawing up concrete plans for the development of national data services for the social sciences, taking into account practical and political realities in each country. Such plans could then be used as a point of reference for stakeholders in further defining and refining the initial concepts, and to demonstrate to potential funders the utility, sophistication, and value of such an enterprise.

Based on the gap analysis carried out in task 3.2 of CESSDA SaW, individual national development plans were drawn up for aspiring CESSDA SPs. This was done in collaboration with potential future CESSDA Service Providers (SPs) and, where possible, ministries/research councils. Plans include a mission statement, the general features of the data service, a description of resources and challenges, and possible, the planning for the data service.

A guide was developed within task 3.3 to help country teams[2] to draft their National Development Plan (NDP). The first section of the guide aims to assist the country teams in developing a "concept" for a future national data service, that is, the model and key features that are to be put into place. This includes defining: the overall mission; the nature of the organisation; the scope of the collection of data; the offered services and activities; the beneficiaries; and the governance structure. The second section of the guide helps country teams to evaluate the concept from section one in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time. This includes subsections on identifying the host institution for the data service, defining the human resources required (number and types of staff, internal structure), and identifying potential partners among the existing network of relevant national and international organisations. The country teams also had the possibility to develop other aspects that are crucial for them. The third section was not compulsory, and was meant to be completed by those countries that are further advanced in their intentions to establish national data services for the social sciences. This section helps country teams to make a concrete step-by-step plan for new data services, both up to "day one" of operations, and after "day one".

Representatives of CESSDA SPs participating in this task served as facilitators of the process, advising country teams in the design and formulation of their plans. In countries where research authorities did not want to be involved, but where data service infrastructures exist that could be potential future CESSDA SPs, the plans were prepared by them. In countries where neither of these conditions apply, participating task 3.3 CESSDA SPs identified institutional partners that are both capable and interested in hosting a new data service, and worked with them to draft the plans.

As a next important step, it is expected that the country teams will present their NDPs to the appropriate officials in ministries or research councils in their countries, who might be in a position to support and later finance a new data service. CESSDA-ERIC should play a key role in this process, communicating with relevant ministries and lending its expertise and the weight of its prestige as a European-wide infrastructure.

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[2] Country teams are people and/or institutions working towards the establishment of a national data service and taking part in the elaboration of the development plan.

2. Method and scope

Among the ERA countries targeted by the CESSDA SaW project, we selected 21 countries for this task. These are non-CESSDA member countries with either no data services in the social sciences, or data services in the development phase with promising infrastructure building proto-activities. Countries with established (national) data services in the social sciences that are not CESSDA members yet were left out of this task, since they were targeted by task 4.5. Austria, despite being a CESSDA member, was also included in this task, since at the beginning of the CESSDA SaW project this country was re-building its national data service.

Once the countries were selected, a major task for the task 3.3 partners was to identify the appropriate actors and institutions that could become potential aspiring service providers, and to establish contacts with them and with the ministries and research councils in each country. A contact list was provided by the CESSDA SaW project. This was extended when needed with further contacts. Since January 2017 contacts were made by email or phone, based on a text prepared and provided by task 3.3.

The National Development Plans (NDPs) were developed primarily by institutions capable and interested in hosting a new data service for the social sciences, as well as in a few cases by research authorities (ministries, etc.). Since January, we were successful in involving Ukraine and several countries that had already been targeted by previous projects, such as SERSCIDA[3] or SEEDS[4] (e.g., Serbia, Croatia, Macedonia, Albania, and Montenegro), both aimed at establishing data services in south-eastern Europe. The CESSDA SaW workshop in Lisbon in early May of 2017 helped to identify and involve additional countries in this process, including Luxembourg, Bulgaria, Iceland, Latvia, and Cyprus.

After the approval of the country teams, plans were developed based on the *Guide for Developing National Data Service Plans*[5] (created within task 3.3 earlier in the CESSDA SaW project) and with the assistance of the CESSDA SaW partners involved in this task. Most of the country teams sent a first version of their plans in June. This version was reviewed by NSD and FORS and then revised by the country teams. Final plans were then submitted in August by the country teams and included in this deliverable.

Among the 13 participating country teams, four did not meet these deadlines (Cyprus, Iceland, Latvia, and Luxembourg) . Major reasons were the late involvement in this task of these country teams (after the Lisbon workshop) and the intention to include their ministries in the process of building their development plans. No NDP is expected for the nine other selected countries. The main reasons are that no appropriate contacts or institutions were found, or the people and institutions contacted never responded. For Bosnia and Herzegovina, even though we had two contacts, no NDP was elaborated due to political instability. Finally, Israel was transferred to task 4.5 because a data service in the social sciences already exists there.

Table 1 shows the selected countries, the task 3.3 partners responsible for contacting and working with the countries, and whether a national development plan resulted from it. We are hopeful that countries with NDPs in preparation will follow through and submit a plan. It should be noted that our existing contacts and exchanges with interested individuals in these countries were highly positive and promising – at the very least seeds were sown in these countries that could later form the basis for new archive proto-activities.

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[3] SERSCIDA - Support for Establishment of National/Regional Social Science Data Archives, http://www.serscida.eu/.
[4] SEEDS - South-Eastern European Data Services, http://seedsproject.ch.
[5] Bornatici Christina and Kleiner Brian (2016), *Guide for Developing National Data Service Plans*, CESSDA SaW (H2020), v.1.0. Available at : https://www.cessda.eu/content/download/1065/9156/file/CESSDA%20SaW-3.3-guide.pdf

Table 1: Assignment of the selected countries to task 3.3 partners and creation of NDPs

Selected countries	Task 3.3 partners	NDPs
Albania	IEN	Yes
Austria	FORS	Yes
Belarus	NSD	No
Bosnia and Herzegovina	FORS	No
Bulgaria	NSD	Yes
Croatia	FORS	Yes
Cyprus	NSD	Yes (in preparation)
Faroe Islands	NSD	No
Iceland	NSD	Yes (in preparation)
Israel	UKDA	No
Kosovo	FFZG	Yes
Latvia	ICS-ULISBOA	Yes (in preparation)
Luxembourg	UKDA	Yes (in preparation)
Macedonia	IEN	Yes
Malta	NSD	No
Moldova	NSD	No
Montenegro	FFZG	Yes
Serbia	FORS	Yes
Spain	ICS-ULISBOA	No
Turkey	NSD	No
Ukraine	NSD	Yes

In the following section, for each selected country the more recent contacts and institutions are described, as well as a summary of the progress made during task 3.3.

Albania

Contact persons

The first person that was contacted was Mrs. Artela Mitrushi, representative from the Institute for Democracy and Mediation, Tirana. She was a participant in SEEDS and RRPP data rescue projects and involved in the first steps of planning for the establishment of new data archive in Albania. Also, Mr. Geron Kamberi from Agency for Research, Technology and Innovation was contacted during the preparation of the Albanian NDP. He gave his personal support and was very active in the CESSDA SaW third workshop in Lisbon, Portugal.

Progress

First contact with Mrs. Mitrushi was established at the end of September 2016. She was involved in the self-assessment process within CESSDA SaW task 3.2., obtained all necessary information about Albania, and completed the survey. The next contact regarding preparation of the NDP was at the beginning of December 2016, with a reminder during the middle of the month. Due to other obligations, she had to withdraw from this project. Mr. Kamberi commented on and completed the NDP for Albania.

Austria

Contact persons

The primary contact person was Dr. Lars Kaczmirek, director of the AUSSDA, the new Austrian data archive and service provider for Austria in CESSDA.

Progress

An NDP was submitted by AUSSDA, even though they had already been established as a service provider of CESSDA. Given the newness of their institution, Dr. Kaczmirek felt that it would be an important and useful exercise to develop a plan following the guide created within task 3.3 of the CESSDA SaW project. Also, he believed that a plan for a newly existing archive could serve as a model for other more advanced data services in a similar situation. The plan for AUSSDA is therefore included in this document.

Belarus

Contact persons

Prof. Larissa Titarenko, professor at the Faculty of philosophy and social sciences of the Belarusian State University, was identified by LiDA as relevant contact person during task 3.2. She is the author of several of the resources used for describing the general research environment in Belarus.

Progress

Query were sent in February and March of 2017, but there was no reply. Other possible contact persons/institutions, specialised in the social sciences, were not identified during the project period. Should we, however, wish to make a new attempt to establish contacts in Belarus, the following institutions may be considered: the Belarus Research Council (BRC), which is a loose network of Belarusian polling agencies, think tanks and donors supporting social science research in Belarus; and/or the National Academy of Sciences of Belarus. It should be noted that the current status/activity of the BRC is uncertain.

Bosnia and Herzegovina

Contact persons

There were two main contacts for Bosnia and Herzegovina: Dr. Tarik Jusić, Executive Director of ANALITIKA – Centre for Social Research, and Ms. Andjela Pepic, Project Manager at the Rectorate – University Entrepreneurship Centre, University of Banja Luka. Both were consulted as part of task 3.3 of CESSDA SaW.

Progress

Although partners in Bosnia and Herzegovina had been involved in previous activities to develop a national archive for the social sciences, specifically with the SERSCIDA project, consultations with the contacts revealed that due to the current political environment in the country, developing an NDP would be premature and ill-advised. There are currently too many uncertainties and difficulties to develop a persuasive national plan with commitment from local partners.

Bulgaria

Contact persons

The initial contact person, identified by SU-SAV during task 3.2, was Dr. Dona Pickard from the Institute for the Study of Societies and Knowledge (ISSK) at the Bulgarian Academy of Sciences. The new contact person is Prof. Emilia Chengelova, Prof. DSc. at the Social Survey Research Centre, also at ISSK, Bulgarian Academy of Sciences.

Progress

A first query was sent in February 2017 and was immediately responded to with a 'careful' interest. In March, a follow-up query was sent, regarding the possibilities of finalising a national development plan before the summer. A second reminder was sent in June, and communication with Prof. Chengelova was established. During the summer, a first draft was developed by Prof. Chengalova. A second and final version was prepared and delivered by the end of August.

Croatia

Contact persons

Ms. Marijana Glavica, systems librarian in the Library of the Faculty of Humanities and Social Sciences, University of Zagreb (FFZG) and member of the *Croatian data archive initiative*, is the responsible person for coordination of CESSDA SaW activities in Croatia.

Progress

The institution chosen to develop the NDP for Croatia is the Library of the Faculty of Humanities and Social Sciences at the University of Zagreb (FFZG). This institution is involved in the CESSDA SaW project as the Croatian partner, and was also involved in previous international projects such as SERSCIDA and SEEDS.

Thanks to the SERSCIDA and SEEDS projects, efforts to build a national data service for the social sciences in Croatia were already made during past years. Marijana Glavica explains her team's involvement and Croatian progress within the CESSDA SaW project in general and task 3.3 as follows:

"The National Data Services Development Plan for Croatia was created by the project CESSDA SaW team members from Croatia. The core team for Croatia consisted of people who were involved in efforts towards establishment of data services for the social sciences and who were working on that goal for the last five years through several projects. During that time, they gained experience and knowledge about data archiving in cooperation with international partners.

The most relevant contact points at the Croatian Ministry of Science and Education for the area of research infrastructures are the Assistant Minister for the Science and Technology and the ESFRI delegate for Croatia who works at the same office. The first contact with the Ministry representatives related to CESSDA SaW project activities was made in July 2016. A memorandum was sent to the Ministry describing CESSDA SaW project goals and significance of the project in building Croatian scientific infrastructure. Other activities related to research data archiving and services in Croatia were also explained in the same document.

After that, the Ministry representatives were contacted several times regarding some other activities related to the CESSDA SaW project and also to the SEEDS project. These were the invitations to participate in workshops organised during the course of both projects as an opportunity for the Ministry to get familiar with data archive and services for the social sciences in the European context. Although no participation in project activities was possible at that time because the Ministry offices were restructuring after the new political party won the elections, this was still a good preparation and announcement of our work on the NDP for Croatia.

In April 2017, soon after the new Assistant Minister for Science and Technology took his position, a meeting related specifically to CESSDA SaW task 3.3 (work on NDP for Croatia) was held at the Ministry with the new Assistant Minister and with the ESFRI delegate. The Ministry representatives were interested in developing research data infrastructures but at the moment there were no available funds to support such kind of activities. Also, the Ministry currently lacks human resources to fully participate in developing the NDP for Croatia, but they are willing to receive the final document and may consider it for future planning. For instance, there is an ongoing project at the Ministry – ResInfra@DR[6] – which focuses on research infrastructures in the Danube macro-region and offers mutual learning opportunities for policy makers and the policy delivery organisations involved in the financing, and parent organisations arranging the operation of research infrastructures."

Cyprus

Contact persons

Initial contact persons, identified by CSDA during task 3.2, were Mr. Antonis Ioulianos (Scientific Officer) and Mrs. Constantina Makri (Scientific Officer with specialty within European Research Infrastructures), at the Research Promotion Foundation. Due to efforts from the CESSDA main office, a new contact person was identified, Dr. Marios Vryonides, Professor of Sociology at the European University, Cyprus. Dr. Vryonides attended the Lisbon workshop.

Progress

Queries were sent in February and March 2017, to which there were no replies. Dr. Vryonides, however, after attending the workshop in Lisbon, promised to represent Cyprus in efforts to establish a national data service for the social sciences. It was agreed in June of 2017 to wait to create a NDP until the Directorate General for European Programmes, Coordination and Development of Cyprus comes to a

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[6] ResInfra@DR - Facilitating Macro-Regional Scope and Link up to Socio-economic Actors of Research Infrastructure in the Danube Region. http://www.interreg-danube.eu/approved-projects/resinfra-dr

decision on whether they will support an application to join CESSDA and subsequently set up a Social Sciences Achieve in Cyprus. As of August, there has still been no decision.

Faeroe Islands

Contact persons

An initial contact person, identified by RODA during task 3.2, was Annika Sølvará from the national Research Council. A second contact was Maria Húsgarð, who is the national contact point of the areas of "Widening and Social Sciences".

Progress

A first query was sent in February 2017 and was responded to with interest. Ms. Sølvará mentioned that the Research Council is in "... the initial steps to draft a national RI Road Map, where data archiving and central archives are an important part". She provided a shortlist of relevant contact persons for further discussions: Mr. Gestur Hovgaard, Associate Professor at the University of the Faroe Islands and Vice Chair of the Research Council Board; Mr. Sámal T. F. Johansen, Manager at the National Archives; and Mr. Sigurd Poulsen, Director of the Statistics Faroe Islands. A follow-up email was sent to Ms. Húsgarð in March, asking which of the listed persons would be the most relevant to contact with regard to the CESSDA project and the development of a national plan. There was no reply, and the suggested persons are yet to be contacted.

Iceland

Contact persons

The initial contact person was Adalheidur Jónsdóttir from the Icelandic Centre for Research, and Counsellor for Education, Science and Culture. A second contact was Dr. Guðbjörg Andrea Jónsdóttir, Director of the Social Science Research Institute at the University of Iceland.

Progress

Queries were sent in February and March 2017, with no reply. However, Iceland was represented at the CESSDA SaW conference in Lisbon in May, by Guðbjörg Andrea Jónsdóttir, where she expressed interest in writing a development plan. Trond Kvamme from NSD sent a follow-up email in mid-June, asking about the progress of the draft plan. Guðbjörg Andrea Jónsdóttir replied that the Science and Technology Policy Council had just approved a new policy for 2017-2019. A RI roadmap will be written and published in 2018. The decision might be pending until then. As of now (end of August) a draft plan has not been delivered. However, as the dialogue and communication between CESSDA and Dr. Jónsdóttir now has been established, we will continue to cooperate and facilitate the establishment of a social science data archive in Iceland in the future.

Israel

Contact persons

CESSDA SaW task 3.2 had already established two contacts in Israel: Dr. Micha Mandel, Director of the Israel Social Sciences Data Center (ISDC, http://isdc.huji.ac.il/), Hebrew University of Jerusalem, and

Prof. Noah Lewin-Epstein, Professor of Sociology and Dean of the Faculty of Social Science of Tel Aviv University.

Progress

Veerle van den Eynden from UKDA contacted Dr. Micha Mandel and Prof. Noah Lewin-Epstein by email in January 2017 and received a response from Micha Mandel. He stated that he was forwarding the information to the Council of Higher Education (no contact name given), who had decided in 2013 that a national database in the social sciences was a recommended priority. However, no further decisions had been taken by the Council of Higher Education since. Micha Mandel hoped the activities under the CESSDA SaW project would 'wake up' the Council. No further information was received from the Council. Veerle van den Eynden did eventually receive as contact name Noa Binstein.

In February 2017, it was decided within task 3.3 to stop working with Israel due to their existing data service for the social sciences, ISDC. Israel was transitioning to task 4.5 instead. Both ISDC and the Council of Higher Education (Noa Binstein) were invited to the CESSDA SaW workshop in Lisbon in May 2017. Neither participated. Micha Mandel has since left his position as Director of ISDC. It is unknown who took over the role.

Kosovo

Contact persons

The primary contact persons for Kosovo were Dr. Arben Hajrullahu, Associate Professor of political science at the University of Pristina and the director of the Centre for Political Courage (CPC), Ms Nitë Bylykbashi-Deliu, project manager at CPC, and Ms Lirije Palushi, research assistant at CPC. CPC was one of the partner institutions in the SEEDS project. Through this project, cooperation was established between CPC and two CESSDA service providers (FORS, Switzerland; ADP, Slovenia) together with two aspiring data services (FFZG, Croatia; IEN, Serbia), who are all also partners in the CESSDA SaW project.

Progress

Ms Bylykbashi-Deliu helped to find contacts at the relevant policy-making and funding institutions responsible for the development of national research infrastructures. The following institutions were identified as most important: The Ministry of Science and the University of Pristina. We were trying to reach managers who were in charge of the department for science at the Ministry of Science and at the University of Pristina. The following persons were contacted: Mr Faton Berisha, Vice-rector for Scientific Research, University of Prishtina and Mr Murteza Osdautaj, Director of the Department for Science and Technology, Ministry of Science, Education and Technology.

At the time when the work on National Data Services Development Plans started in WP3 T3.3, the SEEDS project was ongoing. The agreement was reached among SEEDS project partners that local conferences which were planned within the project could benefit from having a guest speaker from Croatia because of their shared history, similar traditions, and common aspirations towards the European Union. Partners from Kosovo organised their local conference on February 15, 2017. Before the event, we sent information about the CESSDA SaW project and an invitation to collaborate on developing national data services plans to contacts in the Ministry of Science, Education and Technology and in the University of Prishtina, and proposed face-to-face meetings. Positive answers were received and the meetings were held in Prishtina to explain what CESSDA is, what are the goals of the CESSDA SaW project in general, and the purpose of task 3.3 in specific. They were interested to participate in Horizon 2020 projects, but they were not ready to fully participate in developing national plans, since even the basic research infrastructures in Kosovo are still developing.

After the first contacts and meetings in Kosovo in February 2017, the first version of the National Data Services Development Plan for Kosovo was drafted by the Croatian CESSDA SaW project team, heavily relying on SEEDS project results. The draft Plan, together with other relevant documents was then shared with partners from the Centre for Political Courage. The Plan was finalised in cooperation with Ms Bylykbashi-Deliu, and it will be distributed after publishing as part of the CESSDA SaW deliverable D3.4 to all persons who were initially contacted regarding this work to achieve continuity in communication about data services, together with a media pack in which the advantages of having national data services will be highlighted. They will also be invited to attend the final CESSDA SaW dissemination conference, to be held in October 2017 in Dublin, Ireland.

Latvia

Contact persons

Baiba Bela, associate professor and senior researcher at the Advanced Social and Political Research Institute (ASPRI), Faculty of Social Sciences - Department of Sociology and Advanced Political and Social Research Institute, University of Latvia. Jānis Daugavietis, Latvian Sociological Association board member and Researcher at the Department of Theatre, Music and Cinema Art, Institute of Literature, Folklore and Art, University of Latvia.

Progress

The first contact was made in January 2017. The CESSDA SaW contact list appointed Baiba Bela, an associate professor and senior researcher at the University of Latvia (UL) as the contact person for this country. Baiba Bela agreed to participate in the CESSDA SaW project. In February, a second contact was made by email explaining the procedures to be taken, namely it was stated that to assist them in putting together their national plan, the CESSDA SaW *Guide for Developing a National Data Services Plan* had to be followed. No answer was received this time. In March 2017, a third contact was established. Baiba Bela replied stating that the participation would be made through the Latvian Sociological Association (LSA), since her University colleagues did not appear to be very supportive of the development of the national plan. Baiba Bela also appointed her colleague Jānis Daugavietis, as a contact person from the LSA, and that he would be the one to come to the Lisbon workshop. A skype meeting was scheduled for April 2017, but was not joined by Baiba Bela. Claudia Oliveira from ICS-ULISBOA met Jānis Daugavietis at the Lisbon workshop early May. A meeting of the lSA was planned at the end of May to discuss the NDP. In June 2017 Claudia Oliveira sent an email asking for updates and new developments regarding the NDP. According their last email in August, the Latvian team is writing its national plan, based on the CESSDA SaW Guide. They will send their NDP by the end of the CESSDA SaW project.

Since late May some progress has been made. Jānis Daugavietis underlined the support provided by Ilze Lace from the Swedish National Data Service. It was also stated that the workshop in Lisbon was very helpful for academia to be supportive of the NDP, and the idea of sharing data as a whole. The Library of the UL is considering making a specific data repository for all sciences based on Dspace (UL already uses this programme for publications, articles, books, thesis, https://dspace.lu.lv/). The participation of the UL Vice-Rector in social sciences, Prof. Jānis Ikstens, in the Lisbon workshop was very helpful.

The National Library is also considering remodeling their own repository of publications (https://academia.lndb.lv/) in order to include data files. This repository currently tries to collect the publications of all other smaller universities in Latvia. Jānis Daugavietis acknowledges that this is not enough, but it is a good first step towards a real data archive. Latvia is also continuing to work with different stakeholders, monitoring those two aforementioned efforts, also contemplating old datasets (including those from the old Latvian Social Science Data Archive (https://web.archive.org/web/20040603034908/http://www.lszda.lv:80/index.php?akt=26&val=LV).

There is, however, a problem with funding, but Latvia may try to use scientific crowdsourcing and involve the scientific community in voluntary work, asking them to deposit their data. They thus are looking forward to DataVerse.

Luxembourg

Contact persons

Prof. Aline Muller, Director at the Luxembourg Institute of Socio-Economic Research (LISER), and Dr. Agnieszka Walczak, Team Leader Surveys at LISER.

Progress

For Luxembourg the task 3.3 leaders suggested LISER as a key institution. Further to an online investigation, no other relevant social sciences research centres or data centres were found in the country.

Veerle Van den Eynden from UKDA contacted the LISER director Aline Muller by email, with copy to their contact emails for the library and for data/documentation in February 2017. Agnieszka Walczak responded that LISER was just planning to develop an institutional data centre, so they were interested in the CESSDA SaW activities and in joining CESSDA in the long-term. A Skype call was planned early March and Veerle visited LISER in April and met with Aline Muller and Agnieszka Walczak. Whilst they expressed much interest in developing an NDP for their data centre, their timeline was clearly longer than the CESSDA SaW project, as their first step was discussions with their funding council in order to prepare a funding proposal to set up an institutional data centre (that could become a national centre in the long term). Their realistic aim was to develop an NDP by the end of 2017. They were, however, impressed with the CESSDA SaW *Guide for Developing a National Data Services Plan*, and were keen to know how to join CESSDA in the long-term. They have used the guide to inform the development of their data centre strategy, to be presented to the Luxembourg Ministry. Whilst they are still waiting for approval from their Ministry, it is too early to share their strategy or develop a national plan.

LISER participated in the CESSDA SaW workshop in Lisbon in May 2017.

Macedonia

Contact persons

Dr. Aneta Cekik, Docent/Assistant professor of Ss. Cyril and Methodius University, Institute for Sociological, Political and Juridical Research is the responsible person for coordination of CESSDA SaW activities in Macedonia. She was a participant in SEEDS and RRPP data rescue projects and involved in the process of establishment of new data archive in Macedonia. During the round table in Skopje (04/04/2017) within the SEEDS project and the third CESSDA SaW workshop in Lisbon we also had an opportunity to discuss the Macedonian NDP with Ms. Violeta Atanasovska, representative from Macedonian Ministry of Education and Science.

Progress

The Institute for Sociological, Political and Juridical Research, Ss. Cyril and Methodius University in Skopje will likely assume the role of data archive, in anticipation of future agreements and cooperation with other universities and institutions in the R. Macedonia.

Malta

Contact person

No information was gathered during the initial mapping within task 3.2. Possible future contact is Mr Kevin Joseph Ellul (D.L.I.S., M.Sc.(L'Boro)), Administrative Director at the library of the University of Malta, and representative of the National Open Access Desks of the OpenAire project. Contact info: https://www.um.edu.mt/profile/kevinjellul.

Moldova

Contact persons

Georghe Rusnac and Cimpoi Mihai, both at the Academy of Sciences of Moldova. Mr. Rusnac is a member of the Assembly of the Social and Economic Department, and Mr. Mihai is a member of the Assembly of the Department of Humanities and Arts.

Progress

Emails were sent to two different departments at the Academy of Sciences of Moldova, in two turns: Gheorghe Rusnac at the Social and Economic Department (*Sociale şi Economice*), and Cimpoi Mihai at the Department of Humanities and Arts (*Umanistice şi Arte*). The first query was sent in February 2017, to which there was no reply. A second query was sent a month later, again with no response.

Montenegro

Contact persons

The primary contact person for Montenegro was Ms. Nikoleta Tomović, Executive Director of the Centre for Monitoring and Research (CeMI). She was directly involved in the SEEDS project (2015-2017) in which cooperation was established between CeMI and two CESSDA service providers (FORS, Switzerland; ADP, Slovenia) together with two aspiring data services (FFZG, Croatia; IEN, Serbia), who are all also partners in CESSDA SaW project.

Progress

Ms Tomović helped to find contacts at the relevant policy-making and funding institutions responsible for the development of national research infrastructures. The following institutions were identified as the most important: the Ministry of Science, the Ministry of Education, and the Montenegrin Academy of Sciences and Arts.

At the time when the work on developing plans for national data services started, the SEEDS project was ongoing. The agreement was reached among SEEDS project partners that local conferences which were planned within the project could benefit from having a guest speaker from Croatia and/or Serbia because of their shared history, similar tradition, and common aspirations towards the European Union. Montenegrin partners organised their local conference on April 10, 2017. Before the event, we sent information about the CESSDA SaW project and an invitation to collaborate on developing national data services plans to the following persons: Dr. Damir Šehović, Minister, Ministry of Education; Dr. Sanja Damjanović, Minister, Ministry of Science; Smiljana Prelević, secretary, Ministry of Science; Dr. Darko Petrušić, Director, Ministry of Science, Directorate for Scientific Research; Dragan K. Vukčević, President of the Montenegrin Academy of Science and Art. All of them were also invited to participate in the event organised by CeMI, so this was an excellent opportunity to organise face-to-face meetings with

them, and also with other interested individuals attending the conference, to explain what CESSDA is, what are the goals of the CESSDA SaW project in general, and the purpose of task 3.3 in specific. The meetings were held with the following persons: Maja Drakić Grgur, The President of the Center for Young Scholars at the Montenegrin Academy of Sciences and Arts; Jadranka Kaluderović, University of Donja Gorica, Podgorica, Institute for Strategic Studies and Prognoses; and Branka Žižić, national coordinator for Horizon 2020, Ministry of Science, Directorate for Scientific Research.

After the first contacts and meetings in Montenegro in April 2017, the first version of the National Data Services Development Plan for Montenegro was drafted by the Croatian CESSDA SaW project team, heavily relying on SEEDS project results. The draft Plan, together with other relevant documents was than shared with Ms Tomović from CeMI and with other people who attended the meetings. A response was received from the Ministry of Science, expressing interest in CESSDA activities. Later on, the work on the National Data Services Development Plan was delegated to Ms Zorana Lakićević from the Ministry of Science, Directorate for International Programmes and European Integration. Several emails were exchanged with Ms. Lakićević and we also had one phone call. At that time, Ms. Lakićević was working on Montenegrin Smart Specialisation Strategy which is a very important strategic document for the development of research infrastructures in general, as it is the basis for developing national roadmaps for research infrastructures. In our discussions, development of data services for the social sciences were put in the context of Pan-European research infrastructures and ESFRI Roadmaps.

By the time of writing this report we did not receive comments from the Ministry of Science on the draft National Data Services Development Plan for Montenegro. This is completely understandable because this was the first in-depth information for the people from the Ministry of Science about research data services for the social sciences, and also because the Ministry representatives had a lot of other work to do with already insufficient staff resources. In any event, the goal of spreading the word about CESSDA to the relevant people in the Montenegrin Ministry of Science is achieved, and the strong interest has been expressed from their side to be included in CESSDA activities in the future.

In the end, the Plan for Montenegro was finalised in cooperation with Ms. Tomović. The Plan will be distributed after publishing as a part CESSDA SaW deliverable D3.4 to all persons who were initially contacted regarding this work to achieve continuity in communication about data services, together with a media pack in which the advantages of having national data services will be highlighted. They will also be invited to attend the final CESSDA SaW dissemination conference, to be held in October 2017 in Dublin, Ireland.

Serbia

Contact persons

Dr. Aleksandra Bradić-Martinović, researcher at the Institute of Economic Sciences, is the responsible person for coordination of CESSDA SaW activities in Serbia. She was a participant in SERSCIDA, SEEDS and the RRPP data rescue project as coordinator for Serbia. Also, we contacted Dr. Nikola Tanić, assistant to minister in Ministry of Education, Science and Technical Development of Republic of Serbia, who supported the Serbian team in the third CESSDA SaW workshop in Lisbon.

Progress

The institution chosen to develop the NDP for Serbia is the Institute of Economic Sciences, a non-profit academic think-tank institution. This institution is involved in the CESSDA SaW project as the Serbian partner and was also involved in previous international projects such as the SERSCIDA and SEEDS projects. Aleksandra Bradić-Martinović was our contact.

Thanks to SERSCIDA and SEEDS, efforts to build a national data service for the social sciences in Serbia were already made during past years. Mrs. Aleksandra Bradić-Martinović explains her team's involvement and Serbian progress within the CESSDA SaW project in general and task 3.3 as follows:

"Although the social sciences sector is developed in Serbia and the impact on the designated community is moderate, research data production, research data management policies, ethical and legal frameworks, data sharing and reuse are all underdeveloped. While the government provides a relatively solid financial support, the results are relatively poorly used in the public decision-making process. In Serbia, no data archive service exists yet, but advanced proto-activities related to technical infrastructure, organisation and capacity building are provided on a national and institutional level through SER-DAC (the Serbian Data Center in Social Sciences). Also, there are existing technical infrastructures within the social science field that could possibly be used or applied to a new DAS in social sciences and the activities are quite advanced. Individual people were trained to work; basic protocols and technical solutions are prepared and pilot operations of data services are about to get off the ground. It is also expected that the support environment on the level of liabilities and principles of open access policies will follow."

Spain

Contact persons

Dr. José Luis San Martín Rodríguez, Data Bank Director at the Centro De Investigaciones Sociológicas (CIS), Monica Mendez, Researcher at CIS.

Progress

The contact between and Portugal and Spain Spain started in 2009, firstly to discuss the idea of an Iberian Archive, or a closer Iberian initiative. Although the idea was received with some enthusiasm, it never came to light, and one of the reasons was, on one side, lack of resources to follow up the discussions, and some uncertainty concerning funding and long-term sustainability. During the Second Regional Workshop on Microdata Access in European Countries – Cooperation between National Statistical Institutes & Social Science Data Archives – promoted by the EU funded Data Without Boundaries (DwB) project, which was held in Athens in 2014, ICS-ULISBOA had a face-to-face meeting with the Data Bank director, Dr. Oscar Martinez de la Torre, which did not lead to further collaboration.

The first contact within the CESSDA SaW project was established in February 2017. An email was sent to the current Data Bank Director at CIS, Dr. José Luis San Martín Rodríguez. No reply was received. Several attempts to contact by email and by phone, either Mr. Dr. José Luis San Martín Rodríguez or Ms. Monica Mendez a researcher dealing with data within CIS, were carried out in March and April, without success. Also in April, Pedro Moura Ferreira, a collaborator of ICS-ULISBOA, went to Barcelona for the Research Data Alliance meeting, but no representative of CIS was present. Given the fact that no country team has been found, no development plan has been drawn up for Spain.

Bjørn Henrichsen and Ron Dekker visited Spain in June and talked with CIS and the Spanish Ministry. This country has shown interest for becoming a CESSDA-ERIC member. Ron Dekker also talked with Ms. Clara Garcia from the European Commission (DG Research) in Barcelona and Brussels. Ms. Clara Garcia has noted budget restrictions at the Ministry as one of the barriers obstructing international memberships.

Turkey

Contact persons

No information was gathered during the initial mapping within task 3.2.. No relevant contact person was identified.

Ukraine

Contact persons

An initial contact person, identified in the CESSDA-PPP and by LiDA during task 3.2, was Volodymyr Illich Paniotto, General Director of Kyiv International Institute of Sociology (KIIS), Professor at the National university of Kyiv-Mohyla Academy and academic adviser of the National Data Bank of Sociological data "Kyiv archive". An additional contact is Yulia Sakhno, Manager of the Kyiv archive.

Progress

A first query was sent in February 2017 and was responded to with interest. Later Mr. Paniotto (with assistance from Ms. Sakhno) delivered a first draft report by the end of April, before participating in the CESSDA conference in Lisbon in May. Detailed comments to the first version were returned to Paniotto/Sakhno in mid-June. A second version is included in this deliverable.

3. National development plans

3.1 Albania

3.1.1 Introduction

This document presents a first plan for establishing a national data service for the social sciences in Albania. This plan has been mainly developed by Ms. Artela Mitrushi from the Institute for Democracy and Mediation (IDM, an independent non-governmental organisation) and is based on work undertaken during the Southeast European Data Services (SEEDS) project (2015-2017). The SEEDS project aimed to establish national data services in the social science in the Balkans. IDM was the Albanian partner in this project and identified the National Agency for Scientific Research and Innovation (NASRI)[7] to be a leading institution for the establishment of an Albanian data service. The plan includes comments received from NASRI's general director, Mr. Geron Kamberi (Geron.Kamberi@nasri.gov.al).

This plan should be further developed by all the relevant stakeholders, organisations and individuals whose jobs and interests are related to developing research infrastructures in Albania, primarily policy-making and funding institutions. The plan was created according to the *Guide for the elaboration of national data service development plans*, produced for the CESSDA SaW project, and some parts of the text are taken directly from the Guide.

The benefits of establishing a national data service

Empirical research in the social sciences is often extremely extensive and financially demanding, especially if it aims for analysis of complex phenomena on a representative sample. During such research, large amounts of data are collected, which cannot be reproduced because phenomena that are studied by the social sciences are changing over time. Because data are often not appropriately preserved by researchers, they are lost or become unusable over time. This represents a loss of potential knowledge and cultural heritage. The data service, through appropriate procedures, policies, tools and infrastructures, ensures long-term preservation of data and their dissemination.

From a research policy perspective, there are benefits of national data services to scientific communities that justify the needed investments. First, through their core activities - data preservation and dissemination - data services make possible long-term access to and wider and more effective use of existing data. This means that publicly-funded data are used more fully beyond their original purposes, and that research funders can concentrate on financing fewer new data collections. Indeed, data gathered for original research can be further exploited by "secondary" users for new insights and scientific contributions. Recent work by Beagrie et al.[8] demonstrates the economic benefits of national data services.

Second, data services strengthen research practice and quality by rendering research more transparent and open for replicability. By making data and related documentation available for scrutiny, original research can be tested and evaluated, a key pillar of the scientific method. Also, knowing in advance that the data could be used by others in the future is a way to ensure better quality in methods.

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[7] NASRI is the new name (since August 2016) of the National Agency for Research, Technology and Innovation (ARTI). The SEEDS project used the old name ARTI.

[8] Beagrie Neil, John Houghton, Anna Palaiologk, and Peter Williams. (2012). Economic Impact Evaluation of the Economic and Social Data Service. Available http://www.esrc.ac.uk/files/research/research-and-impact-evaluation/economic-impact-evaluation-of-the-economic-and-social-data-service/

Third, more and more funders and journals are requiring that data be deposited and available to researchers for secondary use and replication - having archives and repositories as places to store and disseminate data makes possible these requirements.

Finally, the easy availability of secondary data brings value to university teachers and students, who benefit from having data to train and illustrate methods and concepts in their courses and projects.

3.1.2 Mission

The mission of the **Albanian Data Archive for Social Science (ADAS)** is to manage data and data services in order to support high quality research, teaching and learning in the social sciences in Albania by acquiring, developing and managing data and related digital resources, and by promoting and disseminating these resources as widely and effectively as possible.

ADAS acquires data to meet crucial commitments, such as:

- Providing access to primary research data for secondary use and analysis to support social science research, answering new questions or undertaking follow-up studies;
- Providing access to data for teaching purposes to enhance use of the collection and support skills development;
- Providing access to original research data and documentation, which allows checks for consistency, validation of sources and validation and replication of research outputs, both published and unpublished.

3.1.3 General features of the data service

3.1.3.1 Definition of organisation

The **Albanian Data Archive for Social Science (ADAS)** will be a national research infrastructure that provides long-term preservation and distribution of research data in the social sciences in Albania. The mission of ADAS will be to ensure and promote sustainable services of ingest, storage and dissemination of high-quality research data obtained from the social sciences in Albania that have potential for secondary analysis. ADAS will ensure that the data will be available not just to current researchers but also to future researchers through long-term digital preservation. ADAS will offer data services for national and international researchers, students, and teachers.

3.1.3.2 Scope of collection

ADAS will collect data across the range of social science disciplines. This includes quantitative and qualitative data. The primary focus will be on quantitative data in the disciplines of anthropology, sociology, political science, psychology, educational science, information science, economics, demography, and geography. The data service will also collect and curate qualitative data, but with more careful selection and with consideration of available resources. Qualitative data will encompass in the first phase oral history and life story projects, as well as other narrative studies, currently undertaken within academia and NGOs.

In order to be accepted, the research should provide:
- Comparative or continuous research data (panel data, longitudinal surveys, and time series that allow examination of trends) as well as cross-sectional data;
- Works of general interest for social science research (high-quality and exemplary studies with analytic potential).

Data that fall outside the collecting scope will not be actively archived and disseminated by ADAS.

3.1.3.3 Services and activities

The main activities of ADAS will be:

- Acquiring important research data from a wide range of social science disciplines;
- Appraisal of submitted research data and their selection for deposit;
- Ingesting and processing research data and other documentation, together with creating metadata with the goal of preparing a package for long-term digital preservation (AIP) and preparing for access and further use for scientific, educational and other purposes (DIP);
- Long-term digital preservation;
- Providing access to research data that enables easy and well-informed usage for various purposes;
- Training researchers and more generally data depositors on planning, dealing and preparing data for ingest in open access;
- Providing users support, and training data users on usage of data services;
- Actively promoting secondary use of research data through training of users.

Since there are a number of public and non-public institutions in Albania that produce periodic social science data, such as various Ministries (education, social affairs, health, public order), the Institute of Statistics, universities and research institutions, national think-tanks and international organizations, one core activity of ADAS should be to establish a Network of Social Data Providers (NSDP)[FU4] where all those stakeholders could provide access to their data through ADAS.

3.1.3.4 Beneficiaries

ADAS intends to provide services to the academic community, i.e. university researchers, teachers and students (doctoral, master and bachelor), as well as to researchers from other public institutions (i.e. scientific institutes, government agencies), and researchers from private institutions such as: NGOs, individual researchers, journalists, and private research companies. For other individuals/institutions, the data service reserves the right to decide on a case-by-case basis.

3.1.3.5 Governance structure

An Oversight board will be created with representatives from: NASRI, the Ministry of Innovation and Public Administration, the Institute for Democracy and Mediation (IDM), as well as individuals in management positions within major research and education institutions. A Scientific/expert board will also be put together with researchers, data experts/archivists, and data librarians.

3.1.3.6 Financing schemes

The funding should be secured by national public funding bodies, that is the relevant Ministry and existing funding bodies in the scientific research sector. For Albania, the relevant funding agencies are the Ministry of Education and Sports in Albania, the National Agency for Scientific Research and Innovation (NASRI). They should cover long-term financing to ensure sustainability for ADAS. Initial funding could also be requested at the Digital Albania Fund. The host institution will provide premises and basic office facilities. In addition, the data service will participate in international projects for further financing. An option could be funding through the PERFORM - Responsive Social Science project of the European Cooperation Development Fund.

3.1.4 Resources and challenges

3.1.4.1 Host institution of the future data service

Reflections about the establishment of a national data service in Albania began with the SEEDS project. IDM, the Albanian partner institution for SEEDS, identified NASRI as a possible host institution for ADAS. However, according to NASRI's general director, Geron Kamberi, NASRI does not have the appropriate staff for creating and managing the data service and cannot be at the same time the funding and the hosting institution. Also, ADAS' host-institution should have closer links to primary research data producers in the targeted fields of study.

Ideally, the host institution should be a public institution with the following criteria:
- Recognized entity with positive relations with research institutions and national ministries to facilitate the collaboration with state authorities and researchers;
- Relevant technical capacities to support functioning the ADAS such as: hardware, software, servers, network and telecommunications, etc.;
- Qualified human resources for the establishment of ADAS;
- Experience with data archiving tasks.

A public institution will also reassure the research community that their data will be kept in a secure environment.

Currently in Albania there are some appropriate institutions that may serve as host institution for the national data service, such as the National Library (which has the National Bibliography Centre), the National State Archive, the Library of the Faculty of Social Science at the University of Tirana, the Albanian Centre for Albanological Studies, which includes five institutes and their archives and libraries (Institute of History, Institute of Literature-Linguistics, Institute of Archaeology and Institute of Anthropology), the Unit of Social Science and the Library of the Academy of Sciences, or the Faculty of Social Sciences & Education of the European University of Tirana.

These structures could offer trained staff, appropriate expertise and certain databases in use, such as archives or library bibliographic catalogues related to the social sciences. A next step should be to discuss the possibility to host ADAS with these institutions and possibly to suggest a consortium run by one of these institutions, e.g., a consortium led by the Faculty of Social Sciences of University of Tirana or by its library.

3.1.4.2 Internal structure and human resources

ADAS will include at least the following positions:
- A Director of the data service responsible for financial and executive management, communication with stakeholders, and regional and international partners;
- A quantitative and a qualitative data Archivist responsible for the entire process of data archiving - solicitation, curation, preservation and dissemination of research data;
- An IT Specialist responsible for technical support of the system and ensuring appropriate functioning of the Archive in its storage, preservation, and dissemination activities.

However, the internal structure of the data service will be defined in more detail according to funding capacities.

3.1.4.3 Partner support and cooperation

At this stage ADAS does not yet have formalized partner support. However, in the future the key stakeholders will include the Ministry of Innovation and Public Administration, the Ministry of Education and Sports, the National Agency for Scientific Research and Innovation (NASRI)[FU9] . and other government agencies, the Albanian National Institute of Statistics, the State Archives, the Central Bank of Albania, public and private universities, as well as other relevant governmental and non-governmental institutions. This should also include a study of the legal questions concerning formal relationships with stakeholders.

It will be important to set up lines of communication with key stakeholders and partners so that they are kept informed about the development and direction of the new data service. Key representatives from each stakeholder institution will be identified and contacted to obtain their consent to participate as representatives on behalf of their institution. Representatives will be included in a contact database that will be used for communicating information about the data service.

3.2 Austria[9]

3.2.1 Introduction

Efforts by the Universities of Vienna, Linz, and Graz and the support of the Federal Ministry of Science, Research and Economy led to the launch of the Austrian Social Science Data Archive (AUSSDA) in November 2016. Since AUSSDA has already received funding and is well on its way to becoming a fully functioning archive, this development plan differs from that of other archives featured in this report. Members of the AUSSDA team evaluated their work and outlined their activities in this guide around the 6-month mark after the formal establishment of the archive. All information about timelines, what is being developed and even structural information is describing the situation around April 2017. This chapter can therefore act as a helpful reference for archives once they have received funding and are faced with the questions of what to do next. AUSSDA's next steps, from developing a service portfolio, a governance structure, and policy documents, are outlined, and AUSSDA team members have also outlined some additional aspects to consider in the first phase of establishment.

3.2.2 Mission

"We make social science data accessible, creating opportunities for research and data reuse, benefitting science and society."

The Austrian Social Science Data Archive (AUSSDA) is a core social science research infrastructure in Austria, offering research data and archiving services. It is located at the Universities of Vienna, Graz, and Linz and is funded by the Austrian Federal Ministry of Science, Research and Economy (BMWFW).

AUSSDA strives to become the leading research infrastructure for the social sciences in Austria, offering high quality, sustainable, and easy-to-use solutions for archiving digital data, along with world-wide access to it. The archive follows international standards in order to make deposited social science data and documentation findable, accessible, interoperable and reusable. AUSSDA is active in a growing network of national and international partners, promoting high archiving standards and contributing to archive solutions of the future.

Our collection covers all social science data. We support the open data movement and work towards maximizing the potential for data use within our user group. The primary beneficiaries of our services are researchers, while our online services can also be used by students, educational institutions as well as media representatives and the public. We stand for integrity in data archiving and promote ethical research principles.

3.2.3 General features of the data service

3.2.3.1 Definition of organisation

AUSSDA, the Austrian Social Science Data Archive, is a consortium of three universities. Its headquarters are at the University of Vienna. It has the status of a "core facility" at the University of Vienna. It reports directly to the head of the Vienna University Library. The University of Graz and the University of Linz are partners. The main technical infrastructure and all archive material are maintained and stored at the University of Vienna.

AUSSDA is a supplier and collector of research data for the social sciences in Austria. Its mission is to become (1) the main supplier of data in the social sciences in Austria and (2) the most prominent address for archiving data in the social sciences in Austria.

3.2.3.2 Scope of collection

AUSSDA archives social science data from all disciplines. Examples include the fields of political science, sociology, media and communications, economics and business, educational sciences, law, psychology, social and economic geography, public health, demography, contemporary and social history, as well as other social sciences or interdisciplinary studies. AUSSDA accommodates various data sources such as surveys, content analyses, experiments, and others. Presently, data is primarily derived from research in political science, sociology, and media and communications.

The Austrian Social Science Data Archive's main priority is in collecting quantitative social science data. Other data types are added to the collection if they provide valuable scientific insight for the archive's designated community.

The focus is on traditional-scale data. AUSSDA will participate in open data, open access, open innovation and big data initiatives. Possibilities to archive and disseminate big data and social media data will be explored.

3.2.3.3 Services and activities

AUSSDA's main services are:
- Solicitation and acquisition of data from data producers;
- Curation and long-term preservation of data;
- Online catalogue of archived data;
- Access to and dissemination of data for use in secondary analysis.

The main tasks of AUSSDA are adding new data to its collection and making these available for secondary use. AUSSDA is compliant with international scientific standards of archiving activities. The data archive actively pursues suitable data and devises appropriate plans for their dissemination. AUSSDA will work closely together with other institutions, such as faculties, funding bodies and ministries to reach out to the scientific community.

AUSSDA supports an open data policy and works hard to achieve free data access whenever possible. Metadata will be available for data mining, and the data shall be available for use for as many purposes as possible within the applicable license models granted to AUSSDA by the data depositors. By offering

advice on available license models, AUSSDA ensures that researchers understand data protection issues and usage scenarios to achieve an appropriate archiving and dissemination strategy.

In the initial three years of the setup phase, AUSSDA will offer the following services and activities:

- Materials and trainings for data depositors (how to prepare data for inclusion in the archive, how to deposit prepared data);
- Materials and trainings for data users (how to find data in the catalogue, how to download data);
- Support, assistance, and advice for data depositors and data users;
- Promotional activities and outreach to users;
- Regional collaboration and establishment of networks of users;
- Data management training for researchers;
- Data Management Plan (DMP) Services;
- Legal protection (through archive's policy, terms of use, deposit agreements and metadata guidelines) for both data providers and repository operators;
- Differentiated rights management (through licenses and different levels of access, from closed or embargoed access, through various levels of restricted access to open access);
- Citability of data (assignment of persistent identifier, e.g. DOI);
- Allowing assignment of personal identifiers (e.g. ORCID);
- Script-based anonymization checks;
- Wider promotion of "Open Access" to data.

AUSSDA organizes its services along the data life cycle:

- Proposal development and data management plans -> archive can be contacted for advice on data management plan;
- Project start-up -> documentation guidelines, informed consent;
- Data collection and file creation -> best practice, tutorials, quality controls;
- Data analysis -> manage dataset files, backup data and documentation, information on archiving options;
- Preparing data for sharing -> file formats, contact archive for advice on licenses;
- Depositing data -> complete relevant forms, compliance with standards;
- Outreach -> dissemination of data, data from AUSSDA in university's curricula.

The Austrian Social Science Data Archive is not merely a place to store data. AUSSDA can accompany researchers every step of the way, from an initial data management plan to the dissemination of the collected data. Besides archiving, AUSSDA provides assistance to data depositors in the form of documentation guidelines, best practice examples and lists of necessary quality controls, thereby ensuring the adherence to internationally defined standards. Data consumers also benefit from AUSSDA's services and support, concerning not only the availability of certain data, but also aspects on how to use specific datasets. AUSSDA will play an active role in the Austrian social science community and will visit institutions in Austria to introduce the archive and its uses to researchers and students.

3.2.3.4 Beneficiaries

Sharing research data by making it openly accessible not only furthers the field of social sciences in Austria, it allows young academics to learn from past research - its design and implementation. The services of AUSSDA target Austrian social scientists, but apart from regulations on individual datasets no general restrictions are in place as to who can access and use data: professors, junior researchers and students are all welcome to use and contribute to the archive, as long as all necessary archive regulations are followed. While anyone can use the data within the provided license models, researchers will in particular benefit from the infrastructure AUSSDA provides, specifically its secure, long-term storage. Academic journals increasingly require data accompanying submissions to be made available in an appropriate

data archive. In recent years, no such trustworthy depository existed for the social sciences in Austria. AUSSDA fills this infrastructural gap.
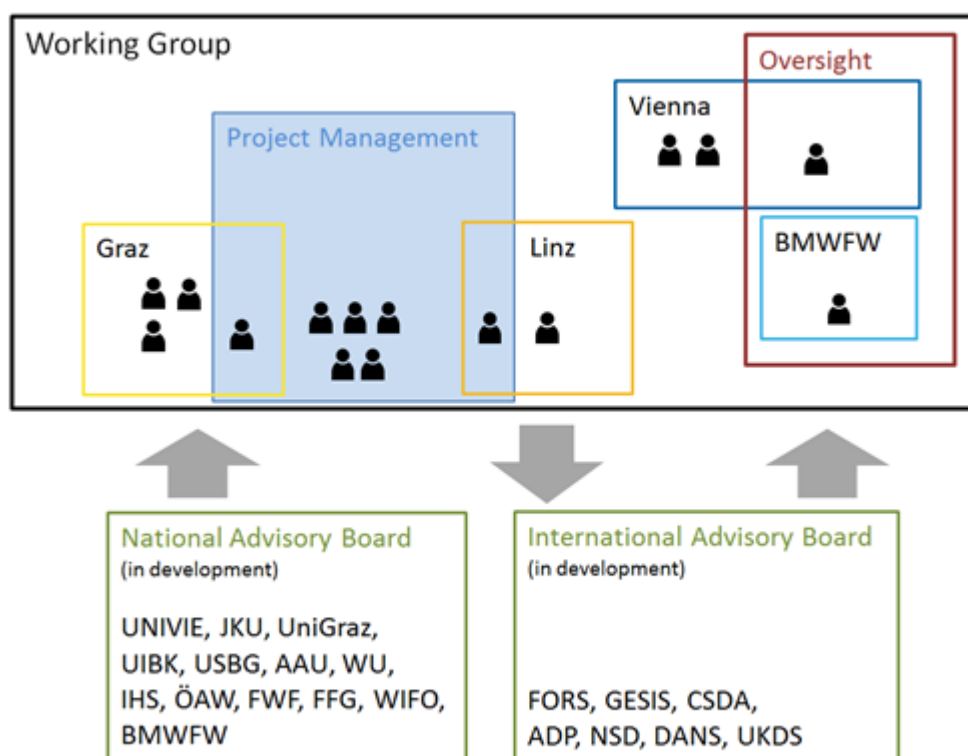
AUSSDA considers its role as going beyond data archiving. The archive can be contacted by aspiring researchers requiring assistance. Additionally, AUSSDA provides example datasets to be used in university courses, allowing an easy introduction to the use of the data archive and to quantitative methods.

3.2.3.5 Governance structure

As of March 2017, AUSSDA has established a working group and plans to build a national advisory board and an international advisory board. The working group guides strategic, financial and policy related decisions of AUSSDA. All policy documents have to pass the working group before they become binding for AUSSDA. It consists of the AUSSDA-team, representatives of the partner institutions (University of Vienna, University of Linz, University of Graz), the head of the Vienna University Library (responsible for financial decisions and financial reporting), and a representative of the BMWFW (funding federal ministry). The working group currently consists of 15 people. In the first year (2017) this board will meet 4 times (February, April, June, tbd) to ensure a constant dialogue among all partners. The number of meetings may be adapted in subsequent years.

Responsible for overseeing that AUSSDA is compliant with the goals and operating within the applicable financial rules are representatives of the BMWFW and the head of the Vienna University Library. They are members of the working group. The annual formal approval process includes an annual performance report of AUSSDA to the ministry.

Figure 1: AUSSDA's governance and internal structure

AUSSDA is supported by two advisory boards. The national advisory board is currently under construction. It has been proposed that it should consist of representatives from (1) all Austrian universities, (2) the Federal Ministry of Science, Research and Economy (BMWFW), (3) the Austrian

Science Fund (FWF), (4) the Austrian Academy of Sciences (ÖAW), (5) the Institute for Advanced Studies (IHS), (6) the Austrian Research Promotion Agency (FFG),(7) the Austrian Institute of Economic Research (WIFO) and (8) the national statistical institute. Members of the national advisory board support AUSSDA with their expertise and promote AUSSDA within their institution. The views expressed by the national advisory board are recommendations.

The international advisory board provides guidance, expertise, and support. Seven CESSDA members are represented as members in the board. It is comprised of individuals with valuable insights into various areas of expertise of archival systems. This includes leading researchers of international standing, representatives of CESSDA members and people who are involved in technical roadmaps but no dedicated IT specialists. Strategic partners from outside of Europe may be added to the international advisory board in the future. The international advisory board consists of members from the following institutions: ADP (Social Science Data Archives/ Slovenia), CSDA (Czech Social Science Data Archive/ Czech Republic), DANS (Data Archiving and Networked Services/ Netherlands), FORS (Swiss Centre of Expertise in the Social Sciences/ Switzerland), GESIS (Leibniz Institute for the Social Sciences/ Germany), NSD (Norwegian Centre for Research Data/ Norway), and UKDS (UK Data Service/ UK).

3.2.3.6 Financing schemes

AUSSDA is funded by the Federal Ministry of Science, Research and Economy (BMWFW). All expenses necessary to establish a long-term social science data archive in Austria have been considered. Eventually AUSSDA will be fully integrated into the organizational and infrastructural settings of the University of Vienna and its partners at the University of Linz and the University of Graz, making it an integral part of the Austrian social science community.

3.2.4 Resources and challenges

3.2.4.1. Host institution

AUSSDA is a subdivision of the Vienna University Library, which in turn is part of the University of Vienna. The University of Vienna, founded in 1365, is one of the oldest and largest universities in Europe. About 9,500 employees, 6,700 of whom are academic employees, work at 19 faculties and centres. This makes the University of Vienna Austria's largest research and education institution. With more than 180 degree programmes, the University offers the most diverse range of studies in Austria.

As Austria's largest and oldest university, the University of Vienna is well-established within the national research community. Partners at the Universities of Graz and Linz play a vital role in connecting AUSSDA to existing national research networks. Cooperation is planned with additional Austrian research institutions and the national statistical institute Statistics Austria.

Through the University of Vienna Computer Centre, AUSSDA has access to the necessary technical infrastructure. This includes email accounts, Wi-Fi and the University's data network, online storage spaces and a website, all necessary hardware and software, IT security, the possibility of attending IT courses, as well as support provided by qualified computer experts.

The Vienna University Library provides various service infrastructures to support members of the University in their research, teaching and learning. It offers the academic community archiving solutions with a focus on mid-term and long-term preservation of digital resources and research data. It furthermore transfers know-how and technology to academic institutions in five European countries and to the national funding body FWF. Staff from AUSSDA has also been conducting Data Management Plan trainings within the institutional staff development programme of the University of Vienna. Additionally, the Vienna University Library coordinated the three-year, nation-wide project e-Infrastructures Austria (www.e-infrastructures.at), which involved 26 partner institutions in Austria. This project allowed

effective stakeholder engagement with Austrian representatives of ministries, research funders, research communities, scientific libraries, ICT-services, legal services, research support and publishers.

The University of Vienna has published an Open Access Policy (https://openaccess.univie.ac.at/en/policy/) and fully supports the establishment of AUSSDA. AUSSDA was established as a core facility at the University of Vienna which indicates the strong support from the head of the University.

The head of AUSSDA is a recognized professional in survey research with a strong publication record and a proven track record of establishing and leading high-performance teams. He has a large network which extends beyond Europe with affiliations at the University of Michigan and at the Australian National University.

AUSSDA has good relations with the Federal Ministry of Science, Research and Economy. Its representatives are regularly updated on AUSSDA's development and its future plans and one representative is a member of the board and strongly supports AUSSDA in its establishment phase.

3.2.4.2 Human resources and internal structure

AUSSDA has a flat hierarchical structure and will employ one head of the archive, one project manager and five data processing specialists with the following profile and activities.

1 head of AUSSDA

> Profile: Social sciences/statistical background; data management skills.
> Main activities:
> - Leadership of the data archive;
> - Setting of policy and procedural rules;
> - Relations with national and international stakeholders and partners;
> - CESSDA-related activities.

1 project manager

> Profile: Humanities and library information background.
> Main activities:
> - Project management;
> - Relations with national stakeholders and partners;
> - Office management;
> - Data management plans;
> - Licenses;
> - Website;
> - Marketing material;
> - CESSDA communications.

5 data processing specialists

The basic profile and activities for all data processing specialists are:

> Profile: Social sciences/statistical background; data management skills.
> Main activities:
> - Solicitation of data;
> - Data and documentation ingest;
> - Data curation and preservation;
> - Contracts creation for data depositors and data users;
> - Information and advice to researchers and students;

- Data service promotion towards the research community (the beneficiaries).

The data processing specialists also work on specific projects and tasks such as:
- Development of policies, workflow protocols for ingest and data delivery, data protection and informed consent, as well as open educational resources;
- Data migration from binary format to current formats;
- Regional contact points;
- Marketing strategy;
- Website;
- Survey expert: ISSP, Social survey Austria;
- Relations with international stakeholders and partners;
- CESSDA projects (ELSST, SaW, metadata, etc.);
- Data Seal of Approval;
- NESSTAR server setup and administration;
- DDI.

3.2.4.3 Partner support and cooperation

National stakeholders and partners

AUSSDA is in regular contact (email, phone and personal meetings) with the responsible ministry and informs ministry representatives about current work and future plans. The Austrian Social Science Data Archive is in the process of reaching out to the Austrian Science Fund, the Austrian Academy of Sciences, the Institute for Advanced Studies, the Austrian Research Promotion Agency and the Austrian Institute of Economic Research in order to establish cooperation and to define its place in the Austrian research community. A collaborative effort is underway to form a partnership with the national statistical institute Statistik Austria. In addition to representatives at the universities of Vienna, Linz and Graz, contacts at all Austrian universities are being identified and asked to join the national oversight board.

International stakeholders and partners

AUSSDA can rely on a large network of support including all national service providers of the Consortium of European Social Science Data Archives (CESSDA). The establishment of AUSSDA takes place in accordance with the goals set out in the Austrian Research Infrastructure Action Plan (2014-2020). The ESFRI infrastructure CESSDA constitutes an integral part of Austrian research infrastructure.

3.2.5 Planning for the data service

3.2.5.1 Establishment plan (before day 1)

Organisation and internal structure

AUSSDA is located at the University of Vienna; the offices are located at Teinfaltstrasse 8, 1010 Vienna. Partners are located at the Universities of Graz and Linz. The AUSSDA working group and international board have been formed; the national board is being set up.

Services to be developed

- Data acquisition;
- Data management plan;
- Data processing (validation, data conversion, metadata);
- Specialized infrastructure of long-term data storage with searchable interface;
- Data dissemination;

- Balancing demands of data providers and data users through agreements adhering to legal requirements;
- Trainings for students.

Classification scheme of data types to be archived

AUSSDA focuses on the collection of –primarily– quantitative social science data. A data collection policy has been developed. The following description for data access levels was developed as part of the data collection policy:

- **Open** data can be accessed by anyone.
- **Restricted** access can take on the following forms:
  - **Standard access** allows registered users access to all data in the archive that are not restricted to certain user groups and do not require special conditions or agreements.
  - **Restricted user group** access defines a predefined user group that is allowed access to data and access is automatically granted when a person meets these defined criteria. This can be controlled case-wise or by implementing automatic authentication (e.g. through an email address from a predefined list of domains).
  - **Access on demand** may be applied to data and the decision to grant access or not is made with every request.
- **Embargoed** data is archived and not accessible for a defined timespan. After this time period, the preselected access and license models apply.

Promotional activities

- Creation of a bilingual (German and English) AUSSDA website, stakeholders mailing list for regular updates, conferences;
- Development of institutional brand and logo;
- Development of website (www.aussda.at);
- Major public event to promote AUSSDA in November 2017;
- Customer support and documented guidelines/ tutorials for data providers and data users;
- Other outreach activities.

Technical infrastructure

- Technical hardware offered by university;
- Software and tools selected (Stata, SPSS, project management software, …);
- Database and archiving system tool: decision-making in progress; currently, Nesstar is being used.

Policies, quality control procedures and workflows

- Establishment of data policies and written protocols for data management and access in progress;
- Data preservation and succession plan is on the development roadmap;
- Policy and plans for data backup and security developed through service level agreement with central computer services of university;
- Agreements and contracts are being developed by a lawyer;
- Standardisation of policy and tools (including compliance with CESSDA and Data Seal of Approval) is being monitored.

3.2.5.2 Operational plan (after day 1)

Implementation and maintenance of technical systems

Computers, servers, security and backup systems are installed. Nesstar installation nearly complete.

Data acquisition and curation (solicit and process research data)

Existing research projects with potentially valuable data have been identified. Pilot projects to test ingest have been started.

Activity report, outreach and promotion

Annual reporting to the ministry is in place. Target groups are being identified; this includes research community, policy-makers and media.

Networking and internal and external communications (e.g., newsletters, email lists)

Email lists are being created and a strategy for ongoing communication will be further developed in the future. International conferences and workshops, as well as CESSDA events have been attended by team members.

Ensuring sustainability and working toward growth

Regular meetings with high-level ministry officials take place as part of the national advisory board and the working group. A major public event will take place on November 17th, 2017, high-level ministry officials will be present. AUSSDA has talked to funding agencies and informed them of AUSSDA's activities.

3.2.6 Experiences and challenges in building AUSSDA – some advice for new archives

3.2.6.1 Brand development

When approaching ministries, planning service portfolios and drafting acquisition plans, one thing that may be overlooked is brand development. What should the name of the newly established archive be and what should the short form look like? Make sure to look up the acronym on the internet to determine whether it is still available. Perhaps it is necessary to draft a guideline outlining which terminology is to be used when referring to the archive, how the acronym is to be adopted and what the procedures should be for other languages (e.g. does the acronym stay the same in English). In order to establish the archive as a brand, each team member and affiliate should refer to the archive in a uniform way. To make the brand recognizable, it is necessary to develop and adopt a logo to show up on the website and various documents. A style guide may be necessary here, outlining what official archive documents should look like.

3.2.6.2 Community building

An important aspect is informing potential users of the establishment of the archive and how they can benefit from it. Once the archive is established, enough deposits and downloads have to take place to prove to funders that the archive is used and needed in the community. A strategy should be devised how potential depositors across the country will be approached. It may be necessary to visit various institutions, travel to national conferences or even organize events to inform user groups of the archive's existence.

3.2.6.3 First documents

Early on, it is helpful to draft a mission statement and to decide what the archive should stand for and strive for and who its beneficiaries are. In order to specify what data should be archived the second document AUSSDA drafted was the data collection policy. Mission statement and data collection policy were both drafted with the service portfolio in mind, since the technical setup and other aspects of the archive's establishment are dependent on what types of services should be offered.

3.2.6.4 Technical setup

A vital decision for an archive is the one concerning the technical archive setup. While it should not take too long to install and become usable, it should also conform to international standards. Other decisions that go along with the technical infrastructure are the organizational setting and the formation of the team (e.g. Is a technical specialist necessary? Is the archive part of an organization that has a technical support system in place?). Long-term thinking is important as the technical system has to be maintained and the archive holdings have to remain intact even in the case funding is reduced or runs out.

3.2.6.5 CESSDA

Newly established archives can play an active role in CESSDA by getting involved in various work packages. If this is not seen as an option for a new archive, it can be very helpful to monitor CESSDA activities and events. One can benefit from the work other archives have done and these are also willing to share their experiences and provide advice.

3.3 Bulgaria[10]

3.3.1 Introduction

Over the years a number of public, state, and private institutions have conducted various types of empirical social research. They include sociological, social-psychological, economic (including marketing), demographic, public relations, and other types of research. A massive amount of data has been produced from that research. These data are left for storage with the clients who commissioned the research or the contracting bodies who conducted the studies. Different public and private institutions have built their own databases. Access to them is very difficult, and in many cases, it is impossible. This outlines one of the most serious challenges that the project faces - the need to ensure a consensus on providing these data archives. Another problem is that of the needed consensual agreement with the National Statistical Institute for the differentiation of the tasks of storage, access and service for users of scientific social research information at the Study of Societies and Knowledge at the Bulgarian Academy of Sciences (ISSK-BAS). In general, the studies realized with public funds should be made public – with public access to the data produced by the conducted social research. The solving of this task depends on normative regulation. The problem with the ownership of private databases is more complex, as it requires consensus agreements.

At present, however, in Bulgaria there is no national institution responsible for a central storage, management and access to the collected empirical data from social research. At the moment, this is partly done by the National Statistical Institute, but still the majority of the databases are kept by various state and private institutions. In most cases, the data become property of the institution that ordered the research, and although it was carried out with public funds, access to the data is difficult or lacking altogether. Currently, a significant share of such data is produced and kept by ISSK-BAS. At the same time, in most European member states there are trends towards the creation of institutional and normative prerequisites for generating and organizing unified datasets from different types of studies. Additionally, special attention is paid to the implementation of policies of consensus on the storing, management, access, and analysis of the generated database.

The existing organization of social research data and their use for scientific purposes in Bulgaria have at least **four major drawbacks:**

1. **Databases are physically dispersed**; they are cut off from each other. The existence of some of the databases is often not even known. This seriously hinders access to them. Researchers are forced to make special efforts to gain access to such data - and, despite the efforts made, there is no guarantee of gaining access to the information sought.
   This creates serious difficulties for the deployment of comparative studies in Bulgaria and for the advancement of scientific thought in general. The limited access to data from already conducted social research leads to the fact that studying of many key social indicators and problems of Bulgarian society often starts "from scratch", which further increases the cost of the empirical studies of the Bulgarian society. If the data are adequately managed and available (under certain conditions), this will save researchers the need to start from the beginning of every new study, and it would create a factual basis for conducting comparative research in dynamic, structural, local and international aspects.

   The lack of serious comparative studies explaining the ongoing social processes in Bulgaria in the period of transformation is one of the main disadvantages of the Bulgarian scientific studies at

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[10] The NDP for Bulgaria has been drawn up by the Institute for the Study of Societies and Knowledge - Bulgarian Academy of Sciences (ISSK-BAS). The contact person on the behalf of ISSK-BAS is Prof. DSc. Emilia Chengelova (chengelova@gmail.com).

present. This disadvantage can be overcome by building a unified system for storage and management of the data from the studies conducted in Bulgaria.

2. **The databases are organized in different ways** and by using different software products. This circumstance creates real methodological, organizational and other obstacles, and narrows the possible use of the data by a wider range of interested users. It hinders the use of databases from different sources and makes it impossible to conduct a comparative analysis of the studied social processes and phenomena.

3. **Access is not always permitted** due to confidentiality claims regarding the results of ongoing research.

4. Database creation and organization is done by using the **available capacity of the respective institution** (in the Bulgarian context in many cases that has a negative effect and **limits the proper storage and management of the data**).

All of the above-mentioned drawbacks decrease significantly the efficiency of the use of data in several ways:

1. Limits significantly the access to sought data;
2. In some cases they limit the possibility of choosing the adequate research design (for instance data which is of interest to users has already been produced and making expenditures for collecting the data anew is not justified);
3. The opportunities for comparative research are very narrowed, as well as the methodological assistance and evaluation of possible gaps in the realization of empirical research.

Considering the situation described, this project is proposed as a solution for the dispersion, lack of professionalisation, and inappropriate practices of storing data from social research in Bulgaria.

The idea of creating a united national depository and a digital storage of data is not new, but its realization up to now has been seriously hindered by the lack of financial means to help start the creation and development of such a system.

The sociologists at the ISSK-BAS (which succeeded in 2010 at the Institute of Sociology at BAS) have repeatedly discussed the need to create and maintain a national database that is set up in accordance with the achievements of modern information technologies and capabilities to build digital repositories. There have been some efforts in this direction. The first attempt to create such a database was made in the 1970s. Work on the task was initiated, but remained unfinished. Another attempt to create an archive of passports of the conducted empirical sociological research was made in 2004. In the same year at the Institute of Sociology an attempt was made to create a database relating specifically to social mobility in Bulgaria, but this project also remained unfinished due to lack of funds and perhaps lack of understanding of the importance of the task.

3.3.1.1 Goal and aims of the Bulgarian National Development Plan

In the age of a globalized society and an increasing number of social surveys conducted every year, the problem of storing, management and access to social research databases is becoming ever more pressing and imperative. In Bulgaria there is a significant number of state, public and private institutions which are engaged in the study of social phenomena and processes. As a result of numerous social studies (sociological, social-psychological, demographic, economic, etc.) every year these institutions collect empirical data on a wide range of indicators concerning various aspects of Bulgarian society. The aim of the National Development Plan is to work towards the establishment of a national data service in the social sciences in Bulgaria that is expected to **have value and impact on the national scientific community**.

3.3.2 Mission

The overall mission of **the National Data Service (NDS)** is the solicitation, acquisition, preservation, management, and delivery of data collected through Social Survey Research held since 2000 in Bulgaria by research and other institutions and covering major topics of the social agenda.

A larger vision or philosophy of NDS will be to take into consideration all data being produced by research teams and focused on studying basic socio-economic topics of Bulgarian transitional society. Usually data are produced with very specific goals, but in the context of NDS more important will be to make these data visible and easy for access, in order to promote correct scientific usage of research data and make them applicable for the purposes of public policy design.

3.3.3 General features of the data service

3.3.3.1 Definition of organisation

The National Data Service (NDS) will be a unit of **the Institute for the Study of Societies and Knowledge at the Bulgarian Academy of Sciences (ISSK-BAS).** ISSK-BAS will play the role of the national collector and provider for Social Survey Research data collected by Bulgarian research and scientific institutions in the domains of Social sciences and Humanities.

ISSK-BAS was founded in 2010, bringing together the research experience of scientists from the Institute of Sociology (founded in 1968), the Institute for Philosophical research (founded in 1945), and the Centre for Science Studies and History of Science (founded in 1972). ISSK-BAS is the main national research centre in the sphere of social sciences (for more details see ISSK-BAS' website: http://issk-bas.org/).

3.3.3.2 Scope of collection

This section defines the nature and scope of the data that will be included in the future NDS collection. The main object of data collecting will be social surveys conducted since 2000. In collecting and managing social survey data, priority will be given to those surveys which are directly connected with data driven for the purposes of Sociology, Political Science, Educational Science, Economic Science, Psychology Science and other subdivisions of Social and Political sciences. Attention will be paid to those surveys which cover all major aspects of socio-economic life of contemporary Bulgarian Society.

In collecting social survey data, ISSK-BAS will take into consideration both qualitative and quantitative data. Recently conducted studies in Bulgaria have applied both qualitative and quantitative research methods. ISSK-BAS will give to both of them equal chances for being a meaningful part of the NDS. In our understanding, both qualitative and quantitative research methods produce valuable and highly applicable research data. **The secondary use of data should be done with a clear awareness of their cognitive applicability and limits. Only in this case the data will serve as reliable source for visibility and setting the Social agenda.**

ISSK-BAS will encourage collecting both "big" data (data driven from nationwide surveys) as well as other data (traditional scale data). As of territorial survey coverage, ISSK-BAS will pay attention mostly to the national representative surveys, although local surveys also will be taken into consideration and those available surveys will be chosen, which meet all basic methodological standards. Very often the scope of the data received depends on the project activities definition, in the framework of which these data have been produced. In our experience, much social survey research in the social sciences are

focused on studying either several major aspects of socio-economic life, or some particular focus of social reality.

3.3.3.3 Services and activities to be provided

This section names and describe the services that will be offered by the ISSK-BAS in its capacity of NDS.

1. ISSK-BAS will develop and deliver the following main services:
- solicitation and acquisition of the data from data providers;
- curation and long-term preservation of data;
- online catalogue of archived data; and
- access to and dissemination of data for use in secondary analyses.

2. ISSK-BAS will guarantee covering a number of additional services and activities, as follows:
- elaboration of material and trainings delivery for data depositors (how to prepare data for inclusion in the data archive and how to correctly deposit the proposed data);
- elaboration and trainings delivery for data users (how to find needed data in the data catalogue and how to download them);
- support, assistance and advice for data depositors and data users;
- promotional activities and outreach to users;
- data management training for researchers;
- establishment of a regional network;
- establishment of networks of data users;
- elaboration of data services covering the needs of data users;
- possibilities for online searching survey data and sorting them (data compilation) in regards of the data users' needs;
- possibilities for ad hoc research teams creating - in regards to the needs of Bulgarian society and social agenda;
- possibilities for data extraction for the purposes of preparation of scientific publications; and
- establishment of ad hoc research teams for the purposes of ''hot'' topic surveys covering.

3. ISSK-BAS will focus serious attention on providing to the data users the following basic analytical services:
- creation and maintenance of research inventory of existing research projects in the country. Attention will be given both to the projects with or without data);
- access to online tools for data analyses and statistical analyses (creating frequency tables, cross tabs, Cramer and Chi-square, graphs, and others statistical indicators and analytical results);
- purchased access to foreign databases (ICPSR and LIS) for national researchers); and
- wider promotion of ''Open Access'' to data.

3.3.3.4 Beneficiaries

The beneficiaries of the NDS could be grouped into several major categories:
- university researchers, teachers and students;
- secondary school teachers and students;
- researchers from other public institutions (scientific institutes, government agencies and others)
- researchers from private institutions (private research agencies, NGOs, business associations, newspapers);
- policymakers;

- journalists; and
- the general public.

3.3.3.5 Governance structure

The purpose of this section is to define the main bodies and key stakeholders that will be involved in the governance of the data service, including their role, responsibilities, and composition.

The ISSK-BAS National Data Service (NDS) will establish a three-stage governance structure:

1. **An Executive Board**
   - NDS Director: will be responsible for overall governance, coordination and control of NDS activities, under the supervision of the ISSK-BAS Director and ISSK-BAS Scientific Board. The NDS Director will be the motor of basic NDS activities for solicitation and data acquisition.
   - Representative of ISSK-BAS: will support the NDS Director in its governance of the NDS activities.

2. **An Oversight Board**
   - Representatives of relevant ministries to data producing and data reservation. For the purposes of the NDS, several ministries could be asked for their representatives designation, i.e. Ministry of Education and Science, Ministry of Labour and Social Policy, Ministry of Regional development and Public Works, Ministry of Economy, Ministry of Finance and others;
   - Representatives of the National Statistical Institute: will play a consultative role in data solicitation and acquisition process;
   - Representatives of National Archives;
   - Representatives of research Councils and national science foundations;
   - Representatives of Universities.

3. **An Advisory Board:**
   - Leading Bulgarian researchers of international standing in Social Science and Humanities;
   - Representative of CESSDA service providers;
   - IT specialists.

3.3.3.6 Financing schemes

This subsection define specific financial schemes for the different stages of the NDS operations:

1. **Establishment of financial resources**
   - ISSK-BAS will try to attract funding through possibilities of Horizon 2020 and other European instruments, as well as through national financial instruments;
   - National institutions such as the National Statistical Institute and the Ministry of Science and Education.

2. **Financial resources for NDS functioning**
   - NDS's successful functioning will be maintained by financial support of national institutions. So far this issue is a subject of discussion but initial debate has been started and will be continued until the proper solution is found.

The NDS, as a national infrastructure, should be financed from public funds to ensure its long-term operation and sustainability. The possible funding sources for the data service are the Ministry of Science and Education. Additional funds will be provided by domestic and international funding organisations.

The financing model for the establishment phase should be different than the model for financing day-to-day operations after the establishment of the data service. During the establishment phase the costs for procuring office and technical equipment have to be considered. Once the service is established, the regular budget should cover the costs for staff and maintenance of technical infrastructures, and also the membership in CESSDA to ensure connectedness with the European community of social science data archives and to be able to receive support from this community.

3.3.4 Resources and challenges

3.3.4.1 Host institution of the future data service

Founded in 2010, ISSK-BAS is the main national research centre in the sphere of the social sciences. The institute conducts complex theoretical and empirical, fundamental and applied research devoted to knowledge, values, and human society. This is conducted in accordance with the academic criteria established at national and European level and reflects world trends in science. The activities of ISSK-BAS include providing expert and consultancy services for the needs of governance and organization in all spheres of social practice related to the requirements of the socio-economic, cultural, and political development of Bulgaria. The scientists at ISSK-BAS have rich experience in national and international projects, EU FP6 and FP7 research projects included. Some of the priority research topics are the inequalities in the context of socio-economic change, youth, job quality and quality of life, and the knowledge society, i.e. science, education, and innovation.

ISSK-BAS enjoys the prestige of a national academic institution that specializes in the development of methodological approaches and conducting social research on the ongoing social processes in Bulgaria. In the light of the public mission and functions of ISSK-BAS, the entrusting of these new specific functions to CESR follows completely logically and realistically.

Indeed, one possible decision is an expansion of the activities of the existing Social Survey Research Centre (SSRC) at the ISSK-BAS, with new functions in order to provide storage and dissemination services for empirical social research data. CESR is part of the ISSK-BAS structure and has more than 40 years of history, rich institutional, methodological and research traditions, and experience in working with empirical data from sociological and other studies. The enhancement of the existing functions of CESR requires the creation of partnerships in order to construct relevant conceptual approaches, software solutions and the formation of the skills necessary to work with them.

ISSK-BAS has the expert capacity (22 professors, 44 associate professors, 109 PhDs), that allows undertaking specific tasks for assisting the project team in the implementation of the concept for Internet infrastructure designing. ISSK-BAS has also in-house all the necessary technical equipment to implement international research projects. ISSK-BAS is a partner in the National Consortium of the European Social Survey, a national partner in the SHARE project, which both have status of European research infrastructures. Additionally, ISSK-BAS has experience in organization and implementation of representative national surveys, and international surveys like the Generations and Gender Survey (2002, 2005) and the European Social Survey (2008, 2009). We have established contacts with the Norwegian Centre for Research Data and have made attempts to become a partner of the Archive for databases in social sciences with a hub in Bergen, Norway.

Additionally, ISSK-BAS has the scientific capacity and rich experience in the creation and administration of empirical data from social research, and it commands a complete base of professional skills, scientific expertise and national network of interviewers for conducting local and national empirical social

research. This base would facilitate the expansion of the existing activities of SSRC with new functions for storage and management of data, including the provision of specialized services to users of data for research purposes.

We see the practical and scientific benefits from the expanding of the activities of CESR with new functions for storing and managing social research data in the following:

1. Firstly, centralized organization and storage of data will provide the widest possible access to their use by interested researchers, research teams and institutions.

2. Secondly, organization and storing of data will be carried out using the most modern technologies in this field, which will create optimal conditions for their effective use in several ways:

   ○ by expanding the opportunities for research and generalizations based on research data;

   ○ it is presumed that the creation and maintenance of such a center would provide significant cost savings in the operation of the system;

   ○ there will be an improvement in the quality of research in the social field and its benefits to society;

   ○ there will be an intensified exchange of technological and methodological training of researchers;

   ○ there will be an expansion of the opportunities for international exchange of the collected information;

   ○ in all cases the access and use of the database will be better organized, significantly easier and timesaving.

3.3.4.2 Human resources

The NDS should employ relevant experts in data management and data archiving. They will be responsible for all aspects of the archiving workflow, including data solicitation, curation, and dissemination. The data experts should optimally have a background in social sciences and information sciences, but could also have a background in related disciplines, such as data science or statistics. Main activities of a data expert include: solicitation of data, data and documentation processing (ingest), data curation and preservation, dissemination of archived data, creating contracts for data depositors and data users, providing information and advice to researchers and students.

3.3.4.3 Partner support and cooperation

In the frame of National Data Resources Plan, ISSK-BAS will make all efforts necessary for establishing a National Consortium of the institutions producing and working with survey data. Most probably, these institutions would be the National Statistical Institute, the Bulgarian Sociological Association, the Faculty of Sociology at the Sofia University "St. Kliment Ohridski", the Faculty of Sociology at South-West University, the Faculty of Sociology at the University of National and World Economy, the Faculty of History, Philosophy and Sociology at the D. A. Tsenov Academy of Economics – Svishtov, as well as the Faculty of Economic and Social Studies at the Plovdiv University "Paisii Hilendarski. At the first stage, potential interests and needs of partners will be identified, joint activities will be discussed, and as a result of negotiations an Agreement for Joint Activities will be signed.

3.4 Croatia[11]

3.4.1 Introduction

In this document, we present a development plan for establishing a national data archive and services for the social sciences in Croatia. The plan describes larger strategic considerations in conceiving and establishing a national data service as a first step in the process of setting up the service. In the first two sections, we develop a "concept" for a future national data service, that is, the model and key features that are to be put into place. This includes defining: the overall mission; the nature of the organisation; the scope of the collection of data; the offered services and activities; the beneficiaries; and the governance structure. In the third section, the previously developed concept is evaluated in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time. This includes subsections on identifying the host institution for the data service, defining the human resources required (number and types of staff, internal structure), and identifying potential partners among the existing network of relevant national and international organisations.

The goals of this document are:
- to promote the development of research data infrastructure and services for the social sciences as one of the buildings blocks of Croatian scientific information system;
- to place the data services in the context of pan-European research infrastructures; and
- to prepare Croatia for CESSDA-ERIC membership.

The importance of investing in research infrastructures is already recognised in all relevant Croatian strategic documents (Strategy for Education, Science and Technology, Smart Specialisation Strategy) and plans (Croatian Research and Innovation Infrastructure Roadmap). The development of data archive services has to be put in that context and also in a broader European context which is strongly supported by the strategic documents. By investing in the development of data archive services for the social sciences, Croatia can make the first steps towards satisfying conditions for membership in CESSDA-ERIC[12], recognised as a ESFRI Landmark project in the ESFRI Roadmap 2016. One of the intentions of this document is to demonstrate that Croatia is participating in CESSDA as well as in DARIAH, C-ERIC, CLARIN-ERIC, SHARE, and ESS, which are currently specified in the Croatian Roadmap, and that CESSDA-ERIC should be considered for future versions of the Roadmap.

This plan was created within the project CESSDA Strengthening and Widening[13] by the Croatian team members, based on experiences and knowledge gained while working on the past and current projects aimed to establish a data service for social sciences in Croatia. The plan was created following the *Guide for the elaboration of national data service development plans*, produced for the CESSDA SaW project by FORS - Swiss Centre of Expertise in the Social Sciences[14]. This plan can be further developed by any agency or a group of relevant stakeholders, organizations and/or individuals who are interested in establishing data services for the social sciences on a national level. This plan, together with the Guide, can also be used as a template for developing similar national level infrastructures for other areas of science. Involvement of policy-making and funding institutions, primarily the Croatian Ministry of Science and Education, is crucial in developing this plan further in the future and to put it into action.

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[11] The NDP for Croatia has been drawn up by Marijana Glavica from FFZG, mglavica@ffzg.hr.

[12] CESSDA, Consortium of European Social Science Data Archives, became CESSDA ERIC in June 2017, after the ESFRI Roadmap was published.

[13] CESSDA Strengthening and Widening project (http://cessdasaw.eu) is financed from Horizon 2020 programme and coordinated by CESSDA.

[14] Some parts of this text were taken directly from the Guide.

The benefits of establishing a national data service

Empirical research in the social sciences often involves extremely extensive and financially demanding endeavours, especially if they aim for analysis of complex phenomena on a representative sample. During such research, large amounts of data are collected, which cannot be reproduced because phenomena that are studied by social sciences are changing over time.

Because data are often not appropriately preserved by researchers, they may be lost or become unusable over time. This represents a loss of potential knowledge and cultural heritage. The data service, through appropriate procedures, policies, tools and infrastructures, ensures long-term preservation of data.

From a research policy perspective, there are benefits of national data services to scientific communities that justify the needed investments. First, through their core activities - data preservation and dissemination - data services make possible long-term access to and wider and more effective use of existing data. This means that publicly-funded data are used more fully beyond their original purposes, and that research funders can concentrate on financing fewer new data collections. Indeed, data gathered for original research can be further exploited by "secondary" users for new insights and scientific contributions. Recent work by Beagrie et al.[15] demonstrates the economic benefits of national data services.

Second, data services strengthen research practice and quality by rendering research more transparent and open for replicability. By making data and related documentation available for scrutiny, original research can be tested and evaluated, a key pillar of the scientific method. Also, knowing in advance that the data could be used by others in the future is a way to ensure better quality in methods.

Third, more and more funders and journals are requiring that data be deposited at and available to researchers for secondary use and replication - having archives and repositories as places to store and disseminate data makes possible these requirements.

Finally, the easy availability of secondary data brings value to university teachers and students, who benefit from having data to train and illustrate methods and concepts in their courses and projects.

3.4.2 Mission

The mission of the **Croatian Data Archive Services for the Social Sciences** is to provide a foundation for social science research. The data archive is committed to providing support to researchers during the entire lifecycle of the project (from hypothesis development and grant preparation to data collection - original or from secondary sources, and data analysis), and in the end it ensures that the data are preserved and reusable for the long-term after the project ends. The data archive promotes data sharing and secondary analysis to achieve wider and more effective use of existing data in research and education.

The mission is realised by acquiring and managing digital objects and by ensuring that the data are seamlessly accessible in open formats and well documented for efficient re-use. In its work, the data archive follows international professional standards and procedures, and it cooperates with similar institutions around Europe and the rest of the world.

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[15] Beagrie Neil, John Houghton, Anna Palaiologk, and Peter Williams. (2012). *Economic Impact Evaluation of the Economic and Social Data Service.* Available http://www.esrc.ac.uk/files/research/research-and-impact-evaluation/economic-impact-evaluation-of-the-economic-and-social-data-service/

3.4.3 General features of the data service

In this section, we outline the general **desired features** of the data service by describing the main objectives and structure of the data services. The resulting concept will define the foundation and help to plan further and more concretely (in section 2).

3.4.3.1 Definition of organisation

The **Croatian Data Archive Services for the Social Sciences** is the national infrastructure public service whose role is to ensure long-term preservation and dissemination of social science research data. It is an expert centre in data curation. The data archive should be established as a unit within a larger existing organisation, but the data services should be available to the whole community, national and international. The purpose of the data archive services is to provide a vital research data resource for researchers, teachers, students, and all other interested users.

3.4.3.2 Scope of collection

The data service will curate social science research data produced by researchers and research organisations during their research projects. The primary focus is on quantitative data in the disciplines of sociology, psychology, education science, information science, political science, and economics. Other disciplines can be included as well, as far as they produce data by using methodologies of the social sciences and cover issues on society and economy. The data service will also collect qualitative data, but with a more careful selection and with consideration of available resources (e.g., it will not deal with time-consuming qualitative data management if there are quantitative data still waiting for processing). Both contemporary and historical data will be acquired but with higher priorities for data management for contemporary data. Considering the size of data, mainly traditional-scale data will be processed for now, and not large-scale or "big-data". Curating data from administrative registers can be considered in the future in cooperation with other projects and initiatives, and with sufficient resources.

3.4.3.3 Services and activities

The core services of the data archive are:
- Solicitation and acquisition of data from data producers;
- Curation and long-term preservation of data;
- Maintaining a catalogue of the archived data;
- Enabling access to data and access rights administration;
- Support, assistance, and advice for data depositors during the entire lifecycle of the project;
- Support for data users;
- Promoting a data sharing culture and secondary analysis.

All services can be scaled and/or developed progressively, but these core services must be implemented first. Some additional services could also be offered, such as:
- Promotional events and outreach to users;
- Promotion of Open Access to research data;
- Creation of materials and training for data depositors and for data users;
- Implementation of tools for data discovery and other tools to improve the spreading of information about available data.

Some optional services can also be offered in the future, e.g.:
- Providing online tools for data analysis and variable exploration - creating tables, graphs and other analytical results;
- Enabling secure access to sensitive data (safe room).

Moreover, the data archive should establish and coordinate a local network of data service users (data depositors, data users, and librarians), and it should also be extensively included in regional and international collaboration projects.

3.4.3.4 Beneficiaries

The data archive offers services for researchers who want to deposit their data and for others who need to use existing data in new research projects or for education. The primary recipients of the data archive services are university researchers and teachers, university students (doctoral, master, and/or bachelor) and researchers from other public research institutions (e.g., scientific institutes, government organisations). Another category of users could be policy makers and funding bodies who can develop data management requirements and criteria for evaluation of research once they have proper infrastructure for such requirements to be put in force. The service can also be used by researchers from NGOs and private research companies, secondary school teachers and students, journalists, businesses, professional organizations, etc. The services are free for all users from the public sector for non-profit use, but fees may be applied for commercial use.

3.4.3.5 Governance structure

The archive will be led by the Head of the data archive, who reports to the hosting institution and to the funding institution.

An Oversight Board will have the responsibility of reviewing the work of the data archive. The Board will review annual plans and annual reports and will ensure that the work of the data archive is in line with goals and strategies of scientific and other institutions to which they belong. It will consist of representatives of major stakeholders: Ministry of Science and Education, Croatian Science Foundation, the data service host institution, major research and education institutions (universities and institutes), representatives of the Croatian Bureau of Statistics and other government organisations that are potential major data depositors and/or data users.

A Scientific and Expert Board has an advisory role on issues related to social science methodology and data archiving procedures. It includes researchers from various fields, data experts/archivists, data librarians, IT experts, and a representative of a CESSDA service provider. Their purpose is to ensure that the needs of the scientific community and other interested communities are adequately addressed.

3.4.3.6 Financing schemes

The formation phase of the data archive can be divided into two different stages: the start-up phase and the operational phase in which the cost profiles will change over a period of months or years. The start-up phase reflects the run up of activities such as the recruitment of staff and specific start-up activities such as training and further development of policies and procedures for the archive. The costs in terms of staff time in the start-up phase can be quite substantial, whereas the operational phase will reflect increasing efficiency as procedures become increasingly established and normalized. The outline of the financial requirements can be based on the KRDS Activity Model put forward by Beagrie et al[16]. It describes the full range of activities required to support long-term preservation of research data, and supports the allocation of costs across these activities. Final calculations for costs will depend on the following key variables: Staffing (based on roles and responsibilities framework of the charter document of the data centre); Software, hardware, servers and other equipment; Economic adjustment such as rates of inflation.

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[16] Beagrie, Ch. et al. (2011). *User Guide for Keeping Research Data Safe*. Available at : http://www.beagrie.com/static/resource/KeepingResearchDataSafe_UserGuide_v2.pdf. An extensive list about digital preservation and data curation costing and cost modelling of which the report by Beagrie is part of can be accessed under the following link: http://wiki.opf-labs.org/display/CDP/Home.

Ideally, the data service will be financed from the state budget as a regular activity (permanent employment status and yearly budget). Alternatively, development and functioning of the data service could be financed through 2-5 year projects, through national calls which follow national strategies for science, research and education and which are related to implementation and development of research infrastructures. In any case (and in the meantime), the data service should participate in international and regional projects (EC calls and others) to support further development, education and cooperation with relevant communities. The host institution contribution consists of the provision of administrative resources and workspace facilities.

3.4.4 Resources and challenges

In this section, we consider how the concepts and general features of the data service outlined in section one can be implemented in practice, taking into consideration real local and institutional resource conditions.

3.4.4.1 Host institution of the future data service

The Faculty of Humanities and Social Sciences, University of Zagreb (FFZG) has been recognised as an appropriate hosting institution for the new data service since 2006 when a group of scientists and information experts from various disciplines and institutions gathered in the Initiative for Social Science Data Archive. The Initiative participated as a project associate in the CESSDA Preparatory Phase Project (2008)[17]. Further efforts directed to the establishment of the data archive in Croatia started through the FP7 project *SERSCIDA - Support for Establishment of National/Regional Data Archives*[18] (2012-2014). Efforts continued in 2015 when FFZG became the partner in two new international projects: *SEEDS - South-Eastern European Data Services*[19] funded through the SCOPES programme by the Swiss National Science Foundation and the Swiss Agency for Cooperation and Development; and *CESSDA SaW - Strengthening and Widening* financed through the Horizon 2020 programme.

The FFZG, as the largest research and education institution in Croatia in the area of social sciences and humanities (HSS) offers more than 100 BA and MA programs as well as 19 PhD programs, and has more than 500 academic staff and around 7,000 students. The FFZG is well integrated into the national research network and it has the biggest academic library in Croatia for the areas of HSS, which offers public services to all users interested in its collections.

The prototype data archive - repository and website were developed at the Library during the SERSCIDA project and then improved during the SEEDS project[20]. The newest prototype is built on the Dataverse platform and is completely ready to become a production system with a persistent identifier (DOI) assigned to each dataset. Also, data archive policies and procedures were developed during the work on both projects.

The FFZG has reliable existing technical infrastructure - proper servers and hardware, software, network and telecommunications. This infrastructure is currently used for FFZG Library operations and for providing digital services to users, and could support some of the needs of a data archive and its services.

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[17] *"In 2006 CESSDA was identified as a social science research infrastructures (RIs) of excellence by the European Strategy Forum on Research Infrastructures (ESFRI). Consequently, CESSDA was awarded FP7 funding to undertake a Preparatory Phase Project (PPP) lasting two years. The PPP will facilitate CESSDA's transition to a fully integrated and formally constituted European Research Infrastructure (ERI)."* https://ppp.cessda.net/doc/CESSDA_PPP_ECRI2008.pdf

[18] SERSCIDA - Support for establishment of National/Regional Social Science Data Archives, http://www.serscida.eu/

[19] SEEDS - South-Eastern European Data Services, http://seedsproject.ch/

[20] Prototype data archive website: https://hr.seedsproject.ffzg.hr/?lang=hr; Prototype data repository: https://dataverse.ffzg.unizg.hr/ .

But more sustainable measures have to be implemented to ensure a long-term preservation of data collections. This can be achieved in cooperation with the University of Zagreb University Computing Centre (Srce). Some preliminary communication and discussion between FFZG staff and Srce management have already been established in that direction. Also, formal cooperation between these two institutions has been established around the Dabar[21] infrastructure, which is perceived as an important component of the future data service.

3.4.4.2 Human resources and internal structure

There is a minimum of four dedicated staff roles needed for a data service. One should be the role of the Head of the data service - a person responsible for financial and executive management, communication with stakeholders and regional and international partners. The Head of the data archive must be a person with a full understanding of the research data management workflow, as well as of issues and challenges associated with these processes, and should also be familiar with technical aspects of research data management. He or she has to have good management skills and a strong national and international network of stakeholders. At least an MA degree in a field of the social sciences is needed, while a PhD would be an advantage.

There should be two data specialists. Data specialist roles can be divided into junior and senior positions, based on previous work experience. A senior data specialist should have demonstrated knowledge in social science methodology, statistical data processing, and data management. An MA in a field of the social sciences and an additional degree in information science are desirable. A junior-level data specialist should hold at least a BA in a social science field. This does not require previous extensive experience in research data management, but sufficient knowledge of statistical operations and data processing is needed for that position.

A fourth role should be an IT expert. Systems administration, software programming and database management skills are necessary for a position of the IT expert in the data archive. The position also requires an overall understanding of data exchange protocols in a networked environment and security issues associated with it. He or she has to have experience in software applications architecture, development, and maintenance. A BA in the field of informatics and computer science or equivalent experience is required, and previous experience with research data management and processing is desirable.

For the normal operation of the service, administrative support from the hosting institution is necessary. The following services are crucial: financial administration, accounting services, HR department services, legal department services, and IT department services, together with all other workspace maintenance services.

At the beginning, the bare minimum number of dedicated people to establish the Croatian Data Archive Services for the Social Sciences is two. Both persons should be data experts and should be able to undertake several roles. At least one of them should also have a good understanding of the data service IT needs to be able to implement new technical solutions in cooperation with other partners. One of them should take on the role of the Head of the data service.

For the last 5 years, existing FFZG staff, together with external collaborators from other institutions (prominently Centre for Scientific Information, Ruder Bošković Institute and University of Zagreb University Computing Centre - Srce), have come through various training activities related to establishment and day-to-day operation of a data archive and services for the social sciences. This experience has to be utilised in the process of establishment of the national data services. There are

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[21] *"Dabar provides technological solutions that facilitate maintenance of higher education and science institutions' digital assets, i.e., various digital objects produced by the institutions and their employees."* https://dabar.srce.hr/en/dabar

currently no fully dedicated staff to support the full establishment and operations of the data service, and so during the establishment phase new staff has to be employed to take on the activities.

3.4.4.3 Partner support and cooperation

On the national level, it is very important for the data archive to be recognised as a valuable national service by all relevant institutions in the area of research and education. Stakeholders and partner institutions should include:

- The *Ministry of Science and* Education (MSE) as the main science policy institution. The data archive services and activities have to be recognised in national strategies related to science and education and supported in action plans. Establishing and sustaining a national service is not possible without the strong commitment of the Ministry. Membership in Pan-European research infrastructure CESSDA-ERIC is only possible through the Ministry and one of the conditions for membership is to have an operational service provider who is able to meet all professional requirements.

- The *Croatian Science Foundation* (CSF) as the main funding body for competitive research projects. The Foundation can develop criteria for project calls and evaluation which include data management plans, data archiving issues, and open access to data. The Foundation is a possible funding source for some of the activities of the data service. Also, it can finance data management activities in research projects and in that way promote the importance of good data practices in research.

- The *University of Zagreb* University *Computing Centre* (Srce) as the provider of crucial technical infrastructure for long-time preservation of the digital assets collected and managed in the data archive. Staff employed at Srce was involved in project activities about establishing a data archive and services for the social sciences. Srce implements and maintains technical aspects of the Dabar infrastructure, which is important in the context of data archiving. The Dabar is developing in cooperation with several other research and education institutions.

- The *Centre for Scientific Information, Rudjer Boskovic Institute* as the institution with experience in building and maintaining information systems for researchers. Staff employed at Srce was involved in project activities about establishing a data archive and services for the social sciences. The Centre is also involved in development and implementation of the Dabar infrastructure.

- All *research and education institutions* in Croatia in the area of social sciences, including faculties (constituents of universities) and public research institutes, should be in close cooperation with the data services. Researchers employed at these institutions are the main provider of data for the data archive, and also the primary users. These institutions can have their own policies about data management and data sharing. Also, they usually have their local information specialists/librarians who can promote and facilitate data sharing and data reuse practices.

- The *Croatian Bureau of Statistics* (CBS), which produces national statistics, and other valuable data heavily used by social science researchers. A formal cooperation with the CBS could be established in the future in the area of managing, documenting and promoting the use of microdata produced by CBS which are of the most interest to researchers.

- *Government bodies,* which produce data and statistics of value for some researchers. These institutions can also benefit from having a secure and reliable place to store and document the data they produce. Discussion about possibilities for data linking should be started.

- The *National Archive*, which can play a role in the long-term preservation of some kinds of data (e.g., publicly available research data as a national heritage).

- The *National and University Library* (NUL) and all other *university and academic libraries* in Croatia as the main partner in the dissemination of data and other information managed by the data archive. Data archive operations are in large part very similar to library operations so that the same operational models can be applied to both institutions. Thus, the close cooperation of the data archive and libraries is necessary.

Cooperation with other research infrastructure projects, especially the ones in the area of social sciences which are recognised by ESFRI Roadmap and which are active or were active in Croatia - namely DARIAH-HR, SHARE, and ESS, is important because there are some similarities between these infrastructures which could be synergised.

Regional and international cooperation is also necessary for the service to improve its relevance and competence. Participation in regional projects and continuing cooperation in the region is interesting because of linguistic and cultural similarities, as well as common history. International cooperation is achieved through membership in CESSDA-ERIC, which represents a comprehensive integrated social science research infrastructure.

During the last five years, while working on projects related to the establishment of data services (SERSCIDA, SEEDS and CESSDA-SAW), most of the listed stakeholders were contacted and the importance of data services for the social sciences was explained to them. Representatives from various institutions were included in project activities - conferences, training and visits to European data archives.

3.4.4.4 Local challenges

The need for national data archive services for the social sciences has yet to be clearly recognised in relevant strategic documents and in supporting action plans in Croatia. The most important documents for the development of research infrastructures in Croatia are the Strategy of Smart Specialisation and Croatian Research and Innovation Infrastructures Roadmap, as they are the foundation for future investment in national and international infrastructure projects. The current version of the Croatian Roadmap (June 2016) does mention the importance of large repositories of data for the social and life sciences, and the need to include Croatia in Pan-European research infrastructures is expressed in the document as well as support for ERIC memberships, but CESSDA-ERIC specifically is not yet listed as a research infrastructure project that could be financed from European structural funds[22]. The reason might be that in the time when the Roadmap was developed CESSDA still did not have ERIC status.

The strong challenge for the last few years was how to communicate with the Ministry of Science and Education and other relevant policy makers and financing bodies the need and importance of establishing the data archive service for the social sciences. The government was not stable and it was not clear in which direction the implementation of the relevant strategies would go, so no one at the Ministry was able to make any promises or commitments. It was not clear about the sources of funding from which the establishment process and day-to-day operations of data services could be financed.

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[22] Croatian Research and Innovation Infrastructures Roadmap (June, 2016).
https://mzo.hr/sites/default/files/migrated/plan_razvoja_istrazivacke_infrastrukture_u_rh.pdf (Croatian only)

Older version of the document from April 2014 is available in English at the following URL:
https://mzo.hr/sites/default/files/migrated/croatian_research_and_innovation_infrastructures_roadmap.pdf

3.5 Kosovo

3.5.1 Introduction

First efforts towards establishment of data services in Kosovo started with the international project SEEDS - South Eastern European Data Services[23] whose goal was to develop knowledge and tools related to data service infrastructures. The plan is based on SEEDS project results and was created in cooperation with Dr. Arben Hajrullahu (arben.hajrullahu@yahoo.com), Nitë Bylykbashi-Deliu (nita.bylykbashi@hotmail.com), and Lirije Palushi (lirije.palushi@gmail.com) from the Centre for Political Courage, Pristina, who authored the SEEDS project reports. As partners in the SEEDS project, they gained experience in data curation and got familiar with policies, procedures and resources that need to be put in place in order to establish data services for the social sciences. The plan was created following the Guide for the elaboration of national data service development plans, produced for the CESSDA SaW project, and some parts of the text are taken directly from the Guide.

The goal of this document is to promote the development of data services for the social sciences in Kosovo, to give an overview of larger strategic considerations in conceiving and establishing a national data service, and to bring the attention of relevant stakeholders to key issues in development planning.

The benefits of establishing a national data service

Empirical research the in social sciences is often extremely extensive and financially demanding, especially if it aims for analysis of complex phenomena on a representative sample. During such research, large amounts of data are collected, which cannot be reproduced because phenomena that are studied change over time.

Because data are often not appropriately preserved by researchers, they may be lost or become unusable over time. This represents a loss of potential knowledge and cultural heritage. The data service, through appropriate procedures, policies, tools and infrastructures, ensures long-term preservation of data.

From a research policy perspective, there are benefits of national data services to scientific communities that justify the needed investments. First, through their core activities - data preservation and dissemination - data services make possible long-term access to and wider and more effective use of existing data. This means that publicly-funded data are used more fully beyond their original purposes, and that research funders can concentrate on financing fewer new data collections. Indeed, data gathered for original research can be further exploited by "secondary" users for new insights and scientific contributions. Recent work by Beagrie et al.[24] demonstrates the economic benefits of national data services.

Second, data services strengthen research practice and quality by rendering research more transparent and open for replicability. By making data and related documentation available for scrutiny, original research can be tested and evaluated, a key pillar of the scientific method. Also, knowing in advance that the data could be used by others in the future is a way to ensure better quality in methods.

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[23] South Eastern European Data Services (SEEDS) project (2015-2017). http://seedsproject.ch/

[24] Beagrie Neil, John Houghton, Anna Palaiologk, and Peter Williams. (2012). Economic Impact Evaluation of the Economic and Social Data Service. Available http://www.esrc.ac.uk/files/research/research-and-impact-evaluation/economic-impact-evaluation-of-the-economic-and-social-data-service/

Third, more and more funders and journals are requiring that data be deposited at and available to researchers for secondary use and replication - having archives and repositories as places to store and disseminate data makes possible these requirements. Finally, the easy availability of secondary data brings value to university teachers and students, who benefit from having data to train and illustrate methods and concepts in their courses and projects.

How to use this document

The document is divided into two main sections. In the first section, a "concept" for a future national data service has been developed, that is, the model and key features that are to be put into place. This includes defining: the nature of the organisation; the overall mission; the scope of the collection of data; the offered services and activities; the beneficiaries; and the governance structure.

In the second section, the previously developed concept is evaluated in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time. This includes subsections on identifying the host institution for the data service, defining the human resources required (number and types of staff, internal structure), and identifying potential partners among the existing network of relevant national and international organisations.

3.5.2 Mission

The mission of the **Kosovo Social Sciences Data Centre (KSSDC)** is to offer a secure environment for enabling researchers in Kosovo to store, access, and reuse national and regional data from the social sciences. The data centre is open and dedicated to the broad research community including researchers, teachers, and students, as well as other stakeholders involved in scientific research in Kosovo and abroad.

3.5.3 General features of the data service

In this section, the general **desired features** of the data service are outlined. The main objectives and structure of the data services are described. The resulting concept will define the foundation and help to plan further and more concretely (in sections 2 and 3).

3.5.3.1 Definition of organisation

The **Kosovo Social Sciences Data Centre (KSSDC)** will be a national infrastructure for social sciences and humanities providing long-term preservation and distribution of research data. The data centre should be housed within a larger existing organisation but its services will be available to the whole community, national and international. The main purpose of the KSSDC will be to provide curation of research data produced by the research community in the country and access to these data for researchers and the broader public.

3.5.3.2 Scope of collection

Holdings of the KSSDC will include social science data in a broader sense. The primary focus, however, will be on quantitative data in sociology, psychology, education science, political science, and economics. These include microdata (coded numerical responses to surveys with a separate record for each individual respondent) and macro data (aggregate figures, e.g. country level economic indicators). KSSDC will also collect and curate qualitative data, but with more careful selection and with consideration of available resources. Qualitative data include in-depth interviews, diaries, anthropological field notes and the complete answers to survey questions. The third type of data may include digitised paper documents, or originally digital files like images, photographs and audio and video clips. The data may come from different sources: international (offices of international organizations in the country), national (central

and local government institutions), universities, individual researchers, NGOs and think tanks, and market research agencies.

3.5.3.3 Services and activities

The key services of the KSSDC will include:
- selecting and acquiring data;
- processing and cataloguing data and documentation;
- data dissemination;
- digital preservation and (technical) systems development and maintenance; and
- education and support for depositors (how to manage data, data management plan) and users (how and why to use data for secondary research).

In addition, the data service will do the following:
- promotion of Open Access to scientific research in Kosovo;
- enabling secure access to sensitive data; and
- permanent monitoring of compliance with the international standards in the field of data management and preservation by collaboration with the wider scientific community.

3.5.3.4 Beneficiaries

The data center will be opened and dedicated to the broad research community, including researchers, teachers, students as well as other stakeholders involved in scientific research in Kosovo and abroad. The beneficiaries encompass a wide range of institutions and individual researchers in Kosovo, such as higher education institutions, both public and private, research institutes and institutions, NGOs, IGOs, public institutions such as the Kosovo Agency of Statistics, and think thanks. A data producer can be anyone who proves the validity of their research data and who is able to share data for secondary use with the broad research community. On the other hand, everyone who has access to the preserved data is considered a user. Users will be registered and include students, teachers, members of public and private institutions, policy makers, and journalists from Kosovo and abroad.

The producers of social science research data in the country are the higher education and research institutions part of the public and private universities, other public and private research institutions, individual researchers, as well as non-governmental organizations and think tanks. The users of data are registered researchers from the country and abroad, and other interested parties such as public institutions, policymakers, journalists, students, and others.

3.5.3.5 Governance structure

An executive board consists of the KSSDC director and the head of the host institution.

A Joint Oversight Board will be composed of representatives from the KSSDC, hosting institution, and representatives of funding institution(s).

A Scientific advisory board will consist of eminent researchers in the social sciences, data archiving experts, information science experts and information technology experts. This board will advise on issues related to social science methodology and data archiving procedures.

3.5.3.6 Financing schemes

Ideally, services will be financed by the government budget, e.g., within the regular budget of the University of Prishtina in order for the national service of data archive to function adequately. Besides

the official financial resources which should secure the sustainability of the data archive continuously, we will seek other financial resources from other relevant national stakeholders as well as international funding from different institutions and agencies, e.g. the European Commission, in order to provide additional promotion and capacity-building activities.

The general costs for the creation and maintenance of the data archive will depend on different conditions such as staffing, equipment, and economic adjustment at the time of creation/maintenance. A more detailed budget will be determined after a deep analysis of the possible costs at the time of creation.

3.5.4 Description of resources and challenges

In this section we consider how the concepts and general features of the data service outlined in section one can be implemented in practice, taking into consideration real local and institutional resource conditions.

3.5.4.1 Host institution of the future data service

The Kosovo Social Sciences Data Centre (KSSDC) could be established by the Centre for Political Courage (CPC) within the Institute for Social Studies and Humanities (ISSH), at the Faculty of Philosophy, University of Prishtina.

CPC was a partner in the international project SEEDS - South-Eastern European Data Services[25] which aimed to support the establishment of new data services for social sciences in countries where no such service exists. Through the SEEDS project CPC staff gained experience and developed skills in data management and in data archiving standards, policies and procedures. A prototype website of the data center was developed as a result of the SEEDS project. CPC was also involved in the RRPP Data Rescue project[26] which aimed to ensure the long-term preservation of the data produced within the framework of the RRPP - Regional Research Promotion Programme Western Balkans and to make these data available for secondary use, to the largest extent possible. The project was a great opportunity for CPC staff to experience the process of data solicitation and to learn about challenges which can stand in the way of data archiving goals and efforts.

3.5.4.2 Human resources and internal structure

The precise number of staff as well as their definite roles and responsibilities will be determined at the time of the establishment of the KSSDC, based on the available resources and expected services. However, for the data service the following dedicated staff is needed:

- Director/Head of the KSSDC (S/he should be responsible for financial and executive management, communication with stakeholders, and with regional and international partners);
- Data Expert with proven knowledge in social science methodology and data management;
- Experienced IT expert in data management, software application, documentation standards, data exchange protocols and programming and database skills;
- Office and Financial Officer to maintain day-to-day office duties and finances.

The KSSDC should be organized as a separate organisational unit at the ISSH at the University of Prishtina. The staff in the aforementioned positions will be chosen through an open call for application and only if they fulfil the expected requirements and are qualified in accordance with the work descriptions.

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[25] SEEDS project was funded by the Swiss National Science Foundation and the Swiss Agency for Development and Cooperation. URL: http://www.seedsproject.ch
[26] RRPP Data Rescue project. http://seedsproject.ch/?page_id=618

Once staff size and positions have been determined, the search for suitable candidates should begin. The search will require detailed job descriptions that are appropriately publicized. If the positions are taken over by existing staff, it should be clarified which of their responsibilities are to be transferred and which are to be maintained.

Some training activities for possible future staff members have already begun as part of the SEEDS project. Staff hired for the data service before day one should begin training with respect to their future roles and responsibilities, either within the context of SEEDS or through other training mechanisms.

Staff will be subject to the rules and regulations of the contracting institution.

3.5.4.3 Partner support and cooperation

Since Kosovo has not yet established its National Data Archive, one of the crucial parts for the future operation of this data service will be the cooperation with relevant national and international stakeholders. On a national level, it is very important that the data archive will be recognized as a valuable national service by all relevant science and research institutions, which are part of the science community and higher education system in Kosovo.

Stakeholders and partner institutions will, inter alia, include:

- the Ministry of Education, Science and Technology (MEST) as the main science policy institution, which also provides multi-annual institutional financing of research activities (distributed to universities and public institutes);

- all relevant public and private scientific institutions and domestic and international agencies operating in Kosovo that deal directly or indirectly with social science data. This includes faculties (constituents of universities); it also includes public institutes that have their own policies about data archiving and may also have their local information specialists/librarians who can promote and facilitate data depositing and data use;

- the Kosovo Agency of Statistics, which produces national statistics, valuable and very heavily used data in social science disciplines;

- the National Archive, which can play a role in the long-term preservation of some kinds of data (e.g., publicly available data as national heritage);

- the Agency of Information Society (AIS) / Ministry of Public Administration, which is the main institution responsible for developing, maintaining and preserving the IT infrastructure and administrative data of public institutions;

- the National Library;

- the University Library; and

- think tanks and NGOs, which are engaged in social science research activity, and which promote the concept of open data. This should also include a study of the legal questions concerning formal relationships with stakeholders.

3.6 Macedonia[27]

3.6.1 Introduction

This first plan for establishing a national data service for the social sciences in Macedonia has been developed by staff from the Institute for Sociological, Political and Juridical Research (ISPJR) at Ss. Cyril and Methodius University in Skopje, who took part in the South East European Data Services (SEEDS) project, funded by the Swiss National Science Foundation. The plan should be further developed by all the relevant stakeholders, organizations and individuals whose jobs and interests are related to developing research infrastructures in Macedonia, primarily policy-making and funding institutions.

The plan was created according to the *Guide for the elaboration of national data service development plans*, produced for the CESSDA SaW project, and some parts of the text are taken directly from the Guide. The plan is divided into three main sections, which address larger strategic considerations in conceiving and establishing a national data service. In the first two sections we develop a "concept" for a future national data service, that is, the model and key features that are to be put into place. In the third section, the previously developed concept is evaluated in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time.

The benefits of establishing a national data service

Empirical research in the social sciences is often extremely extensive and financially demanding, especially if it aims for analysis of complex phenomena on a representative sample. During such research, large amounts of data are collected that cannot be reproduced because phenomena that are studied by the social sciences are changing over time. Because data are often not appropriately preserved by researchers, they are lost or become unusable over time. This represents a loss of potential knowledge and cultural heritage. The data service, through appropriate procedures, policies, tools and infrastructures, ensures long-term preservation of data and their dissemination.

From a research policy perspective there are benefits of national data services to scientific communities that justify the needed investments. First, through their core activities - data preservation and dissemination - data services make possible long-term access to and wider and more effective use of existing data. This means that publicly-funded data are used more fully beyond their original purposes, and that research funders can concentrate on financing fewer new data collections. Indeed, data gathered for original research can be further exploited by "secondary" users for new insights and scientific contributions. Recent work by Beagrie et al.[28] demonstrates the economic benefits of national data services.

Second, data services strengthen research practice and quality by rendering research more transparent and open for replicability. By making data and related documentation available for scrutiny, original research can be tested and evaluated, a key pillar of the scientific method. Also, knowing in advance that the data could be used by others in the future is a way to ensure better quality in methods.

Third, more and more funders and journals are requiring that data be deposited and available to researchers for secondary use and replication - having archives and repositories as places to store and disseminate data makes possible these requirements.

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[27] The NDP for Macedonia has been drawn up by Klime Babunski (klimeb@isppi.ukim.edu.mk), Vesna Catleska (vesna.catleska@isppi.ukim.edu.mk) and Aneta Cekik (anetac@isppi.ukim.edu.mk) from the Institute for Sociological, Political and Juridical Research (ISPJR) at Ss. Cyril and Methodius University in Skopje.

[28] Beagrie Neil, John Houghton, Anna Palaiologk, and Peter Williams. (2012). *Economic Impact Evaluation of the Economic and Social Data Service.* Available at : http://www.esrc.ac.uk/files/research/research-and-impact-evaluation/economic-impact-evaluation-of-the-economic-and-social-data-service/

Finally, the easy availability of secondary data brings value to university teachers and students, who benefit from having data to train and illustrate methods and concepts in their courses and projects.

The aims of this plan

This plan aims to lay down the larger strategic considerations in conceiving and establishing a national social science data archive. This document will help ISPJR's efforts for this idea to be taken more seriously by the Ministry of Education and Science of the R. Macedonia, which is the main funding body in the country, and to check with the potential hosting institution (ISPJR and Ss. Cyril and Methodius University) what is already possible and what should be further developed. This plan will also help to map the basic resources needed and types of activities that should be financed by the funding body.

The plan builds up on the previous activities undertaken only recently in this area in Macedonia. This includes participation in two international projects – the SEEDS project (2015-2017, funded by the Swiss National Science Foundation and coordinated by FORS, http://seedsproject.ch/) and the RRPP data rescue project (funded by the Regional Research Promotion Programme for the Western Balkans of the Swiss government, also coordinated by FORS) – in which ISPJR was the Macedonian partner. Within the SEEDS project the participating institutions from the Western Balkans region gained extensive training in the principles and practices of data archiving provided by the long-established Swiss and Slovenian national data services (respectively FORS and ADP). In the framework of the RRPP data rescue project the participating institutions worked with real data collected through projects financed by the RRPP programme. As a result of this project, 72 national and multinational projects are now documented and archived in SEEDS base (https://seedsdata.unil.ch/), an online database created and maintained by FORS specifically for this purpose.

3.6.2 Mission

The Macedonian Social Science Data Archive (MK DASS), hosted by the Institute for Sociological, Political and Juridical Research at Ss. Cyril and Methodius University in Skopje, will be a national infrastructure and public service that provides long-term preservation and distribution of research data in the social sciences. The data service will serve the research community, including researchers, teachers and students, as well as the broader public interested in social science outputs.

MK DASS's mission will be to:
- acquire, properly document, preserve and disseminate research data in the social sciences produced by researchers in Macedonia;
- advance social science research by making the collected data available for secondary analysis; and
- bring social science outputs to the targeted audiences by providing searchable inventory of projects, and related publications and datasets.

The key activities of MK DASS will include:
- preservation and dissemination of quantitative and qualitative data;
- provision of access and support for both users and data providers including mediation between the demands of data users and data providers;
- permanent monitoring of compliance with the international standards in the field of data management and preservation;
- collaboration with the wider scientific community in the field of collecting and distributing data; and
- promotion of Open Access initiatives.

Wide and heterogeneous groups will benefit from our work, such as: academic researchers, teachers and students; government institutions and policy makers; and the non-governmental sector, including think tanks, the business community, media and research journalists, and the broadest public. At the same time, it should be stressed that we curate and hold data, but the real owners are universities and research institutions, NGOs and think tanks, and independent researchers.

3.6.3 General features of the data service

3.6.3.1 Definition of organisation

The Macedonian Social Science Data Archive (MK DASS) will be a national research infrastructure and public service providing long-term preservation and distribution of research data in the social sciences in the Republic of Macedonia. MK DASS will serve the research community, including researchers, teachers and students, as well as the broad public interested in social science research outputs. MK DASS's main aim will be to provide curation of research data produced by the research community in the country, and access to these data to the research community and the broader public.

MK DASS will be organized as a separate unit of the Institute for Sociological, Political and Juridical Research (ISPJR) at Ss. Cyril and Methodius University in Skopje, one of the oldest public university research institutions in the social sciences in the Republic of Macedonia. The main activities of the Institute are conducting research projects and organization of master and doctoral studies.

Since MK DASS will be a unit of ISPJR, the Archive's legal status and legal responsibilities are subject to the internal legal acts of ISPJR and Ss. Cyril and Methodius University, which in turn comply with the 2008 Law on Higher Education, the 2008 Law on Scientific and Research Activities, and various bylaws.

3.6.3.2 Scope of collection

Our collection scope aims to encompass quantitative and qualitative research data in various disciplines including anthropology, sociology, political science, communication science, psychology, law, education science, economics, business and management, demography, and related social science disciplines.

Specificities on data acquisition

Regardless of the discipline, in order to be accepted the research has to provide:
- greater evidence and understanding of contemporary society, especially the Macedonian society or parts of it;
- comparative or continuous research data (e.g. panel data, longitudinal surveys, and time series that allow examination of trends) as well as cross-sectional data and other datasets;
- good or excellent methodological quality; and
- general interest for social science research (quality and exemplary studies with analytic potential).

In parallel, there are three additional reasons why certain data can be accepted:
- because they possess potential value for secondary use and analysis for research;
- because they may serve teaching and learning purposes; or
- for validation reasons - to make possible the replication of research for important studies.

MK DASS reserves the right to refuse data under the following conditions:
- Data do not match the criteria of the collection development policy and would be better dealt with at another institution (also legal conditions);
- Insufficient or poor quality of the documentation;
- The depositor and MK DASS do not agree on access and dissemination conditions;
- The nature or volume of the data make it difficult or impossible to process given the resources, staff, facilities, or capacities of MK DASS.

3.6.3.3 Services and activities

The key activities of MK DASS will include:
- preservation and dissemination of quantitative and qualitative research data;
- provision of access and support for both data users and data providers including mediation between the demands of data users and data providers;
- permanent monitoring of compliance with international standards in the field of data management and preservation; and
- collaboration with the wider scientific community in the field of collecting and distributing data.

Our additional services and activities include:
- training in data management and methodology of scientific research for researchers;
- open access promotion; and
- international cooperation through participation in joint projects in the field of data archiving.

3.6.3.4 Beneficiaries

MK DASS' designated community consists of on the one hand producers and depositors of research data in social sciences in Macedonia, and data users on the other.

Eligible depositors at MK DASS are researchers, members of research institutions, think-tanks, NGOs, government departments, the State statistical office, and public and commercial sector sources (e.g., marketing research firms). Depositors may only deposit their own work and will be expected to sign a data deposit agreement.

More specifically the data producers consist of:

- the higher education and research institutions of public and private universities;
- other public and private research institutions;
- individual researchers;
- public institutions such as the State statistical office; and
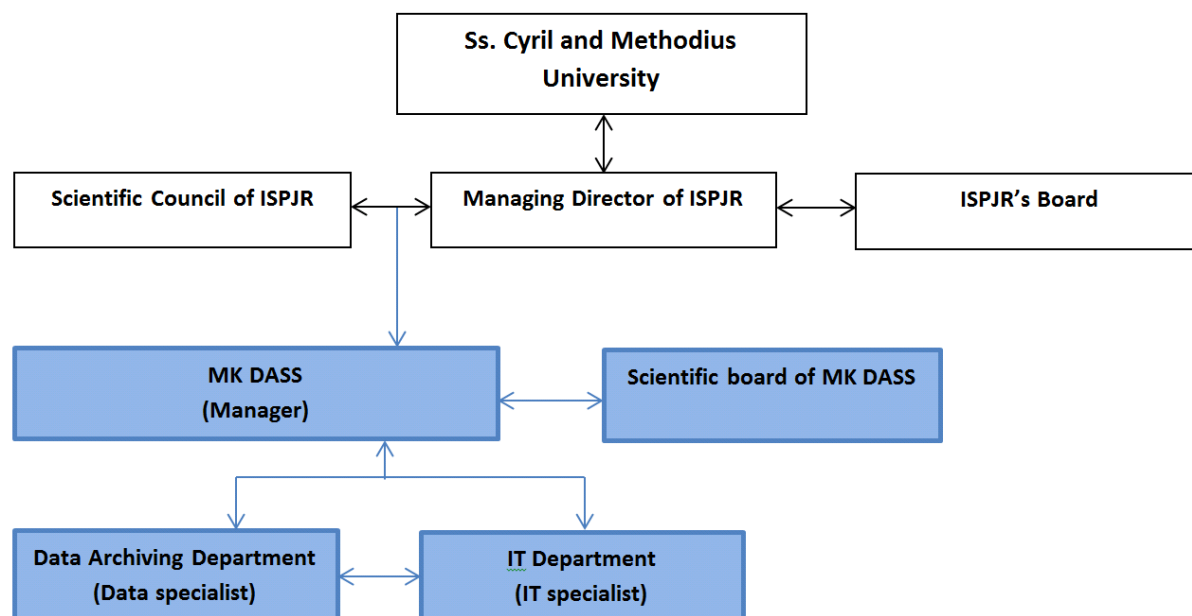- private institutions such as non-governmental organizations and think tanks.

The data users are registered researchers, teachers and students from the country and abroad, and other interested parties, such as public institutions, policy makers or journalists for which the data service may reserve the right to decide on a case-by-case basis. They will sign a user contract in order to access and use the data.

3.6.3.5 Governance structure

Similar to other units of ISPJR, the establishment and the activities performed by MK DASS will be subject to decisions and monitoring of the Scientific council of ISPJR. As is the case with all the other units of Ss. Cyril and Methodius University in Skopje, the Scientific council of ISPJR is constituted of the staff of ISPJR who possess a scientific degree. It decides about the strategic, developmental, financial and operational aspects of ISPJR's work. Its decisions are implemented by the executive bodies of the ISPJR, i.e. the Director and the ISPJR's Board.

The Scientific board of MK DASS on the other hand, in addition to members from ISPJR, will be composed of representatives of the other higher education and research institutions in the country, as well as other national stakeholders. Having in mind that MK DASS will perform national level activity, an external body that will monitor its work will be necessary to ensure the quality of the services and compliance of the national data archive with the ethical principles and practices of scientific activity.

Figure 2: MK DASS's governance and internal structure

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                        ┌─────────────────────────┐
                        │  Ss. Cyril and Methodius │
                        │        University        │
                        └─────────────────────────┘
                                    ↕
┌──────────────────────┐   ┌──────────────────────────┐   ┌─────────────────────┐
│Scientific Council of │←→ │ Managing Director of ISPJR│←→ │   ISPJR's Board     │
│        ISPJR         │   │                          │   │                     │
└──────────────────────┘   └──────────────────────────┘   └─────────────────────┘
                                    ↓
        ┌──────────────────────┐        ┌──────────────────────────┐
        │      MK DASS         │←──────→│ Scientific board of MK DASS│
        │     (Manager)        │        │                          │
        └──────────────────────┘        └──────────────────────────┘
              ↑
        ┌─────┴─────────┐
┌──────────────────────┐   ┌──────────────────────┐
│Data Archiving Dept.  │←→ │   IT Department       │
│  (Data specialist)   │   │   (IT specialist)     │
└──────────────────────┘   └──────────────────────┘
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3.6.3.6 Financing schemes

In order for this type of national service to function properly, the funding is usually secured through the relevant Ministry, or existing funding bodies in the scientific sector of a given country. In the case of Macedonia, the relevant funding agency is the Ministry of Education and Science of the Republic of Macedonia, because currently *other types of national funding bodies do not exist*. The start of the work of the archive will be conditioned by the decision of the Ministry to invest in this kind of infrastructure in Macedonia. In this sense, this plan will help to map the needed basic resources and types of activities that should be financed by the funding body.

The hosting institution (ISPJR) will provide premises and basic office facilities but will have to seek additional funding for hardware and software equipment and also for remuneration for the work done for archiving research data in MK DASS.

As the number of domestic donor organisations is extremely small, one possible solution will be project applications to international donors present in the country (foreign embassies, USAID, EU-IPA2 funds), but also abroad. In addition to this we do hope that through collaboration with members of the Consortium of European Social Science Data Archives (CESSDA) in the implementation of specific projects, we could secure some additional funding, especially when it comes to continuous training of our staff in the various aspects of data archiving.

3.6.4 Resources and challenges

3.6.4.1 Host institution of the future data service

ISPJR is one of the oldest public university research institutions in the social sciences in the Republic of Macedonia, founded in 1965. It is part of the oldest and biggest university in the country- Ss. Cyril and Methodius University in Skopje. The main activities of the Institute have been the realization of scientific research projects and organization of postgraduate (master and doctoral) studies. At present, ISPJR consists of the Department of Sociology, the Department of Political Science, and six other centres including a Centre for documentation of scientific research. Currently there are 25 permanent

employees and two additional staff, among them 16 PhD- Research Fellows, two Research Assistants with MA degrees, and nine support staff.

There is no formal decision by the Ministry of Education and Science as to who should take on the role of national data centre in the social sciences in Macedonia. In the framework of the SEEDS project it was concluded that the Institute for Sociological, Political and Juridical Research is very suitable for performing this task, keeping in mind that it is the oldest and most experienced institution specializing in social science research in the country. This view was also supported by the representatives of other higher education and research institutions in the country who participated in the final (local) conference of the SEEDS project in Macedonia, which took place on April 4, 2017.

Having the ISPJR as a hosting institution brings many advantages:
- ISPJR is a public research institution part of the biggest university in the country, which has a tradition of more than 50 years of research work in the social sciences;
- ISPJR has available and trained staff to perform the activities of data manager and data specialist currently and in the future, with more than 15 employed staff engaged in social science (qualitative and quantitative) research;
- As part of a University, MK DASS probably can rely for technical support from the University computer center and support from other units/members of the University;
- ISPJR is well integrated into the national research network, including links to universities, research institutes, the national library, the NGO sector, and researchers in different disciplines. Also, it has a positive relationship with regard to this activity with the national ministry of science;
- ISPJR already showed commitment to the development of a data service through participation in data archiving projects (SEEDS, RRPP Data Rescue);

We also identified some weaknesses of ISPJR as MK DASS hosting institution:
- Limited technical knowledge and skills of ISPJR staff related to hardware and software operations for data archiving, as well as uncertainty about who would take on this role in the future: the University computer center, another unit at the University, or a newly employed person at ISPJR.
- ISPJR current and future internal financial support to MK DASS is limited.

3.6.4.2 Internal structure and human resources

As a department of ISPJR, the MK DASS management structure will be organized as a flat structure, with two units: Data archiving unit and IT unit, and is characterized by an overall broad span of control with one hierarchical level. All units will report directly to the MK DASS manager. Also, employees will adopt a team-based approach and close collaboration with all other units, departments and centres at ISPJR. The organizational chart below shows the division of units, responsibilities, reporting relationships and hierarchy.

At a minimum MK DASS will have two employees: a data archive manager and one data specialist. An IT specialist will also be needed, but this person will either be part of MK DASS or ISPJR. In the initial operation, the Archive will use the services of an IT specialist through outsourcing.

The **MK DASS manager** will be appointed by the Scientific Council of ISPJR, for a four-year period. S/he will be responsible for the implementation of reliable, adequate and quality data service, and unimpeded functioning of the Archive. The MK DASS Manager should ensure the operation of the Archive to be focused on implementation/execution of its strategic goals, which are predetermined and clearly defined. S/he needs to take care of the continuous development of skills and abilities of employees.

The MK DASS Manager will be also responsible for establishing and maintaining good external relationships with key stakeholders and cooperating institutions. S/he will be responsible for successful presentation of the Archive and its mission outside the organization. The MK DASS Manager should be able to communicate in a positive manner in order to promote the need for open access to research data while emphasizing the benefits that this approach provides, to underline the importance of transparency in scientific research in the social science research community and its importance in a wider social context. S/he should also permanently monitor the compliance with international standards in the field of data management and preservation, and collaborate with the wider scientific community in the field of collecting and distributing data.

The **Data specialist** has duties and responsibilities related to the entire process of data archiving - solicitation, curation, preservation and dissemination of research data. The data specialist will also be engaged in training in data management and methodology of scientific research for researchers, and Open access initiative promotion.

The **IT specialist** is responsible for the overall technical support of the system and ensures appropriate functioning of the Archive in its storage, preservation, and dissemination activities. S/he will also be responsible for maintaining the website of the MK DASS.

Job descriptions

MK DASS manager
Responsibilities and duties:
- achieves defined strategic mission and goals of the organization;
- prepares strategic and operational plan for the next three years;
- assures financial viability: Planning, allocating and controlling financial resources;
- makes decisions: Organizing, coordinating and supervising daily activities according to international standards for data management and data preservation;
- develops plan for continuous improvement of the quality of work: Ensures employee training and development through participation at conferences, workshops, seminars, and trainings on data management, metadata documentation, data preservation, and other fields relevant for the work of the MK DASS;
- permanent monitoring of compliance with the international standards in the field of data management and preservation;
- reports about MK DASS activities to the Managing Director of ISPJR and to the Scientific Council of ISPJR;
- establishes relations and collaboration with designated communities, stakeholders and partner institutions/organizations;
- collaboration with the wider scientific community in the field of collecting and distributing data;
- open access initiative promotion;
- initiates and conducts international cooperation;
- manages the application processes for both national and international projects.

Required knowledge, skills and abilities:
- PhD in the field of social science;
- specific knowledge in data preservation and data management;
- excellent knowledge in international standards in the field of data management and preservation;
- English language proficiency;
- experience and knowledge in related international projects and project management;
- reference in the field of data management and data archiving;
- good management skills and communication skills, skills for team leader;
- solid social networking skills;
- a positive attitude regarding research transparency and a proponent of open data.

The MK DASS Manager:
- reports to the Managing Director of ISPJR;
- supervises the Data specialist and IT specialist;
- works with all Institute sectors, units, centres and labs;
- role outside the ISPJR: establishing and maintaining good external relations, which means close collaboration with stakeholders and beneficiaries, as well as partnership with other related national and international data services or corresponding regional and international organizations.

Data specialist

Responsibilities and duties:
- to solicit and acquire quantitative and qualitative data;
- metadata and data quality control and processing;
- preparation of data for secondary use; data conversion in different formats if needed;
- manages and controls access to research data;
- mediates communication between registered data users and data providers;
- provision of data services to third parties;
- provision of training in data management and methodology of scientific research for researchers.

Knowledge, skills and abilities:
- minimum of bachelor degree in social sciences;
- excellent knowledge in quantitative and qualitative research methodology and related research data;
- specific knowledge in data preservation and data management;
- knowledge of statistics and statistical software packages and tools;
- English language proficiency;
- good communication skills;
- ability to work in a team.

The Data specialist:
- reports to the MK DASS Manager;
- works with the IT specialist and all Institute sectors, units, centres and labs;
- role outside the ISPJR: communication and close collaboration with data depositors and data users.

IT specialist

Responsibilities and duties:
- manages the servers, hardware and software used for storage and distribution of data;
- performs regular backup and system recovery;
- maintains and updates the website of MK DASS.

Knowledge, skills and abilities:
- Bachelor degree in computer science and engineering;
- knowledge of server and network protocols;
- English language proficiency;
- knowledge and skills in adaptation of new or different technologies;
- good communication skills;
- ability to work in a team.

The IT specialist:
- reports to the MK DASS Manager;
- works with the Data specialist.

3.6.4.3 Partner support and cooperation

At this stage of development MK DASS has good relationship and support from FORS from Switzerland, ADP from Slovenia, the Institute of Economic Sciences, Belgrade, FFZG from Croatia, other partners from SEEDS and RRPP data rescue project[29], and CESSDA. These projects and collaboration with partner institutions significantly increased the capacities of the staff from ISPJR for data curation, as well as contributed to the organizational development for the future role of a national data service.

It is important that we have two main groups of partners: already well-established and developed data archives (FORS, ADP) from which we can learn a lot, and also partners at a similar level of development – in the process of establishing data archive - which provides us with the opportunity to share similar experiences.

At the very beginning, in addition to international partners and research institutions, our key national stakeholders will be the Ministry of Education and Science – a crucial institution in establishing the MK DASS as a part of national scientific infrastructure.

The next group of institutions are the producers and users of data: Macedonian Academy of Arts and Sciences, the Inter-University conference of the R. Macedonia, a long list of faculties and institutes, NGOs and think tanks, which will be most interested in using the services of the Archive. To this group of depositors/users of data, we could add the chambers of commerce, but also offices in R. of Macedonia of some international organisations, like the EU, the World Bank, or different UN agencies.

As a group of special partners with whom we could cooperate and share experiences, we note: the State Statistical Office of the R. Macedonia, the National Archive of the R. Macedonia, and the National and University Library St. Clement of Ohrid- Skopje.

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[29] RRPP Data Rescue Project (May 2016 - January 2017) – RRPP programme (http://www.rrpp-westernbalkans.net/en/News.html) was active from 2008 until 2017 and during this period about 100 projects were financed (19 in Macedonia), and most of it gathered primary data. During this project staff from ISPJR did the work of curating and archiving the RRPP data, supported by the long-established national data services in Switzerland (FORS) and Slovenia (ADP).

3.7 Montenegro

3.7.1 Introduction

The goal of this plan is to promote the development of data services for the social sciences in Montenegro, to give an overview of larger strategic considerations in conceiving and establishing a national data service, and to bring the attention of relevant stakeholders to the key issues in development planning.

The plan was compiled based on the results of the recent SEEDS - South Eastern European Data Services project, which dealt with issues around establishment of data services in Montenegro. Ms. Nikoleta Tomović (nikoleta@cemi.co.me) from the Centre for Monitoring and Research (CeMI), who was the author of relevant SEEDS project deliverables, was involved in the development of this plan. The plan was also shared and discussed with Ms. Zorana Lakićević from the Montenegrin Ministry of Science. The plan follows the *Guide for the elaboration of national data service development plans*, produced for the CESSDA SaW project by FORS - Swiss Center of Expertise in Social Sciences, and some parts of the text are taken directly from the Guide.

The benefits of establishing a national data service

Conducting empirical research in the social sciences is often extremely extensive and financially demanding, especially if it aims for analysis of complex phenomena on a representative sample. During such research, large amounts of data are collected, which cannot be reproduced because phenomena that are studied change over time.

Because data are often not appropriately preserved by researchers, they may be lost or become unusable over time. This represents a loss of potential knowledge and cultural heritage. The data service, through appropriate procedures, policies, tools and infrastructures, ensures long-term preservation of data.

From a research policy perspective, there are benefits of national data services to scientific communities that justify the needed investments. First, through their core activities - data preservation and dissemination - data services make possible long-term access to and wider and more effective use of existing data. This means that publicly-funded data are used more fully beyond their original purposes, and that research funders can concentrate on financing fewer new data collections. Indeed, data gathered for original research can be further exploited by "secondary" users for new insights and scientific contributions. Recent work by Beagrie et al.[30] demonstrates the economic benefits of national data services.

Second, data services strengthen research practice and quality by rendering research more transparent and open for replicability. By making data and related documentation available for scrutiny, original research can be tested and evaluated, a key pillar of the scientific method. Also, knowing in advance that the data could be used by others in the future is a way to ensure better quality in methods.

Third, more and more funders and journals are requiring that data be deposited at and available to researchers for secondary use and replication - having archives and repositories as places to store and disseminate data makes possible these requirements. Finally, the easy availability of secondary data

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[30] Beagrie Neil, John Houghton, Anna Palaiologk, and Peter Williams. (2012). Economic Impact Evaluation of the Economic and Social Data Service. Available at: http://www.esrc.ac.uk/files/research/research-and-impact-evaluation/economic-impact-evaluation-of-the-economic-and-social-data-service/

brings value to university teachers and students, who benefit from having data to train and illustrate methods and concepts in their courses and projects.

How to use this document

The document is divided into three main sections. In the first two sections, a concept for a future national data service has been developed, that is, the model and key features that are to be put into place. First, we state the overall mission of the data services and then continue to describe the general desired features of the data service, the main objectives, and structure of the data.

In the third section, the previously developed concept is evaluated in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time. This includes subsections on identifying the host institution for the data service, defining the human resources required (number and types of staff, internal structure), and identifying potential partners among the existing network of relevant national and international organisations.

3.7.2 Mission

The mission of the **Montenegrin Social Science Data Archive (MSSDA)** is:
- to offer a database of well-documented quantitative and qualitative data to be available for researchers and a broader public;
- to preserve data and documentation long-term;
- to promote the use of social science data, culture of data sharing, and secondary analysis; and
- to facilitate international visibility of Montenegrin social science research within the European research area (ERA).

3.7.3 General features of the data service

3.7.3.1 Definition of organisation

The **Montenegrin Social Science Data Archive (MSSDA)** is a national data service infrastructure for long-term preservation and distribution of social science research data produced by Montenegrin researchers. The data service is housed within a larger organisation to avoid additional costs for administrative and financial services. The main purpose of the data service is to provide support in data management and data archiving in the field of social sciences and related disciplines and to promote the re-use of data in secondary research.

3.7.3.2 Scope of collection

The focus of the data service is on both quantitative and qualitative data in the social sciences. The data in the area of sociology, psychology, education sciences, law, political science, economics, business and management, and other social science disciplines are included in the collection. Contemporary, as well as historical data, are considered for archiving by the data service.

3.7.3.3 Services and activities

The key services of the MSSDA are curation and long-time preservation of data, and data dissemination. MSSDA selects and acquires research data and documentation, maintains the catalogue of archived data, and provides access to public and restricted data. Open access is provided for public data. However, different levels of access are defined for restricted data (such as funder determined access, depositor-determined access), and access to sensitive data can be provided under special protocols. Permanent

monitoring of compliance with the international standards in the field of data management and preservation is one of the main principles in conducting the service.

Support and training in data management and data re-use for researchers are also provided by the MSSDA. Promotional activities and outreach to users should be part of the regular activities of the data service together with the wider promotion of Open Access to data.

Additionally, depending on available resources, the MSSDA develops materials and training for data depositors and for data users. Providing access to online tools for data analysis and variable exploration (creating tables, graphs and other analytical results) can also be developed in the future.

3.7.3.4 Beneficiaries

The primary recipients of the services offered by the MSSDA are researchers and teachers from public research and education institutions (universities, scientific institutes, government agencies) and university students (doctoral, master, and/or bachelor). Also, policymakers and research funders can use MSSDA services in decision-making (using the data itself for evidence), for science policies development, and in evaluation (getting statistics about data archiving and data use among researchers). The MSSDA services can also be used by researchers from NGOs and private research companies, secondary school teachers and students, journalists, businesses, and professional organisations. The data and the services should be freely available for research purposes and/or for non-commercial use.

3.7.3.5 Governance structure

The MSSDA joint Oversight Board consists of representatives of the funding institutions and the hosting institution representative. The role of this board is to review annual plans and annual reports of the data service and to ensure that the work is in line with the goals and strategies of institutions to which the service belongs.

The Scientific Advisory Board consists of eminent researchers in social sciences, data archiving experts, information science experts and information technology experts. This board advises on issues related to social science methodology and data archiving procedures.

The Executive Board is composed of the data service director and the head of the host institution. A director is responsible for overall management of the data service.

3.7.3.6 Financing schemes

The data service, as a national infrastructure, should be financed from public funds to ensure its long-term operation and sustainability. The possible funding sources for the data service are the Ministry of Science, the Ministry of Education, and Montenegrin Academy of Arts and Sciences. Additional funds will be provided by domestic and international funding organisations.

The financing model for the establishment phase should be different than the model for financing day-to-day operations after the establishment of the data service. During the establishment phase, the costs for procuring office and technical equipment have to be considered. Once the service is established, the regular budget should cover the costs for staff and maintenance of technical infrastructures, and also the membership in CESSDA-ERIC to ensure connections with the European community of social science data archives and to be able to receive support from this community.

3.7.4 Description of resources and challenges

3.7.4.1 Host institution of the future data service

The national data service for the social sciences could be hosted by the Centre for Monitoring and Research (CeMI) as a service of the Ministry of Science and the Ministry of Education of Montenegro. CeMI is a non-governmental, non-profit organization, whose main goal is to provide infrastructural and expert support for continuous monitoring of the overall process of transition in Montenegro. Its mission is an evidence-based advocacy organization which provides continuous support to the process of democratic consolidation and Europeanization of Montenegro. CeMI is well integrated into existing national networks, with links to universities, research institutes, NGO sector and other institution producing social sciences research.

Most relevant to data services development in Montenegro is the fact that CeMI was involved in the international project SEEDS - South-Eastern European Data Services[31] whose aim was to support the establishment of new data services for social sciences in countries where no such services exist. During the course of the SEEDS project, an establishment plan for data services was developed and data archiving policies and procedures were written[32]. Also, the prototype data archive website was set up[33]. Through that work, CeMI staff gained experience and developed skills in data curation.

3.7.4.2 Human resources and internal structure

The data service should employ experts in data management and data archiving. They will be responsible for all aspects of the archiving workflow, including data solicitation, curation, and dissemination. The data experts should optimally have a background in social sciences and information sciences, but could also have a background in related disciplines, such as data science or statistics. Main activities of a data expert include: solicitation of data, data and documentation processing (ingest), data curation and preservation, dissemination of archived data, creating contracts for data depositors and data users, providing information and advice to researchers and students.

In addition to data managers, the data archive must have IT support available. IT expert shall be responsible for the overall technical support of the system, ensuring the appropriate functioning of the data service in its storage, preservation and dissemination activities, and maintaining the website of the data services.

As legal advice is also necessary for the data service activities, a legal expert has to be available to give advice related to copyright issues and protection of personal data.

At the beginning, the data service should employ at minimum two data experts, one of which needs to take a management role as the Director of the data service. Staff will be subject to the rules and regulations of the hosting institution.

The engagement of professional and highly qualified candidates for all positions in a data service is very important. The search for suitable candidates will require detailed job descriptions that are appropriately publicized. If the positions are taken over by existing staff, it should be clarified which of their responsibilities are to be transferred and which are to be maintained.

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[31] SEEDS project was funded by the Swiss National Science Foundation and the Swiss Agency for Development and Cooperation. http://www.seedsproject.ch

[32] SEEDS project deliverables are available at http://seedsproject.ch/?page_id=64

[33] Prototype data services website for Montenegrin Social Science Data Archive. http://me.seedsproject.ffzg.hr

Staff hired for the data service should begin training with respect to their future roles and responsibilities. Some training activities have already begun as part of the SEEDS project and the knowledge could be transferred to newly employed staff.

3.7.4.3 Partner support and cooperation

On the national level, it is very important for the data service to be recognised as a valuable national service by all relevant institutions that are part of the science community and higher education system. Stakeholders and partner institutions should include:

- The Ministry of Science and its Sector for Scientific Research Activity which performs administrative tasks related to this field and professional tasks related to:
  - the implementation of programs of common interest through which priorities are implemented in this sector;
  - development of plans and programs of scientific research activities;
  - making scientific policy and strategy; proposing and implementing laws and other regulations;
  - harmonization of laws and regulations with EU regulations;
  - drafting regulations on scientific and technological cooperation between Montenegro and other countries (agreements, treaties, protocols, programs);
  - Montenegro's participation in multilateral, regional and bilateral programs and projects relating to science, research and development;
  - project implementation in the field of science financed from the EU pre-accession funds - IPA and other international funds;
  - implementation of bilateral scientific and technological cooperation between Montenegro and other countries;
  - promoting EU Framework Programme and other programs of international cooperation;
  - organization and coordination of the NCP (National Contact person for the Framework programs) and individual programs or parts of programs;
  - monitoring of the implementation of the strategy of scientific research activities in Montenegro;
  - program of the Ministry for scientific and research activities;
  - report on the work of the Government in the field of scientific research;
  - licensing of research institutions and keeping a register of institutions;
  - management of databases in the field of scientific research activities in accordance with the law;
  - and other activities within its scope.

- The Ministry of Education, which is responsible, in this field, for the development of higher education system in Montenegro;

- The Ministry of Public Administration, which has no direct competences when it comes to establishing research data archives, but gives support regarding software and related issues;

- The Council for Scientific Research Activity, which analyses issues related to science in Montenegro and achievements in scientific research activity, makes expert proposals and opinions regarding all issues in this field, and thus contributes to improving scientific research activity in Montenegro;

- Montenegrin Academy of Sciences and Arts;

- All relevant public and private scientific and research institutes; public and private universities;

- The National Library and academic libraries of all Montenegrin universities;

- Think tanks and NGOs, which are engaged in social science research activity, and which promote the concept of open data.

3.7.4.4. Local challenges

One of the challenges is that researchers in Montenegro are currently not fully aware of the benefits of sharing their data with other researchers. Also, a practice of using secondary data in research is not very common. One the other hand, that can be the reason to push forward the development of data services, as a way to promote the culture of data sharing in Montenegro. A strong political will is needed to make this happen.

3.8 Serbia

3.8.1 Introduction

This first plan for establishing a national data service for the social sciences in Serbia has been developed by staff from the Institute for Economic Sciences Belgrade who took part in the SERSCIDA project, funded by the EC within the FP7 project frame - Aleksandra Bradić-Martinović (abmartinovic@ien.bg.ac.rs) and Aleksandar Zdravković (aleksandar.zdravkovic@ien.bg.ac.rs). It should be further developed by all the relevant stakeholders, organizations and individuals whose jobs and interests are related to developing research infrastructures in Serbia, primarily policy-making and funding institutions.

The plan is divided into three main sections (Mission statement, General feature of the data service and Description of resources and challenges), which address larger strategic considerations in conceiving and establishing a national data service. In the first two sections, we develop a "concept" for a future national data service, that is, the model and key features that are to be put into place. In the third section, the previously developed concept is evaluated in relation to realities on the ground, including probable resources and challenges for setting up and maintaining a viable data service over time.

3.8.2 Mission

The mission of the **Serbian Data Centre in Social Sciences (SER-DAC)** is to support high-quality research, teaching and learning in the social sciences and humanities, by acquiring, developing and managing data and related digital resources, and by promoting and disseminating these resources as widely and effectively as possible.

3.8.3 General features of the data service

3.8.3.1 Definition of organisation

The **Serbian Data Centre in Social Sciences (SER-DAC)** is an organizational unit of the Institute of Economic Sciences Belgrade (IES). IES, as a scientific and research institution, is engaged in research in macroeconomics, microeconomics, regional economic development, development studies of domestic and world markets, as well as in the activities of consulting, training and education related to modern business economics, management, marketing, entrepreneurship, finance, banking, and others. It has five centres: Centre for Macroeconomic Research, Centre for Strategic Research and Public Policies, Centre for International Research and Cooperation, Centre for Consulting and Center for Managerial Informatics. SER-DAC is a part of the Centre for Managerial Informatics which covers research in the field of business informatics, management information systems, e-banking and payment systems and also has two infrastructure parts, a data archive and institutional repository (www.ebooks.ien.bg.ac.rs).

The SER-DAC was formally established in March, 2014, but it is still in the beginning phase supported only by international funds through the SEEDS project (http://seedsproject.ch/) and the HORIZON2020 CESSDA SaW project (http://cessdasaw.eu/). Currently SER-DAC can preserve and disseminate all types of data, both quantitative and qualitative through the FORS data portal SEEDS base (https://seedsdata.unil.ch/). The data scope covers all disciplines in the social sciences and humanities. Also, from April 2017 SER-DAC started to test Dataverse platform (http://dataverse-serbia.ien.bg.ac.rs) within CESSDA SaW task 4.4., subtask: Technical support for Dataverse (own installation) as a pilot for

ADP[34] & IES to evaluate remote technical support with the support of DANS[35]. It is expected to be full operated until the end of 2017.

The SER-DAC collects and preserves data for potential secondary use - analysis for research, teaching and learning, and confirmatory analysis based on the principle of Open data access. It will also store sensitive data, which will be forbidden for use without proper security procedures (researcher/teacher accreditation, safe room, etc.) and user-licenses. SER-DAC will organize trainings for the research and teaching community, as well as round tables and conferences. IES will be responsible for data solicitation, trainings, and promotion in cooperation with specialists in the specific fields. Within a regional framework IES developed specific knowledge and skills regarding the collection and preservation of economic data. In that matter IES will be support for regional partners.

The SER-DAC will follow the international standard Open Archival Information System (OAIS) Reference Model (Reference Model for an Open Archival Information System (OAIS); CCSDS 650.0-M-2; Consultative Committee for Space Data Systems: Washington, DC, 2002.) and all the phases of the DCC Curation Lifecycle Model (DCC Curation Lifecycle Model: http://www.dcc.ac.uk/resources/curation-lifecycle-model) Also, it will be compliant with the Data Documentation Initiative (DDI) metadata specification, version 2.5 or higher (Data Documentation Initiative (DDI): http://www.ddialliance.org/).

3.8.3.2 Scope of collection

SER-DAC collects data and information across the range of social science disciplines and the humanities: Economics; Education; Employment and Labour; Environment, Conservation and Land Use; Health; History; Industry and Management; Law, Crime and Legal Systems; Media, Communication and Language; Political Science; Psychology; Sociology, Society and Culture; Social Welfare Policy and Systems. This includes quantitative and qualitative data that fulfill most of the following conditions:

- research that gives evidence and greater understanding of Serbian society or parts of it (including international surveys);
- research data where Serbian researchers are involved;
- comparative or continuous research (panel data, longitudinal surveys, and time series that allow examination of trends);
- data produced with methodological excellence;
- works of general interest for social science research (quality and exemplary studies with analytic potential).

Time series and panel data are of particular interest. The deposited data will be retained for the long-term, unless otherwise specified by the depositor, funding agencies, or by government regulations. SER-DAC will accept data and documentation in paper form only under exceptional circumstances.

Eligible depositors are researchers, members of research institutions, government departments, offices of national statistics, and public and commercial sector sources (e.g., marketing research firms). Depositors may only deposit their own work and will be expected to sign a data deposit agreement

3.8.3.3 Services and activities

General activities in SER-DAC are:

- activities related to the collection, validation and data conversion, creation of metadata, storage, and distribution of data collections;
- creating and improving the classification scheme of data types;

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[34] ADP - Arhiv družboslovnih podatkov, Ljubljana, Slovenia (http://www.adp.fdv.uni-lj.si/).

[35] DANS - Data Archiving and Network Services, Den Haag, Netherlands (https://dans.knaw.nl/en).

- administration of network/system specialized in collecting, storing, and distributing data;
- implementation of systems aimed to improve the quality and safety of using specialized infrastructure designed for data management and preservation;
- design and implementation of new database software, and preparing reports on the use of software tools and the database management system;
- permanent monitoring of compliance with the international standards in the field of data management and preservation;
- mediation between the demands of data users and data providers (contracts for deposit and distribution of data, admission requirements, testing, etc.);
- providing of services to third parties and user trainings;
- customer support;
- activities related to web portal development and maintenance.
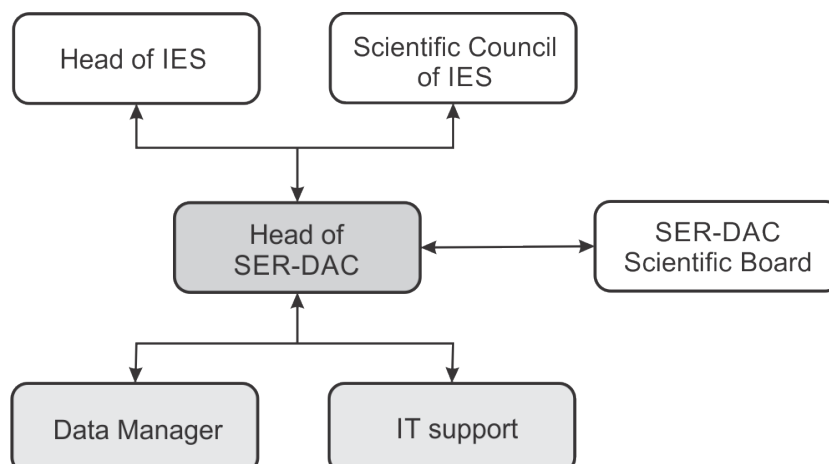
3.8.3.4 Beneficiaries

In the initial phase, SER-DAC intends to provide services to the academic community: university researchers and teachers, university students (doctoral, master, and/or bachelor) and researchers from other public institutions (e.g., scientific institutes, government agencies). Later we intend to expand our services to researchers from other institutions (NGOs, private research companies, newspapers, businesses, associations, etc.), the general public, policymakers, and journalists.

3.8.3.5 Governance structure

SER-DAC is organized as a separate unit managed by a Head, who is responsible to the IES Director, the IES Scientific Council, and the SER-DAC Scientific Board.

Beside the Director and the IES Scientific Council, the work of SER-DAC will be evaluated in the scope of activities connected to data services by the **SER-DAC Scientific Board**. The Scientific Board members are mainly representatives of Belgrade University, National Library of Serbia, the Statistical Office of Republic of Serbia, institutes of social sciences, and the Institute of Economic Sciences, as well as other stakeholders. The SER-DAC Scientific Board has eleven representatives from the Ministry of Education, Science and Technological Development (one representative), the Institute of Economic Sciences (two), the National Library of Serbia (one), the Statistical Office of Republic of Serbia (one), institutes of social sciences (three), universities (two), and the Head of the SER-DAC. The SER-DAC Scientific Board has two regular sessions a year.

Figure 3: SER-DAC's governance and internal structure

3.8.3.6 Financing schemes

According to our experience and previous efforts to establish a fully operational data service we came to the conclusion that the most suitable financing schemes for funding SER-DAC would be based on three funding sources. These sources include:

- The Ministry of Education, Science and Technological Development could finance the staff personnel costs, required software and local promotional activities;
- The IES, as a host institution could provide premises and finance hardware and maintain the system;
- International projects may be used as a potential funding source for the educational and international promotional activities.

The funding from the Ministry and IES should cover long term financing needs to assure sustainability of the SER-DAC. For example, the Ministry of Education, Science and Technological Development of Republic of Serbia announces competitions for technological development projects every 3-5 years, which is a potentially suitable programme framework for co-financing SER-DAC.

3.8.4 Resources and challenges

3.8.4.1 Host institution of the future data service

Having the IES as a hosting institution brings many advantages:

- IES is public non-profit research institution involved in data-oriented social science research;
- IES has developed technical capacities to support the functioning of the SER-DAC (hardware, software, servers, network and telecommunications), even some components of the technical infrastructure for data archiving (developed during the SERSCIDA project);
- IES already has available staff, with an administrative service;
- IES is well-integrated into the national research and service network, including links to universities, research institutes, national statistical institutes, and researchers in different disciplines. Also, it has positive relations with national ministries or research councils;
- IES already shows commitment to development of data a centre through participation in projects related to data archiving (SERSCIDA, SEEDS, RRPP Data Rescue and CESSDA SaW);
- IES is familiar with data archiving issues and has staff with data management skills.

We also identified some weaknesses of IES as SER-DAC hosting institution:

- Commitment of the IES to SER-DAC support may potentially diminish if some of the further IES management boards do not recognize the importance of data archiving;
- Current and projected internal funding resources of the IES to financially support SER-DAC are limited;
- Despite having good cooperation with relevant government entities, possibilities of IES for lobbying for SER-DAC support are limited, due to the lack of political connections of the IES management and staff with highly positioned government officers;
- IES does not have a back-up plan for substituting potential leave of the personal with appropriate knowledge of data management and preservation.

3.8.4.2 Human resources and internal structure

SER-DAC is composed of a Head, a Data Manager and IT support. SER-DAC organizational chart is presented above in Figure 3. Regarding the proposed structure and current human resources, the internal HR capacities of IES match the positions of the SER-DAC head and data specialist. An identified gap is related to proper IT support, which needs to be addressed by outsourcing.

The **SER-DAC Head** is appointed by the Scientific Council, on a proposal of IES Management, for a four-year period.

The tasks of SER-DAC management are as follows:
- proposing basic business policy, long-term (strategic) development plan, and the annual work and development program and taking all measures for successfully implementing policy;
- organizing, coordinating, and monitoring the work of the Centre and the fulfilment of objectives;
- preparing and taking care of the budget and financial plans;
- reporting on all activities to the director and Scientific Council of the Institute of Economic Sciences;
- fulfilment all the obligations based on membership in the Scientific Council of the SER-DAC;
- ensuring cooperation with stakeholders and partner institutions;
- initiating and coordinating the implementation of international cooperation and professional training of staff in the SER-DAC;
- taking care of promotional activities, including promotional meetings and events;
- initiating and managing the application process for international/national projects in the field of data management and data preservation;
- monitoring and coordinating the work of the SER-DAC according to international standards in the field of data management and data preservation.

Required Skills
- PhD in the field of economics or other social science disciplines;
- scientific or teaching position in the area of economics or other social science disciplines;
- specific knowledge in the field of data management and data preservation;
- experience of working in international projects;
- English language proficiency;
- references in the field of data management.

The position of the **Data Manager i**ncludes the following activities:
- providing support to researchers (depositors) in the process of depositing the data and creating metadata,
- data and metadata quality control;
- preparing data for secondary use (performing data conversion into accessible formats compatible for use within statistical software);
- management and control of the access to the data collections;
- mediation between data users and data providers;
- provision of services to third parties and training users.

Required Skills
- high school education, oriented to informatics;
- knowledge of statistics and statistical software packages and tools;
- knowledge of server and network protocols;
- English language proficiency;
- skills in rapid adaptation to new and different technologies.

The **IT support** includes network/system administration related data collection, preservation, and dissemination.

3.8.4.3 Partner support and cooperation

At this stage of development SER-DAC has a close relationship and support of FFZG from Croatia, FORS from Switzerland, ADP from Slovenia, and CESSDA-ERIC. In the future the main stakeholders will be the Ministry of Education, Science and Technology Development of the Republic of Serbia, the National library; the Statistical Office of the Republic of Serbia; research institutes in social science disciplines; faculties in the social sciences; and the Serbian National Labour Service.

This network will connect key persons in each partner and stakeholder institution with IES representatives. Formally IES as legal representative of SER-DAS will sign a memorandum of understanding with each stakeholder. It will be important to set up lines of communication with key stakeholders and partners so that they are kept informed about the development and direction of the new data service. Key representatives from each stakeholder institution will be identified and contacted to obtain their consent to participate as representatives on behalf of their institution. Representatives will be included in a contact database that will be used for communicating information about the data service. Also, the representatives of main stakeholders will be members of the Scientific Board.

3.9 Ukraine

3.9.1 Introduction

This Plan for establishing a national data service in the social sciences for Ukraine was developed by the team of the Ukrainian National Data Bank of Sociological data "Kyiv archive", represented by Yulia Sakhno (j.sakhno@kiis.com.ua), Manager of the Kyiv archive, and Volodymyr Paniotto (paniotto@kmis.kiev.ua), General Director of Kyiv International Institute of Sociology (KIIS), Professor at the National university of Kyiv-Mohyla Academy and academic adviser of the Kyiv archive. It summarizes information on the Data Bank's current situation (mission and working principles, structure and resources) and outlines future needs and necessary resources for improving and maintaining the data service. The principal aim of the Plan is to define strengths and limitations in the current situation, and seek opportunities for the further development and maintaining a viable data service over time. We expect that the Plan would help to improve the Data Bank services, develop a strategy to overcome existing barriers, and contribute to finding funding sources.

3.9.2 Mission

The overall mission of the **Ukrainian National Data Bank of Sociological data "Kyiv archive"** is to promote evidence-based thinking about social processes in Ukraine, both in Ukrainian society and abroad.

We believe that understanding of the ongoing processes in society is impossible without reliable and valid data from sociological surveys. Data from social surveys and opinion polls is very important since it can provide a multifaceted and objective picture of the processes that took place and are taking place at the moment. Until now, different sociological organizations in Ukraine have accumulated a significant amount of sociological data on different issues (political, social, socioeconomic situation, values, attitudes, people's beliefs, health, business activities, etc.), but these data are mainly used only by the data creators, hardly available for anyone outside, and may be lost if incorrectly stored. The Kyiv archive was created to preserve the data from social surveys conducted in Ukraine and to make it easily and freely accessible to all interested persons or entities. Currently it is the only archive in Ukraine which collects, preserves and provides open access to sociological data for a wide range of users.

Our main strategic goals are designed to preserve the data from social surveys conducted in Ukraine and to maximize quality and availability of services for all interested persons or entities both in Ukraine and outside the country. These are to:
- strengthen collaboration with Ukrainian sociological research centres (data creators);
- increase the number of depositors and surveys stored in the Data Bank;
- ensure long-term preservation and recovery of data;
- improve and ensure open and easy access to data by providing direct online registration, creating an English-language version, improving online analysis tools;
- improve use of data by providing academic and data processing advice for academic and non-academic data users;
- promote academic research based on the Data Bank's survey collection; and
- strengthen collaboration with international digital repositories and joining CESSDA.

3.9.3 General features of the data service

3.9.3.1 Definition of organisation

The **Ukraine National Data Bank of Sociological data "Kyiv archive"** (Національний банк соціологічних даних "Київський архів" in Ukrainian, http://ukraine.survey-archive.com) was created in 2015 by the Kyiv International Institute of Sociology (KIIS) and Centre for "Social indicators", together with the National university of Kyiv-Mohyla Academy, due to the financing of the International Renaissance Foundation.

The main purpose of the Data Bank is to make the data from social surveys conducted in Ukraine easily and freely accessible to all interested persons or entities both in Ukraine and outside the country.

3.9.3.2 Scope of collection

The Data Bank is intended to store and share data from the social sciences. We do not set priorities to specific disciplines but the current collection contains mainly survey data for sociology and political sciences as a reflection of the data provided by depositors.

Both quantitative and qualitative traditional-scale data for the period from the earliest studies in modern Ukraine history (1989-1991) up until now can be stored in the archive (although now we have only quantitative data).

3.9.3.3 Services and activities

The main services are:
- solicitation and acquisition of data from data producers;
- data recovery and long-term preservation;
- online cataloguing and classification of archived data, creating thematic compilations and tags to ease data search;
- registering users and providing access to data for secondary analysis;
- online tools for data analysis and variable exploration; and
- user support for data search and use.

The additional services and activities are:
- support, assistance, and advice for data depositors;
- translation of survey materials into English (on routine basis and upon user's request); and
- promotional activities and outreach for users.

3.9.3.4 Beneficiaries

Data and other survey materials stored at the Data Bank are intended for all interested persons and can be available for use both for students and researchers and for individuals outside academic circles. Since the website offers some tools for online analysis and tabulations, statistical analysis skills are desirable but not essential for registration and getting access to data.

The recipients of the Data Bank services include:
- university students (bachelor, master, doctoral);
- university researchers and teachers;
- researchers from other public or private institutions;

- journalists; and
- representatives from governmental and non-governmental organizations.

3.9.3.5 Governance structure

The **executive board** includes the data service director responsible for defining goals, allocating resources, defining responsibilities and time frames.

The **oversight board** consists of representatives of Ukrainian universities and sociological research centres approved by the Sociological Association of Ukraine.

The **advisory board** includes the academic adviser, the data processing specialist, and the IT-specialist.

3.9.3.6 Financing schemes

The first phase of the Data Bank was done under the grant from International Renaissance foundation in 2015. From 2016 to present its activities are supported and financed by Kyiv International Institute of Sociology, Centre "Social indicators" and the National University of Kyiv-Mohyla Academy.

The funding sources are based on the host institutions, i.e. KIIS, Centre "Social indicators" and National University of Kyiv-Mohyla Academy[36], and on the International Renaissance Foundation

We also intend to make efforts to create the consortium of universities and polling companies to ensure financing for the regular functioning of the Data Bank.

3.9.4 Resources and challenges

3.9.4.1 Host institution of the future data service

For the future, we consider that the host institution would be one of the following four variants:

- **National University of Kyiv-Mohyla Academy jointly with Kyiv International Institute of Sociology**, as it is now: The advantage is that those organizations support the Data Bank now and plan to support it in the future. The downside is that those organizations do not intend to expand support and finance transformations which are necessary for the Data Bank development.

- **The Institute of Sociology of the Ukraine National Academy of Science**: This is the main scientific research institution in Ukraine, and if Ukraine National Academy of Science or Ministry of Education and Science of Ukraine would intend to provide resources for the Data Bank support, they would do it only if the Data Bank would belong to the Institute of Sociology of the Ukraine National Academy of Science. The downside is that at this time the possibility that the National Academy of Science or the Ministry would increase financing for the Institute of Sociology is very low, since they do not provide enough funding even for the main Ukraine academic journal "Sociology: theory, methods, marketing" (KIIS is providing regular funding for the journal).

- **Taras Shevchenko National University of Kyiv**, one of the country's leading universities: The dean of the Faculty of Sociology is Andriy Gorbachyk, who has a PhD in cybernetics and is an expert in data archives. The Faculty of Sociology could benefit from the use of the Data Bank, but

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[36] Centre "Social Indicators" and Kyiv International Institute of Sociology (KIIS) are two organizations created by the same owners, but the Centre "Social Indicators" is a NGO and KIIS is a commercial company. Both organizations rent office space at the National University of Kyiv-Mohyla Academy.

we have serious doubts that the management of the University would agree to provide additional funding to the Faculty for support of the Data Bank operation.

- **Sociological Association of Ukraine (SAU)**: SAU is expressing interest in the development of the Data Bank. The Board of the SAU established the Oversight board to develop recommendations on the Data Bank development. SAU is located in one of Ukraine's largest universities – V.N. Karazin Kharkiv National University. Vil Bakirov, the president of the SAU, is the Rector of the Kharkiv National University, which creates favourable conditions for locating the Data Bank. So far, however, Kharkiv National University did not provide any funding for the Data Bank support, although the issues were being discussed for several years.

One more possible scenario is transforming the Data Bank into the Redistributed Data Bank. The idea is to distribute efforts among the different stakeholders (Kyiv International Institute of Sociology, some key universities, Institute of Sociology of the Ukraine NAS) in order to provide support to the Data Bank. One organization could be responsible for server support and the website, another one could ensure data recovery and proper data processing, while the third could provide user support and respond to requests for data and information.

3.9.4.2 Human resources and internal structure

At the current time the active staff of the Data Bank consists of two persons: the Data Bank manager, who works part-time and serves as a manager and a data specialist; and the Academic adviser, who also serves as a manager on a voluntary basis. IT specialists and consultants in methodology are involved from time to time on an irregular basis as freelancers (subject to funding).

Existing human resources are sufficient for providing services for users (registering, providing access to data, user support for data search and use) and data depositors (long-term preservation), but insufficient to enable further development (expansion of the data collection, finalizing the web-site (currently we have a beta-version), translating survey materials into English). Current limitations on the functioning of the Data Bank arise from the lack of financial resources to employ additional staff: the data specialist for full-time in addition to the data bank director; translator(s) to translate survey materials into English; IT-specialist and consultant(s) to finalize the website.

Human resources which are necessary for the efficient work of the Data Bank:
1. For permanent functioning of the Data Bank: data service director / manager (at least part-time), data specialist (full-time), and IT specialist (part-time).
2. Additional staff for work on the Data Bank development: IT-specialist and consultant(s) to improve the Data Bank software; translator(s) to translate survey materials into English.

Data service manager's main responsibilities:
- management of the data service;
- setting of policy and procedural rules;
- relations with national and international stakeholders and partners;
- data service promotion towards the research community (the beneficiaries).

Data specialist's main responsibilities:
- solicitation of data;
- data and documentation ingest;
- data curation and preservation;
- dissemination of the archived data;
- contracts creation for data depositors and data users (maybe with the help of a legal advisor);
- information and advice to researchers and students;

IT specialist main responsibilities:
- install and maintain servers;

- install and maintain hardware for staff;
- install and maintain software for archiving and dissemination of data;
- develop and maintain data service website.

Additional staff (if additional resources are available): translator from Ukrainian/Russian into English.

3.9.4.3 Partner support and collaboration

Possible national partners of the Data Bank are:

- **Sociological Association of Ukraine and Ukrainian Marketing Association**: They could encourage their members to transmit sociological data to the Data Bank and could organize discussions on the Data Bank development strategy among experts.
- **Key universities** (particularly, National University of Kyiv-Mohyla Academy, Taras Shevchenko National University of Kyiv, V.N. Karazin Kharkiv National University, Odessa National University): They are interested in getting access to relevant and up-to-date sociological data for their students and their academic staff.
- **The Institute of Sociology of the Ukraine National Academy of Science**: It is interested in using the data Data Bank materials for academic research work.
- **Main polling companies** (particularly, Kyiv International Institute of Sociology, SOCIS, TNS, Ilko Kucheriv Democratic Initiatives Foundation, Yaremenko Ukrainian Institute for Social Research): Those companies are the main potential data depositors, who can transfer the data from their surveys to the Data Bank.
- **The International Renaissance Foundation** who sponsored the Data Bank creation.

3.9.5 Planning for the data service

3.9.5.1 Activities which are already undertaken

Organisation and internal structure
- The Data Bank already has a host institution and funding institution. The National University of Kyiv-Mohyla Academy gives space for Data Bank, KIIS pay to staff;
- The Data Bank has a web-site (http://ukraine.survey-archive.com/), institutional brand and logo;
- At the current time the Data Bank keeps data from over 200 sociological surveys and public opinion polls conducted by Ukrainian polling companies (KIIS, SOCIS, Ilko Kucheriv Democratic Initiatives Foundation and other) since 1991 till present;
- The Data Bank main services are: data recovery and long-term preservation; online cataloguing and classification of archived data; registering users and providing access to data for secondary analysis; user support for data search and use. In almost two years of operation we provided access to data and support for over 150 users from Ukraine and other countries (USA, Canada, United Kingdom, Spain, Poland, Russia, and others).

Human resources
- The current staffing includes a manager (who performs the tasks of manager and data specialist), academic adviser (who also serves as a data service director and manager on a voluntary basis) and freelance IT specialist.

Policies, quality control procedures and workflows
- Established data policies and written protocols for data management and access.

Technical infrastructure
- The Data Bank has hardware (notebook computers) and rents a server;

- The Data Bank has software for storing and retrieving data developed specifically for this databank by local experts;
- The Data Bank has some necessary software for statistical analysis (SPSS) and publishing data on the web.

Activity report, outreach and promotion
- The Data Bank maintains a database of users and monitors the Data Bank performance (basic indicators are: number of depositors, number of deposited surveys, number of requests and registered users, number of requests from abroad and from non-academic circles);
- The Data Bank conducts promotional activities (presentations at press-conferences, publishing information on the web, holding negotiations with the research community and possible partners).

Networking and internal and external communications
- The Data Bank is trying to carry out internal and external communications on an ongoing basis;
- We are interested in participation in relevant international conferences and workshops.

3.9.5.2 Further steps and resources required

For the further development of the Data Bank services we plan to:
- improve the Data Bank software: if it is possible, then purchase the software that CESSDA uses;
- create fully-fledged English-language version, which involves English interface for the site and translating all survey materials (field questionnaires, labels in data sets, technical reports and other documentation) into English;
- increase the number of deposited surveys and number of depositors;
- join CESSDA and participate in CESSDA projects and activities.

In order to reach the goals, the Data Bank needs both financial and human resources. To obtain financing the Data Bank applied grant proposals to the International Renaissance Foundation in 2016 and 2017. We applied to receive financing (10,000 dollars) for translation of Data Bank survey materials (field questionnaires, labels in data sets, technical reports and other documentation) into English, but those applications were not funded. Currently the Data Bank seeks support of national or international partners in the form of financing, consulting, or division of efforts and responsibilities.

4. Conclusion

Beyond assessing existing conditions and data infrastructure proto-activities in non-CESSDA member countries (task 3.2), task 3.3 of the CESSDA SaW project focused on assisting interested representatives of these countries in drafting development plans for national data archives for the social sciences. These plans should form the blueprints for future archives, with the longer-term aim of widening CESSDA ERIC membership. Of the 21 European non-member countries, nine national development plans (NDPs) were included in this document, with another four promised, pending approval from national ministries. While these NDPs will certainly evolve over time, they represent a significant first step in defining concrete goals, priorities, and organisational structures that might be fully activated with sufficient support from national ministries. CESSDA ERIC will do what it can to assist in this process.

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Glossary

Data acquisition is the process of appraising, selecting and getting data and metadata based on a set of defined criteria; i.e. to identify the data and information that the repository will preserve (ISO 16363). (source: CESSDA SaW Capability Development Model)

Data curation refers to the active management of data through its life cycle of interest and usefulness to a designated community. Data curation activities enable data discovery and retrieval, maintain its quality, add value, and provide for re-use over time. As such, it includes all processes in the organization that involves data management. That is, pre-ingest initiatives; ingest functions; archival storage and preservation; and disseminating and providing access to data for its designated community. (source: International Federation of Data Organizations (IFDO), Data preservation, http://ifdo.org/wordpress/preservation/)

Data depositor is the person or institution that deposits the data in the data service. The data depositor can be a different person or institution than the data producer.

Data dissemination consists of distributing or transmitting data to the end-users.

Data ingest consists of accepting data and metadata from data producers/depositors, preparing data and metadata for storage, and ensuring that the information becomes established within the archive. (source: CESSDA SaW Capability Development Model)

Data Management Plan is part of grant application or research project delivery that consider essential properties of Research Data Management throughout the project, aiming at Open data as the default. (source: CESSDA SaW Capability Development Model)

Data preservation or more specifically, *digital data* preservation, refers to the series of managed activities necessary to ensure continued access to digital materials for as long as necessary. This broad definition of data preservation refers to all of the actions required to maintain access to digital materials beyond the limits of media failure or technological change. *Long-term preservation* can be defined as the ability to provide continued access to digital materials, or at least to the information contained in them, indefinitely. (source: IFDO, Data preservation, http://ifdo.org/wordpress/preservation/)

Data protection is a set of practices that reduces the likelihood that individual study respondents can be harmed through identification and improper use of personal information. It includes anonymization of data, accreditation and authentication systems to control who has access to the data, constraints on access (e.g., prior approval of the data producer, and user contracts).

Data security is the means of ensuring that data is kept safe from corruption or damage and that access is suitably controlled.

Data user is the end user of the data disseminated by the data service.

Long-term access means that the data should be accessible in a period of time long enough for there to be concern about the impacts of changing technologies, including support for new media and data formats, and of a changing Designated Community, on the information being held in an archive. This period extends into the indefinite future (OAIS). (source: CESSDA SaW Capability Development Model)

Online catalogue is an online tool containing a list of the data available in the data service and their description (metadata).

Open access is the practice of providing unrestricted access to scientific publications, or the movement aiming at this practice. This term is sometimes also used to imply access to research data used for these publications (otherwise addressed by the term "Open Data"). (source: DASISH http://training.dasish.eu/training/glossary/)

Open data is data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike. (source: Opend data handbook, http://opendatahandbook.org/guide/en/what-is-open-data/)

Research Data Management (RDM) comprises the different components of the research data lifecycle, from data creation to data preserving, sharing and re-use. RDM is an integral part of the wider research process, contributing the standards and principles of research, and applicable not just to the research data lifecycle, but throughout the lifecycle of research projects as a whole. (See http://repository.jisc.ac.uk/6379/16/Training_for_RDM_-_Comparative_european_approaches_May_2016.pdf). (source: CESSDA SaW Capability Development Model)

Research inventory contains information and description on (past and) current research projects in the field of social sciences conducted in the country.

Secondary analysis involves the use of existing data, collected for the purposes of a prior study, in order to pursue a research interest which is distinct from that of the original work; this may be a new research question or an alternative perspective on the original question (Hinds, Vogel and Clarke-Steffen 1997, Szabo and Strang 1997). (source: Heaton, http://sru.soc.surrey.ac.uk/SRU22.html)